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July 23, 2021

Via Electronic Filing

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120
rchiavetta@pa.gov

In re: Docket No. A-2021-3026132
Application of Aqua Pennsylvania Wastewater, Inc. pursuant to Sections 1102, 1329, 507 and 2102 of the Public Utility Code for Approval of its Acquisition of the Wastewater System Assets of East Whiteland Township

Dear Secretary Chiavetta:

We are counsel to Aqua Pennsylvania Wastewater, Inc. ("Aqua") and are submitting, via electronic filing with this letter, Aqua's Application, pursuant to Sections 1102, 1329, 507 and 2102 of the Public Utility Code, for Approval of its Acquisition of the Wastewater System Assets of East Whiteland Township ("EWT"). Please note that the filing includes a Confidential and Proprietary Sewage Facilities Map and a Confidential and Proprietary Appendix A to Mr. Packer's testimony, which is Exhibit U to the Application. The Confidential and Proprietary Sewage Facilities Map and Confidential and Proprietary Appendix A to Mr. Packer's testimony are being submitted via electronic mail.

The filing also includes Confidential and Public Work Paper Files, as follows:

1. Confidential Work Paper Files, in Excel format, of Gannett Fleming Valuation and Rate Consultants, LLC, the Utility Valuation Expert selected by Aqua, are provided via electronic mail to the Secretary's Bureau. Gannett Fleming considers its Work Paper Files, in Excel Format, to be both Confidential and Proprietary.

2. Confidential Work Paper Files, in Excel format, of AUS Consultants, the Utility Valuation Expert selected by EWT, are provided via electronic mail to the Secretary's Bureau. AUS considers its Work Paper Files, in Excel Format, to be both Confidential and Proprietary.

3. Confidential Work Paper File, in Excel Format, of Appendix A to Mr. Packer's testimony is provided via electronic mail to the Secretary's Bureau. Aqua considers Mr. Packer's Work Paper File, in Excel Format, to be both Confidential and Proprietary.

4. A Public Work Paper File in Excel Format for the Engineer's Asset Inventory is provided via email to the Secretary's Bureau.

We ask that the Public Utility Commission not allow any public disclosure of the Confidential and Proprietary Map, Confidential and Proprietary Appendix A to Exhibit U or Confidential and Proprietary Excel Files and that the Commission take appropriate steps to exclude the Confidential and Proprietary Information from any and all public folders.

Please contact me at your earliest opportunity if anything further is required in regard to this Application.

Our check in the amount of $350.00 in payment of the filing fee is being sent to you by overnight delivery.

Very truly yours,

THOMAS, NIESEN & THOMAS, LLC

By 

Thomas T. Niesen

cc: Certificate of Service (w/encl.)
Alexander R. Stahl, Esquire (w/encl.)
Thomas S. Wyatt, Esquire (w/encl.)

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of Aqua Pennsylvania Wastewater, Inc. (hereinafter referred to as "Aqua" or "Applicant") pursuant to Sections 1102 and 1329 of the Public Utility Code for:	:	**Docket No. A-2021-3026132**
(1) approval of the acquisition by Aqua of the wastewater system assets of East Whiteland Township ("EWT" or "Township") situated within the Township of East Whiteland, Chester County, Pennsylvania;	:	
(2) approval of the right of Aqua to begin to offer, render, furnish and supply wastewater service to the public in portions of East Whiteland Township, Chester County, Pennsylvania; and	:	
(3) an order approving the acquisition that includes the ratemaking rate base of the East Whiteland Township wastewater system assets pursuant to Section 1329(c)(2) of the Public Utility Code.	:	
Request for Approval of Contracts, including Assignments of Contracts, between Aqua and East Whiteland Township, Pursuant to Section 507 of the Public Utility Code	:	
Request for Approval of a Contract between Affiliated Interests, Pursuant to Section 2102 of the Public Utility Code	:	

APPLICATION

To the Pennsylvania Public Utility Commission ("Commission"):

I. BACKGROUND

1. The name and address of Applicant are:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

2. The name, address and contact information for Applicant's counsel are:

Thomas T. Niesen, Esq.
Thomas, Niesen & Thomas, LLC
212 Locust Street, Suite 302
Harrisburg, PA 17101
tniesen@tntlawfirm.com
Tel. No. (717) 255-7600
Fax No. (717) 236-8278

3. Pursuant to Sections 1102 and 1329 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 1102 and 1329, Applicant hereby requests that the Commission: (1) approve Aqua's acquisition of the wastewater system assets ("**Assets**") of EWT; (2) approve the right of Aqua to begin providing wastewater service in the requested territory, as shown as the area outlined in red on the map attached hereto as **Exhibit A** (the "**Requested Territory**");[1] and (3) include, in its Order approving the acquisition, the ratemaking rate base of the Assets as determined under Section 1329(c)(2) of the Public Utility Code.

4. The map of the Requested Territory includes a north arrow depicting map orientation, a graphic scale, the municipal boundaries of EWT and identification and depiction of all private and public roads relative to the Requested Territory. A bearing and angle description of the Requested Territory is included on Exhibit A. The Requested Territory is approximately 8.37 square miles (5,358 acres).

5. Aqua and EWT have reached an agreement regarding the acquisition of the Township Assets, as evidenced by the *Asset Purchase Agreement*, dated as of January 8, 2021, and attached hereto as **Exhibit B** (the "**Agreement**"). Applicant respectfully requests that the Commission issue an

[1] A CONFIDENTIAL facilities map is included with the Asset Inventory as addressed *infra*.

Order and *Certificates of Public Convenience* approving and addressing the items requested in this Application.

6. An **Application Filing Checklist** identifying topics addressed and the section, paragraph and page number where they can be found is included with this Application.

II. AFFECTED ENTITIES

7. Aqua is a regulated public utility company, duly organized and existing under the laws of the Commonwealth of Pennsylvania. Aqua is engaged in the wastewater service business and furnishes wastewater service to approximately 45,000 customer accounts, as reflected in documents already on file with the Commission. Aqua's existing service territories cover various Counties throughout Pennsylvania including parts of Chester County.

8. EWT is a duly organized and validly existing Township of the Second Class. Township owns the sanitary wastewater collection system which provides sanitary wastewater service to approximately 3,895 customers in EWT.

9. Applicant incorporates into this Application other information on file with the Commission that establishes the fact that Aqua is qualified to provide adequate public wastewater service. Aqua will supplement this Application with all additional information the Commission may require. Financial Statements of Aqua for 2020 are attached hereto as **Exhibit C**.

III. PLANT-IN-SERVICE

10. Aqua will acquire EWT's wastewater collection system assets as defined in the Agreement. All assets are located in the Township except for the King Road Pump Station (Pump Station No. 12) which is located on the border between EWT and East Goshen Township.

11. A Sewage Facilities Assessment with Original Cost Estimate of the EWT Sanitary Sewer System, prepared by Pennoni Associates, Inc., Consulting Engineers ("Asset Inventory"), is attached hereto as **Exhibit D**. The facilities map included with the Asset Inventory is considered CONFIDENTIAL.

12. The Asset Inventory explains that the EWT collection system has approximately 57 miles of gravity sewer collection mains, in sizes ranging from 8 inches to 36 inches in diameter, and the System has approximately 5 miles of force mains in sizes ranging from 4 to 14 inches. The Asset Inventory also details the 12 Township owned pump stations.

13. A list of non-depreciable property is presented in Section 8 of the Asset Inventory. The EWT System has no plant held for future use and none is included in the Asset Inventory.

14. All component facilities are installed. The approximate time of installation of component facilities is addressed in Section 8 of the Asset Inventory and in Mr. Bubel's testimony.

15. Wastewater treatment is mainly provided by the Valley Forge Sewer Authority ("VFSA") at its Wastewater Treatment Plant ("WWTP") located in Schuylkill Township, Chester County, pursuant to a Wastewater Service Agreement, dated November 1, 1970, Amended as of December 1, 1974, January 1, 1983, December 2, 1985, and October 4, 1994, by and between VFSA, the Townships of Schuylkill, East Pikeland, Charlestown, EWT, Tredyffrin, Willistown, and Easttown, the Borough of Malvern, EWT Municipal Authority[2], Easttown Municipal Authority, and Tredyffrin Township Municipal Authority. EWT also owns the Malvern Hunt WWTP, which is in the process of being decommissioned and converted into a pump station. Following the decommissioning of the Malvern Hunt WWTP, which is expected to be completed in 2021, all wastewater flows previously sent to Malvern Hunt WWTP will be treated at the VFSA WWTP.

[2] The EWT Municipal Authority was terminated by Ordinance enacted on July 8, 2015.

Chapter 94 Reports to the Department of Environmental Protection ("DEP") of EWT for the Malvern Hunt WWTP and the Township are attached hereto as **Exhibit E1**. The Malvern Hunt WWTP has a permitted capacity of 0.128 million gallons per day ("MGD") with elevation ("EL") between EL 356 and 362. A copy of VFSA's 2020 Chapter 94 Report to DEP for the VFSA WWTP is attached hereto as **Exhibit E2**. The VFSA WWTP has a permitted capacity of 11.75 MGD with EL between EL 90 and EL 105.

16. EWT accepts flow into its Trunkline ("EWT Trunkline") from the Borough of Malvern and Charlestown Township, which then flows for treatment at the VFSA. This arrangement is set forth in the EWT Trunkline Agreement of February 1, 1971, as amended December 12, 1979, and April 18, 2014. Additionally, EWT has several areas of its system that are on the border between EWT and East Goshen Township. While EWT owns the facilities within its borders, flows from these EWT customers are sent to the East Goshen Municipal Authority ("EGMA") WWTP. These arrangements between EWT and East Goshen Township are set forth in the Exhibit F contracts. A copy of EGMA's Chapter 94 Report is attached hereto as **Exhibit E3.** The EGMA WWTP has a permitted capacity of 0.75 MGD with EL between EL 365 and EL 380.

17. Elevation of the EWT collection system and the service area varies:

EL 354 to EL 566 along the western boundary.

EL 364 to EL 582 along the southern boundary.

EL 388 to EL 666 along the northern boundary.

EL 198 to EL 364 along the eastern boundary.

18. Water service in the Requested Territory is provided by Aqua PA and private wells.

19. The original cost, by year and major plant category, of EWT's used and useful plant in service is $44,447,309 with a related calculation depreciation reserve of $10,491,713.

20. Tentative journal entries to record the transaction are presented in Section IV.

IV. ASSET PURCHASE AGREEMENT

21. The Asset Purchase Agreement is dated January 8, 2021. The purchase price is Fifty-Four Million Nine Hundred Thirty Thousand Dollars ($54,930,000.00).

22. The purchase price is based on arm's length negotiations. Aqua and Township are not affiliated with each other.

23. Aqua will use short term debt initially for the purchase of the assets with the expectation that the short term debt will be converted to long term debt and equity capital at a later date.

24. The wastewater system assets to be transferred are the "Acquired Assets" and have the meaning specified in Section 2.01 of the Agreement. The Assets include the assets, properties and rights of the Township used in the system and all pipes, pumping stations, generators, manholes and pipelines and billing and collections related assets necessary to run the system.

25. Acquired Assets also include the twenty-two contracts identified on Schedule 4.13 of the Agreement to which Township is a party (the "Assigned Contracts"). The Assigned Contracts are attached hereto as **Exhibit F1**, **Exhibit F2**, **Exhibit F3**, **Exhibit F4**, **Exhibit F5**, **Exhibit F6**, **Exhibit F7**, **Exhibit F8**, **Exhibit F9**, **Exhibit F10**, **Exhibit F11**, **Exhibit F12**, **Exhibit F13**, **Exhibit F14**, **Exhibit F15**, **Exhibit F16**, **Exhibit F17**, **Exhibit F18**, **Exhibit F19**, **Exhibit F20**, **Exhibit F21**, and **Exhibit F22**, respectively:[3]

> F1 – Valley Forge Treatment Plant Agreement, dated November 1, 1970, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Eastown; the Borough of Malvern; Malvern Municipal

[3] As noted below, Exhibits F2 and F6 are missing certain pages and/or exhibits. The Company and EWT have sought to obtain the missing items from the parties to the contracts through Right to Know ("RTK") requests. Should the documents/information requested via RTK be located and become available, Aqua will supplement the Application and record accordingly.

Authority; East Whiteland Municipal Authority; Tredyffrin Township Municipal Authority; and Easttown Township Municipal Authority.

F2 – Composite Amendment No. 1 to Valley Creek Trunk Sewer Agreement, East Whiteland Trunk Line Agreement, and Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974, by and between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority[4]

F3 – Amendment to Valley Forge Sewer Treatment Plant Agreement, dated January 1, 1983, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; Malvern Municipal Authority; East Whiteland Municipal Authority; Easttown Municipal Authority; Tredyffrin Township Municipal Authority; and Willistown Township Municipal Authority

F4 – Supplement to Valley Forge Sewage Treatment Plant Agreement For the Purpose of Complying with United States Environmental Protection Agency Regulations, dated December 2, 1985, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Eastown; the Borough of Malvern; Malvern Municipal Authority; East Whiteland Municipal Authority; Tredyffrin Township Municipal Authority; Easttown Township Municipal Authority, and Willistown Township Municipal Authority.

F5 – Addendum to Valley Forge Sewage Treatment Plant Agreement for the Purpose of Permitting and Administering the Sale of Reserved Capacity Among the Parties, dated May 26, 1994, by and between Valley Forge Sewer Authority, the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; East Whiteland Township Municipal Authority; Easttown Municipal Authority; and Tredyffrin Township Municipal Authority

F6 – East Whiteland Trunk Line Agreement, dated February 1, 1971, by and between East Whiteland Municipal Authority, the Township of East Whiteland, Malvern Municipal Authority, the Borough of Malvern, and Valley Forge Sewer Authority[5]

F7 – Amendment to East Whiteland Trunk Line Agreement, dated December 12, 1979, by and between East Whiteland Municipal Authority, the Township of East Whiteland, the Borough of Malvern, Malvern Municipal Authority, and Valley Forge Sewer Authority

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[4] Signature Pages for Township of Schuylkill, Township of East Whiteland, Township of Willistown, Borough of Malvern, Malvern Municipal Authority, and East Whiteland Municipal Authority are missing.

[5] Exhibit A to the agreement is missing.

F8 – Amendment to East Whiteland Trunkline Agreement, dated April 18, 2014, by and between East Whiteland Township, East Whiteland Municipal Authority, and Valley Forge Sewer Authority

F9 – Sidley Road Trunk Line Repairs Agreement, dated December 27, 1978, by and between East Whiteland Municipal Authority and Valley Forge Sewer Authority

F10 – Sewage Treatment Agreement, dated November 17, 1987, by and between East Goshen Township, East Goshen Municipal Authority, East Whiteland Township, and East Whiteland Municipal Authority

F11 – Agreement, dated September 14, 1993, by and between Willistown Township, East Whiteland Township and East Whiteland Municipal Authority

F12 – Agreement, dated July 10, 1995, by and between Malvern Borough, East Whiteland Township, and East Whiteland Municipal Authority

F13 – Sewage Treatment Agreement, dated October 17, 2000, by and between East Goshen Township, East Goshen Municipal Authority, East Whiteland Township, and East Whiteland Municipal Authority

F14 – Sewage Capacity / Service Agreement, dated November 1, 2000, by and between East Whiteland Township, East Whiteland Township Municipal Authority, Tredyffrin Township, Tredyffrin Township Municipal Authority, and Trammell Crow Northeast Metro Development, Inc.

F15 – Addendum to Sewage Capacity / Service Agreement, dated November 19, 2015, by and between East Whiteland Township and Tredyffrin Township with the joinders of RLD Atwater JV, LLC and The Haven At Atwater Village, LLC.

F16 – Sewage Treatment Agreement, dated March 2, 2004, by and between East Whiteland Township, East Goshen Township, and Malvern Institute for Psychiatric & Alcoholic Studies

F17 – Wastewater Conveyance Agreement, dated November 20, 2018, by and between Aqua Resources, Inc., Tredyffrin Township, East Whiteland Township, Willistown Township, Charlestown Township, Schuylkill Township, East Pikeland Township, Easttown Township, Eastown Township Municipal Authority, The Borough of Malvern, Tredyffrin Township Municipal Authority, and Valley Forge Sewer Authority

F18 – Agreement with Public Utility or Municipality for Crossing Under Railroad Private Property, dated March 21, 1972, by and between Reading Company and East Whiteland Municipal Authority

F19 – License Agreement for Wire, Pipe and Cable Transverse Crossings and Longitudinal Occupations, dated July 11, 1975, by and between Penn Central Transportation Company and East Whiteland Municipal Authority

F20 – License Agreement, dated November 18, 1993, by and between National Railroad Passenger Corporation and East Whiteland Township Municipal Authority[6]

F21 – Amendment to License Agreement, dated May 6, 2002, by and between National Railroad Passenger Corporation and East Whiteland Township Municipal Authority[7]

F22 – License Agreement, dated September 10, 1999, by and between National Railroad Passenger Corporation and East Whiteland Township[8]

26. Acquired Assets also include all Authorizations and Permits of or held by EWT (to the extent transferrable to Aqua under applicable Law), including all Authorizations and Permits which are environmental permits, other operating permits and those items listed or described on Schedule 4.12 of the Agreement.

27. "Excluded Assets," which are those assets not being transferred to Aqua, has the meaning specified in Section 2.02 of the Agreement. Excluded Assets include Stormwater System Assets, spray irrigation system associated with the Malvern Hunt WWTP, contracts that are not Assigned Contracts, cash and cash equivalents and the assets, properties and rights set forth in Schedule 2.02(h) of the Agreement.

28. "Assumed Liabilities" has the meaning specified in Section 2.04(a) of the Agreement and include all liabilities and obligations arising out of or relating to Aqua's ownership or operation of the wastewater system and the Acquired Assets on or after Closing.

29. The tentative journal entries to record the transfer in Aqua's accounts are:

	Debit	Credit
Utility Plant Purchased	$54,930,000	
Cash/Short Term Debt		$54,930,000

[6] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

[7] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

[8] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

V. CUSTOMERS

30. EWT provides wastewater service to 3,895 customers which are broken down by District. District A and B 3,053 customers, District C 28 customers, District D 279 customers, District E 522 customers, and 13 high volume commercial customers.

31. Wastewater flow for EWT customers was approximately 505,789,000 gallons for 2020. The Township bills on an EDU basis and does not track usage by customer class, except for high volume users.

32. Township projects growth of 2,442 Equivalent Dwelling Units over the next five years.

VI. RATES

33. After Closing, Aqua will implement EWT's sanitary wastewater rates in effect at closing as reflected on Schedule 7.03(a) of the Agreement. Aqua and EWT have agreed that rates shall not be increased until after the third anniversary of the Closing Date.[9] The Township presently bills on an annual basis. Aqua will convert EWT customers to monthly billing at closing. A schedule of rates tariff page implementing monthly rates for Township customers post-closing is attached hereto as **Exhibit G**.

34. As presented in Schedule 7.03(a) of the Agreement, EWT has flat rates for residential customers which are billed on an EDU basis. High volume customers, which are customers that have more than 100,000 gallons of water usage in a quarter, are billed a quarterly usage charge of $6.20 per 1,000 gallons. A copy of EWT's currently effective Rate Ordinance is attached hereto as **Exhibit H**.

35. Upon Commission approval of this Application and completion of the proposed transaction, Aqua will begin to provide wastewater service in its name to the customers in the

[9] As explained in the testimony of Aqua witness Packer, the three-year rate freeze is not a rate stabilization plan.

Requested Territory. It will implement its *Rules and Regulations* to govern the provision of wastewater service in the Requested Territory, as those *Rules and Regulations* are in effect from time to time for Aqua.

36. Copies of the notices that will be sent to customers of Aqua and to customers of EWT describing the filing and the anticipated effect on rates are attached hereto as **Exhibit I1** and **Exhibit I2**.

VII. COST OF SERVICE

37. Copies of EWT's Annual Financial Report for 2019 and 2020 are attached hereto as **Exhibit J1** and **Exhibit J2**. For the year ended December 31, 2020, the Township had approximately $44,707,000 of long-term debt, and the details of long-term debt obligations and debt service on the sewer system are described under Business-Type Activities in Exhibit J2, pages 53-55.

38. Copies of EWT's Adopted Annual Budgets for 2020 and 2021 are attached hereto as **Exhibit J3** and **Exhibit J4**.

39. A copy of EWT's most recent annual report filed with the Department of Community and Economic Development is attached hereto as **Exhibit K**.

40. Aqua projects annual revenue of $3,769,536 from the EWT customers based on EWT's current rate schedule, calculated as follows:

		Customers		*Gallons*	*EDU's*	*Revenue*
	Current Rates	*2020*	*Method*	*2020*	*2020*	*2020*
Service Charges:						
Sewer District A & B	$400.00	3,053	per EDU annually		6,566	$2,626,400
Sewer District C	$542.00	28	per EDU annually		28	$15,176
Sewer District D	$600.00	279	per EDU annually		279	$167,400
Sewer District E	$480.00	522	per EDU annually		772	$370,560
High Volume Customers	$6.20 per 1,000 gallons	13	per 1,000 Gallons	58,064,516	13	$360,000
Other Charges:						$230,000
Total Revenue at Present Rates		**3,895**		**58,064,516**	**7,658**	**$3,769,536**

41. Aqua estimates annual operating and maintenance expenses of $1,965,601 based on EWT's operating expenses presented in the 2019 financial statements, adjusted by the Company.

VIII. PROOF OF COMPLIANCE

42. Aqua will operate and manage the EWT wastewater system as a standalone collection system, but within Aqua's footprint, from its Southeastern Division Office in Bryn Mawr, Pennsylvania. The system is approximately 11 miles from the Company's Southeastern Division Office. Mr. John M. Bright will be the assigned Certified Wastewater Operator for the system. Mr. Bright's currently effective Wastewater Operator's License is attached hereto as **Exhibit L**.

43. The Water Quality Management ("WQM") Permit for the Malvern Hunt WWTP issued in 2016 and the WQM Permit Application for the Pump Station are attached as **Exhibit M1**.[10] A WQM permit for the VFSA WWTP is attached as **Exhibit M2**. A WQM permit for the EGMA WWTP is

[10] As noted above, the Malvern Hunt WWTP is expected to be decommissioned prior to closing. If decommission of the Malvern Hunt WWTP occurs before closing, the 2016 WQM Permit for the WWTP will not be transferred.

attached as **Exhibit M3**. The VFSA WWTP and EGMA WWTP are not part of the acquisition transaction. The National Pollution Discharge Elimination System Permits for the VFSA WWTP and the EGMA WWTP are attached hereto as **Exhibit N1** and **Exhibit N2**, respectively. Copies of Discharge Monitoring Reports ("DMR") for the Malvern Hunt WWTP, VFSA WWTP and the EGMA WWTP, from January 2016 through December 2020, are attached hereto as **Exhibit N3**, **Exhibit N4**, and **Exhibit N5**, respectively.

44. EWT did not have any Notices of Violation within the last five years. EWT was released from its Corrective Action Plan on September 1, 2015, by letter from DEP which is attached hereto as **Exhibit O**.

45. Aqua is a Class A utility. It is in good standing with DEP and in general compliance with DEP with regard to the provision of wastewater service.

46. The service area comprising the Requested Territory is consistent with EWT's sewage planning and in compliance with DEP approved Act 537 Plans. A copy of EWT's Act 537 Plan documents is attached hereto as **Exhibit P1** (1995 Plan), **Exhibit P2** (Special Study 2011), **Exhibit P3** (Special Study 2013), **Exhibit P4** (Special Study 2015), **Exhibit P5** (Special Study 2016), and **Exhibit P6** (Planning Modules). A copy of the VFSA Act 537 Plan is attached hereto as **Exhibit P7**. A copy of the East Goshen Act 537 Plan is attached hereto as **Exhibit P8**. Aqua also has included in the Requested Territory areas of the Township under construction for sewage service anticipated to be completed after Closing. Copies of letters to EWT and Chester County Planning Commissions regarding Aqua's Requested Territory are included as **Exhibit P9** and **Exhibit P10**.

47. The web address for the EWT Comprehensive Plan is: http://www.eastwhiteland.org/DocumentCenter/View/446?dl=0. The web address for the Chester County Comprehensive Plan is: https://chescoplanning.org/Landscapes3/PDF/Landscapes3.pdf.

48. Aqua has an existing operational presence and wastewater professionals in the area. Aqua provides wastewater service in Chester County and in neighboring Willistown Township. The acquisition will easily fold into Aqua's existing wastewater operations. A listing of Aqua's nearby territory and facilities is as follows:

Aqua Facilities	Location	Distance from Township
Willistown Woods System	West Chester, PA	5 miles
Deerfield Knoll System	West Chester, PA	5 miles
Plumsock System	West Chester, PA	5 miles
Southeastern Division Office	Bryn Mawr, PA	11 miles

49. Aqua is not anticipating any physical, operational or managerial changes at its Southeastern Office as a result of the acquisition. Aqua will be adding 3 additional operators to address the day-to-day operations of EWT which are expected to be added in Q1 2022.

50. Planned capital improvements are addressed in Mr. Bubel's testimony.

IX. AFFECTED PERSONS

51. No corporation or entity, except EWT, is now furnishing or has corporate or franchise rights to furnish wastewater service in the Requested Territory, and no competitive condition will be created by approval of this Application. Water and wastewater service providers abutting or within one mile of the Requested Territory are as follows:

i. Within neighboring Charlestown Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by VFSA and private septic systems.

ii. Within neighboring Tredyffrin Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by Tredyffrin Township and private septic systems.

iii. Within neighboring Willistown Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by Willistown Township, Aqua, and private septic systems.

iv. Within neighboring Malvern Borough, water service is provided by Aqua PA and private wells. Wastewater service is provided by Malvern Borough and private septic systems.

v. Within neighboring East Goshen Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by EGMA and private septic systems.

vi. Within neighboring West Goshen Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by West Goshen Township Sewer Authority and private septic systems.

vii. Within neighboring West Whiteland Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by West Whiteland Township and private septic systems.

viii. Within neighboring Uwchlan Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by Uwchlan Township Municipal Authority and private septic systems.

ix. Within neighboring West Pikeland Township, water service is provided by Aqua PA and private wells. Wastewater service is provided by Aqua and private septic systems.

X. REASONS SUPPORTING THIS APPLICATION

52. Approval of this Application is necessary or proper for the service, accommodation, convenience or safety of the public. As summarized below and discussed further in the testimonies of Mr. Packer and Mr. Bubel, which as identified in Section XI below, are attached hereto as **Exhibit U** and **Exhibit V**:

a. Aqua has the technical, regulatory, financial and legal fitness to operate the Assets of EWT, and to maintain the operations and make improvements to meet continuing and future customer needs.[11] The proposed transaction will not have an adverse effect on the service provided to existing customers of Aqua;

[11] As a certificated provider of utility service, Aqua's fitness is presumed. *See Re Pennsylvania-American Water Company,* 85 PA PUC 548 (1995).

b. EWT has agreed to sell its Assets. The public interest and need will be served by allowing Aqua, in lieu of EWT, to provide wastewater service in the Requested Territory and to address the issues of regulatory requirements and capital expenditures. The EWT system will benefit from the support of wastewater professionals throughout Aqua's organization;

c. The acquisition is consistent with the Commission's long-standing policy supporting the consolidation/regionalization of water/wastewater systems. Through consolidation/regionalization, the utility industry has a better chance to realize the benefits of better management practices, economies of scale, and the resulting greater environmental/economic benefits. The Commission has previously stated that "acquisitions of smaller systems by larger more viable systems will likely improve the overall long-term viability of the water and wastewater industry."[12] The benefits of consolidation/regionalization, ultimately, inure to customers both existing and acquired;

d. Aqua provides utility service to approximately 45,000 wastewater customers and has years of experience operating wastewater treatment and collection systems in a safe, reliable and efficient manner. Aqua has the managerial, technical, and financial resources to improve the operations of the Township;

e. In *McCloskey v. Pa. P.U.C.*, 195 A.3d 1055 (Pa. Cmwlth. 2018), *petition for allowance of appeal denied* No. 703 MAL 2018 (April 23, 2019), the Commonwealth Court held that Commission findings: (i) that Aqua, as the owner of numerous water and wastewater systems has sufficient operational expertise and ability to raise capital to support system operations; and (ii) that the Commission has a policy of

[12] Pennsylvania Public Utility Commission, Final Policy Statement on Acquisitions of Water and Wastewater Systems, Docket No. M-00051926, Final Order at 18 (Aug. 17, 2006).

consolidation/regionalization of wastewater system assets that allows for increased maintenance, upgrade and expansion of public sewer and water facilities, are substantial evidence, consistent with *Popowsky v. Pa. P.U.C.*, 937 A.2d 1040 (Pa. 2007) to support a conclusion that there is a public benefit to a transaction;

f. The acquisition of the EWT Sewer system will increase Aqua's customer base by approximately 9%. With a larger customer base, future infrastructure investments, Statewide, will be shared at a lower incremental cost per customer for all Aqua customers; and

g. The acquisition will not have any immediate impact on the rates of either existing customers of Aqua or Township customers. As discussed in the testimony of Mr. Packer and presented in the Notice to customers, the increase in rate base may ultimately require an increase in revenue. The hypothetical impact on rates is outweighed by the recognized benefits of Aqua's ownership including its expertise and ability to raise capital; the furtherance of consolidation/regionalization of wastewater services; and the spreading of costs over a larger customer base. Perhaps more significantly, the acquisition furthers the objective of the General Assembly with the enactment of Section 1329. While *McCloskey* concludes that rate impact should be addressed, it recognizes that it is not dispositive in the Commission's determination of substantial affirmative benefits.

XI. ADDITIONAL INFORMATION REQUIRED BY SECTION 1329 OF THE PUBLIC UTILITY CODE AND THE PUBLIC UTILITY COMMISSION'S 1329 CHECKLIST

53. Aqua and EWT have agreed to use the process presented in Section 1329 of the Public Utility Code, 66 Pa. C.S. § 1329, to determine the fair market value of the Assets and the ratemaking rate base. Aqua's verified statement that it selected Gannett Fleming Valuation and Rate Consultants,

LLC ("Gannett Fleming") as its Utility Valuation Expert is attached hereto as **Exhibit AA1**. EWT's verified statement that it selected AUS Consultants ("AUS") as its Utility Valuation Expert is attached hereto as **Exhibit AA2**.

54. As required by Section 1329(d)(1)(i), copies of the Fair Market Value Appraisal Reports of Gannett Fleming, Utility Valuation Expert, and AUS, Utility Valuation Expert, are attached hereto as **Exhibit Q** and **Exhibit R**, respectively. Confidential and Proprietary Work Paper Files, in Excel Format, of Gannett Fleming and AUS are provided with the Application.

55. Applicant states that the purchase price of the Assets of the selling utility as agreed to by Aqua and EWT is $54,930,000.

56. The ratemaking rate base determined pursuant to Section 1329(c)(2) of the Public Utility Code is $54,930,000, being the lesser of the purchase price of $54,930,000 negotiated by Aqua and EWT and the average of the fair market value appraisals which is $56,724,729 – determined by $55,668,000 presented in the appraisal of Gannett Fleming and $57,781,458 presented in the appraisal of AUS.

57. Aqua will incur transaction and closing costs of approximately $308,300, which it will include in its rate base.

58. A schedule of rates tariff page implementing rates equal to the rates of EWT at the time of closing is attached hereto as Exhibit G, as previously stated.

59. Applicant verifies that Gannett Fleming was selected by Aqua, the acquiring public utility, and that AUS was selected by EWT, the selling municipality.

60. The Utility Valuation Experts were paid $60,190.47 for the completed Fair Market Value Appraisal Reports. Documentation of the fees paid to Gannett Fleming and AUS, including the valuation service agreements and all associated invoices, are attached hereto as **Exhibit S1** and

Exhibit S2, respectively. Fees paid to the Utility Valuation Experts did not exceed 5% of the fair market value of the selling utility.

61. Statements of Gannett Fleming and of AUS verifying that they have no affiliation with Aqua or EWT as specified in Section 1329; that their Appraisals determined fair market value in compliance with the most recent edition of the Uniform Standards of Professional Appraisal Practice as of the date of their report, employing the cost, market and income approaches; and that they applied applicable jurisdictional exceptions to their submitted Appraisal are attached hereto as **Exhibit T1** and **Exhibit T2**, respectively.

62. The testimony of William C. Packer, in support of this Application is attached hereto as **Exhibit U**.[13] Mr. Packer's testimony explains that Aqua is not presenting a rate stabilization plan. Aqua is proposing to implement EWT's existing rates after Closing and to maintain those rates until the next Aqua rate proceeding following Closing of the transaction.

63. The testimony of Mark J. Bubel, Sr., in support of this Application is attached hereto as **Exhibit V**.

64. The testimony of John Nagel, Township Manager of EWT, in support of the Application is attached hereto as **Exhibit W**.

65. The Engineer's Asset Inventory of tangible assets of EWT is attached hereto as Exhibit D as aforesaid.

66. The testimony of Harold Walker, III, in support of the Gannett Appraisal is attached hereto as **Exhibit X**.

67. The testimony of Jerome C. Weinert in support of the AUS Consultants Appraisal is attached hereto as **Exhibit Y**.

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[13] Exhibit U has an Appendix A, which is CONFIDENTIAL and is submitted in CONFIDENTIAL and PUBLIC forms.

68. Answers to the Section 1329 Application Standard Data Requests are attached hereto as **Exhibit Z.**

XII. SECTION 507 APPROVAL OF ASSIGNMENT OF CONTRACTS

69. Section 507 of the Code provides that, except for contracts between a public utility and a municipal corporation to furnish service at tariff rates, no contract or agreement between a public utility and a municipal corporation shall be valid unless filed with the Commission at least 30 days prior to its effective date.

70. Aqua requests that that the Commission, to the extent necessary, issue certificates for filing, pursuant to Section 507, for the following contracts, which will be assigned to Aqua at closing.

i. F1 – Valley Forge Treatment Plant Agreement, dated November 1, 1970, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Eastown; the Borough of Malvern; Malvern Municipal Authority; East Whiteland Municipal Authority; Tredyffrin Township Municipal Authority; and Easttown Township Municipal Authority.

ii. F2 – Composite Amendment No. 1 to Valley Creek Trunk Sewer Agreement, East Whiteland Trunk Line Agreement, and Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974, by and between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority

iii. F3 – Amendment to Valley Forge Sewer Treatment Plant Agreement, dated January 1, 1983, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; Malvern Municipal Authority; East Whiteland Municipal Authority; Easttown Municipal Authority; Tredyffrin Township Municipal Authority; and Willistown Township Municipal Authority

iv. F4 – Supplement to Valley Forge Sewage Treatment Plant Agreement For the Purpose of Complying with United States Environmental Protection Agency Regulations, dated December 2, 1985, by and between Valley Forge Sewer Authority; the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and

Eastown; the Borough of Malvern; Malvern Municipal Authority; East Whiteland Municipal Authority; Tredyffrin Township Municipal Authority; Easttown Township Municipal Authority, and Willistown Township Municipal Authority.

v. F5 – Addendum to Valley Forge Sewage Treatment Plant Agreement for the Purpose of Permitting and Administering the Sale of Reserved Capacity Among the Parties, dated May 26, 1994, by and between Valley Forge Sewer Authority, the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; East Whiteland Township Municipal Authority; Easttown Municipal Authority; and Tredyffrin Township Municipal Authority

vi. F6 – East Whiteland Trunk Line Agreement, dated February 1, 1971, by and between East Whiteland Municipal Authority, the Township of East Whiteland, Malvern Municipal Authority, the Borough of Malvern, and Valley Forge Sewer Authority

vii. F7 – Amendment to East Whiteland Trunk Line Agreement, dated December 12, 1979, by and between East Whiteland Municipal Authority, the Township of East Whiteland, the Borough of Malvern, Malvern Municipal Authority, and Valley Forge Sewer Authority

viii. F8 – Amendment to East Whiteland Trunkline Agreement, dated April 18, 2014, by and between East Whiteland Township, East Whiteland Municipal Authority, and Valley Forge Sewer Authority

ix. F9 – Sidley Road Trunk Line Repairs Agreement, dated December 27, 1978, by and between East Whiteland Municipal Authority and Valley Forge Sewer Authority

x. F10 – Sewage Treatment Agreement, dated November 17, 1987, by and between East Goshen Township, East Goshen Municipal Authority, East Whiteland Township, and East Whiteland Municipal Authority

xi. F11 – Agreement, dated September 14, 1993, by and between Willistown Township, East Whiteland Township and East Whiteland Municipal Authority

xii. F12 – Agreement, dated July 10, 1995, by and between Malvern Borough, East Whiteland Township, and East Whiteland Municipal Authority

xiii. F13 – Sewage Treatment Agreement, dated October 17, 2000, by and between East Goshen Township, East Goshen Municipal Authority, East Whiteland Township, and East Whiteland Municipal Authority

xiv. F14 – Sewage Capacity / Service Agreement, dated November 1, 2000, by and between East Whiteland Township, East Whiteland Township Municipal Authority, Tredyffrin Township, Tredyffrin Township Municipal Authority, and Trammell Crow Northeast Metro Development, Inc.

xv. F15 – Addendum to Sewage Capacity / Service Agreement, dated November 19, 2015, by and between East Whiteland Township and Tredyffrin Township with the joinders of RLD Atwater JV, LLC and The Haven At Atwater Village, LLC.

xvi. F16 – Sewage Treatment Agreement, dated March 2, 2004, by and between East Whiteland Township, East Goshen Township, and Malvern Institute for Psychiatric & Alcoholic Studies

xvii. F17 – Wastewater Conveyance Agreement, dated November 20, 2018, by and between Aqua Resources, Inc., Tredyffrin Township, East Whiteland Township, Willistown Township, Charlestown Township, Schuylkill Township, East Pikeland Township, Easttown Township, Eastown Township Municipal Authority, The Borough of Malvern, Tredyffrin Township Municipal Authority, and Valley Forge Sewer Authority

xviii. F18 – Agreement with Public Utility or Municipality for Crossing Under Railroad Private Property, dated March 21, 1972, by and between Reading Company and East Whiteland Municipal Authority

xix. F19 – License Agreement for Wire, Pipe and Cable Transverse Crossings and Longitudinal Occupations, dated July 11, 1975, by and between Penn Central Transportation Company and East Whiteland Municipal Authority

xx. F20 – License Agreement, dated November 18, 1993, by and between National Railroad Passenger Corporation and East Whiteland Township Municipal Authority[14]

xxi. F21 – Amendment to License Agreement, dated May 6, 2002, by and between National Railroad Passenger Corporation and East Whiteland Township Municipal Authority[15]

xxii. F22 – License Agreement, dated September 10, 1999, by and between National Railroad Passenger Corporation and East Whiteland Township[16]

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[14] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

[15] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

[16] The Company will enter into a new license agreement with Amtrak (formerly National Railroad Passenger Corporation prior to closing.

XIII. SECTION 2102 APPROVAL OF CONTRACTS BETWEEN AFFILIATED INTERESTS

71. Section 2102 of the Code provides that, no contract or arrangement providing for the furnishing of management, supervisory, construction, engineering, accounting, legal, financial, or similar services, and no contract or arrangement for the purchase, sale, lease, or exchange of any property, right, or thing or for the furnishing of any service, property, right or thing other than those above enumerated, made or entered into after the effective date of this section between a public utility and any affiliated interest shall be valid or effective unless and until such contract or arrangement has received the written approval of the commission.

72. Upon Closing of the Proposed Transaction Aqua will take assignment from EWT of EWT's interest in the Wastewater Conveyance Agreement among Aqua Resources, Inc. and the Townships of Tredyffrin, EWT, Willistown, Charlestown, Schuylkill, East Pikeland and Easttown, Easttown Township Municipal Authority, the Borough of Malvern, Tredyffrin Township Municipal Authority, and VFSA, dated November 20, 2018, included and noted above as Exhibit F17. Aqua requests that the Commission, to the extent necessary, approve, pursuant to Section 2102, Exhibit F17, which will become an affiliated contract at Closing. Additional discussion is provided in Mr. Packer's Testimony, Exhibit U.

XIV. OTHER APPROVALS, CERTIFICATES, REGISTRATIONS AND RELIEF, IF ANY

73. Aqua asks that the Commission issue such other approvals, certificates, registrations and relief, if any, that may be required with respect to Aqua's acquisition of the EWT wastewater system assets.

XV. CONCLUSION

WHEREFORE, Aqua requests that the Public Utility Commission approve this Application, filed pursuant to Sections 1102, 1329, 507, and 2102 of the Public Utility Code, and:

a. Issue *Certificates of Public Convenience* under §1102 of the Pennsylvania Public Utility Code:

(1) Authorizing Aqua to acquire, by purchase, the wastewater system assets of East Whiteland Township; and

(2) Authorizing Aqua to begin to offer, render, furnish and supply wastewater service to the public in the Requested Territory covered by this Application.

b. Authorize Aqua to file tariff revisions, effective upon one day's notice, to:

(1) Include within its territory all the Requested Territory covered by this Application;

(2) Adopt and apply East Whiteland Township's rates as set forth in this Application as Aqua's Base Rates within the Requested Territory; and

(3) Apply Aqua's *Rules and Regulations* within the Requested Territory.

c. Enter an *Order* approving this Application and Aqua's acquisition of the Assets and, as part of that *Order* include the ratemaking rate base of East Whiteland Township as $54,930,000 pursuant to Section 1329(c)(2) of the Public Utility Code;

d. Approve Contracts, including Assignment of Contracts, between Aqua and East Whiteland Township, pursuant to Section 507 of the Public Utility Code;

e. Approve the Contract between Aqua and Aqua Resources, Inc., pursuant to Section 2102 of the Public Utility Code; and

f. Issue such other approvals, certificates, registrations and relief, if any, under the Public Utility Code that may be required with respect to Aqua's acquisition of the East Whiteland Township wastewater system assets.

Respectfully submitted,

AQUA PENNSYLVANIA WASTEWATER, INC.

By _____

Thomas T. Niesen, Esquire
PA Attorney ID No. 31379
Thomas, Niesen & Thomas, LLC
212 Locust Street, Suite 302
Harrisburg, PA 17101
tniesen@tntlawfirm.com

Counsel for Aqua Pennsylvania Wastewater, Inc.

Date: July 23, 2021

VERIFICATION

I, William C. Packer, Vice President, Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc., hereby state that the facts set forth in the foregoing Application of Aqua Pennsylvania Wastewater, Inc., pursuant to Sections 1102, 1329, 507 and 2102 of the Public Utility Code, for approvals and an order relating to the acquisition of the wastewater system assets of East Whiteland Township are true and correct to the best of my knowledge, information and belief and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

William C. Packer

William C. Packer
Vice President, Regulatory
Accounting and Regional Controller
Aqua Pennsylvania, Inc.

Dated: July 23, 2021

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of Aqua Pennsylvania Wastewater, Inc. (hereinafter referred to as "Aqua" or "Applicant") pursuant to Sections 1102 and 1329 of the Public Utility Code for:	:	**Docket No. A-2021-3026132**
(1) approval of the acquisition by Aqua of the wastewater system assets of East Whiteland Township ("EWT" or "Township") situated within the Township of East Whiteland, Chester County, Pennsylvania;	:	
(2) approval of the right of Aqua to begin to offer, render, furnish and supply wastewater service to the public in portions of East Whiteland Township, Chester County, Pennsylvania; and	:	
(3) an order approving the acquisition that includes the ratemaking rate base of the East Whiteland Township wastewater system assets pursuant to Section 1329(c)(2) of the Public Utility Code.	:	
Request for Approval of Contracts, including Assignments of Contracts, between Aqua and East Whiteland Township, Pursuant to Section 507 of the Public Utility Code	:	
Request for Approval of a Contract between Affiliated Interests, Pursuant to Section 2102 of the Public Utility Code	:	

CERTIFICATE OF SERVICE

I hereby certify that I have this 23rd day of July, 2021, served a true and correct copy of the foregoing Application, with Exhibits, and Work Paper Files, including Confidential Work Paper Files in Excel Format, upon the persons and in the manner set forth below:

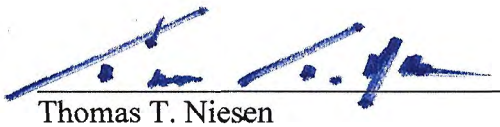
ELECTRONIC ACCESS VIA SHARE FILE

Daniel Searfoorce, Manager
Sean Donnelly, Supervisor
Janelle Eckman
Matthew Lamb
Clinton McKinley
Paul Zander
Bureau of Technical Utility Services
Pennsylvania Public Utility Commission

Allison C. Kaster, Deputy Chief Prosecutor
Lisa Gumby, Fixed Utility Manager
Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission

Christine Maloni Hoover
Interim Acting Consumer Advocate
Office of Consumer Advocate

Teresa Reed Wagner
Executive Director
Office of Small Business Advocate



Thomas T. Niesen
PA Attorney ID No. 31379

APPLICATION CHECKLIST

1.	Transmittal letter with caption and statement that the filing is pursuant to 66 Pa. C.S. § 1329.		Yes	
2.	Verification form that is signed by an officer or authorized employee of the company, is dated, and accurately references the case.		Yes	
3.	Certificate of Service indicating that a complete copy of the application with exhibits was served by registered or certified mail, return receipt requested, or by hand delivery, upon the statutory advocates (OCA, OSBA) and the Bureau of Investigation and Enforcement.		Yes	A Certificate of Service is included with the Application
4.	Provide responses to Section 1329 Application Standard Data Requests, including electronic working documents (i.e., Excel spreadsheets) for all the filing's schedules, studies, and working papers to the extent practicable.		Yes	Section XI and Exhibit Z
5.	Provide copies of two independent appraisals by separate utility valuation experts for use in establishing the fair market value of the Selling Utility.		Yes	Section XI, Paragraph 54, Page 18 and Exhibits Q and R
6.	State the purchase price of the seller as agreed to by the buyer and seller.		Yes	Section XI, Paragraph 55, Page 18
7.	State the total fees paid to the utility valuation experts for providing the completed appraisals for the acquisition and provide documentation, i.e., the valuation service agreement and all associated invoices, supporting the subject fee amounts.		Yes	Section XI, Paragraph 60, Pages 18 and 19 and Exhibits S1 and S2
8.	Buyer and Seller Verification Statements:			
	a. Provide a verification statement of the Buyer that its utility valuation expert was selected by the Buyer.		Yes	Section XI, Paragraph 59, Page 18 and Exhibit AA1
	b. Provide a verification statement of the Seller that its utility valuation expert was selected by the Seller.		Yes	Section XI, Paragraph 59, Page 18 and Exhibit AA2
9.	Utility Valuation Expert Verification Statements:			
	a. Buyer Utility Valuation Expert has no affiliation with the buyer or seller		Yes	Section XI, Paragraph 61, Page 19 and Exhibit T1

APPLICATION CHECKLIST

	b. Buyer Utility Valuation Expert determined fair market value in compliance with the most recent edition of the Uniform Standards of Professional Appraisal Practice as of the date of the report employing the cost, market, and income approaches.		Yes	Section XI, Paragraph 61, Pages 19 and Exhibit T1
	c. Buyer Utility Valuation Expert applied applicable jurisdictional exceptions to the submitted appraisal.		Yes	Section XI, Paragraph 61, Page 19 and Exhibit T1
	d. Seller Utility Valuation Expert has no affiliation with the buyer or seller		Yes	Section XI, Paragraph 61, Page 19 and Exhibit T2
	e. Seller Utility Valuation Expert determined fair market value in compliance with the most recent edition of the Uniform Standards of Professional Appraisal Practice as of the date of the report employing the cost, market, and income approaches.		Yes	Section XI, Paragraph 61, Page 19 and Exhibit T2
	f. Seller Utility Valuation Expert applied applicable jurisdictional exceptions to the submitted appraisal.		Yes	Section XI, Paragraph 61, Page 19 and Exhibit T2
10.	Estimated or, if available, actual transaction and closing costs incurred by the buyer that will be included in its rate base.		Yes	Section XI, Paragraph 57, Page 18
11.	State the ratemaking rate base as required in 66 Pa. C.S. § 1329 and specify whether it is based on either the fair market value determined by the valuation experts or the asset purchase price.		Yes	Section XI, Paragraph 56, Page 18
12.	Provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of the acquisition and a rate stabilization plan, if applicable to the acquisition.		Yes	Section VI, Paragraph 33, Page 10 and Exhibit G
13.	Seller Testimony			
	a. Provide seller direct testimony supporting the application, if any.		Yes	Section XI, Paragraph 64, Page 19 and Exhibit W
	b. Provide seller UVE direct testimony.		Yes	Section XI, Paragraph 67, Page 19 and Exhibit Y
14.	Buyer Testimony:			
	a. Provide buyer direct testimony supporting the application.		Yes	Section XI, Paragraphs 62 and 63, Page 19 and Exhibits U and V
	b. Provide buyer UVE direct testimony.		Yes	Section XI, Paragraph 66, Page 19 and Exhibit X

APPLICATION CHECKLIST

15.	Plant in Service:			
	a. Provide an inventory of the used and useful plant assets to be transferred. Identify separately any utility plant that is held for future use.		Yes	Section III, Paragraphs 11, 12 and 13, Page 4 and Exhibit D
	b. Provide a list of all non-depreciable property such as land and rights-of-way.		Yes	Section III, Paragraph 13, Page 4 and Exhibit D
	c. State the DEP-permitted productive or treatment capacity of sources or treatment facility and the pipe sizes and material used for construction for all transmission and distribution or collection facilities.		Yes	Section III, Paragraphs 12, 15 and 16, Pages 4 and 5, Exhibit D and Exhibit V
	d. State the elevations of major facilities and service areas.		Yes	Section III, Paragraph 17, Page 5 and Exhibit V
	e. State the approximate time schedule for installation of the various component facilities.		Yes	Section III, Paragraph 14, Page 4 and Exhibits D and V
	f. State the tentative journal entries for booking the acquisition.		Yes	Section IV, Paragraph 29, Pages 9 and 10
16.	Map of Service Area - provide a scalable map or plan of suitable scale highlighting the boundaries of the proposed service area that includes:			
	a. The extent of the proposed service area with any existing adjoining service areas identified.		Yes	Section I, Paragraph 3, Page 2 and Exhibit A
	b. A north arrow depicting map orientation.		Yes	Section I, Paragraph 4, Page 2 and Exhibit A
	c. A written description of the boundaries for the service territory utilizing bearing angles and distances.		Yes	Section I, Paragraph 4, Page 2 and Exhibit A
	d. Size of the service territory area in terms of acres or square miles.		Yes	Section I, Paragraph 4, Page 2 and Exhibit A
	e. Identification and depiction of all municipal boundaries relative to the service area.		Yes	Section I, Paragraph 4, Page 2 and Exhibit A

APPLICATION CHECKLIST

	f. Depiction of the location or route of the waterworks or wastewater collection, treatment or disposal facilities.		Yes	Section III, Paragraph 11, Page 4, Exhibit D and Confidential Sewage Facilities Maps
17.	Customers:			
	a. State the seller's actual number of customers by class and quantify the related consumption or gallons treated in the current calendar year and future number of connections anticipated for the next 5 years and, if available, the next 10 years.		Yes	Section V, Paragraph 30, Page 10, Exhibits U (Appendix A), V and W
	b. Buyer shall demonstrate its ability to provide adequate water supply, treatment, storage and distribution or adequate wastewater collection, treatment or disposal capacity to meet present and future customer demands.		Yes	Exhibit V
	c. For **water** system acquisitions, quantify the number of public and private fire hydrants.		N/A	
18.	Rates:			
	a. State the current rates of the seller.		Yes	Section VI, Paragraph 34, Page 10 and Exhibit H
	b. Provide a copy of the seller's current rules and regulations for service.		Yes	Section VI, Paragraph 34, Page 10 and Exhibit H
	c. Provide a proposed tariff or tariff supplement showing the rates, proposed rules, and conditions of service.		Yes	Section VI, Paragraph 33, Page 10 and Exhibit G
	d. Provide a copy of the notification sent, or which will be sent, to affected customers describing the filing and the anticipated effect on rates.		Yes	Section VI, Paragraph 36, Page 11 and Exhibits I1 and I2
19.	Cost of Service:			
	a. Provide a copy of the seller's two most recent audited financial statements.		Yes	Section VII, Paragraph 37, Page 11 and Exhibits J1 and J2
	b. Provide a copy of the seller's two most recent adopted budgets.		Yes	Section VII, Paragraph 38, Page 11 and Exhibits J3 and J4

APPLICATION CHECKLIST

	c. Provide a copy of the seller's most recent annual report filed with the Commonwealth's Department of Community and Economic Development.		Yes	Section VII, Paragraph 39, Page 11 and Exhibit K
	d. Provide calculations quantifying the projected revenues and expenses for the acquisition.		Yes	Section VII, Paragraph 40, Page 11
	e. State whether the seller has any outstanding loans on the utility plant and identify the nature, terms, and payment history.		Yes	Section VII, Paragraph 37, Page 11
20.	Proof of Compliance - provide proof of compliance with applicable design, construction and operation standards of DEP or of the county health department, or both, including:			
	a. For **water** system acquisitions, provide copies of the public water supply/water quality management permits for the utility plant.		N/A	
	b. For **wastewater** system acquisitions, provide copies of the water quality management and National Pollution Discharge Elimination System (NPDES) permits for the utility plant.		Yes	Section VIII, Paragraph 43, Pages 12 and 13, Exhibits M1, M2 and M3 and Exhibits N1 through N5
	c. For **wastewater** system acquisitions, provide a copy of the Chapter 94 Municipal Wasteload Management Report that was most recently submitted to DEP.		Yes	Section III, Paragraphs 15 and 16, Pages 4 and 5 and Exhibits E1 through E3
	d. Valid buyer's certified operators' certificates appropriate to the facilities being acquired.		Yes	Section VIII, Paragraph 42, Page 12 and Exhibit L
	e. Provide documentation evidencing a 5-year compliance history with DEP with an explanation of each violation for the seller's utilities that have been providing service as well as provide a copy of any DEP-approved corrective action plans.		Yes	Section VIII, Paragraph 44, Page 13 and Exhibits O and V
	f. Provide documentation of all Notices of Violation issued to seller by DEP for the last 5 years, an explanation of each, including a description of any corrective or compliance measures taken.		Yes	Section VIII, Paragraph 44, Page 13 and Exhibit O
	g. Statement attesting to Aqua's compliance history with DEP		Yes	Section VIII, Paragraph 45, Page 13
	h. Provide a statement clarifying whether the acquired plant will be physically interconnected to the buyer's system or be operated as a standalone system.		Yes	Section VIII, Paragraph 42, Page 12
	i. Provide a statement that explains how the acquisition will fit into the current operations of the buyer.		Yes	Section VIII, Paragraph 48, Page 14

APPLICATION CHECKLIST

	j. Provide a statement that identifies the staff, district or division of the buyer that will operate and manage the acquisition.		Yes	Section VIII, Paragraph 42, Page 12 and Paragraph 48, Page 14
	k. Provide a statement quantifying the distance in miles the acquisition is from the buyer's existing system or facilities.		Yes	Section VIII, Paragraph 42, Page 12 and Paragraph 48, Page 14
	l. Provide a statement that identifies all planned physical, operational and managerial changes of the buyer that will occur after closing and state the timeframe and cost for each.		Yes	Section VIII, Paragraph 49, Page 14 and Exhibit V
21.	Affected Persons. State the identity of all public utilities, municipalities, municipal authorities, cooperatives and associations which provide public water service or wastewater collection, treatment or disposal service within each municipality, or a municipality directly adjacent to the municipality(ies), in which the applicant seeks to provide service that abuts or is situated within one mile of the applicant's proposed facilities.		Yes	Section IX, Paragraph 51, Pages 14 and 15
22.	Other requirements - demonstrate compliance with the following:			
	a. For **wastewater** system acquisitions, demonstrate compliance with the DEP-approved Act 537 Official Sewage Facilities Plans for the affected municipalities (including the extent of the requested service territory).		Yes	Section VIII, Paragraph 46, Page 13
	b. For **wastewater** system acquisitions, provide a copy of the DEP-approved Act 537 Official Sewage Facilities Plans for the affected municipalities.		Yes	Section VIII, Paragraph 46, Page 13 and Exhibits P1 through P8
	c. For **wastewater** system acquisitions, state the method of water service being provided in the requested wastewater service territory (i.e., public water or private wells) and identify the name of water utility, if applicable.		Yes	Section III, Paragraph 18, Page 5
	d. For **water** system acquisitions, state the method of wastewater service being provided in the requested water service territory (i.e., public wastewater or private on-lot) and identify the name of wastewater utility, if applicable.		N/A	
	e. Provide evidence the filing is consistent with the affected municipality and county comprehensive plans if the filing proposes to expand service beyond the existing plant footprint.		Yes	Section VIII, Paragraphs 46 and 47, Page 13

APPLICATION CHECKLIST

23.	Verification:			
	a. For **water** system acquisitions, provide a verification that the water sources and customers are metered in accordance with 52 Pa. Code § 65.7 (relating to metered service). If unmetered water service is currently provided, the applicant shall provide a metering plan to the Commission.		N/A	
	b. Include a statement that there is no affiliation between the buyer and seller.		Yes	Section IV, Paragraph 22, Page 6
	c. Include a statement that the agreement was conducted at arm's length.		Yes	Section IV, Paragraph 22, Page 6
	d. Include a statement explaining how the customers will benefit from the Buyer's ownership.		Yes	Section X and Exhibits U, V and W
24.	Asset Purchase Agreement (APA):			
	a. Provide a copy of the APA that is signed by all parties.		Yes	Section I, Paragraph 5, Pages 2 and 3 and Exhibit B
	b. APA clearly states the purchase price and terms.		Yes	Section IV, Paragraph 21, Page 6 and Exhibit B
	c. APA clearly states whether all assets or only a portion of the assets are to be purchased (e.g., water treatment and distribution or wastewater collection and treatment).		Yes	Section IV, Paragraph 24, Page 6 and Exhibit B
	d. APA adequately describes the assets to be acquired.		Yes	Section IV, Paragraphs 24, 25 and 26, Pages 6, 7, 8 and 9 and Exhibit B
	e. APA adequately describes the assets to be excluded.		Yes	Section IV, Paragraph 27, Page 9 and Exhibit B
25.	Provide a copy of all municipal and affiliate contracts to be assumed by buyer as part of the acquisition and a list and annual dollar value of other contracts.		Yes	Section IV, Paragraph 25, Pages 6, 7, 8 and 9 and Exhibits F1, through F22

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Composite Amendment No. 1 to Valley Creek Trunk Sewer Agreement, East Whiteland Trunk Line Agreement, and Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974, by and between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority	F2
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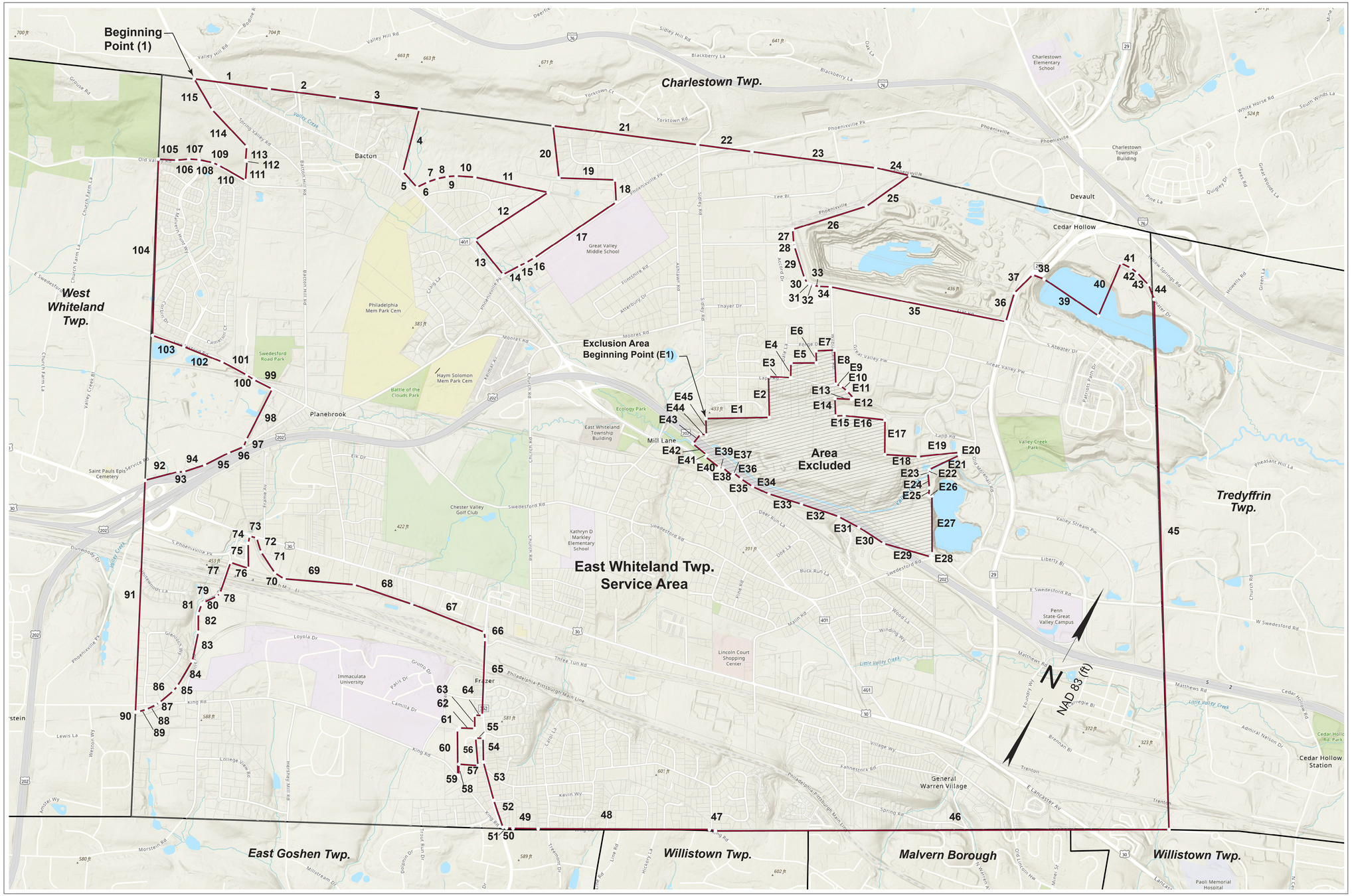
Beginning Point (1)
Exclusion Area Beginning Point (E1)
Charlestown Twp.
West Whiteland Twp.
East Whiteland Twp. Service Area
Area Excluded
Tredyffrin Twp.
East Goshen Twp.
Willistown Twp.
Malvern Borough
Willistown Twp.
Bacton
Planebrook
Devault
Cedar Hollow
Frazer
General Warren Village
Cedar Hollow Station
Great Valley Middle School
Philadelphia Mem Park Cem
Haym Solomon Mem Park Cem
Swedesford Road Park
Battle of the Clouds Park
Ecology Park
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Charlestown Elementary School
Charlestown Township Building
Kathryn D Markley Elementary School
Chester Valley Golf Club
Saint Pauls Epis Cemetery
Immaculata University
Penn State-Great Valley Campus
Lincoln Court Shopping Center
Paoli Memorial Hospital
Cedar Hollow Rd Park
Great Valley Pw
Phoenixville Pk
Swedesford Rd
W Swedesford Rd
E Swedesford Rd
Valley Hill Rd
Sidley Hill Rd
Blackberry La
Yorktown Rd
Yorktown Cr
Phoenixville
Lee Bl
Thayer Dr
Moores Rd
Lapp Rd
Mill Lane
Elk Dr
Deer Run La
Buck Run La
Dog La
Line Rd
Church Rd
Sidley Rd
Malin Rd
Valley Creek
Valley Creek Bl
Spring Valley Rd
Old Valley Rd
Church Farm La
Baacon Hill Rd
Camelot Ct
Cambridge Ct
Lewis La
Weston Wy
Amherst Wy
Glenhurst Wy
Dunwoody Dr
Gruise Rd
Deerfield
Oak Ln
Pine La
Quigley Dr
Rees Rd
Great Woods La
White Horse Rd
South Winds La
Willow Springs Rd
Howells Rd
Green La
Admiral Nelson Dr
Patriots Path Dr
Pheasant Hill La
Valley Stream Pw
Liberty Bl
Foundry Rd
Carnegie Bl
Brennan Bl
Matthews Rd
Little Valley Creek
Cedar Knoll Rd
Fahnestock Rd
Village Wy
Trenton
E Lancaster Av
Spring Rd
Kevin Wy
Three Tun Rd
Philadelphia-Pittsburgh Main Line
Grotto Dr
Paris Dr
Camilla Dr
Loyola Dr
Glenhurst Wy
Hickory Ln
Tredyffrin Dr
Dolphin Dr
Mainstream Dr
Morstein Rd
King Rd
College View Rd
Hackney Mill Rd
Frame Av
Elmax Av
Valley Creek Bl
Finchmire Rd
Attebury Dr
Cabot La
Foxcroft Dr
Foxcroft Rd
Great Valley Pw
S Atwater Dr
Lapp Rd
Old Lincoln Hw
Mine St
Warren Av
Hickory Ln
Line Rd
Tredyffrin Dr
Dolphin Dr
Mainstream Dr
Morstein Rd
Kevin Wy
Spring Rd
Trenton
E Lancaster Av
Village Wy
Fahnestock Rd
Foxcroft Rd
Foxcroft Dr

EXHIBIT B

ASSET PURCHASE AGREEMENT

Execution Version

SANITARY SEWER

ASSET PURCHASE AGREEMENT

By and Between

Township of East Whiteland, Chester County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of January 8, 2021

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SANITARY SEWER ASSET PURCHASE AGREEMENT

THIS SANITARY SEWER ASSET PURCHASE AGREEMENT ("Agreement"), dated as of January 8, 2021 (the "Effective Date"), is made and entered into by and between the Township of East Whiteland, Chester County, a body corporate and politic, organized and existing under the laws of the Commonwealth of Pennsylvania (the "Seller"), and Aqua Pennsylvania Wastewater, Inc. (the "Buyer"), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania.

RECITALS:

WHEREAS, Seller, acting by and through the Board of Supervisors of East Whiteland Township, Chester County (the "Township Board") owns and operates a sanitary wastewater collection and conveyance system (the "System") that provides sanitary wastewater service to various customers in East Whiteland Township, Pennsylvania (the "Service Area") and as set forth on Schedule A; and

WHEREAS, Buyer is a regulated public utility organized and existing under the laws of the Commonwealth of Pennsylvania that furnishes wastewater service to the public in several counties, including Chester County, Pennsylvania; and

WHEREAS, Buyer, in reliance upon the representations, warranties and covenants of Seller herein, desires to purchase and acquire from Seller, and Seller, in reliance upon the representations, warranties and covenants of Buyer herein, desires to sell, transfer and convey to Buyer all of the assets of the System (other than the Excluded Assets), and in connection therewith, Buyer has agreed to assume certain ongoing obligations and liabilities of Seller related to the acquired assets, all on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual representations, warranties, covenants, and agreements stated in this Agreement, the receipt and sufficiency of which hereby are acknowledged, intending to be legally bound, the Parties agree as follows:

ARTICLE I.

DEFINITIONS

In addition to the capitalized terms defined elsewhere in this Agreement, the following terms, as used in this Agreement (unless otherwise specified herein), have the meanings set forth in this Article I:

"**Acquired Assets**" has the meaning specified in Section 2.01.

"**Affiliate**" means, when used to indicate a relationship with a specified Person, a Person that, directly or indirectly, through one or more intermediaries, has a 10% or more voting or economic interest in such specified Person or controls, is controlled by or is under common control with (which includes, with respect to a managed fund or trust, the right to direct or cause the direction of the management and policies of such managed fund or trust as manager, advisor, supervisor, sponsor or trustee pursuant to relevant contractual arrangements) such specified

Person, and a Person is deemed to be controlled by another Person if controlled in any manner whatsoever that results in control in fact by that other Person (or that other Person and any Person or Persons with whom that other Person is acting jointly or in concert), whether directly or indirectly and whether through share ownership, a trust, a contract or otherwise (and for purposes of this definition, a managed fund or trust is deemed to be an Affiliate of the Person managing, supervising, sponsoring or advising such fund or trust and a limited partner in a managed fund or trust is deemed to be an Affiliate of such fund or trust and of the Person managing, supervising, sponsoring or advising such fund or trust).

"**Agreement**" has the meaning specified in the Preamble to this Agreement (and includes all Schedules and Exhibits referred to herein), as amended, modified and supplemented from time to time in accordance with the terms hereof.

"**Assigned Contracts**" has the meaning specified in Section 2.01(c).

"**Assignment and Assumption Agreement**" has the meaning specified in Section 13.02(c).

"**Assumed Liabilities**" has the meaning specified in Section 2.04(a).

"**Authorizations and Permits**" mean all licenses, permits, franchises, authorizations, certificates, registrations, consents, orders, adjudications, variances, waivers and approvals currently in effect issued or granted by Governmental Authorities, including without limitation, environmental permits, operating permits and approvals that are held by Seller that primarily relate directly or indirectly to the operation of the System, including those set forth on Schedule 4.12.

"**Business Day**" means any day that is neither a Saturday, Sunday nor a day observed as a holiday by either the Commonwealth of Pennsylvania or the United States government.

"**Buyer**" has the meaning specified in the Preamble of this Agreement.

"**Buyer Fundamental Representations**" has the meaning specified in Section 8.01.

"**Buyer Indemnified Persons**" has the meaning specified in Section 8.02.

"**CERCLA**" means the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended.

"**Closing**" means the consummation of the sale and purchase of the Acquired Assets and assumption of the Assumed Liabilities, the release/waiver of liabilities and the other transactions contemplated by this Agreement, all in accordance with the terms and conditions of this Agreement and as specified in Article XIII.

"**Closing Date**" has the meaning specified in Section 13.01.

"**Closing Effective Time**" has the meaning specified in Section 13.01.

"**Code**" means the Internal Revenue Code of 1986, as amended.

"**Confidential Information**" means any information about Buyer, Seller or the System related to the transactions contemplated by this Agreement, except that such term does not include information which the receiving Party can demonstrate (a) is generally available to or known by the public other than as a result of improper disclosure by the receiving Party, (b) is obtained by the receiving Party from a source other than the disclosing Party, and that source was not bound by a duty of confidentiality to the disclosing Party with respect to such information, or (c) is legally in the public domain.

"**Customer Sewer Laterals**" has the meaning specified in Section 2.02(k).

"**Direct Claim**" has the meaning specified in Section 8.04(c).

"**Easements**" means all easements, rights of way, licenses, use agreements, occupancy agreements, leases and other agreements and appurtenances for and over the real property of third parties that are necessary for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto).

"**EDU**" means equivalent dwelling unit and having a use rate of 275 gallons per day.

"**Effective Date**" has the meaning specified in the Preamble.

"**Environment**" means soil, surface waters, ground waters, land, stream sediments, flora, fauna, surface or subsurface strata and ambient air.

"**Environmental Claims**" means all notices of investigations, warnings, notice letters, notices of violations, Liens, orders, claims, demands, suits or administrative or judicial actions for any injunctive relief, fines, penalties, third party claims, or other claims asserting violations of Environmental Requirements or responsibility for Environmental Liabilities.

"**Environmental Conditions**" means the Release of Hazardous Materials or the presence of Hazardous Materials on, in, under or within any property (including the presence in the Environment), other than the presence of Hazardous Materials in locations and at concentrations that are naturally occurring.

"**Environmental Liabilities**" means any legal obligation or liability arising under Environmental Requirements or related to or arising out of any Environmental Condition, including those consisting of or relating to any (a) duty imposed by, breach of or noncompliance with any Environmental Requirements; (b) environmental, health or safety matters or conditions (including on-site or off-site contamination, occupational safety and health and regulation of Hazardous Materials); (c) Remedial Action undertaken by any Person; (d) bodily injury (including illness, disability and death, and regardless of when any such bodily injury occurred, was incurred or manifested itself), property damage (including trespass, nuisance, wrongful eviction and deprivation of the use of real or personal property), or other losses or damages incurred by any other Person (including any employee or former employee of such Person); (e) any injury to, destruction of, or loss of natural resources, or costs of any natural resource damage assessments; (f) exposure of any Person to any Hazardous Materials; and (g) the presence or Release of any Hazardous Materials.

"**Environmental Requirements**" mean all present Laws (including common law), regulations, legally binding or otherwise enforceable requirements and Authorizations and Permits relating to human health, pollution, or protection of the Environment (including ambient air, surface water, ground water, land surface or surface strata), including (i) those relating to emissions, discharges, Releases, or threatened Releases of Hazardous Materials, and (ii) those relating to the identification, generation, manufacture, processing, distribution, use, treatment, storage, disposal, release, recovery, transport or other handling of Hazardous Materials. Without limiting the previous, the term "**Environmental Requirements**" includes (1) CERCLA; the Superfund Amendments and Reauthorization Act, Public Law 99-499, 100 Stat. 1613; the Emergency Planning and Community Right to Know Act, 42 U.S.C. Sections 11001-11050; the Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901-6992k ("RCRA"); the Safe Drinking Water Act, 42 U.S.C. Sections 300f to 300j-26; the Toxic Substances Control Act, 15 U.S.C. Sections 2601-2692; the Hazardous Materials Transportation Act, 49 U.S.C. Sections 5101-5127; the Federal Water Pollution Control Act, 33 U.S.C. Sections 1251-1387; the Oil Pollution Act of 1990, 33 U.S.C. Sections 2701--2761; the Clean Air Act, 42 U.S.C. Sections 7401-7671q; the Atomic Energy Act of 1954, as amended, 42 U.S.C. Sections 2011 et seq.; the Low Level Radioactive Waste Policy Act, as amended, 42 U.S.C. Section 2021b et seq.; the Occupational Safety and Health Act, 29 U.S.C. Sections 651-678, and the regulations promulgated pursuant to the above-listed federal statutes, and (2) counterpart Laws and regulations promulgated or issued by any state or local Governmental Authority, specifically including the Pennsylvania Storage Tank and Spill Prevention Act of 1989 (35 Pa. C.S.A. § 6021.101 *et. seq.*).

"**EPA**" means the United States Environmental Protection Agency, or a successor Governmental Authority with substantially similar power and authority thereto.

"**Equipment and Machinery**" means (i) all the equipment, tangible personal property, machinery, office furniture and equipment, fixtures, tooling, spare maintenance or replacement parts, environmental testing equipment, and vehicles owned or leased by Seller (including all leases of such property), which are primarily used in the operation of the System, (ii) any rights of Seller to warranties applicable to the foregoing (to the extent assignable), and licenses received from manufacturers and Seller of any such item, and (iii) any related claims, credits, and rights of recovery with respect thereto, as set forth on Schedule 4.10.

"**Excluded Assets**" has the meaning specified in Section 2.02.

"**Excluded Liability**" or "**Excluded Liabilities**" means all liabilities other than Assumed Liabilities.

"**Files and Records**" means all files and records of Seller primarily relating to the System and the Acquired Assets, whether in hard copy, digital, or magnetic or other format including data, geographic information system data, plans, contracts and recorded knowledge relating to the Acquired Assets (including property records, related to the foregoing), customer and supplier records, customer lists (both current and prospective), customer billing records, records of sales calls, manuals, books, files, records, engineering data, procedures, systems, instructions, drawings, blueprints, plans, designs, specifications, equipment lists, parts lists, equipment maintenance records, equipment warranty information, plant plans, specifications and drawings, sales and

advertising material, and computer software, and records relating to the System, whether stored on-site or off-site.

"**Final Order**" means a Governmental Approval by a Governmental Authority as to which (a) no request for stay of the action is pending, no such stay is in effect and if any time period is permitted by statute or regulation for filing any request for such stay, such time period has passed, (b) no petition for rehearing, reargument or reconsideration of the action is pending and the time for filing any such petition has passed, (c) such Governmental Authority does not have action under consideration on its own motion and (d) no appeal to a court or administrative tribunal or a request for stay by a court or administrative tribunal of the Government Authority's action is pending or in effect and the deadline for filing any such appeal or request for stay has passed.

"**Governmental Approval**" means any consent, approval, authorization, notice, filing, registration, submission, reporting, order, adjudication or similar item of, to or with any Governmental Authority.

"**Governmental Authority**" or "**Governmental Authorities**" means any court, department, commission, board, bureau, municipality, municipal authority (established pursuant to the Municipal Authorities Act of the Commonwealth of Pennsylvania), agency or instrumentality of the United States, any state, county, city or political subdivision thereof, or any foreign governmental body, including without limitation, the PaPUC, the EPA, PaDEP and the Township Board.

"**Hazardous Materials**" means any solid, liquid, gas, odor, heat, sound, vibration, radiation or other substance or emission which is a contaminant, pollutant, dangerous substance, toxic substance, hazardous waste, residual waste, solid waste, hazardous material or hazardous substance which is or becomes regulated by applicable Environmental Laws or which is classified as hazardous or toxic under applicable Environmental Laws (including gasoline, diesel fuel or other petroleum hydrocarbons, polychlorinated biphenyls, asbestos and urea formaldehyde foam insulation).

"**Indemnified Party**" means any Buyer Indemnified Persons or Seller Indemnified Persons, as applicable, entitled to indemnification pursuant to Article VIII.

"**Indemnifying Party**" means a Party which is obligated to indemnify the Buyer Indemnified Persons or the Seller Indemnified Persons, as applicable, pursuant to Article VIII.

"**Knowledge**" means either (i) the actual knowledge of a Representative of Buyer and the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Buyer or (ii) the actual knowledge of a Representative of Seller, the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Seller, as applicable based on the context in which the term is used.

"**Land Development Agreement / Financial Security Agreement**" means any agreement between Seller and an applicant for subdivision and/or land development approval pursuant to the Pennsylvania Municipalities Planning Code, pursuant to which applicant is required to construct

public improvements and required to post financial security, for the benefit of Seller, to secure applicant's obligations under such agreement.

"**Law**" means any applicable law, statute, regulation, ordinance, rule, order, judicial, administrative and regulatory decree, judgment, adjudication, consent decree, settlement agreement or governmental requirement enacted, promulgated, entered into, agreed or imposed by any Governmental Authority, as may be in effect at the relevant time or times in the context in which the term is used.

"**Liability Cap**" has the meaning specified in Section 8.05(c).

"**Lien**" means any lien in a fixed and ascertainable monetary sum, or any pledge, mortgage, deed of trust or security interest securing a fixed and ascertainable monetary sum, or any charge or claim in a fixed and ascertainable monetary sum. In addition, in connection with Real Property, any item otherwise falling within the definition of a "Lien" must be filed of record by the responsible Party in accordance with the terms of this Agreement.

"**Loss**" means any and all losses, liabilities, obligations, damages, penalties, interest, Taxes, claims, actions, demands, causes of action, judgments, reasonable attorneys', consultants' and other professional fees, and all other reasonable costs and expenses sustained or incurred in investigating, preparing or defending or otherwise incident to any such claim, action, demand, cause of action or judgment or the enforcement of a Party's rights under Article VIII; except that "**Losses**" shall not include punitive, incidental, consequential, special or indirect damages, including loss of future revenue or income, loss of business reputation or opportunity relating to the breach or alleged breach of this Agreement, or diminution of value or any damages based on any type of multiple, except in the case of fraud or to the extent actually awarded to a Governmental Authority or other third party in respect of a Third Party Claim.

"**Material Adverse Effect**" means any result, occurrence, fact, change, event or effect that has a materially adverse effect on the business, financial condition, physical condition or results of operations of the System, except that no effect arising out of or in connection with or resulting from any of the following is deemed, either alone or in combination, to constitute or contribute to a Material Adverse Effect: (i) general economic conditions or changes in those conditions; (ii) financial, banking, currency or capital markets fluctuations or conditions (either in the United States or any international market and including changes in interest rates); (iii) conditions affecting the real estate, financial services, construction, water utility or sewer utility industries generally; (iv) any existing event, circumstance, condition or occurrence of which Buyer has Knowledge as of the Effective Date; (v) any action, omission, change, effect, circumstance or condition contemplated by this Agreement or attributable to the execution, performance or announcement of this Agreement or the transactions contemplated hereby; and (vi) negligence, intentional misconduct or bad faith of Buyer or its Representatives.

"**Missing Easements**" means, as of any particular date, each material Easement that is for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto) that either (a) has not been obtained by Seller as of such date or (b) if such Easement has been obtained by Seller as of such date, and such Easement is not sufficient to operate the System as currently conducted.

"**MS4 System**" or **"Municipal Separate Storm Sewer System**" means the current and any future assets and facilities, built, operated or maintained, or real property ("**MS4 System Real Property**") and Stormwater System Assets owned by Seller and used for the purpose of capturing, conveying and discharging stormwater separate from the System.

"**Outside Date**" means 365 days after the date the application to the PaPUC is accepted as complete by the PaPUC and the statutory 6-month consideration period is initiated.

"**PaDEP**" means the Pennsylvania Department of Environmental Protection, or any successor Governmental Authority with substantially similar powers thereto.

"**PaPUC**" means the Pennsylvania Public Utility Commission, or any successor Governmental Authority with substantially similar powers thereto.

"**Party**" means Buyer or Seller and the term "Parties" means collectively Buyer and Seller.

"**PCB Equipment**" means PCB equipment as defined in 40 C.F.R. Part 761.

"**Pending Development Plan**" means any subdivision or land development plan that has been submitted to Seller for approval pursuant to the Pennsylvania Municipal Planning Code, as updated prior to Closing.

"**Permitted Liens**" means (a) Liens for Taxes not yet due and payable or being contested in good faith by appropriate procedures; (b) easements, rights of way, zoning ordinances and other similar encumbrances affecting Real Property and Easements as set forth on Schedule 4.09; (c) other than with respect to Real Property owned by Seller, Liens arising under original purchase price conditional sales contracts and equipment leases with third parties entered into in the ordinary course of business; and (d) other imperfections of title or Liens, if any, that have not had, and would not have, a Material Adverse Effect.

"**Person**" means any individual (including, the heirs, beneficiaries, executors, legal representatives or administrators thereof), corporation, partnership, joint venture, trust, limited liability company, limited partnership, joint stock company, unincorporated association or other entity or a Governmental Authority.

"**Plan**" has the meaning specified in Section 7.10(a).

"**Purchase Price**" has the meaning specified in Section 3.01.

"**Real Property**" means those certain parcels of land, with the buildings, improvements, and Equipment and Machinery thereon or therein, that are part of the System and fee simple title to which is to be conveyed by Seller to Buyer as part of the Acquired Assets.

"**Regulated Asbestos Containing Material**" means regulated asbestos containing material as defined by 40 C.F.R. § 61.141.

"**Release**" means any actual or threatened spilling, leaking, pumping, pouring, injecting, emptying, discharging, emitting, escaping, leaching, dumping, disposal, or release or migration of

Hazardous Materials into the Environment, including the abandonment or discarding of barrels, containers and other receptacles containing any Hazardous Materials.

"**Remedial Action**" means any and all actions to (a) investigate, clean up, remediate, remove, treat, contain or in any other way address any Hazardous Materials in the Environment, (b) prevent the Release or threat of Release or minimize the further Release of any Hazardous Materials so it does not migrate or endanger public health or welfare or the indoor or outdoor Environment, and (c) perform pre-remedial studies and investigations and post-remedial monitoring, maintenance and care. The term "**Remedial Action**" includes any action which constitutes (i) a "removal", "remedial action" or "response" as defined by Section 101 of CERCLA, 42 U.S.C. §§ 9601(23), (24), and (25); (ii) a "corrective action" as defined in RCRA, 42 U.S.C. § 6901 et seq.; or (iii) a "response" or "interim response" as defined in the Pennsylvania Hazardous Sites Cleanup Act, 35 P.S. §6020.103.

"**Representative**" means, with respect to any Person, any director, officer, employee, official, lender mortgagee, financier, provider of any financial instrument (or any agent or trustee acting on their behalf), partner, member, owner, agent, lawyer, accountant, auditor, professional advisor, consultant, engineer, contractor, other Person for whom such Person is at law responsible or other representative of such Person and any professional advisor, consultant or engineer designated by such Person as its "Representative."

"**Schedules**" means the disclosure schedules delivered by Seller and Buyer, respectively, concurrently with the execution and delivery of this Agreement, and as may be supplemented and updated pursuant to Sections 9.03 and 10.04. Any disclosure set forth on any particular Schedule is deemed disclosure in reference to all Schedules comprising the Schedules to which such disclosure is reasonably apparent.

"**Seller**" has the meaning specified in the Preamble of this Agreement.

"**Seller Fundamental Representations**" has the meaning specified in Section 8.01.

"**Seller Indemnified Persons**" has the meaning specified in Section 8.03.

"**Seller DEP Permits**" means the Water Quality Management Permits set forth on Schedule 4.12, each issued by PaDEP to Seller with respect to the System, including any revisions or amendments thereto. This definition shall not include any permit issued and related to the Stormwater System Assets.

"**Service Area**" has the meaning specified in the recitals to this Agreement.

"**Stormwater System Assets**" means all assets owned by Seller, and used exclusively in the operation or maintenance of the MS4 System, including (i) drains, pipes and collection basins and all other stormwater drainage assets used exclusively for stormwater collection, conveyance and discharge; (ii) catch basins, inlets, pipes and all other stormwater lateral facilities (the "**Stormwater Lateral Facilities**") that connect surface stormwater drains to storm conveyances which discharge to surface waters; (iii) interest in real estate directly associated with (i) and (ii); and (iv) any related permits.

"**Supplies**" means all lubricants, spare parts, fuel, chemicals, raw materials, and other supplies and inventory, and all rights to warranties received from suppliers with respect to the foregoing, and related claims, credits, and rights of recovery with respect thereto that are necessary to operate the System.

"**System**" has the meaning specified in the recitals to this Agreement and shall include the Acquired Assets and exclude the Excluded Assets.

"**Taxes**" means any federal, state, local or foreign income, gross receipts, license, payroll, employment, excise, severance, stamp, occupation, premium, windfall profits, environmental, customs duties, permit fees, capital stock, franchise, profits, withholding, social security, unemployment, disability, real property, personal property, parking, sales, use, transfer, registration, value added, alternative or add-on minimum, estimated or other tax, levy, impost, stamp tax, duty, fee, withholding or similar imposition of any kind payable, levied, collected, withheld or assessed at any time, including any interest, penalty or addition thereto, whether disputed or not.

"**Third Party Claim**" has the meaning specified in Section 8.05(a).

"**Threshold Amount**" has the meaning specified in Section 8.05(a).

"**Title Commitment**" has the meaning specified in Section 6.01.

"**Title Company**" has the meaning specified in Section 6.01.

"**Title Policy**" has the meaning specified in Section 2.03.

"**Township Board**" the meaning specified in the Preamble of this Agreement.

"**Township Senior Staff**" means the Township Manager, Assistant Manager, Superintendent of Public Works and the Township Engineer.

"**UCC Search**" has the meaning specified in Section 6.04.

"**Unscheduled Real Property**" has the meaning specified in Section 6.06.

"**Utility Valuation Expert**" means an expert that was approved by the PaPUC and is currently, at the time of this Agreement, on the list of approved appraisers maintained by the PaPUC.

ARTICLE II.

TERMS OF PURCHASE AND ASSUMPTION OF LIABILITIES

Section 2.01. Purchase and Sale of Acquired Assets.

Subject to the terms and conditions set forth in this Agreement, at Closing, Buyer shall purchase from Seller and Seller shall sell, transfer, assign and deliver to Buyer, free and clear of all Liens except for Permitted Liens, all of Seller's right, title and interest in and to all assets, facilities, business, goodwill, properties and rights of Seller of every kind and description, whether tangible or intangible, real, personal or mixed, wherever situated, in each case used in, held for use in, or acquired or developed for use in, the System, or otherwise related to, or arising out of the operation or conduct of the System (whether or not any such assets have any value for accounting purposes or are carried or reflected on the books or financial records of Seller), including any of the foregoing in which Seller is entitled to acquire rights in the future pursuant to Pending Development Plans (other than the rights of Seller pursuant to Section 2.02(d)) or development plans approved pursuant to this Agreement, but in all cases other than the Excluded Assets (collectively referred to as the "Acquired Assets"), including:

(a) all real property and appurtenant interests, rights of way used in, or necessary for, the operation of the System, including without limitation (i) good and marketable fee simple title to the Real Property set forth on Schedule 4.09, and (ii) all Easements, including without limitation those set forth on Schedule 4.09;

(b) all sanitary wastewater related treatment, collection and conveyance facilities, including all collection system mains (whether gravity or force mains), laterals (from the collection system main to the edge-of-road or curb-line when the main is located within a public right-of-way or the edge of an easement where the main is located within private property), pumping stations, generators, manholes, and other related appurtenances and any billing and collections related assets necessary to own and operate the System;

(c) all contracts, licenses, and leases to which Seller is a party or beneficiary or payee, including without limitation, all construction contracts, surety bonds, operation and maintenance agreements, management agreements, reserved capacity agreements, architect agreements and consultant agreements, and agreements relating to vehicles and other items of personal property as set forth on Schedule 4.13 (the "Assigned Contracts");

(d) all Supplies;

(e) all personal property and fixed assets, including all Equipment and Machinery, auxiliary equipment and plant equipment, including without limitation those items set forth on Schedule 4.10;

(f) all expenses prepaid by Seller and security deposits paid by Seller;

(g) all Files and Records;

(h) all Authorizations and Permits of or held by Seller (to the extent transferrable to Buyer under Law), including all Authorizations and Permits which are environmental permits, Seller DEP Permits other than those NPDES permits that relate to the Stormwater System Assets, other operating permits and those items set forth on Schedule 4.12; and

(i) all goodwill of the System.

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION OR WARRANTY REGARDING ANY REPRESENTATION REGARDING THE FUTURE PROFITABILITY OR FUTURE EARNINGS PERFORMANCE OF THE ACQUIRED ASSETS OR THE SYSTEM OR ANY FUTURE RATEMAKING THAT MAY BE ALLOWED BY THE PAPUC FOR ANY OF THE ACQUIRED ASSETS. NOTWITHSTANDING THE FOREGOING, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE VALID UNTIL THE TIME OF CLOSING.

Section 2.02. Excluded Assets.

Notwithstanding anything herein to the contrary, the Acquired Assets shall not include the following (the "Excluded Assets"):

(a) the Stormwater System Assets, including any related NPDES permits;

(b) all contracts, licenses and leases that are not Assigned Contracts;

(c) the seals, organizational documents, minute books, tax returns, books of account or other records having to do with the organization of Seller;

(d) cash and cash equivalents, including (i) accounts receivable and amounts earned by Seller but not yet billed attributable to services rendered by Seller as of or before the Closing Date and (ii) EDU fees owed to Seller at or before the Closing Date for any Pending Development Plan but not yet paid to Seller;

(e) all insurance policies of Seller and all rights to applicable claims and proceeds thereunder;

(f) all rights to any outstanding lien related to non-payment by a System customer existing at or before the Closing Date and all actions, suits or claims of any nature available to or being pursued by Seller, whether arising by way of counterclaim or otherwise;

(g) all assets, properties and rights used by Seller other than those which primarily relate to the operations of the System;

(h) the assets, properties and rights specifically set forth on Schedule 2.02(h);

(i) the MS4 System Real Property;

(j) the rights which accrue or will accrue to Seller under this Agreement and any related agreement, exhibit or schedule; and

(k) all connecting facilities originating from Seller's terminus point of the collection facilities at the edge-of-road or curb-line when the facilities are located with a public right-of-way or the edge of an easement where the collection facilities are located within private property to and throughout the customer's property, including grinder pumps (the "Customer Sewer Laterals").

Section 2.03. Sale Free of Liens.

After Buyer fulfills its obligations pursuant to Section 3.01(a), on the Closing Date, the Acquired Assets will be free and clear of all Liens other than Permitted Liens. Seller shall convey the Acquired Assets by appropriate special warranty or other deed (subject to Section 6.02(c)), bills of sale, endorsements, assignments and other instruments of transfer or conveyance described herein, and if not expressly described herein, then by transfer documents satisfactory in form and substance reasonably acceptable to Buyer and Seller and their counsel in their reasonable, good faith discretion. At Closing, title to the Real Property shall be good and marketable and insured by the Title Company, at the Title Company's filed rates, as a good and marketable title, free and clear of all Liens and exceptions to coverage, except for the Permitted Liens, pursuant to an owner's policy of title insurance on the American Land Title Association's ("ALTA") Owner's Form 2006, subject to the terms of Section 6.02 (the "Title Policy").

Section 2.04. Assumption of Liabilities.

(a) On the terms and conditions set forth in this Agreement and excluding the Excluded Liabilities, Buyer shall assume and pay, perform and discharge when due any and all liabilities and obligations of Seller both (1) arising under Seller DEP Permits (arising from, related to, or based on events or circumstances occurring on or after the Closing Date), and (2) arising out of or relating to the System or the Acquired Assets on or after the Closing, including the following:

(i) all liabilities and obligations under the Assigned Contracts and Authorizations and Permits resulting from events that occur or conditions that arise on or after the Closing;

(ii) any litigation initiated against Seller related to the System or the Acquired Assets resulting from events that occur on or after Closing or conditions that arise on or after the Closing;

(iii) all liabilities and obligations for Taxes relating to the System, its operation, the Acquired Assets and the Assumed Liabilities attributable to the period after the Closing Date; and

(iv) all other liabilities and obligations arising out of or relating to Buyer's ownership or operation of the System and the Acquired Assets on or after the Closing (all of the aforementioned liabilities in this Section 2.04(a) are referred to as the "Assumed Liabilities").

(b) At the Closing, to the extent Seller is not released therefrom, Buyer shall indemnify Seller against any Loss relating to the Assumed Liabilities in accordance with Section 8.03.

(c) Buyer shall not assume or be liable to pay any liabilities or obligations relating to the Excluded Liabilities or any other liabilities or obligations that are not Assumed Liabilities.

Section 2.05. Further Assurances.

At any time and from time to time after the Closing Date, Seller shall, upon the request of Buyer, and Buyer shall, upon the request of Seller, at the cost of requesting Party, promptly execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate, (a) the sale, conveyance, transfer, assignment and delivery hereunder of the Acquired Assets to Buyer, (b) the assumption by Buyer of any of the Assumed Liabilities, (c) performance by the Parties of any of their other respective obligations under this Agreement, (d) the vesting in Buyer of all right, title and interest in the Acquired Assets and the System as specified in this Agreement, and (e) any other matters reasonably requested by a Party to carry out the provisions, purposes and intent of this Agreement.

Section 2.06. Certain Transfers; Assignment of Contracts.

(a) Notwithstanding anything to the contrary in this Agreement, and subject to the provisions of this Section 2.06(a) and Section 2.06(a), to the extent that the sale, transfer, assignment, conveyance and delivery, or attempted sale, transfer, assignment, conveyance and delivery, to Buyer of any Assigned Contract or other Acquired Asset would result in a violation of Law, or would require the consent, authorization, approval or waiver of any Person (other than the Parties), including any Governmental Authority, and such consent, authorization, approval or waiver shall not have been obtained before the Closing, this Agreement shall not constitute a sale, transfer, assignment, conveyance and delivery, or an attempted sale, transfer, assignment, conveyance and delivery, thereof (any such Acquired Asset, a "Nonassignable Asset"). Following the Closing, Seller and Buyer shall use its commercially reasonable efforts (at the cost and expense of the Party that is responsible for compliance with such Law or obtaining such consent, authorization, approval or waiver), and shall cooperate with each other, to obtain any such required consent, authorization, approval or waiver, or any release, substitution, novation or amendment required to sell, transfer, assign, convey and deliver any such Nonassignable Asset to Buyer and in no event will Buyer be required to pay any additional consideration therefor. Once such consent, authorization, approval, waiver, release, substitution or amendment is obtained, Seller shall sell, transfer, assign, convey and deliver to Buyer the relevant Acquired Asset to which such consent, authorization, approval, waiver, release, substitution or amendment relates for no additional consideration. Any applicable sales, transfer and other similar Taxes in connection with such sale, transfer, assignment, conveyance and delivery shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties

the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer or Seller identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Fifty Four Million Nine Hundred Thirty Thousand Dollars ($54,930,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and any amounts required to be deposited into the escrow fund pursuant to Section 6.05(e), to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is

entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

(c) In addition to the Purchase Price, Buyer shall pay Seller up to Seventy Thousand Dollars ($70,000) as reimbursement for engineering and legal fees incurred related to this transaction to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date. Seller shall provide Buyer with invoices evidencing the amount of transaction-related fees incurred at least five (5) Business Days before the Closing Date.

Section 3.02. Fair Consideration.

The consideration specified in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Transfer Taxes.

Any and all deed stamps or transfer Taxes which may be due the Commonwealth of Pennsylvania or any political subdivision in connection with the sale, transfer, assignment, conveyance and delivery hereunder of the Acquired Assets to Buyer (collectively, "Transfer Taxes"), shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

ARTICLE IV.

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller makes only the representations and warranties which are set forth in this Article IV.

As a material inducement to Buyer to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Seller represents and warrants, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply to or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 4.01. Organization.

Seller is a body corporate and politic, organized and existing under the Second Class Township Code of the Commonwealth of Pennsylvania.

Section 4.02. Power and Authority.

Seller has (i) duly adopted an authorizing ordinance or resolution authorizing the transactions contemplated herein, which remains in full force and effect, (ii) duly authorized and approved the execution and delivery of this Agreement and (iii) duly authorized and approved the performance by Seller of its obligations contained in this Agreement. Seller has all requisite power

and authority to own, lease and operate the Acquired Assets and the System and has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms of this Agreement.

Section 4.03. Enforceability.

This Agreement has been duly authorized, executed and delivered by Seller and is a valid and legally binding obligation of Seller, enforceable against Seller in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 4.04. No Conflict or Violation.

The execution and delivery of this Agreement by Seller, the consummation of the transactions contemplated by this Agreement and the performance by Seller of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Seller under (i) any Law or (ii) any agreement, instrument or document to which Seller is a party or by which it is bound.

Section 4.05. Consents and Approvals.

Schedule 4.05 sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Seller or the performance by Seller of its obligations hereunder.

Section 4.06. Undisclosed Liabilities

Except as set forth in Schedule 4.06, there are no liabilities or obligations of Seller, either accrued, absolute, contingent or otherwise, relating to the Acquired Assets, other than liabilities incurred in the ordinary course that could not reasonably be expected to have a Material Adverse Effect on Buyer.

Section 4.07. Absence of Certain Changes or Events.

Except as set forth on Schedule 4.07, since December 31, 2016, there has not been any transaction or occurrence that has resulted or is reasonably likely to result in a Material Adverse Effect and Seller has operated and maintained the System since that date in the ordinary course.

Section 4.08. Tax Matters.

Except as set forth in Schedule 4.08 or as would not have a Material Adverse Effect, (i) Seller has timely paid all Taxes that may have been or may be due and payable by Seller on or before the Closing Date, arising from the ownership or operation of the Acquired Assets or the System on or before the Closing Date (ii) no taxing authority has asserted any claim against the Seller for the assessment of any additional tax liability or initiated any action or proceeding which

could result in such an assertion; and (iii) the Seller has made all withholding of Taxes required to be made under all Laws and regulations, including without limitation, withholding with respect to compensation paid to employees, and the amounts withheld have been properly paid over to the appropriate taxing authorities.

Section 4.09. Real Property and Easements.

Schedule 4.09 sets forth all Real Property of Seller and separately identifies all Easements. Seller does not lease (as lessee) any real property that is used in the operation of the System. There are no pending condemnation proceedings relating to any of the Real Property or Easements nor has Seller actually received any written threats of any condemnation proceedings and, to the Knowledge of Seller, no such proceedings are threatened. Seller has not received any written notices of any violations of any Law from any Governmental Authority with respect to the Real Property or the Easements which has not been cured in all material respects and, to Seller's Knowledge, no such violations of Law exist. With respect to the Real Property, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Real Property held by third parties, (ii) Seller is in sole possession of the Real Property, and (iii) to Seller's Knowledge there are no encroachments either way across the boundary of the Real Property, nor any dispute with adjacent real property owners over the location of boundaries or potential claims adverse to title. With respect to each Easement, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Easement held by third parties, and (ii) to Seller's Knowledge there are no disputes with adjacent real property owners of the owners of the real property encumbered by the Easement over the location of boundaries or potential claims adverse to title.

Section 4.10. Equipment and Machinery.

All Equipment and Machinery included in the Acquired Assets is set forth on Schedule 4.10. Except as set forth in Schedule 4.10, Seller has good title, free and clear of all Liens (other than the Permitted Liens and Liens that will be released on or before Closing) to the Equipment and Machinery owned by Seller. Except as set forth on Schedule 4.10, all the Equipment and Machinery is owned by Seller, and none is leased or used under any conditional sales, title-retention, lease, license or similar arrangement.

Section 4.11. Environmental Compliance.

Except as set forth on Schedule 4.11, or that otherwise could not be expected to have a Material Adverse Effect:

(a) The System as currently operated by Seller and all operations and activities conducted by Seller with respect to the System are in compliance in all material respects with all applicable Environmental Requirements.

(b) Seller has generated, used, handled, treated, stored and disposed of all Hazardous Materials in (i) compliance in all material respects with all applicable Environmental Requirements and (ii) a manner that has not given, and could not reasonably be anticipated to give, rise to Environmental Liabilities.

(c) Seller has not received notice of any Environmental Claims related to the System that have not been fully and finally resolved, and to the Knowledge of Seller no claims of Environmental Liabilities have been threatened allegedly arising from or relating to the System that have not been fully and finally resolved.

(d) Hazardous Materials are not present at or on the System or Acquired Assets, there has been no Release of Hazardous Materials at, on or from any part of the System or the Acquired Assets, in each case in a manner that violates any Environmental Requirements or has resulted in, or could reasonably be anticipated to give rise to, Environmental Liabilities.

(e) No Lien or activity use limitation or institutional control has been recorded affecting any Acquired Assets by any Governmental Authority due to either the presence of any Hazardous Material on or off the Acquired Assets or a violation of any Environmental Requirement.

(f) There are no underground storage tanks on or at any of the Acquired Assets. Any underground storage tanks previously located at the Acquired Assets have been removed or otherwise closed, plugged and abandoned in compliance with applicable Environmental Requirements in effect at the time of such closure.

(g) No PCB Equipment is on or at any of the Acquired Assets. Any PCB Equipment that previously existed at the Acquired Assets has been flushed of polychlorinated byphenyls or has been removed and properly disposed of, in compliance with applicable Environmental Requirements, and any remaining PCB Equipment is labeled to the extent required under applicable Environmental Requirements and being managed in compliance with applicable Environmental Requirements.

(h) No Regulated Asbestos Containing Material exists in or on the Acquired Assets in an aggregate amount that would reasonably be expected to result in an Environmental Liability; and any Regulated Asbestos Containing Material is being managed in compliance with all applicable Environmental Requirements.

(i) Seller has delivered to Buyer (1) all material environmental site assessments or reasonable and accurate summaries thereof pertaining to the System, (2) all material compliance audits or compliance assurance reviews prepared within the previous five (5) years or reasonable and accurate summaries thereof relating to compliance with Environmental Requirements by the System, and (3) reasonable and accurate summaries of, or all material documents pertaining to, any known and unresolved Environmental Liabilities incurred in relation to the System, to the extent possessed by or under the reasonable control of Seller.

Section 4.12. Authorizations and Permits.

Schedule 4.12 sets forth the Authorizations and Permits of Seller that are currently in full force and effect; (ii) Seller has made true and complete copies of all Authorizations and Permits available to Buyer; and (iii) except as set forth on Schedule 4.12, Seller is in compliance with all terms, conditions and requirements of all Authorizations and Permits, except in each case where such violation or failure, individually or in the aggregate, would not have a Material Adverse

Effect, and no proceeding is pending or, to the Knowledge of Seller threatened relating to the revocation or limitation of any of the Authorizations or Permits, other than those revocations or limitations which do not individually or in the aggregate have a Material Adverse Effect.

Section 4.13. System Contracts.

(a) Schedule 4.13 sets forth a complete and accurate list of all the Assigned Contracts.

(b) Seller has made available to Buyer true and complete copies of all of the Assigned Contracts.

(c) All of the Assigned Contracts set forth on Schedule 4.13 are in full force and effect. Seller has not, nor to the Knowledge of Seller has any other party thereto, breached any material provision of or defaulted under the material terms of, nor does any condition exist which, with notice or lapse of time, or both, would cause Seller, or to the Knowledge of Seller, any other party, to be in default under any Assigned Contract.

Section 4.14. Compliance with Law; Litigation.

(a) Seller has operated and is operating the System in compliance, in all material respects, with all Laws, Authorizations and Permits and is not in breach of any Law, Authorization or Permit that would have a Material Adverse Effect on the operations of the System or on Buyer. There are no Authorizations or Permits from any Governmental Authority necessary for the operation of the System as currently being operated except for those Authorizations and Permits set forth on Schedule 4.12.

(b) Except at set forth on Schedule 4.14, there are no facts, circumstances, conditions or occurrences regarding the System that could reasonably be expected to give rise to any environmental claims or governmental enforcement actions that could reasonably be expected to have a Material Adverse Effect, and there are no past, pending or threatened environmental claims or governmental enforcement actions against Seller that individually or in the aggregate could reasonably be expected to have a Material Adverse Effect.

(c) Except at set forth on Schedule 4.14, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller before or at the time of Closing that could reasonably be expected to have a Material Adverse Effect on the operations of the System. As of the Effective Date, no action, suit or proceeding, at Law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller which could materially affect the validity or enforceability of this Agreement.

Section 4.15. Broker's and Finder's Fees.

No broker, finder, or Person is entitled to any commission or finder's fee by reason of any agreement or action of Seller in connection with this Agreement or the transactions contemplated by this Agreement. Seller shall pay when due the fees and expenses of their financial and technical advisors. Seller has employed Public Financial Management, Inc., as municipal advisor to provide transaction structuring advice and to provide Seller with municipal advice relating to the sale of

the System. Seller shall pay all fees owed to Public Financial Management, Inc. in connection with the transactions contemplated by this Agreement.

Section 4.16. Title to the Acquired Assets; Sufficiency.

(a) Except as set forth on Schedule 4.16(a), Seller has good and marketable title to, all Real Property, and valid leasehold interest in or valid licenses or Easements to use and access, all of the Acquired Assets, free and clear of all Liens, other than Permitted Liens and Liens which will be fully and unconditionally released at or before Closing. The use of the Acquired Assets is not subject to any Liens, other than Permitted Liens, and such use does not encroach on the property or the rights of any Person.

(b) Except as set forth on Schedule 4.16(b), the Acquired Assets are sufficient for, and constitute all the assets, properties, business, goodwill and rights of every kind and description, and services required for, the continued conduct and operation of the System by Buyer in substantially the same manner as currently conducted and operated by Seller. Except for the Excluded Assets and except as set forth on Schedule 4.16(b), (i) the Acquired Assets, taken as a whole, comprise all the assets, properties, business, goodwill and rights of every kind and description used or held for use in, or useful or necessary to the operation of the System as currently operated by Seller, and (ii) there are no assets, properties, business, goodwill, rights or services used in the conduct or operation of the System that are owned by any Person other than Seller that will not be licensed or leased to Buyer under valid, current license arrangements or leases. None of the Excluded Assets are material to the System.

Section 4.17. Pending Development Plans.

Schedule 4.17 sets forth a full and complete list of all Pending Development Plans as of the Effective Date. Each Pending Development Plan, if consummated could result in the expansion of the Service Area. Seller provides no assurances whatsoever that any development or expansion of the Service Area associated with any Pending Development Plan will actually be undertaken or completed. The Parties expect that Schedule 4.17 will change from time to time between the Effective Date and Closing, and the Seller shall provide updates to Schedule 4.17 pursuant to Section 9.03.

Section 4.18. Land Development Agreements/Financial Security Agreements

Schedule 4.18 sets forth a list of all Land Development / Financial Security Agreements existing as of the Effective Date between Seller and any third party.

ARTICLE V. REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer makes only the representations and warranties which are set forth in this Article V.

As a material inducement to Seller to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Buyer represents and warrants to Seller, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 5.01. Organization.

Buyer is duly organized, validly existing and in good standing under the laws of the state of its organization.

Section 5.02. Authorization and Validity of Agreement.

Buyer has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms of this Agreement. This Agreement has been duly authorized, executed and delivered by Buyer and is a valid and legally binding obligation of Buyer, enforceable against it in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 5.03. No Conflict or Violation.

The execution and delivery of this Agreement by Buyer, the consummation of the transactions contemplated hereby and the performance by Buyer of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a material breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Buyer under (i) any Law, (ii) any material agreement, instrument or document to which Buyer is a party or by which it is bound or (iii) the articles, bylaws or governing documents of Buyer.

Section 5.04. Consents and Approvals.

Schedule 5.04 sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Buyer or the performance by Buyer of its obligations hereunder.

Section 5.05. Broker's and Finder's Fees.

No broker, finder or third party is entitled to any commission or finder's fee in connection with this Agreement or the transactions contemplated by this Agreement.

Section 5.06. Financial Wherewithal.

Upon Closing, and after giving effect to the consummation of the transactions contemplated hereby and the incurrence of any indebtedness in connection therewith, Buyer shall have the financial ability and will have sufficient working capital for its needs and anticipated needs to operate the System as a certificated public utility system regulated by the PaPUC, authorized, among things, to provide wastewater utility services to retail residential, commercial and industrial customers in the System.

Section 5.07. Sufficient Funds.

Buyer shall have sufficient funds available at Closing to consummate the transactions contemplated by this Agreement, to pay the Purchase Price in accordance with Article III and expenses related to the transactions contemplated by this Agreement, and on and after Closing, to generally provide ownership, operation and capital for the operations and capital needs of the System following the Closing, and assuring that the customers of the System will receive safe, adequate and reliable wastewater service equal to or better than such customers would have received without the transactions contemplated by this Agreement and at all times consistent with the provisions of the Pennsylvania Public Utility Code, 66 Pa. C. S. § 101 *et seq*, and Law.

Section 5.08. Independent Decision.

Except as expressly set forth in this Agreement, or any of the related agreements, Buyer acknowledges that (a) neither Seller nor any other Person has made any representation or warranty, express or implied, as to the accuracy or completeness of the System or information provided to Buyer, and (b) neither Seller nor any other Person shall have or be subject to any liability to Buyer or any other Person resulting from the distribution to Buyer, or Buyer use of, any information regarding the System or Acquired Assets that has been furnished or made available to Buyer and its Representatives.

Section 5.09. Scheduled Matters.

Buyer acknowledges that: (a) the inclusion of any matter on any Schedule shall not be deemed an admission by Seller that such listed matter is material or that such listed matter has or could have a material adverse effect or constitutes a material liability with respect to the Acquired Assets; (b) matters reflected in the Schedules are not necessarily limited to matters required by this Agreement to be reflected in such Schedules; and (c) such additional matters are set forth for informational purposes only and do not necessarily include other matters of a similar nature.

Section 5.10. Independent Investigation.

Buyer acknowledges that it has conducted an independent investigation of the financial condition, assets, liabilities, properties and projected capital needs and operations of the System in making its determination as to the propriety of the transaction contemplated by this Agreement and, in entering into this Agreement and related agreements, has relied solely on the results of its investigation and on the representations and warranties of Seller expressly contained in Article IV of this Agreement.

Section 5.11. Litigation.

Buyer is not in breach of any Law that could have a material adverse effect on the operations of the System or Buyer. Neither Buyer nor any Affiliate of Buyer is listed on any of the following lists maintained by the Office of Foreign Assets Control of the United States Department of the Treasury, the Bureau of Industry and Security of the United States Department of Commerce or their successors, or on any other list of Persons with which Seller may not do business under Law: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the

Entity List and the Debarred List. Except as set forth on Schedule 5.11, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Buyer, threatened against Buyer before or at the time of Closing, which will have a material adverse effect on (i) the transactions contemplated by this Agreement or (ii) the validity or enforceability of this Agreement.

ARTICLE VI.

TITLE TO REAL PROPERTY; EASEMENTS

Section 6.01. Evidence of Title.

Subject to Section 6.06, with respect to all Real Property, Buyer shall obtain at its sole cost and expense a commitment for a Title Policy (the "Title Commitment"), issued by a title insurance company selected by Buyer and licensed to insure title to real property by the Commonwealth of Pennsylvania (the "Title Company"). Promptly following the Effective Date, Buyer shall order the Title Commitment from the Title Company and shall provide Seller evidence of the order. Notwithstanding anything to the contrary in Section 6.02(a), a purported Objection Notice is void with respect to any parcel of Real Property if, within thirty (30) Business Days after the Effective Date, Buyer has not ordered the Title Commitment from the Title Company for such parcel of Real Property and provided Seller with evidence of the order.

Section 6.02. Objections to Title.

(a) Notice of Objections. Within thirty (30) Business Days of Buyer's receipt of the Title Commitment for any of the parcels of Real Property, Buyer shall deliver to Seller a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of all exception documents listed in the Title Commitment, along with Buyer's notice to Seller of any exceptions to title set forth on Schedule B of the Title Commitment to which Buyer objects (the "Objection Notice"). The exceptions listed in the Title Objection Notice are referred to as the "Title Objection Items." None of the following are Title Objection Items: (a) Permitted Liens, (b) items that pertain to Buyer or any requirements, conditions or obligations of Buyer, (c) matters of record that are set forth in the Title Commitment and adversely restrict or prevent the use of the Real Property in the operation of the System and (d) standard Title Company exceptions (such as the "survey" exception). Any Objection Notice which does not include a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of any and all exception documents listed in the Title Commitment is void. If Buyer provides Seller with an Objection Notice, Seller shall use its commercially reasonable efforts to have all of the Title Objection Items cured, satisfied or released of record, or bond over, by the Title Company ("Cure" or "Cured") before or as of the Closing. At or before the Closing, Seller shall deliver written evidence to Buyer, in form and substance reasonably satisfactory to Buyer and at Seller's cost and expense, evidencing that Seller has Cured all Title Objection Items.

(b) Liens. Without limiting Seller's obligations pursuant to Section 6.02(a), before or as of the Closing, Seller shall, at its sole cost and expense, Cure any Lien encumbering the Real Property which can be Cured by the payment of money (other than Permitted Liens).

(c) Title Endorsements/Survey. Buyer shall pay for any endorsements required by Buyer or any mortgagee of Buyer to the Title Policy. If any survey is required by Buyer or its mortgagee, either as a condition to any endorsement or otherwise, Buyer shall pay to obtain the survey and all related costs and expenses. If Buyer obtains a survey of any Real Property and wants the deed to contain the legal description based on a survey, if the same is not identical to the legal description contained in Seller's deed of record, Seller is not obligated to include the same in the deed to Buyer unless the survey is certified to Seller and such description is included in the deed on a "quitclaim" basis only and without warranty of title.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Real Property in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Real Property as provided for in this Agreement. For the avoidance of doubt, Seller shall provide such title as soon as reasonably practicable in accordance with Section 6.01.

(e) Insurable Claims. To the extent any Claim for Losses under Article VIII is an Insurable Claim, Buyer shall assert and pursue with reasonable diligence the Insurable Claim against the Title Company (which includes commencing litigation and diligently prosecuting the Insurable Claim to judgment) before pursuing a Claim for Losses under Article VIII. Following a non-favorable judgment that substantially denies the relief sought by Buyer from the Title Company in connection with the Insurable Claim (each a "Non-Favorable Judgment"), Buyer may, following such Non-Favorable Judgment, pursue Seller with a Claim for Losses under Article VIII (any Claim against Seller following an attempted Insurable Claim against the Title Company is a "Residual Title Claim"). Notwithstanding anything to the contrary in Article VIII, Buyer must assert a Claim for Losses based upon a Residual Title Claim within sixty (60) day of the Non-Favorable Judgment. For purposes of this Section 6.02(d), an "Insurable Claim" means a Claim that: (i) arises out of Buyer's discovery of a title defect or encumbrance with respect to any of the Real Property following the Closing Date that materially restricts or prevents the use of such Real Property in the operation of the System; and (ii) is a claim against the Title Company under the Title Policy. Buyer acknowledges that any Claims that it could otherwise bring as a breach of a covenant of title under the special warranty deed to the Real Property is included within the Claim for Losses under Article VIII and is subject to the terms of this Section 6.02(d) of first pursuing the same as an Insurable Claim.

Section 6.03. Title Expenses.

Irrespective of whether Closing occurs, Buyer shall pay all costs and expenses for obtaining the Title Commitment, Title Policy and any survey. Seller shall pay for all expenses to release, satisfy or bond over any Liens, and to effect the Cure of any Title Objection Items that Seller undertakes to Cure, including the cost of any title endorsement to insure Buyer against any adverse effect of such Title Objection Items.

Section 6.04. UCC Search; Releases.

Not later than sixty (60) Business Days after the Effective Date, Buyer shall obtain at its sole cost and expense a Uniform Commercial Code search against Seller covering any of the personal property or fixtures included among the Acquired Assets from the Office of the Secretary

of the Commonwealth of Pennsylvania and the Recorder of Chester County, Pennsylvania (the "UCC Search"). On or before the Closing, Seller shall obtain at its sole cost and expense releases of any and all security interests in any of the Acquired Assets which are not Permitted Liens. Seller shall provide the form of the releases of any security interests to Buyer on or before the Closing Date.

Section 6.05. Easements.

(a) Promptly after the Effective Date and before the Closing, Seller shall, at its sole cost and expense, cause an abstractor selected by Seller and reasonably acceptable to Buyer and the Title Company (the "Abstractor") to perform a search of the public land records of Chester County, based on Seller's records and plans of the System (and such other sources of information as are reasonably related thereto), by means of searching the grantee index in the names of Seller and such other searches as the Abstractor may reasonably make, to (i) identify and provide Buyer with title information on all recorded Easements, and (ii) together with Seller, identify all Missing Easements. During this process, as the Abstractor provides written search results to Seller (including updated versions of the Abstractor search result chart), Seller will promptly provide the same to Buyer for its review, and Seller shall, or shall cause the Abstractor to, provide Buyer with periodic updates (which shall occur no less frequently than bi-weekly) on the status of the activities set forth in the previous sentence. Promptly after the Effective Date, Seller shall engage an engineer to develop a map of all collection pipes, services, pump stations, manholes of the System and identify each parcel within the Service Area that Seller's sanitary wastewater conveyance facilities encroaches upon private property for use in connection with the Abstractor's report to identify the Missing Easements.

(b) Notice of Objections. Within forty five (45) days of Buyer's receipt from the Seller (or the Abstractor or an engineer) of the information described in subsection 6.05(a), Buyer shall deliver to Seller written notice identifying the encumbrances on the Easements that, in Buyer's reasonable opinion, could materially and adversely restrict or prevent the use of the Easements in the operation of the System, (an "Easement Objection Notice"). Buyer shall not be permitted to include in its Easement Objection Notice any encumbrances that: (a) are Permitted Liens, (b) pertain to the Buyer or any requirements, conditions or obligations of the Buyer, or (c) are matters of record and set forth in the Abstractor's search results that do not, in Buyer's reasonable opinion, materially and adversely restrict or prevent the use of the Easements in the operation of the System (specifically including mortgages or other instruments securing indebtedness incurred by the owner of the land burdened by the Easement) (such exceptions objected to in the Objection Notice, the "Easement Objection Items." If Buyer provides the Seller with an Easement Objection Notice, the Seller shall use commercially reasonable efforts to have the Easement Objection Items Cured, prior to or as of the Closing. If Seller is unable to Cure any Easement Objection Item, Seller shall grant Buyer a license pursuant to Section 6.05(d) in all of Seller's rights necessary to access Easements and operate and maintain the System until such time as Buyer is provided title to such Easement as provided for in this Agreement.

(c) If during the process of Abstractor's review and investigation of the Chester County land records, Seller determines that there is a Missing Easement, Seller shall take any and all actions (including the use of its power of condemnation) to obtain any Missing Easements so that the same may be sold, assigned, transferred and conveyed to Buyer at the Closing pursuant to the terms and

conditions of this Agreement. All costs and expenses incurred in connection with obtaining each Missing Easement (including any payment to a landowner in connection with condemnation, in lieu of condemnation or otherwise) shall be paid by Seller and no additional consideration shall be payable by Buyer for any Missing Easement. If Seller has not obtained all Missing Easements by the date that is sixty (60) Business Days after the date that Abstractor has completed its review of the County land records and delivered the last results to Seller (the "Abstract Completion Date"), then, no later than thirty (30) Business Days after the Abstract Completion Date (but in any event no later than thirty (30) days before the Closing), Seller shall commence and file in the Court of Common Pleas, Chester County, a condemnation or eminent domain proceeding to obtain any and all such Missing Easements. For the purposes of clarity, upon obtaining each Missing Easement (including upon the final resolution of a condemnation proceeding), each Missing Easement that has been acquired or obtained by Seller will be considered an Easement.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Easement in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Easement as provided for in this Agreement.

(e) Escrow at Closing for Missing Easements. For all of the Missing Easements listed on attached Schedule 6.05(e) as of the Closing Date, Seller will have additional time following the Closing Date to secure and assign and transfer the Missing Easements to Buyer. Seller shall diligently pursue and deliver the Missing Easements on or before the third (3rd) anniversary of the Closing Date, subject to any extension as permitted by Escrow Agreement, in the form attached as Exhibit C, that will require, among other things, the funding of an escrow account in the amount of Two Thousand Dollars ($2,000) per Missing Easements listed on attached Schedule 6.05(e) as of the Closing Date to secure the Seller's obligations under this Agreement and the Escrow Agreement.

Section 6.06. Unscheduled Property.

The Parties acknowledge that Seller may own interests in or have the legal right to use or occupy the Real Property and Easements that is necessary or essential to the operation of the System and that is not set forth on Schedule 4.09 (the "Unscheduled Real Property"). If the Parties discover before or after the Closing Date, one or more parcels of Unscheduled Real Property, the discovering Party shall notify the non-discovering Party of the discovery. In addition to its obligations in Section 2.03, Seller shall convey, assign or otherwise transfer any rights to each parcel of Unscheduled Real Property, without additional consideration payable by Buyer, in such a manner as to provide Buyer with reasonable assurances that Buyer may use or occupy the Unscheduled Real Property as it was used by Seller as of the Effective Date.

ARTICLE VII.

OTHER AGREEMENTS

Section 7.01. Taxes.

Seller shall pay any and all Taxes, if any, arising out of the ownership of the Acquired Assets and out of the operation of the System before the Closing.

Section 7.02. Cooperation on Tax Matters.

Seller shall furnish or cause to be furnished to Buyer, as promptly as practicable, whether before or after the Closing Date, such information and assistance relating to the System as is reasonably necessary for the preparation and filing by Buyer of any filings relating to any Tax matters.

Section 7.03. Rates.

(a) Rates. Buyer shall implement the Seller's sanitary wastewater base rates then in effect at Closing, as set forth on Schedule 7.03(a) (the "Base Rate") as Buyer's effective sanitary wastewater base rates, provided that the rates set forth on Schedule 7.03(a) (at Closing) shall not be lower than those in effect on the date the Effective Date. Buyer shall not propose to increase Base Rates until after the third anniversary of the Closing Date. Buyer intends to bill customers on a monthly basis instead of annual billing, which Buyer will prorate accordingly. At and after the Closing, Buyer shall charge and collect its then-existing miscellaneous fees and charges and apply its then-existing rules and regulations for wastewater service in the Buyer's tariff (or rules and regulations), as amended from time to time, within the Service Area.

(c) PaPUC Approval. The Buyer shall include the rate provisions of Sections 7.03(a) in its requested PaPUC Governmental Approval.

Section 7.04. Buyer Taxpayer.

From and after the Closing Date, Buyer acknowledges that, upon conveyance of the Acquired Assets to Buyer, Buyer will be subject to, among other Taxes, real estate Taxes, which Buyer shall pay when due.

Section 7.05. PaPUC Approval.

(a) Promptly after the Effective Date, Buyer shall timely initiate and faithfully prosecute the necessary proceedings to obtain from the PaPUC (i) the issuance of certificates of public convenience to Buyer to provide wastewater services in the Service Area and (ii) the approval of the acquisition of the System by Buyer under terms and conditions that are reasonably acceptable to Seller and Buyer. Seller shall cooperate with and assist Buyer in proceedings before the PaPUC.

(b) Buyer and Seller hereby agree that the procedures for determining fair market value of the System and Acquired Assets outlined in subsection (a) of Section 1329 of Title 66 of the

Pennsylvania Consolidated Statutes ("Section 1329") shall be utilized and filed with the PaPUC as contemplated by Section 1329.

(c) The fees and expenses related to engaging the licensed engineer for such Section 1329 determination shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

(d) Buyer, in Buyer's first base rate proceeding with respect to the System following the Closing, shall propose the use of statutory and regulatory mechanisms available to benefit the Buyer's acquired customers for ratemaking purposes.

Section 7.06. Remedies for Breach of Article VII Agreements.

If Buyer breaches any of the covenants and agreements set forth in this Article VII following Closing, in addition to all other rights and remedies available at law or in equity, including specific performance and/or injunctive relief, Seller may commence proceedings before the PaPUC seeking enforcement of such covenants and agreements.

Section 7.07. Operation and Maintenance of the MS4 System.

Subject to Law, Seller, shall at all times maintain ownership of its MS4 System and Stormwater System Assets. Seller will maintain any NPDES permits related to the Stormwater System Assets.

Section 7.08. Utility Valuation Experts.

Buyer and Seller shall each be responsible for the costs associated with their respective Utility Valuation Expert for the preparation and completion of their respective Utility Valuation Expert's appraisal report and any additional work by their respective Utility Valuation Expert necessary to assist in the processing and prosecution of the application to the PaPUC in regard to this transaction under Section 1329.

Section 7.09. EDU Allocations.

In connection with EDU allocations, Buyer shall at all times act in compliance with Seller's ordinances, including those with respect to zoning and land use, the Seller's Act 537 plan and the Seller's comprehensive plans.

Section 7.10 Act 537 Plan.

(a) Buyer acknowledges that Seller previously drafted and committed to an Act 537 Plan under the Pennsylvania Sewage Facilities Act (the original plan established in 1995, together with all subsequent amendments, the "Plan"), which has been made available to Buyer and which may be amended pursuant to Section 12.08 hereunder. Buyer understands that the Plan contains obligations and commitments, as more fully set forth in the Plan to complete certain improvements and upgrades to the System (the "System Improvements"). Buyer shall accept and complete all of the System Improvements as Seller agreed to complete under the Plan.

(b) Buyer acknowledges the Seller has jurisdiction over sewage facilities planning and sewer service through the Plan and its Act 537 planning program, zoning, subdivision and land development ordinances and comprehensive land use planning policies. Buyer and Seller shall cooperate with respect to current and future sewage facilities planning and sewer service consistent with the provisions of this Section 7.10.

(c) Subject to PaPUC approval of the Service Area as specified in Section 7.10, Buyer shall extend sewer lines and provide sewage collection and treatment services to properties within the Service Area in a manner consistent with the Plan and the Buyer's Tariff. Pursuant to Section 12.08, Seller will confer with Buyer concerning any amendment to the Plan that would affect the provision of sewage collection and treatment services within the Service Area. Seller will not propose or adopt any amendment to the Plan that would reduce the Service Area or divert wastewater flows generated from properties located within the Service Area from being served by the System without the approval of Buyer.

(d) Buyer will not request, pursue, or implement expansions of the System within the Seller's border beyond the current Service Area (that would trigger a Plan amendment) without the prior written approval of Seller and the PaDEP. Seller shall promptly notify and confer with Buyer, and consider Buyer's comments, concerning any proposed Plan amendment (including any sewage facilities planning module) that would involve the provision of sewage collection and treatment services by the System to area or properties outside of the Service Area. With respect to any such potential Plan amendment, Seller and Buyer shall cooperate in evaluating alternatives for provision of sewage services to such areas consistent with the requirements of 25 Pa Code Ch. 71, including consideration of the technical feasibility, economic feasibility and cost effectiveness, consistency with the objectives and policies of plans and requirements of 25 Pa. Code Ch. 71.21(a)(5), consistency with municipal land use plans and ordinances, subdivision ordinances and other ordinances and plans for controlling land use and development, technically and administratively able to be implemented, and other factors required under Act 537 or under Buyer's Tariff.

(e) If Seller and Buyer each determine that the provision of sewage collection and treatment services by the System to certain areas or properties outside of the Service Area is technically feasible, economically feasible and cost effective, and meets all of the requirements set forth in Act 537 and 25 Pa. Code Ch. 71, the Seller shall amend the Plan to include such identified areas and properties in the Service Area. If Seller amends the Plan pursuant to this subsection and such amendment is approved by PaDEP, (i) Buyer shall request that the modified Service Area be approved by PaPUC; and (ii) subject to PaPUC approval of the inclusion of such modified Service Area, Buyer shall extend sewer lines and provide sewage collection services to properties within such Service Area in a manner consistent with the Plan and Buyer's Tariff.

Section 7.11 Compliance and Operational Reports.

After the Effective Date and through the Closing Date, Seller shall provide Buyer with a periodic report to the person designated by Buyer, disclosing any and all material compliance or operational deficiencies that occurred during the previous month.

Section 7.12 Required Sewer Projects / Malvern Hunt System.

(a) Subject to extensions set forth in subsection (b) below, on or prior to the later to occur of: (i) the first anniversary of the Closing Date; or (ii) first anniversary following the date on which Seller secures and assigns to Buyer: all permits required from any Governmental Authority having jurisdiction over the Required Sewer Projects or the completion thereof; and all easements or other property rights required to complete the Required Sewer Projects, Buyer shall complete the sewer projects set forth on Schedule 7.12 (the "Required Sewer Projects") and a map of the expanded Service Area anticipated to result from the Required Sewer Projects as set forth on Schedule 7.12. Each Required Sewer project is deemed complete only upon notice of Seller's reasonable satisfaction of completion. After the Closing Date and through the completion date of each Required Sewer Project, Buyer shall provide Seller with a periodic report to the person designated by Seller, with an update and status report regarding each Required Sewer Project.

(b) The one (1) year deadline set forth in subsection (a) above shall be extended for any delays resulting from the discovery of concealed subsurface conditions, including but not limited to, the presence of rock or infrastructure of other utilities requiring relocation.

(c) Seller shall be responsible for all work to decommission the Excluded Assets specified on Schedule 2.02(h) (the "Malvern Hunt System") and for constructing all gravity and / or force main piping systems required to divert sewage flow into the existing collection system included with the Acquired Assets, all in compliance with applicable Laws. The decommissioning work conducted by Seller shall include upgrade of existing pumping systems if needed. Seller shall be responsible for post-decommissioning water quality sampling of existing groundwater monitoring wells as well as preparation of a final closure report to PA DEP if required by DEP.

Section 7.13 Governance Matters.

Effective on the Closing Date, Seller shall:

(i) provide Buyer with all financial information and other reports or communications received by Seller from the Valley Forge Sewer Authority within two (2) Business Days of receipt of such information by Seller from the Valley Forge Sewer Authority; and

(ii) appoint, as Seller representative, the person identified by Buyer to the joint board pursuant to the Valley Forge Sewage Treatment Plant Agreement and any successor to any subsequent term.

ARTICLE VIII.

INDEMNIFICATION

Section 8.01. Survival.

All representations and warranties contained in this Agreement shall survive until twelve (12) months following the Closing Date, except that (a) the representations and warranties of Seller set forth in Section 4.01 (Organization), Section 4.02 (Power and Authority), Section 4.03 (Enforceability) and Section 4.15 (Brokers' and Finders' Fees) (collectively, the "Seller

Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law, and (b) the representations and warranties of Buyer set forth in Section 5.01 (Organization), Section 5.02 (Authorization and Validity of Agreement), and Section 5.05 (Brokers' and Finders' Fees) (collectively, the "Buyer Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law. The covenants and agreements of the Parties contained in this Agreement survive the Closing indefinitely or for the shorter period explicitly specified therein, except that for those covenants and agreements that survive for a shorter period, breaches thereof survive indefinitely or until the latest date permitted by Law. Notwithstanding the preceding sentences, (x) any breach of representation, warranty, covenant or agreement in respect of which indemnity may be sought under this Agreement shall survive the time at which it would otherwise terminate pursuant to the preceding sentences, if notice of the inaccuracy or breach thereof giving rise to such right of indemnity shall have been given to the Party against whom such indemnity may be sought before such time, and (y) nothing contained in this Section 8.01 shall limit in any way any rights a Party may have to bring claims grounded in fraud, intentional misrepresentation or willful misconduct, which rights shall survive the Closing indefinitely.

Section 8.02. Indemnification by Seller.

To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Seller shall indemnify, defend and hold harmless, Buyer and its successors and Affiliates and their respective employees, officers, directors, trustees and agents (the "Buyer Indemnified Persons"), from and against any and all claims for Losses arising from or relating to: (a) any misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement (without regard to any materiality, Material Adverse Effect or related qualifications in the relevant representation or warranty (except where such provision requires disclosure of lists of items of a material nature or above a specified threshold)); (b) any breach or nonfulfillment of any of the covenants or agreements of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement; or (c) any Excluded Liability or Excluded Asset.

Section 8.03. Indemnification by Buyer.

To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Buyer shall defend, indemnify and hold harmless Seller and its successors and Affiliates and each of their respective employees, officers, directors and agents (the "Seller Indemnified Persons") from and against any and all claims for Losses arising from or relating to: (a) any material misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Buyer contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (b) any material breach of any of the covenants or agreements of Buyer contained in this Agreement or in any exhibit, schedule certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (c) any Assumed Liability as and when payment and performance is due, including without limitation any liability related to any claims by any Governmental Authority; (d) Buyer's actions involving Environmental Laws, Hazardous

Materials or environmental claims from and after the Closing Date; or (e) the ownership, operation or control of the Acquired Assets or the System from and after the Closing Date.

Section 8.04. Indemnification Procedure.

(a) Third Party Claims. If any Indemnified Party receives notice of the assertion or commencement of any action, suit, claim or other legal proceeding made or brought by any Person who is not a Party or an Affiliate of a Party or a Representative of a Party (a "Third Party Claim") against such Indemnified Party with respect to which the Indemnifying Party may be obligated to provide indemnification under this Agreement, the Indemnified Party shall promptly notify the Indemnifying Party thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Third Party Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party. The Indemnifying Party may participate in, or by giving notice to the Indemnified Party (and subject to the other requirements herein) to assume the defense of any Third Party Claim at the Indemnifying Party's expense and by the Indemnifying Party's own counsel (which counsel shall be reasonably acceptable to the Indemnified Party), so long as (i) the Indemnifying Party notifies the Indemnified Party, within ten (10) Business Days after the Indemnified Party has given notice of the Third Party Claim to the Indemnifying Party (or by such earlier date as may be necessary under applicable procedural rules in order to file a timely appearance and response) that the Indemnifying Party is assuming the defense of such Third Party Claim, and if the Indemnifying Party assumes control of such defense it must first agree and acknowledge in such notice that the Indemnifying Party is fully responsible (with no reservation of any rights other than the right to be subrogated to the rights of the Indemnified Party) for all Losses relating to such Third Party Claim, (ii) the Indemnifying Party conducts the defense of the Third Party Claim actively and diligently and at its own cost and expense, and (iii) the Third Party Claim (A) does not involve injunctive relief, specific performance or other similar equitable relief, any claim in respect of Taxes, any Governmental Authority, any criminal allegations, or any potential damage to the goodwill, reputation or overriding commercial interests of Buyer or its Affiliates, (B) is not one in which the Indemnifying Party is also a party and joint representation would be inappropriate or there may be legal defenses available to the Indemnified Party which are different from or additional to those available to the Indemnifying Party, or (C) does not involve a claim which, upon petition by the Indemnified Party, the appropriate court rules that the Indemnifying Party failed or is failing to vigorously prosecute or defend. The Indemnified Party shall reasonably cooperate in good faith in such defense. If the Indemnifying Party assumes the defense of any Third Party Claim, subject to Section 8.04(b), it may take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party may, at its own cost and expense, participate in the defense of any Third Party Claim with counsel selected by it subject to the Indemnifying Party's right to control the defense thereof. If the Indemnifying Party elects not to compromise or defend such Third Party Claim or fails to promptly notify the Indemnified Party in writing of its election to defend as specified in this Agreement, the Indemnified Party may, subject to Section 8.04(b), pay, compromise, and defend such Third Party Claim and seek indemnification for any and all Losses based upon, arising from or relating to such

Third Party Claim. Seller and Buyer shall reasonably and in good faith cooperate with each other in all reasonable respects in connection with the defense of any Third Party Claim, including making available records relating to such Third Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party or management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third Party Claim.

(b) Settlement of Third Party Claims. Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into settlement of any Third Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld or delayed), except as specified in this Section 8.04(b). If a firm offer is made to settle a Third Party Claim without leading to liability or the creation of a financial or other obligation on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all liabilities and obligations in connection with such Third Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall promptly notify the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within fifteen (15) days after its receipt of such notice, the Indemnified Party may continue to contest or defend such Third Party Claim and in such event, the maximum liability of the Indemnifying Party as to such Third Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third Party Claim, the Indemnifying Party may settle the Third Party Claim upon the terms set forth in such firm offer to settle such Third Party Claim. If the Indemnified Party has assumed the defense pursuant to Section 8.04(a), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

(c) Direct Claims. Any claim by an Indemnified Party with respect to any Loss which does not arise or result from a Third Party Claim (a "Direct Claim") shall be asserted by the Indemnified Party giving the Indemnifying Party prompt notice thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Direct Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Losses that have been or may be sustained by the Indemnified Party. The Indemnifying Party shall have thirty (30) days after its receipt of such notice to respond in writing to such Direct Claim. During such thirty (30) day period, the Indemnified Party shall reasonably cooperate and assist the Indemnifying Party in determining the validity and amount of such Direct Claim. If the Indemnifying Party does not so respond within such thirty (30) day period, by delivery of notice disputing the basis or amount of the Direct Claim, the Indemnifying Party shall be deemed to have rejected such claim, in which case the Indemnified Party shall be free to pursue such remedies as may be available to the Indemnified Party on the terms and subject to the provisions of this Agreement. If the Indemnifying Party has timely disputed its indemnity obligation for any Losses with respect to such Direct Claim, the Parties shall proceed in good faith to negotiate a resolution of such dispute and, if not resolved through negotiations, such dispute may be resolved by litigation in an appropriate court of jurisdiction determined pursuant to this Agreement.

Section 8.05. Limitations on Indemnification Obligations.

(a) Subject to the other limitations contained in this Section 8.05, neither Buyer nor Buyer Indemnified Persons shall seek indemnification pursuant to Section 8.02(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement or for breach of Seller's Fundamental Representations) unless the aggregate amount of Losses incurred by Buyer and Buyer Indemnified Persons under this Agreement exceeds one (1) percent of the Purchase Price in the aggregate (the "Threshold Amount"), in which case Seller will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(b) Subject to the other limitations contained in this Section 8.05 neither Seller nor the Seller Indemnified Persons shall seek indemnification pursuant to Section 8.03(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement) unless the aggregate amount of Losses incurred by Seller and Seller Indemnified Persons under this Agreement exceeds the Threshold Amount, in which case Buyer will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(c) Except in the case of fraud, intentional misrepresentation or willful misconduct (for which all applicable legal and equitable remedies will be available to Buyer), the Buyer Indemnified Parties shall only be entitled to assert claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations, which shall not be limited by this Section 8.05(c)) up to the aggregate amount of 5% of Purchase Price (the "Liability Cap"), which shall represent the sole and exclusive remedy of Buyer and the other Buyer Indemnified Parties for any such claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations or in the case of fraud, intentional misrepresentation or willful misconduct which shall not be subject to the Liability Cap, but shall be capped at the Purchase Price).

(d) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be limited to the amount of any liability or damage that remains after deducting therefrom any insurance proceeds and any indemnity, contribution or other similar payment received or reasonably expected to be received by the Indemnified Party in respect of any such claim. The Indemnified Party shall use its commercially reasonable efforts to recover under insurance policies or indemnity, contribution or other similar agreements for any Losses before seeking indemnification under this Agreement.

(e) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be reduced by an amount equal to any Tax benefit realized or reasonably expected to be realized as a result of such Loss by the Indemnified Party.

(f) Each Indemnified Party shall take, and cause its Affiliates to take, all reasonable steps to mitigate any Loss upon becoming aware of any event or circumstance that would be

reasonably expected to, or does, give rise thereto, including incurring costs only to the minimum extent necessary to remedy the breach that gives rise to such Loss.

(g) Subject to the provisions of Sections 3.01, 7.06, 15.11 and any other provisions for equitable relief and/or specific performance, the Parties' sole and exclusive remedy with respect to any and all claims for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article VIII. Each Party hereby waives, to the fullest extent permitted under Law, any and all rights, claims and causes of action for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement it may have against the other Party and their Affiliates and each of their respective Representatives arising under or based upon any Law, except pursuant to the indemnification provisions set forth in this Article VIII. Nothing in this Section 8.05(g) shall limit any Party's right to seek and obtain any equitable relief and/or specific performance pursuant to this Agreement.

Section 8.06. Knowledge of Breach.

Neither Party shall be liable for any Losses based upon or arising out of any inaccuracy in or breach of any representations or warranties of such Party contained in this Agreement if the Party claiming such Losses had Knowledge of such inaccuracy or breach before the Closing.

ARTICLE IX.

PRE-CLOSING COVENANTS OF SELLER

Section 9.01. Operation of the System.

Except as otherwise expressly permitted by this Agreement, as required by Law or with the prior written consent of Buyer (which consent shall not be unreasonably withheld, delayed or conditioned), from the Effective Date until the Closing, Seller shall (i) operate and manage the System only in the ordinary course of business in accordance with past practices and procedures, (ii) collect accounts receivable and pay accounts payable in the ordinary course and in a manner consistent with its past practices, (iii) comply in all material respects with all Laws and Authorizations and Permits, (iv) use its commercially reasonable efforts to maintain and preserve intact the business and assets of the System and preserve the rights, franchises, goodwill and relationships of Seller and the System and its customers, lenders, suppliers, regulators, and others having business relationships with Seller and the System, (iv) continue to collect EDU Fees, and sewer rents in a manner consistent with past practice, without discounting such EDU Fees, and sewer rents, (v) perform all of its obligations under all Assigned Contracts, and (vi) not take any action, or omit to take any action, that would cause to occur a fact, circumstance, condition or occurrence regarding the System or any of the Acquired Assets that could reasonably be expected to have a Material Adverse Effect.

Section 9.02. Cooperation.

Seller shall reasonably cooperate with Buyer and its employees, attorneys, accountants and other agents and, generally, act in reasonably good faith to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated by this Agreement.

Section 9.03. Supplements and Updates.

Seller shall promptly deliver to Buyer any supplemental information and reports updating the information set forth in the representations and warranties set forth in Article IV of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as specified in such representations and warranties) as if then made. Within ten (10) Business Days of having Knowledge of the same, but in no event later than three (3) Business Days before the Closing Date, Seller shall promptly advise Buyer of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

Section 9.04. Consents and Approvals.

Promptly after the Effective Date, or as required by Law, except as otherwise expressly specified in this Agreement, Seller shall file all applications and reports that are required to be filed by Seller with any Governmental Authority necessary to undertake and consummate the transactions contemplated in this Agreement as set forth on Schedule 4.05. Seller shall also promptly provide all information that any Governmental Authority may require in connection with any such application or report. Seller shall use its commercially reasonable efforts to obtain each consent, waiver, authorization or approval of any kind from any Person in connection with the transactions contemplated by this Agreement. All authorizations of any Governmental Authority necessary to consummate the transactions contemplated by this Agreement will be in form and content reasonably satisfactory to Buyer and Seller before Closing and shall be final and non-appealable. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 9.05. Pending Development Plan Agreements / Future Developments.

Seller shall enforce all of its rights and the counterparties' obligations under any agreements relating to Pending Development Plans in existence as of the Effective Date, which shall not be amended without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide such consent to Seller within fifteen (15) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. After the Effective Date, Seller shall not enter into any new agreements (including Land Development Agreements and Financial Security Agreements) with landowners regarding the construction of any sewer facilities which, upon completion of construction, will be transferred to Buyer pursuant to Section 2.01 without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide such consent to Seller within seven (7) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. For the avoidance of doubt, any attempt by Buyer to withhold consent for entry into any amendment or new agreement by Seller pursuant to this Section 9.05 that is, in the opinion of Seller's solicitor, required pursuant

to the Pennsylvania Municipal Planning Code is deemed unreasonable. Prior to Closing, Seller shall complete the dedication of all Acquired Assets.

ARTICLE X.

PRE-CLOSING COVENANTS OF BUYER

Section 10.01. Actions Before the Closing Date.

Buyer shall not take any action which shall cause it to be in breach of any representation, warranty, covenant or agreement contained in this Agreement or cause it to be unable to perform in any material respect its obligations hereunder, and Buyer shall use its commercially reasonable efforts (subject to any conditions set forth in this Agreement) to perform and satisfy all conditions to Closing to be performed or satisfied by Buyer under this Agreement, including action necessary to obtain all consents and approvals from any Person required to be obtained by Buyer to effect the transactions contemplated by this Agreement.

Section 10.02. Governmental Approvals.

Promptly after the execution of this Agreement, or as required by Law, except as otherwise expressly specified in this Agreement, Buyer shall file all applications and reports that are required to be filed by Buyer with any Governmental Authority as set forth on Schedule 5.04. Buyer shall also promptly provide all information that any Governmental Authority may reasonably require in connection with any such application or report.

Section 10.03. Cooperation.

Buyer shall reasonably cooperate with Seller and their employees, attorneys, accountants and other agents and, generally, do such other acts and things in good faith as may be reasonable to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated in accordance with the provisions of this Agreement.

Section 10.04. Supplements and Updates.

Buyer shall promptly deliver to Seller any supplemental information updating the information set forth in the representations and warranties set forth in Article V of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as specified in such representations and warranties) as if then made. At least three (3) Business Days before the Closing Date, Buyer shall advise Seller of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

ARTICLE XI.

CONDITIONS PRECEDENT TO OBLIGATIONS OF SELLER

The obligation of Seller to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Seller in its sole discretion:

Section 11.01. Consents and Approvals.

Receipt of all required material, consents, waiver, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 5.04, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired).

Section 11.02. Representations and Warranties of Buyer.

The representations and warranties made by Buyer in Article V which are (a) not qualified by materiality must be true and correct in all material respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all material respects as of such specified date) and (b) qualified by materiality must be true and correct in all respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all respects as of such specified date), and Seller must have received a certificate to that effect from a duly authorized officer of Buyer dated as of the Closing Date.

Section 11.03. PaPUC Approval.

PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals or files a petition for reconsideration of PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 11.04. No Injunctions.

Neither Seller nor Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 11.05. Performance of the Obligations of Buyer.

Buyer must have performed in all material respects all obligations required under this Agreement to be performed by Buyer on or before the Closing Date, and Seller must have received a certificate to that effect from Buyer dated the Closing Date.

Section 11.06. Deliveries by Buyer.

Buyer must have made delivery to Seller of the documents and items specified in Section 13.03 herein.

Section 11.07. No Material Adverse Effect.

There must not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

ARTICLE XII.

CONDITIONS PRECEDENT TO OBLIGATIONS OF BUYER

The obligation of Buyer to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Buyer in its sole discretion:

Section 12.01. Consents and Approvals.

Receipt of all required material, consents, waivers, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 4.05, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired).

Section 12.02. Representations and Warranties of Seller.

The representations and warranties made by Seller in Article IV this Agreement (disregarding all "materiality" and "Material Adverse Effect" or similar qualifications contained therein) must be true and correct on and as of the Closing Date (except for representations and warranties expressly stated to relate to a specific date, in which case each such representation and warranty must be true and correct as of such earlier date), with only such exceptions as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and Buyer must have received a certificate to that effect from Seller dated as of the Closing Date.

Section 12.03. PaPUC Approval.

PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 12.04. No Injunctions.

Neither Seller nor Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 12.05. No Material Adverse Effect.

There must not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

Section 12.06. Deliveries by Seller.

Seller must have made delivery to Buyer of the documents and items specified in Section 13.02 herein.

Section 12.07. Performance of the Obligations of Seller.

Seller must have performed in all material respects all obligations required under this Agreement to be performed by Seller on or before the Closing Date, and Buyer must have received a certificate to that effect from Seller dated the Closing Date.

Section 12.08. Act 537 Plan.

The Seller must have obtained PaDEP approval of all Act 537 Plan revisions or updates (i) required by PaDEP in order to allow acquisition of the System by Buyer or (ii) otherwise required to address other outstanding deficiencies with respect to existing Act 537 Plan, upon terms and conditions satisfactory to Buyer in its reasonable discretion. Notwithstanding the previous sentence, Buyer shall be responsible for the costs of preparing and submitting any necessary revisions to the Act 537 Plan required to allow acquisition of the System by Buyer. Seller and Buyer shall cooperate regarding the Act 537 Plan submission and PaDEP approval process.

ARTICLE XIII.

CLOSING

Section 13.01. Closing Date.

The Closing shall take place at the offices of Hamburg, Rubin, Mullin, Maxwell and Lupin, PC (375 Morris Rd, Lansdale, PA 19446) at 10:00 a.m. Eastern Standard Time on the earliest agreed upon date or within twenty (20) Business Days after the date upon which all the conditions precedent to Closing described in this Agreement have been fulfilled or waived and Buyer and Seller receive the last of the required consents, waivers, authorizations and approvals from the Governmental Authorities, in each case, for the transactions contemplated by this Agreement, or at such other place and time, by such other method, or on such other date, as may be mutually agreed to by the Parties (the "Closing Date"). The Closing will be effective at 12:01 a.m., East Whiteland Township, PA time, on the Closing Date (the "Closing Effective Time").

Section 13.02. Deliveries by Seller.

At the Closing, Seller shall deliver or cause to be delivered to Buyer executed copies of the following agreements, documents and other items:

(a) A Bill of Sale transferring all of the Acquired Assets comprising personal property, in the form attached as Exhibit A;

(b) Possession of the Acquired Assets, including without limitation, the Real Property, the Easements and an interest in the Missing Easements, including a license from Seller to Buyer;

(c) A duly executed counterpart to an Assignment and Assumption Agreement with respect to the Assumed Liabilities (the "Assignment and Assumption Agreement"), in the form attached as Exhibit B;

(d) The consents to transfer all of the Assigned Contracts and Authorizations and Permits (including environmental Authorizations and Permits), to the extent required hereunder;

(e) One or more special warranty or other deeds in recordable form reasonably acceptable to Buyer transferring fee simple title of Real Property;

(f) Copies or originals of all Files and Records, materials, documents and records in possession of Seller relating to the Real Property or the Assigned Contracts;

(g) Certificate of Seller pursuant to Section 12.02 of this Agreement;

(h) Certificate of Seller pursuant to Section 12.07 of this Agreement;

(i) Any documents duly executed by Seller required by the Title Company to issue final owner's title policies in accordance with the provisions of Article VI;

(j) A duly executed counterpart to the Escrow Agreement; and

(k) All such other instruments of conveyance or other documents as shall, in the reasonable opinion of Buyer and its counsel, be necessary to transfer to Buyer the Acquired Assets in accordance with this Agreement or to carry out the terms of this Agreement, duly executed and acknowledged by Seller, if necessary, and in a recordable form.

Section 13.03. Deliveries by Buyer.

At the Closing, Buyer shall deliver or caused to be delivered to Seller the following agreements, documents and other items:

(a) Payment in full of the Purchase Price;

(b) A duly executed counterpart to the Assignment and Assumption Agreement;

(c) Certificate of Buyer pursuant to Section 11.02 of this Agreement;

(d) Certificate of Buyer pursuant to Section 11.05 of this Agreement;

(e) Evidence of PaPUC approval as specified in Section 12.03;

(f) A duly executed counterpart to the Escrow Agreement; and

(g) All such other instruments of assumption as shall, in the reasonable opinion of Seller and its counsel, be necessary for Buyer to assume the Assumed Liabilities in accordance with this Agreement.

ARTICLE XIV.

TERMINATION

Section 14.01. Events of Termination.

This Agreement may be terminated and abandoned at any time before the Closing:

(a) By the mutual consent of Seller and Buyer;

(b) By either Seller or Buyer, upon notice, if:

(i) the Closing does not occur on or before the Outside Date, except Buyer has the one-time right, upon notice to Seller, to extend the Outside Date for up to ninety (90) days if, in the Buyer's sole discretion, any such amount of time up to ninety (90) days is necessary to obtain a required Governmental Approval; or

(ii) any Governmental Authority issues an order, decree or ruling or taken any other action, in each case permanently restraining, enjoining or otherwise prohibiting the material transactions contemplated by this Agreement and such order, decree, ruling or other action becomes final and non-appealable;

(c) By Seller (if Seller is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Buyer pursuant to the terms of this Agreement or of any representation or warranty of Buyer contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Seller to Buyer or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XI of this Agreement not being satisfied (which condition has not been waived by Seller in writing); or

(d) By Buyer (if Buyer is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Seller pursuant to the terms of this Agreement or of any representation or warranty of Seller contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Buyer to Seller or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XII of this Agreement not being satisfied (which condition has not been waived by Buyer in writing).

This Agreement may not be terminated after the Closing.

Section 14.02. Effect of Termination.

If this Agreement is terminated by Seller or Buyer pursuant to Section 14.01, notice thereof will be given promptly to the other and all further obligations of the Parties terminate without further action by either Party and without liability or other obligation of either Party to the other Party hereunder, except that no Party will be released from liability hereunder if this Agreement is terminated and the transactions abandoned by reason of any willful breach of this Agreement.

Section 14.03. Damages for Willful Breach.

If this Agreement is terminated as a result of willful breach by either Party as described in Section 14.02, the Party who willfully breached the Agreement is liable for Losses incurred by the non-breaching Party as a result of the breach in accordance with Article VIII.

ARTICLE XV.

MISCELLANEOUS

Section 15.01. Confidentiality.

Except as and to the extent required by Law (including but not limited to the Pennsylvania Right-To-Know Act at 65 Pa § 67.101) or pursuant to an order of a court of competent jurisdiction and as required hereunder to obtain any and all required Governmental Approvals, neither Party shall, directly or indirectly, disclose or use (and no Party shall permit its Representatives to disclose or use) any Confidential Information with respect to the other Party furnished, or to be furnished, by such other Party or its Affiliates or Representatives to the other Party or its Affiliates or Representatives in connection herewith at any time or in any manner other than in connection with the completion of the transactions contemplated by this Agreement and related transactions.

Section 15.02. Public Announcements.

Subject to Law or listing rules of an exchange on which Buyer's parent corporation's stock is listed, and except as otherwise set forth herein, the initial public announcement relating to the transactions contemplated herein will be mutually agreed upon and jointly made by the Parties. Subsequent public announcements related to the sale of the System by one Party shall be provided to the other Party as soon as reasonably practicable before issuance.

Section 15.03. Notices.

All notices, other communications and approvals required or permitted by this Agreement shall be in writing, shall state specifically that they are being given pursuant to this Agreement and shall be addressed as follows:

in the case of Seller:

East Whiteland Township

209 Conestoga Road
Frazer, PA 19355
Attention: Manager

with a copy to:

Hamburg, Rubin, Mullin, Maxwell and Lupin, PC
375 Morris Rd
Lansdale, PA 19446
Attention: Joseph J. McGrory, Jr., Solicitor

in the case of Buyer:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Marc A. Lucca, President
malucca@aquaamerica.com

with a copy to:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Frances Orth, Esq., Vice President, Senior Managing Counsel
fporth@aquaamerica.com

or such other persons or addresses as a Party may from time to time designate by notice to the other Party. A notice, other communication or approval is deemed to have been sent and received (i) on the day it is delivered, or if such day is not a Business Day or if the notice is received after ordinary office hours (time or place of receipt), the notice, other communication or approval is deemed to have been sent and received on the next Business Day, or (ii) on the fourth Business Day after mailing if sent by United States registered or certified mail.

Section 15.04. Headings.

The article, section and paragraph headings in this Agreement are for reference purposes only and do not affect the meaning or interpretation of this Agreement.

Section 15.05. Severability.

If any term, provision, covenant or restriction contained in this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions contained in this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

Section 15.06. Entire Agreement.

This Agreement is the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, negotiations, discussions and understandings, written or oral, between the Parties. There are no representations, warranties, conditions or other agreements, whether direct or collateral, or express or implied, that form part of or affect this Agreement, or that induced any Party to enter into this Agreement or on which reliance is placed by any Party, except as specifically set forth in this Agreement. The Parties acknowledge and agree that (i) each has substantial business experience and is fully acquainted with the provisions of this Agreement, (ii) the provisions and language of this Agreement have been fully negotiated and (iii) no provision of this Agreement shall be construed in favor of any Party or against any Party by reason of such provision of this Agreement having been drafted on behalf of one Party rather than the other Party.

Section 15.07. Amendments; Waivers.

The Parties may amend this Agreement only by the Parties' written agreement that identifies itself as an amendment to this Agreement. Any waiver of, or consent to depart from, the requirements of any provision of this Agreement will be effective only if it is in writing and signed by the Party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Agreement will operate as a waiver of such right. No single or partial exercise of any such right will preclude any other or further exercise of such right or the exercise of any other right.

Section 15.08. Parties in Interest; Third Party Beneficiary.

This Agreement is not intended to and shall not be construed to create upon any Person other than the Parties any rights or remedies hereunder.

Section 15.09. Anti-Assignment; Successors and Assigns.

Neither Party to this Agreement may assign any right or delegate any performance under this Agreement without the prior written consent of the other Party. A purported assignment or purported delegation without prior written consent is void. This agreement is binding upon, and inures to the benefit of, the Parties and their permitted respective successors and assigns.

Section 15.10. Governing Law; Jurisdiction.

The laws of the Commonwealth of Pennsylvania (without giving effect to its conflicts of law principles) govern all matters arising and relating to this Agreement, including torts. The Parties irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each Party irrevocably submits to the exclusive

jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 15.11. Specific Performance.

Irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof and that the Parties may seek specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity if the other Party has performed in accordance with the terms hereof.

Section 15.12. Counterparts; Electronic Mail; Facsimile Execution.

This Agreement may be executed in any number of counterparts which, taken together, is one and the same agreement. This Agreement becomes effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Agreement, a Party may send a copy of its executed counterpart to the other Party by electronic mail or facsimile transmission. Such Party is deemed to have executed and delivered this Agreement on the date it sent such electronic mail or facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Agreement executed by such Party.

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SIGNATURES NEXT PAGE]

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IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: _____
Printed: John Nagel	Printed: Marc A. Lucca
Its: Manager	Its: President
ATTEST:	ATTEST:
By: Donna Wikert	By: _____
Printed: Donna Wikert	Printed: _____
Title: Assistant to the Township Manager, Board Secretary	Title: _____

IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: _____
Printed: John Nagel	Printed: Marc A. Lucca
Its: Manager	Its: President
ATTEST:	ATTEST:
By: _____	By: _____
Printed: _____	Printed: HEIDI H. McINTYRE
Title: _____	Title: Ass't Secretary

July 22, 2021 Version

ASSET PURCHASE AGREEMENT

By and Between

Township of East Whiteland, Chester County,

As Seller

and

Aqua Pennsylvania Wastewater, Inc. As Buyer

SCHEDULES AND EXHIBITS

Capitalized terms used in the Schedules which are not otherwise defined herein shall have the respective meanings ascribed to such terms in the Agreement. The Schedules are to be read in their entirety. Nothing in the Schedules is intended to broaden the scope of any representation or warranty in the Agreement. The disclosure of any item, explanation, exception or qualification in any Schedule is disclosure of that item for all purposes for which disclosure is required under the Agreement when it is reasonably apparent from the context that such item, explanation, exception or qualification also relates to another Schedule irrespective of whether any cross reference is made or no Schedule is provided with respect to a representation. Other than as expressly set forth herein or when the Schedules reference agreements or other matters not documented in a separate writing, all descriptions of agreements, written materials or other matters appearing herein, are summary in nature and are qualified by reference to the complete documents, which have been supplied to the Buyer or its counsel.

Exhibit A

BILL OF SALE

THIS BILL OF SALE is made as of this ____ day of _____, 202_, by and between **TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY** (the "Seller") and **AQUA PENNSYLVANIA WASTEWATER, INC.** (the "Buyer," and, together with Seller, each a "Party" and collectively, the "Parties").

B A C K G R O U N D:

A. Seller and Buyer have entered into that certain Asset Purchase Agreement dated as of January 8, 2021 (the "Purchase Agreement"), pursuant to which Seller has agreed, among other things, to sell, transfer, convey, assign and deliver to Buyer and Buyer has agreed to purchase from Seller the Acquired Assets, including, without limitation, all of its personal property and fixed assets including equipment, machinery, vehicles, auxiliary equipment and plant equipment, as more thoroughly described on Exhibit "A" attached hereto and incorporated herein by reference (collectively, the "Personal Property").

B. Seller desires hereunder to transfer and assign to Buyer the Personal Property pursuant to the Purchase Agreement and Buyer desires to accept the sale, transfer, conveyance, assignment and delivery thereof.

C. All capitalized terms not defined herein shall have the meaning ascribed to such term in the Purchase Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Purchase Agreement and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the Parties hereto agree as follows:

1. Transfer and Assignment. Seller hereby sells, transfers, assigns, delivers and conveys to Buyer, its successors and assigns, all of Seller's right, title and interest in, to and under the Personal Property.

2. Acceptance of Transfer and Assignment. Buyer hereby accepts the transfer, conveyance, assignment and delivery of the Personal Property.

3. Absolute Transfer. It is the intention of Seller to transfer absolute title of the Personal Property to Buyer.

4. Counterparts; Facsimile Signatures. This Agreement may be executed in any number of counterparts which, taken together, shall constitute one and the same agreement. This Agreement shall be effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Agreement, a Party may send a copy of its executed counterpart to the other Party by facsimile transmission. Such Party shall be deemed to have executed and delivered this Agreement on the date it sent such facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Agreement executed by such Party.

5. Governing Law; Jurisdiction. This Agreement shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania (without giving effect to the principles of conflicts of laws thereof). The Parties hereto irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

6. Binding Effect. This Bill of Sale shall be binding upon and inure to the benefit of Seller and Buyer and their respective successors and assigns.

7. Further Assurances. Each Party hereto covenants and agrees, at its own expense, to take such further action and execute and deliver such further instruments of conveyance and transfer

and of assumption as may be reasonably requested by the other Party to carry out the provisions and purpose of this Agreement.

[Remainder of Page Intentionally Blank; Signature Page Immediately Follows]

IN WITNESS WHEREOF, the undersigned have caused this Bill of Sale to be duly executed on the day and year first above written.

SELLER:	BUYER:
TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: _____
Name: John Nagel, Manager	Name: Marc A. Lucca, President
ATTEST:	ATTEST:
By: _____	By: _____
Name:	Name:
Title:	Title:

EXHIBIT A

Personal Property

All of Seller's right, title and interest in and to all assets, facilities, business, goodwill, properties and rights of Seller of every kind and description, whether tangible or intangible, real, personal or mixed, wherever situated, in each case used in, held for use in, or acquired or developed for use in, the System (capitalized terms contained herein not otherwise defined within this document shall have the meanings assigned to them in the Purchase Agreement, unless the context shall otherwise require), or otherwise related to, or arising out of the operation or conduct of the System (whether or not any such assets have any value for accounting purposes or are carried or reflected on the books or financial records of Seller), including any of the foregoing in which Seller is entitled to acquire rights in the future pursuant to Pending Development Plans (other than the rights of Seller pursuant to Section 2.02(d)) of the Purchase Agreement or development plans approved pursuant to this Agreement, but in all cases other than the Excluded Assets (the foregoing collectively referred to as the "Acquired Assets"), including:

(a) all sanitary wastewater related pumping and conveyance facilities, including but not limited to all collection system pipes, pumping stations, hoists, generators, manholes and pipelines and any billing and collections related assets necessary to run the System;

(b) all Supplies;

(c) all personal property and fixed assets, including all Equipment and Machinery, auxiliary equipment and plant equipment, including without limitation those items listed on Schedule 4.10 of the Purchase Agreement; and

(d) all Files and Records.

Exhibit B

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT (this "Assignment") is entered into effective as of this _____ day of June, 202__, by and between **TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY**, a Pennsylvania municipality (the "Assignor") and **AQUA PENNSYLVANIA WASTEWATER, INC.**, a Pennsylvania corporation (the "Assignee," and, together with Assignor, each a "Party" and collectively, the "Parties").

A. Assignor, as Seller, and Assignee, as Buyer, are parties to that certain Asset Purchase Agreement dated as of January 8, 2021 (the "Purchase Agreement"), pursuant to which Assignor has agreed, among other things, to sell, transfer, convey, assign and deliver to Assignee and Assignee has agreed to purchase from Assignor the Acquired Assets.

B. Sections 2.01, 2.04, 13.02 and 13.03 of the Purchase Agreement contemplate that at Closing, Assignor will assign to Assignee and Assignee will accept and assume, all of Assignor's right, title and interest in to any and all Assigned Contracts and Authorizations and Permits and, including, without limitation, all of the assets more thoroughly described on Exhibit "A" attached hereto and incorporated herein by reference (collectively, the "Assigned Business Deliverables") necessary for the operation of the Acquired Assets.

C. Unless herein otherwise defined, all terms defined in the Purchase Agreement shall have the meanings ascribed to them in the Purchase Agreement when used in this Assignment.

NOW, THEREFORE, in consideration of mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, the Parties hereto agree as follows:

1. Assignment of Assigned Business Deliverables. Assignor hereby assigns, transfers, sets over, conveys and delivers to Assignee, and Assignee hereby accepts, all of Assignor's right, title and interest in and to all Assigned Business Deliverables, together with all rights and privileges of any nature thereunder accruing to Assignor on or after the date hereof.

2. Indemnification by Assignor. Assignor hereby agrees to indemnify, defend and hold harmless Assignee and the Buyer Indemnified Persons from, of and against any and all losses arising out of or relating to the breach by Assignor of any of the obligations, terms or covenants of Assignor, under or pursuant to the Assigned Business Deliverables that accrued prior to the date hereof subject to Assignor's indemnification obligations under Article VIII of the Purchase Agreement.

3. Indemnification by Assignee. Assignee hereby agrees to indemnify, defend and hold harmless Assignor and Seller Indemnified Parties from, of and against any and all losses arising out of or relating to the breach by Assignee of any of the obligations, terms or covenants of Assignee, under or pursuant to the Assigned Business Deliverables that accrue on or after the date hereof subject to Assignee's indemnification obligations under Article VIII of the Purchase Agreement.

4. Counterparts; Facsimile Signatures. This Assignment may be executed in any number of counterparts which, taken together, shall constitute one and the same agreement. This Assignment shall be effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Assignment, a Party may send a copy of its executed counterpart to the other Party by facsimile transmission. Such Party shall be deemed to have executed and delivered this Assignment on the date it sent such facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Assignment executed by such Party.

5. Successors; Assigns. Neither Party hereto shall assign or delegate this Assignment or any rights or obligations hereunder without the prior written consent of the other Parties hereto, and any attempted assignment or delegation without prior written consent shall be void and of no force or effect.

6. Governing Law; Jurisdiction. This Assignment shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania (without giving effect to the principles of conflicts of laws thereof). The Parties hereto irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Assignment. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS ASSIGNMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS ASSIGNMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS - REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

7. Further Assurances. Each Party hereto covenants and agrees, at its own expense, to take such further action and execute and deliver such further instruments of conveyance and transfer and of assumption as may be reasonably requested by the other Party to carry out the provisions and purpose of this Assignment.

8. Absolute Assignment. It is the intention of Assignor to transfer absolute title of the Assigned Business Deliverables to Assignee, its successors and assigns, free of any redemption by Assignor or its successors and assigns.

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SIGNATURE PAGE IMMEDIATELY FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have caused this Assignment to be duly executed as of the day and year first written above.

SELLER:	BUYER:
TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: _____
Name: John Nagel, Manager	Name: Marc A. Lucca, President
ATTEST:	ATTEST:
By: _____	By: _____
Name:	Name:
Title:	Title:

EXHIBIT A

Assigned Business Deliverables

All of Seller's right, title and interest in and to all assets, facilities, business, goodwill, properties and rights of Seller of every kind and description, whether tangible or intangible, real, personal or mixed, wherever situated, in each case used in, held for use in, or acquired or developed for use in, the System (capitalized terms contained herein not otherwise defined within this document shall have the meanings assigned to them in the Purchase Agreement, unless the context shall otherwise require), or otherwise related to, or arising out of the operation or conduct of the System (whether or not any such assets have any value for accounting purposes or are carried or reflected on the books or financial records of Seller), including any of the foregoing in which Seller is entitled to acquire rights in the future pursuant to Pending Development Plans (other than the rights of Seller pursuant to Section 2.02(d)) of the Purchase Agreement or development plans approved pursuant to this Agreement, but in all cases other than the Excluded Assets (the foregoing collectively referred to as the "Acquired Assets"), including:

(a) all real property and appurtenant interests used in the operation of the System, including without limitation (i) good and marketable fee simple title to the Real Property described and identified on Schedule 4.09 of the Purchase Agreement, and (ii) all Easements, including without limitation those identified on Schedule 4.09 of the Purchase Agreement;

(b) all contracts, licenses, and leases to which Seller is a party, including without limitation, all construction contracts, surety bonds, operation and maintenance agreements, management agreements, reserved capacity agreements, architect agreements and consultant agreements, and agreements relating to all other items of personal property as set forth on Schedule 4.13 of the Purchase Agreement (the "Assigned Contracts");

(c) all expenses prepaid by Seller and security deposits paid by Seller;

(d) all Authorizations and Permits of or held by Seller (to the extent transferrable to Buyer under applicable Law), including all Authorizations and Permits which are environmental permits, Seller's NPDES Permits other than those NPDES permits that relate to the Stormwater System Assets, other operating permits and those items listed or described on Schedule 4.12 of the Purchase Agreement; and

(e) all goodwill of the System.

Exhibit C

ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Escrow Agreement") is made as of this _____ day of _____, 202_, by and among **AQUA PENNSYLVANIA WASTEWATER, INC.**, a Pennsylvania corporation ("Buyer"), **EAST WHITELAND TOWNSHIP** ("Seller"), and _____, a _____ _____ (the "Escrow Agent"), as escrow agent. Each of the Buyer, Seller and the Escrow Agent shall be referred to herein as a "Party" and collectively, as the 'Parties".

WHEREAS, Buyer and Seller are Parties to that certain Asset Purchase Agreement dated January 8, 2021, as amended by the updated and supplemented representations, warranties and schedules required by Section 9.03 of the Asset Purchase Agreement (all of the foregoing collectively, the "Purchase Agreement"). Solely as between Buyer and Seller, terms not otherwise defined herein shall have the respective meanings ascribed to them in the Purchase Agreement

WHEREAS, concurrently with the execution and delivery of this Escrow Agreement, the Buyer and Seller are closing on the transactions contemplated by the Purchase Agreement.

WHEREAS, the Purchase Agreement requires Seller to transfer or assign certain real property interests to Buyer for Acquired Assets situated upon lands owned by third parties, specifically including sewer lines encroaching upon land owned by third parties (collectively referred to herein as "Easements"). The Easements are identified on Schedule 4.09 of the Purchase Agreement, as that Schedule was amended as an attachment to the Closing Certificate delivered by Seller to Buyer on the date hereof.

WHEREAS, as of the date of this Escrow Agreement, Seller has not transferred or assigned [_____] of the Easements (collectively, the "Missing Easements", the list of which is attached hereto as **Exhibit "A"**) which therefore will not be transferred to Buyer at Closing. Seller and Buyer have agreed to permit Seller to assign and transfer the Missing Easements following Closing pursuant to the terms of this Escrow Agreement.

WHEREAS, Buyer has agreed to deposit [_____] Dollars ($[____.__]) of the Purchase Price in escrow with the Escrow Agent (in accordance with Section 2 hereof) (the "Easement Escrow Fund" or the "Escrow Fund"), in order to secure Seller's obligations to assign and transfer all of the Missing Easements after the date hereof.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the parties hereto hereby agree as follows:

1. Escrow Fund. Buyer is delivering on the date hereof to the Escrow Agent an amount in cash equal to the Escrow Fund, which funds are to be held in escrow by the Escrow Agent pursuant hereto and released in accordance with the terms hereof.

2. Protection and Investment of Escrow Fund. The Escrow Agent shall separately hold and safeguard the Easement Escrow Fund for such period of time that any funds remain therein, shall treat the Escrow Fund as a separate escrow account in accordance with the terms of this Escrow Agreement and not as its property and shall hold and dispose of the Escrow Fund only in accordance with the terms of this Escrow Agreement. The Escrow Fund shall be held in escrow in a separate account held in a national banking association regulated by the OCC and authorized to conduct business in Pennsylvania. The Escrow Agent shall deposit the Escrow Fund into an interest-bearing account.

3. Term. This Escrow Agreement shall be for a term ending on the [____] (___) year anniversary of the date of this Escrow Agreement (the "Term"), subject to extension in the event that there are pending claims upon the expiration of the Term, or upon the Seller's delivery to Buyer of all Missing Easements, whichever is sooner.

4. Distributions from Easement Escrow Fund. The Easement Escrow Fund shall be distributed to Seller or Buyer (such Party in such capacity, the "Withdrawing Party") in accordance with the following terms:

(a) Subject to Section 4(c) below, the Easement Escrow Fund shall be distributed to Seller (such Party in such capacity, the "Withdrawing Party") in accordance with the following terms:

(i) Seller shall be entitled to quarterly distributions from the Escrow Fund calculated as: the number of Missing Easements delivered to Buyer during the preceding calendar quarter which satisfy the criteria set forth herein (each, an "Easement Document"), multiplied by **[$_____]**, subject to a maximum aggregate distribution under this subparagraph (i) during the Term of _____ Dollars ($_____). In order for a Missing Easement to be included as an Easement Document for purposes of determining distributions under this subsection (a), the Easement Document must satisfy the following criteria:

(A) the Easement Document shall be in the form of (1) a recorded deed of easement or a recorded deed in lieu of condemnation, in each case duly executed by the third party granting the rights set forth therein, or (2) a final, unappealable order of court in a condemnation proceeding;

(B) the Easement Document shall be perpetual in duration and shall adequately describe the area of land encumbered by such Easement Document which shall include adequate vehicular access to the Acquired Assets situated therein and adequate area for maintaining, repairing and replacing said Acquired Assets when necessary;

(C) the Easement Document shall satisfy all requirements for recording such Easement Document as imposed by the Chester County Recorder of Deeds; and

(D) any Easement Document in the form attached hereto as **Exhibit "B"** which, upon delivery to Buyer, complies with subparagraphs (A) through (C) above, shall be deemed to satisfy all requirements upon which a release from the Escrow Fund is conditioned.

(ii) Subject to subparagraph (iii) below, the remaining _____ Dollars ($____) shall be distributed to Seller upon Seller's delivery of the last of the [____] Missing Easement Documents (satisfying all criteria set forth in subparagraph (i) above) to Buyer in accordance with the terms hereof.

(b) All disbursements made under subparagraphs (a)(i) and (a)(ii) above shall occur within ten (10) days after the Escrow Agent has received a Withdrawal Request as set forth in Section 4(d) hereof.

(c) The balance in the Escrow Fund, if any, existing upon expiration of the Term following any distribution owed to Seller resulting from delivery of Easement Documents during the quarter in which the Term expires, shall be distributed to Buyer.

(d) Within ten (10) days following the end of each calendar quarter during the Term (in which case only Seller shall be the Withdrawing Party) or, in the event that there is a balance in the Escrow Fund existing upon expiration of the Term, then within ten (10) days of the expiration of the Term (in which case either Seller or Buyer may be the Withdrawing Party)the Withdrawing Party shall request a disbursement from the Easement Escrow Fund (a "Withdrawal Request") by delivering to Escrow Agent and the other Party to this Escrow Agreement a written notice of such request (a "Withdrawal Request Notice"). The Withdrawal Request Notice shall describe the basis and amount of the Withdrawal Request, which, with respect to Seller, shall be calculated in accordance with Section 4(a)(i) above, and shall include any documentation (including Easement Documents delivered to Buyer) evidencing the basis for the amount of the Withdrawal Request, and a certification that a copy of the Withdrawal Request has been delivered to the other Party. The Escrow Agent shall release to the Withdrawing Party the amount of the Withdrawal Request from the Easement Escrow Fund on or before the tenth (10th) day after the date when the Escrow Agent receives the Withdrawal Request Notice, provided that, if the Escrow Agent, within such period of ten (10) days, receives from the other Party (in such capacity, an "Objecting Party") a written notice of dispute of the Withdrawal Request (which notice shall include a certification by the Objecting Party that it has delivered a copy of such notice to Withdrawing Party) then the Escrow Agent shall continue to hold the amount set forth in the Withdrawal Request in the Easement Escrow Fund pursuant to this Escrow Agreement until the Escrow Agent receives either written instructions signed by the Withdrawing Party and the Objecting Party directing a release from the Easement Escrow Fund, or a final order of a court of competent jurisdiction (from which there is no further appeal or for which the time to appeal has expired without such appeal having been taken) directing a release from the Easement Escrow Fund. The Escrow Agent shall make distributions from the Easement Escrow Fund in accordance with such instructions or order within two (2) business days after receipt of either.

(e) Should a dispute arise between the Parties as to whether an Easement Document satisfies the criteria for release under subparagraph (a)(i) above, the Parties shall jointly select a neutral attorney with expertise in real property transactions to serve as mediator of the dispute and both parties shall diligently pursue a resolution of such dispute in good faith. In the event that the parties are unable to resolve such dispute within sixty (60) days following the delivery by the Objecting Party to the withdrawing of the notice of objection, either Party may pursue a claim in the Chester County Court of Common Pleas.

5. Default & Remedies.

(a) It shall be a default of this Escrow Agreement if Seller shall fail to diligently pursue the delivery of all Easement Documents using commercially reasonable efforts and to transfer such interests to Buyer on or before the expiration of the Term ("Default").

(b) In the event of a Default, Buyer may, at Buyer's sole discretion, after first providing written notice to Seller and a thirty (30) day cure period thereafter to Seller, undertake to obtain such easements on its own or file suit in a court of competent jurisdiction seeking specific performance in the form of an order requiring Seller to obtain all Easement Documents, including by way of the exercise of its power of eminent domain. Buyer and Seller acknowledge that the remedies at law for any breach or threatened breach, including monetary damages, may be inadequate compensation for any loss and that any defense in any action for specific performance that a remedy at law would be adequate is waived. Any requirements for the securing or posting of a bond with such remedy are waived by the Buyer and Seller.

(c) If Seller Defaults and Buyer elects to pursue a remedy under Paragraph 4(b) above, Buyer shall be entitled to recover from Seller all actual damages, including costs and reasonable attorneys' fees incurred in obtaining the outstanding easements or in bringing an action seeking specific performance of the terms of this Escrow Agreement. In the event Seller incurs a liability to Buyer under this Section 5(c), any amount distributed to Buyer pursuant to Section 4(c) above shall be applied as a credit to such amount owed by Seller to Buyer under this Section 5(c). The establishment of the amount of the Escrow Fund shall not limit Buyer's right to recovery hereunder or under the Purchase Agreement.

6. Limitation of Escrow Agent's Liability.

(a) Limitation on Liability. The Escrow Agent shall incur no liability with respect to any action taken or suffered by it in reliance upon any notice, direction, instruction, consent, statement or other documents believed by it to be genuine and duly authorized, nor for other action or inaction, except its own willful misconduct or gross negligence. If any controversy arises between the parties to this Escrow Agreement, or with any other Party, concerning the subject matter of this Escrow Agreement, its terms or conditions, the Escrow Agent will not be required to resolve the controversy or to take any action regarding it. The Escrow Agent may hold all documents and funds and may wait for settlement of any such controversy by final appropriate legal proceedings or by written agreement of Buyer and Seller. The Escrow Agent shall not be responsible for the sufficiency of this Escrow Agreement or any other agreement referred to herein. The Escrow Agent is not responsible for determining and verifying the authority of any person acting or purporting to act on behalf of any Party to this Escrow Agreement; provided, however, Escrow Agent shall use commercially reasonable efforts to ascertain whether or not such person has the requisite authority required to act on behalf of a Party. In all questions arising under this Escrow Agreement, the Escrow Agent may rely on the advice of counsel, and the Escrow Agent shall not be liable to anyone and shall be fully indemnified for anything done, omitted or suffered in good faith by the Escrow Agent based on such advice. The Escrow Agent shall not be required to take any action hereunder involving any expense unless the payment of such expense is made or provided for in a manner satisfactory to it in its sole judgment. In no event shall the Escrow Agent be liable for indirect, punitive, special or consequential damages (including, but not limited to lost profits), even if Escrow Agent has been advised of the likelihood of such damages or penalty and regardless of the form of action. Escrow Agent undertakes to perform only such duties as are expressly set forth herein and no duties shall be implied. Escrow Agent has no fiduciary or

discretionary duties of any kind. Escrow Agent's permissive rights shall not be construed as duties. Escrow Agent shall have no liability under and no duty to inquire as to the provisions of any document other than this Escrow Agreement, including without limitation any other agreement between any or all of the parties hereto or any other persons even though reference thereto may be made herein and whether or not a copy of such document has been provided to Escrow Agent. Escrow Agent shall not be responsible for delays or failures in performance resulting from acts of God, strikes, lockouts, riots, acts of war or terror, epidemics, governmental regulations, fire, communication line failures, computer viruses, attacks or intrusions, power failures, earthquakes or any other circumstance beyond its control. Escrow Agent shall not be obligated to take any legal action in connection with the Escrow Fund, this Escrow Agreement or the Purchase Agreement or to appear in, prosecute or defend any such legal action. If any portion of the Escrow Fund is at any time attached, garnished or levied upon, or otherwise subject to any writ, order, decree or process of any court, or, in case disbursement of the Escrow Fund, is stayed or enjoined by any court order, Escrow Agent is authorized, in its sole discretion, to respond as it deems appropriate or to comply with all writs, orders, decrees or process so entered or issued, including but not limited to those which it is advised by legal counsel of its own choosing is binding upon it, whether with or without jurisdiction; and if Escrow Agent relies upon or complies with any such writ, order, decree or process, it shall not be liable to any of the parties hereto or to any other person or entity by reason of such compliance even if such order is reversed, modified, annulled, set aside or vacated. Notwithstanding the foregoing, Escrow Agent shall immediately provide written notice to Seller and Buyer if any portion of the Escrow Fund is at any time attached, garnished or levied upon, or otherwise subject to any writ, order, decree or process of any court, or, in case of disbursement of the Escrow Fund, is stayed or enjoined by any court order. Nothing herein shall preclude Escrow Agent from acting in any other capacity for any other Party hereto or for any other person or entity.

(b) Indemnification. Buyer and Seller agree jointly and severally to indemnify the Escrow Agent for, and hold it harmless against, any claim (whether asserted by Buyer, Seller or any other person or entity), loss, liability or expense incurred by the Escrow Agent except to the extent directly caused by gross negligence or willful misconduct on the part of the Escrow Agent (as determined by a court of competent jurisdiction), arising out of or in connection with its carrying out of its duties hereunder, and in connection therewith to indemnify the Escrow Agent, its directors, officers, partners, employees and agents against any and all expenses, including reasonable attorneys' fees and expenses and the cost of defending any action, suit or proceeding or resisting any claim or enforcing Buyer's or Seller's obligations under this Escrow Agreement. The obligations of Buyer and Seller under this Section shall survive any termination of this Escrow Agreement and the resignation or removal of Escrow Agent.

(c) Authority to Interplead. Buyer and Seller authorize the Escrow Agent, if a dispute exists with respect to any obligation of Escrow Agent hereunder or the Escrow Agent is threatened with litigation or is sued, to interplead all interested parties in any court located in Chester County, Pennsylvania and to deposit the Escrow Fund with the clerk of that court after deduction and payment to the Escrow Agent of all its unpaid expenses. In the event of any dispute, the Escrow Agent shall be entitled to petition a court of competent jurisdiction and shall perform any acts ordered by such court.

7. Successor Escrow Agents. The Escrow Agent may resign at any time upon giving at least thirty (30) days' written notice to Seller and Buyer and, after the date of such resignation notice, notwithstanding any other provision of this Escrow Agreement, Escrow Agent's sole

obligation will be to hold the Escrow Fund pending appointment of a successor Escrow Agent. Similarly, Escrow Agent may be removed at any time by Buyer and Seller giving at least thirty (30) days' prior written notice to Escrow Agent specifying the date when such removal shall take effect. No such resignation or removal shall become effective until the appointment of a successor escrow agent which shall be accomplished as follows: Buyer and the Seller shall use their commercially reasonable efforts to mutually agree on a successor escrow agent within thirty (30) days after receiving such notice. If the parties fail to agree upon a successor escrow agent within such time, the Escrow Agent may petition a court of competent jurisdiction to appoint a successor escrow agent, and all costs and expenses related to such petition shall be paid jointly and severally by Buyer and Seller. The successor escrow agent shall execute and deliver an instrument accepting such appointment and it shall, without further acts, be vested with all the estates, properties, rights, powers, and duties of the predecessor escrow agent as if originally named as escrow agent. Upon appointment of a successor escrow agent, and payment of the Escrow Fund to the successor escrow agent, after deduction and payment to the retiring Escrow Agent of all reasonable actual expenses payable to, incurred by, or expected to be incurred by the retiring Escrow Agent in connection with the performance of its duties and the exercise of its rights hereunder, the Escrow Agent shall be discharged from any further duties and liability under this Escrow Agreement. After any retiring, Escrow Agent's resignation or removal, the provisions of this Escrow Agreement shall inure to its benefit as to any actions taken or omitted to be taken by it while it was Escrow Agent under this Escrow Agreement.

8. Further Instruments. If the Escrow Agent reasonably requires other or further instruments in connection with its performance of its duties, the necessary parties hereto shall join in furnishing such instruments.

9. Termination. This Escrow Agreement shall terminate upon the earlier of expiration of the Term or such time as no funds remain in the Easement Escrow Fund due to distribution in accordance with Section 4 of this Escrow Agreement.

10. Waiver & Other Remedies. The rights and remedies herein reserved to Buyer or Seller are cumulative and not alternative.

11. Compensation of Escrow Agent. The Escrow Agent shall not be compensated or charge fees for acting as Escrow Agent, but shall be reimbursed by the parties for reasonable expenses actually paid to third parties and incurred for service as Escrow Agent only, subject to reasonable substantiation of such expenses

12. General.

(a) Governing Law and Jurisdiction. This Escrow Agreement shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania (without giving effect to the principles of conflicts of laws thereof). The Parties hereto irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each party irrevocably submits to the exclusive

jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS ESCROW AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS ESCROW AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS ESCROW AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

(b) Notices. All notices, requests, claims and other communications under this Escrow Agreement shall be in writing and shall be deemed given if delivered personally or by overnight courier to the parties at the following addresses (or at such other address for a Party as shall be specified by notice from such Party):

if to the Buyer, to:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Marc A. Lucca, President
malucca@aquaamerica.com

with a copy to:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Frances Orth, Esq., Vice Pres., Senior Managing Counsel
fporth@aquaamerica.com

if to the Seller, to:

East Whiteland Township
209 Conestoga Road
Frazer, PA 19355
Attention: Manager

with copies to:

Hamburg, Rubin, Mullen, Maxwell and Lupin, PC
375 Morris Road
Lansdale, PA 19446
Attention: Joseph J. McGrory, Jr., Solicitor

if to the Escrow Agent, to:

_____

Any notice addressed to the Escrow Agent shall be effective only upon receipt.

(c) Headings. The article, section and paragraph headings in this Escrow Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Escrow Agreement.

(d) Severability. If any term, provision, covenant or restriction contained in this Escrow Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions contained in this Escrow Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

(e) Entire Agreement. This Escrow Agreement, including the relevant provisions of the Closing Agreement pertaining to the parties' rights and obligations regarding the Missing Easements, constitute the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, negotiations, discussions and understandings, written or oral, between the Parties. There are no representations, warranties, conditions or other agreements, whether direct or collateral, or express or implied, that form part of or affect this Agreement, or that induced any Party to enter into this Escrow Agreement or on which reliance is placed by any Party, except as specifically set forth in this Escrow Agreement. The Parties acknowledge and agree that (i) each has substantial business experience and is fully acquainted with the provisions of this Escrow Agreement, (ii) the provisions and language of this Escrow Agreement have been fully negotiated and (iii) no provision of this Escrow Agreement shall be construed in favor of any Party or against any Party by reason of such provision of this Escrow Agreement having been drafted on behalf of one Party rather than the other Party.

(f) Amendments; Waivers. This Escrow Agreement may be amended, changed or supplemented only by a written agreement signed by the Parties. Any waiver of, or consent to depart from, the requirements of any provision of this Escrow Agreement shall be effective only if it is in writing and signed by the Party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Escrow Agreement shall operate as a waiver of such right. No single or partial exercise of any such right shall preclude any other or further exercise of such right or the exercise of any other right.

(g) Parties in Interest; Third Party Beneficiary. Except as hereinafter provided, this Escrow Agreement is not intended to and shall not be construed to create upon any Person other than the Parties any rights or remedies hereunder.

(h) Successors and Assigns. This Escrow Agreement shall be binding upon, and inure to the benefit of, the Parties hereto and their respective successors and assigns; provided, however, that no party may assign any of its rights or delegate any of its duties under this Escrow Agreement without the prior written consent of the other party hereto and any attempted assignment or delegation without prior written consent shall be void and of no force or effect.

(i) Specific Performance. The Parties agree that irreparable damage would occur if any provision of this Escrow Agreement were not performed in accordance with the terms hereof and that the Parties shall be entitled to specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity if the other Party has performed in accordance with the terms hereof.

(j) Counterparts; Facsimile; Execution. This Escrow Agreement may be executed in any number of counterparts which, taken together, shall constitute one and the same agreement. This Escrow Agreement shall be effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Escrow Agreement, a Party may send a copy of its executed counterpart to the other Party by facsimile transmission. Such Party shall be deemed to have executed and delivered this Escrow Agreement on the date it sent such facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Escrow Agreement executed by such Party.

(k) To help the government fight the funding of terrorism and money laundering activities, federal law requires all financial institutions to obtain, verify and record information that identifies each person who opens an account. For a non-individual person such as a business entity, a charity, a trust or other legal entity, Escrow Agent requires documentation to verify its formation and existence as a legal entity. Escrow Agent may require financial statements, licenses or identification and authorization documents from individuals claiming authority to represent the entity or other relevant documentation. Buyer and Seller agree to provide all information requested by Escrow Agent in connection with any legislation or regulation to which Escrow Agent is subject, in a timely manner. Escrow Agent's appointment and acceptance of its duties under this Escrow Agreement is contingent upon verification of all regulatory requirements applicable to Buyer, Seller and any of their permitted assigns, including successful completion of a final background check. These conditions include, without limitation, requirements under the USA Patriot Act, the USA FREEDOM Act, the Bank Secrecy Act, and the U.S. Department of the Treasury Office of Foreign Assets Control. If these conditions are not met, Escrow Agent may at its option promptly terminate this Escrow Agreement in whole or in part and refuse any otherwise permitted assignment by Buyer or Seller, without any liability or incurring any additional costs.

13. Representations and Warranties. Buyer and Seller each respectively make the following representations and warranties to Escrow Agent:

(a) it has full power and authority to execute and deliver this Escrow Agreement and to perform its obligations hereunder; and this Escrow Agreement has been duly approved by

all necessary action and constitutes its valid and binding agreement enforceable in accordance with its terms.

(b) each of the applicable persons designated on **Exhibit "C"** attached hereto has been duly appointed to act as its authorized representative hereunder and individually has full power and authority on its behalf to execute and deliver any instruction or direction, to amend, modify or waive any provision of this Escrow Agreement and to take any and all other actions as its authorized representative under this Escrow Agreement and no change in designation of such authorized representatives shall be effective until written notice of such change is delivered to each other Party to this Escrow Agreement pursuant to Section 14(a) and Escrow Agent has had reasonable time to act upon it.

(c) no printed or other material in any language, including any prospectus, notice, report, and promotional material or the rights, powers, or duties of Escrow Agent under this Escrow Agreement shall be issued by any other parties hereto, or on such Party's behalf, without the prior written consent of Escrow Agent.

(d) it will not claim any immunity from jurisdiction of any court, suit or legal process, whether from service of notice, injunction, attachment, execution or enforcement of any judgment or otherwise.

14. Security Procedures. In the event instructions, including funds transfer instructions, address change or change in contact information are given to Escrow Agent (other than in writing at the time of execution of this Escrow Agreement), whether in writing, by facsimile or otherwise, Escrow Agent is authorized but shall not be required to seek confirmation of such instructions by telephone call-back to any person designated by the instructing Party on **Exhibit "C"** hereto, and Escrow Agent may rely upon the confirmation of anyone purporting to be the person so designated. The persons and telephone numbers for call-backs may be changed only in writing actually received and acknowledged by Escrow Agent and shall be effective only after Escrow Agent has a reasonable opportunity to act on such changes. Buyer and Seller agree that Escrow Agent may at its option record any telephone calls made pursuant to this Section. Escrow Agent in any funds transfer may rely solely upon any account numbers or similar identifying numbers provided by Buyer or Seller to identify (i) the beneficiary, (ii) the beneficiary's bank, or (iii) an intermediary bank, even when its use may result in a person other than the beneficiary being paid, or the transfer of funds to a bank other than the beneficiary's bank or an intermediary bank so designated. Buyer and Seller acknowledge that these optional security procedures are commercially reasonable.

15. Tax Reporting. Escrow Agent shall have no responsibility for the tax consequences of this Escrow Agreement and Buyer and Seller shall consult with independent counsel concerning any and all tax matters. Buyer and Seller jointly and severally agree to (a) assume all obligations imposed now or hereafter by any applicable tax law or regulation with respect to payments or performance under this Escrow Agreement and (b) request and direct the Escrow Agent in writing with respect to withholding and other taxes, assessments or other governmental charges, and advise the Escrow Agent in writing with respect to any certifications and governmental reporting that may be required under any applicable laws or regulations. Except as otherwise agreed by Escrow Agent in writing, Escrow Agent has no tax reporting or withholding obligation except with respect to Form 1099-B reporting on payments of gross proceeds under Internal Revenue Code Section

6045 and Form 1099 and Form 1042-S reporting with respect to investment income earned on the Escrow Fund, if any. To the extent that U.S. federal imputed interest regulations apply, Buyer and Seller shall, no later than five (5) Business Days after the effective date of this Escrow Agreement, so inform the Escrow Agent, provide the Escrow Agent with all imputed interest calculations and direct the Escrow Agent to disburse imputed interest amounts as Buyer and Seller deem appropriate. The Escrow Agent shall rely solely on such provided calculations and information and shall have no responsibility for the accuracy or completeness of any such calculations or information. Buyer and Seller shall provide Escrow Agent a properly completed IRS Form W-9 or Form W-8, as applicable, for each payee. If requested tax documentation is not so provided, Escrow Agent is authorized to withhold taxes as required by the United States Internal Revenue Code and related regulations. Buyer and Seller have determined that any interest or income on the Escrow Fund shall be reported on an accrual basis and deemed to be for the account of Seller.

Signature page follows.

IN WITNESS WHEREOF, each of the parties hereto has executed this Escrow Agreement as of the date first above written.

BUYER:

AQUA PENNSYLVANIA WASTEWATER, INC.

_____

Name: Marc A. Lucca

Title: President

SELLER:

EAST WHITELAND TOWNSHIP

_____

Name: John Nagel

Title: Manager

ESCROW AGENT:

_____

_____

Name:

Title:

Exhibit A

MISSING EASEMENTS

Exhibit B

FORM OF EASEMENT TEMPLATE

Prepared By & Return To:

[ ]

Chester County Tax Parcel Number:

DEED OF EASEMENT

THIS DEED OF EASEMENT is made this [ ] day of [ ], 20[ ] by and between **[Grantor]**, having a mailing address of [address] (the "**Grantor**"), and **AQUA PENNSYLVANIA WASTEWATER, INC.**, a corporation organized and existing under the laws of Pennsylvania of the Commonwealth of Pennsylvania, having a business address of 762 W. Lancaster Avenue, Bryn Mawr, Pennsylvania, 19010 (the "**Grantee**").

RECITALS

WHEREAS, Grantee owns and operates the sanitary wastewater collection system (the "**System**"), which collects sanitary wastewater from customers in and around the Township of East Whiteland, Pennsylvania, and transports its sewage for treatment at a plant owned and operated by the Valley Forge Sewer Authority.

WHEREAS, certain underground sanitary sewer lines owned by Grantee (the "**Sewer Lines**") are situated within the real property owned by the Grantor described on **Exhibit "A"** attached hereto (the "**Property**") which either were never the subject of an instrument that was recorded in the Chester County Recorder of Deeds office.

WHEREAS, the parties wish to document Grantee's rights to own, operate, maintain and replace the Sewer Lines with the boundaries of the Property.

NOW, THEREFORE, the said Grantor, for and in consideration of the sum of Ten and 00/100 Dollars ($10.00), lawful money of the United States of America, unto it well and truly paid

by East Whiteland Township (as predecessor to Grantee as owner of the Sewer Lines) on behalf of the said Grantee, at or before the sealing and delivery hereof, the receipt of whereof is hereby acknowledged, by these presents hereby does grant, convey, bargain and sell, alien, enfeoff, release and confirm unto the said Grantee, its respective successors, and assigns forever, a permanent and perpetual, non-exclusive easement for access, ingress, egress and regress to the Sewer Lines, and for using, operating, altering, inspecting, repairing, removing, improving, replacing, maintaining and installing the Sewer Lines, as they exist or may be installed and exist in the future on the real estate described on **Exhibit "B"** (the **"Easement Area"**).

TOGETHER WITH the right to use, repair, remove, reconstruct and reinstall the Sewer Lines, the right to access such facilities, and the right to make excavations and trim or remove trees, brush, undergrowth, landscaping and other obstructions in the exercise of the foregoing rights.

THE EASEMENT GRANTED HEREIN are permanent and perpetual and are covenants running with the lands burdened by the easement described in this Deed of Easements.

TO HAVE AND TO HOLD this Deed of Easement with the wastewater system improvements thereon installed and erected, hereditaments and premises hereby granted, or mentioned and intended so to be, with appurtenances, all and singular and the rights, liberties, privileges, above-described, unto the said Grantee, its successors and assigns forever.

AND THE SAID GRANTOR, for itself, its successor and assigns, does by these presents covenant, promise, grant and agree, to and with the Grantee, its successors and assigns, by these presents, that it, the said Grantor and its successors and assigns, all and singular the hereditaments, premises, and land hereby described and granted, or mentioned and intended so to be, with the appurtenances, unto the said Grantee, its successors and assigns, against them the said Grantor and its successors and assigns, and against all and every person and persons whomsoever lawfully claiming or to claim the same or any part thereof, by, from or under it, them or any of them, shall and will **WARRANT** and forever **DEFEND.**

This Deed of Easement and all of the covenants herein contained shall inure to the benefit of, and shall be binding upon the Grantor, its successors and assigns, and Grantee, its successors and assigns.

[Signature page to follow]

IN WITNESS WHEREOF, Grantor has duly executed this instrument as of the above written date.

GRANTOR:

By: _____

I hereby certify that the address of

the within named Grantee is:

Aqua Pennsylvania Wastewater, Inc.

762 West Lancaster Avenue

Bryn Mawr, PA 19010

_____

On behalf of said Grantee

SIGNATURE PAGE FOR DEED OF EASEMENT

COMMONWEALTH OF PENNSYLVANIA :

: SS

COUNTY OF CHESTER :

On this day of , 20___, before me, the undersigned officer, personally appeared **[Grantor]**, who, known to me or satisfactorily proven, acknowledged himself to be the person who executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____

Notary Public

My commission expires on:

Exhibit A: Legal description for fee interest in Property

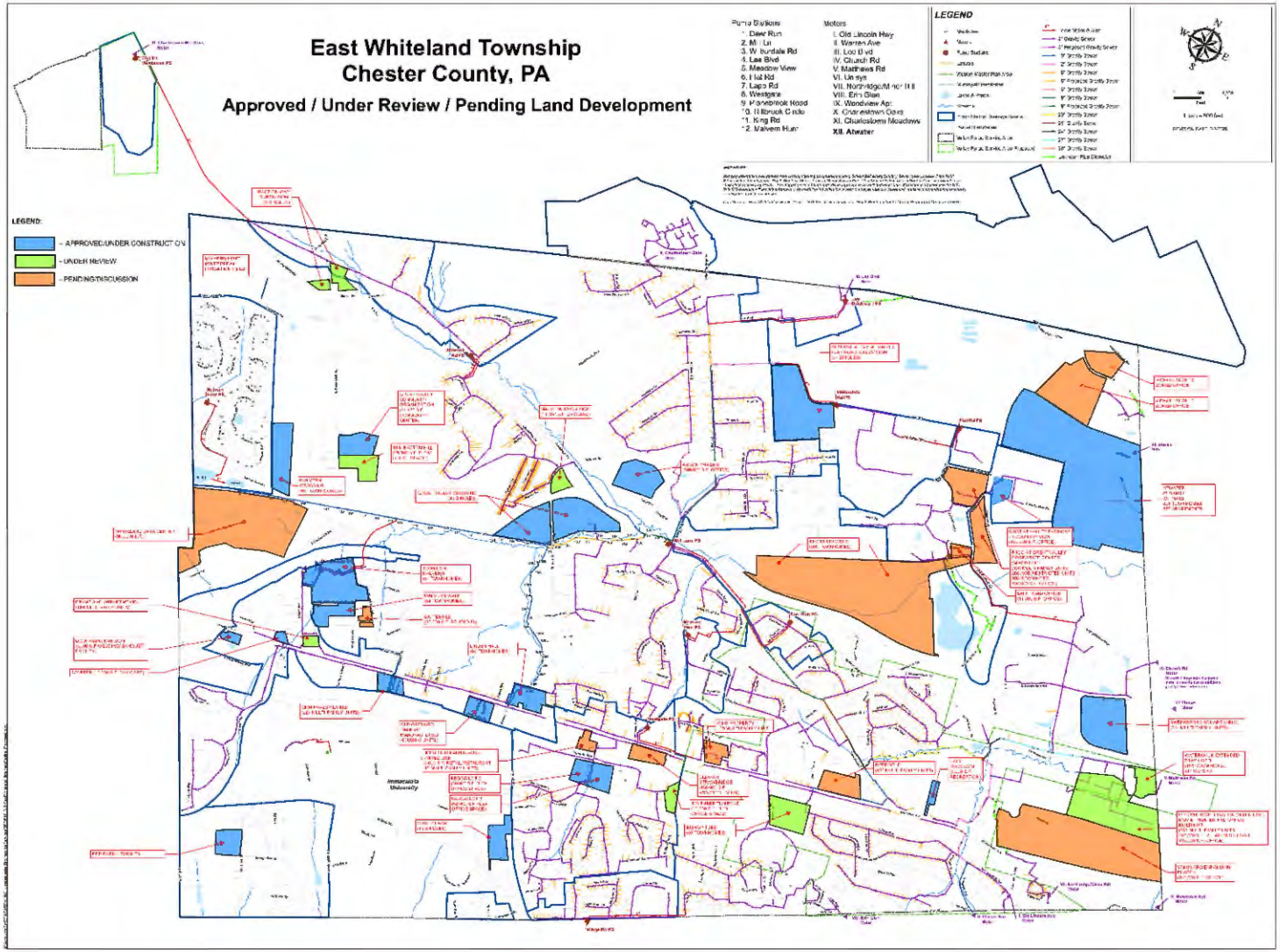
Exhibit B: Legal description of Easement Area

Exhibit C

AUTHORIZED PERSONS

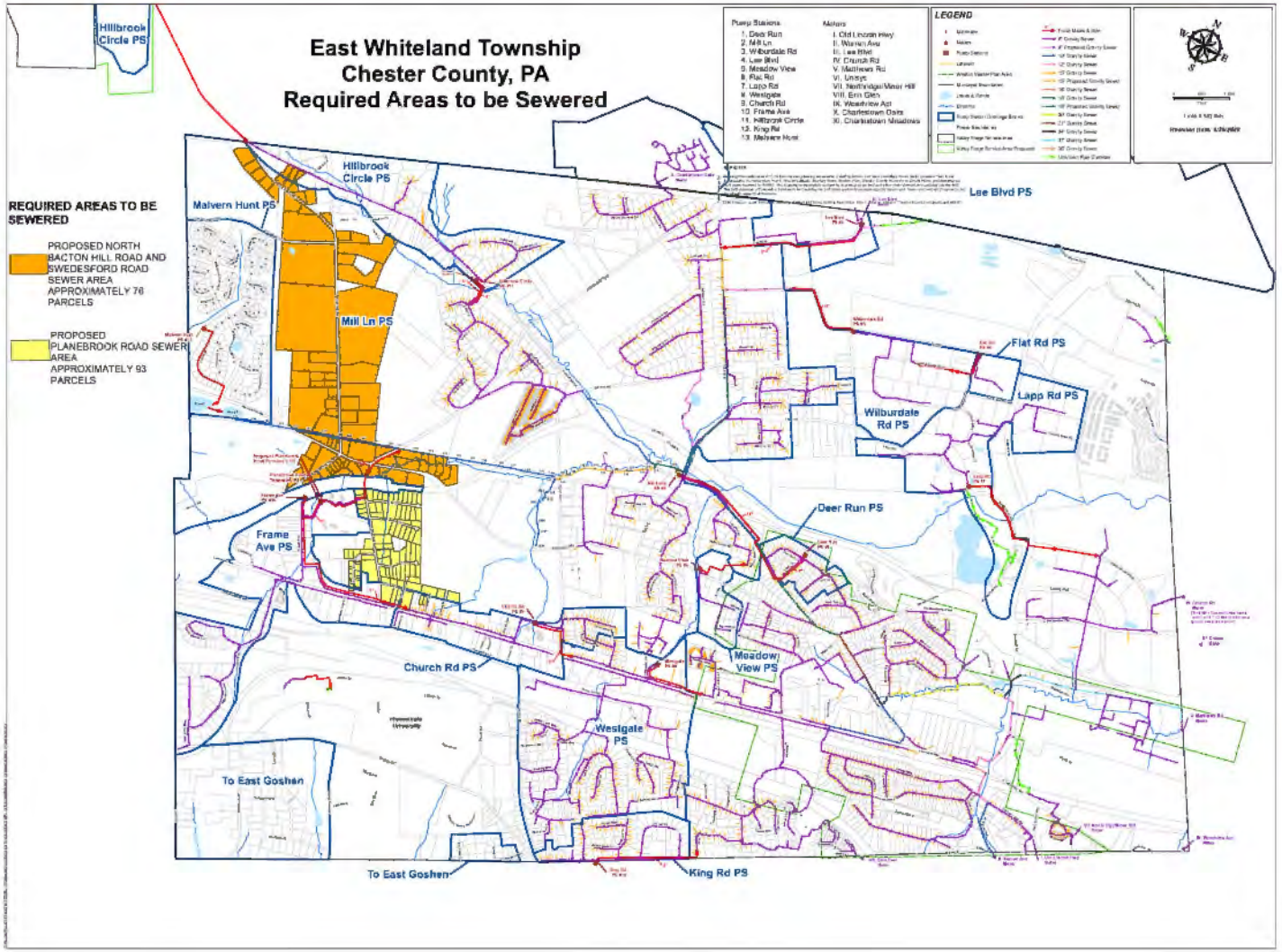
SCHEDULE A

Service Area



SCHEDULE B

Expanded Service Area Map



Schedule 2.02(h)

Excluded Assets

The Malvern Hunt Pumping Station, force main and the gravity sewer collection system within the Malvern Hunt Wastewater Treatment Plant (the "WWTP") will be included in the Acquired Assets. However, it is expected that the spray irrigation system associated with the WWTP, including the treatment ponds and the spray irrigation fields, will be decommissioned and, along with associated parcels 42-3-47 and 42-3-127, will be excluded from the sale.

Schedule 4.05

Consents and Approvals

1. Pennsylvania Public Utility Commission ("PaPUC") Approval of Transaction

2. PaPUC Approval of Consent to Assignment and Amendment to Sewer Service Agreements and Related Amendments

3. Pennsylvania Department of Environmental Protection ("PaDEP") Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer

4. PaDEP Approval of Transfer of all NPDES[1] and WQM Permits

[1] NPDES permits will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

Schedule 4.06

Undisclosed Liabilities

None.

Schedule 4.07

Events Having a Material Adverse Effect

None.

Schedule 4.08

Tax Matters

None.

Schedule 4.09

Real Property and Easements; Liens

The "Matthews Road Drainage Area" in the list below is the name given to the eastern portion of the Township which does not drain into a pump station. All other drainage area names are based upon the pump station names on the aforementioned plans. The instruments have the following abbreviations: DB (deed book), MB (miscellaneous book) and PB (plan book). The properties located within the Church Road drainage area on the March 3, 2020 sanitary sewer system plan are incorporated into the Planebrook drainage area in this list.

DEER RUN DRAINAGE AREA (DR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
DR 1	4-4F-13-E	15 Deer Run Lane	Pump Station	DB: 8914/1465	Yes
DR 2	42-4K-57	11 Fawn Circle	Gravity Line & Force Main	MB: 197/260	Yes
DR 3	42-4K-60	146 Conestoga Road	Gravity Line & Force Main	MB: 199/67	Yes

DEER RUN DRAINAGE AREA (DR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Deer Run Lane	Gravity Line & Force Main	DB: P40/251	Yes
Fawn Circle	Gravity Line & Force Main	DB: P40/251	Yes
Doe Lane	Gravity Line	DB: P40/246 DB: W31/40	Yes
Buck Run Lane	Gravity Line	DB: W31/40	Yes
Conestoga Road	Force Main		Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 1	42-5-1.1	85 Matthews Road	Gravity Line	MB: 197/878 Plan No. 18668	Yes
MR 2	42-4-266	Uptown Worthington	Gravity Line	DB: 8443/1099	Yes
MR 3	42-4-260.2	11 Matthews Road	Gravity Line	Plan No. 20382 Plan No. 15178	Yes
MR 4	42-4-260.2A	5 Matthews Road	Gravity Line	Plan No. 15178	Yes
MR 5	RESERVED				
MR 6	42-4-257.2	Lindenwood Drive & Morehall Road	Gravity Line	Plan No. 4470	Yes
MR 7	42-4-255-E	Chester Valley Trail	Gravity Line		No
MR 8	42-4-268.1	19 Morehall Road	Gravity Line	DB: 3559/1973	Yes
MR 9	42-4-269	1100 Brannan Boulevard	Gravity Line	DB: 3559/1973	Yes
MR 10	42-4-270	Railroad Tracks	Gravity Line		No
MR 11	42-4-272	49 E. Lancaster Avenue	Gravity Line	DB: 3559/1973	Yes
MR 12	RESERVED				
MR 13	42-4-339	9 Old Lincoln Highway	Gravity Line	DB: 4373/191	Yes
MR 14	42-5-16.1	Northridge Community Common Areas	Gravity Line	DB: 4373/180	Yes
MR 15	42-4-132	WS Morehall Road	Gravity Line	Plan No. 10214 Plan No. 9327	Yes
MR 16	42-4-132.2	10 Morehall Road	Gravity Line	MB: 199/73 1972-00522	Yes
MR 17	42-4-332	32 Lancaster Avenue	Gravity Line	MB: 199/54 MB: 284/241	Yes
MR 18	42-4-331	52 Lancaster Avenue	Gravity Line	MB: 284/237 1975-00649	Yes
MR 19	42-4-330	60 Lancaster Avenue	Gravity Line	MB: 284/233 1975-00648	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 20	42-4-329	70 Lancaster Avenue	Gravity Line	MB: 284/229 1975-00647	Yes
MR 21	42-4-328	84 Lancaster Avenue	Gravity Line	MB: 287/5 1975-00684	Yes
MR 22	42-4-327	102 Lancaster Avenue	Gravity Line	MB: 284/224 1975-00646	Yes
MR 23	42-4-326	106 Lancaster Avenue	Gravity Line	MB: 284/221 1975-00645	Yes
MR 24	42-4-325	108 Lancaster Avenue	Gravity Line	MB: 284/217 1975-00644	Yes
MR 25	42-4-324	112 Lancaster Avenue	Gravity Line	MB: 284/213 1975-00643	Yes
MR 26	42-4-323	114 Lancaster Avenue	Gravity Line	MB: 284/209 1975-00642	Yes
MR 27	42-4-322	116 Lancaster Avenue	Gravity Line	MB: 284/205 1975-00641	Yes
MR 28	42-4-322.9	120 Lancaster Avenue	Gravity Line	MB: 284/205 1975-00641	Yes
MR 29	42-4-322.8	126 Lancaster Avenue	Gravity Line	MB: 284/201 1975-00640	Yes
MR 30	42-4-322.7	140 Lancaster Avenue	Gravity Line	MB: 284/197 1975-00639	Yes
MR 31	42-4-322.6	152 Lancaster Avenue	Gravity Line	MB: 287/13 1975-00686	Yes
MR 32	42-4-322.5	154 Lancaster Avenue	Gravity Line	MB: 390/33 MB: 284/193	Yes
MR 33	42-4-322.4	160 Lancaster Avenue	Gravity Line	MB: 287/189 1975-00637	Yes
MR 34	42-4-322.2	172 Lancaster Avenue	Gravity Line	MB: 287/185 1975-00636	Yes
MR 35	42-4-322.1	188 Lancaster Avenue	Gravity Line	MB: 284/181 1975-00635	Yes
MR 36	42-4-318	200 Lancaster Avenue	Gravity Line	MB: 284/177 1975-00634	Yes
MR 37	42-4-317.2	218 Lancaster Avenue	Gravity Line	MB: 284/169 MB: 287/17	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 38	42-4-317.1	228 Lancaster Avenue	Gravity Line	MB: 284/173 1975-00633	Yes
MR 39	42-4-317	228 Lancaster Avenue	Gravity Line	MB: 284/169 MB: 287/17	Yes
MR 40	42-4-316	230 Lancaster Avenue	Gravity Line	MB: 284/165 1975-00631	Yes
MR 41	42-4-315	240 Lancaster Avenue	Gravity Line	MB: 284/161 MB: 287/157	Yes
MR 42	42-4-313	270 Lancaster Avenue	Gravity Line	MB: 284/153 MB: 287/157	Yes
MR 43	42-4-132.1	7 Lancaster Avenue	Gravity Line	MB: 199/27 MB: 284/245	Yes
MR 44	42-4-139	73 Lancaster Avenue	Gravity Line	MB: 287/1 1975-00683	Yes
MR 45	42-4-140	77 Lancaster Avenue	Gravity Line	MB: 287/9 1975-00685	Yes
MR 46	42-4-141	81 Lancaster Avenue	Gravity Line	MB: 284/249 1975-00652	Yes
MR 47	42-4-130	101 Lancaster Avenue	Gravity Line	DB: 6523/952	Yes
MR 48	42-4-127	115 Lancaster Avenue	Gravity Line	MB: 284/261 1975-00655	Yes
MR 49	42-4-129	155 Lancaster Avenue	Gravity Line	MB: 284/257 MB: 284/265	Yes
MR 50	42-4-125.2	157 Lancaster Avenue	Gravity Line	MB: 284/257 MB: 284/265	Yes
MR 51	42-4-125.3	161 Lancaster Avenue	Gravity Line	MB: 284/269 1975-00657	Yes
MR 52	42-4-125.3A	167 Lancaster Avenue	Gravity Line	MB: 284/269 1975-00657	Yes
MR 53	42-4-125.8	NS Lancaster Avenue	Gravity Line	MB: 287/273 1975-00658	Yes
MR 54	42-4-125	NS Lancaster Avenue	Gravity Line	MB: 345/130 MB: 284/273	Yes
MR 55	42-4-102.2	181 Lancaster Avenue	Gravity Line	MB: 401/378 MB: 284/277	Yes
MR 56	42-4-102.4	183 Lancaster Avenue	Gravity Line	MB: 401/378 MB: 284/277	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 57	42-4-103	189 Lancaster Avenue	Gravity Line	MB: 284/281 1975-00660	Yes
MR 58	42-4-104	195 Lancaster Avenue	Gravity Line	MB: 399/399 MB: 284/285	Yes
MR 59	42-4-106.1	197 Lancaster Avenue	Gravity Line	MB: 284/253 1975-00653	Yes
MR 60	42-4-97.1	237 Lancaster Avenue	Gravity Line	MB: 284/289 MB: 284/293	Yes
MR 61	42-4-98.1	245 Lancaster Avenue	Gravity Line	MB: 284/289 1975-00664	Yes
MR 62	42-4-98.4	249 Lancaster Avenue	Gravity Line	MB: 284/302 1975-00665	Yes
MR 63	42-4-98	255 Lancaster Avenue	Gravity Line	MB: 286/336 MB: 284/302	Yes
MR 64	42-4-100	271 Lancaster Avenue	Gravity Line	MB: 983/401 MB: 284/306	Yes
MR 65	42-4-89.1B	NS Lancaster Avenue	Gravity Line	MB: 286/336 1975-00679	Yes
MR 66	42-4-89.1A	NS Lancaster Avenue	Gravity Line	MB: 546/424	Yes
MR 67	42-4-101.1	289 Lancaster Avenue	Gravity Line	MB: 983/337 1987-0872	Yes
MR 68	42-4-87.2	309 Lancaster Avenue	Gravity Line & Force Main	MB: 983/349 1987-08872	Yes
MR 69	42-4-333	18 E. Lancaster Avenue	Gravity Line		No
MR 70	42-4-334-E	Railroad Tracks	Gravity Line		No (2 Crossings)
MR 71	42-4-335	9 Village Way	Gravity Line	MB: 206/582 MB: 199/30	Yes
MR 72	42-4-338	5 Old Lancaster Pike	Gravity Line	MB: 197/274	Yes
MR 73	42-4-350	54 Old Lancaster Pike	Gravity Line	MB: 197/274	Yes
MR 74	42-4-352	54 Old Lancaster Pike	Gravity Line & Meter	MB: 199/61 1972-00518	No
MR 75	42-4-351	52 Old Lancaster Pike	Gravity Line	Plan No. 7654	Yes
MR 76	42-4-352.1	100 Daisey Lane	Gravity Line	Plan No. 7654	Yes
MR 77	42-4-352.2	102 Daisey Lane	Gravity Line	Plan No. 7654	Yes
MR 78	42-4-352.3	103 Daisey Lane	Gravity Line		No

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 79	42-4-343	333 North Warren Avenue	Gravity Line	MB: 199/79 1972-00524	Yes
MR 80	42-4R-26	15 Spring Road	Gravity Line	MB: 345/56 MB: 284/347	Yes
MR 81	42-4R-34	39 Spring Road	Gravity Line	MB: 402/164 MB: 285/1	Yes
MR 82	42-4R-33	45 Spring Road	Gravity Line	MB: 345/56	Yes
MR 83	42-4R-32	57 Spring Road	Gravity Line	MB: 285/5 1975-00675	Yes
MR 84	42-4R-25	127 Watch Hill Lane	Gravity Line	MB: 345/56	Yes
MR 85	42-4R-21	Between Watch Hill Ln & Fahnestock Road	Gravity Line	MB: 286/344 1975-00681	Yes
MR 86	42-4R-19	8 Lantern Lane	Gravity Line	MB: 284/339 1975-00671	Yes
MR 87	42-4R-20	9 Lantern Lane	Gravity Line	MB: 284/343 1975-00672	Yes
MR 88	42-4-321.2	1 South Malin Road	Gravity Line	MB: 197/888	Yes
MR 89	42-4-278.20	Inis Way/Kerry Lane	Gravity Line	DB: 3877/431	Yes
MR 90	42-4-281.47	Sugar Ridge Lane & Sunnybrook Lane	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 91	42-4-281	Sugar Ridge Common Area	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 92	42-4-281.28	8 Broad Leaf Terrace	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 93	42-4-281.29	10 Broad Leaf Terrace	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 94	42-4-281.30	12 Broad Leaf Terrace	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 95	42-4-281.31	14 Broad Leaf Terrace	Gravity Line	DB: 6267/2378 DB: 4643/95	Yes
MR 96	42-4-294-E	Railroad Tracks	Gravity Line		No (4 Crossings)
MR 97	42-7C-5	15 Oak Hill Circle	Gravity Line	DB: 5648/615	Yes
MR 98	42-4Q-169	17 Oak Hill Circle	Gravity Line	DB: 5648/607	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 99	42-4Q-157	41 Oak Hill Circle	Gravity Line	MB: 427/203	Yes
MR 100	42-4Q-156	43 Oak Hill Circle	Gravity Line	MB: 427/203	Yes
MR 101	42-4Q-155	45 Oak Hill Circle	Gravity Line	MB: 419/341	Yes
MR 102	42-4Q-179	5 Forest Way	Gravity Line	PB: 43/4	Yes
MR 103	42-4Q-180	7 Forest Way	Gravity Line	PB: 43/4	Yes
MR 104	42-4Q-172	30 Oak Hill Circle	Gravity Line	PB: 43/4	Yes
MR 105	42-4Q-171	32 Oak Hill Circle	Gravity Line	PB: 43/4	Yes
MR 106	42-7B-138.10	19 Amy Lane	Gravity Line	DB: 2603/389	Yes
MR 107	42-7B-138.11	21 Amy Lane	Gravity Line	DB: 2603/389	Yes
MR 108	42-7-64.4	16 Summit Road	Gravity Line	MB: 960/194	Yes
MR 109	42-7-64.2	20 Summit Road	Gravity Line	MB: 960/190	Yes
MR 110	42-4P-28-E	49 Summit Road	Gravity Line	DB: H49/87	Yes
MR 111	42-4-295.1	8 South Malin Road	Gravity Line	MB: 284/327 1975-00668	Yes
MR 112	42-4-321	9 South Malin Road	Gravity Line	MB: 284/340 1975-00680	Yes
MR 113	42-4-321.1	10 South Malin Road	Gravity Line	MB: 286/323 1975-00667	Yes
MR 114	42-4K-143	28 Birch Road	Gravity Line		No
MR 115	42-4K-142	30 Birch Road	Gravity Line		No
MR 116	42-4K-28	6 Pine Road	Gravity Line	MB: 197/271	Yes
MR 117	42-4K-27	8 Pine Road	Gravity Line	MB: 196/996	Yes
MR 118	42-4K-7	7 Pine Road	Gravity Line	MB: 196/1002	Yes
MR 119	42-4K-6	9 Pine Road	Gravity Line	MB: 197/1021	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 120	42-4K-30	7 Locust Drive	Gravity Line	MB: 197/262 MB: 347/323	Yes
MR 121	42-4K-17	12 Locust Drive	Gravity Line	MB: 196/999 MB: 347/323	Yes
MR 122	42-4-109	67 Malin Road	Gravity Line	MB: 377/134	Yes
MR 123	42-4-110	69 Malin Road	Gravity Line	MB: 345/134	Yes
MR 124	42-4-143	39 Conestoga Road	Gravity Line	Plan No. 5498 MB: 197/268	Yes
MR 125	42-4-144	ES Conestoga Road	Gravity Line	MB: 336/282	Yes
MR 126	42-4-240.3	8 Winding Way	Gravity Line	MB: 199/51 PB: 49/27	Yes
MR 127	42-4-240.1	12 Winding Way	Gravity Line	MB: 202/41 MB: 199/48	Yes
MR 128	42-4-142	40 Morehall Road	Gravity Line	MB: 197/268	Yes
MR 129	42-4-252	S of Winding Way	Gravity Line	MB: 197/883	Yes
MR 130	42-4-249	30 Winding Way	Gravity Line	MB: 345/52	Yes
MR 131	42-4-253-E	36 Winding Way	Gravity Line	DB: O31/211	Yes
MR 132	42-4-257.1	200 Lindenwood Drive	Gravity Line	MB: 199/57	Yes
MR 133	42-4-254	50 Morehall Road	Gravity Line	MB: 347/326 MB: 199/57	Yes
MR 134	42-4-260.6-E	30 East Swedesford Road	Gravity Line	DB: 554/536	Yes
MR 135	42-4-53.14	20 Liberty Boulevard	Gravity Line	DB: 2603/325 Plan No. 9429	Yes
MR 136	42-4-53.15	40 Liberty Boulevard	Gravity Line	DB: 2603/380 Plan No. 8837	Yes
MR 137	42-4-53.16	11 Liberty Boulevard	Gravity Line	DB: 554/536 Plan No. 7496	Yes
MR 138	42-4-53.6	10 Valley Stream Parkway	Gravity Line & Force Main	Plan No. 5076 DB: 6765/1748	Yes
MR 139	42-4-53.10	20 Valley Stream Parkway	Gravity Line & Force Main	Plan No. 5434 DB: 6765/1748	Yes
MR 140	42-4-53.7	30 Valley Stream Parkway	Gravity Line & Force Main	Plan No. 5434 DB:6765/1748	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MR 141	42-4-53.12	40 Valley Stream Parkway	Gravity Line	Plan No. 6432 DB: 554/536	Yes
MR 142	RESERVED				
MR 143	42-4-53.5	65 Valley Stream Parkway	Gravity Line	Plan No. 4799	Yes
MR 144	42-4-53.3	51 Valley Stream Parkway	Gravity Line	DB: 6773/235	Yes
MR 145	42-4-53.11	75 Valley Stream Parkway	Gravity Line	Plan No. 19299 DB: 554/536	Yes
MR 146	42-4-53	41 Valley Stream Parkway	Gravity Line	DB: 554/536	Yes
MR 147	42-4-53.8	70 Valley Stream Parkway	Gravity Line	DB: 554/536	Yes
MR 148	42-2-8.1	1400 Atwater Drive	Gravity Line	Plan No. 19233 Plan No. 15830	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Oak Hill Circle	Gravity Line	DB: H49/60 DB: S54/414	Yes
Forest Way	Gravity Line	DB: H49/60 DB: S54/414	Yes
Amy Lane	Gravity Line & Force Main	DB: 2603/308	Yes
Birch Road	Gravity Line	DB: Q35/224 DB: Q35/243 DB: P40/443	Yes
Locust Road	Gravity Line	DB: Q35/224	Yes
Pine Road	Gravity Line	DB: Q35/239	Yes
Doe Lane	Gravity Line	DB: P40/246 DB: W31/40	Yes
Buck Run Lane	Gravity Line	DB: W31/40	Yes
Willow Drive	Gravity Line	DB: P40/443	Yes
Sycamore Drive	Gravity Line	DB: P40/443	Yes
Beth Circle	Gravity Line	DB: T49/241	Yes
Village Way	Gravity Line	DB: N27/627 DB: Q24/523 DB: W24/133	Yes
Spring Road	Gravity Line	DB: S36/52 DB: W31/64	Yes
Woodview Road	Gravity Line	DB: W31/64	Yes
Fahnestock Road	Gravity Line	DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35	Yes
Longview Road	Gravity Line	DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35	Yes
Lantern Lane	Gravity Line	DB: X24/35	Yes

MATTHEWS ROAD DRAINAGE AREA (MR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Old Lincoln Highway/ Old Lancaster Road	Gravity Line	DB: 2603/365	Yes
Roberts Road	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Elbow Lane	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Winding Way	Gravity Line	DB: N29/192 DB: O31/215	Yes
Wood Lane	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Beth Lane	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Hillside Drive	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Kane Drive	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Swedesford Road	Gravity Line	DB: N29/192 DB: O31/215 DB: O31/222	Yes
Valley Stream Parkway	Gravity Line & Force Main	DB: 6773/219 DB: 6773/235	Yes
Malin Road	Gravity Line	DB: Q35/224	Yes
South Malin Road	Gravity Line	DB: 2603/336	Yes
South Malin Road Railroad Crossing			No
Summit Road	Gravity Line	DB: H49/60	Yes
U.S. Route 202	Gravity Line	MB: 554/536	Yes
Lancaster Avenue	Gravity Line & Force Main		Yes
East Lancaster Avenue	Gravity Line		Yes
Conestoga Road	Gravity Line & Force Main		Yes
Morehall Road	Gravity Line & Force Main		Yes

MATTHEWS ROAD DRAINAGE AREA (MR)			
Street	Structure	Instrument/ Docket	Easement or ROW
East Swedesford Road	Gravity Line		Yes
Matthews Road	Gravity Line		Yes
Warren Avenue	Gravity Line		Yes
Lindenwood Drive	Gravity Line		Yes

KING ROAD DRAINAGE AREA (KR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
KR 1	53-2-18 & 53-2-127	940 West King Road	Pump Station	DB: 6033/577	Yes
KR 2	42-7-53	909 King Road	Force Main	Plan No. 7631	Yes
KR 3	42-7B-101	911 King Road	Gravity Line & Force Main	DB: 689/549	Yes
KR 4	42-7B-102	1 Kings Circle	Gravity Line & Force Main	DB: 9549/1435	Yes
KR 5	42-7B-133	923 King Road	Gravity Line & Force Main	DB: 10200/763	Yes
KR 6	42-7B-132	927 King Road	Gravity Line & Force Main	DB: 3587/954	Yes
KR 7	42-7B-119	937 King Road	Gravity Line & Force Main	DB: F53/118	Yes
KR 8	42-7B-120	36 Kings Circle	Gravity Line & Force Main	DB: 3827/1452	Yes
KR 9	42-7B-118	35 Kings Circle	Gravity Line & Force Main	DB: 10117/2299	Yes
KR 10	42-7B-85	957 King Road	Gravity Line & Force Main	DB: 6737/2373	Yes
KR 11	42-7B-86	1 Madeline Drive	Gravity Line & Force Main	DB: 8800/2081	Yes
KR 12	42-7B-84	961 King Road	Gravity Line & Force Main	DB: 3532/2014	Yes
KR 13	42-7B-83	965 King Road	Gravity Line & Force Main	DB: 9636/2118	Yes
KR 14	42-7B-82	6 Queen Anne Lane	Gravity Line & Force Main	DB: 9839/713	Yes
KR 15	42-7B-81	8 Queen Anne Lane	Gravity Line & Force Main	DB: 9179/23	Yes
KR 16	42-7B-80	10 Queen Anne Lane	Gravity Line & Force Main	DB: 3584/1943	Yes
KR 17	42-7B-52	1009 King Road	Gravity Line	PB: 16/45 DB: 5686/920	Yes
KR 18	42-7-52.2	1011 King Road	Gravity Line	PB: 16/45	Yes
KR 19	42-7-52.3	1013 King Road	Gravity Line	PB: 16/45 DB: 5648/601	Yes
KR 20	42-7-52.1A	1015 King Road	Gravity Line	PB: 16/45 Plan No. 1193	Yes

KING ROAD DRAINAGE AREA (KR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
KR 21	42-7-50.1	1017 King Road	Gravity Line	Plan No. 17279	Yes
KR 22	42-7-50	1021 King Road	Gravity Line	Plan No. 17279	Yes

KING ROAD DRAINAGE AREA (KR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Kings Circle	Gravity Line	DB: N29/595	Yes
Madeline Drive	Gravity Line	DB: V28/663	Yes
Kevin Way	Gravity Line	DB: V28/663	Yes
Queen Anne Lane	Gravity Line	DB: V28/671	Yes
Carol Lane	Gravity Line	DB: V28/671	Yes
King Road	Gravity Line & Force Main		Yes

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 1	42-4-87.2	309 Lancaster Avenue	Gravity, FM & Pump Station	MB: 983/353 1987-08872	Yes
WG 2	42-4-87.1	337 Lancaster Avenue	Gravity Line	MB: 983/341 1987-08872	Yes
WG 3	42-4N-22	345 Lancaster Avenue	Gravity Line	MB: 983/405 1987-08872	Yes
WG 4	42-4N-21	351 Lancaster Avenue	Gravity Line	MB: 983/357 1987-08872	Yes
WG 5	42-4N-20.1	353 Lancaster Avenue	Gravity Line	MB: 983/361 1987-08872	Yes
WG 6	42-4N-39	365 Lancaster Avenue	Gravity Line	MB: 983/365 1987-08872	Yes
WG 7	42-4N-40	375 Lancaster Avenue	Gravity Line	MB: 983/369 1987-08872	Yes
WG 8	42-4N-41	383 Lancaster Avenue	Gravity Line	MB: 983/345 1987-08872	Yes
WG 9	42-4N-42	385 Lancaster Avenue	Gravity Line	MB: 983/409 1987-08872	Yes
WG 10	42-4N-43	393 Lancaster Avenue	Gravity Line	MB: 983/413 1987-08872	Yes
WG 11	42-4N-44	397 Lancaster Avenue	Gravity Line	MB: 1357/504 1987-08895	Yes
WG 12	42-4-312	284 Lancaster Avenue	Gravity Line	MB: 983/373 1987-08872	Yes
WG 13	42-4-312.1	286 Lancaster Avenue	Gravity Line	MB: 983/377 1987-08872	Yes
WG 14	42-4-311	288 Lancaster Avenue	Gravity Line	MB: 983/381 1987-08872	Yes
WG 15	42-4-310.1	Lancaster Avenue	Gravity Line	MB: 983/417 1987-08872	Yes
WG 16	42-4-310	310 Lancaster Avenue	Gravity Line	MB: 983/385 1987-08872	Yes
WG 17	42-4-310.2	310 Lancaster Avenue	Gravity Line	MB: 983/421 1987-08872	Yes
WG 18	42-4-309	310 Lancaster Avenue	Gravity Line	MB: 983/421 1987-08872	Yes

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 19	42-4-309.1	330 Lancaster Avenue	Gravity Line	MB: 983/425 1987-08872	Yes
WG 20	42-4-308.2	340 Lancaster Avenue	Gravity Line	MB: 983/429 Plan No. 16523	Yes
WG 21	42-4-308.1	352 Lancaster Avenue	Gravity Line	MB: 983/369 1987-08872	Yes
WG 22	42-4-308	362 Lancaster Avenue	Gravity Line	MB: 983/393 DB: 3608/825	Yes
WG 23	42-4-307	360 Lancaster Avenue	Gravity Line	MB: 983/397 1987-08872	Yes
WG 24	42-4-306	370 Lancaster Avenue	Gravity Line	MB: 983/433 1987-08872	Yes
WG 25	42-4-304.2	382 Lancaster Avenue	Gravity Line	MB: 983/437, 441 445 & 449	Yes
WG 26	42-4-304-E	384 Lancaster Avenue	Gravity Line	MB: 983/453 1987-08872	Yes
WG 27	42-4-303	392 Lancaster Avenue	Gravity Line	DB: 1358/34 Plan No. 19774	Yes
WG 28	42-4-319-E	Railroad Tracks	Gravity Line		No
WG 29	42-4-296.16	155 Three Tun Road	Gravity Line	Plan No. 15362	Yes
WG 30	42-4-296.15	215 Three Tun Road	Gravity Line	Plan No. 15362	Yes
WG 31	42-4-296.14	225 Three Tun Road	Gravity Line	Plan No. 18412	Yes
WG 32	42-4-296.7	380 Three Tun Road	Gravity Line	DB: 5792/93	Yes
WG 33	RESERVED				

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 34	42-4-297.2	60 Three Tun Road	Gravity Line	Plan No. 18267	Yes
WG 35	42-4-297.3	70 Three Tun Road	Gravity Line	Plan No. 20467	Yes
WG 36	RESERVED				
WG 37	42-7B-134	1 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 38	42-7B-135	3 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 39	42-4P-15	5 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 40	42-4P-16	7 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 41	42-4P-17	9 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 42	42-4P-18	11 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 43	42-4P-19	13 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 44	42-4P-20	15 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 45	42-4P-29	17 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 46	42-4P-30	19 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 47	42-4P-31	21 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 48	42-4P-32	23 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 49	42-7B-145	2 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 50	42-7B-144	4 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 51	42-7B-143	6 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 52	42-7B-142	8 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 53	42-4P-37	10 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 54	42-4P-36	12 Ridge Road	Gravity Line	MB: 575/140	Yes

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 55	42-7B-151	14 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 56	42-7B-150	16 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 57	42-7B-149	18 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 58	42-7B-148	20 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 59	42-7B-147	22 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 60	42-7B-146	24 Ridge Road	Gravity Line	MB: 575/140	Yes
WG 61	42-7B-137	2 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 62	42-4P-27	3 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 63	42-4P-24	4 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 64	42-4P-23	6 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 65	42-4P-22	8 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 66	42-4P-21	10 Ridgewood Drive	Gravity Line	MB: 575/140	Yes
WG 67	42-4P-33	3 Sleighride Drive	Gravity Line	MB: 575/140	Yes
WG 68	42-4P-26	85 Summit Road	Gravity Line	MB: 575/140	Yes
WG 69	42-4P-25	87 Summit Road	Gravity Line	MB: 575/140	Yes
WG 70	42-7B-136	93 Summit Road	Gravity Line	MB: 575/140	Yes
WG 71	42-7B-100.2	90 Summit Road	Gravity Line	DB: 5648/717	Yes
WG 72	42-7B-100	92 Summit Road	Gravity Line	DB: 5648/711	Yes
WG 73	42-7A-41	26 Carol Lane	Gravity Line	DB: 5648/564	Yes
WG 74	42-7A-39	30 Carol Lane	Gravity Line	DB: 5686/926	Yes

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 75	42-7A-38	32 Carol Lane	Gravity Line	DB: 5648/558	Yes
WG 76	42-7A-37	34 Carol Lane	Gravity Line	DB: 5676/1121	Yes
WG 77	42-7A-36	36 Carol Lane	Gravity Line	DB: 5676/1145	Yes
WG 78	42-7A-35	38 Carol Lane	Gravity Line	DB: 5676/1139	Yes
WG 79	42-7A-34	40 Carol Lane	Gravity Line	DB: 5676/1096	Yes
WG 80	42-7A-33	42 Carol Lane	Gravity Line	DB: 5676/1133	Yes
WG 81	42-7A-32	44 Carol Lane	Gravity Line	DB: 5676/1151	Yes
WG 82	42-7A-31	46 Carol Lane	Gravity Line	DB: 5676/1103	Yes
WG 83	42-7A-27	54 Carol Lane	Gravity Line	DB: 5542/1669 2003-00682	Yes
WG 84	42-7A-25.3	3 Dawn Way	Gravity Line	DB: 3802/1172	Yes
WG 85	42-7A-11.9	27 Judith Lynn Way	Gravity Line	DB: 4599/2192	Yes
WG 86	42-7A-11.10	29 Judith Lynn Way	Gravity Line	DB: 4599/2192	Yes
WG 87	42-7A-92.5	15 Rogers Way	Gravity Line	DB: 4599/2214	Yes
WG 88	42-7A-92.6	17 Rogers Way	Gravity Line	DB: 4599/2214	Yes
WG 89	42-7A-92.12	16 Rogers Way	Gravity Line	DB: 4599/2214	Yes
WG 90	42-7A-92.10	20 Rogers Way	Gravity Line	DB: 4599/2214	Yes
WG 91	42-7A-68	4 Barbara Drive	Gravity Line	DB: 5648/577	Yes
WG 92	42-7A-69	6 Barbara Drive	Gravity Line	DB: 5686/942	Yes
WG 93	42-7A-92.15	10 Barbara Drive	Gravity Line	DB: 4599/2214	Yes
WG 94	42-7A-74	3 Barbara Drive	Gravity Line	DB: 5648/583	Yes

WESTGATE DRAINAGE AREA (WG)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WG 95	42-7A-73	5 Barbara Drive	Gravity Line	DB: 5648/570	Yes
WG 96	42-7A-92.14	11 Barbara Drive	Gravity Line	DB: 4599/2214	Yes
WG 97	42-7A-88	197 Summit Road	Gravity Line	DB: 5648/699	Yes
WG 98	RESERVED				
WG 99	42-7A-55	218 Summit Road	Gravity Line	DB: 5648/693	Yes
WG 100	42-7A-65	219 Summit Road	Gravity Line	DB: 5676/1115	Yes
WG 101	42-7A-84	125 Sproul Road	Gravity Line	DB: 5676/1127	Yes
WG 102	42-7A-83	127 Sproul Road	Gravity Line	DB: 5648/730	Yes
WG 103	42-7A-82	129 Sproul Road	Gravity Line	DB: 5676/1109	Yes
WG 104	42-7A-81	131 Sproul Road	Gravity Line	DB: 5648/723	Yes
WG 105	42-7A-80	133 Sproul Road	Gravity Line	DB: 5542/1657 2003-00679	Yes
WG 106	42-7A-80.1	135 Sproul Road	Gravity Line	DB: 5542/1657 2003-00679	Yes
WG 107	42-7A-79	137 Sproul Road	Gravity Line	DB: 5686/912	Yes
WG 108	42-7-40	159 Sproul Road	Gravity Line	DB: 5542/1624 2003-00680	Yes
WG 109	RESERVED				
WG 110	42-7-43	179 Sproul Road	Gravity Line	DB: 5686/932	Yes
WG 111	42-7-44	181 Sproul Road	Gravity Line	DB: 5686/936	Yes
WG 112	42-7-48	1029 King Road	Gravity Line	DB: 5648/595	Yes
WG 113	42-7A-60	3 Woodcrest Lane	Gravity Line	DB: 5542/2126 2003-02145	Yes
WG 114	42-7A-59	4 Woodcrest Lane	Gravity Line	DB: 5648/589	Yes
WG 115	42-7A-58	6 Woodcrest Lane	Gravity Line	DB: 5542/1691 2003-00683	Yes

WESTGATE DRAINAGE AREA (WG)			
Address	Structure	Instrument/ Docket	Easement or ROW
Westgate Village Drive	Gravity Line & Force Main	DB: 4804/2104	Yes
Buttonwood Avenue	Gravity Line	DB: R24/293	Yes
Beechwood Avenue	Gravity Line	DB: R24/293	Yes
Ridge Road	Gravity Line	DB: S60/29	Yes
Ridgewood Drive	Gravity Line	DB: S60/29	Yes
Sleighride Drive	Gravity Line	DB: S60/29	Yes
Summit Road	Gravity Line	DB: S60/29 MB: 114/645 DB: 2603/357 DB: S36/49	Yes
Carol Lane	Gravity Line	MB: 114/645	Yes
Diane Drive	Gravity Line	MB: 114/645	Yes
Dawn Way	Gravity Line	DB: 3802/1172	Yes
Judith Lynn Way	Gravity Line	DB: 4599/2180	Yes
Carla Terrace	Gravity Line	DB: 4599/2180	Yes
Rogers Way	Gravity Line	DB: 4599/2224	Yes
Barbara Drive	Gravity Line	DB: O34/259	Yes
Woodcrest Lane	Gravity Line	DB: T33/81	Yes

PLANEBROOK DRAINAGE AREA (PB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
PB 1	42-3-153.3	150 Planebrook Road	Gravity, FM & Pump Station	DB: 9950/1608 DB: 9830/1917	Yes
PB 2	42-3-165	60 Planebrook Road	Gravity Line & Force Main	DB: 9579/478	Yes
PB 3	42-3-149.1	5 Frame Avenue	Gravity Line & Force Main	DB: 1358/17 1988-08895	Yes
PB 4	42-3R-11.1	549 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/564 1988-08895	Yes
PB 5	42-3R-12	555 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/568 1988-08895	Yes
PB 6	42-3R-13	565 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/572 1988-08895	Yes
PB 7	42-3-179	567 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/576 1988-08895	Yes
PB 8	42-3-180	577 Lancaster Avenue (incl. r-o-w strip)	Gravity Line & Force Main	DB: 1678/190 1988-08895	Yes
PB 9	42-3Q-19	581 Lancaster Avenue (incl. r-o-w strip)	Gravity Line & Force Main	DB: 1357/584 1988/08895	Yes
PB 10	42-3Q-18	585 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/588 1988-08895	Yes
PB 11	42-3Q-9	587 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/592 1988-08895	Yes
PB 12	42-3-182	589 Lancaster Avenue	Gravity Line & Force Main	DB: 1358/1 1988-08895	Yes
PB 13	42-3-181	591 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/592 1988-08895	Yes
PB 14	42-3-183	593 Lancaster Avenue	Gravity Line & Force Main	DB: 1358/5 1988-08895	Yes
PB 15	42-3-184	593 Lancaster Avenue	Gravity Line & Force Main	DB: 1358/9 1988-08895	Yes
PB 16	42-3-185.1	593 Lancaster Avenue	Gravity Line & Force Main	DB: 1358/13 1988-08895	Yes
PB 17	42-3-185	609 Lancaster Avenue	Gravity Line & Force Main	DB: 1358/17 1988-08895	Yes
PB 18	42-3-145	619 Lancaster Avenue	Gravity Line	DB: 1358/126 1988-08895	Yes
PB 19	42-6-10.1	627 Lancaster Avenue	Gravity Line	DB: 1358/26 1988-08895	Yes

PLANEBROOK DRAINAGE AREA (PB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
PB 20	42-6-10	635 Lancaster Avenue	Gravity Line	DB: 1358/30 1988-08895	Yes
PB 21	RESERVED				
PB 22	42-3-228	562 Lancaster Avenue	Gravity Line	DB: 1358/82 1988-08895	Yes
PB 23	42-6-23.1	564 Lancaster Avenue	Gravity Line	DB: 1358/86 1988-08895	Yes
PB 24	42-6-23.4	590 Lancaster Avenue	Gravity Line	DB: 1358/94 1988-08895	Yes
PB 25	42-6-23.4A	596 Lancaster Avenue	Gravity Line	DB: 1358/94 1988-08895	Yes
PB 26	42-6-24.2	9 Ravine Road	Gravity Line	DB: 1358/54 1988-08895	Yes
PB 27	42-6-21	SS Lancaster Avenue	Gravity Line	DB: 1358/114 1988-08895	Yes
PB 28	42-6-23	600 Lancaster Avenue	Gravity Line	DB: 1358/90 DB: 1379/275	Yes
PB 29	42-6-23.3	600 Lancaster Avenue	Gravity Line	DB: 1358/98 1988-08895	Yes
PB 30	42-6-23.2D	630 Lancaster Avenue	Gravity Line	DB: 1358/102 1988-08895	Yes
PB 31	42-6-23.2	634 Lancaster Avenue	Gravity Line	DB: 1358/122 1988-08895	Yes
PB 32	42-6-23.2C	638 Lancaster Avenue	Gravity Line	DB: 1358/106 1988-08895	Yes
PB 33	42-6-23.2B	640 Lancaster Avenue	Gravity Line	DB: 1358/110 1988-08895	Yes
PB 34	42-6-23.2A	642 Lancaster Avenue	Gravity Line	DB: 1358/118 1988-08895	Yes
PB 35	RESERVED				
PB 36	42-6-246	Whitewoods Common Area	Gravity Line	DB: 5406/689	Yes
PB 37	42-6-222	3 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 38	42-6-223	5 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes

PLANEBROOK DRAINAGE AREA (PB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
PB 39	42-6-224	7 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 40	42-6-225	9 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 41	42-6-226	11 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 42	42-6-227	13 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 43	42-6-228	15 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 44	42-6-229	17 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 45	42-6-230	19 Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
PB 46	42-6G-16-E	NS Glenloch Way	Gravity Line	DB: Y58/519	Yes
PB 47	RESERVED				

PLANEBROOK DRAINAGE AREA (PB)			
Street	Structure	Instrument/ Docket	Easement or ROW
Frame Avenue	Gravity Line, FM & Pump Station	DB: P40/238	Yes
Whitewoods Lane	Gravity Line	DB: 5406/689	Yes
Glenloch Way	Gravity Line	DB: Y58/531	Yes
Ravine Road	Gravity Line	DB: Y58/531	Yes
Ravine Road Railroad Crossing	Gravity Line		No
King Road	Gravity Line	DB: Y58/531	Yes
South Phoenixville Pike	Gravity Line		Yes
Lancaster Avenue	Gravity Line		Yes
Planebrook Road / Phoenixville Pike	Force Main		Yes

MEADOW VIEW DRAINAGE AREA (MV)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MV 1	42-4-88	11 Sycamore Drive	Gravity Line	MB: 546/434	Yes
MV 2	42-4-89.5	9 Willow Drive	Gravity Line	MB: 546/404	Yes
MV 3	42-4-89	304 Swedesford Road	Gravity Line	MB: 546/444	Yes
MV 4	42-4-89.2	310 Swedesford Road	Gravity Line	MB: 546/424	Yes
MV 5	42-4-71.2A	313 Swedesford Road	Pump Station & Force Main	Plan No. 2571	Yes
MV 6	42-4-71.2	309 Swedesford Road	Force Main	Plan No. 2571	Yes
MV 7	42-4-71.13	330 Swedesford Road	Force Main	Plan No. 2571	Yes
MV 8	RESERVED				
MV 9	42-4-71.8	7 Manor View Circle	Force Main		No

MEADOW VIEW DRAINAGE AREA (MV)			
Street	Structure	Instrument/ Docket	Easement or ROW
Willow Drive	Gravity Line	DB: P40/443	Yes
Sycamore Drive	Gravity Line	DB: P40/443	Yes
East Swedesford Road	Gravity Line		Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 1	42-4-2.4-E	200 Conestoga Road	Gravity Line, FM & Pump Station	DB: 3127/39	Yes
ML 2	42-4-2.2-E	198 Conestoga Road	Gravity Line & Force Main	DB: 3127/39	Yes
ML 3	42-4-18-E	170 Conestoga Road	Gravity Line & Force Main	DB: 5959/435	Yes
ML 4	42-4-41, 56 & 66	Chester Valley Trail	Gravity Line & Force Main		GL: No FM: Yes
ML 5	42-4-39	158 Conestoga Road	Force Main	DB: H64/430	Yes
ML 6	42-4-38	154 Conestoga Road	Force Main	DB: 4588/1426	Yes
ML 7	42-4-71.23	1 Valley Creek Road	Force Main	DB: 6761/259	Yes
ML 8	42-4-71.3	1 Manor View Circle	Force Main	DB: 4632/136	Yes
ML 9	42-4K-119	153 Conestoga Road	Force Main	DB: 2538/22	Yes
ML 10	42-4K-120	151 Conestoga Road	Force Main	DB: 85/579	Yes
ML 11	42-4K-121	149 Conestoga Road	Force Main	DB: 1816/457	Yes
ML 12	42-4K-122	147 Conestoga Road	Force Main	DB: S52/265	Yes
ML 13	42-4K-123	145 Conestoga Road	Force Main	DB: 7799/1042	Yes
ML 14	42-4K-124	143 Conestoga Road	Force Main	DB: 4193/2383	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 15	42-4-70	161 Conestoga Road	Gravity Line		No
ML 16	42-4-71.26	8 Limekiln Drive	Gravity Line	DB: H49/68	Yes
ML 17	42-4-71.19	9 Limekiln Drive	Gravity Line	DB: H49/68	Yes
ML 18	42-4-71.18	11 Limekiln Drive	Gravity Line	DB: H49/68	Yes
ML 19	42-4-71.27	11 Valley Creek Road	Gravity Line	DB: H49/68	Yes
ML 20	RESERVED				
ML 21	RESERVED				
ML 22	42-4-60.3	3 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 23	42-4-60.4	5 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 24	42-4-60.5	7 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 25	42-4-60.6	9 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 26	42-4-60.7	11 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 27	42-4-60.8	13 Knollbrook Circle	Gravity Line	PB: 61/10	Yes
ML 28	42-4-60.9	12 Knollbrook Circle	Gravity Line	MB: 420/341	Yes
ML 29	42-4-61.1	20 Mill Lane	Gravity Line	Plan No. 6557	Yes
ML 30	42-4-61.2	22 Mill Lane	Gravity Line	Plan No. 6557	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 31	42-4-61.3	24 Mill Lane	Gravity Line	Plan No. 6557	Yes
ML 32	42-4-61.4	28 Mill Lane	Gravity Line	Plan No. 6557	Yes
ML 33	42-4-65.1	1 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 34	42-4-65.2	3 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 35	42-4-65.3	5 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 36	42-4-65.4	7 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 37	42-4-65.5	9 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 38	42-4-65.6	11 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 39	42-4-65.7	10 Mill Creek Lane	Gravity Line	PB: 63/14	Yes
ML 40	42-4J-31	8 Brett Lane	Gravity Line	PB: 1088	Yes
ML 41	42-4J-9	17 Westgate Circle	Gravity Line	MB: 964/533	Yes
ML 42	42-4J-10	19 Westgate Circle	Gravity Line	MB: 964/533	Yes
ML 43	42-4J-11	21 Westgate Circle	Gravity Line	MB: 964/533	Yes
ML 44	42-4J-13	3 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 45	42-4J-12	5 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 46	42-4J-15	2 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 47	42-4J-16	4 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 48	42-4J-17	6 Stuart Drive	Gravity Line	MB: 964/533	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 49	42-4J-18	8 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 50	42-4J-19	10 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 51	42-4J-20	12 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 52	42-4J-21	14 Stuart Drive	Gravity Line	MB: 964/533	Yes
ML 53	42-4-85.12	Devonshire Lane & Swedesford Road	Gravity Line	DB: 6482/1996	Yes
ML 54	RESERVED				
ML 55	42-4-2.5-E	202 Conestoga Road	Gravity Line	DB: 8918/1465	Yes
ML 56	42-4-2.1-E	206 Conestoga Road	Gravity Line	DB: 3127/39	Yes
ML 57	42-4-365-E	208 Conestoga Road	Gravity Line	DB: 3127/39	Yes
ML 58	42-4-59-E	205 Conestoga Road	Gravity Line	DB: 3520/2315	Yes
ML 59	42-4-58-E	207 Conestoga Road	Gravity Line	DB: 3520/2315	Yes
ML 60	42-4-58.1-E	209 Conestoga Road	Gravity Line	DB: A47/48	Yes
ML 61	42-3-124-E	Chester Valley Trail	Gravity Line	DB: 9750/2155	Yes
ML 62	42-3-123.25	ES Church Road	Gravity Line	DB: 9598/2270	Yes
ML 63	42-3-123.15	120 Sweetwater Way	Gravity Line	DB: 9598/2270	Yes
ML 64	42-3-123.14	122 Sweetwater Way	Gravity Line	DB: 9598/2270	Yes
ML 65	42-3-117.1	WS Church Road	Gravity Line	DB: 9598/2270	Yes
ML 66	42-3-117.1A	124 Foreside Road	Gravity Line	DB: 9598/2270	Yes
ML 67	42-4-55-E	361 Swedesford Road	Gravity Line	Plan No. 14830	Partial Gap
ML 68	RESERVED				
ML 69	RESERVED				

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 70	RESERVED				
ML 71	42-4-62.1	353 Swedesford Road	Gravity Line		No
ML 72	42-4-62.2	355 Swedesford Road	Gravity Line	DB: 5151/2261 2001-10487	Yes
ML 73	42-4-62	357 Swedesford Road	Gravity Line		No
ML 74	RESERVED				
ML 75	RESERVED				
ML 76	42-4-83.1-E & 42-4-83-E	354 Swedesford Road	Gravity Line		No
ML 77	RESERVED				
ML 78	42-3-119.1	76 Church Road	Gravity Line	DB: 7743/170	Yes
ML 79	42-3-118-E	Chester County Trail	Gravity Line	DB: 9750/2155	Yes
ML 80	42-3-115	200 Moores Road	Gravity Line	Plan No. 20653	Yes
ML 81	42-3-115.1	125 Phoenixville Pike	Gravity Line	DB: 3837/1431	Yes
ML 82	42-3-83-E	Chester County Trail	Gravity Line	DB: 9750/2155	Yes
ML 83	42-3-71-E	Chester County Trail	Gravity Line	DB: 9750/2155	Yes
ML 84	42-3-76-E	Chester County Trail	Gravity Line	DB: 9750/2155	Yes
ML 85	42-3-129-E	Chester County Trail	Gravity Line	DB: 9750/2155	Yes
ML 86	42-3-119	421 Swedesford Road	Gravity Line	DB: 7819/2124	Yes
ML 87	42-3-199	430 Swedesford Road	Gravity Line	DB: 7819/2124	Yes
ML 88	42-4-77	22 Church Road	Gravity Line	DB: 1357/492 1988-08895	Yes
ML 89	42-4-80.1	14 Church Road	Gravity Line	DB: 1357/496 1988—08895	Yes
ML 90	42-4-80	403 Lancaster Avenue	Gravity Line	DB: 1357 1988-08895	Yes
ML 91	42-4-75.1	NS Lancaster Avenue	Gravity Line & Pump Station	DB: 1357/483 & 488 1988-08895	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 92	42-3-227	445 Lancaster Avenue	Gravity Line	DB: 1357/479 1988-08895	Yes
ML 93	42-3-226.1	447 Lancaster Avenue	Gravity Line	DB: 1357/4475 1988-08895	Yes
ML 94	42-3-226	449 Lancaster Avenue	Gravity Line	DB: 1357/467 1988-08895	Yes
ML 95	42-3-223	457 Lancaster Avenue	Gravity Line	DB: 1357/471 1988-08895	Yes
ML 96	42-3-222	459 Lancaster Avenue	Gravity Line	DB: 1357/508 1988-08895	Yes
ML 97	42-3-222.1	471 Lancaster Avenue	Gravity Line	DB: 1357/512 1988-08895	Yes
ML 98	42-3-221	477 Lancaster Avenue	Gravity Line	DB: 1357/520 1988-08895	Yes
ML 99	42-4-220	483 Lancaster Avenue	Gravity Line	DB: 1357/516 1988-08895	Yes
ML 100	42-4-218	497 Lancaster Avenue	Gravity Line	DB: 1357/524 & 531 1988-08895	Yes
ML 101	42-3-217	503 Lancaster Avenue	Gravity Line	DB: 1357/528 1988-08895	Yes
ML 102	42-3R-5	1 Charles Street	Gravity Line	DB: 1678/210 1988-08895	Yes
ML 103	42-3R-2	2 Charles Street	Gravity Line	DB: 1678/200 1988-08895	Yes
ML 104	42-3R-16	Charles Street	Gravity Line	DB: 1357/540 1988-08895	Yes
ML 105	42-3R-6	519 Lancaster Avenue	Gravity Line	DB: 1357/544 1988-08895	Yes
ML 106	42-3R-7	527 Lancaster Avenue	Gravity Line	DB: 1357/548 1988-08895	Yes
ML 107	42-3R-8	531 Lancaster Avenue	Gravity Line	DB: 1357/548 1988-08895	Yes
ML 108	42-3R-9	535 Lancaster Avenue	Gravity Line	DB: 1357/556 1988-08895	Yes
ML 109	42-3R-10	537 Lancaster Avenue	Gravity Line & Force Main	DB: 1357/556 1988-08895	Yes
ML 110	42-4-302-E	400 Lancaster Avenue	Gravity Line	DB: 1358/38 1988-08895	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 111	42-4-302.1-E	410 Lancaster Avenue	Gravity Line	DB: 1358/42 1988-08895	Yes
ML 112	42-4-300	420 Lancaster Avenue	Gravity Line	DB: 1358/46 1988-08895	Yes
ML 113	42-4-299	422 Lancaster Avenue	Gravity Line	DB: 1358/50 1988-08895	Yes
ML 114	42-4-298.1	428 Lancaster Avenue	Gravity Line	DB: 1357/422 1988-08895	Yes
ML 115	42-4-298	430 Lancaster Avenue	Gravity Line	DB: 1357/418 1988-08895	Yes
ML 116	42-4-275	446 Lancaster Avenue	Gravity Line	DB: 1357/426 DB: 1379/271	Yes
ML 117	42-3-239	211 Apple Lane	Gravity Line	DB: 1357/430 DB: 1357/434	Yes
ML 118	42-3-237.2	480 Lancaster Avenue	Gravity Line	DB: 1357/438 1988-08895	Yes
ML 119	42-3-237.1	490 Lancaster Avenue	Gravity Line	DB: 1357/442 1988-08895	Yes
ML 120	42-3-236	500 Lancaster Avenue	Gravity Line	DB: 1357/418 1988-08895	Yes
ML 121	42-3-234	510 Lancaster Avenue	Gravity Line	DB: 1357/450 1988-08895	Yes
ML 122	42-3-233.1	520 Lancaster Avenue	Gravity Line	DB: 1357/458 1988-08895	Yes
ML 123	42-3R-40	522 Lancaster Avenue	Gravity Line	DB: 1358/62 1988-08895	Yes
ML 124	42-3R-37	524 Lancaster Avenue	Gravity Line	DB: 1358/58 1988-08895	Yes
ML 125	42-3R-39	526 Lancaster Avenue	Gravity Line	DB: 1358/66 1988-08895	Yes
ML 126	42-3R-38	530 Lancaster Avenue	Gravity Line	DB: 1357/462 1988-08895	Yes
ML 127	42-3-232	536 Lancaster Avenue	Gravity Line	DB: 1358/70 1988-08895	Yes
ML 128	42-3-231	542 Lancaster Avenue	Gravity Line	DB: 1357/536 1988-08895	Yes
ML 129	42-3-229	554 Lancaster Avenue	Gravity Line	DB: 1678/195 DB: 1358/74 & 78	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 130	42-3M-144	80 Markel Road	Gravity Line	DB: 644/72	Yes
ML 131	42-3M-145	82 Markel Road	Gravity Line	DB: 644/72	Yes
ML 132	42-3M-146	84 Markel Road	Gravity Line	DB: 644/72	Yes
ML 133	42-3M-147	86 Markel Road	Gravity Line	DB: 644/72	Yes
ML 134	42-3M-148	88 Markel Road	Gravity Line	DB: 644/72	Yes
ML 135	42-3M-149	90 Markel Road	Gravity Line	DB: 644/72	Yes
ML 136	42-3M-150	92 Markel Road	Gravity Line	DB: 644/72	Yes
ML 137	42-3M-151	94 Markel Road	Gravity Line	DB: 644/72	Yes
ML 138	42-3-109.11	13 Weightman Drive	Gravity Line	Plan Nos. 10112-10115	Yes
ML 139	42-3-297	WS Phoenixville Pike	Gravity Line	Plan Nos. 10112-10115	Yes
ML 140	42-3-251	11 Tunbridge Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 141	42-3-252	13 Tunbridge Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 142	42-3-245	1 Craig Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 143	42-3-296	5 Craig Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 144	42-3-295	7 Craig Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 145	42-3-281	41 Craig Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 146	42-3-280	43 Craig Lane	Gravity Line	Plan Nos. 10112-10115	Yes
ML 147	42-3-298	WS Phoenixville Pike	Gravity Line	Plan Nos. 10112-10115	Yes
ML 148	42-3-298.1	165 Phoenixville Pike	Gravity Line	DB: 4415/1866	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 149	RESERVED				
ML 150	42-3-45.6Q	19 Moores Road	Gravity Line		No
ML 151	42-3-334	21 Moores Road	Gravity Line	Plan No. 13903	Yes
ML 152	42-3-45.6K	26 Atterbury Drive	Gravity Line	PB: 31/19	Yes
ML 153	42-3-242.10	34 Ashlawn Circle	Gravity Line	PB: 37/3	Yes
ML 154	RESERVED				
ML 155	42-4-20.2S	1 Oak Glen Drive	Gravity Line	DB: 1945/343 DB: 1945/353	Yes
ML 156	42-4-20.2Q	5 Oak Glen Drive	Gravity Line	DB: 1945/343 DB: 1945/353	Yes
ML 157	42-4-20.2P	7 Oak Glen Drive	Gravity Line	DB: 1945/343 DB: 1945/353	Yes
ML 158	42-4-4	1 Lapp Road	Gravity Line		No
ML 159	42-4-5.2C	ES Sidley Road	Gravity Line	DB: 7246/1583 DB: 7647/431	Partial Gap
ML 160	42-4-5.2D	ES Sidley Road	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 161	42-4-527	4 Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 162	42-4-5.45	10 Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 163	42-4-526	16 Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 164	42-4-525	18 Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 165	42-4-524	20 Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 166	42-4-5.2B	Fetters Mill Drive	Gravity Line	DB: 7246/1583 DB: 7647/431	Yes
ML 167	42-4-6.10	8 Dale Lane	Gravity Line		No
ML 168	42-4-6.14	10 Forge Drive	Gravity Line	DB: 9494/1779	Yes

MILL LANE DRAINAGE AREA (ML)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
ML 169	42-4-5.24E	2 Thayer Drive	Gravity Line	DB: 3127/31	Yes
ML 170	42-3D-33	2 Hayes Road	Gravity Line	DB: 10298/1790	Yes
ML 171	42-3D-34	4 Hayes Road	Gravity Line	DB: 8784/252	Yes
ML 172	42-3D-36	8 Hayes Road	Gravity Line	Pl: 54/18 & 19	Yes
ML 173	42-3D-38	3 Hayes Road	Gravity Line	Pl: 54/18 & 19	Yes
ML 174	42-3D-37	5 Hayes Road	Gravity Line	Pl: 54/18 & 19	Yes
ML 175	42-1R-5	330 Sidley Road	Gravity Line	Pl: 54/18 & 19	Yes
ML 176	42-3D-30	271 Phoenixville Pike	Gravity Line	DB: 1754/73	Yes
ML 177	42-3D-31	273 Phoenixville Pike	Gravity Line	DB: 6306/1321	Yes
ML 178	42-3D-32	275 Phoenixville Pike	Gravity Line	DB: 8432/684	Yes
ML 179	42-1R-6	285 Phoenixville Pike	Gravity Line	Pl: 54/18 & 19	Yes
ML 180	42-2-10.2D	301 Phoenixville Pike	Gravity Line	Plan No. 5996 DB: 9405/211	Yes
ML 181	RESERVED				
ML 182	42-4-2.3	12 Moores Road	Gravity Line	Plan No. 19563 DB: 8906/1501	Yes

MILL LANE DRAINAGE AREA (ML)			
Address	Structure	Instrument/ Docket	Easement or ROW
Manor View Circle	Gravity Line & Force Main	DB: H49/68	Yes
Limekiln Drive	Gravity Line	DB: H49/68	Yes
Valley Creek Road	Gravity Line	DB: H49/68	Yes
Mill Creek Lane	Gravity Line	DB: Y58/546	Yes
Knollbrook Circle	Gravity Line	DB: S51/87	Yes
Brett Lane	Gravity Line	DB: H64/127	Yes
Westgate Circle	Gravity Line	DB: H64/131	Yes
Stuart Drive	Gravity Line	DB: H64/131	Yes
Devonshire Lane	Gravity Line	DB: 6482/1996	Yes
Charles Street	Gravity Line	DB: P30/117	Yes
Beechwood Avenue	Gravity Line	DB: R24/293	Yes
Buttonwood Avenue	Gravity Line	DB: R24/293	Yes
Markel Road	Gravity Line	DB: 644/66	Yes
Kelmar Road	Gravity Line	DB: 644/66	Yes
Rickmar Lane	Gravity Line	MB: 964/570	Yes
Weightman Drive	Gravity Line	DB: 7784/928	Yes
Morris Lane	Gravity Line	DB: 7784/923	Yes
Craig Lane	Gravity Line	DB: 4748/586	Yes
Kenwood Court	Gravity Line	DB: 4748/586	Yes
Clover Mill Lane	Gravity Line	DB: 3966/279 DB: 4748/586 DB: 6267/1	Yes

MILL LANE DRAINAGE AREA (ML)			
Address	Structure	Instrument/ Docket	Easement or ROW
Tunbridge Lane	Gravity Line	DB: 4748/586	Yes
Atterbury Drive	Gravity Line	DB: H49/73	Yes
Flintshire Road	Gravity Line	DB: H49/73	Yes
Ashlawn Road	Gravity Line	DB: H49/73	Yes
Ashlawn Circle	Gravity Line	DB: H49/73	Yes
Oak Glen Road	Gravity Line	DB: 1288/316	Yes
Oak Glen Drive	Gravity Line	DB: 1288/316	Yes
Lapp Road	Gravity Line	DB: 1288/316 DB: 7647/431	Yes
McCoy Court	Gravity Line	DB: 7647/431	Yes
Fetters Mill Drive	Gravity Line	DB: 7647/431	Yes
Dale Lane	Gravity Line	DB: S54/409	Yes
Forge Drive	Gravity Line	DB: S54/409	Yes
Thayer Drive	Gravity Line	DB: 3127/19	Yes
Almy Drive	Gravity Line	DB: 3127/19	Yes
Aston Road	Gravity Line	DB: R53/410	Yes
James Thomas Road	Gravity Line	DB: R53/410	Yes
Spruce Road	Gravity Line	DB: R53/410	Yes
Hayes Road	Gravity Line	DB: R53/418	Yes

MILL LANE DRAINAGE AREA (ML)			
Address	Structure	Instrument/ Docket	Easement or ROW
Yellow Springs Road	Gravity Line	DB: R53/410	Yes
Phoenixville Road	Gravity Line	DB: 7174/1645 DB: 4748/586 DB: R53/410 DB: R53/418 MB: 964/552	Yes
Conestoga Road	Gravity Line/ Force Main	DB: 7174/1645 MB: 964/552 DB: H49/68	Yes
Swedesford Road	Gravity Line	DB: H64/131 DB: H49/68 MB: 964/560	Yes
Sidley Road	Gravity Line	DB: 7647/431 DB: 7246/1583 DB: 3127/19 DB: 117/407 DB: R53/418 DB: H49/73	Yes
Flat Road	Gravity Line	DB: 3127/19	Yes
Moores Road	Gravity Line	DB: 7174/1645 DB: 1945/330 DB: 644/62 DB: 440/532 DB: 440/538 DB: 117/407 DB: H49/73	Yes
Mill Lane	Gravity Line	DB: 420/337 DB: 117/407 DB: Y58/546 DB: S51/87	Yes

HILLBROOK CIRCLE DRAINAGE AREA (HB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
HB 1	35-3-102	Charlestown Oaks	Gravity Line	DB: 7037/1110	Yes
HB 2	42-3-32.2	38 Hillbrook Circle	Gravity Line		No
HB 3	42-3-32.1	388 Conestoga Road	Gravity Line		No
HB 4	42-3-32	386 Conestoga Road	Gravity Line		No
HB 5	42-3-33	384 Conestoga Road	Gravity Line		No
HB 6	42-3-33.1	2 Hillbrook Circle	Gravity Line		No
HB 7	42-3-107.3P	8 Clover Mill Lane	Gravity Line & Force Main	DB: 6267/2370	Yes
HB 8	42-3-107.3N	10 Clover Mill Lane	Gravity, FM & Pump Station	DB: 6262/2370	Yes

HILLBROOK CIRCLE DRAINAGE AREA (HB)			
Street	Structure	Instrument/ Docket	Easement or ROW
Willing Way	Gravity Line	DB: 9377/1312	Yes
Hillbrook Circle	Gravity Line	DB: K34/292	Yes
Hillbrook Court	Gravity Line	DB: K34/292	Yes
Conestoga Road	Gravity Line & Force Main	MB: 964/552 DB: G52/532	Yes

LEE BOULEVARD DRAINAGE AREA (LB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
LB 1	RESERVED				
LB 2	42-2-10.4	17 Lee Boulevard	Gravity, FM & Pump Station	Plan No. 5369	Yes
LB 3	42-2-10.5A	15 Lee Boulevard	Gravity Line	PB: 64/30	Yes
LB 4	42-2-10.1	11 Lee Boulevard	Gravity Line & Force Main	Plan No. 10751	Yes
LB 5	42-2-10.3A	14 Lee Boulevard	Gravity Line	Plan No. 5369	Yes
LB 6	42-2-10.3	8 Lee Boulevard	Gravity Line	Plan No. 5349	Yes
LB 7	42-2-10.2B	6 Lee Boulevard	Gravity Line	PB: 59/18	Yes

LEE BOULEVARD DRAINAGE AREA (LB)			
Street	Structure	Instrument/ Docket	Easement or ROW
Lee Boulevard	Gravity Line & Force Main	DB: S51/92	Yes

FLAT ROAD DRAINAGE AREA (FR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
FR 1	RESERVED				
FR 2	RESERVED				
FR 3	42-4-15.10	29 Great Valley Parkway	Gravity Line & Force Main	MB: 574/402 PB: 69/1	Yes
FR 4	42-4-15.10A	31 Great Valley Parkway	Gravity Line & Force Main	MB: 574/402 PB: 69/1	Yes
FR 5	42-4-15.7	33 Great Valley Parkway	Force Main	Plan No. 16670 PB: 69/1	Yes

FLAT ROAD DRAINAGE AREA (FR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Flat Road		DB: U28/28	Yes
Great Valley Parkway		DB: D62/327 MB: 634/200	Yes

WILBURDALE ROAD DRAINAGE AREA (WB)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
WB 1	42-4-15.1	67 Great Valley Parkway	Gravity Line	MB: 634/200	Yes
WB 2	42-4-15.9	103 Great Valley Parkway	Gravity, FM & Pump Station	MB: 634/200	Yes
WB 3	42-4-15.21	244 Great Valley Parkway	Gravity Line	MB: 634/200	Yes
WB 4	42-4-15.14	260 Great Valley Parkway	Gravity Line	MB: 634/200	Yes

WILBURDALE ROAD DRAINAGE AREA (WB)			
Street	Structure	Instrument/ Docket	Easement or ROW
Flat Road	Gravity Line & Force Main	DB: U28/28	Yes
Great Valley Parkway	Gravity Line & Force Main	DB: D62/327 MB: 634/200	Yes

LAPP ROAD DRAINAGE AREA (LR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
LR 1	42-4-29.2	2 West Liberty Boulevard	Gravity Line	Plan No. 16792	Yes
LR 2	42-4-29.1	Old Morehall Road	Force Main	Plan No. 18373	Yes
LR 3	RESERVED				
LR 4	42-4-29	201 Old Morehall Road	Gravity Line & Force Main	Plan No. 15770 DB: 9846/637	Yes
LR 5	42-4-28.2	257 Old Morehall Road	Force Main	DB: 6765/1762	Yes
LR 6	42-4-42	367 Old Morehall Road	Gravity Line & Force Main	DB: 6765/1780	GL: No FM: Yes
LR 7	42-4-25	460 Lapp Road	Gravity Line	DB: 6773/273	Yes
LR 8	42-4-25.3	508 Lapp Road	Gravity Line	DB: 6773/273	Yes
LR 9	42-4-26.1	510 Lapp Road	Gravity, FM & Pump Station	DB: 6773/273 MB: 173/277	Yes
LR 10	42-4-26.2	515 Lapp Road	Force Main	DB: 6773/273	Yes
LR 11	RESERVED				
LR 12	42-2-12.2	1 Great Valley Parkway	Gravity Line	Plan No. 4520	Yes
LR 13	42-2-12.1	3 Great Valley Parkway	Gravity Line	Plan No. 4520	Yes
LR 14	42-2-12.3	5 Great Valley Parkway	Gravity Line	Plan No. 4521	Yes
LR 15	42-2-12	7 Great Valley Parkway	Gravity Line	Plan No. 4521	Yes
LR 16	42-4-52	3 Country View Road	Gravity Line	Plan No. 5010	Yes
LR 17	42-4-52.5	4 Country View Road	Gravity Line	Plan No. 5010	Yes
LR 18	42-4-52.6	5 Country View Road	Gravity Line	Plan No. 5010	Yes
LR 19	42-4-15.15	10 Great Valley Parkway	Gravity Line	DB: 6773/273 MB: 581/59	Yes
LR 20	42-4-15.12	12 Great Valley Parkway	Gravity Line	MB: 581/59	Yes
LR 21	42-4-15.16	18 Great Valley Parkway	Gravity Line	DB: 6773/273 MB: 581/59	Yes

LAPP ROAD DRAINAGE AREA (LR)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
LR 22	42-4-15.17A	311 Technology Drive	Gravity Line	DB: 6773/273 DB: 581/59	Yes
LR 23	42-4-15.17	325 Technology Drive	Gravity Line	DB: 6773/273	Yes
LR 24	42-4-15.18A	375 Technology Drive	Gravity Line	DB: 6773/273	Yes
LR 25	42-4-15.20	300 Technology Drive	Gravity Line	DB: 6773/273	Yes
LR 26	42-4-17	333 Technology Drive	Gravity Line	DB: 6773/273	Yes
LR 27	42-4-16	358 Technology Drive	Gravity Line	DB: 6765/1789	Yes
LR 28	42-4-15.18	425 Technology Drive	Gravity Line	DB: 6773/273	Yes
LR 29	42-4-15.27	271 Great Valley Parkway	Gravity Line	DB: 6773/273	Yes
LR 30	42-4-16.1	278 Great Valley Parkway	Gravity Line	DB: 6773/273	Yes

LAPP ROAD DRAINAGE AREA (LR)			
Street	Structure	Instrument/ Docket	Easement or ROW
Technology Drive	Gravity Line	DB: 6773/251	Yes
Lapp Road	Gravity Line	DB: 6773/251 DB: A36/1025 MB: 173/277	Yes
Valley Stream Parkway	Force Main	DB: 6773/219 DB: 6773/235	Yes
Old Morehall Road	Gravity Line & Force Main		Yes
Morehall Road	Force Main		Yes

MALVERN HUNT DRAINAGE AREA (MAL)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
MAL 1	42-3-370	WS South Malvern Hunt Way	Gravity, FM & Pump Station	DB: 7234/1961 Plan No. 16381	Yes
MAL 2	42-3-350	13 Hayworth Circle	Gravity Line	Plan No. 15562	Yes
MAL 3	42-3-351	14 Hayworth Circle	Gravity Line	Plan No. 15562	Yes
MAL 4	42-3-497	11 Dillon Court	Gravity Line	Plan No. 16381	Yes
MAL 5	42-3-498	13 Dillon Court	Gravity Line	Plan No. 16381	Yes
MAL 6	42-3-336	7 Regency Court	Gravity Line	DB: 7234/1961	Yes
MAL 7	42-3-337	9 Regency Court	Gravity Line	DB: 7234/1961	Yes
MAL 8	42-3-375	Malvern Hunt Open Space	Gravity Line	DB: 7234/1961	Yes
MAL 9	42-3-376	Malvern Hunt Open Space	Gravity Line	DB: 7234/1961	Yes
MAL 10	42-3-378	Malvern Hunt Open Space	Gravity Line	DB: 7234/1961	Yes
MAL 11	42-3-64.22	9 Fairwind Lane	Gravity Line	DB: 7234/1961	Yes
MAL 12	42-3-64.23	7 Fairwind Lane	Gravity Line	DB: 7234/1961	Yes
MAL 13	42-3-64.89	13 Langston Circle	Gravity Line	DB: 7234/1961	Yes
MAL 14	42-3-64.90	14 Langston Circle	Gravity Line	DB: 7234/1961	Yes
MAL 15	42-3-127	SS Swedesford Road	Gravity Line & Lagoon	DB: 7234/1972	Yes
MAL 16	42-3-47	41 Old Valley Road	Gravity Line & Spray Field	DB: 7234/1978	Yes

MALVERN HUNT DRAINAGE AREA (MAL)			
Street	Structure	Instrument/ Docket	Easement or ROW
All Internal Roads	Gravity Line & Force Main	DB: 6986/1454	Yes
Swedesford Road	Force Main	Plan No. 15562	Yes

IMMACULATA UNIVERSITY DRAINAGE AREA (IM)					
Folio	UPI	Address	Structure	Instrument/ Docket	Easement or ROW
IM 1	RESERVED				

Schedule 4.10

Equipment and Machinery

Equipment
Pipe Tech Software and Durabook Laptop
50KW MMD Power Portable Generator
Sewer Jet (Diesel) – Trailer Mounted
Deer Run Pump Station Generator

Vehicles

Vehicle Type	VIN
2001 Ford E350 Truck	
2003 GMC Pickup Truck	
2010 Ford F550 Truck	
2011 GMC Pickup Truck	
2011 GMC Pickup Truck	
2018 Carmate 20' Custom Cargo Trailer	
2019 Ford F-150 Unit	

Schedule 4.11

Environmental Compliance

Sanitary System Overflow (SSO) Reporting for Operating Years 2016 through 2020:

- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2016, there was no reported SSO within the East Whiteland Township wastewater collection and conveyance system.
- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2017, there was no reported SSO within the East Whiteland Township wastewater collection and conveyance system.
- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2018, there were three (3) SSOs:
    - On June 11, 2018 and August 13, 2018 SSOs occurred at manhole 6-9, located at 249 Lancaster Avenue. These 2 SSOs were caused by rain events exceeding 3" per hour. On November 30, 2018, the Township diverted the flow from the Frame Avenue Pump Station to the Planebrook Pump Station, which reduced the flow by 80,000 GPD on Lancaster Avenue at the location of the overflows. Also, the Church Road Sewer Extension, referenced on Schedule 4.12, which was completed in March 2020, will redirect the flow associated with the Church Road Pump Station from the Lancaster Avenue area where these SSOs occurred.
    - On August 23, 2018 an SSO occurred at manholes 18A-1 to 18 A-2, located on Warren Avenue, which was caused by a clogged pipe. The pipe was cleared and flow resumed.
- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2019, there was no reported sanitary system overflow within the East Whiteland Township wastewater collection and conveyance system.
- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2020, there was no reported SSO within the East Whiteland Township wastewater collection and conveyance system.

Corrective Action Plan (CAP) and Connection Management Plan (CMP):

- From 2013 to 2014 the Township was under a CAP. Phases 1 and 2 of the CAP required improvements to the Mill Lane and Sidley Collection System. Phase 3 of the CAP required improvements to the Lee Boulevard Pump Station. Upgrade improvements were also made to the sanitary sewer within Conestoga Road. Approximately 3,780 L.F. of new 18", 20" and 24" pipe were installed to replace existing deteriorating sewer. The CAP was lifted by

the DEP in 2015 after the Township completed the gravity sewer main replacement from the Mill Lane Pump Station to Lee Boulevard.

- The conditions of the CMP currently on file with the PADEP are still in effect for the contributory drainage areas from Charlestown that flow through the Mill Lane and Sidley Road sewer systems.

Schedule 4.12

Authorizations and Permits

537 Plan:

- East Whiteland Township Act 537 Sewage Facilities Plan, dated May 2, 1995
- East Whiteland Township Act 537 Sewage Facilities Plan Special Study for the Mill Lane Pump Station Replacement Project (Route 401 Area (Area 1), Bacton Hill and Swedesford Road Areas (Area 2), Planebrook Area (Area 3), Church Road Extension – to Eliminate Church Road Pump Station (Area 4), and Immaculata University Area (Area 5)), as prepared by Advanced GeoServices and revised September 2011.
- East Whiteland Township/Charlestown Township (Southside) Act 537 Sewage Facilities Plan Special Study for the North-Central portion of East Whiteland Township and the South-Central portion of Charlestown Township (to accommodate future flow needs for Charlestown Township and East Whiteland Township), as prepared by Arro Consulting, Inc. dated February 2013.
- East Whiteland Township/Great Valley Corporate Center Act 537 Sewage Facilities Plan Special Study for upgrades of the Willburdale Pump Station and Flat Road Pump Station (for wastewater needs of the Great Valley Corporate Campus), as prepared by Arro Consulting, Inc. dated April 2015 and revised September 2015.
- East Whiteland Township Act 537 Sewage Facilities Plan Special Study for Frame Avenue/Planebrook Road Sewer Extension, as prepared by Arro Consulting, Inc. dated August 2016, with a last revision date of October 30, 2018.
- East Whiteland Township Sewage Facilities Planning Module (Component 3m) Planebrook Road Area Sewer Extension, as prepared by Arro Consulting, Inc. dated March 2020. This module is for the extension of public sanitary sewer service from the existing manhole located on Planebrook Road to properties currently served by on-lot disposal systems along Planebrook Road, Elk Drive, Fairview Drive, Prospect Avenue, Golf Circle, Bracken Avenue, and Davis Avenue. This module was approved by the DEP pursuant to that certain approval letter dated February 26, 2021.

WQM Permits

Pump Station	**WQM Permit Number**
Deer Run	1571413
Mill Lane	1575412
Wilburdale	1507413
Lee Boulevard	1587430
Meadowview	1580410
Flat Road	
Lapp Road	1583405
Westgate	1587436

Hillbrook	1500428
King Road	1502418
Malvern Hunt	1599418
Planebrook	1517401

Permit No. 1501419

Permit No. 1502418 for sewer extension completed in 2004 for approximately 250 homes located in the King Road, Carol Lane and Summit Road areas.

Permit No. 1599418 for the Malvern Hunt sewage treatment plant.[2]

[2] Will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

Schedule 4.13

Assigned Contracts

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewage Treatment Agreement	East Goshen Township East Goshen Municipal Authority East Whiteland Township East Whiteland Municipal Authority	November 17, 1987	Transmission of sewage from 23 lots located in East Whiteland (the "EW Lots") Township within the Lockwood Chase Development from East Whiteland through East Goshen Township's sewage collection system to the Lockwood Chase Plant (leased and operated by East Goshen Township) for treatment.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewage Treatment Agreement	East Goshen Township East Whiteland Township	October 17, 2000	Transmission of sewage from 4 lots located in East Whiteland

	East Whiteland Municipal Authority		Township within the Mill Valley subdivision from East Whiteland through East Goshen's sewage collection system, to the West Goshen Treatment Plant for treatment. East Goshen reserves its capacity in the West Goshen Treatment Plant for East Whiteland.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement	Malvern Borough East Whiteland Township East Whiteland Municipal Authority	July 10, 1995	Transmission of sewage from 19 lots located in East Whiteland Township within the Erin Glenn subdivision from East Whiteland through the Erin Glen Meter into Malvern Borough's collection system, then

			back to East Whiteland through the Warren Avenue Meter (which will then go through the East Whiteland Trunkline to Valley Forge Sewage Treatment Plant).
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement	Willistown Township East Whiteland Township East Whiteland Municipal Authority	September 14, 1993	Transmission of sewage from 114 apartments in East Whiteland Township within the Woodview Apartments from East Whiteland to the collection system in Willistown (which will then go through the Valley Creek Trunkline to the Valley Forge Sewage Treatment Plant).

Name of Contract	Parties to Contract	Date of Contract	Subject
Sewage Capacity/Service Agreement	East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Township Municipal Authority Trammell Crow Northeast Metro Development, Inc.	November 1, 2000	Transmission of sewage from the portion of the Great Valley Corporate Campus (developed by Trammel Crow) located in East Whiteland Township (the "EW Portion") that is required to be served by the Valley Forge Sewage Treatment Plant ("VFSTP") under East Whiteland's 537 Plan. Tredyffrin sold its reserve capacity in the VFSTP to Trammel Crow for use by the EW Portion. Tredyffrin bills East Whiteland for its flow into Tredyffrin's system. Sewage is transmitted

			from the EW Portion through the Valley Creek Trunkline (in Tredyffrin) to the VFSTP for treatment.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Addendum to Sewage Capacity/Service Agreement dated November 1, 2000	East Whiteland Township Tredyffrin Township RLD Water JV, LLC The Haven at Atwater Village, LLC	November 19, 2015	Modifies the Agreement dated November 1, 2000 to address additional flow from the Havens Apartment Complex, located in East Whiteland (the "Atwater Capacity"). The addendum adds RLD Atwater and The Haven at Atwater Village as parties. Tredyffrin will bill East Whiteland a sewer rental charge for the first 46,393 GPD of flows from the Atwater Capacity. For

			the average daily flows over 46,393 GPD, Tredyffrin will be entitled to collect a conveyance fee (but not a treatment fee) – as of March 2020, the conveyance fee has not yet been established or charged.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
East Whiteland Trunk Line Agreement	East Whiteland Township East Whiteland Municipal Authority Malvern Municipal Authority Borough of Malvern Valley Forge Sewer Authority	February 1, 1971	Transmission of sewage from the municipalities through the East Whiteland Trunkline (the "Trunkline") to the Valley Forge Sewage Treatment Plant ("VFSTP"), including charges for maintenance and repairs to the Trunkline.

Name of Contract	Parties to Contract	Date of Contract	Subject
Amendment to East Whiteland Trunk Line Agreement	East Whiteland Township East Whiteland Municipal Authority Malvern Municipal Authority Borough of Malvern Valley Forge Sewer Authority ("VFSA")	December 12, 1979	Addendum to the Agreement dated February 1, 1971 to address the reservation by EW for the VFSA of reserved capacity in the Trunkline and the Mill Lane Pump Station and the transmission of sewage from Charlestown Township through the Trunkline to the VFSTP. The addendum also adds VFSA as a municipality under the agreement, as it owns and operates the Charlestown Sewer System.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Amendment to East Whiteland Trunk Line Agreement	East Whiteland Township	April 18, 2014	Addendum to the Agreement dated February 1, 1971 establishing an

	East Whiteland Municipal Authority Valley Forge Sewer Authority		increased reserve capacity for the VFSA within the East Whiteland sewer system and establishing the related cost sharing between East Whiteland and VFSA.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Valley Forge Sewer Treatment Plant Agreement	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township	November 1, 1970	Transmission and treatment of sewage from the municipalities to the Valley Forge Sewage Treatment Plant ("VFSTP"), including charges for maintenance and repairs to the VFSTP.

	Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Composite Amendment No. 1	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township Tredyffrin Township Willistown Township Easttown Township Malvern Borough East Whiteland Municipal Authority	December 1, 1974	This amendment amends portions of (and specifically Section 2.03 and certain Exhibits) of the Valley Creek Trunk line Agreement, the East Whiteland Trunk line Agreement and the Valley Forge Sewer Treatment Plant Agreement to address the construction

	Tredyffrin Municipal Authority Easttown Municipal Authority Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		by and reimbursement of Tredyffrin Authority by the other municipalities for its construction of the portion of the Valley Creek Trunk Sewer located in Valley Forge State Park. Also addresses the award of and credit for certain grants from the EPA to each of the authorities for the respective collection systems.

Name of Contract	Parties to Contract	Date of Contract	Subject
Agreement	East Whiteland Municipal Authority Valley Forge Sewer Authority	December 27, 1978	East Whiteland Municipal Authority and VFSA agreed to share costs for the Sidley Road Trunk line repairs. Schedule A (detailing the repairs and referenced in the agreement) is not included.

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Amendment to Valley Forge Sewage Treatment Agreement	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority (“VFSA”)	January 1, 1983	This amendment changed the interest rates for late payments.

Name of Contract	Parties to Contract	Date of Contract	Subject
Supplement to Valley Forge Sewage Treatment Agreement for the Purpose of Complying with the United States Environmental Protection Agency Regulations	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")	December 2, 1985	This supplement includes requirements that the municipalities, in order to comply with EPA regulations, enact ordinances to include monitoring, reporting and other requirements for industrial users and it gives VFSA authority to inspect, charge, fine, etc. industrial users and act on behalf of each municipality if necessary.

Name of Contract	Parties to Contract	Date of Contract	Subject
Addendum to Valley Forge Sewage Treatment Agreement for the Purpose of Permitting and administering the Sale of Reserved Capacity among the Parties	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")	May 26, 1994	This addendum addresses disparities between the reserved capacities of the various municipalities by allowing for the permanent sale of unused reserved capacity between the municipalities, with the consent of VFSA and pursuant to certain offer and sale procedures.

Name of Contract	Parties to Contract	Date of Contract	Subject
Wastewater Conveyance Agreement	Aqua Resources, Inc. Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township Tredyffrin Township Willistown Township Easton Township Easton Municipal Authority Malvern Borough Valley Forge Sewer Authority ("VFSA")	November 20, 2018	The transmission of sewage from the municipalities through the Valley Creek Trunkline (owned by Aqua) to be treated at Valley Forge Sewer Treatment Plant ("VFSTP"). The VFSA agrees to accept, treat and dispose of such sewage pursuant to this Agreement and the Valley Forge Sewage Treatment Plant Agreement.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewer Treatment Agreement	East Whiteland Township East Goshen Township Malvern Institute for Psychiatric and Alcoholic Studies	March 2, 2004	Transmission of flow from the Malvern Institute property located in East Goshen, through East Whiteland Township's

			system to the Valley Forge Sewage Treatment Plant. The agreement also addresses the permanent sewer easement that Malvern Institute conveyed and granted across its property to allow East Whiteland to construct a sanitary sewer line and the King Road Pump Station.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
National Railroad Passenger Corporation License Agreement	National Railroad Passenger Corporation (NRPC) East Whiteland Township Municipal Authority	November 18, 1993	NRPC granted an exclusive license to East Whiteland to construct, maintain, repair, alter, renew, relocate and remove an iron sewer pipe, encased in a steel casing pipe, for a distance of approximately

			250 feet under NRPC's right-of-way. The pipe conveys sanitary sewage from the Southridge Subdivision to East Whiteland's collection system.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
National Railroad Passenger Corporation Amendment to License Agreement	National Railroad Passenger Corporation East Whiteland Township Municipal Authority	May 6, 2002	Amends November 18, 1993 License Agreement. Changes description and location of pipe to be installed and adds additional lump sum rent payment of $16,315 for May 6, 2002 (date of Amendment) through October 31, 2018 and $250 fee for expenses and preparation of Amendment. Previous lump sum payment of $13,120 was made

			upon execution of original agreement (as well as $500 for expenses and license preparation).
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
National Railroad Passenger Corporation License Agreement	National Railroad Passenger Corporation East Whiteland Township	September 10, 1999	NRPC granted an exclusive license to East Whiteland to construct, maintain, repair, alter, renew, relocate and remove an iron sewer pipe, encased in a steel casing pipe, for a distance of approximately 267 feet near Sugartown Road. The pipe conveys sanitary sewage from the Sugartown Ridge Subdivision to East Whiteland's collection system.

Name of Contract	Parties to Contract	Date of Contract	Subject
Agreement with Public Utility or Municipality for Crossing under Railroad Private Property	Reading Company East Whiteland Municipal Authority	March 21, 1972 (no set term)	Reading Company (RC) granted a license across and under its tracks, right of way and property to East Whiteland Municipal Authority (EW) to lay, maintain, and use two steel pipes in steel casing pipes 1,600 feet west and 511 feet west of Valley Store Station in East Whiteland Township (the "Facilities"). EW is responsible for all costs of construction, relocation and removal and for all taxes assessed against the Facilities. There is an annual $40 charge for the license, to be adjusted by RC every fifth year commencing

			on January 1, 1977. In the event that RC deems it necessary that the Facilities be altered or changed, EW must do so within 30 days of notice of such from RC. Upon termination of the agreement (by RC if there is a breach by EW), EW is required to remove the Facilities and restore the premises to good condition.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
License Agreement for Wire, Pipe and Cable Transverse Crossings and Longitudinal Occupations	Penn Central Transportation Company East Whiteland Municipal Authority	July 11, 1975 (no set term)	Penn Transportation Company (PTC) granted a license across and under its tracks, right of way and property to East Whiteland Municipal Authority (EW) to construct, maintain, alter

			renew, relocate and ultimately remove a sewage main under Railroad Bridge No. 2.73 and 2 manholes at valuation station 2284+49, located 1399 feet west of mile post 3 (west of Knickerbocker station) (the "Facilities"). EW is responsible for all costs of construction, relocation and removal and for any taxes assessed against the Facilities. In addition to reimbursement to PTC for the cost of preparing the agreement, there was a $1,100 licensing fee paid to PTC. PTC must consent to any alterations to the planned Facilities required by EW.

			In the event that PTC deems it necessary that the location of the Facilities be altered, EW must do so at EW's sole cost and expense. Upon termination of the agreement, EW is required to remove the Facilities and restore the premises to good condition, at EW's sole cost and expense.

Schedule 4.14

Seller Litigation

None.

Schedule 4.16(a)

Exception to Title to Acquired Assets

None.

Schedule 4.16(b)

Sufficiency

None.

Schedule 4.17

Pending Development Plans

1. Phase 1 – Conestoga Road (Rt. 401) (TO BE COMPLETED BY SELLER)

Scope of work is to connect 22 properties (one has been connected) to the existing 8" sanitary main within the right-of-way of Conestoga Road.

- This project requires a Highway Occupancy Permit (HOP) from PennDOT, which has been obtained.
- As of July, 2021, this project is essentially complete. The laterals have all been installed and the contractor is in the process of completing restoration work.
- It is anticipated that the project will be complete (including all paperwork) by the end of October, 2021.

Also see Required Sewer Projects to be completed by Buyer on Schedule 7.12.

Schedule 4.18

Land Development/Financial Security Agreements

None.

Schedule 5.04

Consents and Approvals

1. Pennsylvania Public Utility Commission (the "PaPUC") Approval of Transaction

2. PaPUC Approval of Consent to Assignment and Amendment to Sewage Treatment Agreements and Related Amendments

3. Pennsylvania Department of Environmental Protection (the "PaDEP") Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer

4. PaDEP transfer of all NPDES[3] and WQM Permits

[3] NPDES permits will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

Schedule 5.11

Buyer Litigation

None.

Schedule 6.05(e)

Missing Easements

To be provided at Closing.

Schedule 7.03(a)

Rates

Sewer District	**Rate**
Sewer District A	$400/EDU/Year or $33.33/EDU/Month
Sewer District B	$400/EDU/Year or $33.33/EDU/Month
Sewer District C	$542/EDU/Year or $45.17/EDU/Month
Sewer District D	$600/EDU/Year or $50.00/EDU/Month
Sewer District E	$480/EDU/Year or $40.00/EDU/Month

Commercial and Industrial users whose quarterly sewer discharge or water consumption is in excess of 100,000 gallons shall pay a quarterly charge of $6.20 per 1,000 gallons.

Schedule 7.12

Required Sewer Projects

A. North Bacton Hill Road and Swedesford Road:

   a. Generally consisting of those parcels abutting the following roads:

      i. North Bacton Hill Road from Swedesford Road to Spring Valley Road.

      ii. Spring Valley Road from North Bacton Hill Road to the Conestoga Road.

      iii. South Bacton Hill Road from Swedesford Road to the cul-de-sac.

      iv. Swedesford Road from Bacton Hill Road to a point approximately 620-feet west of the intersection.

B. Planebrook Road:

   a. Generally consisting of those parcels abutting the following roads and/or unopened streets:

      i. Planebroook Road form Bracken Avenue to the Route 202 overpass.

      ii. Elk Drive from Planebrook Road to the cul-de-sac.

      iii. Fairway Drive from Planebrook Road to the cul-de-sac.

      iv. Golf View Lane from Planebrook Road to the cul-de-sac.

      v. Prospect Avenue from Planebrook Road to UPI #42-30-8 (2 Prospect Avenue), including a spur to service UPI #42-3-174.

      vi. Bracken Avenue form Planebrook Road to Coffman Street including the following spurs:

         1. East of Coffman Street to service UPI #42-3-216.1, UPI #42-3-216.2 and UPI #42-3-216.3

         2. North of Bracken Avenue within "Davis Avenue" to service UPI #42-3R-28

The installations in A and B above shall be in general conformance with the following design plans completed by ARRO Consulting Inc.:

- Plans Entitled "*North Bacton Hill & Swedesford Road Areas Sanitary Sewer Phase 2"*, 24-sheets, dated January 23, 2020

- Plans Entitled *"Planebrook Road Areas Sanitary Sewers Phase 4"*, 19 sheets, dated January 23, 2020.

Gravity and Low Pressure System Service Connections for A and B above:

- The Required Sewer Projects described in sections A and B above will provide service connections to the curb, ROW line, or property line as shown on the plans.
- The respective property owners will be responsible, at their own expense, for connecting to the service connection provided as noted above. Buyer will have no responsibility for infrastructure located within the boundaries of the property owners' properties.
- Notwithstanding references to "E-One Grinder Pumps" on the plans, Buyer will have no responsibility for grinder pumps which will remain the responsibility of the property owners served by such grinder pumps.

Permitting - The Township is in the process of obtaining all required permits for the above projects in A and B above.

Easements - Various easements will be required for portions of the proposed sewer within Prospect Avenue, Bracken Avenue and Davis Avenue in the Planebrook Road project. The Township will retain responsibility for securing all necessary easements per Section 7.12(a) of the Asset Purchase Agreement.

EXHIBIT C

AQUA 2020 FINANCIAL STATEMENTS

Balance Sheet

Balance Sheet
For Period 12 Ending December 31, 2020 Fiscal Year 2020

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	
Account Nbr	Description	Current Year	Previous Year	Change	Percent
ASSETS	Assets and Other Debits				
NET PLANT	Net Plant				
NETUTL PLANT	Net Utility Plant				
UTIL PLANT	Utility Plant				
PPE	PPE				
103000-0000	Property Held for Future Use	4,507,408.12	5,557,769.28	1,050,361.16-	18.9-
104000-0000	Utility Plant Purchased/Sold	30,921,923.32	54,346,938.63	23,425,015.31-	43.1-
106000-0000	PPE-Unclass Complete Construct	167,038,252.31	147,211,784.15	19,826,468.16	13.5
300000-0000	PPE-Utility Plant in Service	5,150,479,523.80	4,753,901,673.06	396,577,850.74	8.3
300001-0000	PPE-Dedicated Property Estimate	4,646,277.07	3,445,782.00	1,200,495.07	34.8
	Total PPE	5,357,593,384.62	4,964,463,947.12	393,129,437.50	7.9
UTIL PLT ACQ	UTIL PLT ACQ ADJ				
114000-0000	U Plant Acq Adj	17,840,762.25-	17,860,762.25-	20,000.00	.1-
115000-0000	Accum Amort Util Plant Acq Adj	16,265,788.21	15,201,959.51	1,063,828.70	7.0
	Total UTIL PLT ACQ ADJ	1,574,974.04-	2,658,802.74-	1,083,828.70	40.8-
	Total Utility Plant	5,356,018,410.58	4,961,805,144.38	394,213,266.20	7.9
ACCUM DEPR	ACCUM DEPR				
108000-0000	AD-General	1,146,869,097.07-	1,031,885,366.34-	114,983,730.73-	11.1
	Total ACCUM DEPR	1,146,869,097.07-	1,031,885,366.34-	114,983,730.73-	11.1
	Total Net Utility Plant	4,209,149,313.51	3,929,919,778.04	279,229,535.47	7.1
CWIP	CWIP				
105015-0000	CWIP-Contributed Property	39,429,138.90	38,157,727.06	1,271,411.84	3.3
105016-0000	CWIP-Advances	55,113,104.30	45,900,312.79	9,212,791.51	20.1
105020-0000	CWIP-Capital-Payroll-Rg	166,114,407.63	154,307,104.04	11,807,303.59	7.7
105029-0000	CWIP-Capital-Payroll-OT	39,538,559.07	36,696,454.52	2,842,104.55	7.7
105030-0000	CWIP-ACCOUNTS PAYABLE	3,109,888,305.15	2,851,895,376.22	257,992,928.93	9.0
105040-0000	CWIP-INVENTORY	346,366,342.75	318,471,524.96	27,894,817.79	8.8
105050-0000	CWIP-TRANSPORTATION	25,882,070.97	24,706,133.82	1,175,937.15	4.8
105060-0000	CWIP-GENERAL OVERHEAD	7,833,416.13	2,211.98-	7,835,628.11	354235.9-
105070-0000	CWIP-PAYROLL OVERHEAD	153,179,291.20	141,092,059.11	12,087,232.09	8.6
105080-0000	CWIP-AFUDC	11,868,929.76	11,868,929.76	0.00	
105081-0000	CWIP-AFUDC Debt	24,389,870.75	22,615,562.99	1,774,307.76	7.8
105085-0000	CWIP-AFUDC Equity	26,342,485.08	23,193,682.22	3,148,802.86	13.6
105090-0000	CWIP-CLOSING	3,889,768,986.06-	3,551,110,141.24-	338,658,844.82-	9.5
	Total CWIP	116,176,935.63	117,792,514.27	1,615,578.64-	1.4-
	Total Net Plant	4,325,326,249.14	4,047,712,292.31	277,613,956.83	6.9
OTHER PROP/I	Other Property and Investment				
OTHER PPE	OTHER PPE				
121000-0000	Nonutility Property	28,758,975.46	28,480,667.57	278,307.89	1.0
122000-0000	Accum Depr/Amort-Nonutil Prop	4,845,766.44-	4,298,843.13-	546,923.31-	12.7
	Total OTHER PPE	23,913,209.02	24,181,824.44	268,615.42-	1.1-
	Total Other Property and Inves	23,913,209.02	24,181,824.44	268,615.42-	1.1-
CURRENT	Current and Accrued Assets				
CASH IN BANK	CASH IN BANK				
131200-0000	Cash	5,002,000.00	0.00	5,002,000.00	

Balance Sheet

Consolidated		AQUA PENNSYLVANIA INC.	Consolidated		
Account Nbr	Description	Current Year	Previous Year	Change	Percent
CASH IN BANK	CASH IN BANK				
131211-0000	Cash-FIDELITY S&L	112,566.39	53,633.80	58,932.59	109.9
131218-0000	Cash-NAT.CITY-SHENANGO	17,794.46	14,352.18	3,442.28	24.0
131230-0000	Cash-PNC	231,197.01	205,394.19	25,802.82	12.6
131231-0000	Cash-PNC (Disbursement)	0.00	53,971.60-	53,971.60	100.0-
131254-0000	CASH-WAYNE PENNVEST ESCROW	401,839.90	400,734.98	1,104.92	.3
131261-0000	Cash-Citizens Bank-Money Market	0.00	6,937.68	6,937.68-	100.0-
	Total CASH IN BANK	5,765,397.76	627,081.23	5,138,316.53	819.4
WORKING FUND	WORKING FUND				
134000-0000	Working Funds	3,053.45	3,053.45	0.00	
134010-0000	Working Funds-OFFICE FUNDS	14,050.00	14,050.00	0.00	
	Total WORKING FUND	17,103.45	17,103.45	0.00	
CUST A/R	CUST A/R				
141000-0000	Customer Accounts Receivable	50,834,751.37	40,552,015.01	10,282,736.36	25.4
141010-0000	Customer AR Non CIS	0.00	15,659.80-	15,659.80	100.0-
	Total CUST A/R	50,834,751.37	40,536,355.21	10,298,396.16	25.4
OTHER AR	OTHER AR				
142000-0000	Other A/R	814,825.97	616,652.34	198,173.63	32.1
142080-0000	Other A/R-Contract Ops	125,318.61	70,125.61	55,193.00	78.7
172000-0000	Rents Receivable	600.00	700.00	100.00-	14.3-
	Total OTHER AR	940,744.58	687,477.95	253,266.63	36.8
RESERVE UN	RESERVE - UN				
143000-0000	RESERVE-UNCOLLECTABLE ACCTS	10,799,644.79-	4,750,003.97-	6,049,640.82-	127.4
	Total RESERVE - UN	10,799,644.79-	4,750,003.97-	6,049,640.82-	127.4
INTERCO	ALL INTERCOMPANY				
NONSYSINTCO	NON SYSTEM INTERCOMPANY				
145014-0000	InterCompany Acct Co 14 - Resource	28,338,136.02-	28,338,136.02-	0.00	
	Total AR AFFILIATES	28,338,136.02-	28,338,136.02-	0.00	
SYSTEMINT	ALL SYSTEM INTER&ZONE				
INTERCOMPANY	SYSTEM INTERCOMPANY				
911000-0000	Sys IntComp Acct Co 10 - Corp	9,752,957.45-	3,899,319.85	13,652,277.30-	350.1-
911100-0000	Sys IntComp Acct Co 11 - Serv	6,133,984.84-	6,198,551.65-	64,566.81	1.0-
911400-0000	Sys IntComp Acct Co 14 - Aqua Reso	7,901.43	9,460.17	1,558.74-	16.5-
911800-0000	Sys IntComp Acct Co 18 - Cust Serv	578,857.81-	605,217.58-	26,359.77	4.4-
911900-0000	Sys IntComp Acct Co 19 - Aqua Infr	667.31	173.09	494.22	285.5
912300-0000	Sys IntComp Acct Co 23 - OH	35,324.16	17,829.21	17,494.95	98.1
912400-0000	Sys IntComp Acct Co 24 - IL	7,282.79	67,007.17	59,724.38-	89.1-
912500-0000	Sys IntComp Acct Co 25 - NJ	14,761.51	50,168.00	35,406.49-	70.6-
913100-0000	Sys IntComp Acct Co 31 - TX	2,078.66	9,884.89	7,806.23-	79.0-
913200-0000	Sys IntComp Acct Co 32 - IN	61.97-	3,022.33	3,084.30-	102.1-
913400-0000	Sys IntComp Acct Co 34 - VA	913.62	1,175.53	261.91-	22.3-
913500-0000	Sys IntComp Acct Co 35 - NC	6,168.07	15,929.61	9,761.54-	61.3-
	Total SYSTEM INTERCOMPANY	16,390,764.52-	2,729,799.38-	13,660,965.14-	500.4
INTRAZONE	SYSTEM ZONE				
921501-0000	IntraZone Acct Co 15 Zone 1	332,613,341.14-	261,966,161.21-	70,647,179.93-	27.0

Balance Sheet

Consolidated | AQUA PENNSYLVANIA INC. | Consolidated

Account Nbr	Description	Current Year	Previous Year	Change	Percent
INTRAZONE	SYSTEM ZONE				
921502-0000	IntraZone Acct Co 15 Zone 2	318,056,535.42	245,829,941.89	72,226,593.53	29.4
921503-0000	IntraZone Acct Co 15 Zone 3	1,450,136.83	1,227,539.32	222,597.51	18.1
921504-0000	IntraZone Acct Co 15 Zone 4	15,431,509.56	14,218,532.02	1,212,977.54	8.5
921506-0000	IntraZone Acct Co 15 Zone 6	1,470,036.76	1,902,307.30	432,270.54-	22.7-
921507-0000	IntraZone Acct Co 15 Zone 7	54.91-	54.91-	0.00	
921508-0000	IntraZone Acct Co 15 Zone 8	3,794,822.52-	1,212,104.41-	2,582,718.11-	213.1
	Total SYSTEM ZONE	0.00	0.00	0.00	
	Total ALL SYSTEM INTER&ZONE	16,390,764.52-	2,729,799.38-	13,660,965.14-	500.4
	Total ALL INTERCOMPANY	44,728,900.54-	31,067,935.40-	13,660,965.14-	44.0
MATERIALS AN	MATERIALS AN				
151000-0000	Plant Material & Supplies	6,695,112.19	7,924,584.39	1,229,472.20-	15.5-
	Total MATERIALS AN	6,695,112.19	7,924,584.39	1,229,472.20-	15.5-
UNBILLED REV	UNBILLED REV				
173000-0000	Unbilled-Revenue	23,579,553.14	21,489,963.95	2,089,589.19	9.7
173010-0000	Unbilled Revenue Non CIS	1,598,511.36	797,235.09	801,276.27	100.5
	Total UNBILLED REV	25,178,064.50	22,287,199.04	2,890,865.46	13.0
OTHER PREPAY	OTHER PREPAY				
162000-0000	Other Prepaids	3,006,836.49	23,986.54	2,982,849.95	12435.5
162130-0000	OTHER PPD-REAL ESTATE TAX	71,178.23	142,644.23	71,466.00-	50.1-
162140-0000	OTHER PPD-PUC ASSESSMENT	1,038,493.00	862,443.00	176,050.00	20.4
162150-0000	OTHER PPD-SBA ASSESSMENT	42,415.00	33,385.00	9,030.00	27.0
162160-0000	OTHER PPD-CONS ADVOC ASSMT	373,297.00	280,387.00	92,910.00	33.1
162165-0000	OTHER PPD-DPC ASSESSMENT	6,345.00	12,163.00	5,818.00-	47.8-
162170-0000	OTHER PPD-AWWA DUES	10,247.00	10,221.00	26.00	.3
	Total OTHER PREPAY	4,548,811.72	1,365,229.77	3,183,581.95	233.2
	Total Current and Accrued Asse	38,451,440.24	37,627,091.67	824,348.57	2.2
NON CURRENT	Non-Current Assets				
UNAMR DB EXP	UMAMORT DEBT EXP				
181000-0000	Unamortized Debt Expense	120,824.27	105,062.30	15,761.97	15.0
	Total UMAMORT DEBT EXP	120,824.27	105,062.30	15,761.97	15.0
RATE CASE	RATE CASE				
186101-0000	Deferred Rate Case Exp-1	746,842.42	1,210,623.50	463,781.08-	38.3-
	Total RATE CASE	746,842.42	1,210,623.50	463,781.08-	38.3-
PRELIMINARY	PRELIMINARY				
183010-0000	PRELIM SURVEY-PAYROLL-Rg	69,935.65	49,793.35	20,142.30	40.5
183019-0000	PRELIM SURVEY-PAYROLL-Ot	2,788.90	1,084.06	1,704.84	157.3
183020-0000	PRELIM SURVEY-ACCTS PAY	1,365,135.56	754,932.80	610,202.76	80.8
183030-0000	PRELIM SURVEY-INVENTORY	30,139.65	21,928.83	8,210.82	37.4
183050-0000	PRELIM SURVEY-GEN OVERHEAD	541.48	0.00	541.48	
183060-0000	PRELIM SURVEY-PR OVERHEAD	228.40	0.00	228.40	
	Total PRELIMINARY	1,468,769.64	827,739.04	641,030.60	77.4

Consolidated AQUA PENNSYLVANIA INC. Consolidated

Account Nbr	Description	Current Year	Previous Year	Change	Percent
REG ASSETS	REG ASSETS				
186325-0000	Reg Asset-EXC FUND/DEF-OPEB	1,069,083.00-	433,136.00-	635,947.00-	146.8
186330-0000	Reg Asset-TAXES(FAS 109)	769,670,590.20	714,376,165.20	55,294,425.00	7.7
186355-0000	Reg Asset-AFUDC Gross Up (WIP)	2,603,066.35	2,923,153.85	320,087.50-	11.0-
186366-0000	Reg Asset-AFUDC Gross Up (InSvc)	11,970,073.71	10,378,179.44	1,591,894.27	15.3
186367-0000	Reg Asset-AFUDC Gross Up (AD)	765,715.91-	524,399.28-	241,316.63-	46.0
186380-0000	Reg Asset-PENSION/SERP AML	435,901.00	207,701.00	228,200.00	109.9
186381-0000	Reg Asset-Vacation Balancing Account	456,506.82	319,330.81	137,176.01	43.0
186399-0000	Reg Asset-OTHER	19,102.13-	19,102.13-	0.00	
186400-0000	Reg Asset-FAS143	9,379,887.56	7,872,769.91	1,507,117.65	19.1
186520-0000	Reg Asset-COVID19 Recovery Costs	4,726,646.44	0.00	4,726,646.44	
	Total REG ASSETS	797,388,771.04	735,100,662.80	62,288,108.24	8.5
RWIP	RWIP				
184010-0000	RWIP-PAYROLL-Rg	8,074,194.42	7,925,322.33	148,872.09	1.9
184019-0000	RWIP-PAYROLL-Ot	1,792,867.78	1,719,627.96	73,239.82	4.3
184020-0000	RWIP-ACCOUNTS PAYABLE	34,352,333.52	31,735,852.44	2,616,481.08	8.2
184030-0000	RWIP-INVENTORY	1,323,621.90	948,278.59	375,343.31	39.6
184040-0000	RWIP-TRANSPORTATION	162.04-	619.49-	457.45	73.8-
184050-0000	RWIP-GENERAL OVERHEAD	1,734,686.46	1,563,699.55	170,986.91	10.9
184060-0000	RWIP-PAYROLL OVERHEAD	7,599,415.88	7,415,320.34	184,095.54	2.5
184070-0000	RWIP-CASH SALVAGE	3,536,170.79-	3,089,366.91-	446,803.88-	14.5
184099-0000	RWIP-CLOSING	48,942,144.27-	45,749,472.29-	3,192,671.98-	7.0
	Total RWIP	2,398,642.86	2,468,642.52	69,999.66-	2.8-
OTH DEF DBTS	OTHER DEFER DBTS				
186210-0000	Other Deferred DB-SUSP-AMORTIZ	167,384.75-	176,990.23-	9,605.48	5.4-
186270-0000	Other Deferred DB-SERVICE LINE	11,807.27	22,397.96	10,590.69-	47.3-
	Total OTHER DEFER DBTS	155,577.48-	154,592.27-	985.21-	.6
GOODWILL	GOODWILL				
116000-0000	Good Will-Water	24,685,749.96	20,581,832.29	4,103,917.67	19.9
116200-0000	Good Will-Sewer	11,243,896.22	5,434,042.72	5,809,853.50	106.9
	Total GOODWILL	35,929,646.18	26,015,875.01	9,913,771.17	38.1
OPER LEASE	Net Operating Lease Right-of				
185000-0000	Lease - Land	8,875,771.46	8,875,771.46	0.00	
185001-0000	Lease - Office Building	240,078.12	168,126.12	71,952.00	42.8
185002-0000	Lease - Office Equipment	91,472.86	91,472.86	0.00	
185300-0000	Accumulated Lease Amortization	651,648.59-	400,065.94-	251,582.65-	62.9
	Total Operating Lease right-of	8,555,673.85	8,735,304.50	179,630.65-	2.1-
	Total Non-Current Assets	846,453,592.78	774,309,317.40	72,144,275.38	9.3
	Total Assets and Other Debits	5,234,144,491.18	4,883,830,525.82	350,313,965.36	7.2
LIABS/EQUITY	Liabilities and Equity Capital				
TOT CAPITAL	Total Capitalization				
COM STOCK EQ	Equity Capital				
COMMON STOCK	COMMON STOCK				
201000-0000	Common Capital Stock	110,000.00-	110,000.00-	0.00	

Balance Sheet

Consolidated | AQUA PENNSYLVANIA INC. Consolidated

Account Nbr	Description	Current Year	Previous Year	Change	Percent
	Total COMMON STOCK	110,000.00-	110,000.00-	0.00	
CAPITAL SURP	CAPITAL SURP				
211000-0000	Other Paid-In Capital	144,580,200.55-	146,073,107.56-	1,492,907.01	1.0-
211002-0000	Other Paid-In Cap-PSU	5,862,749.73-	5,504,391.28-	358,358.45-	6.5
211003-0000	Other Paid-In Cap-RSU	1,019,212.58-	753,780.31-	265,432.27-	35.2
211500-0000	Other Paid-In Cap-Stock Option Expe	8,916,118.59-	8,775,522.33-	140,596.26-	1.6
211501-0000	Other Paid-In Cap - Tax on Stock Ba	1,644,203.90-	1,644,203.90-	0.00	
211600-0000	Other Paid-In Cap-Restricted Stock	449,399.37-	449,399.37-	0.00	
	Total CAPITAL SURP	162,471,884.72-	163,200,404.75-	728,520.03	.4-
RE	Retained Earnings				
RE PY	RE PY				
215000-0000	Unapproriated Retained Earning	1,604,320,181.15-	1,509,937,563.90-	94,382,617.25-	6.3
	Total RE PY	1,604,320,181.15-	1,509,937,563.90-	94,382,617.25-	6.3
RE CY	RE CY				
215100-0000	Undistrib Retained Earnings	187,469,590.58-	194,382,617.25-	6,913,026.67	3.6-
215101-0000	Undistributed RE (Manual)	22,624,986.04	15,463,313.77	7,161,672.27	46.3
	Total RE CY	164,844,604.54-	178,919,303.48-	14,074,698.94	7.9-
DIVIDEND COM	DIVIDENDS COMMON				
215300-0000	Dividend Appropriation Common	50,000,000.00	100,000,000.00	50,000,000.00-	50.0-
	Total DIVIDENDS COMMON	50,000,000.00	100,000,000.00	50,000,000.00-	50.0-
EARN IN SUBS	EARNINGS IN SUBS				
215200-0000	EARNINGS OF SUBSIDIARIES	30,105,492.78-	22,943,820.51-	7,161,672.27-	31.2
	Total EARNINGS IN SUBS	30,105,492.78-	22,943,820.51-	7,161,672.27-	31.2
REACQ CAPSTK	REACQ CAP STOCK				
216000-0000	Reacquired Capital Stock	1,000.00	1,000.00	0.00	
	Total REACQ CAP STOCK	1,000.00	1,000.00	0.00	
	Total Retained Earnings	1,749,269,278.47-	1,611,799,687.89-	137,469,590.58-	8.5
	Total Equity Capital	1,911,851,163.19-	1,775,110,092.64-	136,741,070.55-	7.7
LT DEBT	Long-Term Debt				
LTD	LTD				
221010-0000	Long-Term Debt-FMB	1,785,000,000.00-	1,607,246,000.00-	177,754,000.00-	11.1
224020-0000	Long-Term Debt-PENNVEST	29,050,790.02-	33,992,491.85-	4,941,701.83	14.5-
251000-0000	Unamortized Bond Premium	1,716,969.00-	1,788,201.00-	71,232.00	4.0-
	Total LTD	1,815,767,759.02-	1,643,026,692.85-	172,741,066.17-	10.5
DEBT IS COST	Unamortized debt issue cost				
225020-0000	Unamortized debt issue costs - exte	13,763,103.53	13,578,341.57	184,761.96	1.4
	Total Unamortized debt issue c	13,763,103.53	13,578,341.57	184,761.96	1.4
	Total Long-Term Debt	1,802,004,655.49-	1,629,448,351.28-	172,556,304.21-	10.6
ST DEBT	Short-Term Debt				
LOANS PAYBLE	LOANS PAYABLE				
232101-0000	Loans Payable-REVOLVR-CUR PRTN	49,197,904.46-	25,724,392.28-	23,473,512.18-	91.3

Consolidated AQUA PENNSYLVANIA INC. Consolidated

Account Nbr	Description	Current Year	Previous Year	Change	Percent
	Total LOANS PAYABLE	49,197,904.46-	25,724,392.28-	23,473,512.18-	91.3
	Total Short-Term Debt	49,197,904.46-	25,724,392.28-	23,473,512.18-	91.3
	Total Total Capitalization	3,763,053,723.14-	3,430,282,836.20-	332,770,886.94-	9.7
TOT LIAB	Total Liabilities				
CURENT LIAB	Current and Accrued Liabilit				
CURRENT PORT	CURRENT PORT				
232510-0000	Current Portion Ltd-FMB	5,861,000.00-	55,866,000.00-	50,005,000.00	89.5-
232520-0000	Current Portion Ltd-PENNVEST	5,484,509.72-	5,580,830.50-	96,320.78	1.7-
	Total CURRENT PORT	11,345,509.72-	61,446,830.50-	50,101,320.78	81.5-
AP	AP				
231000-0000	A/P	4,434,842.52-	2,556,419.97-	1,878,422.55-	73.5
231001-0000	A/P-Accrued Trade	6,628,690.85-	1,300,340.58-	5,328,350.27-	409.8
231002-0000	A/P-Accrued Purchased Water	406,778.81-	393,689.46-	13,089.35-	3.3
231003-0000	A/P-Accrued Electric	983,966.38-	1,028,636.01-	44,669.63	4.3-
231006-0000	A/P-Refunds to Customers	8,294.04-	1,511.69	9,805.73-	648.7-
231200-0000	A/P-Contractors Retainage	4,855,283.83-	6,324,700.33-	1,469,416.50	23.2-
231300-0000	A/P-Received, Not Invoiced	14,430,995.80-	13,997,450.82-	433,544.98-	3.1
	Total AP	31,748,852.23-	25,599,725.48-	6,149,126.75-	24.0
TAX ACC FED	TAXES ACC FED				
236124-0000	Accrued Tax-Fed-Other	9,362,731.05	24,269,009.80	14,906,278.75-	61.4-
	Total TAXES ACC FED	9,362,731.05	24,269,009.80	14,906,278.75-	61.4-
TAX ACC STE	TAXES ACC STATE				
236127-0000	Accrued Tax-ST-CN Income	235,048.70	575,733.11-	810,781.81	140.8-
	Total TAXES ACC STATE	235,048.70	575,733.11-	810,781.81	140.8-
TAX ACC OTHR	TAXES ACC OTHER				
236120-0000	Accrued Tax-PA 1099 W/H	4,217.88-	14,837.41-	10,619.53	71.6-
236201-0000	Accrued Tax-Oth-EMPLOYER FICA	86,380.44-	51,632.68-	34,747.76-	67.3
	Total TAXES ACC OTHER	90,598.32-	66,470.09-	24,128.23-	36.3
INTEREST ACC	INTEREST ACC				
237110-0000	Accrued Int LTD-FMB	19,682,855.12-	19,585,438.03-	97,417.09-	.5
237120-0000	Accrued Int LTD-PENNVEST	142,493.89-	83,843.77-	58,650.12-	70.0
237250-0000	Accrued Int-Other-STD	12,437.88-	8,390.44-	4,047.44-	48.2
	Total INTEREST ACC	19,837,786.89-	19,677,672.24-	160,114.65-	.8
OTHR CURLIAB	OTHER CUR LIAB				
241001-0000	Accrued Liab-OTHER	866,593.90-	1,168,052.35-	301,458.45	25.8-
241004-0000	Accrued Liab-ANTENNA LEASES	602,170.72-	680,698.25-	78,527.53	11.5-
241006-0000	Accrued Liab-AUDIT FEES	599,496.00-	360,313.31-	239,182.69-	66.4
241008-0000	Accrued Liab-PAVING MAINS	91,753.90-	149,176.49-	57,422.59	38.5-
241011-0000	Accrued Liab-UNCLAIMED CHECKS	83,235.92-	88,560.88-	5,324.96	6.0-
243030-0000	ACCRUED BONUS	1,480,000.00-	1,380,000.00-	100,000.00-	7.2
243130-0000	ACCRUED SALARIES AND WAGES	811,234.69-	548,643.48-	262,591.21-	47.9
243137-0000	Accrued Vacation	456,506.82-	319,330.81-	137,176.01-	43.0
243140-0000	PAYROLL CLEARING	53,255.69-	683,861.74-	630,606.05	92.2-

Balance Sheet

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	
Account Nbr	Description	Current Year	Previous Year	Change	Percent
OTHR CURLIAB	OTHER CUR LIAB				
261003-0000	Accrued Insur Liab-UNINSURED	0.00	295,000.00-	295,000.00	100.0-
261020-0000	Operating Lease Liability	241,063.11-	213,115.91-	27,947.20-	13.1
263002-0000	NQ Pension Reserve - Current	0.00	34,713.00-	34,713.00	100.0-
263103-0000	EMPLOYEE PROFIT SHARING	770,307.00-	686,301.87-	84,005.13-	12.2
	Total OTHER CUR LIAB	6,055,617.75-	6,607,768.09-	552,150.34	8.4-
	Total Current and Accrued Liab	59,480,585.16-	89,705,189.71-	30,224,604.55	33.7-
DEF NC LIAB	Deferred and Non-Current and				
ADV FOR CNST	ADV FOR CONST				
252050-0000	CAC-WIP Non Cash	64,269,305.08-	55,056,513.57-	9,212,791.51-	16.7
252080-0000	CAC-WIP Cash	4,661,879.02	2,363,545.75	2,298,333.27	97.2
252099-0000	CAC-WIP Closing	59,607,426.06	52,692,967.82	6,914,458.24	13.1
252102-0000	Adv Cust-CASH OTHER	358,663.48-	669,569.68-	310,906.20	46.4-
252106-0000	CAC-Non Unitized	50,053,676.73-	46,433,467.72-	3,620,209.01-	7.8
252199-0000	Adv Cust-Non Cash Dedicated Propert	4,646,277.07-	3,445,782.00-	1,200,495.07-	34.8
	Total ADV FOR CONST	55,058,617.28-	50,548,819.40-	4,509,797.88-	8.9
REG LIAB	REG LIAB				
253115-0000	Reg Liab-Pension/OPEB	85,979,289.11-	78,557,054.11-	7,422,235.00-	9.4
253116-0000	Reg Liab-FAS 109	261,796,433.00-	285,923,143.00-	24,126,710.00	8.4-
	Total REG LIAB	347,775,722.11-	364,480,197.11-	16,704,475.00	4.6-
NC OP LEASE	Non-Current Operating Lease				
285000-0000	Non-Current Operating Lease	8,314,610.74-	8,522,188.59-	207,577.85	2.4-
	Total NON-Current Operating Le	8,314,610.74-	8,522,188.59-	207,577.85	2.4-
LT DEF FIT	LT DEF FIT				
282020-0000	Deferred FIT Depreciation	569,795,144.31-	526,766,659.31-	43,028,485.00-	8.2
283050-0000	Federal Deferred Tax-Other	2,782,573.75-	3,648,018.75-	865,445.00	23.7-
	Total LT DEF FIT	572,577,718.06-	530,414,678.06-	42,163,040.00-	7.9
LT DEF SIT	LT DEF SIT				
282030-0000	State Deferred Tax-Depr	369,770,477.00-	347,581,016.00-	22,189,461.00-	6.4
283060-0000	State Deferred Tax-Other	49,937,332.41	49,459,352.41	477,980.00	1.0
	Total LT DEF SIT	319,833,144.59-	298,121,663.59-	21,711,481.00-	7.3
UNAMORT ITC	UNAMORT ITC				
255101-0000	Deferred Taxes - Unamortized ITC (F	3,867,844.95-	4,121,257.95-	253,413.00	6.1-
	Total UNAMORT ITC	3,867,844.95-	4,121,257.95-	253,413.00	6.1-
CIAC	CIAC				
271050-0000	CIAC-WIP NON CASH	1,464,468.84-	193,057.00-	1,271,411.84-	658.6
271080-0000	CIAC-WIP CASH	2,233,321.00-	845,208.18-	1,388,112.82-	164.2
271099-0000	CIAC-WIP CLOSING	3,685,889.84	858,415.18	2,827,474.66	329.4
271101-0000	CIAC-UNITIZED	211,828,177.43-	205,706,453.54-	6,121,723.89-	3.0
	Total CIAC	211,840,077.43-	205,886,303.54-	5,953,773.89-	2.9
OTHR NC LIAB	OTHER NCUR LIAB				
253200-0000	OPEB Reserve - Non Current	10,347,248.81-	9,404,573.93-	942,674.88-	10.0
253250-0000	Pension Reserve - Non Current	77,799,387.14	69,597,152.14	8,202,235.00	11.8
253350-0000	NQ Pension Reserve - Non Current	418,135.61-	111,138.98-	306,996.63-	276.2

Balance Sheet

Consolidated AQUA PENNSYLVANIA INC. Consolidated

Account Nbr	Description	Current Year	Previous Year	Change	Percent
OTHR NC LIAB	OTHER NCUR LIAB				
253420-0000	Uncertain Tax Position Reserve-Fede	11,640,872.00-	12,666,326.00-	1,025,454.00	8.1-
253421-0000	Uncertain Tax Position Reserve-Stat	3,453,432.00-	1,218,034.00-	2,235,398.00-	183.5
	Total OTHER NCUR LIAB	51,939,698.72	46,197,079.23	5,742,619.49	12.4
	Total Deferred and Non-Current	1,467,328,036.44-	1,415,898,029.01-	51,430,007.43-	3.6
CIAC ACC AMR	CIAC ACC AMORT				
272000-0000	Accum Amort of CIAC	55,717,853.56	52,055,529.10	3,662,324.46	7.0
	Total CIAC ACC AMORT	55,717,853.56	52,055,529.10	3,662,324.46	7.0
	Total Total Liabilities	1,471,090,768.04-	1,453,547,689.62-	17,543,078.42-	1.2
	Total Liabilities and Equity C	5,234,144,491.18-	4,883,830,525.82-	350,313,965.36-	7.2

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
NETPROFIT	Net Profit				
NETINCOME	Net Income				
NIBT	Net Icome Before Taxes				
OPER INC	Operating Income				
TOTREV	Revenue				
OPREV	OPREV				
OPREV-WTR	OPREV-WTR				
460100-0000	Unmetered Rev-RESIDENTIAL	30,673.29-	30,673.29-	25,106.87-	25,106.87-
460700-0000	Unmetered Rev-AVAILABILTY LOT	0.00	0.00	32,647.34-	32,647.34-
461100-0000	Metered Sales-Residential	318,190,211.32-	318,190,211.32-	283,751,359.54-	283,751,359.54-
461200-0000	Metered Sales-Commercial	102,713,516.32-	102,713,516.32-	103,695,825.14-	103,695,825.14-
461300-0000	Metered Sales-Industrial	18,329,697.19-	18,329,697.19-	18,994,068.55-	18,994,068.55-
461400-0000	Metered Sales-Public Authority	8,254,557.99-	8,254,557.99-	8,888,774.40-	8,888,774.40-
461605-0000	Metered Sales - Bulk Water	224,501.75-	224,501.75-	123,999.29-	123,999.29-
462000-0000	Metered Fire Protection Rev	12,878,316.09-	12,878,316.09-	11,916,416.97-	11,916,416.97-
462100-0000	Public Fire Protection	6,505,768.06-	6,505,768.06-	6,313,029.31-	6,313,029.31-
462200-0000	Private Fire Protection	2,078,549.40-	2,078,549.40-	1,997,672.56-	1,997,672.56-
466000-0000	Sales for Resale-Metered	2,635,538.82-	2,635,538.82-	2,628,850.97-	2,628,850.97-
471000-0000	Misc Srv Rev	495,985.82-	495,985.82-	477,835.74-	477,835.74-
471010-0000	Misc Srv Rev-RECONNECTION FEE	51,703.77-	51,703.77-	287,323.78-	287,323.78-
471050-0000	Misc Srv Rev-LATE PAYMENT FEES	860,552.79-	860,552.79-	588,451.35-	588,451.35-
471060-0000	Misc Srv Rev-BAD CHECK FEE	21,635.00-	21,635.00-	18,680.00-	18,680.00-
471070-0000	Misc Srv Rev-NEW ACCT FEE	100.00-	100.00-	150.00-	150.00-
471100-0000	Misc Srv Rev-DSIC IMPRV SURCH	3,682,858.12-	3,682,858.12-	11,027,596.51-	11,027,596.51-
471200-0000	Misc Srv Rev-ST TAX ADJ SURCH	1,217.84	1,217.84	19,015.90	19,015.90
	Total OPREV-WTR	476,952,947.89-	476,952,947.89-	450,748,772.42-	450,748,772.42-
OPREV-SWR	OPREV-SWR				
521100-0000	SW-Flat Rate Rev-Residential	5,868,956.60-	5,868,956.60-	4,990,777.74-	4,990,777.74-
521200-0000	SW-Flat Rate Rev-Commercial	1,433,233.99-	1,433,233.99-	1,196,620.29-	1,196,620.29-
521700-0000	SW-Flat Rate Rev-Avail Lot	0.00	0.00	60,587.34-	60,587.34-
522100-0000	SW-Measured Rev-Residential	16,710,472.41-	16,710,472.41-	10,079,089.43-	10,079,089.43-
522200-0000	SW-Measured Rev-Commercial	6,429,743.91-	6,429,743.91-	3,336,125.68-	3,336,125.68-
522300-0000	SW-Measured Rev-Industrial	3,684.71-	3,684.71-	810.57-	810.57-
522400-0000	SW-Measured Rev-Pub Authority	1,284,873.39-	1,284,873.39-	1,234,422.64-	1,234,422.64-
532000-0000	SW-Forfeited Discounts/Abate	63,705.05-	63,705.05-	44,223.43-	44,223.43-
536000-0000	SW-Other WW Revenues	219.62-	219.62-	74,961.21-	74,961.21-
536030-0000	SW-Other WW Rev-DSIC	134,046.24-	134,046.24-	180,456.74-	180,456.74-
	Total OPREV-SWR	31,928,935.92-	31,928,935.92-	21,198,075.07-	21,198,075.07-
	Total OPREV	508,881,883.81-	508,881,883.81-	471,946,847.49-	471,946,847.49-
NON OPER REV	NON-OPER REV				
415000-0000	Rev-Merch,Job,Contract	79,937.73-	79,937.73-	204,344.05-	204,344.05-
415010-0000	Rev-Contract-WW Billing	2,801,476.98-	2,801,476.98-	2,801,551.98-	2,801,551.98-
415020-0000	Rev-Contract-Lab Services	557,562.00-	557,562.00-	543,098.60-	543,098.60-
415030-0000	Rev-Contract-Base	0.00	0.00	203,682.76-	203,682.76-
415200-0000	Rev-Coal/Culm	0.00	0.00	2,000.00-	2,000.00-
421020-0000	Nonutil Inc-Rental Prop	27,393.75-	27,393.75-	34,079.13-	34,079.13-
421030-0000	Nonutil Inc-Antennae	2,208,860.84-	2,208,860.84-	2,227,671.90-	2,227,671.90-
421501-0000	Nonutil Inc-Ums Outside Serv	437,537.92-	437,537.92-	436,926.26-	436,926.26-
421900-0000	Nonutil Inc-Other	3,189,600.57	3,189,600.57	1,073,131.04-	1,073,131.04-

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
	Total NON-OPER REV	2,923,168.65-	2,923,168.65-	7,526,485.72-	7,526,485.72-
	Total Revenue	511,805,052.46-	511,805,052.46-	479,473,333.21-	479,473,333.21-
OPER EXP	Utility Costs & Expenses				
OM	Operations & Maint				
OM LABOR	OM LABOR				
601110-0000	WT-Source Oper LBR-Employ-Rg	265,007.60	265,007.60	246,397.79	246,397.79
601119-0000	WT-Source Oper LBR-Employ-OT	20,295.24	20,295.24	17,910.19	17,910.19
601210-0000	WT-Source Maint LBR-Employ-Rg	217,561.82	217,561.82	337,936.80	337,936.80
601219-0000	WT-Source Maint LBR-Employ-OT	26,162.37	26,162.37	44,097.07	44,097.07
601310-0000	WT-WTRTRT Oper LBR-Employ-Rg	5,221,112.00	5,221,112.00	5,578,786.12	5,578,786.12
601319-0000	WT-WTRTRT Oper LBR-Employ-OT	779,479.17	779,479.17	789,749.67	789,749.67
601410-0000	WT-WTRTRT Maint LBR-Employ-Rg	164,094.28	164,094.28	174,292.78	174,292.78
601419-0000	WT-WTRTRT Maint LBR-Employ-OT	24,643.11	24,643.11	28,783.79	28,783.79
601510-0000	WT-T&D Oper LBR-Emp-Sys-GEN-Rg	4,004,121.30	4,004,121.30	3,284,343.36	3,284,343.36
601519-0000	WT-T&D Oper LBR-Emp-Sys-GEN-OT	76,032.42	76,032.42	55,709.08	55,709.08
601520-0000	WT-T&D Oper LBR-Emp-Sy-Main-Rg	209,768.51	209,768.51	356,226.43	356,226.43
601529-0000	WT-T&D Oper LBR-Emp-Sy-Main-OT	5,902.10	5,902.10	10,334.86	10,334.86
601530-0000	WT-T&D Oper LBR-Emp-Sy-Srv-Rg	1,757.76	1,757.76	4,358.95	4,358.95
601539-0000	WT-T&D Oper LBR-Emp-Sy-Srv-OT	0.00	0.00	525.43	525.43
601540-0000	WT-T&D Oper LBR-Emp-Sy-Mtr-Rg	717,872.34	717,872.34	463,839.92	463,839.92
601549-0000	WT-T&D Oper LBR-Emp-Sy-Mtr-OT	97,430.98	97,430.98	30,761.96	30,761.96
601550-0000	WT-T&D Oper LBR-Emp-Sy-Hyd-Rg	777,383.41	777,383.41	696,094.05	696,094.05
601559-0000	WT-T&D Oper LBR-Emp-Sy-Hyd-OT	183,277.03	183,277.03	178,665.11	178,665.11
601560-0000	WT-T&D Oper LBR-Emp-Lost Tm-Rg	173,753.66	173,753.66	212,747.90	212,747.90
601569-0000	WT-T&D Oper LBR-Emp-Lost Tm-OT	8,159.55	8,159.55	13,621.14	13,621.14
601570-0000	WT-T&D Oper LBR-Emp-Oth Wrk-Rg	340,232.68	340,232.68	284,251.89	284,251.89
601579-0000	WT-T&D Oper LBR-Emp-Oth Wrk-OT	212,222.11	212,222.11	308,735.87	308,735.87
601610-0000	WT-T&D Maint LBR-Emp-Sy-GEN-Rg	324,312.83	324,312.83	471,924.53	471,924.53
601619-0000	WT-T&D Maint LBR-Emp-Sy-GEN-OT	55,316.19	55,316.19	112,269.15	112,269.15
601620-0000	WT-T&D Maint LBR-Emp-Sy-Main-R	166,112.13	166,112.13	108,384.03	108,384.03
601629-0000	WT-T&D Maint LBR-Emp-Sy-Main-O	46,446.52	46,446.52	29,079.46	29,079.46
601630-0000	WT-T&D Maint LBR-Emp-Sy-Srv-Rg	764,664.39	764,664.39	927,402.01	927,402.01
601639-0000	WT-T&D Maint LBR-Emp-Sy-Srv-OT	116,435.93	116,435.93	131,634.66	131,634.66
601640-0000	WT-T&D Maint LBR-Emp-Sy-Mtr-Rg	133,315.18	133,315.18	89,943.17	89,943.17
601649-0000	WT-T&D Maint LBR-Emp-Sy-Mtr-OT	16,542.44	16,542.44	8,227.20	8,227.20
601650-0000	WT-T&D Maint LBR-Emp-Sy-Hyd-Rg	180,472.77	180,472.77	162,581.96	162,581.96
601659-0000	WT-T&D Maint LBR-Emp-Sy-Hyd-OT	6,518.15	6,518.15	6,641.81	6,641.81
601660-0000	WT-T&D Maint LBR-Emp-LostTm-Rg	144,666.44	144,666.44	139,024.97	139,024.97
601669-0000	WT-T&D Maint LBR-Emp-LostTm-OT	50,325.65	50,325.65	82,840.11	82,840.11
601670-0000	WT-T&D Maint LBR-Emp-OthWrk-Rg	28,952.63	28,952.63	44,830.03	44,830.03
601679-0000	WT-T&D Maint LBR-Emp-OthWrk-OT	3,120.52	3,120.52	11,463.36	11,463.36
601710-0000	WT-Cust Accts Labor-Employ-Rg	585,649.05	585,649.05	321,271.33	321,271.33
601719-0000	WT-Cust Accts Labor-Employ-OT	27,418.25	27,418.25	18,943.25	18,943.25
601810-0000	WT-A & G Labor-Employ-Rg	12,939,357.28	12,939,357.28	12,480,900.39	12,480,900.39
601819-0000	WT-A & G Labor-Employ-OT	732,151.15	732,151.15	726,435.30	726,435.30
603810-0000	WT-A & G Labor-Officers, Exec	582,557.67	582,557.67	620,222.40	620,222.40
603820-0000	WT-A & G Labor-Bonuses	2,003,984.47	2,003,984.47	1,417,742.66	1,417,742.66
603840-0000	WT-A & G Labor-Stock Option Co	140,596.26	140,596.26	264,132.43	264,132.43
603842-0000	WT-A & G PSU Amortization	358,358.45	358,358.45	400,662.74	400,662.74
603843-0000	WT-A & G RSU Amortization	265,432.27	265,432.27	191,616.07	191,616.07

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
OM LABOR	OM LABOR				
650520-0000	WT-Trans-T&D OP-Payrol-RG	488,252.70	488,252.70	563,774.58	563,774.58
650529-0000	WT-Trans-T&D OP-Payrol-OT	85,444.84	85,444.84	84,661.75	84,661.75
701310-0000	SW-Pump Oper-LBR-Employ-Rg	114,694.68	114,694.68	123,547.50	123,547.50
701319-0000	SW-Pump Oper-LBR-Employ-OT	24,316.50	24,316.50	22,903.47	22,903.47
701410-0000	SW-Pump Maint-LBR-Employ-Rg	2,615.44	2,615.44	0.00	0.00
701419-0000	SW-Pump Maint-LBR-Employ-OT	238.29	238.29	0.00	0.00
701510-0000	SW-T&D Oper-LBR-Employ-Rg	150,574.67	150,574.67	145,670.42	145,670.42
701519-0000	SW-T&D Oper-LBR-Employ-OT	13,794.07	13,794.07	19,362.67	19,362.67
701710-0000	SW-Cust Accts-LBR-Employ-Rg	3,991.57	3,991.57	6,966.17	6,966.17
701719-0000	SW-Cust Accts-LBR-Employ-OT	1,170.41	1,170.41	1,505.81	1,505.81
701810-0000	SW-A&G-LBR-Employ-Rg	2,180,854.86	2,180,854.86	1,750,614.17	1,750,614.17
701819-0000	SW-A&G-LBR-Employ-OT	195,121.70	195,121.70	139,243.62	139,243.62
750520-0000	SW-Trans-T&D OP-Payroll-RG	2,090.00	2,090.00	7,491.00	7,491.00
	Total OM LABOR	36,462,135.79	36,462,135.79	34,752,084.34	34,752,084.34
OM EMP BEN	OM EMP BENEFITS				
604810-0000	WT-A&G Empl-HEALTH PLANS	0.00	0.00	1,520.95	1,520.95
604813-0000	WT-A&G Emp-DENTAL PLAN	540,444.26	540,444.26	525,303.52	525,303.52
604820-0000	WT-A&G Emp-KEYSTONE HMO	8,363,517.37	8,363,517.37	7,949,848.75	7,949,848.75
604822-0000	WT-A&G Empl-Insurance Payments	1,479,615.78-	1,479,615.78-	1,380,090.89-	1,380,090.89-
604824-0000	WT-A&G Empl-Contributions Dent	47,654.03-	47,654.03-	45,921.06-	45,921.06-
604827-0000	WT-A&G Empl-Pension Service Co	9,576,600.00	9,576,600.00	9,226,453.00	9,226,453.00
604828-0000	WT-A&G Empl-OPEB Service Costs	1,345,170.00	1,345,170.00	930,119.00	930,119.00
604829-0000	WT-A&G Empl-Nonqual Service Co	127,487.04-	127,487.04-	75,811.00-	75,811.00-
604835-0000	WT-A&G Emp-20 YEAR CLUB	0.00	0.00	10,354.40	10,354.40
604837-0000	WT-A&G Empl-CONTRIB THRIFT PL	1,362,397.35	1,362,397.35	1,296,433.48	1,296,433.48
604838-0000	WT-Aqua Year End Contribution	773,778.11	773,778.11	667,177.85	667,177.85
604840-0000	WT-A&G Empl-GROUP LIFE INS	212,703.40	212,703.40	205,258.89	205,258.89
604842-0000	WT-A&G Empl-LTD INSURANCE	261,674.86	261,674.86	245,120.86	245,120.86
604845-0000	WT-A&G Empl-EDUCATION	65,378.80	65,378.80	68,258.47	68,258.47
604850-0000	WT-A&G Empl-WELFARE EXP-Gen	2,097.70-	2,097.70-	3,027.07	3,027.07
604852-0000	WT-A&G Emp-BACKGROUND CHECKS	4.95	4.95	0.00	0.00
604854-0000	WT-A&G Emp-DOT PHYSICALS	0.00	0.00	604.00	604.00
604855-0000	WT-A&G Emp-EASE CONTRACT	36,501.30	36,501.30	41,444.77	41,444.77
604857-0000	WT-A&G Emp-FLOWERS & FRUIT	2,541.15	2,541.15	3,633.23	3,633.23
604858-0000	WT-A&G Emp-RETIREMENT GIFTS	0.00	0.00	739.86	739.86
604860-0000	WT-A&G Emp-RETIREMENT LUNCHS	2,406.79	2,406.79	8,595.48	8,595.48
604864-0000	WT-A&G Emp-PROF SERV - HR	7,955.00	7,955.00	0.00	0.00
604867-0000	WT-A&G Emp-TUITION RFND-NONTAX	68,420.24	68,420.24	68,379.94	68,379.94
604870-0000	WT-A&G Emp-EMPLY X-MAS GIFTS	0.00	0.00	40,615.00	40,615.00
604880-0000	WT-A&G Fees COLI Accounts	47,840.76	47,840.76	27,962.64	27,962.64
604881-0000	WT-A&G Def Comp Insurance Char	0.00	0.00	2,771.10	2,771.10
604891-0000	WT-A&G Empl-INTERCO BENEFITS	1,619,201.21-	1,619,201.21-	1,396,489.32-	1,396,489.32-
704850-0000	SW-A&G Empl-WELFARE EXP-Gen	1,564.23	1,564.23	232.95	232.95
704858-0000	SW-A&G Emp-RETIREMENT GIFTS	0.00	0.00	50.00	50.00
704860-0000	SW-A&G Emp-RETIREMENT LUNCHS	0.00	0.00	101.33	101.33
704891-0000	SW-A&G Empl-INTERCO BENEFITS	1,548,515.67	1,548,515.67	1,326,922.82	1,326,922.82
	Total OM EMP BENEFITS	20,941,358.48	20,941,358.48	19,752,617.09	19,752,617.09
OM PRCH WTR	OM PURCH WATER				
610100-0000	WT-Purchased Water	4,808,831.54	4,808,831.54	4,944,013.26	4,944,013.26

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
	Total OM PURCH WATER	4,808,831.54	4,808,831.54	4,944,013.26	4,944,013.26
OM PRCH WW T	OM PURCH WW TRMT				
710500-0000	SW-Purchased WW-T&D-OPER	5,028,151.65	5,028,151.65	1,751,046.84	1,751,046.84
	Total OM PURCH WW TRMT	5,028,151.65	5,028,151.65	1,751,046.84	1,751,046.84
OM SLUDGE	OM SLUDGE				
711500-0000	SW-Sludge Removal-T&D-OPER	1,046,248.55	1,046,248.55	1,188,683.24	1,188,683.24
	Total OM SLUDGE	1,046,248.55	1,046,248.55	1,188,683.24	1,188,683.24
OM PRCH PWR	OM PURCH POWER				
615100-0000	WT-Purchased Power-SOURCE OPER	7,665,181.89	7,665,181.89	8,087,928.36	8,087,928.36
615300-0000	WT-Purchased Power-TREAT OPER	120,279.89	120,279.89	76,608.67	76,608.67
615500-0000	WT-Purchased Power-T&D OPER	1,374,533.52	1,374,533.52	1,534,187.40	1,534,187.40
615800-0000	WT-Purchased Power-A & G EXPS	304,525.53	304,525.53	366,068.93	366,068.93
616100-0000	WT-Fuel PWR Prod-SOURCE OPER	215,846.91	215,846.91	153,527.33	153,527.33
616300-0000	WT-Fuel PWR Prod-TREAT OPER	4,173.20	4,173.20	10,225.03	10,225.03
616500-0000	WT-Fuel PWR Prod-T&D OPER	2,184.99	2,184.99	813.72	813.72
616700-0000	WT-Fuel PWR Prod-CUST ACCTS	2,423.69	2,423.69	22,730.26	22,730.26
616800-0000	WT-Fuel PWR Prod-A & G EXPS	68,004.20	68,004.20	64,564.43	64,564.43
715100-0000	SW-Purchased PWR-Collect Oper	1,340,752.47	1,340,752.47	1,302,393.90	1,302,393.90
715300-0000	SW-Purchased PWR-Pump Oper	1,794.38	1,794.38	2,836.21	2,836.21
716100-0000	SW-Fuel PWR Prod-Collect Oper	51,451.21	51,451.21	64,045.53	64,045.53
716300-0000	SW-Fuel PWR Prod-Pump Oper	5,731.63	5,731.63	7,705.46	7,705.46
	Total OM PURCH POWER	11,156,883.51	11,156,883.51	11,693,635.23	11,693,635.23
OM CHEMICALS	OM CHEMICALS				
618300-0000	WT-Chem-WTRTRT-OPER-GENERAL	673,741.70	673,741.70	680,802.50	680,802.50
618315-0000	WT-Chem-WTRTRT-OPER-LIQUI ALUM	1,125,138.97	1,125,138.97	1,135,344.43	1,135,344.43
618320-0000	WT-Chem-WTRTRT-OPER-CAUSTIC	175,601.62	175,601.62	172,045.74	172,045.74
618325-0000	WT-Chem-WTRTRT-OPER-CHLORINE	393,747.07	393,747.07	432,150.60	432,150.60
618330-0000	WT-Chem-WTRTRT-OPER-COAGULANTS	489,547.46	489,547.46	523,598.73	523,598.73
618335-0000	WT-Chem-WTRTRT-OPER-FLUORIDE	29,056.62	29,056.62	27,403.08	27,403.08
618340-0000	WT-Chem-WTRTRT-OPER-HYPOCHLORI	237,960.19	237,960.19	209,069.94	209,069.94
618345-0000	WT-Chem-WTRTRT-OPER-POLYPHOSPH	355,586.30	355,586.30	347,253.80	347,253.80
618350-0000	WT-Chem-WTRTRT-OPER-ZINC ORTHO	231,757.65	231,757.65	185,231.53	185,231.53
618353-0000	WT-Chem-WTRTRT-OPER-POLYMER	165,322.42	165,322.42	190,941.11	190,941.11
618355-0000	WT-Chem-WTRTRT-OPER-SODA ASH	.24	.24	0.00	0.00
618360-0000	WT-Chem-WTRTRT-OPER-PERCOL	29,988.00	29,988.00	24,445.01	24,445.01
618363-0000	WT-Chem-WTRTRT-OPER-SOLAR SALT	6,815.11	6,815.11	16,960.64	16,960.64
618365-0000	WT-Chem-WTRTRT-OPER-LIME	233,378.12	233,378.12	227,714.74	227,714.74
618367-0000	WT-Chem-WTRTRT-OPER-COPPER SUL	772.75	772.75	1,864.13	1,864.13
618375-0000	WT-Chem-WTRTRT-OPER-CARBON	801,033.13	801,033.13	776,423.16	776,423.16
618385-0000	WT-Chem-WTRTRT-OPER-POTAPERM	56,866.30	56,866.30	0.00	0.00
618390-0000	WT-Chem-WTRTRT-OPER-AMMONIA	141,122.82	141,122.82	126,415.75	126,415.75
618395-0000	WT-Chem-WTRTRT-OPER-MISC Chem	67,426.00	67,426.00	62,901.34	62,901.34
718300-0000	SW-Chem-Pump Oper-GENERAL	506,902.91	506,902.91	537,604.81	537,604.81
718600-0000	SW-Chem-T&D Maint-GENERAL	0.00	0.00	148.50	148.50
	Total OM CHEMICALS	5,721,765.38	5,721,765.38	5,678,319.54	5,678,319.54
OM SUPPLIES	OM SUPPLIES				
620100-0000	WT-Mat&Sup-Source OPER	53,562.01	53,562.01	31,852.16	31,852.16

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
OM SUPPLIES	OM SUPPLIES				
620200-0000	WT-Mat&Sup-Source MAINT	4,229.11	4,229.11	20,593.29	20,593.29
620300-0000	WT-Mat&Sup-WTRTRT OPER	452,508.70	452,508.70	478,961.24	478,961.24
620400-0000	WT-Mat&Sup-WTRTRT MAINT	69,751.40	69,751.40	74,824.19	74,824.19
620500-0000	WT-Mat&Sup-T&D OPER-Gen	20,046.87-	20,046.87-	4,890.04-	4,890.04-
620501-0000	WT-Mat&Sup-T&D OPER-Mains	46,662.15	46,662.15	34,553.12	34,553.12
620502-0000	WT-Mat&Sup-T&D OPER-Services	19,435.06	19,435.06	16,485.08	16,485.08
620503-0000	WT-Mat&Sup-T&D OPER-Meters	700.30	700.30	72.00	72.00
620504-0000	WT-Mat&Sup-T&D OPER-Hydrants	10,998.32	10,998.32	15,963.87	15,963.87
620506-0000	WT-Mat&Sup-T&D OP-FRIEGHT	482.97	482.97	37.24	37.24
620507-0000	WT-Mat&Sup-T&D OP-MAINT OF OTH	98,389.07	98,389.07	140,506.54	140,506.54
620508-0000	WT-Mat&Sup-T&D OP-OBSOLETE INV	189,132.66	189,132.66	18,516.89-	18,516.89-
620509-0000	WT-Mat&Sup-T&D OP-INVENT PRICE	937.77	937.77	3,337.48-	3,337.48-
620510-0000	WT-Mat&Sup-T&D OP-SALT SUPPLY	0.00	0.00	510.00	510.00
620511-0000	WT-Mat&Sup-T&D OP-BUILDING SUP	42,352.42	42,352.42	42,494.72	42,494.72
620512-0000	WT-Mat&Sup-T&D OP-MAINT SUPPLY	414,197.46	414,197.46	411,460.37	411,460.37
620513-0000	WT-Mat&Sup-T&D OP-SAFETY SUPPL	673,427.14	673,427.14	430,848.51	430,848.51
620514-0000	WT-Mat&Sup-T&D OP-TOOL PURCH	99,420.30	99,420.30	97,435.59	97,435.59
620600-0000	WT-Mat&Sup-T&D MAINT-Gen	35,904.55	35,904.55	45,697.35	45,697.35
620601-0000	WT-Mat&Sup-T&D MAINT-Mains	135,445.28	135,445.28	183,972.28	183,972.28
620602-0000	WT-Mat&Sup-T&D MAINT-Services	50,848.24	50,848.24	80,221.27	80,221.27
620603-0000	WT-Mat&Sup-T&D MAINT-Meters	58,236.73	58,236.73	53,615.38	53,615.38
620604-0000	WT-Mat&Sup-T&D MAINT-Hydrants	66,367.98	66,367.98	43,909.55	43,909.55
620607-0000	WT-Mat&Sup-T&DMNT-MAINT OF OTH	0.00	0.00	109.24	109.24
620608-0000	WT-Mat&Sup-T&DMNT-OBSOLETE INV	0.00	0.00	45.46	45.46
620609-0000	WT-Mat&Sup-T&DMNT-INVENT PRICE	221.04	221.04	0.00	0.00
620610-0000	WT-Mat&Sup-T&DMNT-SALT SUPPLY	1,279.95	1,279.95	6,679.53	6,679.53
620611-0000	WT-Mat&Sup-T&DMNT-BUILDING SUP	14.80	14.80	0.00	0.00
620612-0000	WT-Mat&Sup-T&DMNT-MAINT SUPPLY	1,892.03	1,892.03	4,532.11	4,532.11
620613-0000	WT-Mat&Sup-T&DMNT-SAFETY SUPPL	1,592.65	1,592.65	700.12	700.12
620614-0000	WT-Mat&Sup-T&DMNT-TOOL PURCH	29,068.45	29,068.45	23,875.29	23,875.29
620700-0000	WT-Mat&Sup-Cust Accts	248.50	248.50	308.00	308.00
620800-0000	WT-Mat&Sup-A & G	13,463.46	13,463.46	14,580.80	14,580.80
620801-0000	WT-Mat&Sup-A&G-Build & Grounds	94,642.19	94,642.19	54,727.83	54,727.83
620802-0000	WT-MAT&SUP-A&G-PAPER	1,205.40	1,205.40	1,825.68	1,825.68
720200-0000	SW-Mat&Sup-Collect Maint	84.63	84.63	0.00	0.00
720300-0000	SW-Mat&Sup-Pump Oper	144,487.65	144,487.65	125,740.20	125,740.20
720400-0000	SW-Mat&Sup-Pump Maint	908.91	908.91	0.00	0.00
720500-0000	SW-Mat&Sup-T&D Oper	708.48	708.48	85.76	85.76
720512-0000	SW-Mat&Sup-T&D OP-MAINT SUPPLY	4,785.15	4,785.15	964.35	964.35
720600-0000	SW-Mat&Sup-T&D Maint	4,380.21	4,380.21	67.31	67.31
720612-0000	SW-Mat&Sup-T&DMNT-MAINT SUPPLY	13,610.17	13,610.17	0.00	0.00
720800-0000	SW-Mat&Sup-A&G	0.00	0.00	316.58-	316.58-
	Total OM SUPPLIES	2,815,536.42	2,815,536.42	2,411,194.44	2,411,194.44
OM OS ENG	OM OS ENGINEER				
631200-0000	WT-Cont Serv-Eng-Source MAINT	7,332.26	7,332.26	6,969.09	6,969.09
631500-0000	WT-Cont Serv-Eng-T&D OPER	0.00	0.00	3,947.88	3,947.88
631600-0000	WT-Cont Serv-Eng-T&D MAINT	11,254.47	11,254.47	0.00	0.00
631800-0000	WT-Cont Serv-Eng-A & G	151,320.48	151,320.48	122,559.37	122,559.37
	Total OM OS ENGINEER	169,907.21	169,907.21	133,476.34	133,476.34

Income Statement

Consolidated AQUA PENNSYLVANIA INC. Consolidated AQUACHART

Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
OM OS ACCNT	OM OS ACCOUNTING				
632800-0000	WT-Cont Serv-Acct-A & G	695,402.62	695,402.62	782,260.54	782,260.54
732800-0000	SW-Cont Serv-Acct-A&G	69,581.00	69,581.00	36,443.55	36,443.55
	Total OM OS ACCOUNTING	764,983.62	764,983.62	818,704.09	818,704.09
OM OS LEGAL	OM OS LEGAL				
633800-0000	WT-Cont Serv-Legl-A & G	580,610.31	580,610.31	775,586.50	775,586.50
733800-0000	SW-Cont Serv-Legal-A&G	250.34-	250.34-	14,725.34	14,725.34
	Total OM OS LEGAL	580,359.97	580,359.97	790,311.84	790,311.84
OM MGMT FEES	OM MGMT FEES				
634900-0000	WT-Corp Mgmt Fees Only	17,813,810.32	17,813,810.32	24,515,258.94	24,515,258.94
734900-0000	SW-Corp Mgmt Fees Only	1,653,087.75	1,653,087.75	767,749.01	767,749.01
	Total OM MGMT FEES	19,466,898.07	19,466,898.07	25,283,007.95	25,283,007.95
OM OS LABTST	OM OS LAB TESTING				
635300-0000	WT-Cont Serv-Testg-WTTRT OPER	287,864.50	287,864.50	187,668.25	187,668.25
635400-0000	WT-Cont Serv-Testg-WTTRT MAINT	2,337.00	2,337.00	0.00	0.00
735300-0000	SW-Cont Serv-Test-Pump Oper	0.00	0.00	9,358.60	9,358.60
735400-0000	SW-Cont Serv-Test-Pump Maint	459,853.31	459,853.31	378,445.51	378,445.51
	Total OM OS LAB TESTING	750,054.81	750,054.81	575,472.36	575,472.36
OM OS OTHER	OM OS OTHER				
636100-0000	WT-Cont Serv-Oth-Source OPER	78,206.79	78,206.79	168,906.45	168,906.45
636200-0000	WT-Cont Serv-Oth-Source MAINT	223,934.03	223,934.03	166,960.77	166,960.77
636300-0000	WT-Cont Serv-Oth-WTRTRT OPER	47,631.31	47,631.31	37,726.38	37,726.38
636310-0000	WT-Cont Serv-Oth-Basin-Lag Cln	623,107.60	623,107.60	647,616.95	647,616.95
636400-0000	WT-Cont Serv-Oth-WTRTRT MAINT	1,678,295.27	1,678,295.27	1,380,451.36	1,380,451.36
636500-0000	WT-Cont Serv-Oth-T&D OPER-Gen	319,477.28	319,477.28	305,667.35	305,667.35
636501-0000	WT-Cont Serv-Oth-T&D OPER-Main	573.10	573.10	1,546.40	1,546.40
636502-0000	WT-Cont Serv-Oth-T&D OPER-Serv	7,286.84	7,286.84	17,791.18	17,791.18
636503-0000	WT-Cont Serv-Oth-T&D OPER-Metr	186,870.31	186,870.31	206,170.59	206,170.59
636504-0000	WT-Cont Serv-Oth-T&D OPER-Hyd	8,636.78	8,636.78	1,610.00-	1,610.00-
636600-0000	WT-Cont Serv-Oth-T&D MAINT-Gen	798,841.38	798,841.38	1,057,581.44	1,057,581.44
636601-0000	WT-Cont Serv-Oth-T&D MAINT-Mai	25,550.38	25,550.38	123,653.60	123,653.60
636602-0000	WT-Cont Serv-Oth-T&D MAINT-Srv	12,659.67	12,659.67	6,154.63	6,154.63
636604-0000	WT-Cont Serv-Oth-T&D MAINT-Hyd	51,947.22	51,947.22	1,369.38	1,369.38
636610-0000	WT-Cont Serv-Oth-Build&Grounds	1,396,116.39	1,396,116.39	1,474,117.58	1,474,117.58
636611-0000	WT-Cont Serv-Grounds Care	604,612.39	604,612.39	957,446.09	957,446.09
636620-0000	WT-Cont Serv-Oth-MAINT&Constr	11,528.65-	11,528.65-	409,299.90	409,299.90
636630-0000	WT-Cont Serv-Oth-Security	550,695.67	550,695.67	681,139.97	681,139.97
636640-0000	WT-Cont Serv-Oth-Temp Help	35,972.75	35,972.75	41,804.68	41,804.68
636700-0000	WT-Other ACO Direct costs	565,928.65	565,928.65	559,115.70	559,115.70
636710-0000	WT-WorkFlow Processing Fee	908,142.56	908,142.56	954,160.21	954,160.21
636720-0000	WT-WorkFlow Billing Postage	1,322,127.42	1,322,127.42	1,376,609.89	1,376,609.89
636730-0000	WT-ACO Allocation	4,963,579.82	4,963,579.82	5,379,217.48	5,379,217.48
636740-0000	WT-ACO Lockbox Fees	609,241.06	609,241.06	623,794.29	623,794.29
636800-0000	WT-Cont Serv-Oth-A&G	816,313.44	816,313.44	1,279,150.29	1,279,150.29
636801-0000	WT-Cont Serv-Oth-CC	689,602.00	689,602.00	480,930.99	480,930.99
736200-0000	SW-Cont Serv-Oth-Collect Maint	209,074.75	209,074.75	197,238.11	197,238.11
736300-0000	SW-Cont Serv-Oth-Pump Oper	293,858.19	293,858.19	375,863.26	375,863.26
736400-0000	SW-Cont Serv-Oth-Pump Maint	313,266.58	313,266.58	237,946.08	237,946.08

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
OM OS OTHER	OM OS OTHER				
736500-0000	SW-Cont Serv-Oth-T&D Oper	735,812.81	735,812.81	684,025.68	684,025.68
736600-0000	SW-Cont Serv-Oth-T&D Maint	481,968.82	481,968.82	738,577.86	738,577.86
736610-0000	SW-Cont Serv-Oth-Build&Grounds	37,338.17	37,338.17	6,734.08	6,734.08
736700-0000	SW-Other ACO Direct costs	1,237.08	1,237.08	0.00	0.00
736710-0000	SW-WorkFlow Processing Fee	87,808.33	87,808.33	38,386.85	38,386.85
736720-0000	SW-WorkFlow Billing Postage	127,607.20	127,607.20	56,859.14	56,859.14
736730-0000	SW-ACO Allocation	461,853.22	461,853.22	267,079.59	267,079.59
736740-0000	SW-ACO Lockbox Fees	13,043.84	13,043.84	10,700.22	10,700.22
736800-0000	SW-Cont Serv-Oth-A&G	485,537.85	485,537.85	368,675.78	368,675.78
736900-0000	SW-Cont Serv-Oth-Recl WT	160.00	160.00	0.00	0.00
	Total OM OS OTHER	19,762,388.30	19,762,388.30	21,318,860.20	21,318,860.20
OM OS CMPSVS	OM OS COMP SVS				
636820-0000	WT-Cont Serv-Oth-A&G-SFTW MANT	306,544.47	306,544.47	235,251.32	235,251.32
736810-0000	SW-Cont Serv-Oth-A&G-HRDW MANT	6,387.20	6,387.20	1,280.00	1,280.00
736820-0000	SW-Cont Serv-Oth-A&G-SFTW MANT	7,881.00	7,881.00	0.00	0.00
	Total OM OS COMP SVS	320,812.67	320,812.67	236,531.32	236,531.32
OM LEASES	OM LEASES				
641100-0000	WT-Rent Bldg/RP-Source OPER	468,419.52	468,419.52	468,386.80	468,386.80
641500-0000	WT-Rent Bldg/RP-T&D OPER	31,025.95	31,025.95	34,438.80	34,438.80
641800-0000	WT-Rent Bldg/RP-A & G	6,463.46	6,463.46	11,175.73	11,175.73
642300-0000	WT-Rent Equip-WTRTRT OPER	5,882.25	5,882.25	2,206.54	2,206.54
642800-0000	WT-Rent Equip-A & G	37,676.54	37,676.54	86,658.54	86,658.54
741100-0000	SW-Rent Bldg/RP-Collect Oper	36,498.29	36,498.29	0.00	0.00
741800-0000	SW-Rent Bldg/RP-A&G	80,790.52	80,790.52	90,475.32	90,475.32
	Total OM LEASES	666,756.53	666,756.53	693,341.73	693,341.73
OM TRANS	OM TRANSPORTATION				
650200-0000	WT-Trans-Source MAINT	0.00	0.00	516.08	516.08
650500-0000	WT-Trans-T&D OP-GENERAL	0.00	0.00	23,006.93	23,006.93
650511-0000	WT-Trans-T&D OP-OUTSIDE SVC	207,568.09	207,568.09	246,165.67	246,165.67
650512-0000	WT-Trans-T&D OP-CAR ALLOWANC	189.00	189.00	0.00	0.00
650513-0000	WT-Trans-T&D OP-CAR WASH TCK	938.39	938.39	2,006.73	2,006.73
650514-0000	WT-Trans-T&D OP-LICENSES	109,052.68	109,052.68	112,667.94	112,667.94
650515-0000	WT-Trans-T&D OP-LEASE	98,171.96-	98,171.96-	118,921.71-	118,921.71-
650531-0000	WT-Trans-T&D OP-DIESEL	154,006.34	154,006.34	155,814.45	155,814.45
650532-0000	WT-Trans-T&D OP-GASOLINE	1,025,141.15	1,025,141.15	1,084,125.25	1,084,125.25
650533-0000	WT-Trans-T&D OP-MOTOR OIL	24,150.38	24,150.38	28,477.63	28,477.63
650534-0000	WT-Trans-T&D OP-CNG Fuel	64,598.84	64,598.84	70,823.01	70,823.01
650540-0000	WT-Trans-T&D OP-PARTS AUTO&MCH	434,571.48	434,571.48	423,655.10	423,655.10
650544-0000	WT-Trans-T&D OP-TIRES	95,558.91	95,558.91	122,205.64	122,205.64
650545-0000	WT-Trans-T&D OP-TOOL PURCHASES	49,140.20	49,140.20	20,149.55	20,149.55
650551-0000	WT-Trans-T&D OP-CLEARING RES	1,174,945.27-	1,174,945.27-	1,333,843.45-	1,333,843.45-
650555-0000	WT-Trans-T&D OP-CRASH	37,556.99	37,556.99	88,914.68	88,914.68
650611-0000	WT-Transportation-T&D-Outside	105.00	105.00	0.00	0.00
650800-0000	WT-Trans-A & G	63,428.67	63,428.67	158,247.38	158,247.38
750515-0000	SW-Trans-T&D OP-Lease	29,835.37	29,835.37	81,039.39	81,039.39
750532-0000	SW-Trans-T&D OP Gasoline	7,703.39	7,703.39	31,901.00	31,901.00
750540-0000	SW-Trans-T&D Ops-Parts Auto &	2,329.83	2,329.83	7,837.00	7,837.00
750800-0000	SW-Trans-A&G	2,971.60	2,971.60	2,654.54	2,654.54

Consolidated AQUA PENNSYLVANIA INC. Consolidated AQUACHART

Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
	Total OM TRANSPORTATION	1,035,729.08	1,035,729.08	1,207,442.81	1,207,442.81
OM INSURANCE	OM INSURANCE				
656800-0000	WT-Ins-Vehicle-A & G	253,662.97	253,662.97	228,106.00	228,106.00
657800-0000	WT-Ins-Gen Liab-A & G	2,896,372.24	2,896,372.24	2,360,251.00	2,360,251.00
658800-0000	WT-Ins-Work Comp-A & G	1,317,881.85	1,317,881.85	1,351,195.00	1,351,195.00
659800-0000	WT-Ins-Other-A & G	1,255,156.26	1,255,156.26	1,425,610.00	1,425,610.00
757800-0000	SW-Ins-Gen Liab-A&G	35,639.85	35,639.85	7,040.41	7,040.41
758800-0000	SW-Ins-Work Comp-A&G	5,672.07	5,672.07	36,870.39	36,870.39
759800-0000	SW-Ins-Other-A&G	28,760.08	28,760.08	2,277.20	2,277.20
	Total OM INSURANCE	5,793,145.32	5,793,145.32	5,411,350.00	5,411,350.00
OM OTHER	OM OTHER				
660800-0000	WT-Advertising-A & G	200,124.60	200,124.60	103,075.49	103,075.49
675200-0000	WT-Misc-SRC MAINT	55.10	55.10	7,757.44	7,757.44
675300-0000	WT-Misc-WTRTRT OPER	39,747.62	39,747.62	14,217.44	14,217.44
675400-0000	WT-Misc-WTRTRT MAINT	6,794.25	6,794.25	31,623.31	31,623.31
675500-0000	WT-Misc-T&D OPER	61.44	61.44	1,793.28	1,793.28
675600-0000	WT-Misc-T&D MAINT	5,709.34	5,709.34	4,235.66	4,235.66
675700-0000	WT-Misc-Cust Accts	0.00	0.00	30.00	30.00
675800-0000	WT-Misc-A&G	124,202.79	124,202.79	72,347.84	72,347.84
675802-0000	WT-Misc-A&G-ACT&EVNT 100% D	1,389.00	1,389.00	21,465.50	21,465.50
675803-0000	WT-Misc-A&G-Chamber Commerce	94,503.50	94,503.50	131,321.50	131,321.50
675804-0000	WT-Misc-A&G-ACT&EVNT 50% D	35,852.57	35,852.57	50,054.60	50,054.60
675805-0000	WT-Misc-A&G-Civic Org Events	0.00	0.00	1,950.00	1,950.00
675808-0000	WT-Misc-A&G-COMM EXP	406,198.01	406,198.01	373,786.02	373,786.02
675810-0000	WT-Misc-A&G-DATA LINES	649,439.40	649,439.40	580,506.97	580,506.97
675816-0000	WT-Misc-A&G-CONTRIB	119.59	119.59	0.00	0.00
675819-0000	WT-Misc-A&G-Office Supplies	276,793.64	276,793.64	407,357.91	407,357.91
675820-0000	WT-Misc-A&G-DIRECTORS	0.00	0.00	436.41	436.41
675824-0000	WT-Misc-A&G-DUES	475,180.03	475,180.03	441,194.48	441,194.48
675825-0000	WT-Misc-A&G-Promotional Items	27,005.39	27,005.39	42,617.97	42,617.97
675827-0000	WT-Misc-A&G-FINES&PENALTIES	4,500.00	4,500.00	21,237.59	21,237.59
675828-0000	WT-Misc-A&G-LIC&PER	654,784.82	654,784.82	682,883.88	682,883.88
675830-0000	WT-Misc-A&G-MAIL&POST	24,112.73	24,112.73	60,384.84	60,384.84
675831-0000	WT-Misc-A&G-MAIL OVERNIGHT	85,962.74	85,962.74	63,835.85	63,835.85
675832-0000	WT-Misc-A&G-MAINT	119,265.74	119,265.74	171,162.70	171,162.70
675834-0000	WT-Misc-A&G-MEALS 100% DED	50,408.26	50,408.26	100,834.40	100,834.40
675836-0000	WT-Misc-A&G-MEALS 50% DED	62,847.00	62,847.00	75,088.05	75,088.05
675840-0000	WT-Misc-A&G-SEMINARS	23,770.73	23,770.73	61,976.21	61,976.21
675842-0000	WT-Misc-A&G-SUBSCRIPT	40,675.65	40,675.65	55,108.02	55,108.02
675846-0000	WT-Misc-A&G-TRV	39,702.67	39,702.67	22,656.39	22,656.39
675847-0000	WT-Misc-A&G-TRV-Auto Mile Reim	7,410.52-	7,410.52-	904.31-	904.31-
675848-0000	WT-Misc-A&G-TRV-RENTAL CAR	93.17	93.17	433.01	433.01
675849-0000	WT-Misc-A&G-TRV-Airplane	689.86	689.86	6,922.91	6,922.91
675850-0000	WT-Misc-A&G-TRV-HOTEL	14,352.70	14,352.70	51,686.47	51,686.47
675856-0000	WT-Misc-A&G-UNIFORMS	194,945.99	194,945.99	202,482.14	202,482.14
675857-0000	WT-Misc-A&G-Bond Trustee Fee	164,166.53	164,166.53	258,296.32	258,296.32
675858-0000	WT-Misc-A&G-Bank Fees	5,531.56	5,531.56	940.48-	940.48-
675859-0000	WT-Misc-A&G-CO Exp-All Other	1,000.00	1,000.00	241.25	241.25
675860-0000	WT-Misc-A&G-Payroll Overhead	0.00	0.00	40.00	40.00
675861-0000	WT-Misc-A&G-SERVICE CLEARING	6,332.92-	6,332.92-	19,744.00-	19,744.00-

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
OM OTHER	OM OTHER				
675862-0000	WT-Misc-A&G-Interco Billing	15,175.38	15,175.38	13,848.60	13,848.60
675863-0000	WT-Misc-A&G-INTRACO CLEARING	1,309,910.04-	1,309,910.04-	1,145,352.03-	1,145,352.03-
675864-0000	WT-Misc-A&G-Claims	328,001.27	328,001.27	312,948.68	312,948.68
675865-0000	WT-Misc-A&G-AR/AP Adj	.45-	.45-	119.32	119.32
675866-0000	WT-Misc-A&G-Utilities	18,889.68	18,889.68	12,662.57	12,662.57
675872-0000	WT-Misc-A&G-Security Comm.	191,750.45	191,750.45	178,180.73	178,180.73
676210-0000	WT-Cap OH Credit-Labor	2,158,432.56-	2,158,432.56-	1,921,396.86-	1,921,396.86-
676220-0000	WT-Cap OH Credit-Benefits	7,146,181.97-	7,146,181.97-	7,065,882.48-	7,065,882.48-
676230-0000	WT-Cap OH Credit-PR Taxes	1,422,096.16-	1,422,096.16-	1,455,839.61-	1,455,839.61-
676240-0000	WT-Cap OH Credit-Other	1,917,449.73-	1,917,449.73-	2,013,262.69-	2,013,262.69-
760800-0000	SW-Advertising-A&G	0.00	0.00	212.00	212.00
775300-0000	SW-Misc-Pump Oper	300.00	300.00	0.00	0.00
775400-0000	SW-Misc-Pump Maint	0.00	0.00	1,368.00	1,368.00
775700-0000	SW-Misc-Cust Accts	0.00	0.00	30.00	30.00
775800-0000	SW-Misc-A&G	6,362.51	6,362.51	44,318.93	44,318.93
775805-0000	SW-Misc-A&G-Civic Org Events	284.97	284.97	662.13	662.13
775808-0000	SW-Misc-A&G-COMM EXP	102,305.84	102,305.84	83,108.78	83,108.78
775810-0000	SW-Misc-A&G-DATA LINES	48,252.69	48,252.69	44,662.03	44,662.03
775819-0000	SW-Misc-A&G-Office Supplies	10,671.24	10,671.24	12,639.26	12,639.26
775824-0000	SW-Misc-A&G-DUES	1,094.25	1,094.25	730.00	730.00
775827-0000	SW-Misc-A&G-FINES&PENALTIES	1,555.00	1,555.00	14,450.00	14,450.00
775828-0000	SW-Misc-A&G-LIC&PER	72,203.09	72,203.09	99,227.52	99,227.52
775830-0000	SW-Misc-A&G-MAIL&POST	62.31	62.31	290.96	290.96
775831-0000	SW-Misc-A&G-MAIL OVERNIGHT	2,322.77	2,322.77	4,089.16	4,089.16
775834-0000	SW-Misc-A&G-MEALS 100% DED	513.26	513.26	983.79	983.79
775836-0000	SW-Misc-A&G-MEALS 50% DED	2,204.42	2,204.42	2,057.14	2,057.14
775840-0000	SW-Misc-A&G-SEMINARS	2,179.50	2,179.50	2,970.41	2,970.41
775842-0000	SW-Misc-A&G-SUBSCRIPT	681.14	681.14	200.67	200.67
775846-0000	SW-Misc-A&G-TRV	627.78	627.78	19.08	19.08
775847-0000	SW-Misc-A&G-TRV-Mile Reim	0.00	0.00	4,097.67	4,097.67
775850-0000	SW-Misc-A&G-TRV-HOTEL	923.76	923.76	4,803.57	4,803.57
775856-0000	SW-Misc-A&G-UNIFORMS	2,333.53	2,333.53	7,839.34	7,839.34
775858-0000	SW-Misc-A&G-Bank Fees	858.00	858.00	0.00	0.00
775860-0000	SW-Misc-A&G-Payroll Overhead	809.88	809.88	136.68	136.68
775865-0000	SW-Misc-A&G-AR/AP Adj	37.05	37.05	0.00	0.00
775866-0000	SW-Misc-A&G-Utilities	105,782.37	105,782.37	64,176.95	64,176.95
	Total OM OTHER	9,221,645.79-	9,221,645.79-	8,591,446.64-	8,591,446.64-
OM BAD DEBT	OM BAD DEBT				
670700-0000	WT-Bad Debt Expense-Cust Accts	1,537,063.46	1,537,063.46	2,263,002.36	2,263,002.36
670710-0000	WT-Recovery of Bad Debt	358,322.30-	358,322.30-	365,239.33-	365,239.33-
670720-0000	WT-Bad Debt Reserve Change	1,255,823.84	1,255,823.84	294,105.39	294,105.39
770700-0000	SW-Bad Debt Exp-Cust Accts	336,659.05	336,659.05	134,563.41	134,563.41
770710-0000	SW-Recovery of Bad Debt	17,129.59-	17,129.59-	15,570.78-	15,570.78-
770720-0000	SW-Bad Debt Reserve Change	67,170.54	67,170.54	54,008.88	54,008.88
	Total OM BAD DEBT	2,821,265.00	2,821,265.00	2,364,869.93	2,364,869.93
NON OPER EXP	NON-OPER EXP				
416000-0000	Exp-Merch,Job,Contract	89,742.21	89,742.21	160,561.76	160,561.76
416010-0000	Exp-Merch,Job,Contract-WW Bill	288,277.42	288,277.42	204,854.74	204,854.74
416020-0000	Exp-Merch,Job,Contract-Lab Tst	56.26	56.26	216.38	216.38

Income Statement

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
NON OPER EXP	NON-OPER EXP				
416030-0000	Exp-Non Oper Contract-Labor-Rg	19,618.22	19,618.22	56,415.58	56,415.58
416039-0000	Exp-Non Oper Contract-Labor-Ot	1,358.43	1,358.43	5,342.46	5,342.46
426020-0000	Misc NonUtil Exp-RENTAL PROP	4,921.12	4,921.12	293.77	293.77
426030-0000	Misc NonUtil Exp-ANTENNAE	26,743.65	26,743.65	31,476.02	31,476.02
426040-0000	Misc NonUtil Exp-DEVELOPER-Rg	431,248.04	431,248.04	408,480.48	408,480.48
426049-0000	Misc NonUtil Exp-DEVELOPER-OT	56,120.44	56,120.44	82,323.67	82,323.67
426060-0000	Misc NonUtil Exp-CHARIT CONTR	2,809,317.48	2,809,317.48	2,333,431.40	2,333,431.40
426080-0000	Misc NonUtil Exp-ACQUISITIONS	2,420,198.59	2,420,198.59	1,284,924.46	1,284,924.46
426090-0000	Misc NonUtil Exp-NON-CUST REL	46,173.97	46,173.97	92,381.11	92,381.11
426100-0000	Misc NonUtil Exp-Street Lights	4,450.05	4,450.05	0.00	0.00
426105-0000	Misc NonUtil Exp-Garbage	1,779.51	1,779.51	1,783.74	1,783.74
426110-0000	Misc NonUtil Exp-Bill Mat&Serv	51,512.55	51,512.55	62,666.36	62,666.36
426220-0000	Misc NonUtil-Acq-Trv & Pers	0.00	0.00	40.24	40.24
426230-0000	Misc NonUtil-Acq-Prof Services	400.00-	400.00-	379,320.41	379,320.41
426310-0000	Misc NonUtil-N-Cust-Payroll-Rg	121,899.83	121,899.83	118,417.54	118,417.54
426320-0000	Misc NonUtil-N-Cust-Trv & Pers	13,290.25	13,290.25	44,588.47	44,588.47
426340-0000	Misc NonUtil-N-Cust-Act & Evnt	143,426.24	143,426.24	119,539.62	119,539.62
426900-0000	Misc NonUtil Exp-OTHER	323,781.07	323,781.07	525,622.48	525,622.48
426930-0000	Misc NonUtil-Other-Prof Servic	27,833.35	27,833.35	57,877.33	57,877.33
426950-0000	Misc NonUtil-Nontax Ded Bus Ex	275,123.99	275,123.99	227,971.24	227,971.24
	Total NON-OPER EXP	7,156,472.67	7,156,472.67	6,198,529.26	6,198,529.26
	Total Operations & Maint	138,048,038.78	138,048,038.78	138,612,045.17	138,612,045.17
DEPRECIATION	DEPRECIATION				
403000-0000	Deprec Exp-Utility Plant	98,575,631.17	98,575,631.17	93,171,917.60	93,171,917.60
403020-0000	Deprec Exp-Other Phy Prop	6,047.21	6,047.21	15,596.11	15,596.11
403200-0000	Deprec Exp-Utility Plant-SWR	9,677,077.05	9,677,077.05	7,017,287.95	7,017,287.95
403220-0000	Deprec Exp-Other Phy Prop-SWR	540,876.40	540,876.40	842,360.52	842,360.52
	Total DEPRECIATION	108,799,631.83	108,799,631.83	101,047,162.18	101,047,162.18
AMORTIZATION	AMORTIZATION				
406000-0000	Amort-Util Plant Acq Adj	1,063,828.70-	1,063,828.70-	4,178,602.46-	4,178,602.46-
407301-0000	Amort-CIAC	3,144,050.49-	3,144,050.49-	2,779,190.05-	2,779,190.05-
407321-0000	Amort-CIAC-SWR	518,273.97-	518,273.97-	518,112.08-	518,112.08-
428000-0000	Amort-Debt Disc & Expense	100,957.30	100,957.30	134,664.55	134,664.55
666800-0000	WT-Reg Com-Amort Rate Case-A&G	476,455.68	476,455.68	277,932.48	277,932.48
766800-0000	SW-Reg Com-Amort Rate Case-A&G	22,649.40	22,649.40	13,212.15	13,212.15
	Total AMORTIZATION	4,126,090.78-	4,126,090.78-	7,050,095.41-	7,050,095.41-
OTHER TAXES	OTHER TAXES				
408101-0000	Assessment-PUC	1,901,502.00	1,901,502.00	1,835,002.00	1,835,002.00
408102-0000	Assessment-Consumer Advocate	653,711.00	653,711.00	552,738.00	552,738.00
408103-0000	Assessment-SBA	75,822.00	75,822.00	79,791.00	79,791.00
408105-0000	Assessment-DPC	18,540.00	18,540.00	557.00	557.00
408110-0000	Property Taxes	1,223,472.84	1,223,472.84	1,198,267.71	1,198,267.71
408121-0000	Payroll Taxes-FICA	3,860,146.64	3,860,146.64	3,764,745.41	3,764,745.41
408122-0000	Payroll Taxes-FUTA	22,361.68	22,361.68	27,727.84	27,727.84
408123-0000	Payroll Taxes-SUTA	228,430.38	228,430.38	283,183.11	283,183.11
408139-0000	Other Taxes-Misc	3,666.60	3,666.60	1,151.00	1,151.00
408204-0000	Other Taxes-PURTA	4,653,301.78	4,653,301.78	4,297,001.00	4,297,001.00

Consolidated		AQUA PENNSYLVANIA INC.		Consolidated	AQUACHART
Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
	Total OTHER TAXES	12,640,954.92	12,640,954.92	12,040,164.07	12,040,164.07
	Total Utility Costs & Expenses	255,362,534.75	255,362,534.75	244,649,276.01	244,649,276.01
	Total Operating Income	256,442,517.71-	256,442,517.71-	234,824,057.20-	234,824,057.20-
OTHR INC EXP	Other Income Expenses				
ALL INT EXP	All Interest Expense				
INTEREST EXP	INTEREST EXP				
427200-0000	Interest Expense-Short-Term De	542,625.04	542,625.04	803,906.33	803,906.33
427300-0000	Interest Expense-Long-Term Deb	74,096,893.75	74,096,893.75	67,799,249.19	67,799,249.19
427500-0000	Interest Expense-Other	297.69	297.69	2,819.42	2,819.42
427600-0000	Amort-Debt Issuance Costs	664,120.99	664,120.99	710,116.98	710,116.98
427700-0000	Amort-Premium/Disc on Debt	71,232.00-	71,232.00-	71,232.00-	71,232.00-
	Total INTEREST EXP	75,232,705.47	75,232,705.47	69,244,859.92	69,244,859.92
INTEREST INC	INTEREST INC				
419010-0000	Interest Inc-Other	303.14-	303.14-	1,101.89-	1,101.89-
419015-0000	Interest Inc-Banks	807.52-	807.52-	34.59-	34.59-
419030-0000	Interest Inc-Service Lines	12.35-	12.35-	1,593.34-	1,593.34-
	Total INTEREST INC	1,123.01-	1,123.01-	2,729.82-	2,729.82-
AFUDC	AFUDC				
420001-0000	Allow Funds Used During Const-	1,783,108.15-	1,783,108.15-	2,805,380.76-	2,805,380.76-
420002-0000	Allow Funds Used During Const-	4,417,856.73-	4,417,856.73-	7,499,554.64-	7,499,554.64-
	Total AFUDC	6,200,964.88-	6,200,964.88-	10,304,935.40-	10,304,935.40-
	Total All Interest Expense	69,030,617.58	69,030,617.58	58,937,194.70	58,937,194.70
OTHER NET	Other Net				
OTHER RETIRE	OTHER COMPONENTS OF NET PERIOD				
404827-0000	Pension - Non Service Cost	576,600.00-	576,600.00-	773,547.00	773,547.00
404828-0000	OPEB - Non Service Cost	579,045.00	579,045.00	1,022,033.00	1,022,033.00
404829-0000	Nonqual - Non Service Cost	221,286.00	221,286.00	166,898.00	166,898.00
	Total Other Compnoents of Net	223,731.00	223,731.00	1,962,478.00	1,962,478.00
ASSET SALE	ASSET SALE				
414000-0000	Net (Gain) Loss Utility Prop	401,559.39-	401,559.39-	513,163.75-	513,163.75-
	Total ASSET SALE	401,559.39-	401,559.39-	513,163.75-	513,163.75-
	Total Other Net	177,828.39-	177,828.39-	1,449,314.25	1,449,314.25
	Total Other Income Expenses	68,852,789.19	68,852,789.19	60,386,508.95	60,386,508.95
	Total Net Icome Before Taxes	187,589,728.52-	187,589,728.52-	174,437,548.25-	174,437,548.25-
INCOME TAXES	INCOME TAXES				
409101-0000	Federal Income Tax	10,715,548.75	10,715,548.75	2,977,442.00-	2,977,442.00-
409111-0000	State Income Tax	5,204,617.19	5,204,617.19	750,758.00	750,758.00
410101-0000	Deferred Federal Income Taxes	9,502,044.00-	9,502,044.00-	9,021,464.00-	9,021,464.00-
410111-0000	Deferred State Income Taxes	6,044,571.00-	6,044,571.00-	8,443,508.00-	8,443,508.00-
412100-0000	ITC-Def Future Periods	253,413.00-	253,413.00-	253,413.00-	253,413.00-

Income Statement

Consolidated | AQUA PENNSYLVANIA INC. | Consolidated | AQUACHART

Account Nbr	Description	Period Amount	Year To Date	Last Year Period	Last Year To Date
	Total INCOME TAXES	120,137.94	120,137.94	19,945,069.00-	19,945,069.00-
	Total Net Income	187,469,590.58-	187,469,590.58-	194,382,617.25-	194,382,617.25-
	Total Net Profit	187,469,590.58-	187,469,590.58-	194,382,617.25-	194,382,617.25-

EXHIBIT D

ENGINEERING ASSESSMENT - ASSET INVENTORY

EAST WHITELAND TOWNSHIP
SEWERAGE FACILITIES
ENGINEERING ASSESSMENT AND ORIGINAL COST

East Whiteland Township
Chester County, PA

Prepared for:

East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

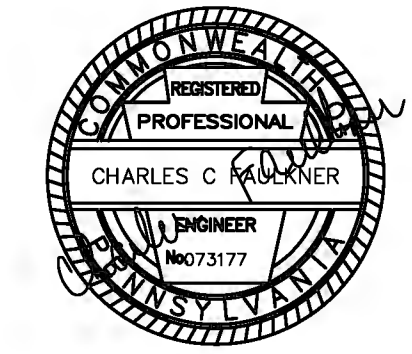
Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

Submitted By:

Pennoni Associates Inc.
1900 Market St, Suite 300
Philadelphia, PA 19103



Frank A. Ciufo, PE
Pennoni Associates Inc.



Charles Faulkner, PE
Pennoni Associates Inc.

EWTPX17000.03

May 20, 2021,
revised June 17, 2021

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APPENDICES

APPENDIX A – SYSTEM MAPS

- A1 – East Whiteland Township Sanitary Sewer Collection System

APPENDIX B

- Uniform System of Accounts - Section 300
- PA ACT 12 of 2016

APPENDIX C – OWNED PROPERTY & EASEMENTS OF VALUE

- (TO BE PROVIDED)

APPENDIX D – SUPPORTING DOCUMENTS

- Exhibit No. 3
- Exhibit No. 4
- Exhibit No. 5
- Pricing Structure

1. EXECUTIVE SUMMARY

As required by PA Act 12 of 2016 and following the guidelines of the "Uniform System of Accounts for Class A Wastewater Utilities", an assessment of the tangible assets of facilities and equipment of the East Whiteland Township wastewater utility has been prepared as part of the asset purchase agreement with Aqua Pennsylvania Wastewater, Inc. (Aqua). Each facility and class of equipment was coded based on Section 300 of the "Wastewater Utility Plant Accounts" of the Guidelines. The Asset Survey included the 12 Township owned pump stations and associated force mains, and approximately 60 miles of gravity sewers. Asset cost information was derived from various sources. Site visits to each of the facilities were conducted to inventory the equipment and assess conditions.

Site inventories and facility conditions were documented on facility information sheets and summarized in the facility description summaries.

Conditions of the Pump Stations varies from fair to very good based on the age and/or completion of recent improvements.

Gravity sewer and force main conditions were not determined. The piping installation period ranges from approximately the late 1970s to 2019.

A complete list of the assets and available original costs is provided in Section 8 of this report.

2. PURPOSE OF REPORT

The purpose of this report is to "conduct an assessment of the tangible assets of the selling utility" per the requirements of PA Act 12 of 2016.

This engineering assessment will be used by the Utility Value Experts (UVEs) retained by both the seller (East Whiteland Township) and buyer (AQUA). The engineering assessment followed the practices and procedures of the Public Utility Commission (PUC) and National Association of Regulatory Utility Commissioners (NARUC) Systems of Accounts. The engineering assessment report documents the conditions and original costs of East Whiteland Township's assets that will be used as the common list for the UVEs to develop their appraisal of the system.

The report preparation process included meeting with key Township and Aqua representatives to identify and confirm specific information needed to support the assessment and to prepare the report, providing a mutually agreed upon scope of work with East Whiteland Township and Aqua. The inventory is a compilation of data gathered by the Township and Pennoni, developed from institutional knowledge, available records, maps, work orders, payment records from construction projects, GIS, site evaluations, and other sources to provide an inventory and listing.

This report contains the following:

- An inventory of the used and useful assets to be transferred, compiled by year and account (codes).
- A list of non-depreciable property such as land and rights-of-way.
- A review of system components, plans, and reports of key facilities. This includes:
  - Permitted discharges, including regulatory requirements
  - Pumping Stations (12 each), including force mains
  - Gravity collection system
  - Metering stations
- Summary of the operation and maintenance expenses based upon review of Township operating records.
- An assessment of the identified assets.
- Determination and/or establishment of an original cost of construction for each asset.

Assets were identified through various sources. Force main sizes and quantities were taken from GIS and project drawings. Pump Stations were field inventoried and evaluated; and, supplemented with information obtained from drawings, where available. Asset costs are based on Construction Escrow Releases/Estimates where available or estimated current cost and back calculated to the year of installation using the ENR Construction Cost Index.

A coding system as described in Section 300 of the Uniform System of Accounts for Class A Wastewater Utilities was used for classifying various assets. Section 300 as well as the listing of codes can be found in Appendix B. The entire Uniform System of Accounts can be found in the Digital Files.

3. SYSTEM DESCRIPTION

System Summary

East Whiteland Township is responsible for the safe collection and transmission of an average over 1.062 million gallons per day (MGD) of wastewater generated in southeastern Pennsylvania (A map of the service areas is located in Appendix A, Figure A1). East Whiteland Township's facilities serve residential, commercial, institutional, and industrial customers all within Chester County. The Township owns and operates a system consisting of 12 pump stations and associated force mains, and approximately 60 miles of gravity collection system mains and interceptor sewers for the conveyance of wastewater to the Valley Forge Sewer Authority Wastewater Treatment Plant via the Valley Creek Trunk Sewer. The Township does not have any property held for future use.

In addition to customers within the Township, East Whiteland Township also collects/conveys sewage to/from municipalities that border the Township including Malvern Borough, Tredyffrin Township Charlestown Township and Willistown Township. Agreements with these municipalities, (or entities operating their respective system) outline the responsibilities regarding this relationship.

PUMP STATION LIST

East Whiteland Township

PUMP STATION	PUMP STATION NO.	Address
Deer Run	P.S. 1	15 Deer Run Ln
Mill Lane	P.S. 2	202 Conestoga Rd
Wilburdale	P.S. 3	101 Flat Rd.
Lee Boulevard	P.S. 4	13 Lee Blvd
Meadowview	P.S. 5	317 Swedesford Rd
Flat Road	P.S. 6	601 Flat Rd
Lapp Road	P.S. 7	510 Lapp Rd
Westgate	P.S. 8	331 Lancaster Ave
Hillbrook Circle	P.S. 11	379 Conestoga Rd
King Road	P.S. 12	340 King Rd
Malvern Hunt	P.S. 13	30 Corbin Dr
Planebrook Road	P.S. 14	170 Cricket Dr

4. INVENTORY OF ASSETS

4.1. PUMP STATIONS

P.S. 1 - AKA Deer Run PS

Facility Description (see attached Information Sheet)

P.S. 1 is located at 15 Deer Run Lane and is equipped with (2) 90-GPM dry pit submersible pumps. Wastewater is discharged through an 830 foot, 4-inch ACP force main that ties into the existing sewage collection system at Manhole 826 located on Conestoga Road near Deer Run Ln. The pump station was installed in 1976.

The pump wet well is (5-ft diameter, 12-ft deep) with 24-inch MH cover hatchway. The control panel is custom manufactured.

The Building (10-ft x 12-ft) is constructed of concrete with brick facade and asphalt shingle roof in good condition. The building contains florescent lighting and 1 steel door.

The Generator is a Generac SD00353G163, 35 KW unit with 132-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Cummins Power Command.

The property is surrounded by a 136 LF 6-ft chain link with barbed wire fence.

Property Condition

The building is in good condition, the roof is in good condition and all HVAC systems appear to be in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Control Panel and ATS



Figure 3 – Dry Pit Pump



Figure 4 – Generator

PUMP STATION #		P.S. 1		**Scheduled Visit Date:**		
Station Name		Deer Run				
Location		15 Deer Run Ln				
Start Up Date		1976				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Good			
		No. of Pumps	2			
		Type	Dry Pit Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CT3127			
		Year Installed	1976			
		Pump GPM	90			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	7.5			
		Motor Voltage	230			
371.3		Pump Control (VFD?)				
370.3		**WET WELL**				
		Condition	good			
		Size	5' diam x 12 deep			
		Material				
		Lined				
		Hatch	24' MH cover			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	custom			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material	ACP			
		Diameter	8"			
371		**GRINDER**				
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type				
		Manufacturer				
		Size				
		#				
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Generac SD00353G163			
		Generator KW	35			
		Generator KVA	44			
		Fuel Tank (Gals)	132			
355		ATS (manf/model #)	Cummins Power Command			
		Year Installed	2018			
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	ACP			
		Length in Feet	830			
		Year Installed	1976			
		Discharge Point	MH 826			
		Discharge Point Location	Conestoga Road near Deer Run Ln			

354.2		**BUILDING**				
		Condition	good			
		Size	10' x 12			
		Main Structure Material	concrete with brick facade			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	florescent			
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp panel			
396		Alarm System (manf/ model)	Ademco - auto dial			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	good	good		
		Type	In-line pipe exhaust	electric unit heater		
		Manufacturer		Q-Mark		
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	136'			
		Fence Type	6' chain link w/ barb wire			
		Year Installed				
354.3		Paving and Walkways	asphalt drive			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable	Yes			
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
Pumps and controls are original and in fair condition. Building and other facilities are in good condition. Generator is was replaced in 2018 and is in very good condition.						

P.S. 2 - AKA Mill Lane PS

Facility Description (see attached Information Sheet)

P.S. 2 is located at 202 Conestoga Rd and is equipped with (3) 1600-GPM dry pit submersible pumps. Wastewater is discharged through a 3400 LF, 14-inch DIP force main that ties into the existing sewage collection system at Manhole 826 located on Conestoga Road near Deer Run Lane. The pump station was installed in 1976 and reconstructed 2013.

The pump wet well is Concrete (9-ft x 30-inch x 31-ft deep) with 42-inch x 42-inch and 36-inch x 36-inch hatchways. The control panel is manufactured by Healy-Ruff. There are (6) 12-inch gate valves and (3) 12-inch check valves installed in 2013. The influent line to the wet well contains a bar screen.

The Building (32-ft x 22-ft) is constructed of masonry block and asphalt shingle roof in good condition. The building contains 2 steel doors.

The Generator is an Onan DFEK-1207638, 500 KW unit with 850-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is surrounded by a 600 LF 6-ft cyclone with barbed wire fence.

Property Condition

The building is in very good condition, the roof is in good condition and all HVAC systems are in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Building - Front



Figure 3 – Dry Pit Pumps



Figure 4 – Dry Pit Pumps



Figure 5 -Dry Pit Pump



Figure 6 - MCC



Figure 7 - Pump Control Panel



Figure 8- Pump Control Interface



Figure 9 -Crane



Figure 10 - Generator



Figure 11 -Scada System



Figure 12 -Bar Screen



Figure 13 -VFDs



Figure 14 – Old Pump Building



Figure 15 – Old Pump Bldg. Upper Floor

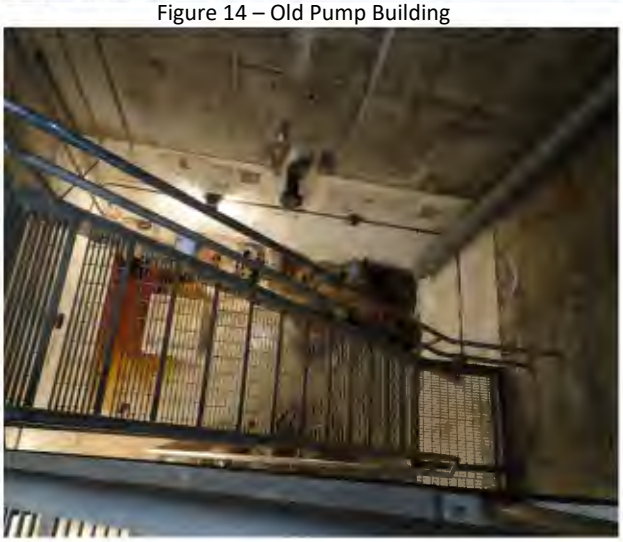

Figure 16- Old Pump Bldg. Pump Dry Pit

PUMP STATION #		P.S. 2		**Scheduled Visit Date:**		2/10/2021
Station Name		Mill Lane				
Location		202 Conestoga Rd				
Start Up Date		1976, Reconstructed 2014				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	3			
		Type	Dry Pit Submersible			
		Pump Manufacturer	Fairbanks Morse			
		Pump Model Number	C5446			
		Year Installed	2013			
		Pump GPM	1600			
		Pump TDH Ft.	200			
		Outlet Size	5"			
		Motor HP	150			
		Motor Voltage	460			
371.3		Pump Control (VFD)	VFD Eaton EPX9000			
370.3		**WET WELL**				
		Condition	Very Good			
		Size	9'x30'x31'Deep			
		Material	Concrete			
		Lined				
		Hatch	42"x42", 36"x36"			
		Vent				
		Rails				
		Cable				
		Piping	Ductile Iron			
371.3		**CONTROL PANEL**				
		Manufacturer	Healy-Ruff			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	Bar Screen			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Shaw-Box			
		Model/Serial number	2-Ton			
		Year Installed	2013			
360		**VALVES (DISCHARGE)**				
		Type	Gate	Check		
		Manufacturer	Milliken	Milliken		
		Size	12"	12"		
		#	6	3		
		Year Installed	2013	2013		
355		**GENERATOR**				
		Manufacturer	Onan DFEK-1207638			
		Generator KW	500			
		Generator KVA	625			
		Fuel Tank (Gals)	850			
355		ATS (manf/model #)	ASCO 7000			
		Year Installed	2013			
360		**FORCE MAIN**				
		Force Main Size	14"			
		Force Main Mat.	DIP			
		Length in Feet	3400			
		Year Installed	1976			
		Discharge Point	MH 826			
		Discharge Point Location	Conestoga Road near Deer Run Ln			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	32' x 22'			
		Main Structure Material	Masonary Block			
		Roof Type	Asphalt Shingle			
		Roof Condition	Good			
		Doors (number /material)	2 - Steel			
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	Allen Bradley 800 Amp	225 Amp &125 Amp service panels		
396		Alarm System (manf/ model)	Sensaphone Scada			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	Very Good			
		Type	2 Wall and 2 Roof units			
		Manufacturer	Greenheck			
		Year Installed	2013			
364		Flow Meter	Rosemont Magmeter			
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	600'			
		Fence Type	6' cyclone w/ barbed wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer	N/A			
		Type				
		MISCELLANEOUS				
		Other Buildings	Old Pump Bldg. - 20' x 20' Brick			
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The pump station was built in 2013 and is in excellent condition. The property is shared with the Police Department which includes their impoundment lot. The former pump station is used for storage, pumps and related equipment have been removed.						

P.S. 3 - AKA Wilburdale PS

Facility Description (see attached Information Sheet)

P.S. 3 is located at 101 Flat Rd. and is equipped with (2) 930-GPM submersible pumps. Wastewater is discharged through a 1935 LF, 10-inch PVC force main that ties into the existing sewage collection system at Manhole 1202 located on Flat Road by Sidley Road. The pump station was installed in 1979 and reconstructed 2017.

The pump wet well is precast concrete (12-ft dia. x appr. 18-ft deep) with 6-ft x 4.5-ft hatchway. There are (3) 4-inch gate valves, (2) 4-inch check valves within a (12.5-ft x 10-ft x 5-ft deep) valve box installed in 2017. The control panel is manufactured by Stacon.

The Building (15-ft x 13-ft) is constructed of concrete block and asphalt shingle roof in very good condition. The building contains outdoor walpacks lighting and 1 steel door.

The Generator is an MTU 4R0113DS50 50 KW unit with 185-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is not fenced.

Property Condition

The building is in very good condition, the roof is in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station



Figure 3 – Pump Control Panel



Figure 4 – Generator



Figure 5 – Pump Control Interface



Figure 6 – Valve Chamber



Figure 7 – Automatic Transfer Switch



Figure 8 – Valve Chamber

PUMP STATION #		P.S. 3		**Scheduled Visit Date:**		2/10/2021
Station Name		Wilburdale				
Location		101 Flat Rd.				
Start Up Date		1979, Reconstructed 2017				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP3153HT			
		Year Installed	2017			
		Pump GPM	930			
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	15			
		Motor Voltage	230			
371.3		Pump Control (VFD?)				
370.3		**WET WELL**				
		Condition				
		Size	2 dia. X appr. 18' Deep			
		Material	precast concrete			
		Lined				
		Hatch	6' x 4.5 '			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Stacon			
		Year Installed	2017			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Davit Crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Gate	Check	valve box	
		Manufacturer	Valmatic	Valmatic		
		Size	4"	4"	12.5' x 10' x 5' D	
		#	3	2		includes hook up for portable pump
		Year Installed	2017			
355		**GENERATOR**				
		Manufacturer	MTU 4R0113DS50			4' x 4' exhaust lovers
		Generator KW	50			
		Generator KVA	620			
		Fuel Tank (Gals)	185			
355		ATS (manf/model #)	ASCO 7000			incl. Total Protection Service surge protector
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	10"			
		Force Main Mat.	PVC			
		Length in Feet	1935			
		Year Installed	2016			
		Discharge Point	MH 1202			
		Discharge Point Location	Flat Road by Sidley Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	15' x 13'			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - Steel			
		Lighting (Type)	outdoor walpacks			
		Year Installed				
		ELECTRICAL				
371.3		MCC	Amp Panel, 200 Amp Main			
396		Alarm System (manf/ model)	Sensaphone Sentinal			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	4' x 4' motorize louvers	Electric unit heaters	2' x 2' exhaut fan	
		Manufacturer		Q-Mark		
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility was installed in 2017 and is in excellent condition.						

P.S. 4 - AKA Lee Boulevard PS

Facility Description (see attached Information Sheet)

P.S. 4 is located at 13 Lee Blvd and is equipped with (2) 470-GPM Submersible pumps. Wastewater is discharged through a 3310 LF, 8-inch DIP force main that ties into the existing sewage collection system at Manhole 1582 located on Yellow Spring Road at Lee Boulevard. The pump station was installed in 1987 and reconstructed 2007.

The pump wet well is precast concrete (9-ft diam. X 15-ft deep (est)) with 4.5-ft x 4.5-ft aluminum hatchway. There are (2) 6-inch check valves and (2) 6-inch gate valves. The control panel is manufactured by Flygt.

The Building (11.5-ft x 15.5-ft) is constructed of prefabricated masonry and asphalt shingle roof in good condition. The building contains Halogen wall pack lighting and 1 steel door.

The Generator is an Katolight D50FJJ4T2 50 KW unit with 140-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO.

The property is surrounded by a 115 LF 6-ft cyclone with barbed wire fence.

Property Condition

The building is in very good condition, the roof is in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station



Figure 3 – Pump Control Panel



Figure 4 – Generator



Figure 5 – Pump Control Interface


Figure 6 – Valve Chamber



Figure 7 – Scada System Interface


Figure 8 –Auto Dialer, flow readout and electrical panel

PUMP STATION #		P.S. 4		**Scheduled Visit Date:**		2/10/2021
Station Name		Lee Boulevard				
Location		13 Lee Blvd				
Start Up Date		1987, Reconstructed 2007				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3126			
		Year Installed	2007			
		Pump GPM	470			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	11			
		Motor Voltage	230			
371.3		Pump Control	Multitrode MT2PC			
370.3		**WET WELL**				
		Condition				
		Size	9' diam. X 15' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	4.5' x 4.5' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	N/A			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		Meter pit - 7' diam, 6' deep
		Manufacturer	Mueller	Mueller		4' x 4' hatch
		Size	6"	6"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Katolight D50FJJ4T2			
		Generator KW	50			80 HP
		Generator KVA	63			4' x 4' exhaust vent
		Fuel Tank (Gals)	140			
355		ATS (manf/model #)	ASCO			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	DIP			
		Length in Feet	3310			
		Year Installed	1987			
		Discharge Point	MH 1582			
		Discharge Point Location	Yellow Spring Road at Lee Boulevard			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	11.5 x 15.5			
		Main Structure Material	Pre-Fab Masonary			
		Roof Type	Asphalt Shingle			
		Roof Condition	Good			
		Doors (number /material)	1 - Steel			
		Lighting (Type)	Halogen wall packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 Amp panel			
396		Alarm System (manf/ model)	ACS Scadapack, Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	5' x 4' Motorized louvers	18" x 18" exhaust fan		
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	115'			
		Fence Type	cyclone w/ Barbed Wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer	N/A			
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The pump equipment, building and generator are all in very good condition.						

P.S. 5 - AKA Meadowview PS

Facility Description (see attached Information Sheet)

P.S. 5 is located at 317 Swedesford Rd and is equipped with (2) 80-GPM submersible pumps. Wastewater is discharged through a 1245 LF, 4-inch ACP force main that ties into the existing sewage collection system at Manhole 822 located on Manor View Circle by Valley Creek Road. The pump station was installed in 1980.

The pump wet well is precast concrete (6-ft dia. x 12-ft deep) with 3-ft x 6-ft hatchway. There are (2) 4-inch check valves and (2) 4-inch plug valves. The control panel is custom manufactured.

The property is surrounded by a 112 LF chain link and wood stockade fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station and Valve Chamber



Figure 3 – Pump Control Panel



Figure 4 –Pump Wetwell

PUMP STATION #		P.S. 5		**Scheduled Visit Date:**		
Station Name		Meadowview				
Location		317 Swedesford Rd				
Start Up Date		1980				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Fair			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	1980			
		Pump GPM	80			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	6.5			
		Motor Voltage	230			
371.3		Pump Control	floats			
370.3		**WET WELL**				
		Condition	good			
		Size	6' dia. X 12' deep			
		Material	precast concrete			
		Lined				
		Hatch	3' x 6'			steel double door
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	custom			
		Year Installed	1980			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	Plug		pre-cast valve chamber
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	ACP			
		Length in Feet	1245			
		Year Installed	1980			
		Discharge Point	MH 822			
		Discharge Point Location	Manor View Circle by Valley Creek Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp feed			In control panel
396		Alarm System (manf/ model)				
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	112'			
		Fence Type	chain link and wood stockade			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable	yes			
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
Overall condition of the facilites is fair.						

P.S. 6 - AKA Flat Road PS

Facility Description (see attached Information Sheet)

P.S. 6 is located at 601 Flat Rd and is equipped with (2) 275-GPM submersible pumps. Wastewater is discharged through a 1655 LF, 6-inch ACP force main that ties into the existing sewage collection system at Manhole 1323 located on Great Valley Parkway parallel to Flat Road. The original pump station was installed in 1979. In January of 2019 a sinkhole developed at the station. This required the station to be reconstructed at a new location. The new station went online in 2019. Components, such as the control panel and pumps (2002), were incorporated from the decommissioned Frame Avenue Pump Station.

The pump wet well is precast concrete (8-ft diam. x 16.85-ft deep) with a 3-ft x 4-ft hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt. The facility has no generator.

The property is not fenced in.

Property Condition

The facility is in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Pump Control Interface



Figure 5 – MCC and Disconnects



Figure 6 – Valve Chamber



Figure 7 – Electrical Panel



Figure 8 –Auto Dialer

PUMP STATION #		P.S. 6		**Scheduled Visit Date:**		
Station Name		Flat Road				
Location		601 Flat Rd				
Start Up Date		Original construction in 1979, Reconstructed 2019				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP 3153			
		Year Installed	2002			
		Pump GPM	275			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	18			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Flygt Multitrode			
370.3		**WET WELL**				
		Condition	Very good			
		Size	8-ft diam. x 16.85-ft deep			
		Material	precast concrete			
		Lined				
		Hatch	3-ft x 4-ft			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2002			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		4' x 4' concrete valve chamber
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	ACP			
		Length in Feet	1655			
		Year Installed	1979			
		Discharge Point	MH 1323			
		Discharge Point Location	Manor View Circle by Valley Creek Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	200 Amp Panel	150 Amp sub		
396		Alarm System (manf/ model)	Sensaphone			
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	asphalt paving			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						

In January of 2019 a sinkhole developed at the station. This required the station to be reconstructed at a new location. The new station went online in 2019. Components, such as the control panel and pumps (2002), were incorporated from the decommissioned Frame Avenue Pump Station. All in very good condition.

P.S. 7 - AKA Lapp Road PS

Facility Description (see attached Information Sheet)

P.S. 7 is located at 510 Lapp Rd and is equipped with (2) 315-GPM submersible pumps. Wastewater is discharged through a 3715 LF, 6-inch PVC force main that ties into the existing sewage collection system at Manhole 746 located on Valley Stream Parkway near Morehall Road. The pump station was installed in 1995 and upgraded in 2000.

The pump wet well is precast concrete (6-ft dia x 20-ft deep (est)) with 4-ft x 4-ft aluminum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Generator is an Onan DGDA-3384553 80 KW unit. The Automatic Transfer Switch (ATS) is an ASCO 300 series. The wet well is oversized to accommodate excess volume to compensate for the lack of a generator.

The property is surrounded by a 150 LF 60-ft chain link with barbed wire fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel and ATS



Figure 4 – Pump Control Panel



Figure 5 – Automatic Transfer Switch



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Generator

PUMP STATION #		P.S. 7		**Scheduled Visit Date:**		
Station Name		Lapp Road				
Location		510 Lapp Rd				
Start Up Date		1987, upgraded in 2006				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3152			
		Year Installed	2000			
		Pump GPM	315			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	23			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Flygt Multitrode			
370.3		**WET WELL**				
		Condition	fair			
		Size	6' dia x 20' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	4' x 4' alum			double door
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2006			upgraded
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGDA-3384553			
		Generator KW	80			
		Generator KVA	100			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	ASCO 300			
		Year Installed	2000			
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	PVC			
		Length in Feet	3715			
		Year Installed	1987			
		Discharge Point	MH 746			
		Discharge Point Location	Valley Stream Parkway near Morehall Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp Panel			
396		Alarm System (manf/ model)	Sensaphone 2000			
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	150'			
		Fence Type	6' - chain link with barb wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility condition is fair. Pump control panel was upgraded in 2006. Generator enclosure is rusting, generator is in good condition.						

P.S. 8 - AKA Westgate PS

Facility Description (see attached Information Sheet)

P.S. 8 is located at 331 Lancaster Ave and is equipped with (2) 700-GPM pumps. Wastewater is discharged through a 1620 LF, 8-in PVC force main that ties into the existing sewage collection system at Manhole 530 located on Lancaster Avenue near Maple Linden Lane. The pump station was installed in 1988 and upgraded in 2001.

The pump wet well is precast concrete (9-ft dia. x 12-ft deep) with aluminum 3-ft x 6-ft hatchway. There are (2) 6-inch check valves and (2) 6-inch gate valves. The control panel is manufactured by Flygt.

The Generator is an Onan DGEA 125 KW unit with integral fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Onan.

The property is surrounded by a 150 LF 6-ft chain link with barbed wire fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Pane, Elec. Panel and ATS



Figure 4 – Pump Control Panel



Figure 5 – Automatic Transfer Switch



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Generator

PUMP STATION #		P.S. 8		**Scheduled Visit Date:**		
Station Name		Westgate				
Location		331 Lancaster Ave				
Start Up Date		1988, Upgraded 2001				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition				
		No. of Pumps	2			
		Type				
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3201, NP3171			
		Year Installed	2001			
		Pump GPM	700			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	30			
		Motor Voltage	230			
371.3		Pump Control	Multitrode			
370.3		**WET WELL**				
		Condition	fair			
		Size	9' dia. X 12' deep			
		Material	precast concrete			
		Lined				
		Hatch	aluminum 3' x 6'			double doors
		Vent				
		Rails				
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2000			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material	PVC			
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		8' diam concrete chamber
		Manufacturer				
		Size	6"	6"		
		#	2	2		
		Year Installed	2000	2000		
355		**GENERATOR**				
		Manufacturer	Onan DGEA			
		Generator KW	125			
		Generator KVA	156			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	Onan			
		Year Installed	2000			
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	PVC			
		Length in Feet	1620			
		Year Installed	1988			
		Discharge Point	MH 530			
		Discharge Point Location	Lancaster Avenue near Maple Linden Lane			

354.2		**BUILDING**				
		Condition	good			3-sided shed
		Size				
		Main Structure Material	wood			
		Roof Type	asphalt shingle			
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	250 Amp Panel			
396		Alarm System (manf/ model)				
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	150'			
		Fence Type	chain link with barb wire			
		Year Installed				
354.3		Paving and Walkways	asphalt drive, stone			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility is in fair condition.						

P.S. 11 - AKA Hillbrook Circle PS

Facility Description (see attached Information Sheet)

P.S. 11 is located at 379 Conestoga Rd and is equipped with (2) 295-GPM submersible pumps. Wastewater is discharged through a 785 LF, 4-inch PVC force main that ties into the existing sewage collection system at Manhole 985 located on Clover Mill Lane near Craig Lane. The pump station was installed in 2000.

The pump wet well is precast concrete (8-ft diam x 25-ft deep) with 3-ft x 5-ft alum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Building (12-ft x 15-ft) is constructed of concrete block and asphalt shingle roof in good condition. The building contains florescent lighting and 1 steel door.

The Generator is an Onan DGCA-5007330GS 50 KW unit. The Automatic Transfer Switch (ATS) is manufactured by Cummins.

The property is not fenced.

Property Condition

The overall facility is in good condition. The building is in very good condition and the roof is in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Pump Control Panel Interface



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Automatic Transfer Switch

PUMP STATION #		P.S. 11		**Scheduled Visit Date:**		
Station Name		Hillbrook Circle				
Location		379 Conestoga Rd				
Start Up Date		2000				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	2000			
		Pump GPM	295			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	10			
		Motor Voltage	230			
371.3		Pump Control	Multitrode			
370.3		**WET WELL**				
		Condition	good			
		Size	8' diam x 25' deep			
		Material	precast concrete			
		Lined				
		Hatch	3' x 5' alum			
		Vent				
		Rails				
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2000			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		6' dia concrete chamber
		Manufacturer	Clow	Clow		
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGCA-5007330GS			
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	Cummins			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	PVC			
		Length in Feet	785			
		Year Installed	2000			
		Discharge Point	MH 985			
		Discharge Point Location	Clover Mill Lane near Craig Lane			

354.2		**BUILDING**				
		Condition	very good			
		Size	12' x 15			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	florescent			
		Year Installed				
		ELECTRICAL				
371.3		MCC	250 amp panel			
396		Alarm System (manf/ model)				**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	4' x 4' louver			
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	stone			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility is in good condition. The building is in very good condition and the roof is in good condition.						

P.S. 12 - AKA King Road PS

Facility Description (see attached Information Sheet)

P.S. 12 is located at 340 King Rd within an easement in Williston Township and is equipped with (2) 258-GPM Submersible pumps. Wastewater is discharged through a 2400 LF, 4-inch PVC force main that ties into the existing sewage collection system at Manhole 338 located on Amy Lane near W. King Road. The pump station was installed in 2004.

The pump wet well is precast concrete (7-ft diam. x 15-ft est) with 4-ft x 4.5-ft aluminum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Building (13-ft x 10-ft) is constructed of concrete block and asphalt shingle roof in good condition. The building contains halogen wall pack lighting and 1 steel door.

The Generator is an Onan DGHE-5636689B 50 KW unit with 145-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Cummin Power Command.

The property is not fenced.

Property Condition

The building is in very good condition, the roof is in good condition and all HVAC systems are in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Pump Control Panel Interface



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Automatic Transfer Switch

PUMP STATION #		P.S. 12		**Scheduled Visit Date:**		2/10/2021
Station Name		King Road				
Location		340 King Rd				
Start Up Date		2004				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition				
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP3102			
		Year Installed	2004			
		Pump GPM	258			
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	6.5			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Multitrode MT2PC			
370.3		**WET WELL**				
		Condition	good			
		Size	7' diam. X 15' est			
		Material	precast concrete			
		Lined				
		Hatch	4' x 4.5 ' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	N/A			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		Crispen air release valve
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGHE-5636689B			30" x 30" exhaust louvers
		Generator KW	50			
		Generator KVA	63			
		Fuel Tank (Gals)	145			
355		ATS (manf/model #)	Cummin Power Command			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	PVC			
		Length in Feet	2400			
		Year Installed	2004			
		Discharge Point	MH 338			
		Discharge Point Location	Amy Lane near W. King Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	13' x 10'			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	halogen wall pack	LED on stanchion		
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 Amp Panel			
396		Alarm System (manf/ model)	Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	good			
		Type	5.5' x 3' motorized louver			
		Manufacturer				
		Year Installed	2004			
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	asphalt driveway			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility was in very good condition. The roof was in good condition.						

P.S. 13 - AKA Malvern Hunt PS

Facility Description (see attached Information Sheet)

P.S. 13 is located at 30 Corbin Dr and is equipped with (2) 300-GPM submersible pumps. Wastewater is discharged through a 2860 LF, 6-inch DIP force main that ties into the existing sewage collection system at Manhole 101 located on Chester Valley Trail near Swedesford Road. The pump station was installed in 2000.

The pump wet well is precast concrete (9-ft dia. x 15-ft deep (est)) with 7.5-ft x 6-ft aluminum hatchway. The control panel is manufactured by Flygt. There are (2) 6-inch check valves and (2) 6-inch gate valves. The influent line to the wet well contains a 3 HP Muffin Monster.

The Building (14-ft x 16-ft) is constructed of concrete block with stucco and asphalt shingle roof in very good condition. The building contains halogen wall pack lighting and 1 steel door.

The Generator is an Katolight D50FJJ4 50 KW unit with 150-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Katolight.

The property is surrounded by a 200 LF 6-ft cyclone fence. This facility also has a chemical dosing system, which contains 100-gallon fuel tank and LMI Dosing pump. The system is not currently in use.

Property Condition

The building is in fair condition, the roof is in very good condition and all HVAC systems are in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Grinder Control Panel



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Auto Dialer



Figure 9 – Flowmeter readout



Figure 10 – Flow Meter



Figure 11 – Chemical Dosing System (abandoned)



Figure 12 –Old Grinder (to be replaced)

PUMP STATION #		P.S. 13		**Scheduled Visit Date:**		2/10/2021
Station Name		Malvern Hunt				
Location		30 Corbin Dr				
Start Up Date		2000				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Fair			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	2000?			
		Pump GPM	300			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	7.5			
		Motor Voltage	230			
371.3		Pump Control	level probe			
370.3		**WET WELL**				
		Condition	Good			
		Size	9' dia. X 15' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	7.5' x 6' aluminum			
		Vent				
		Rails	galv. Steel			showing rust
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	Muffin Monster			new grinder on order
		Model/Serial number				
		HP	3			
		Year Installed	2021			
371		**CRAIN/HOIST**				
		Manufacturer	Davit Crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		chamber - 7' x 7' x 6' deep
		Manufacturer	Clow	Clow		4' x 4' aluminum hatch
		Size	6"	6"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Katolight D50FJJ4			4' x 4' exhaust louvers
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)	150			
355		ATS (manf/model #)	Katolight			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	DIP			
		Length in Feet	2860			
		Year Installed	2000			
		Discharge Point	MH 101			
		Discharge Point Location	Chester Valley Trail near Swedesford Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	14' x 16'			
		Main Structure Material	Conc. Block w/ stucco			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	halogen wall packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 amp panel			
396		Alarm System (manf/ model)	Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	Very Good	good		
		Type	5' x 5' grav. Louvers	elec. unit heater		
		Manufacturer				
		Year Installed				
364		Flow Meter	Rosemount Magmeter			
364		Chart Recorder	rosemount totalizer			
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	200'			
		Fence Type	6' cyclone			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				System abandoned
		Manufacturer		LMI		
		Type	100 gallon tank	dosing pump		
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The building, generator and control panels are all in fair condition. The pump station guide rails and some support bracket have begun to rust.						

P.S. 14 - AKA Planebrook Road PS

Facility Description (see attached Information Sheet)

P.S. 14 is located at 170 Cricket Drive and is equipped with (2) 390-GPM submersible pumps. Wastewater is discharged through a 2545 LF, 8-inch PVC force main that ties into the existing sewage collection system at Manhole 113 located on Phoenixville Pike at Chester Valley Trail. The pump station was installed in 2018.

The pump wet well is precast concrete (9-ft dia. x 18-ft Deep) with 6-ft x 6-ft aluminum hatchway. There are (2) 4-inch check valves and (6) 4-inch gate valves. The control panel is manufactured by Flygt/Stacon.

The Building (12.5-ft x 15.5-ft) is constructed of Concrete Block and asphalt shingle roof in very good condition. The building contains LED wall pack lighting and 1 steel door.

The Generator is an MTU4R0113 DS50 50 KW unit with 185-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is surrounded by a 225 LF 6-ft cyclone fence.

Property Condition

The building is in very good condition, the roof is in very good condition and all HVAC systems are in good condition.



Figure 1 – Facility Site



Figure 2 – Facility Site



Figure 3 – Pump Station



Figure 4 – Pump Station Wetwell



Figure 5 – Pump Control Panel



Figure 6 – Valve Chamber



Figure 7 – Valve Chamber



Figure 8 –Flow Meter Totalizer



Figure 9 - Generator



Figure 10 – Automatic Transfer Switch



Figure 11 – MCC and Disconnects



Figure 12 –Auto Dialer System)

PUMP STATION #		P.S. 14		**Scheduled Visit Date:**		2/10/2021
Station Name		Planebrook	Phone #			
Location		170 Cricket Drive				
Start Up Date		2018				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP 3127			
		Year Installed	2018			
		Pump GPM	390			
		Pump TDH Ft.	45			
		Outlet Size	4"			
		Motor HP	10			
		Motor Voltage	230			
371.3		Pump Control	Flygt Multitrode MT2PC			
370.3		**WET WELL**				
		Condition	Very Good			
		Size	9' dia. X 18' Deep			
		Material	Precast Concrete			
		Lined				
		Hatch	6' x 6' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt/Stacon			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Thern Davit crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		Valve chamber - 7' x 17' x 6' deep
		Manufacturer	APCO	APCO		Hatches - 3' x 3', 4' x 4'
		Size	4"	4"		
		#	2	6		Includes emergency connection
		Year Installed				for portable pump
355		**GENERATOR**				
		Manufacturer	MTU4R0113 DS50			4' x 4' exhaust hood
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)	185			
355		ATS (manf/model #)	ASCO 7000			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	PVC			
		Length in Feet	2545			
		Year Installed	2018			
		Discharge Point	MH 113			
		Discharge Point Location	Phoenixville Pike at Chester Valley Trail			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	12.5' x 15.5'			
		Main Structure Material	Concrete Block			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	LED wall Packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	?????	50 amp panel		
396		Alarm System (manf/ model)	Sensaphone Sentinal			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	4' x 4' Motorize louvers	Electric unit heater	12" x 12" exhaust fan	
		Manufacturer			Qmark	
		Year Installed				
364		Flow Meter	E&H magmeter			
364		Chart Recorder	Seimens Totalizer			
354.3		Hydrants	1 - yard			
		GROUNDS				
354.3		Fence Length	225'			
		Fence Type	6' cyclone			
		Year Installed				
354.3		Paving and Walkways	asphalt drive			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility was built in 2018, all components are in very good condition.						

4.2. COLLECTION SYSTEM

East Whiteland Township owns the collection system identified within this report. There are also privately owned systems within the Township that connect to the Township system. collection system generally consists of 8-inch to 36-inch gravity piping and laterals within the right of way. A map of the collection system can be found in Appendix A, Figure A1. Related cost data for the collection system can be found in Section 8 under account codes 361.21, 361.23, and 360.21.

4.3. METER PITS

A total of eleven (11) meter pits measure flow to/from the Township. However, East Whiteland Township only owns the following three (3):

- Erin Glen Meter located within the vicinity of Kerry lane and Iris way adjacent to Malvern Borough.
- Woodview Apartments Meter located within the East Whiteland Township portion of the apartment complex at the southeast corner of the Township.
- Mathews Road meter located on the border with Tredyffrin Township at the southeast corner of the Township.

All other meters are owned and operated by other municipalities or the Valley Forge Sewer Authority.



Figure 1 – Erin Glen Meter Pit



Figure 2 – Erin Glen Meter Pit



Figure 3 – Erin Glen Meter Pit



Figure 4 –Matthews Road Meter Pit



Figure 5 –Matthews Road Meter Pit



Figure 6 – Woodview Apartment Facility Site



Figure 7 – Woodview Apartment Flow Totalizer and SCADA Unit



Figure 8 – Woodview Apartment Meter Chamber

5. OWNED PROPERTY & EASEMENTS OF VALUE

Property that was directly purchased by the Township and easements acquired are listed in Section 8 – "List of Assets and Costs". The value of said easements are listed with a purchase price of $1 and included in the original purchase price of the facilities listed in Section 8 – "List of Assets and Costs".

6. REGULATORY REQUIREMENTS

3800-PM-WSFR0015 1/2011
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 1599418

AMENDMENT NO. _____

APS ID. 916602

AUTH. ID. 1139890

A. PERMITTEE (Name and Address): CLIENT ID#: **78789**
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

B. PROJECT/FACILITY (Name):
Malvern Hunt WWTP

C. LOCATION (Municipality, County): SITE ID#: **527339**
East Whiteland Township, Chester County

D. THIS PERMIT APPROVES THE OPERATION OF SEWAGE FACILITIES CONSISTING OF:
The Malvern Hunt Pump Station with comminutor, an influent bar screen, a two sell aerated treatment lagoon, a storage lagoon, a chlorine disinfection system, and spray fields.

Pump Stations: _____	Manure Storage:	Sewage Treatment Facility:		
Design Capacity: _____ GPM	Volume: _____ MG	Annual Average Flow:	**0.105**	MGD
	Freeboard: _____ inches	Design Hydraulic Capacity:	**0.128**	MGD
		Design Organic Capacity:	**222**	lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Permit Renewal:** All operations and procedures shall be in accordance with the Water Quality Management Permit application dated **5/23/2016**, its supporting documentation and addendums dated _____, which are hereby made a part of this permit.

   Amendments: All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation and addendums dated _____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

   Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.
3. Special Conditions **1 through XVII** are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED:
November 21, 2016

BY: _____
Jenifer L. Fields, P.E.
TITLE: **Clean Water Program Manager**
Southeast Regional Office

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS

Water Quality Management Permit No. 1599418

Malvern Hunt WWTP

East Whiteland Township, Chester County

I. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled at a point after chlorination and shall be limited at all times as follows:

	Discharge Limitations (mg/l)			Monitoring Requirements	
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent Flow (mgd)	0.105			Continuous	Recorded
$CBOD_5$	25		50	1/Month	Grab
Suspended Solids	30		60	1/Month	Grab
Fecal Coliform	200/100 ml as geometric average			1/Month	Grab
pH	Within limits of 6.0 to 9.0 standard units at all times			1/Month	Grab

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters.

Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

II. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

III. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

A. Quarterly analysis of groundwater sampled at groundwater monitoring wells **MW-L1, MW-L2, MW-L3, MW-S1, MW-S2, MW-S3, MW-S6, MW-S7, and MW-S8,** shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.

B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.

C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.

D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

IV. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP **annually** and be in **report form.** The report shall be due to DEP within 28 days of the end of the month of permit issuance. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Water Management Program
2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

V. The annual groundwater monitoring report shall include the following information:

A. General Information

i. Facility name
ii. Facility permit number
iii. Facility location (including municipality and county)
iv. Facility contact information:

a. permittee name, address, and telephone number
b. contact name and title
c. facility operator name, address, and telephone number
d. facility consultant name, address, and telephone number

B. Site Data

i. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

ii. Average effluent flow for the year covered by this report.

iii. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

a. Date of sampling
b. Groundwater elevations
c. Sampling depth
d. Identification of upgradient and downgradient wells
e. The results of the analysis of the samples

iii. Background groundwater data generated prior to system start-up. **This information is absolutely needed and needs to be included in the data tabulation.**

C. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

D. **Groundwater Background Report**

Within 60 days of system start up, or upon issuance of permit renewal a Groundwater Background Report shall be submitted to DEP. The report shall include the follow information:

i. Site Information

a. Brief narrative, including site limitations.
b. Soil type and bedrock lithology beneath the absorption areas.
c. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.

ii. Construction details of each groundwater monitoring well shall include:

a. Well depth.
b. Casing depth.
c. Static water levels.
d. Surface elevation.
e. Well log.
f. Water bearing zones.
g. Top of casing elevation.
h. Ground surface elevation.

VI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.

VII. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration neither greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value nor greater than 1000/100 ml of these organisms in a more than 10 percent of the samples tested.

VIII. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

IX. The authorization to discharge contained in Section D of this permit shall expire in five years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.

X. Sprayfield Weekly Maximum Hydraulic Loadings

A. Effluent flows to each sprayfield must be consistent with the maximum hydraulic loading requirements of the following tables, which provide the weekly maximum gallons for each irrigation zone.

MAXIMUM WEEKLY SPRAYFIELD HYDRAULIC LOADINGS IN GALLONS

Spray Zone 1 6.16 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,671
February	0.50	83,671
March	1.27	212,539
April	1.50	251,020
May	2.00	334,691
June	2.50	418,369
July	2.50	418,369
August	2.50	418,369
September	2.50	418,369
October	1.55	259,410
November	1.16	194,126
December	0.50	83,671

Spray Zone 2 6.19 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	84,079
February	0.50	84,079
March	1.27	213,574
April	1.50	252,243
May	2.00	336,321
June	2.50	420,406
July	2.50	420,406
August	2.50	420,406
September	2.50	420,406
October	1.55	260,673
November	1.16	195,072
December	0.50	84,079

Spray Zone 3 6.15 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,536
February	0.50	83,536
March	1.27	212,194
April	1.50	250,613
May	2.00	334,148
June	2.50	417,690
July	2.50	417,690
August	2.50	417,690
September	2.50	417,690
October	1.55	258,989
November	1.16	193,811
December	0.50	83,536

B. The permittee shall include with the monthly Discharge Monitoring Report a Supplemental Land Application System Form 3800-FM-BPNPSM0449 that indicates the gallons per day discharged to the spray irrigation zones.

C. Spray irrigation events shall consist of simultaneous operation of two zones with one zone left off for a week-long resting period. All zones shall be rested each month.

D. Application of the effluent shall be managed to prevent runoff from the permitted spray fields and ponding of effluent.

E. No irrigation is to occur on frozen soils.

F. No irrigation is to occur if more than 0.5 inches of rainfall has fallen during the previous 24 hours.

G. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

H. The spray fields shall be maintained to ensure that vegetation does not interfere with or impair proper operation of the spray heads.

I. Fallen trees in wooded spray fields are required to be removed. All work must be conducted during dry or frozen soil conditions to prevent damage to the soil.

XI. At all times, the wastewater level in the storage lagoon shall be managed within the low and high water level parameters as designed. The water level shall be controlled so that a freeboard of at least 24 inches is maintained at all times. The Department must be notified if the water level is anticipated to enter freeboard.

XII. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

A. The exact place, date, and time of sampling or measurement.
B. The person(s) who performed the sampling or measurement.
C. The dates the analyses were performed.
D. The person(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The results of such analyses.

XIII. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XIV. The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

XV. Laboratory Certification

Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of act 90 of 2002 (27 Pa. Code C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XVI. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Stream Law, the permittee shall allow authorized representatives of Department of Environmental Protection upon the presentation of credentials and other documents as may be required by law:

A. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.

B. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

C. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or The Clean Streams Law, any substances or parameters at any location.

XVII. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.

7. OPERATING EXPENSES

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08341 Interest								
08341 34101	Interest Earnings	-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6%
TOTAL Interest		-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6%
08364 Sewer Dept. Earning								
08364 36400	Sewer Rents - Other	-210,000	0	-210,000	-57,646.00	.00	-152,354.00	27.5%
08364 36411	Sewer Connection Fe	-35,000	0	-35,000	-5,400.00	.00	-29,600.00	15.4%
08364 36412	Sewer Rents	-3,703,000	0	-3,703,000	-926,446.40	.00	-2,776,553.60	25.0%
TOTAL Sewer Dept. Earning		-3,948,000	0	-3,948,000	-989,492.40	.00	-2,958,507.60	25.1%
08380 Miscellaneous Revenue								
08380 36244	Sewer Certification	-5,000	0	-5,000	-1,075.00	.00	-3,925.00	21.5%
08380 38003	Refund from VFSA	-375,000	0	-375,000	.00	.00	-375,000.00	.0%
TOTAL Miscellaneous Revenue		-380,000	0	-380,000	-1,075.00	.00	-378,925.00	.3%
08429 Sewer Dept. Expenses								
08429 13000	Wages - Sewer Maint	500,000	0	500,000	30,796.13	.00	469,203.87	6.2%
08429 15300	Disability Insuranc	3,000	0	3,000	778.35	.00	2,221.65	25.9%
08429 15600	Medical Insurance	119,000	0	119,000	37,746.82	.00	81,253.18	31.7%
08429 15650	Retiree Benefits (O	17,000	0	17,000	4,343.43	.00	12,656.57	25.5%
08429 15700	Drug & Alcohol and	525	0	525	.00	.00	525.00	.0%
08429 15800	Life Insurance	2,325	0	2,325	466.98	.00	1,858.02	20.1%
08429 16000	Pension/Retirement	158,000	0	158,000	.00	.00	158,000.00	.0%
08429 16100	FICA (Soc. Sec.) &	39,000	0	39,000	2,355.92	.00	36,644.08	6.0%
08429 17000	Vacation Payout	2,500	0	2,500	.00	.00	2,500.00	.0%
08429 18200	Longevity Pay	7,358	0	7,358	.00	.00	7,358.00	.0%
08429 18300	Overtime	15,000	0	15,000	.00	.00	15,000.00	.0%
08429 20000	Material & Supplies	4,000	0	4,000	.00	.00	4,000.00	.0%
08429 21300	Small Items of Equi	5,000	0	5,000	.00	.00	5,000.00	.0%

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08429 23000	Utilities - Pump St	91,200	0	91,200	19,724.36	.00	71,475.64	21.6%
08429 23100	Vehicle Fuel	10,000	0	10,000	1,078.36	.00	8,921.64	10.8%
08429 23800	Uniforms	3,800	0	3,800	273.06	.00	3,526.94	7.2%
08429 31100	Financial Services	9,000	0	9,000	662.50	.00	8,337.50	7.4%
08429 31300	Twp. Engineering Se	55,000	0	55,000	2,364.33	.00	52,635.67	4.3%
08429 31400	Legal Services	15,000	0	15,000	1,102.50	.00	13,897.50	7.4%
08429 31900	Computer Serv. / Da	27,250	0	27,250	92.99	.00	27,157.01	.3%
08429 32100	Telephone (incl. Mo	15,500	0	15,500	2,562.11	.00	12,937.89	16.5%
08429 32500	Postage & Courier	7,500	0	7,500	.00	.00	7,500.00	.0%
08429 33100	Training, Conferenc	2,500	0	2,500	.00	.00	2,500.00	.0%
08429 34000	Advertising, Printi	4,000	0	4,000	75.00	.00	3,925.00	1.9%
08429 35200	Insurance - Liabili	34,000	0	34,000	8,341.30	.00	25,658.70	24.5%
08429 35400	Worker's Comp Insur	8,000	0	8,000	1,715.40	.00	6,284.60	21.4%
08429 37000	Office Equipment Ma	1,200	0	1,200	.00	.00	1,200.00	.0%
08429 37100	Sewer System - Main	121,920	0	121,920	17,795.24	7,894.39	96,230.37	21.1%
08429 37200	Road Maintenance &	1,000	0	1,000	.00	.00	1,000.00	.0%
08429 37300	Pump Stations - Mai	76,000	0	76,000	6,795.17	14,999.93	54,204.90	28.7%
08429 37400	Equipment - Maint.	700	0	700	.00	.00	700.00	.0%
08429 37500	Vehicle - Maint. &	6,000	0	6,000	1,555.71	.00	4,444.29	25.9%
08429 38500	Sewer Rentals - Oth	1,760,000	0	1,760,000	441,744.07	.00	1,318,255.93	25.1%
TOTAL Sewer Dept. Expenses		3,122,278	0	3,122,278	582,369.73	22,894.32	2,517,013.95	19.4%
08470 Debt - Sewer Dept.								
08470 25522	GOB 2013 Bond - Pri	50,000	0	50,000	.00	.00	50,000.00	.0%
08470 25523	GOB 2012 A Bond - P	350,000	0	350,000	.00	.00	350,000.00	.0%
08470 25524	GOB 2012B Bond - Pr	335,000	0	335,000	.00	.00	335,000.00	.0%
08470 47000	Interest Exp. - Deb	516,409	0	516,409	.00	.00	516,409.00	.0%
TOTAL Debt - Sewer Dept.		1,251,409	0	1,251,409	.00	.00	1,251,409.00	.0%
08475 Fiscal Agent Fees								
08475 47600	Fiscal Agent Fees	3,150	0	3,150	.00	.00	3,150.00	.0%
TOTAL Fiscal Agent Fees		3,150	0	3,150	.00	.00	3,150.00	.0%
08492 Interfund Operating Transfers								
08492 49201	Transfer to General	168,345	0	168,345	.00	.00	168,345.00	.0%
TOTAL Interfund Operating Transfers		168,345	0	168,345	.00	.00	168,345.00	.0%

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
TOTAL Sewer Fund		205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.9%
	TOTAL REVENUES	-4,340,000	0	-4,340,000	-990,878.98	.00	-3,349,121.02	
	TOTAL EXPENSES	4,545,182	0	4,545,182	582,369.73	22,894.32	3,939,917.95	

FOR 2021 03

	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
GRAND TOTAL	205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.9%

** END OF REPORT - Generated by Usha Hogan **

8. LIST OF ASSETS AND COSTS

EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WASTEWATER SYSTEM
AS OF JUNE 17, 2021

ACCOUNT	DESCRIPTION		ORIGINAL COST ($)
353.2	LAND AND LAND RIGHTS - COLLECTION	$	668.00
353.3	LAND AND LAND RIGHTS - PUMPING	$	13.00
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT	$	11,085,241.50
354.3	STRUCTURES AND IMPROVEMENTS - PUMPING	$	8,005,275.38
360.21	COLLECTION SEWERS - FORCE - MAINS	$	2,304,354.55
361.21	COLLECTION SEWERS - GRAVITY - MAINS	$	10,767,737.96
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES	$	4,350,867.01
363.2	SERVICES TO CUSTOMERS	$	6,619,976.03
365.2	FLOW MEASURING INSTALLATIONS	$	78,670.00
390.7	COMPUTER AND SOFTWARE	$	21,550.00
391.7	TRANSPORTATION EQUIPMENT	$	212,955.81
	SYSTEM TOTAL	$	43,447,309.24

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
353.20	LAND AND LAND RIGHTS - COLLECTION						
	DEER RUN DRAINAGE AREA (DR)	(DR 2) UPI: 42-4K-57 - Gravity Line & Force Main, MB: 197/260			Easement - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	(DR 3) UPI: 42-4K-60 - Gravity Line & Force Main, MB: 199/67			Easement - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Deer Run Lane - Gravity Line & Force Main, DB: P40/251			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Fawn Circle - Gravity Line & Force Main, DB: P40/251			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Doe Lane - Gravity Line, DB: P40/246 DB: W31/40			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Buck Run Lane - Gravity Line, DB: W31/40			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Conestoga Road - Force Main,			ROW - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 3) UPI: 42-4-15.10 - Gravity Line & Force Main, MB: 574/402 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 4) UPI: 42-4-15.10A - Gravity Line & Force Main, MB: 574/402 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 5) UPI: 42-4-15.7 - Force Main, Plan No. 16670 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	Flat Road - , DB: U28/28			ROW - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	Great Valley Parkway - , DB: D62/327 MB: 634/200			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 1) UPI: 35-3-102 - Gravity Line, DB: 7037/1110			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 2) UPI: 42-3-32.2 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 3) UPI: 42-3-32.1 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 4) UPI: 42-3-32 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 5) UPI: 42-3-33 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 6) UPI: 42-3-33.1 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 7) UPI: 42-3-107.3P - Gravity Line & Force Main, DB: 6267/2370			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Willing Way - Gravity Line, DB: 9377/1312			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Hillbrook Circle - Gravity Line, DB: K34/292			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Hillbrook Court - Gravity Line, DB: K34/292			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Conestoga Road - Gravity Line & Force Main, MB: 964/552 DB: G52/532			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 2) UPI: 42-7-53 - Force Main, Plan No. 7631			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	KING ROAD DRAINAGE AREA (KR)	(KR 3) UPI: 42-7B-101 - Gravity Line & Force Main, DB: 689/549			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 4) UPI: 42-7B-102 - Gravity Line & Force Main, DB: 9549/1435			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 5) UPI: 42-7B-133 - Gravity Line & Force Main, DB: 10200/763			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 6) UPI: 42-7B-132 - Gravity Line & Force Main, DB: 3587/954			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 7) UPI: 42-7B-119 - Gravity Line & Force Main, DB: F53/118			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 8) UPI: 42-7B-120 - Gravity Line & Force Main, DB: 3827/1452			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 9) UPI: 42-7B-118 - Gravity Line & Force Main, DB: 10117/2299			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 10) UPI: 42-7B-85 - Gravity Line & Force Main, DB: 6737/2373			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 11) UPI: 42-7B-86 - Gravity Line & Force Main, DB: 8800/2081			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 12) UPI: 42-7B-84 - Gravity Line & Force Main, DB: 3532/2014			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 13) UPI: 42-7B-83 - Gravity Line & Force Main, DB: 9636/2118			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 14) UPI: 42-7B-82 - Gravity Line & Force Main, DB: 9839/713			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 15) UPI: 42-7B-81 - Gravity Line & Force Main, DB: 9179/23			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 16) UPI: 42-7B-80 - Gravity Line & Force Main, DB: 3584/1943			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 17) UPI: 42-7B-52 - Gravity Line, PB: 16/45 DB: 5686/920			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 18) UPI: 42-7-52.2 - Gravity Line, PB: 16/45			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 19) UPI: 42-7-52.3 - Gravity Line, PB: 16/45 DB: 5648/601			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 20) UPI: 42-7-52.1A - Gravity Line, PB: 16/45 Plan No. 1193			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 21) UPI: 42-7-50.1 - Gravity Line, Plan No. 17279			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 22) UPI: 42-7-50 - Gravity Line, Plan No. 17279			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Kings Circle - Gravity Line, DB: N29/595			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Madeline Drive - Gravity Line, DB: V28/663			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Kevin Way - Gravity Line, DB: V28/663			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Queen Anne Lane - Gravity Line , DB: V28/671			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	KING ROAD DRAINAGE AREA (KR)	Carol Lane - Gravity Line, DB: V28/671			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	King Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 1) UPI: 42-4-29.2 - Gravity Line, Plan No. 16792			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 2) UPI: 42-4-29.1 - Force Main, Plan No. 18373			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 4) UPI: 42-4-29 - Gravity Line & Force Main, Plan No. 15770 DB: 9846/637			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 5) UPI: 42-4-28.2 - Force Main, DB: 6765/1762			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 6) UPI: 42-4-42 - Gravity Line & Force Main, DB: 6765/1780			Easement - GL: No FM: Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 7) UPI: 42-4-25 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 8) UPI: 42-4-25.3 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 10) UPI: 42-4-26.2 - Force Main, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 12) UPI: 42-2-12.2 - Gravity Line, Plan No. 4520			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 13) UPI: 42-2-12.1 - Gravity Line, Plan No. 4520			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 14) UPI: 42-2-12.3 - Gravity Line, Plan No. 4521			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 15) UPI: 42-2-12 - Gravity Line, Plan No. 4521			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 16) UPI: 42-4-52 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 17) UPI: 42-4-52.5 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 18) UPI: 42-4-52.6 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 19) UPI: 42-4-15.15 - Gravity Line, DB: 6773/273 MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 20) UPI: 42-4-15.12 - Gravity Line, MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 21) UPI: 42-4-15.16 - Gravity Line, DB: 6773/273 MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 22) UPI: 42-4-15.17A - Gravity Line, DB: 6773/273 DB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 23) UPI: 42-4-15.17 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 24) UPI: 42-4-15.18A - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 25) UPI: 42-4-15.20 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	LAPP ROAD DRAINAGE AREA (LR)	(LR 26) UPI: 42-4-17 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 27) UPI: 42-4-16 - Gravity Line, DB: 6765/1789			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 28) UPI: 42-4-15.18 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 29) UPI: 42-4-15.27 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 30) UPI: 42-4-16.1 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Technology Drive - Gravity Line, DB: 6773/251			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Lapp Road - Gravity Line , DB: 6773/251 DB: A36/1025 MB: 173/277			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Valley Stream Parkway - Force Main, DB: 6773/219 DB: 6773/235			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Old Morehall Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Morehall Road - Force Main,			ROW - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 3) UPI: 42-2-10.5A - Gravity Line, PB: 64/30			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 4) UPI: 42-2-10.1 - Gravity Line & Force Main, Plan No. 10751			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 5) UPI: 42-2-10.3A - Gravity Line, Plan No. 5369			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 6) UPI: 42-2-10.3 - Gravity Line, Plan No. 5349			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 7) UPI: 42-2-10.2B - Gravity Line, PB: 59/18			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	Lee Boulevard - Gravity Line & Force Main, DB: S51/92			ROW - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 2) UPI: 42-3-350 - Gravity Line, Plan No. 15562			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 3) UPI: 42-3-351 - Gravity Line, Plan No. 15562			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 4) UPI: 42-3-497 - Gravity Line, Plan No. 16381			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 5) UPI: 42-3-498 - Gravity Line, Plan No. 16381			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 6) UPI: 42-3-336 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 7) UPI: 42-3-337 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 8) UPI: 42-3-375 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 9) UPI: 42-3-376 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 10) UPI: 42-3-378 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 11) UPI: 42-3-64.22 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 12) UPI: 42-3-64.23 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 13) UPI: 42-3-64.89 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 14) UPI: 42-3-64.90 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 15) UPI: 42-3-127 - Gravity Line & Lagoon, DB: 7234/1972			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 16) UPI: 42-3-47 - Gravity Line & Spray Field, DB: 7234/1978			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	All Internal Roads - Gravity Line & Force Main, DB: 6986/1454			ROW - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	Swedesford Road - Force Main, Plan No. 15562			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Doe Lane - Gravity Line, DB: P40/246 DB: W31/40			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Buck Run Lane - Gravity Line, DB: W31/40			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 1) UPI: 42-5-1.1 - Gravity Line, MB: 197/878			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 2) UPI: 42-4-266 - Gravity Line, DB: 8443/1099 Plan No. 18668			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 3) UPI: 42-4-260.2 - Gravity Line, Plan No. 20382 Plan No. 15178			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 4) UPI: 42-4-260.2A - Gravity Line, Plan No. 15178			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 6) UPI: 42-4-257.2 - Gravity Line, Plan No. 4470			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 7) UPI: 42-4-255-E - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 8) UPI: 42-4-268.1 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 9) UPI: 42-4-269 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 10) UPI: 42-4-270 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 11) UPI: 42-4-272 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 13) UPI: 42-4-339 - Gravity Line, DB: 4373/191			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 14) UPI: 42-5-16.1 - Gravity Line, DB: 4373/180			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 15) UPI: 42-4-132 - Gravity Line, Plan No. 10214 Plan No. 9327			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 16) UPI: 42-4-132.2 - Gravity Line, MB: 199/73 1972-00522			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 17) UPI: 42-4-332 - Gravity Line, MB: 199/54 MB: 284/241			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 18) UPI: 42-4-331 - Gravity Line, MB: 284/237 1975-00649			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 19) UPI: 42-4-330 - Gravity Line, MB: 284/233 1975-00648			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 20) UPI: 42-4-329 - Gravity Line, MB: 284/229 1975-00647			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 21) UPI: 42-4-328 - Gravity Line, MB: 287/5 1975-00684			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 22) UPI: 42-4-327 - Gravity Line, MB: 284/224 1975-00646			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 23) UPI: 42-4-326 - Gravity Line, MB: 284/221 1975-00645			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 24) UPI: 42-4-325 - Gravity Line, MB: 284/217 1975-00644			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 25) UPI: 42-4-324 - Gravity Line, MB: 284/213 1975-00643			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 26) UPI: 42-4-323 - Gravity Line, MB: 284/209 1975-00642			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 27) UPI: 42-4-322 - Gravity Line, MB: 284/205 1975-00641			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 28) UPI: 42-4-322.9 - Gravity Line, MB: 284/205 1975-00641			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 29) UPI: 42-4-322.8 - Gravity Line, MB: 284/201 1975-00640			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 30) UPI: 42-4-322.7 - Gravity Line, MB: 284/197 1975-00639			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 31) UPI: 42-4-322.6 - Gravity Line, MB: 287/13 1975-00686			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 32) UPI: 42-4-322.5 - Gravity Line, MB: 390/33 MB: 284/193			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 33) UPI: 42-4-322.4 - Gravity Line, MB: 287/189 1975-00637			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 34) UPI: 42-4-322.2 - Gravity Line, MB: 287/185 1975-00636			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 35) UPI: 42-4-322.1 - Gravity Line, MB: 284/181 1975-00635			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 36) UPI: 42-4-318 - Gravity Line, MB: 284/177 1975-00634			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 37) UPI: 42-4-317.2 - Gravity Line, MB: 284/169 MB: 287/17			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 38) UPI: 42-4-317.1 - Gravity Line, MB: 284/173 1975-00633			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 39) UPI: 42-4-317 - Gravity Line , MB: 284/169 MB: 287/17			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 40) UPI: 42-4-316 - Gravity Line, MB: 284/165 1975-00631			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 41) UPI: 42-4-315 - Gravity Line, MB: 284/161 MB: 287/157			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 42) UPI: 42-4-313 - Gravity Line, MB: 284/153 MB: 287/157			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 43) UPI: 42-4-132.1 - Gravity Line, MB: 199/27 MB: 284/245			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 44) UPI: 42-4-139 - Gravity Line, MB: 287/1 1975-00683			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 45) UPI: 42-4-140 - Gravity Line, MB: 287/9 1975-00685			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 46) UPI: 42-4-141 - Gravity Line, MB: 284/249 1975-00652			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 47) UPI: 42-4-130 - Gravity Line, DB: 6523/952			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 48) UPI: 42-4-127 - Gravity Line, MB: 284/261 1975-00655			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 49) UPI: 42-4-129 - Gravity Line, MB: 284/257 MB: 284/265			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 50) UPI: 42-4-125.2 - Gravity Line, MB: 284/257 MB: 284/265			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 51) UPI: 42-4-125.3 - Gravity Line, MB: 284/269 1975-00657			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 52) UPI: 42-4-125.3A - Gravity Line, MB: 284/269 1975-00657			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 53) UPI: 42-4-125.8 - Gravity Line, MB: 287/273 1975-00658			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 54) UPI: 42-4-125 - Gravity Line, MB: 345/130 MB: 284/273			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 55) UPI: 42-4-102.2 - Gravity Line, MB: 401/378 MB: 284/277			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 56) UPI: 42-4-102.4 - Gravity Line, MB: 401/378 MB: 284/277			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 57) UPI: 42-4-103 - Gravity Line, MB: 284/281 1975-00660			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 58) UPI: 42-4-104 - Gravity Line, MB: 399/399 MB: 284/285			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 59) UPI: 42-4-106.1 - Gravity Line, MB: 284/253 1975-00653			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 60) UPI: 42-4-97.1 - Gravity Line, MB: 284/289 MB: 284/293			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 61) UPI: 42-4-98.1 - Gravity Line, MB: 284/289 1975-00664			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 62) UPI: 42-4-98.4 - Gravity Line, MB: 284/302 1975-00665			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 63) UPI: 42-4-98 - Gravity Line , MB: 286/336 MB: 284/302			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 64) UPI: 42-4-100 - Gravity Line, MB: 983/401 MB: 284/306			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 65) UPI: 42-4-89.1B - Gravity Line, MB: 286/336 1975-00679			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 66) UPI: 42-4-89.1A - Gravity Line, MB: 546/424			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 67) UPI: 42-4-101.1 - Gravity Line, MB: 983/337 1987-0872			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 68) UPI: 42-4-87.2 - Gravity Line & Force Main, MB: 983/349 1987-08872			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 69) UPI: 42-4-333 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 70) UPI: 42-4-334-E - Gravity Line,			Easement - No (2 Crossings)		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 71) UPI: 42-4-335 - Gravity Line, MB: 206/582 MB: 199/30			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 72) UPI: 42-4-338 - Gravity Line, MB: 197/274			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 73) UPI: 42-4-350 - Gravity Line, MB: 197/274			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 74) UPI: 42-4-352 - Gravity Line & Meter, MB: 199/61 1972-00518			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 75) UPI: 42-4-351 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 76) UPI: 42-4-352.1 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 77) UPI: 42-4-352.2 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 78) UPI: 42-4-352.3 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 79) UPI: 42-4-343 - Gravity Line, MB: 199/79 1972-00524			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 80) UPI: 42-4R-26 - Gravity Line, MB: 345/56 MB: 284/347			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 81) UPI: 42-4R-34 - Gravity Line, MB: 402/164 MB: 285/1			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 82) UPI: 42-4R-33 - Gravity Line, MB: 345/56			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 83) UPI: 42-4R-32 - Gravity Line, MB: 285/5 1975-00675			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 84) UPI: 42-4R-25 - Gravity Line, MB: 345/56			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 85) UPI: 42-4R-21 - Gravity Line, MB: 286/344 1975-00681			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 86) UPI: 42-4R-19 - Gravity Line, MB: 284/339 1975-00671			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 87) UPI: 42-4R-20 - Gravity Line, MB: 284/343 1975-00672			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 88) UPI: 42-4-321.2 - Gravity Line, MB: 197/888			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 89) UPI: 42-4-278.20 - Gravity Line, DB: 3877/431			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 90) UPI: 42-4-281.47 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 91) UPI: 42-4-281 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 92) UPI: 42-4-281.28 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 93) UPI: 42-4-281.29 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 94) UPI: 42-4-281.30 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 95) UPI: 42-4-281.31 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 96) UPI: 42-4-294-E - Gravity Line,			Easement - No (4 Crossings)		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 97) UPI: 42-7C-5 - Gravity Line, DB: 5648/615			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 98) UPI: 42-4Q-169 - Gravity Line, DB: 5648/607			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 99) UPI: 42-4Q-157 - Gravity Line, MB: 427/203			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 100) UPI: 42-4Q-156 - Gravity Line, MB: 427/203			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 101) UPI: 42-4Q-155 - Gravity Line, MB: 419/341			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 102) UPI: 42-4Q-179 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 103) UPI: 42-4Q-180 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 104) UPI: 42-4Q-172 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 105) UPI: 42-4Q-171 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 106) UPI: 42-7B-138.10 - Gravity Line, DB: 2603/389			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 107) UPI: 42-7B-138.11 - Gravity Line, DB: 2603/389			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 108) UPI: 42-7-64.4 - Gravity Line, MB: 960/194			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 109) UPI: 42-7-64.2 - Gravity Line, MB: 960/190			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 110) UPI: 42-4P-28-E - Gravity Line, DB: H49/87			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 111) UPI: 42-4-295.1 - Gravity Line, MB: 284/327 1975-00668			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 112) UPI: 42-4-321 - Gravity Line, MB: 284/340 1975-00680			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 113) UPI: 42-4-321.1 - Gravity Line, MB: 286/323 1975-00667			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 114) UPI: 42-4K-143 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 115) UPI: 42-4K-142 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 116) UPI: 42-4K-28 - Gravity Line, MB: 197/271			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 117) UPI: 42-4K-27 - Gravity Line, MB: 196/996			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 118) UPI: 42-4K-7 - Gravity Line, MB: 196/1002			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 119) UPI: 42-4K-6 - Gravity Line, MB: 197/1021			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 120) UPI: 42-4K-30 - Gravity Line, MB: 197/262 MB: 347/323			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 121) UPI: 42-4K-17 - Gravity Line, MB: 196/999 MB: 347/323			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 122) UPI: 42-4-109 - Gravity Line, MB: 377/134			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 123) UPI: 42-4-110 - Gravity Line, MB: 345/134			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 124) UPI: 42-4-143 - Gravity Line, Plan No. 5498 MB: 197/268			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 125) UPI: 42-4-144 - Gravity Line, MB: 336/282			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 126) UPI: 42-4-240.3 - Gravity Line, MB: 199/51 PB: 49/27			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 127) UPI: 42-4-240.1 - Gravity Line, MB: 202/41 MB: 199/48			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 128) UPI: 42-4-142 - Gravity Line, MB: 197/268			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 129) UPI: 42-4-252 - Gravity Line, MB: 197/883			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 130) UPI: 42-4-249 - Gravity Line, MB: 345/52			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 131) UPI: 42-4-253-E - Gravity Line, DB: O31/211			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 132) UPI: 42-4-257.1 - Gravity Line, MB: 199/57			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 133) UPI: 42-4-254 - Gravity Line, MB: 347/326 MB: 199/57			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 134) UPI: 42-4-260.6-E - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 135) UPI: 42-4-53.14 - Gravity Line, DB: 2603/325 Plan No. 9429			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 136) UPI: 42-4-53.15 - Gravity Line, DB: 2603/380 Plan No. 8837			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 137) UPI: 42-4-53.16 - Gravity Line, DB: 554/536 Plan No. 7496			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 138) UPI: 42-4-53.6 - Gravity Line & Force Main, Plan No. 5076 DB: 6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 139) UPI: 42-4-53.10 - Gravity Line & Force Main, Plan No. 5434 DB: 6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 140) UPI: 42-4-53.7 - Gravity Line & Force Main, Plan No. 5434 DB:6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 141) UPI: 42-4-53.12 - Gravity Line, Plan No. 6432 DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 143) UPI: 42-4-53.5 - Gravity Line, Plan No. 4799			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 144) UPI: 42-4-53.3 - Gravity Line, DB: 6773/235			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 145) UPI: 42-4-53.11 - Gravity Line, Plan No. 19299 DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 146) UPI: 42-4-53 - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 147) UPI: 42-4-53.8 - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 148) UPI: 42-2-8.1 - Gravity Line, Plan No. 19233 Plan No. 15830			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Oak Hill Circle - Gravity Line, DB: H49/60 DB: S54/414			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Forest Way - Gravity Line, DB: H49/60 DB: S54/414			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Amy Lane - Gravity Line & Force Main , DB: 2603/308			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Birch Road - Gravity Line, DB: Q35/224 DB: Q35/243 DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Locust Road - Gravity Line, DB: Q35/224			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Pine Road - Gravity Line, DB: Q35/239			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Willow Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Sycamore Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Beth Circle - Gravity Line, DB: T49/241			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Village Way - Gravity Line, DB: N27/627 DB: Q24/523 DB: W24/133			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Spring Road - Gravity Line, DB: S36/52 DB: W31/64			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Woodview Road - Gravity Line, DB: W31/64			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	Fahnestock Road - Gravity Line, DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Longview Road - Gravity Line , DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lantern Lane - Gravity Line, DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Old Lincoln Highway/ Old Lancaster Road - Gravity Line, DB: 2603/365			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Roberts Road - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Elbow Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Winding Way - Gravity Line, DB: N29/192 DB: O31/215			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Wood Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Beth Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Hillside Drive - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Kane Drive - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Swedesford Road - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Valley Stream Parkway - Gravity Line & Force Main, DB: 6773/219 DB: 6773/235			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Malin Road - Gravity Line, DB: Q35/224			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	South Malin Road - Gravity Line , DB: 2603/336			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	South Malin Road Railroad Crossing - ,			ROW - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	Summit Road - Gravity Line, DB: H49/60			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	U.S. Route 202 - Gravity Line, MB: 554/536			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lancaster Avenue - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	East Lancaster Avenue - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Conestoga Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Morehall Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	East Swedesford Road - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Matthews Road - Gravity Line,			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	Warren Avenue - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lindenwood Drive - Gravity Line,			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	Willow Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	Sycamore Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	East Swedesford Road - Gravity Line,			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 1) UPI: 42-4-88 - Gravity Line, MB: 546/434			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 2) UPI: 42-4-89.5 - Gravity Line, MB: 546/404			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 3) UPI: 42-4-89 - Gravity Line, MB: 546/444			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 4) UPI: 42-4-89.2 - Gravity Line, MB: 546/424			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 6) UPI: 42-4-71.2 - Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 7) UPI: 42-4-71.13 - Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 9) UPI: 42-4-71.8 - Force Main,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	Buttonwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Beechwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 2) UPI: 42-4-2.2-E - Gravity Line & Force Main, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 3) UPI: 42-4-18-E - Gravity Line & Force Main, DB: 5959/435			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 4) UPI: 42-4-41, 56 & 66 - Gravity Line & Force Main,			Easement - GL: No FM: Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 5) UPI: 42-4-39 - Force Main, DB: H64/430			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 6) UPI: 42-4-38 - Force Main, DB: 4588/1426			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 7) UPI: 42-4-71.23 - Force Main, DB: 6761/259			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 8) UPI: 42-4-71.3 - Force Main, DB: 4632/136			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 9) UPI: 42-4K-119 - Force Main, DB: 2538/22			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 10) UPI: 42-4K-120 - Force Main, DB: 85/579			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 11) UPI: 42-4K-121 - Force Main, DB: 1816/457			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 12) UPI: 42-4K-122 - Force Main, DB: S52/265			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 13) UPI: 42-4K-123 - Force Main, DB: 7799/1042			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 14) UPI: 42-4K-124 - Force Main, DB: 4193/2383			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 15) UPI: 42-4-70 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 16) UPI: 42-4-71.26 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 17) UPI: 42-4-71.19 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 18) UPI: 42-4-71.18 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 19) UPI: 42-4-71.27 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 22) UPI: 42-4-60.3 - Gravity Line , PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 23) UPI: 42-4-60.4 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 24) UPI: 42-4-60.5 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 25) UPI: 42-4-60.6 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 26) UPI: 42-4-60.7 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 27) UPI: 42-4-60.8 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 28) UPI: 42-4-60.9 - Gravity Line, MB: 420/341			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 29) UPI: 42-4-61.1 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 30) UPI: 42-4-61.2 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 31) UPI: 42-4-61.3 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 32) UPI: 42-4-61.4 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 33) UPI: 42-4-65.1 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 34) UPI: 42-4-65.2 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 35) UPI: 42-4-65.3 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 36) UPI: 42-4-65.4 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 37) UPI: 42-4-65.5 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 38) UPI: 42-4-65.6 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 39) UPI: 42-4-65.7 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 40) UPI: 42-4J-31 - Gravity Line, PB: 1088			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 41) UPI: 42-4J-9 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 42) UPI: 42-4J-10 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 43) UPI: 42-4J-11 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 44) UPI: 42-4J-13 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 45) UPI: 42-4J-12 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 46) UPI: 42-4J-15 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 47) UPI: 42-4J-16 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 48) UPI: 42-4J-17 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 49) UPI: 42-4J-18 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 50) UPI: 42-4J-19 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 51) UPI: 42-4J-20 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 52) UPI: 42-4J-21 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 53) UPI: 42-4-85.12 - Gravity Line, DB: 6482/1996			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 55) UPI: 42-4-2.5-E - Gravity Line, DB: 8918/1465			Township Owned Property		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 56) UPI: 42-4-2.1-E - Gravity Line, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 57) UPI: 42-4-365-E - Gravity Line, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 58) UPI: 42-4-59-E - Gravity Line, DB: 3520/2315			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 59) UPI: 42-4-58-E - Gravity Line, DB: 3520/2315			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 60) UPI: 42-4-58.1-E - Gravity Line, DB: A47/48			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 61) UPI: 42-3-124-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 62) UPI: 42-3-123.25 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 63) UPI: 42-3-123.15 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 64) UPI: 42-3-123.14 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 65) UPI: 42-3-117.1 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 66) UPI: 42-3-117.1A - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 67) UPI: 42-4-55-E - Gravity Line, Plan No. 14830			Easement - Partial Gap		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 71) UPI: 42-4-62.1 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 72) UPI: 42-4-62.2 - Gravity Line, DB: 5151/2261 2001-10487			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 73) UPI: 42-4-62 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 76) UPI: 42-4-83.1-E & 42-4-83-E - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 78) UPI: 42-3-119.1 - Gravity Line, DB: 7743/170			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 79) UPI: 42-3-118-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 80) UPI: 42-3-115 - Gravity Line, Plan No. 20653			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 81) UPI: 42-3-115.1 - Gravity Line, DB: 3837/1431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 82) UPI: 42-3-83-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 83) UPI: 42-3-71-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 84) UPI: 42-3-76-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 85) UPI: 42-3-129-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 86) UPI: 42-3-119 - Gravity Line, DB: 7819/2124			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 87) UPI: 42-3-199 - Gravity Line, DB: 7819/2124			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 88) UPI: 42-4-77 - Gravity Line, DB: 1357/492 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 89) UPI: 42-4-80.1 - Gravity Line, DB: 1357/496 1988—08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 90) UPI: 42-4-80 - Gravity Line, DB: 1357 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 92) UPI: 42-3-227 - Gravity Line, DB: 1357/479 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 93) UPI: 42-3-226.1 - Gravity Line, DB: 1357/4475 1988-08895			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 94) UPI: 42-3-226 - Gravity Line, DB: 1357/467 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 95) UPI: 42-3-223 - Gravity Line, DB: 1357/471 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 96) UPI: 42-3-222 - Gravity Line, DB: 1357/508 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 97) UPI: 42-3-222.1 - Gravity Line, DB: 1357/512 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 98) UPI: 42-3-221 - Gravity Line, DB: 1357/520 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 99) UPI: 42-4-220 - Gravity Line, DB: 1357/516 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 100) UPI: 42-4-218 - Gravity Line, DB: 1357/524 & 531 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 101) UPI: 42-3-217 - Gravity Line, DB: 1357/528 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 102) UPI: 42-3R-5 - Gravity Line, DB: 1678/210 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 103) UPI: 42-3R-2 - Gravity Line, DB: 1678/200 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 104) UPI: 42-3R-16 - Gravity Line, DB: 1357/540 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 105) UPI: 42-3R-6 - Gravity Line, DB: 1357/544 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 106) UPI: 42-3R-7 - Gravity Line, DB: 1357/548 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 107) UPI: 42-3R-8 - Gravity Line, DB: 1357/548 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 108) UPI: 42-3R-9 - Gravity Line, DB: 1357/556 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 109) UPI: 42-3R-10 - Gravity Line & Force Main, DB: 1357/556 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 110) UPI: 42-4-302-E - Gravity Line, DB: 1358/38 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 111) UPI: 42-4-302.1-E - Gravity Line, DB: 1358/42 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 112) UPI: 42-4-300 - Gravity Line, DB: 1358/46 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 113) UPI: 42-4-299 - Gravity Line, DB: 1358/50 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 114) UPI: 42-4-298.1 - Gravity Line, DB: 1357/422 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 115) UPI: 42-4-298 - Gravity Line, DB: 1357/418 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 116) UPI: 42-4-275 - Gravity Line, DB: 1357/426 DB: 1379/271			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 117) UPI: 42-3-239 - Gravity Line, DB: 1357/430 DB: 1357/434			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 118) UPI: 42-3-237.2 - Gravity Line, DB: 1357/438 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 119) UPI: 42-3-237.1 - Gravity Line, DB: 1357/442 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 120) UPI: 42-3-236 - Gravity Line, DB: 1357/418 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 121) UPI: 42-3-234 - Gravity Line, DB: 1357/450 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 122) UPI: 42-3-233.1 - Gravity Line, DB: 1357/458 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 123) UPI: 42-3R-40 - Gravity Line, DB: 1358/62 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 124) UPI: 42-3R-37 - Gravity Line, DB: 1358/58 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 125) UPI: 42-3R-39 - Gravity Line, DB: 1358/66 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 126) UPI: 42-3R-38 - Gravity Line, DB: 1357/462 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 127) UPI: 42-3-232 - Gravity Line, DB: 1358/70 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 128) UPI: 42-3-231 - Gravity Line, DB: 1357/536 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 129) UPI: 42-3-229 - Gravity Line, DB: 1678/195 DB: 1358/74 & 78			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 130) UPI: 42-3M-144 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 131) UPI: 42-3M-145 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 132) UPI: 42-3M-146 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 133) UPI: 42-3M-147 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 134) UPI: 42-3M-148 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 135) UPI: 42-3M-149 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 136) UPI: 42-3M-150 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 137) UPI: 42-3M-151 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 138) UPI: 42-3-109.11 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 139) UPI: 42-3-297 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 140) UPI: 42-3-251 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 141) UPI: 42-3-252 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 142) UPI: 42-3-245 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 143) UPI: 42-3-296 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 144) UPI: 42-3-295 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 145) UPI: 42-3-281 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 146) UPI: 42-3-280 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 147) UPI: 42-3-298 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 148) UPI: 42-3-298.1 - Gravity Line, DB: 4415/1866			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 150) UPI: 42-3-45.6Q - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 151) UPI: 42-3-334 - Gravity Line, Plan No. 13903			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 152) UPI: 42-3-45.6K - Gravity Line, PB: 31/19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 153) UPI: 42-3-242.10 - Gravity Line, PB: 37/3			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 155) UPI: 42-4-20.2S - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 156) UPI: 42-4-20.2Q - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 157) UPI: 42-4-20.2P - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 158) UPI: 42-4-4 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 159) UPI: 42-4-5.2C - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Partial Gap		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 160) UPI: 42-4-5.2D - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 161) UPI: 42-4-527 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 162) UPI: 42-4-5.45 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 163) UPI: 42-4-526 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 164) UPI: 42-4-525 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 165) UPI: 42-4-524 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 166) UPI: 42-4-5.2B - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 167) UPI: 42-4-6.10 - Gravity Line,			Easement - No		$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 168) UPI: 42-4-6.14 - Gravity Line, DB: 9494/1779			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 169) UPI: 42-4-5.24E - Gravity Line, DB: 3127/31			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 170) UPI: 42-3D-33 - Gravity Line, DB: 10298/1790			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 171) UPI: 42-3D-34 - Gravity Line, DB: 8784/252			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 172) UPI: 42-3D-36 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 173) UPI: 42-3D-38 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 174) UPI: 42-3D-37 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 175) UPI: 42-1R-5 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 176) UPI: 42-3D-30 - Gravity Line, DB: 1754/73			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 177) UPI: 42-3D-31 - Gravity Line, DB: 6306/1321			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 178) UPI: 42-3D-32 - Gravity Line, DB: 8432/684			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 179) UPI: 42-1R-6 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 180) UPI: 42-2-10.2D - Gravity Line, Plan No. 5996 DB: 9405/211			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 182) UPI: 42-4-2.3 - Gravity Line, Plan No. 19563 DB: 8906/1501			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Manor View Circle - Gravity Line & Force Main, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Limekiln Drive - Gravity Line, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Valley Creek Road - Gravity Line, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Mill Creek Lane - Gravity Line, DB: Y58/546			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Knollbrook Circle - Gravity Line, DB: S51/87			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Brett Lane - Gravity Line, DB: H64/127			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Westgate Circle - Gravity Line, DB: H64/131			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Stuart Drive - Gravity Line, DB: H64/131			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Devonshire Lane - Gravity Line, DB: 6482/1996			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Charles Street - Gravity Line, DB: P30/117			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	Markel Road - Gravity Line, DB: 644/66			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Kelmar Road - Gravity Line, DB: 644/66			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Rickmar Lane - Gravity Line, MB: 964/570			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Weightman Drive - Gravity Line, DB: 7784/928			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Morris Lane - Gravity Line, DB: 7784/923			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Craig Lane - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Kenwood Court - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Clover Mill Lane - Gravity Line, DB: 3966/279 DB: 4748/586 DB: 6267/1			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Tunbridge Lane - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Atterbury Drive - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Flintshire Road - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Ashlawn Road - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Ashlawn Circle - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Oak Glen Road - Gravity Line, DB: 1288/316			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Oak Glen Drive - Gravity Line, DB: 1288/316			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Lapp Road - Gravity Line, DB: 1288/316 DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	McCoy Court - Gravity Line, DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Fetters Mill Drive - Gravity Line, DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Dale Lane - Gravity Line, DB: S54/409			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Forge Drive - Gravity Line, DB: S54/409			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Thayer Drive - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Almy Drive - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Aston Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	James Thomas Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	Spruce Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Hayes Road - Gravity Line, DB: R53/418			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Yellow Springs Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Phoenixville Road - Gravity Line, DB: 7174/1645 DB: 4748/586 DB: R53/410 DB: R53/418 MB: 964/552			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Conestoga Road - Gravity Line/ Force Main, DB: 7174/1645 MB: 964/552 DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Swedesford Road - Gravity Line, DB: H64/131 DB: H49/68 MB: 964/560			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Sidley Road - Gravity Line, DB: 7647/431 DB: 7246/1583 DB: 3127/19 DB: 117/407 DB: R53/418			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Flat Road - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Moores Road - Gravity Line, DB: 7174/1645 DB: 1945/330 DB: 644/62 DB: 440/532 DB: 440/538 DB:			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Mill Lane - Gravity Line, DB: 420/337 DB: 117/407 DB: Y58/546 DB: S51/87			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 2) UPI: 42-3-165 - Gravity Line & Force Main, DB: 9579/478			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 3) UPI: 42-3-149.1 - Gravity Line & Force Main, DB: 1358/17 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 4) UPI: 42-3R-11.1 - Gravity Line & Force Main, DB: 1357/564 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 5) UPI: 42-3R-12 - Gravity Line & Force Main, DB: 1357/568 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 6) UPI: 42-3R-13 - Gravity Line & Force Main, DB: 1357/572 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 7) UPI: 42-3-179 - Gravity Line & Force Main, DB: 1357/576 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 8) UPI: 42-3-180 - Gravity Line & Force Main, DB: 1678/190 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 9) UPI: 42-3Q-19 - Gravity Line & Force Main, DB: 1357/584 1988/08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 10) UPI: 42-3Q-18 - Gravity Line & Force Main, DB: 1357/588 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 11) UPI: 42-3Q-9 - Gravity Line & Force Main, DB: 1357/592 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 12) UPI: 42-3-182 - Gravity Line & Force Main, DB: 1358/1 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 13) UPI: 42-3-181 - Gravity Line & Force Main, DB: 1357/592 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 14) UPI: 42-3-183 - Gravity Line & Force Main, DB: 1358/5 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 15) UPI: 42-3-184 - Gravity Line & Force Main, DB: 1358/9 1988-08895			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PLANEBROOK DRAINAGE AREA (PB)	(PB 16) UPI: 42-3-185.1 - Gravity Line & Force Main, DB: 1358/13 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 17) UPI: 42-3-185 - Gravity Line & Force Main, DB: 1358/17 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 18) UPI: 42-3-145 - Gravity Line, DB: 1358/126 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 19) UPI: 42-6-10.1 - Gravity Line, DB: 1358/26 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 20) UPI: 42-6-10 - Gravity Line, DB: 1358/30 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 22) UPI: 42-3-228 - Gravity Line, DB: 1358/82 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 23) UPI: 42-6-23.1 - Gravity Line, DB: 1358/86 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 24) UPI: 42-6-23.4 - Gravity Line, DB: 1358/94 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 25) UPI: 42-6-23.4A - Gravity Line, DB: 1358/94 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 26) UPI: 42-6-24.2 - Gravity Line, DB: 1358/54 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 27) UPI: 42-6-21 - Gravity Line, DB: 1358/114 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 28) UPI: 42-6-23 - Gravity Line, DB: 1358/90 DB: 1379/275			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 29) UPI: 42-6-23.3 - Gravity Line, DB: 1358/98 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 30) UPI: 42-6-23.2D - Gravity Line, DB: 1358/102 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 31) UPI: 42-6-23.2 - Gravity Line, DB: 1358/122 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 32) UPI: 42-6-23.2C - Gravity Line, DB: 1358/106 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 33) UPI: 42-6-23.2B - Gravity Line, DB: 1358/110 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 34) UPI: 42-6-23.2A - Gravity Line, DB: 1358/118 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 36) UPI: 42-6-246 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 37) UPI: 42-6-222 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 38) UPI: 42-6-223 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 39) UPI: 42-6-224 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 40) UPI: 42-6-225 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 41) UPI: 42-6-226 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PLANEBROOK DRAINAGE AREA (PB)	(PB 42) UPI: 42-6-227 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 43) UPI: 42-6-228 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 44) UPI: 42-6-229 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 45) UPI: 42-6-230 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 46) UPI: 42-6G-16-E - Gravity Line, DB: Y58/519			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Whitewoods Lane - Gravity Line, DB: 5406/689			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Glenloch Way - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Ravine Road - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Ravine Road Railroad Crossing - Gravity Line,			ROW - No		$ -
	PLANEBROOK DRAINAGE AREA (PB)	King Road - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	South Phoenixville Pike - Gravity Line,			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Lancaster Avenue - Gravity Line,			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Planebrook Road / Phoenixville Pike - Force Main,			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 2) UPI: 42-4-87.1 - Gravity Line, MB: 983/341 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 3) UPI: 42-4N-22 - Gravity Line, MB: 983/405 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 4) UPI: 42-4N-21 - Gravity Line, MB: 983/357 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 5) UPI: 42-4N-20.1 - Gravity Line, MB: 983/361 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 6) UPI: 42-4N-39 - Gravity Line, MB: 983/365 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 7) UPI: 42-4N-40 - Gravity Line, MB: 983/369 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 8) UPI: 42-4N-41 - Gravity Line, MB: 983/345 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 9) UPI: 42-4N-42 - Gravity Line, MB: 983/409 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 10) UPI: 42-4N-43 - Gravity Line, MB: 983/413 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 11) UPI: 42-4N-44 - Gravity Line, MB: 1357/504 1987-08895			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 12) UPI: 42-4-312 - Gravity Line, MB: 983/373 1987-08872			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 13) UPI: 42-4-312.1 - Gravity Line, MB: 983/377 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 14) UPI: 42-4-311 - Gravity Line, MB: 983/381 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 15) UPI: 42-4-310.1 - Gravity Line, MB: 983/417 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 16) UPI: 42-4-310 - Gravity Line, MB: 983/385 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 17) UPI: 42-4-310.2 - Gravity Line, MB: 983/421 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 18) UPI: 42-4-309 - Gravity Line, MB: 983/421 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 19) UPI: 42-4-309.1 - Gravity Line, MB: 983/425 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 20) UPI: 42-4-308.2 - Gravity Line, MB: 983/429 Plan No. 16523			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 21) UPI: 42-4-308.1 - Gravity Line, MB: 983/369 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 22) UPI: 42-4-308 - Gravity Line, MB: 983/393 DB: 3608/825			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 23) UPI: 42-4-307 - Gravity Line, MB: 983/397 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 24) UPI: 42-4-306 - Gravity Line, MB: 983/433 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 25) UPI: 42-4-304.2 - Gravity Line, MB: 983/437, 441 445 & 449			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 26) UPI: 42-4-304-E - Gravity Line, MB: 983/453 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 27) UPI: 42-4-303 - Gravity Line, DB: 1358/34 Plan No. 19774			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 28) UPI: 42-4-319-E - Gravity Line,			Easement - No		$ -
	WESTGATE DRAINAGE AREA (WG)	(WG 29) UPI: 42-4-296.16 - Gravity Line, Plan No. 15362			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 30) UPI: 42-4-296.15 - Gravity Line, Plan No. 15362			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 31) UPI: 42-4-296.14 - Gravity Line, Plan No. 18412			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 32) UPI: 42-4-296.7 - Gravity Line, DB: 5792/93			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 34) UPI: 42-4-297.2 - Gravity Line, Plan No. 18267			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 35) UPI: 42-4-297.3 - Gravity Line, Plan No. 20467			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 37) UPI: 42-7B-134 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 38) UPI: 42-7B-135 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 39) UPI: 42-4P-15 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 40) UPI: 42-4P-16 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 41) UPI: 42-4P-17 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 42) UPI: 42-4P-18 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 43) UPI: 42-4P-19 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 44) UPI: 42-4P-20 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 45) UPI: 42-4P-29 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 46) UPI: 42-4P-30 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 47) UPI: 42-4P-31 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 48) UPI: 42-4P-32 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 49) UPI: 42-7B-145 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 50) UPI: 42-7B-144 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 51) UPI: 42-7B-143 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 52) UPI: 42-7B-142 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 53) UPI: 42-4P-37 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 54) UPI: 42-4P-36 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 55) UPI: 42-7B-151 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 56) UPI: 42-7B-150 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 57) UPI: 42-7B-149 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 58) UPI: 42-7B-148 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 59) UPI: 42-7B-147 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 60) UPI: 42-7B-146 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 61) UPI: 42-7B-137 - Gravity Line , MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 62) UPI: 42-4P-27 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 63) UPI: 42-4P-24 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 64) UPI: 42-4P-23 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 65) UPI: 42-4P-22 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 66) UPI: 42-4P-21 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 67) UPI: 42-4P-33 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 68) UPI: 42-4P-26 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 69) UPI: 42-4P-25 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 70) UPI: 42-7B-136 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 71) UPI: 42-7B-100.2 - Gravity Line, DB: 5648/717			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 72) UPI: 42-7B-100 - Gravity Line, DB: 5648/711			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 73) UPI: 42-7A-41 - Gravity Line, DB: 5648/564			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 74) UPI: 42-7A-39 - Gravity Line, DB: 5686/926			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 75) UPI: 42-7A-38 - Gravity Line, DB: 5648/558			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 76) UPI: 42-7A-37 - Gravity Line, DB: 5676/1121			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 77) UPI: 42-7A-36 - Gravity Line, DB: 5676/1145			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 78) UPI: 42-7A-35 - Gravity Line, DB: 5676/1139			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 79) UPI: 42-7A-34 - Gravity Line, DB: 5676/1096			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 80) UPI: 42-7A-33 - Gravity Line, DB: 5676/1133			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 81) UPI: 42-7A-32 - Gravity Line, DB: 5676/1151			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 82) UPI: 42-7A-31 - Gravity Line, DB: 5676/1103			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 83) UPI: 42-7A-27 - Gravity Line, DB: 5542/1669 2003-00682			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 84) UPI: 42-7A-25.3 - Gravity Line, DB: 3802/1172			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 85) UPI: 42-7A-11.9 - Gravity Line, DB: 4599/2192			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 86) UPI: 42-7A-11.10 - Gravity Line, DB: 4599/2192			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 87) UPI: 42-7A-92.5 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 88) UPI: 42-7A-92.6 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 89) UPI: 42-7A-92.12 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 90) UPI: 42-7A-92.10 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 91) UPI: 42-7A-68 - Gravity Line, DB: 5648/577			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 92) UPI: 42-7A-69 - Gravity Line, DB: 5686/942			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 93) UPI: 42-7A-92.15 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 94) UPI: 42-7A-74 - Gravity Line, DB: 5648/583			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 95) UPI: 42-7A-73 - Gravity Line, DB: 5648/570			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 96) UPI: 42-7A-92.14 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 97) UPI: 42-7A-88 - Gravity Line, DB: 5648/699			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 99) UPI: 42-7A-55 - Gravity Line, DB: 5648/693			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 100) UPI: 42-7A-65 - Gravity Line, DB: 5676/1115			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 101) UPI: 42-7A-84 - Gravity Line, DB: 5676/1127			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 102) UPI: 42-7A-83 - Gravity Line, DB: 5648/730			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 103) UPI: 42-7A-82 - Gravity Line, DB: 5676/1109			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 104) UPI: 42-7A-81 - Gravity Line, DB: 5648/723			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 105) UPI: 42-7A-80 - Gravity Line, DB: 5542/1657 2003-00679			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 106) UPI: 42-7A-80.1 - Gravity Line, DB: 5542/1657 2003-00679			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 107) UPI: 42-7A-79 - Gravity Line, DB: 5686/912			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 108) UPI: 42-7-40 - Gravity Line, DB: 5542/1624 2003-00680			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 110) UPI: 42-7-43 - Gravity Line, DB: 5686/932			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 111) UPI: 42-7-44 - Gravity Line, DB: 5686/936			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 112) UPI: 42-7-48 - Gravity Line, DB: 5648/595			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 113) UPI: 42-7A-60 - Gravity Line, DB: 5542/2126 2003-02145			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 114) UPI: 42-7A-59 - Gravity Line, DB: 5648/589			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 115) UPI: 42-7A-58 - Gravity Line, DB: 5542/1691 2003-00683			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Westgate Village Drive - Gravity Line & Force Main, DB: 4804/2104			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Buttonwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Beechwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Ridge Road - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Ridgewood Drive - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Sleighride Drive - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Summit Road - Gravity Line, DB: S60/29 MB: 114/645 DB: 2603/357 DB: S36/49			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Carol Lane - Gravity Line, MB: 114/645			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Diane Drive - Gravity Line, MB: 114/645			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Dawn Way - Gravity Line, DB: 3802/1172			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Judith Lynn Way - Gravity Line, DB: 4599/2180			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Carla Terrace - Gravity Line, DB: 4599/2180			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Rogers Way - Gravity Line, DB: 4599/2224			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Barbara Drive - Gravity Line, DB: O34/259			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Woodcrest Lane - Gravity Line, DB: T33/81			ROW - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 1) UPI: 42-4-15.1 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 3) UPI: 42-4-15.21 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 4) UPI: 42-4-15.14 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	Flat Road - Gravity Line & Force Main, DB: U28/28			ROW - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	Great Valley Parkway - Gravity Line & Force Main, DB: D62/327 MB: 634/200			ROW - Yes		$ 1.00
							$ 668.00

Note 1: Each easement is designated as either Yes or No.
"Yes" easement has been confirmed with an instrument recorded in the Office of the Recorder of Deeds in and for Chester County.
"No" easement will have to be acquired by the Township.

353.30	LAND AND LAND RIGHTS - PUMPING						
	DEER RUN DRAINAGE AREA (DR)	(DR 1) UPI: 4-4F-13-E - Pump Station, DB: 8914/1465			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 8) UPI: 42-3-107.3N - Gravity, FM & Pump Station, DB: 6262/2370			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 1) UPI: 53-2-18 & 53-2-127 - Pump Station, DB: 6033/577			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 9) UPI: 42-4-26.1 - Gravity, FM & Pump Station, DB: 6773/273 MB: 173/277			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 2) UPI: 42-2-10.4 - Gravity, FM & Pump Station, Plan No. 5369			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 1) UPI: 42-3-370 - Gravity, FM & Pump Station, DB: 7234/1961 Plan No. 16381			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 5) UPI: 42-4-71.2A - Pump Station & Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 1) UPI: 42-4-2.4-E - Gravity Line, FM & Pump Station, DB: 3127/39			Township Owned Property		$ 1.00
		(ML 91) UPI: 42-4-75.1 - Gravity Line & Pump Station, DB: 1357/483 & 488 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 1) UPI: 42-3-153.3 - Gravity, FM & Pump Station, DB: 9950/1608 DB: 9830/1917			Easement - Yes		$ 1.00
		Frame Avenue - Gravity Line, FM & Pump Station , DB: P40/238			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 1) UPI: 42-4-87.2 - Gravity, FM & Pump Station, MB: 983/353 1987-08872	(blank)	(blank)	Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 2) UPI: 42-4-15.9 - Gravity, FM & Pump Station, MB: 634/200	(blank)	(blank)	Easement - Yes		$ 1.00
							$ 13.00

Note 1: Each easement is designated as either Yes or No.
"Yes" easement has been confirmed with an instrument recorded in the Office of the Recorder of Deeds in and for Chester County.
"No" easement will have to be acquired by the Township.

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT						
		Sewer - Capactiy Rights	2017	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights outside of East Whiteland Township		$ 2,168,888.00
		VFSA Capacity Rights	2013	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights at Valley Forge Treatment Plant		$ 8,916,353.50
	TOTAL STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT						**$ 11,085,241.50**
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING						
	(P.S. 1) Deer Run	(P.S. 1) Deer Run - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1976	Exhibit No. 3, Appendix D			$ 78,670.00
	(P.S. 1) Deer Run	(P.S. 1) Deer Run - Generator	2018	Steele Spreadsheet			$ 51,550.00
	(P.S. 11) Hillbrook Circle	(P.S. 11) Hillbrook Circle - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2000	Township Records			$ 464,526.14
	(P.S. 12) King Road	(P.S. 12) King Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2004	Exhibit No. 3, Appendix D			$ 233,129.00
	(P.S. 13) Malvern Hunt	(P.S. 13) Malvern Hunt - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2000	Escrow			$ 374,100.00
	(P.S. 14) Planebrook Road	(P.S. 14) Planebrook Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2018	Escrow			$ 353,800.00
	(P.S. 14) Planebrook Road	(P.S. 14) Planebrook Road - Electrical	2018	Escrow			$ 79,730.00
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane - Reconstruction	2014	Exhibit No. 3, Appendix D, Township Records			$ 3,001,023.00
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane - Original Building (retained after reconstruction)	1976	Exhibit No. 3, Appendix D			$ 40,000.00
	(P.S. 3) Wilburdale	(P.S. 3) Wilburdale - Reconstruction, general	2017	Escrow			$ 469,600.00
	(P.S. 3) Wilburdale	(P.S. 3) Wilburdale - Reconstrcution, electrical	2017	Escrow			$ 95,500.00
	(P.S. 4) Lee Boulevard	(P.S. 4) Lee Boulevard - Reconstruction	2007	Township Records			$ 556,117.00
		(P.S. 4) Lee Boulevard - Pump Upgrades	2002	Estimate			$ 49,664.45
	(P.S. 5) Meadowview	(P.S. 5) Meadowview - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1980	Exhibit No. 3, Appendix D			$ 106,067.00
	(P.S. 6) Flat Road	(P.S. 6) Flat Road - Reconstruction	2019	Bid Tab & estimate for Township contribution			$ 352,000.00
	(P.S. 7) Lapp Road	(P.S. 7) Lapp Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1987	Exhibit No. 3, Appendix D			$ 179,265.00
	(P.S. 7) Lapp Road	(P.S. 7) Lapp Road - Upgrades: generator, pump control panel and transfer switch	2006	Estimate			$ 131,119.57

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	(P.S. 8) Westgate	(P.S. 8) Westgate - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1988	Exhibit No. 3, Appendix D, Township Records			$ 78,824.35
	(P.S. 8) Westgate	(P.S. 8) Westgate - Upgrades: generator, pump control panel and transfer switch	2001	Exhibit No. 3, Appendix D, Township Records			$ 89,972.00
		50KW MMD POWER PRO PORTABLE GENERATOR	2007	Township Records			$ 23,866.00
		SEWER JET (DIESEL) - TRAILER MOUNTED	2009	Township Records			$ 53,907.50
		Capacity Rights (Wilson Road Pump Station)	2014	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights within Wilson Road Pump Station system		$ 1,142,844.37
	TOTAL STRUCTURES AND IMPROVEMENTS - PUMPING						**$ 8,005,275.38**
360.21	COLLECTION SEWERS - FORCE - MAINS						
	(P.S. 1) Deer Run	(P.S. 1) Deer Run FM - 4" ACP	1976	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		830	$ 31,269.40
	(P.S. 11) Hillbrook Circle	(P.S. 11) Hillbrook Circle FM - 4" PVC	2000	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		785	$ 85,964.86
	(P.S. 12) King Road	(P.S. 12) King Road FM - 4" PVC	2004	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2,400	$ 286,021.50
	(P.S. 13) Malvern Hunt	(P.S. 13) Malvern Hunt FM - 6" DIP	2000	Escrow		2,860	$ 279,122.94
	(P.S. 14) Planebrook	(P.S. 14) Planebrook FM - 8" PVC	2017	Township provided		2,545	$ 443,454.75
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane FM - 14" DIP	1976	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,400	$ 193,322.11
	(P.S. 3) Wilburdale Rd	(P.S. 3) Wilburdale Rd FM - 10" PVC Replacement	2016	Estimate		1,935	$ 89,428.47
	(P.S. 4) Lee Blvd	(P.S. 4) Lee Blvd FM - 8" DIP	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,310	$ 276,127.99
	(P.S. 5) Meadow View	(P.S. 5) Meadow View FM - 4" ACP	1980	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,245	$ 63,237.44
	(P.S. 6) Flat Rd	(P.S. 6) Flat Rd FM - 6" ACP	1979	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,655	$ 77,969.12
	(P.S. 7) Lapp Rd	(P.S. 7) Lapp Rd FM - 6" PVC	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,715	$ 340,443.41
	(P.S. 8) Westgate	(P.S. 8) Westgate FM - 8" PVC	1988	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,620	$ 137,992.57
	TOTAL COLLECTION SEWERS - FORCE - MAINS					**26,300**	**$ 2,304,354.55**
361.21	COLLECTION SEWERS - GRAVITY - MAINS						
		18" ACP	1975	Quantities from GIS, unit pricing from estimate		1,842	$ 58,356.08
		12" ACP	1975	Quantities from GIS, unit pricing from estimate		2,830	$ 68,677.29
		12" ACP	1978	Quantities from GIS, unit pricing from estimate		2,027	$ 61,740.49
		10" ACP	1975	Quantities from GIS, unit pricing from estimate		4,486	$ 75,582.08
		10" ACP	1977	Quantities from GIS, unit pricing from estimate		2,296	$ 45,057.04
		10" ACP	2012	Quantities from GIS, unit pricing from estimate		109	$ 7,711.37

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		36" ACP	1967	Quantities from GIS, unit pricing from estimate		157	$ 3,625.87
		27" ACP	1967	Quantities from GIS, unit pricing from estimate		3,833	$ 67,279.78
		24" ACP	1967	Quantities from GIS, unit pricing from estimate		243	$ 3,557.15
		24" ACP	1975	Quantities from GIS, unit pricing from estimate		632	$ 19,081.73
		10" PVC	1991	Quantities from GIS, unit pricing from estimate		1,427	$ 52,555.09
		10" PVC	1992	Quantities from GIS, unit pricing from estimate		1,054	$ 40,012.42
		10" PVC	1993	Quantities from GIS, unit pricing from estimate		183	$ 7,273.99
		10" PVC	2007	Quantities from GIS, unit pricing from estimate		8,646	$ 524,646.93
		10" PVC	2019	Quantities from GIS, unit pricing from estimate		492	$ 42,281.39
		10" PVC	2020	Quantities from GIS, unit pricing from estimate		1,275	$ 111,336.08
		8" ACP	1951	Quantities from GIS, unit pricing from estimate		719	$ 2,995.29
		8" ACP	1954	Quantities from GIS, unit pricing from estimate		2,913	$ 14,038.43
		8" ACP	1967	Quantities from GIS, unit pricing from estimate		3,298	$ 27,177.06
		8" ACP	1970	Quantities from GIS, unit pricing from estimate		5,901	$ 62,533.31
		8" ACP	1971	Quantities from GIS, unit pricing from estimate		2,094	$ 25,402.60
		8" ACP	1972	Quantities from GIS, unit pricing from estimate		1,725	$ 23,205.13
		8" ACP	1973	Quantities from GIS, unit pricing from estimate		6,653	$ 96,745.87
		8" ACP	1974	Quantities from GIS, unit pricing from estimate		6,831	$ 105,874.72
		8" ACP	1975	Quantities from GIS, unit pricing from estimate		49,832	$ 845,813.84
		8" ACP	1977	Quantities from GIS, unit pricing from estimate		7,370	$ 145,673.10
		8" ACP	1978	Quantities from GIS, unit pricing from estimate		16,989	$ 361,879.62
		8" ACP	1979	Quantities from GIS, unit pricing from estimate		4,942	$ 113,876.97
		8" ACP	1981	Quantities from GIS, unit pricing from estimate		7,549	$ 204,755.08
		8" ACP	2012	Quantities from GIS, unit pricing from estimate		430	$ 30,744.03
		8" PVC	1970	Quantities from GIS, unit pricing from estimate		346	$ 3,668.20
		8" PVC	1983	Quantities from GIS, unit pricing from estimate		1,492	$ 46,541.18
		8" PVC	1984	Quantities from GIS, unit pricing from estimate		3,842	$ 122,229.73

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" PVC	1985	Quantities from GIS, unit pricing from estimate		794	$ 25,549.19
		8" PVC	1987	Quantities from GIS, unit pricing from estimate		13,171	$ 445,308.18
		8" PVC	1988	Quantities from GIS, unit pricing from estimate		16,918	$ 586,647.87
		8" PVC	1990	Quantities from GIS, unit pricing from estimate		8,876	$ 322,292.20
		8" PVC	1991	Quantities from GIS, unit pricing from estimate		3,676	$ 136,365.76
		8" PVC	1992	Quantities from GIS, unit pricing from estimate		1,919	$ 73,418.31
		8" PVC	1993	Quantities from GIS, unit pricing from estimate		2,966	$ 118,574.34
		8" PVC	1994	Quantities from GIS, unit pricing from estimate		1,176	$ 48,812.47
		8" PVC	1996	Quantities from GIS, unit pricing from estimate		409	$ 17,626.35
		8" PVC	1997	Quantities from GIS, unit pricing from estimate		4,377	$ 195,693.34
		8" PVC	1998	Quantities from GIS, unit pricing from estimate		3,549	$ 161,226.12
		8" PVC	1999	Quantities from GIS, unit pricing from estimate		4,126	$ 191,811.88
		8" PVC	2000	Quantities from GIS, unit pricing from estimate		17,626	$ 841,402.41
		8" PVC	2001	Quantities from GIS, unit pricing from estimate		697	$ 33,916.65
		8" PVC	2002	Quantities from GIS, unit pricing from estimate		11,437	$ 573,796.70
		8" PVC	2003	Quantities from GIS, unit pricing from estimate		2,539	$ 130,439.13
		8" PVC	2004	Quantities from GIS, unit pricing from estimate		2,760	$ 150,691.88
		8" PVC	2005	Quantities from GIS, unit pricing from estimate		18,989	$ 1,084,944.19
		8" PVC	2006	Quantities from GIS, unit pricing from estimate		423	$ 25,135.71
		8" PVC	2007	Quantities from GIS, unit pricing from estimate		784	$ 47,935.30
		8" PVC	2011	Quantities from GIS, unit pricing from estimate		1,899	$ 132,177.28
		8" PVC	2012	Quantities from GIS, unit pricing from estimate		2,913	$ 208,075.48
		8" PVC	2013	Quantities from GIS, unit pricing from estimate		380	$ 27,836.86
		8" PVC	2014	Quantities from GIS, unit pricing from estimate		111	$ 8,385.04
		8" PVC	2017	Quantities from GIS, unit pricing from estimate		3,251	$ 267,817.00
		8" PVC	2018	Quantities from GIS, unit pricing from estimate		1,398	$ 118,706.70
		8" DIP	1954	Quantities from GIS, unit pricing from estimate		862	$ 4,154.49

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" DIP	1975	Quantities from GIS, unit pricing from estimate		274	$ 4,654.72
		8" CIP	1975	Quantities from GIS, unit pricing from estimate		123	$ 2,079.98
		20" ACP	1975	Quantities from GIS, unit pricing from estimate		4,544	$ 129,196.92
		16" ACP	1975	Quantities from GIS, unit pricing from estimate		349	$ 9,050.37
		12" PVC	1970	Quantities from GIS, unit pricing from estimate		1,503	$ 22,773.69
		12" PVC	2012	Quantities from GIS, unit pricing from estimate		81	$ 8,301.62
		12" PVC	2016	Quantities from GIS, unit pricing from estimate		1,348	$ 152,918.81
		15" PVC	2013	Quantities from GIS, unit pricing from estimate		916	$ 81,957.99
		15" PVC	2017	Quantities from GIS, unit pricing from estimate		2,253	$ 226,562.48
		18" PVC	1988	Quantities from GIS, unit pricing from estimate		1,496	$ 96,804.77
		18" PVC	2013	Quantities from GIS, unit pricing from estimate		2,835	$ 387,731.42
		18" PVC	2014	Quantities from GIS, unit pricing from estimate		139	$ 19,571.48
		18" PVC	2017	Quantities from GIS, unit pricing from estimate		621	$ 95,579.17
		10" DI	2020	Quantities from GIS, unit pricing from estimate		93	$ 8,118.65
		8" CSP	1978	Quantities from GIS, unit pricing from estimate		1,049	$ 22,339.74
		8" CSP	1983	Quantities from GIS, unit pricing from estimate		2,490	$ 77,680.40
		20" PVC	2014	Quantities from GIS, unit pricing from estimate		98	$ 12,406.81
		21" PVC	2014	Quantities from GIS, unit pricing from estimate		74	$ 9,339.15
	TOTAL COLLECTION SEWERS - GRAVITY - MAINS					**302,772**	**$ 10,767,737.96**
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES						
		Manholes	1951	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		6	$ 2,077.71
		Manholes	1954	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		22	$ 8,810.81
		Manholes	1967	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		35	$ 23,972.08
		Manholes	1970	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		28	$ 24,659.55
		Manholes	1971	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		9	$ 9,074.19
		Manholes	1972	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 5,589.66

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Manholes	1973	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		40	$ 48,339.55
		Manholes	1974	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 38,646.13
		Manholes	1975	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		297	$ 418,962.34
		Manholes	1977	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		50	$ 82,138.97
		Manholes	1978	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		83	$ 146,936.93
		Manholes	1979	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		24	$ 45,962.11
		Manholes	1980	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 4,128.63
		Manholes	1981	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 81,156.88
		Manholes	1983	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		17	$ 44,080.82
		Manholes	1984	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		24	$ 63,456.18
		Manholes	1985	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 13,376.28
		Manholes	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		67	$ 188,257.68
		Manholes	1988	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		89	$ 256,487.24
		Manholes	1990	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		40	$ 120,708.58
		Manholes	1991	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 92,502.00
		Manholes	1992	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		16	$ 50,864.94
		Manholes	1993	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		19	$ 63,128.39
		Manholes	1994	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		7	$ 24,141.72
		Manholes	1996	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 7,168.03
		Manholes	1997	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		23	$ 85,453.87
		Manholes	1998	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 113,259.95
		Manholes	1999	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		20	$ 77,279.51
		Manholes	2000	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		111	$ 440,368.85
		Manholes	2001	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 16,180.36
		Manholes	2002	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		61	$ 254,336.19
		Manholes	2003	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		13	$ 55,496.10
		Manholes	2004	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		15	$ 68,061.20

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Manholes	2005	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		98	$ 465,353.00
		Manholes	2006	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 19,772.02
		Manholes	2007	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 182,884.21
		Manholes	2011	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		9	$ 52,057.49
		Manholes	2012	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		17	$ 100,911.05
		Manholes	2013	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		14	$ 85,237.04
		Manholes	2014	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 25,014.12
		Manholes	2016	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 32,964.00
		Manholes	2017	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 246,501.10
		Manholes	2018	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		11	$ 77,599.65
		Manholes	2019	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 14,388.35
		Manholes	2020	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		8	$ 58,497.23
		Manholes	2021	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 14,624.31
	TOTAL COLLECTION SEWERS - GRAVITY - MANHOLES					**1,506**	**$ 4,350,867.01**
363.20	SERVICES TO CUSTOMERS						
		4" PVC	1982	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		3,190	$ 102,469.43
		4" PVC	1985	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,485	$ 52,315.53
		4" PVC	1986	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,320	$ 47,611.22
		4" PVC	1987	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		996	$ 36,853.27
		4" PVC	1988	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,952	$ 112,029.11
		4" PVC	1989	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		5,578	$ 216,183.43
		4" PVC	1993	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,629	$ 71,273.98
		4" PVC	1995	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		628	$ 28,853.50
		4" PVC	1996	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		227	$ 10,713.57
		4" PVC	1997	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		936	$ 45,795.05
		4" PVC	1998	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,142	$ 106,491.11
		4" PVC	1999	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,592	$ 81,005.82

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		4" PVC	2000	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		622	$ 32,495.47
		4" PVC	2001	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,397	$ 340,755.79
		4" PVC	2002	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,486	$ 136,495.47
		4" PVC	2003	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		464	$ 26,084.10
		4" PVC	2004	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,820	$ 407,503.61
		4" PVC	2012	Number of customers since 2004. Average year and estimated length of laterals used. Estimated Unit Price used.		54,800	$ 4,283,602.02
		4" ACP	1970	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,016	$ 69,770.80
		4" ACP	1976	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		13,260	$ 267,367.04
		4" ACP	1978	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,749	$ 64,086.47
		4" ACP	1980	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,951	$ 80,220.26
	TOTAL SERVICES TO CUSTOMERS					**119,240**	**$ 6,619,976.03**
365.20	FLOW MEASURING INSTALLATIONS						
	Woodview Apt., Matthew Road, and Erin Glen	Meter Pits	1976	Exhibit No. 3, Appendix D			$ 78,670.00
	TOTAL FLOW MEASURING INSTALLATIONS						**$ 78,670.00**
390.70	COMPUTER AND SOFTWARE						
		PIPE TECH SOFTWARE AND DURABOOK LAPTOP	2008	Township Records			$ 21,550.00
	TOTAL COMPUTER AND SOFTWARE						**$ 21,550.00**
391.70	TRANSPORTATION EQUIPMENT						
		2001 FORD E350 TRUCK	2001	Township Records			$ 39,952.00
		2003 GMC PICKUP TRUCK	2003	Township Records			$ 25,808.00
		2018 Carmate 20' Custom Cargo Trailer	2018	Township Records			$ 7,264.50
		2010 FORD F550 TRUCK	2010	Township Records			$ 62,722.85
		2011 GMC PICKUP TRUCK	2011	Township Records			$ 23,738.01
		2011 GMC PICKUP TRUCK	2011	Township Records			$ 20,470.45
		2019 Ford F-150 Unit	2019	Township Records			$ 33,000.00
	TOTAL TRANSPORTATION EQUIPMENT						**$ 212,955.81**
	SYSTEM TOTAL						**$ 43,447,309.24**

APPENDICES

APPENDIX A

SYSTEM MAPS

- **A1 – East Whiteland Township Sanitary Sewer Collection System**

APPENDIX B

- **Uniform System of Accounts - Section 300**
- **PA ACT 12 of 2016**

WASTEWATER UTILITY PLANT ACCOUNTS

	.1	.2
	Intangible Plant	Collection Plant
351. Organization	351.1	XXXXXXXXXX
352. Franchises	352.1	XXXXXXXXXX
353. Land and Land Rights	XXXXXXXXXX	353.2
354. Structures and Improvements	XXXXXXXXXX	354.2
355. Power Generation Equipment	XXXXXXXXXX	355.2
360. Collection Sewers - Force	XXXXXXXXXX	360.2
361. Collection Sewers - Gravity	XXXXXXXXXX	361.2
362. Special Collecting Structures	XXXXXXXXXX	362.2
363. Services to Customers	XXXXXXXXXX	363.2
364. Flow Measuring Devices	XXXXXXXXXX	364.2
365. Flow Measuring Installations	XXXXXXXXXX	365.2
366. Reuse Services	XXXXXXXXXX	XXXXXXXXXX
367. Reuse Meters and Meter Installations	XXXXXXXXXX	XXXXXXXXXX
370. Receiving Wells	XXXXXXXXXX	XXXXXXXXXX
371. Pumping Equipment	XXXXXXXXXX	XXXXXXXXXX
374. Reuse Distribution Reservoirs	XXXXXXXXXX	XXXXXXXXXX
375. Reuse Transmission and Distribution System	XXXXXXXXXX	XXXXXXXXXX
380. Treatment and Disposal Equipment	XXXXXXXXXX	XXXXXXXXXX
381. Plant Sewers	XXXXXXXXXX	XXXXXXXXXX
382. Outfall Sewer Lines	XXXXXXXXXX	XXXXXXXXXX
389. Other Plant and Misc. Equipment	389.1	389.2
390. Office Furniture and Equipment	XXXXXXXXXX	XXXXXXXXXX
391. Transportation Equipment	XXXXXXXXXX	XXXXXXXXXX
392. Stores Equipment	XXXXXXXXXX	XXXXXXXXXX
393. Tools, Shop and Garage Equipment	XXXXXXXXXX	XXXXXXXXXX
394. Laboratory Equipment	XXXXXXXXXX	XXXXXXXXXX
395. Power Operated Equipment	XXXXXXXXXX	XXXXXXXXXX
396. Communication Equipment	XXXXXXXXXX	XXXXXXXXXX
397. Miscellaneous Equipment	XXXXXXXXXX	XXXXXXXXXX
398. Other Tangible Plant	XXXXXXXXXX	XXXXXXXXXX

WASTEWATER UTILITY PLANT ACCOUNTS

.3	.4	.5	.6	.7
System Pumping Plant	Treatment and Disposal Plant	Reclaimed Water Treatment Plant	Reclaimed Water Distribution Plant	General Plant
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	352.6	XXXXXXXXXX
353.3	353.4	353.5	353.6	353.7
354.3	354.4	354.5	354.6	354.7
355.3	355.4	355.5	355.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	366.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	367.6	XXXXXXXXXX
370.3	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
371.3	XXXXXXXXXX	371.5	371.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	374.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	375.6	XXXXXXXXXX
XXXXXXXXXX	380.4	380.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	381.4	381.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	382.4	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
389.3	389.4	389.5	389.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	390.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	391.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	392.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	393.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	394.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	395.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	396.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	397.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	398.7

WASTEWATER UTILITY PLANT ACCOUNTS

The wastewater utility plant accounts have been designed utilizing an account matrix. The matrix employs a list of object accounts which in effect act as control accounts. The object accounts are further segregated by the matrix into classifications by functions or subaccount. The instructions for segregating the object accounts to the function subaccount are contained in Accounting Instruction 32. Listed below are the object account descriptions.

351. Organization

This account shall include all fees paid to federal or state governments for the privilege of incorporation and expenditures incident to organizing the corporation, partnership or other enterprise and putting it into readiness to do business. A sample of items to be included in this account are listed below.

1. Actual cost of obtaining certificates authorizing an enterprise to engage in the public utility business.
2. Fees and expenses for incorporation.
3. Fees and expenses for mergers or consolidations.
4. Office expenses incident to organizing the utility.
5. Stock and minute books and corporate seal.

Note A:--This account shall not include any discounts upon securities issued or assumed; nor shall it include any costs incident to negotiating loans, selling bonds or other evidences of debt, or expenses in connection with the authorization, issuance and sale of capital stock.

Note B:--Exclude from this account and include in the appropriate expense account the cost of preparing and filing papers in connection with the extension of the term of incorporation unless the first organization costs have been written off. Where charges are made to this account for expenses incurred in mergers, consolidations or reorganizations, amounts previously included herein or in similar accounts in the books of the companies concerned shall be excluded from this account.

352. Franchises

A. This account shall include amounts paid to the federal government, to a state or to a political subdivision thereof in consideration for franchises, consents or certificates, running in perpetuity or for a specified term of more than one year, together with necessary and reasonable expenses incident to procuring such franchises, consents or certificates of permission and approval, including expenses of organizing and merging separate corporations, where statutes require solely for the purpose of acquiring franchise.

B. If a franchise or certificate is acquired by assignment, the charge to this account in respect thereof shall not exceed the amount paid therefor by the utility to the assignor, nor shall it exceed the amount paid by the original grantee, plus the expense of acquisition to such grantee. Any excess of the amount actually paid by the utility over the amount specified shall be charged to account 426 - Miscellaneous Nonutility Expenses.

C. When any franchise has expired, the book cost thereof shall be credited hereto and charged to account 426 - Miscellaneous Nonutility Expenses, or to account 110.1 - Accumulated Amortization of Utility Plant in Service, as appropriate.

D. Records supporting this account shall be kept so as to show separately the book cost of each franchise.

Note:--Annual or other periodic payments under franchises shall not be included herein but in the appropriate expense account.

353. Land and Land Rights

This account shall include the cost of land and land rights used in connection with wastewater collection, pumping, treatment and disposal, reclaimed water treatment and distribution and general plant operations (See Accounting Instruction 24). A sample of items to be included in this account are listed below:

1. Bulkheads buried, not requiring maintenance or replacement.
2. Cost, first, of acquisition including mortgages and other liens assumed (but not subsequent interest thereon).
3. Condemnation proceedings, including court and counsel costs.
4. Consents and abutting damages, payment for.
5. Conveyancers' and notaries' fees.
6. Fees, commissions, and salaries to brokers, agents, and others in connection with the acquisition of the land or land rights.
7. Leases, cost of voiding upon purchase to secure possession of land.
8. Removing, relocating, or reconstructing property of others, such as buildings, highways, railroads, bridges, cemeteries, churches, telephone and power lines, etc., in order to acquire quiet possession.
9. Retaining walls unless identified with structures.
10. Special assessments levied by public authorities for public improvements on the basis of benefits for new

roads, new bridges, new sewers, new curbing, new pavements, and other public improvements, but not taxes levied to provide for the maintenance of such improvements.

11. Surveys in connection with the acquisition, but not amounts paid for topographical surveys and maps where such costs are attributable to structures or plant equipment erected or to be erected or installed on such land.
12. Taxes assumed, accrued to date of transfer of title.
13. Title, examining, clearing, insuring and registering in connection with the acquisition and defending against claims relating to the period prior to the acquisition.
14. Appraisals prior to closing title.
15. Cost of dealing with distributees or legatees residing outside of the state or county, such as recording power of attorney, recording will or exemplification of will, recording satisfaction of state tax.
16. Filing satisfaction of mortgage.
17. Documentary stamps.
18. Photographs of property at acquisition.
19. Fees and expenses incurred in the acquisition of sewer rights, and grants.
20. Cost of fill to extend bulkhead line over land under water, where riparian rights are held, which is not occasioned by the erection of a structure.
21. Sidewalks and curbs constructed by the utility on public property.
22. Labor and expenses in connection with securing rights of way, where performed by company employees and company agents.

354. Structures and Improvements

This account shall include the cost in place of structures and improvements used in connection with wastewater collection, pumping, treatment and disposal, reclaimed water treatment and distribution and general plant operations (See Accounting Instruction 25). A sample of items to be included in this account are listed below:

1. Architects' plans and specifications including supervision.
2. Boilers, furnaces, piping, wiring, fixtures, and machinery for heating, lighting, signaling, ventilating and air conditioning systems, plumbing, vacuum cleaning systems, incinerator and smoke pipe, flues, etc.

3. Bulkheads, including dredging, riprap fill, piling, decking, concrete fenders, etc., when exposed and subject to maintenance and replacement.
4. Commissions and fees to brokers, agents, architects and others.
5. Conduit (not to be removed) with its contents.
6. Damages to abutting property during construction.
7. Drainage systems.
8. Elevators, cranes, hoists, etc., and the machinery for operating them.
9. Excavation, including shoring, bracing, bridging, refill and disposal of excess excavated material, cofferdams around foundations, pumping water from cofferdam during construction, test borings.
10. Fences and fence curbs (not including protective fences isolating items of equipment, which should be charged to the appropriate equipment account).
11. Fire protection systems when forming a part of a structure.
12. Flagpole.
13. Floor covering (permanently attached).
14. Foundations and piers for machinery, constructed as a permanent part of a building or other item listed herein.
15. Grading and clearing when directly occasioned by the building of a structure.
16. Intrasite communication system, poles, pole fixtures, wires and cables.
17. Landscaping, lawns, shrubbery, etc.
18. Leases, voiding upon purchase, to secure possession of structures.
19. Leased property, expenditures on.
20. Lighting fixtures and outside lighting systems.
21. Marquee, permanently attached to building.
22. Painting, first cost.
23. Permanent paving, concrete, brick, flagstone, asphalt, etc., within the property lines.
24. Partitions, including movable.
25. Permits and privileges.
26. Power boards for services to a building.
27. Refrigerating systems for general use.
28. Retaining walls except when identified with land.
29. Roadways.
30. Roofs.
31. Scales, connected to and forming a part of a structure.
32. Water and wastewater systems, for general use.
33. Sidewalks, culverts, curbs and streets constructed by the utility on its property.

34. Sprinkling systems.
35. Stacks -- brick, steel, or concrete, when set on foundation forming part of general foundation and steelwork of a building.
36. Steel inspection during construction.
37. Storage facilities constituting a part of a building.
38. Storm doors and windows.
39. Temporary heating during construction (net cost).
40. Temporary water connection during construction (net cost).
41. Temporary shanties and other facilities used during construction (net cost).
42. Topographical maps.
43. Vaults constructed as part of a building.
44. Watchmen's sheds and clock systems (net cost when used during construction only).
45. Water meters and supply system for a building or for general company purposes.
46. Water supply piping, hydrants and wells.
47. Yard surfacing, gravel, concrete, or oil (First cost only).
48. Tunnels, intake and discharge when constructed as part of a structure including sluice gates and those constructed to house.

355. Power Generation Equipment

A. This account shall include the cost installed of any equipment used for the production of power principally used in pumping operations.

B. Subaccounts shall be maintained hereunder for the cost of equipment used for each type of power generating equipment.

360. Collecting Sewers - Force

This account shall include all sewers which are used to lift sewage from a low elevation to a higher elevation. The force sewer will include that pipe between the discharge outlet of the lift station and the receiving manhole.

361. Collecting Sewers - Gravity

This account shall include the installed cost of all gravity collecting sewers, interceptor, branch, trunk, lateral including service wye, and manholes and lampholes. Manholes shall be included as a separate unit of property.

362. Special Collecting Structures

Inverted siphon shall be included in this account but so

distinctly noted; also any other special designed structures unusual to the wastewater system should be included herein but specifically noted as to what they do.

363. Services to Customers

This account shall include the installed cost of service sewers, from collection sewer to the customer's property or curb line. A sample of items to be included in this account are listed below:

1. Jointing and jointing material.
2. Manhole or clean-out.
3. Municipal inspection and permits
4. Pavement disturbed.
5. Protection of street openings.
6. Tapping saddle.
7. Service connection wye shall be included in account 363 instead of account 361 when company owns service sewers to customers property line.

364. Flow Measuring Devices

A. This account shall include the cost of flow measuring and recording equipment and initial testing used for measuring the quantity of wastewater or wastewater effluent delivered by customers, whether actually in service or held in reserve.

B. When flow measuring equipment is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering flow measuring equipment shall be so kept that the utility can furnish information as to the number of devices of each type and size in service and in reserve, as well as the location of each device included in this account.

365. Flow Measuring Installations

A. This account shall include the cost of labor employed, materials used and expenses incurred in connection with the original installation of customers' flow measuring equipment. A sample of items to be included in this account are listed below:

1. Floats, connections, flumes, or wires.
2. Special manhole, boxes, or other separate housing.

B. When a flow measuring installation is permanently retired from service, the cost thereof shall be credited to this account.

366. Reuse Services

A. This account shall include the cost installed of reclaimed water service pipes and accessories leading to the customers' premises.

B. A complete reclaimed water service begins with the connection on the main and extends to but does not include the connection with the customer's meter. A stub service extends from the main to the property line, or the curb stop (curb stop cock).

C. Services which have been used but have become inactive shall be retired from utility plant in service immediately if there is no prospect for future use.

Items

1. Corporation stops or tees.
2. Gate valves and boxes.
3. Goose necks.
4. Jointing and jointing material.
5. Municipal inspection or permits.
6. Pavements disturbed.
7. Pipes.
8. Placing pipes and accessories.
9. Protection of street openings.
10. Service or curb boxes.
11. Service or curb stops (curb stop cocks).
12. Tapping main.
13. Tapping saddle.

367. Reuse Meters and Meter Installations

A. This account shall include the cost of meters, devices and appurtenances attached thereto, used for measuring the quantity of reclaimed water delivered to users, whether actually in service or held in reserve. It shall also include the cost of labor employed, materials used and expenses incurred in connection with the original installation of a customer's meters and devices and appurtenances attached thereto.

B. When a meter and/or meter installation is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering meters shall be so kept that the utility can furnish information as to the number of meters of each type and size in service and in reserve as well as the location of each meter included in this account.

D. A sample of items to be included in this account are listed

below:

1. Meters, including badging and initial testing.
2. Remote meter registers.
3. Installation labor (first installation only).
4. Meter coupling.
5. Meter bars.
6. Meter yokes.
7. Meter fittings, connections and shelves.
8. Meter vaults or boxes.
9. Stops.

Note A:--This account shall not include meters for recording the output of a supply or treatment plant, or those located on mains. It includes only those meters to record reclaimed water delivered to customers, including company use and for those used elsewhere in the system if a type available for general use.

Note B:--The utility shall maintain a statistical record to show separately the number of each type and size of meter or group of types and sizes as carried in the continuing property record. Underlying records shall be kept so that the utility can determine readily for each such classification the number of company-owned meters in service (subdivided between active and inactive) and the number of meters carried herein but not in service, the latter to include meters undergoing repairs; and the number of meters in service owned by customers.

370. Receiving Wells

This account shall include the cost of constructing wells at pumping stations or at other junction points along the collecting system, used for intercepting wastewater for clearing and screening, transfer to a pumping well or otherwise further convey it along the collecting system to the treatment plant or point of final
discharge. This account shall include any chemical feed apparatus and holding basins associated with the receiving well.

371. Pumping Equipment

This account shall include the cost installed of pumping equipment driven by electric power or diesel engines. A sample of items to be included in this account are listed below:

1. Motors or engines for driving pumps.
2. Pumps, including settings, gearing, shafting and belting.
3. Sewage piping within station, including valves.
4. Auxiliary equipment for motors and pumps such as oiling systems, cooling systems, condensers, etc.

5. Electrical power lines and switching.
6. Foundations, frames, and bed plates.
7. Hoist units.

374. Reuse Distribution Reservoirs

This account shall include the cost in place of reservoirs, tanks and appurtenances used in storing reclaimed water for distribution. A sample of items to be included in this account are listed below:

1. Bridges and culverts.
2. Clearing land.
3. Dams.
4. Embankments.
5. Fences.
6. Foundations.
7. Gates and gate houses.
8. Landscaping.
9. Lighting systems.
10. Piping system within reservoirs.
11. Retaining walls.
12. Roads and paths.
13. Rust-proofing apparatus.
14. Sewer drain or storm sewer.
15. Spillways and channels.
16. Standpipes.
17. Tanks.
18. Towers.
19. Valves.

375. Reuse Transmission and Distribution System

A. This account shall include the cost installed of reclaimed water transmission and distribution mains and appurtenances. A sample of items to be included in this account are listed below:

1. Air chambers.
2. Blow-offs and overflows.
3. Bridges and culverts.
4. Electrolysis control equipment.
5. Gauges and recorders.
6. Jointing and jointing material.
7. Manholes.
8. Meters and appurtenances.
9. Municipal inspection or permits.
10. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
11. Pipes.
12. Fire mains.
13. Fire Hydrants.

B. Records supporting this account shall be so kept as to show separately the cost of mains of different sizes and types and of each tunnel, bridge, or river crossing.

380. Treatment and Disposal Equipment

This account shall include the cost installed of apparatus equipment and other facilities used for the treatment of wastewater, disposal of sewage wastes and the treatment of effluent for reuse. A sample of items to be included in this account are listed below:

1. Aeration chambers.
2. Chemical equipment.
3. Disinfection facilities.
4. Filters.
5. Imhoff tank.
6. Land fill equipment and appurtenances.
7. Monitoring equipment.
8. Oxidation pond or lagoon.
9. Sedimentation equipment.
10. Septic tank.
11. Screen unit.
12. Sludge system.
13. Trucks, tractors, or other equipment used primarily for sludge or other waste disposal.
14. Package mechanical treatment plant.
15. Sedimentation basin.
16. Sludge digestion equipment.
17. Sludge filtration or dewatering equipment.

381. Plant Sewers

This account shall include the cost installed of plant yard piping and appurtenances, and facilities required to dispose of treatment plant liquid effluent into the outfall sewer line. A sample of items to be included in this account are listed below:

1. Unit to unit sections of yard piping.
2. Valves and vaults.
3. Pipe tunnels and galleries.
4. Filter and filter backwash piping.

382. Outfall Sewer Lines

This account shall include the installed cost of sewer line carrying effluent from treatment facility to point of discharge. Includible in this account would be headwall or outlet.

389. Other Plant and Miscellaneous Equipment

This account shall include the cost installed of all other intangible, collection system pumping, treatment and disposal, reclaimed water treatment and reclaimed water distribution plant not provided for in the foregoing accounts.

390. Office Furniture and Equipment

A. This account shall include the cost of office furniture and equipment owned by the utility and devoted to utility service, and not permanently attached to buildings, except the cost of such furniture and equipment which the utility elects to assign to other plant accounts on a functional basis. A sample of items to be included in this account are listed below:

1. Book cases and shelves.
2. Desk, chairs, and desk equipment.
3. Drafting room equipment.
4. Electronic data processing equipment.
5. Filing, storage and other cabinets.
6. Floor covering.
7. Library and library equipment.
8. Mechanical office equipment such as accounting machines, typewriters, etc.
9. Safes.
10. Tables.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

391. Transportation Equipment

This account shall include the cost of transportation vehicles used for utility purposes. A sample of items to be included in this account are listed below:

1. Airplanes.
2. Automobiles.
3. Bicycles.
4. Electrical vehicles.
5. Motor trucks.
6. Motorcycles.
7. Repair cars or trucks.
8. Tractors and trailers.
9. Other transportation vehicles.

392. Stores Equipment

A. This account shall include the cost of equipment used for the receiving, shipping, handling and storage of materials and supplies.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location. A sample of items to be included in this account are listed below:

1. Chain falls.
2. Counters.
3. Cranes (portable).
4. Elevating and stacking equipment (portable).
5. Hoists.
6. Lockers.
7. Scales.
8. Shelving.
9. Storage bins.
10. Trucks, hand and power driven.
11. Wheelbarrows.

393. Tools, Shop and Garage Equipment

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or includible in other accounts. A sample of items to be included in this account are listed below:

1. Air compressors.
2. Anvils.
3. Automobile repair shop equipment.
4. Battery charging equipment.
5. Belts, shafts and countershafts.
6. Boilers.
7. Cable pulling equipment.
8. Concrete mixers.
9. Drill presses.
10. Derricks.
11. Electric equipment.
12. Engines.
13. Forges.
14. Furnaces.
15. Foundations and settings specially constructed for and not expected to outlast the equipment for which provided.
16. Gas producers.
17. Gasoline pumps, oil pumps and storage tanks.
18. Greasing tools and equipment.

19. Hoists.
20. Ladders.
21. Lathes.
22. Machine tools.
23. Motor driven tools.
24. Motors.
25. Pipe threading and cutting tools.
26. Pneumatic tools.
27. Pumps.
28. Riveters.
29. Smithing equipment.
30. Tool racks.
31. Vises.
32. Welding apparatus.
33. Work benches.

394. Laboratory Equipment

A. This account shall include the cost installed of laboratory equipment used for general laboratory purposes and not specifically provided for or includible in other departmental or functional plant accounts. A sample of items to be included in this account are listed below:

1. Autoclaves.
2. Barometers.
3. Cameras.
4. Centrifuge.
5. Distilling apparatus.
6. Furnaces.
7. Microscopes.
8. Ovens.
9. Pitometers.
10. Rain gauges.
11. Refrigerators.
12. Scales.
13. Sterilizers.
14. Stop watches.
15. Testing machines.
16. Therometers.
17. Voltmeters.
18. Other bacteriological, electric, chemical hydraulic or research equipment.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

395. Power Operated Equipment

This account shall include the cost of power operated equipment used in construction of repair work exclusive of equipment includible in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted. A sample of items to be included in this account are listed below:

1. Air compressors, including driving unit and vehicle.
2. Back filling machines.
3. Boring machines.
4. Bulldozers.
5. Cranes and joists.
6. Diggers.
7. Engines.
8. Pile drivers.
9. Pipe cleaning machines.
10. Pipe coating or wrapping machines.
11. Tractors - Crawler type.
12. Trenchers.
13. Other power operated equipment.

Note:--It is intended that this account include only such large units as are generally self-propelled or mounted on moveable equipment.

396. Communication Equipment

This account shall include the cost installed of telephone, telegraph and wireless equipment for general use in connection with utility operations. A sample of items to be included in this account are listed below:

1. Antennae.
2. Booths.
3. Cables.
4. Distribution boards.
5. Extension cords.
6. Gongs.
7. Handsets, manual and dial.
8. Insulators.
9. Intercommunicating sets.
10. Loading coils.
11. Operators desks.
12. Poles and fixtures used wholly for telephone and telegraph wires.
13. Radio transmitting and receiving sets.
14. Remote control equipment and lines.
15. Sending keys.
16. Storage batteries.

17. Switchboards.
18. Teleautograph circuit connections.
19. Telegraph receiving sets.
20. Telephone and telegraph circuits.
21. Testing instruments.
22. Towers.
23. Underground conduit used wholly for telephone or telegraph wires and cable wires.

397. Miscellaneous Equipment

This account shall include the cost of equipment, apparatus, etc., used in utility operations, and which is not includible in any other account. A sample of items to be included in this account are listed below:

1. Hospital and infirmary equipment.
2. Kitchen equipment.
3. Recreation equipment.
4. Radios.
5. Restaurant equipment.
6. Soda fountains.
7. Operator's cottage furnishings.
8. Electric signs advertising the corporate name or symbol, plant or facility name, or otherwise serving only the general purpose of acquainting the public with the facilities and services of the utility.
9. Other miscellaneous equipment.

Note:--Miscellaneous equipment of the nature indicated above wherever practicable shall be included in the utility plant accounts on a functional basis.

398. Other Tangible Plant

This account shall include the cost of tangible utility plant not provided for elsewhere.

§ 1329. Valuation of acquired water and wastewater systems.

(a) Process to establish fair market value of selling utility.--Upon agreement by both the acquiring public utility or entity and the selling utility, the following procedure shall be used to determine the fair market value of the selling utility:

(1) The commission will maintain a list of utility valuation experts from which the acquiring public utility or entity and selling utility will choose.

(2) Two utility valuation experts shall perform two separate appraisals of the selling utility for the purpose of establishing its fair market value.

(3) Each utility valuation expert shall determine fair market value in compliance with the Uniform Standards of Professional Appraisal Practice, employing the cost, market and income approaches.

(4) The acquiring public utility or entity and selling utility shall engage the services of the same licensed engineer to conduct an assessment of the tangible assets of the selling utility. The assessment shall be incorporated into the appraisal under the cost approach required under paragraph (3).

(5) Each utility valuation expert shall provide the completed appraisal to the acquiring public utility or entity and selling utility within 90 days of execution of the service contract.

(b) Utility valuation experts.--

(1) The utility valuation experts required under subsection (a) shall be selected as follows:

(i) one shall be selected by the acquiring public utility or entity; and

(ii) one shall be selected by the selling utility.

(2) The utility valuation experts shall not:

(i) derive any material financial benefit from the sale of the selling utility other than fees for services rendered; or

(ii) be an immediate family member of a director, officer or employee of either the acquiring public utility, entity or selling utility within a 12-month period of the date of hire to perform an appraisal.

(3) Fees paid to utility valuation experts may be included in the transaction and closing costs associated with acquisition by the acquiring utility or entity. Fees eligible for inclusion may be of an amount not exceeding 5% of the fair market value of the selling utility or a fee approved by the commission.

(c) Ratemaking rate base.--The following apply:

(1) The ratemaking rate base of the selling utility shall be incorporated into the rate base of:

(i) the acquiring public utility during the acquiring public utility's next base rate case; or

(ii) the entity in its initial tariff filing.

(2) The ratemaking rate base of the selling utility shall be the lesser of the purchase price negotiated by the acquiring public utility or entity and selling utility or the fair market value of the selling utility.

(d) Acquisitions by public utility.--The following apply:

(1) If the acquiring public utility and selling utility agree to use the process outlined in subsection (a), the acquiring public utility shall include the following as an attachment to its application for commission approval of the acquisition filed pursuant to section 1102 (relating to enumeration of acts requiring certificate):

(i) Copies of the two appraisals performed by the utility valuation experts under subsection (a).

(ii) The purchase price of the selling utility as agreed to by the acquiring public utility and selling utility.

(iii) The ratemaking rate base determined pursuant to subsection (c)(2).

(iv) The transaction and closing costs incurred by the acquiring public utility that will be included in its rate base.

(v) A tariff containing a rate equal to the existing rates of the selling utility at the time of the acquisition and a rate stabilization plan, if applicable to the acquisition.

(2) The commission shall issue a final order on an application submitted under this section within six months of the filing date of an application meeting the requirements of subsection (d)(1).

(3) If the commission issues an order approving the application for acquisition, the order shall include:

(i) The ratemaking rate base of the selling utility, as determined under subsection (c)(2).

(ii) Additional conditions of approval as may be required by the commission.

(4) The tariff submitted pursuant to subsection (d)(1)(v) shall remain in effect until such time as new rates are approved for the acquiring public utility as the result of a base rate case proceeding before the commission. The acquiring public utility may collect a distribution system improvement charge during this time, as approved by the commission under this chapter.

(5) The selling utility's cost of service shall be incorporated into the revenue requirement of the acquiring public utility as part of the acquiring utility's next base rate case proceeding. The original source of funding for any part of the water or sewer assets of the selling utility shall not be relevant to determine the value of said assets.

(e) Acquisitions by entity.--An entity shall provide all the information required by subsection (d)(1) to the commission as an attachment to its application for a certificate of public convenience filed pursuant to section 1102.

(f) Postacquisition projects.--The following apply:

(1) An acquiring public utility's postacquisition improvements that are not included in a distribution improvement charge shall accrue allowance for funds used during construction after the date the cost was incurred until the asset has been in service for a period of four years or until the asset is included in the acquiring public utility's next base rate case, whichever is earlier.

(2) Depreciation on an acquiring public utility's postacquisition improvements that have not been included in the calculation of a distribution system improvement charge shall be deferred for book and ratemaking purposes.

(g) Definitions.--The following words and phrases when used in this section shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Acquiring public utility." A water or wastewater public utility subject to regulation under this title that is acquiring a selling utility as the result of a voluntary arm's-length transaction between the buyer and seller.

"Allowance of funds used during construction." An accounting practice that recognizes the capital costs, including debt and equity funds that are used to finance the construction costs of an improvement to a selling utility's assets by an acquiring public utility.

"Entity." A person, partnership or corporation that is acquiring a selling utility and has filed or whose affiliate has

filed an application with the commission seeking public utility status pursuant to section 1102.

"Fair market value." The average of the two utility valuation expert appraisals conducted under subsection (a)(2).

"Ratemaking rate base." The dollar value of a selling utility which, for postacquisition ratemaking purposes, is incorporated into the rate base of the acquiring public utility or entity.

"Rate stabilization plan." A plan that will hold rates constant or phase rates in over a period of time after the next base rate case.

"Selling utility." A water or wastewater company located in this Commonwealth, owned by a municipal corporation or authority that is being purchased by an acquiring public utility or entity as the result of a voluntary arm's-length transaction between the buyer and seller.

"Utility valuation expert." A person hired by an acquiring public utility and selling utility for the purpose of conducting an economic valuation of the selling utility to determine its fair market value.

(Apr. 14, 2016, P.L.76, No.12, eff. 60 days)

2016 Amendment. Act 12 added section 1329.

APPENDIX C

OWNED PROPERTY & EASEMENTS OF VALUE

- **(TO BE PROVIDED)**

APPENDIX D

SUPPORTING DOCUMENTS

- **EXHIBIT NO. 3**
- **EXHIBIT NO. 4**
- **EXHIBIT NO. 5**
- **GRAVITY STRUCTURE PARKING STRUCTURE**

Exhibit No. 3
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Pump Stations

Pump Station		Year Placed in Service	Original Cost	Cost Index Original Nov. 2005		2005 Replacement Cost	Cost Index Current	Trended Current Replacement Cost
~~Mill Lane~~	Replaced 2013	~~1976~~	~~$133,739~~	~~2401~~	~~7630~~	~~$425,000~~		
Deer Run		1976	78,670	2401	7630	250,000	11184	$366,441
Flat Road		1979	98,378	3003	7630	250,000	11184	366,441
~~Wilburdale~~	Replaced 2017	~~1979~~	~~98,378~~	~~3003~~	~~7630~~	~~250,000~~		
Meadowview		1980	106,067	3237	7630	250,000	11184	366,441
Lee Boulevard		1987	144,378	4406	7630	250,000	11184	366,441
Westgate		1988	148,080	4519	7630	250,000	11184	366,441
Church Road		1989	151,201	4615	7630	250,000	11184	366,441
Lapp Road		1995	179,265	5471	7630	250,000	11184	366,441
Hillbrook Circle		2002	214,220	6538	7630	250,000	11184	366,441
Frame Avenue		2002	214,220	6538	7630	250,000	11184	366,441
King Road		2004	233,129	7115	7630	250,000	11184	366,441
Three Meter Pits		1976	78,670	2401	7630	250,000	11184	366,441
			$1,646,278			**$2,750,000**		**$4,030,851**

Developer Built Subtractions

Pump Station		Year Placed in Service	Original Cost	Cost Index Original Nov. 2005		2005 Replacement Cost	Cost Index Current	Trended Current Replacement Cost
Flat Road		1979	$98,378	3003	7630	$250,000	11184	$366,441
~~Wilburdale~~	Replaced 2017	~~1979~~	~~98,378~~	~~3003~~	~~7630~~	~~250,000~~		
Lapp Road		1995	179,265	5471	7630	250,000	11184	366,441
			$277,643			**$500,000**		**$732,882**

Exhibit No. 3
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Pump Stations

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Wilson Road PS Improvements - Tredyffrin Twp.	2012	$911,521	9308	11184	$1,095,199
Mill Lane Pump Station	2013	3,001,023	9547	11184	3,515,639
Wilburdale Pump Station	2017	533,051	10738	11184	555,196
Church Road PS Upgrade	2005	177,000	7446	11184	265,848
Deer Run PS Generator	2017	51,550	10738	11184	53,692
Lee Boulevard Pump Station and Force Main	2008	556,177	8310	11184	748,523
		$5,230,322			**$6,234,097**

Associated Retirements	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Deer Run PS Generator	1975	$(10,619)	2212	11184	$(53,692)
		$(10,619)			**$(53,692)**
	Net Total	**$6,588,338**			**$9,478,375**

Exhibit No. 4
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Sewers

Force Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot		Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1976	14" DIP	3,600	$180.69		$650,484	2401	7630	$204,694	11184	$953,456
1976	4"	730	119.72		87,396	2401	7630	27,502	11184	128,101
1979	4"	1,600	119.72		191,552	3003	7630	75,378	11184	280,770.04
1979	6"	2,240	127.80		286,272	3003	7630	112,652	11184	419,607
1980	4"	1,600	119.72		191,552	3237	7630	81,269	11184	280,770
1972	6"	3,200	127.80		408,960	1753	7630	93,959	11184	599,439
1988	8"	1,700	140.84		239,428	4519	7630	141,818	11184	350,945
1989	8"	1,340	140.84		188,726	4615	7630	114,142	11184	276,627
1991	6"	2,335	127.80		298,413	4835	7630	189,102	11184	437,403
1995	6"	4,600	127.80		587,880	5471	7630	421,545	11184	861,693
2002	4"	795	119.72		95,177	6538	7630	81,556	11184	139,508
2002	6"	1,600	127.80		204,480	6538	7630	175,215	11184	299,719
2004	6"	1,600	127.80		204,480	7115	7630	190,681	11184	299,719
		26,940			**$3,634,800**			**$1,909,513**		**$5,327,759**

Exhibit No. 4
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Sewers

Gravity Sewer Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	18"	320	$153.87	3	$4,748.50	$63,484	1381	7630	$11,490	11184	$93,052
1970	12"	4,410	126.51	14	4,748.50	624,388	1381	7630	113,012	11184	915,206
1970	10"	840	121.04	5	4,748.50	125,416	1381	7630	22,700	11184	183,830
1976	36"	100	$226.57	1	4,748.50	27,406	2401	7630	8,624	11184	40,170
1976	27"	4,000	190.22	12	4,748.50	817,862	2401	7630	257,364	11184	1,198,793
1976	24"	680	164.87	4	4,748.50	131,106	2401	7630	41,256	11184	192,170
1976	12"	3,221	126.51	18	4,748.50	492,962	2401	7630	155,125	11184	722,566
1976	10"	3,876	121.04	17	4,748.50	549,876	2401	7630	173,034	11184	805,988
1982	10"	2,240	$121.04	7	4,748.50	304,369	3825	7630	152,587	11184	446,133
		19,687		**81**		**$3,136,868**			**$935,192**		**$4,597,908**

Developer Built Subtractions

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	10"	840	$121.04	3	$4,748.50	$115,919	1381	7630	$20,981	11184	$169,910
1970	12"	4,410	126.51	14	4,748.50	624,388	1381	7630	113,012	11184	915,206
		5,250		**17**		**$740,307**			**$133,993**		**$1,085,116**

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Conestoga Road Sewer Main	2015	$1,853,778	10036	11184	$2,065,864
		$1,853,778			**$2,065,864**
Associated Retirements					
Conestoga Road Sewer Main	1975	$(408,600)	2212	11184	$(2,065,864)
		$(408,600)			**$(2,065,864)**
	Net Total	**$2,246,377**			**$3,512,792**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Gravity Sewer Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	8"	23,200	$111.50	81	$4,748.50	$2,971,429	1381	7630	$537,817	11184	$4,355,413
1976	8"	51,134	111.50	214	4,748.50	6,717,620	2401	7630	2,113,893	11184	9,846,446
1978	8"	10,600	111.50	49	4,748.50	1,414,577	2776	7630	514,661	11184	2,073,435.44
1980	8"	11,380	111.50	54	4,748.50	1,525,289	3237	7630	647,132	11184	2,235,714
1982	8"	12,300	111.50	64	4,748.50	1,675,354	3825	7630	839,891	11184	2,455,674
1985	8"	5,725	111.50	27	4,748.50	766,547	4195	7630	421,425	11184	1,123,577
1986	8"	5,090	111.50	31	4,748.50	714,739	4295	7630	402,310	11184	1,047,638
1987	8"	3,840	111.50	14	4,748.50	494,639	4406	7630	285,660	11184	725,024
1988	8"	11,385	111.50	53	4,748.50	1,521,098	4519	7630	900,980	11184	2,229,571
1989	8"	21,508	111.50	94	4,748.50	2,844,501	4615	7630	1,720,370	11184	4,169,367
1993	8"	6,280	111.50	35	4,748.50	866,418	5210	7630	591,664	11184	1,269,964
1995	8"	2,420	111.50	9	4,748.50	312,567	5471	7630	224,129	11184	458,149
1996	8"	875	111.50	4	4,748.50	116,557	5622	7630	85,885	11184	170,844
1997	8"	3,610	111.50	18	4,748.50	487,988	5825	7630	372,552	11184	715,275
1998	8"	8,260	111.50	37	4,748.50	1,096,685	5920	7630	850,961	11184	1,607,481
1999	8"	6,140	111.50	40	4,748.50	874,550	6060	7630	694,539	11184	1,281,884
2000	8"	2,400	111.50	11	4,748.50	319,834	6221	7630	260,778	11184	468,800
2001	8"	24,669	111.50	150	4,748.50	3,462,869	6342	7630	2,878,462	11184	5,075,748
2002	8"	9,585	111.50	59	4,748.50	1,348,889	6538	7630	1,155,837	11184	1,977,153
2003	8"	1,791	111.50	11	4,748.50	251,930	6695	7630	221,044	11184	369,270
2004	8"	26,300	111.50	134	4,748.50	3,568,749	7115	7630	3,327,909	11184	5,230,944
		248,492		**1,189**		**$33,352,825**			**$19,047,899**		**$48,887,372**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Developer Built Subtractions

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	8"	9,156	$111.50	32	$4,748.50	$1,175,150	1381	7630	$212,697.50	11184	$1,722,492
1976	8"	20,179	111.50	86	4,748.50	2,657,665	2401	7630	836,311	11184	3,895,509
1978	8"	4,183	111.50	20	4,748.50	559,765	2776	7630	203,658	11184	820,484
1980	8"	4,491	111.50	22	4,748.50	603,612	3237	7630	256,093	11184	884,753
1982	8"	4,854	111.50	26	4,748.50	663,144	3825	7630	332,448	11184	972,012
1985	8"	2,259	111.50	11	4,748.50	303,346	4195	7630	166,771	11184	444,634
1986	8"	2,009	111.50	12	4,748.50	283,025	4295	7630	159,308	11184	414,847
1987	8"	1,515	111.50	6	4,748.50	195,637	4406	7630	112,983	11184	286,758
1988	8"	4,493	111.50	21	4,748.50	601,927	4519	7630	356,535	11184	882,283
1989	8"	8,488	111.50	38	4,748.50	1,125,463	4615	7630	680,687	11184	1,649,664
1993	8"	2,478	111.50	14	4,748.50	343,007	5210	7630	234,235	11184	502,767
1995	8"	955	111.50	4	4,748.50	123,630	5471	7630	88,650	11184	181,212
1996	8"	345	111.50	2	4,748.50	46,122	5622	7630	33,985	11184	67,604
1997	8"	1,425	111.50	7	4,748.50	193,137	5825	7630	147,449	11184	283,093
1998	8"	3,260	111.50	15	4,748.50	433,941	5920	7630	336,712	11184	636,055
1999	8"	2,423	111.50	16	4,748.50	346,372	6060	7630	275,077	11184	507,699
2000	8"	947	111.50	4	4,748.50	126,560	6221	7630	103,191	11184	185,507
2001	8"	9,735	111.50	60	4,748.50	1,371,233	6342	7630	1,139,819	11184	2,009,904
2002	8"	3,783	111.50	24	4,748.50	534,153	6538	7630	457,706	11184	782,943
2003	8"	707	111.50	4	4,748.50	99,762	6695	7630	87,532	11184	146,228
2004	8"	10,379	111.50	54	4,748.50	1,412,520	7115	7630	1,317,195	11184	2,070,422
		98,064		**477**		**$13,199,171**			**$7,539,041**		**$19,346,870**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Mill Lane Gravity Sewer	2014	$641,387.00	9806	11184	$731,517
Sidley Road Sewer Main	2014	1,022,044	9806	11184	1,165,665
Wilburdale FM and Flat Rd. Gravity	2016	533,529	10339	11184	577,135
		$2,196,960			**$2,474,317**

Associated Retirements	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Wilburdale FM and Flat Rd. Gravity	1970	$(71,266)	1381	11184	$(577,135)
		$(71,266)			**$(577,135)**

	Net Total	**$22,279,348**		**$11,508,858**	**$31,437,685**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Service Connections

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Connections	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	4"	6,016	$97.87	201	$588,817	1381	7630	$106,574	11184	$863,068
1976	4"	13,260	$97.87	442	1,297,784	2401	7630	408,385	11184	1,902,245
1978	4"	2,749	$97.87	92	269,029	2776	7630	97,880	11184	394,333
1980	4"	2,951	$97.87	98	288,825	3237	7630	122,539	11184	423,349
1982	4"	3,190	$97.87	106	312,175	3825	7630	156,500	11184	457,575
1985	4"	1,485	$97.87	49	145,301	4195	7630	79,882	11184	212,977
1986	4"	1,320	$97.87	44	129,185	4295	7630	72,715	11184	189,354
1987	4"	996	$97.87	33	97,459	4406	7630	56,284	11184	142,853
1988	4"	2,952	$97.87	98	288,952	4519	7630	171,153	11184	423,536
1989	4"	5,578	$97.87	186	545,874	4615	7630	330,148	11184	800,123
1993	4"	1,629	$97.87	54	159,387	5210	7630	108,843	11184	233,623
1995	4"	628	$97.87	21	61,420	5471	7630	44,042	11184	90,027
1996	4"	227	$97.87	8	22,208	5622	7630	16,364	11184	32,551
1997	4"	936	$97.87	31	91,622	5825	7630	69,948	11184	134,296
1998	4"	2,142	$97.87	71	209,639	5920	7630	162,667	11184	307,282
1999	4"	1,592	$97.87	53	155,834	6060	7630	123,758	11184	228,415
2000	4"	622	$97.87	21	60,912	6221	7630	49,665	11184	89,283
2001	4"	6,397	$97.87	213	626,101	6342	7630	520,438	11184	917,716
2002	4"	2,486	$97.87	83	243,268	6538	7630	208,452	11184	356,573
2003	4"	464	$97.87	15	45,456	6695	7630	39,883	11184	66,627
2004	4"	6,820	97.87	227	667,496	7115	7630	622,449	11184	978,391
		64,440		**2,148**	**$6,306,743**			**$3,568,568**		**$9,244,197**

Pricing Structure

Pipe Diameter (in.)	Easement Installed Cost per LF	Paved Installed Cost per LF	Blended Cost per LF
<4	$ 55.00	$ 100.10	$ 55.00
4 [(4)]	$ 55.00	$ 97.87	$ 78.17
6	$ 55.00	$ 100.10	$ 55.00
8	$ 55.00	$ 100.10	$ 77.00
10	$ 59.00	$ 107.38	$ 76.44
12	$ 90.00	$ 163.80	$ 110.08
15	$ 94.00	$ 171.08	$ 94.00
16	$ 100.00	$ 182.00	$ 117.62
18	$ 114.00	$ 207.48	$ 143.74
21	$ 129.00	$ 234.78	$ 129.00
24	$ 137.00	$ 249.34	$ 137.00
27	$ 164.00	$ 298.48	$ 164.00
30	$ 183.00	$ 333.06	$ 183.00
36	$ 216.00	$ 393.12	$ 216.00
40	$ 239.00	$ 434.98	$ 239.00
42	$ 249.00	$ 453.18	$ 249.00
44	$ 262.00	$ 476.84	$ 262.00
48	$ 282.00	$ 513.24	$ 282.00
52	$ 308.00	$ 560.56	$ 308.00
54	$ 315.00	$ 573.30	$ 315.00
64	$ 392.00	$ 713.44	$ 392.00
72	$ 430.00	$ 782.60	$ 430.00

Notes:

1. Reflects generic unit prices for various components of a sewer system within this region. The schedule was a basis of cost for previous Assessment reports in the region.

2. Prices from 2015 unless otherwise noted, Table ENR CCI (2015) = 10035

3. The "Blended Cost" is a combined cost that accounts for the percentage of the overall system constructed within a completed roadway. Approximate percentages were determined from Township Records.

4. The "Blended Cost" is a combined cost that accounts for the percentage of laterals installed 2005 & later, assumed to be developer installed, and % of laterals installed before 2005, assumed to be Township installed. This number is assumed to be in the year 2012 and is then brought back for all of the other years.

EXHIBIT E1

CHAPTER 94 REPORT FOR 2020
EAST WHITELAND TOWNSHIP

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

OPERATING YEAR 2020
MALVERN HUNT WASTEWATER TREATMENT PLANT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Prepared by:

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John Neild
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Director of Public Works

EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

MALVERN HUNT WASTEWATER TREATMENT PLANT
OPERATING YEAR 2020

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Exhibit 1 – Hydraulic Loading Graph

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Exhibit 4 – Influent Flow Graph at Rainfall Greater Than 1.0 Inch per Day

Appendix B – Flow Meter Calibration Reports

1. INTRODUCTION

As required by Chapter 94, Municipal Wasteload Management, Title 25 of the Rules and Regulations of the Pennsylvania Department of Environmental Protection (PADEP), this report summarizes the operation of the East Whiteland Township (Township) Malvern Hunt Wastewater Treatment Plant (WWTP) for the past five years, and projected loading for the next five years. Data presented in the tables and graphs included in the Appendices were taken from 2020 plant operating records.

The WWTP is located in East Whiteland Township, Chester County, Pennsylvania. The plant has a permitted 0.105 MGD lagoon treatment and spray irrigation system that is designed to serve the 279 unit residential community of Malvern Hunt.

The facility was constructed in 2000 by the Cutler Group, Inc. and was owned and operated by the Cutler Group, Inc. until October 31, 2007 when Water Quality Management Permit No. 1599418 for the WWTP was transferred to East Whiteland Township. The Township contracted Miller Environmental, Inc. to operate the WWTP from October 2007 to July 2011. ARRO Consulting, Inc. has been operating the WWTP since August 2011.

The WWTP process is an aerated lagoon treatment system, consisting of an influent pump station, a headworks with a comminutor and influent bar screen, a secondary treatment lagoon, storage/polishing lagoon, and effluent spray pumps. Sewage flow to the treatment lagoon is continuous, going through aeration, solid-liquid separation settling, and decanting processes. The treated water is discharged through an 8-inch diameter gravity main to the storage/polishing lagoon. The supernatant of the storage/polishing lagoon is chlorinated prior to being pumped out for spray irrigation.

The WWTP spray irrigation is applied to three (3) zones located in woodlands north of the Malvern Hunt development (18.5 acres total). By the current permit the facility can simultaneously spray in two of the three zones, alternating the three zones with a minimum of five days rest period for the inactive zone. The application rate to the spray zones cannot exceed 0.25 inches per hour at any time.

2. HYDRAULIC AND ORGANIC LOADINGS

2.1 2020 Plant Performance

Malvern Hunt development is fully built-out with 279 residential units. The WWTP currently has a permitted hydraulic capacity of 0.105 MGD Annual Average Flow (AAF) with a design hydraulic capacity of 0.393 MGD. The design organic capacity of the facility is 222 lbs BOD_5/day.

Table 1 of Appendix A contains the 2020 plant performance information for the WWTP. During 2020 the average sewage flow was 49,203 gallons-per-day (gpd) (0.0492 MGD), well below the permitted limit of 0.105 MGD. The highest consecutive maximum three-month average for 2020 was 55,100 gpd (0.0551 MGD).

Influent BOD_5 and total suspended solids are tabulated in Table 1. The plant's current permitted maximum monthly organic influent limit is 222 lbs/day. During 2020 the maximum monthly influent organic load was 112 lbs/day. Permitted discharge limits for $CBOD_5$ and suspended solids are 25 mg/l and 30 mg/l, respectively. During 2020 the highest monthly effluent $CBOD_5$ was 12.4 mg/l and the highest monthly effluent total suspended solids was 11.6 mg/l, both parameters at or below the permitted limits.

2.2 Current Hydraulic and Organic Loadings

Table 2 of Appendix A contains a summary of monthly average hydraulic loadings on the Malvern Hunt WWTP for the years 2016 through 2020. Flow has fluctuated over this period with a maximum average annual flow of 49,203 gpd (0.0492 MGD) in 2020 and a minimum average annual flow of 44,292 gpd (0.0443 MGD) in 2019. Current flows remain below the permitted limit of 0.105 MGD (105,000 gpd) for average annual flow.

The highest maximum three-month flow for the time period was 52,567 gpd (0.0526 MGD) in 2018 and the minimum three-month flow was 45,333 gpd (0.0453 MGD) in 2017. The average 5-year flow peaking factor is 1.056.

Influent BOD and TSS samples are collected once a month. Effluent samples are collected on the same day as influent samples during land application months, generally March through November, but during 2020 April through November. In months where no effluent

land applications occur effluent testing is suspended. Table 1A contains the results of the monthly sampling and also the approximate influent flow on the day of sampling.

Table 3 of Appendix A contains the average annual organic loadings for the plant during the years from 2016 and 2020. In 2020 the average annual BOD_5 loading increased from the previous year's level to 112 lbs./day, with maximum 1-month loading of 176 lbs./day. These loadings are below the plant's permitted influent loading limit of 222 lbs./day. The average 5-year organic peaking factor is 1.53.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

As previously stated, the WWTP hydraulic loading data has been available since the start-up of the WWTP, but organic loading data has only been available since August of 2011. Also, the Malvern Hunt Development is currently built out with 279 units and no population changes are expected for the next five years. Table 4 of Appendix A contains the summary of past and projected hydraulic and organic loadings for the WWTP. As demonstrated by Exhibit 1 and Exhibit 2 in Appendix A, the WWTP is not projected to expect hydraulic or organic overloads in the next five years.

4. SEWER EXTENSIONS

Malvern Hunt Development is currently built-out with 279 units and no future extensions and connections are expected.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

Operation and maintenance activities for the treatment plant and collection system are performed by the treatment plant operator and the Township's public works crew. The mechanical equipment in the treatment facility is inspected weekly by the plant operator. Maintenance performed is logged into the plant's record.

The plant operator routinely performs the laboratory analyses required for process control and discharge permit reporting purposes. Results of the analyses are recorded on a monthly log. A copy is forwarded to the appropriate State and Federal agencies as required by the facility's WQM permit.

6. CONDITION OF THE SEWER SYSTEM

The Township is continuing the corrective measures necessary to prevent unwanted runoff from entering into the system, thus reducing the inflow/infiltration in the system. The Township has created a numbering system for all 1,452 manholes in its sanitary sewer system, including Malvern Hunt WWTP drainage area, and located each manhole with a GPS locating device. A sewer system layer has been developed in the Township's GIS data map with each manhole located and identified with its corresponding number. The Township is beginning to televise its system again and is inputting this information onto the new GIS layer to allow the Township to better detect and remedy excessive infiltration and inflow if encountered.

7. SEWAGE PUMPING STATIONS

There is one pumping station within the collection system and it receives all the sewage flow from the Malvern Hunt development and pumps it to the WWTP. The station was constructed in 2000 and it has two (2) pumps – one operating, one backup – with each pump rated at approximately 300 gpm or 432,000 gpd (0.4320 MGD). The pumps alternate lead-lag at the station. A magnetic flow meter is located on the force main leaving the station. The meter totalizer amounts are logged approximately each work-day, which excludes weekends and holidays; therefore, instantaneous readings can't be made during peak flow events, only maximum daily readings are available.

Based on the 2020 metering records, the average daily flow leaving the station was 49,203 gpd (0.0492 MGD) and the maximum daily flow was 195,836 gpd (0.1958 MGD) following a 5.86-inch rainfall event. There were no instances in 2020 in which both the lead and lag pump were operating simultaneously. As the Malvern Hunt development is built out no additional flows would be expected; therefore, the influent pumps are expected to be able to handle any future peak flows if they can manage current peak flows.

There are two effluent spray pumps at the WWTP that operate alternately. Each pump has a hydraulic design capacity of 220 gpm or 316,800 gpd (0.3168 MGD). In 2020, the annual average flow for the effluent spray pumps was 73,540 gpd (0.0735 MGD) and the maximum daily flow was 164,000 gpd (0.1640 MGD). One pump is able to handle all normal flow to the spray fields.

8. PUMPING STATION FLOW DURING MAJOR STORM EVENTS

The Department requires Chapter 94 Reports to include a discussion of metered flow data for the collection and conveyance systems, specifically during major storm events (greater than 1.0 inch of rain).

Exhibit 3 of Appendix A contains a graph of the monthly rainfall and flow totals at the WWTP. The chart shows that rainfall does not have influence on the monthly flow at the WWTP.

Table 5 of Appendix A contains a summary of the rainfall and metered flow at the Malvern Hunt metered influent pump station for the ten (10) days in 2020 where rain fell more than 1.0-inch plus in a 24-hour period and Exhibit 4 of Appendix A is the chart developed from this data. As related to yearly average flow, the peaking factor for the pump station during the rain events is:

Pump Station	Annual Avg. Flow (MGD)	Peak Flow (MGD)	Rain Events Peaking Factor	
			High	Average
Malvern Hunt	0.0492	0.1958	3.98	2.14

The high peaking factor at the pump station occurred during a 5.86-inch rainfall event in August 2020. The high peaking factor is within the Department's current pump station peaking factor guidelines.

9. INDUSTRIAL WASTES

There is no industrial waste discharged to Malvern Hunt's WWTP.

10. CALIBRATION REPORTS

The flow meter was calibrated quarterly during 2020. Copies of the calibration reports are included in Appendix B.

Appendix A

Table 1

2020 Plant Performance Summary

Table 1

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
PLANT PERFORMANCE SUMMARY

Month	Avg Daily Flow (gpd)	BOD5 Daily Load (lbs/day)	BOD5 Influent (mg/l)	BOD5 Effluent (mg/l)	BOD5 Percent Removal	TSS Influent (mg/l)	TSS Effluent (mg/l)	TSS Percent Removal
January	43,800	115	316	0.0	100.0	190	0.0	100.0
February	42,900	176	491	0.0	100.0	146	0.0	100.0
March	50,700	51	120	0.0	100.0	47	0.0	100.0
April	54,300	59	130	10.7	91.8	87	17.0	80.5
May	49,700	116	281	12.4	95.6	280	37.0	86.8
June	48,000	135	337	7.0	97.9	488	5.0	99.0
July	49,400	97	235	3.8	98.4	243	5.0	97.9
August	51,100	98	231	3.5	98.5	89	5.0	94.4
September	45,200	124	329	6.0	98.2	440	14.0	96.8
October	49,130	80	195	2.5	98.7	136	5.0	96.3
November	51,100	169	396	2.0	99.5	470	5.0	98.9
December	55,100	122	265	0.0	100.0	133	0.0	100.0
Annual Average	**49,203**	**112**	**277**	**6.0**	**97.3**	**229**	**11.6**	**93.8**
Max. 3 Month Average	**51,777**							
Max. Month	**55,100**	**176**		**12.4**			**37.0**	
Discharge Limits	**105,000**	**222**		**25**			**30**	

NOTES

1. **No land application effluent flow during the months of January, February, March and December 2020, therefore no effluent testing was done during these months.**

Table 1A

2020 Organic Loading Sampling

Daily Flow and Sample Results

Table 1A

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
ORGANIC LOADING SAMPLING: DAILY FLOW and SAMPLE RESULTS

		SAMPLING DAY FLOW			BOD5				TSS	
Month	Sample Date	Pump #1 (minutes)	Pump #2 (minutes)	Avg. Daily Infl. Flow (gpd)	Influent Sample (mg/l)	Organic Load (lbs/day)	Effluent Sample (mg/l)	Percent Removal	Influent Sample (mg/l)	Effluent Sample (mg/l)
January	1/13/2020	96	86	49,575	316	131	0.0	100.0	190	0.0
February	2/10/2020	81	85	45,467	491	186	0.0	100.0	146	0.0
March	3/9/2020	89	87	48,206	120	48	0.0	100.0	47	0.0
April	4/13/2020	92	96	51,493	130	56	10.7	91.8	87	17.0
May	5/11/2020	98	97	53,410	281	125	12.4	95.6	280	37.0
June	6/8/2020	81	88	46,289	337	130	7.0	97.9	488	5.0
July	7/13/2020	83	83	45,467	235	89	3.8	98.4	243	5.0
August	8/10/2020	76	78	42,180	231	81	3.5	98.5	89	5.0
September	9/7/2020	77	76	41,906	329	115	6.0	98.2	440	14.0
October	10/12/2020	89	91	49,301	195	80	2.5	98.7	136	5.0
November	11/9/2020	80	83	44,645	396	147	2.0	99.5	470	5.0
December	12/7/2020	84	88	47,110	265	104	0.0	100.0	133	0.0

Average Influent Pump Rate = ***274*** **gpm**

NOTES

1. **No land application effluent flow during the months of January, February, March and December 2020, therefore no effluent testing was done during these months.**

Table 2

Hydraulic Loading Data (2016 – 2020)

Table 2

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
HYDRAULIC LOADING DATA (GPD)
2016 - 2020

Month	2016	2017	2018	2019	2020	2020 Rainfall (in.)
January	44,600	46,900	45,300	46,400	43,800	3.23
February	48,800	43,900	48,600	44,900	42,900	2.65
March	40,500	45,200	45,900	47,600	50,700	4.45
April	43,300	42,300	46,000	41,200	54,300	5.92
May	46,800	45,900	64,700	47,800	49,700	2.84
June	53,200	44,800	46,500	47,700	48,000	2.87
July	44,900	44,300	46,500	43,600	49,400	8.61
August	44,900	44,380	46,500	39,400	51,100	9.37
September	44,900	42,400	46,500	40,800	45,200	2.48
October	54,600	43,600	43,700	43,000	49,130	4.19
November	46,900	42,900	50,200	43,400	51,100	5.95
December	47,900	45,600	47,500	45,700	55,100	6.50
Average Annual Flow (GPD)	**46,775**	**44,348**	**48,158**	**44,292**	**49,203**	
					Total	**59.06**
Max. 3 Month Ave. Flow (GPD)	**49,800**	**45,333**	**52,567**	**46,367**	**51,777**	
PEAKING FACTOR						
Max. 3 Month Ave. Flow / Ave. Annual Flow	**1.065**	**1.022**	**1.092**	**1.047**	**1.052**	

Flow Peaking Factor: Average 5 Year Ratio	**1.056**

Rain Data from USGS Site #01473169 Valley Creek near Valley Forge.

Table 3

Organic Loading Data (2016 – 2020)

Table 3

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
ORGANIC LOADING DATA (lbs BOD5/day)
2016 - 2020

Month	2016	2017	2018	2019	2020
January	62	76	78	62	115
February	73	86	52	119	176
March	71	76	114	65	51
April	68	43	149	88	59
May	74	79	168	22	116
June	98	106	65	61	135
July	85	87	164	59	97
August	101	42	47	57	98
September	71	75	99	94	124
October	80	41	76	49	80
November	83	85	83	100	169
December	50	91	88	102	122
Average Annual BOD (lbs/day)	**76**	**74**	**99**	**73**	**112**
Max. 1 Month BOD5 Loading (lbs/day)	**101**	**106**	**168**	**119**	**176**
RATIO: Max. 1 Month BOD5 / Ave. Annual BOD5	**1.32**	**1.43**	**1.70**	**1.63**	**1.57**

Organic Peaking Factor:
Average 5 Year Ratio 1.53

Table 4

Past and Projected Treatment Plant Loadings

Table 4

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
PAST AND PROJECTED TREATMENT PLANT LOADINGS

Year	Connected Population	Average Total Flow (gpd)	Max. 3 Month Ave. Flow (gpd)	Per Capita Flow (gpcd)	Average Total BOD5 (lbs/day)	Per Capita BOD5 (lbs/day)
2016	762	46,775	49,800	61.4	76	0.100
2017	762	44,348	45,333	58.2	74	0.097
2018	762	48,158	52,567	63.2	99	0.129
2019	762	44,292	46,367	58.1	73	0.096
2020	762	49,203	51,777	64.6	112	0.147
Average	**762**	**46,555**		**61.1**	**87**	**0.114**
Projected Loadings						
2021	762	46,555	49,144	61.1	87	0.114
2022	762	46,555	49,144	61.1	87	0.114
2023	762	46,555	49,144	61.1	87	0.114
2024	762	46,555	49,144	61.1	87	0.114
2025	762	46,555	49,144	61.1	87	0.114

Table 5

Flow Summary at Rainfall Greater Than 1.0 Inch per Day

Table 5

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
INFLUENT FLOW SUMMARY AT RAINFALL GREATER THAN 1.0 INCH PER DAY

Rain Date	Rain (in.)	Influent Rainfall Flow	
		Peak (MGD)	Peaking Factor
01/25/20	2.21	0.1008	2.05
03/28/20	1.31	0.1005	2.04
04/13/20	2.49	0.0000	0.00
04/30/20	1.09	0.0742	1.51
07/06/20	3.43	0.0611	1.24
07/10/20	3.21	0.1060	2.15
08/04/20	5.86	0.1958	3.98
10/29/20	2.07	0.0920	1.87
11/30/20	2.52	0.1104	2.24
12/24/20	2.65	0.1052	2.14

Yearly Avg Flow (MGD) = 0.0492
Maximum Daily (MGD) = 0.1958
High Peaking Factor = 3.98
Average Peaking Factor = 2.14

NOTE 1. **No recorded pump station influent flow data is available for the April 13, 2020 rainfall event.**

Exhibit 1

Hydraulic Loading Graph

EXHIBIT 1

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
HYDRAULIC LOADING

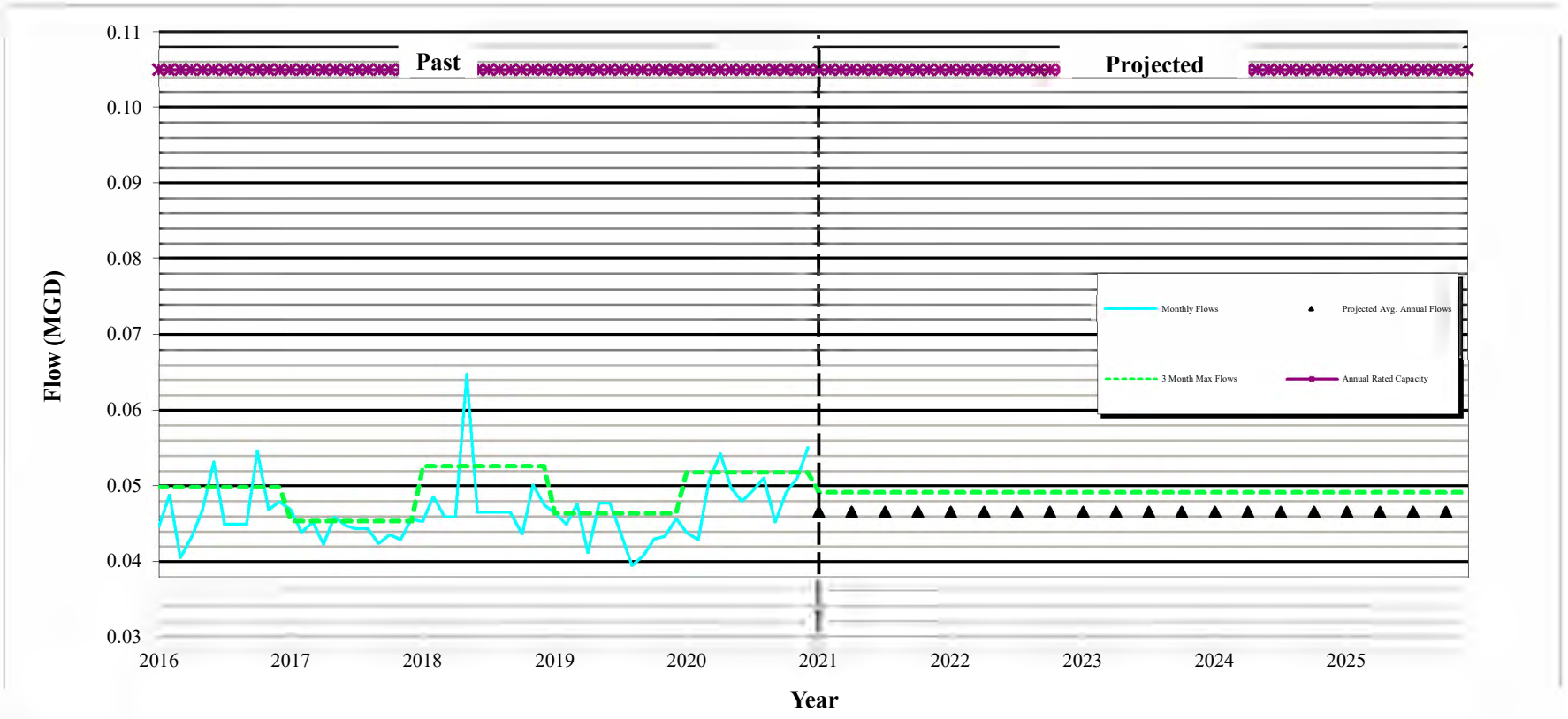


Exhibit 2

Organic Loading Graph

EXHIBIT 2

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
ORGANIC LOADING

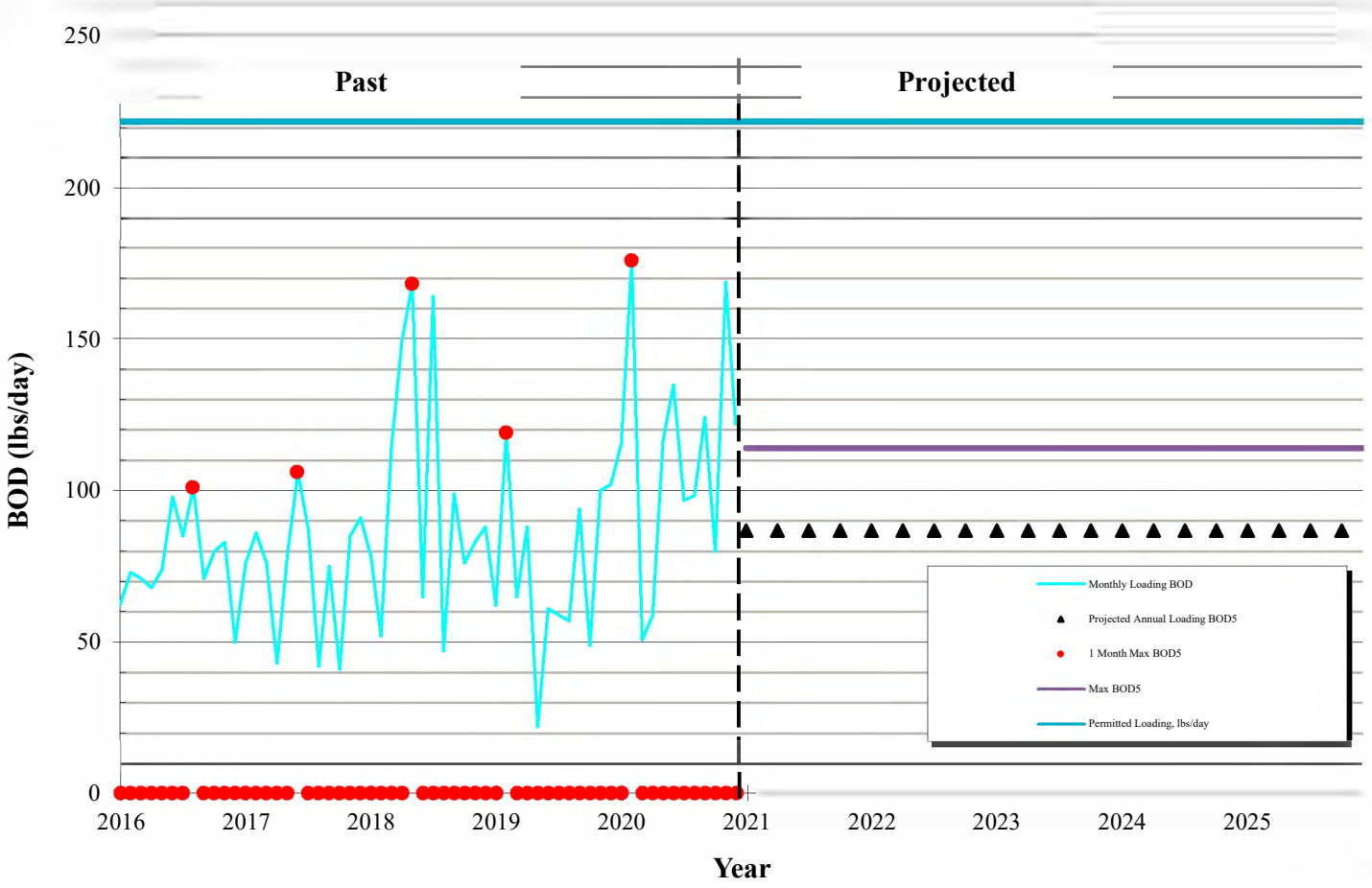


Exhibit 3

Monthly Total Flow Versus Rainfall Graph

EXHIBIT 3

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
MONTHLY TOTAL FLOW VERSUS RAINFALL

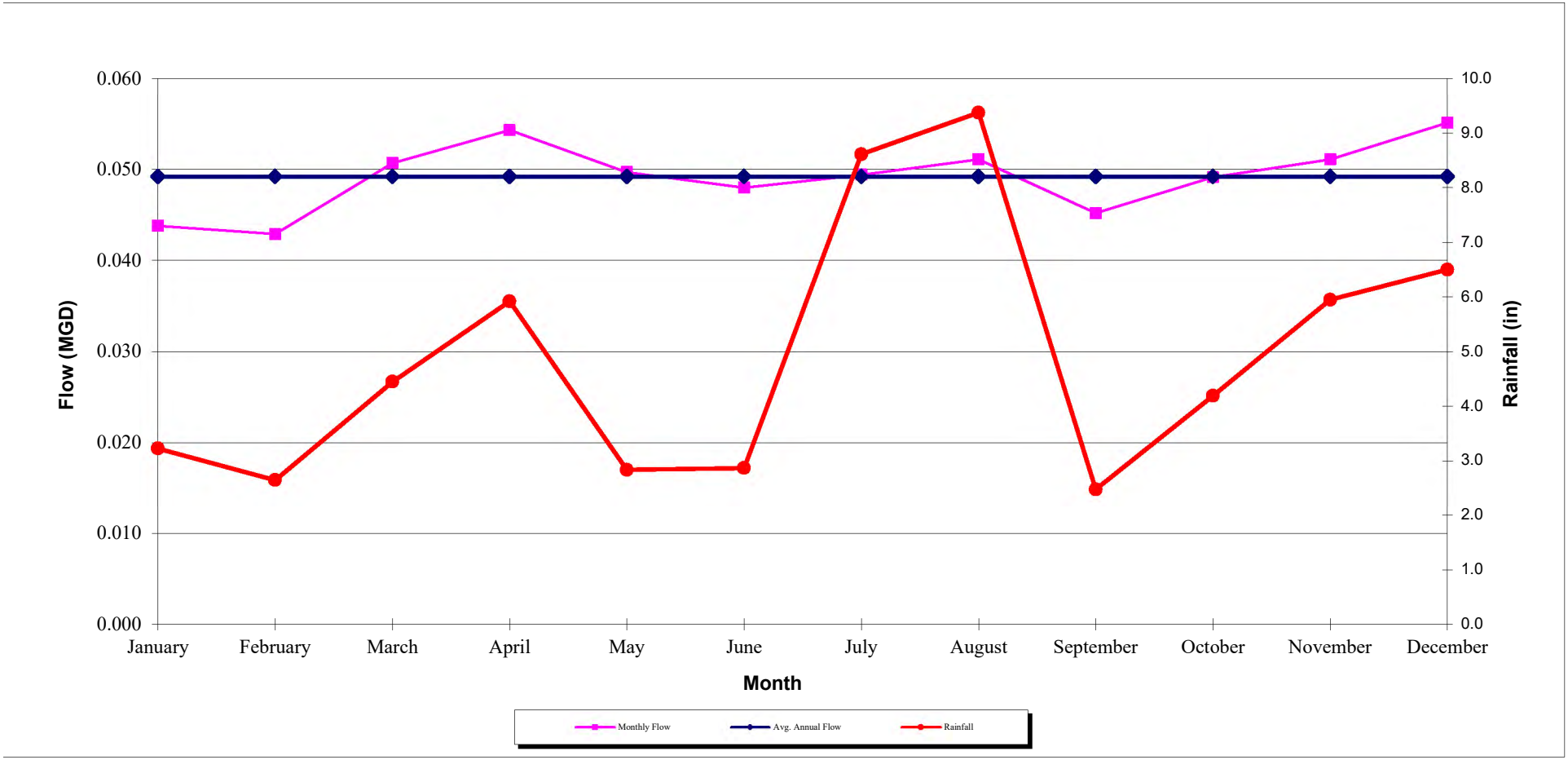
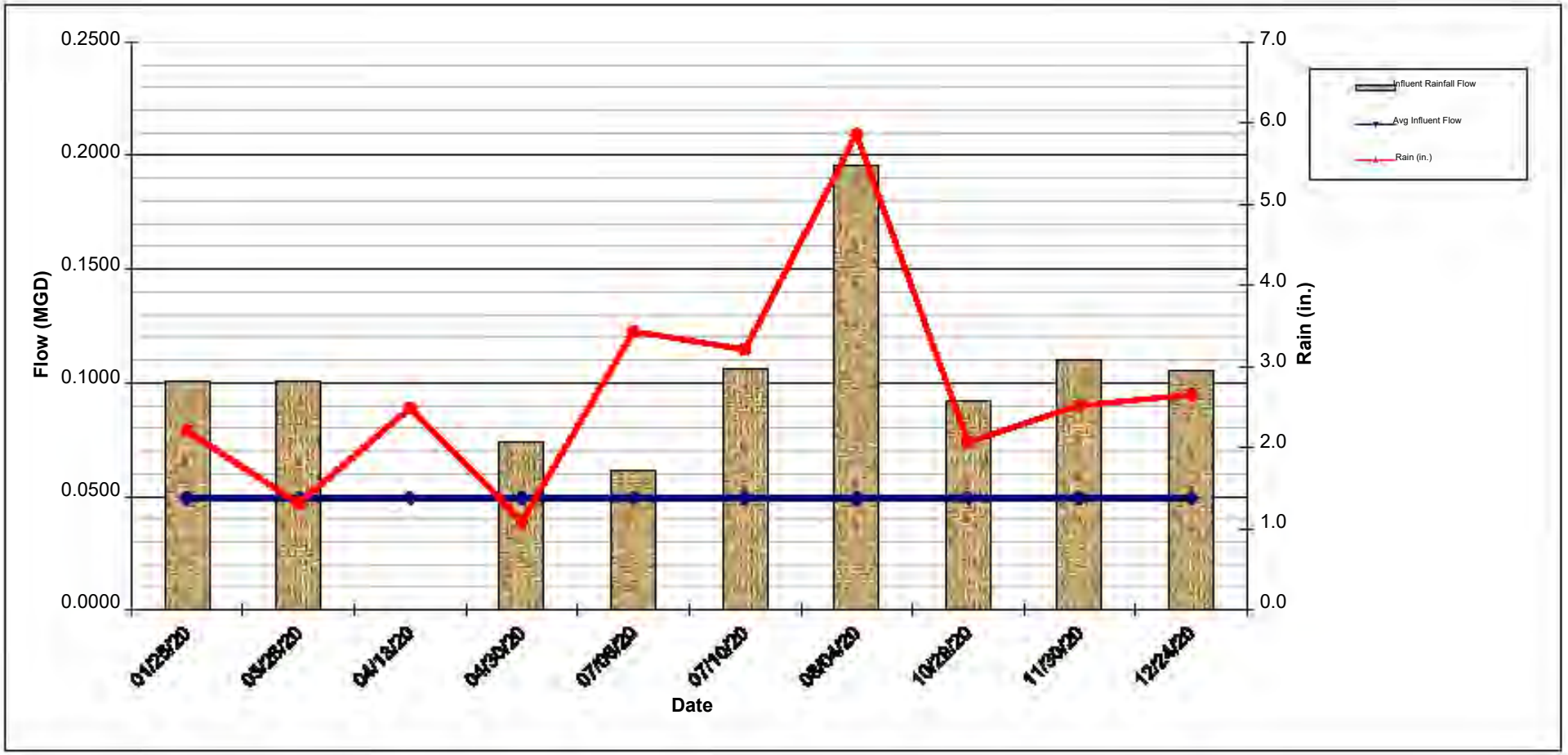


Exhibit 4

Flow Graph at Rainfall Greater Than 1.0 Inch per Day

EXHIBIT 4

EAST WHITELAND TOWNSHIP
MALVERN HUNT WASTEWATER TREATMENT PLANT
2020 CHAPTER 94 REPORT
INFLUENT FLOW GRAPH AT RAINFALL GREATER THAN 1.0 INCH PER DAY



NOTE 1. No recorded pump station influent flow data is available for the April 13, 2020 rainfall event.

Appendix B

Flow Meter Calibration Reports

CALIBRATION TRACKING FORM							
FULL REPORT ON ALL CUSTOMERS FOR EAST WHITELAND TWP.							
Revision Date:	**4/8/2019**				**Quarterly**		
Revised By:	**D. Reilly**	**Cell Phone 215-803-6459**					
Wood View							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Korman Corp.	Flow Meter (E Whiland x100)	Badger	2100	2534	Parking lot (Wood View)	0-50 GPM. = 4-20 Ma.	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951052544C03	Gen.room(Woodview) **OUT OF SERVICE**	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951053863C03	Generator room (Wood View)	4-20 Ma. = 0 - 400 GPM	Quarterly
	Flow Meter (Tredyffrin)	Rosemount	8712	860180575	Meter pit	0-400 GPM = 4-20 Ma.	Quarterly
Totalizer tested 2-27-20					**NOTE: Left all units within spec.**	**3/3/2020**	
Unisys							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Exeter Prop.Mang.	Flow Meter / Totalizer x100	Badger	2100	2792	Parking lot (Unisys)	0 - .45 MGD = 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 312.50 GPM	
Totalizer tested Failed to Mill Lane					**NOTE: Left all units within spec.**	**Failed**	
Erin Glenn							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391	Parking lot (Erin) Freq. 1140	0 to 590.0 GPM	Quarterly
	Transmitter	Quindar	QIPD30	N/A	Parking lot (Erin)	4-20Ma. = Timed Hz	Quarterly
	Receiver	Quindar	QPDI30	N/A	Mill Lane	Timed Hz = 4-20 Ma.	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 2-27-20					**NOTE: Left Flow Meter within spec.**	**4/1/2020**	
Malvern Hunt							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x10	Rosemount	8712	46783	Pump House	0 to 590.0 GPM	Quarterly
East Whiteland (Irrigation.)	Flow Meter / Totalizer x100	Flow Tech	V30CF5	180531-F5A188	Lab Bldg	0 to 500.0 GPM	Quarterly
	Chart Recorder	Chessel	392	950953090C03	Lab Bldg	0 to 500.0 GPM	Quarterly
	Level Meter	Sigma	SDM680	009713/9329-7	Lab Bldg	0 to 20 Feet	Quarterly
Totalizer tested 4-8-20					**NOTE: Left all units within spec.**	**4/8/2020**	
Mill Lane							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x100	Rosemount	8712	2792	Pump House	0 - 1000 GPM= 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	860128428	Mill Lane	0 to 1000.0 GPM	
Totalizer tested 2-27-20					**NOTE: Left all units within spec.**	**4/8/2020**	
Old Lincoln	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 03-26-20**		
Warren Ave.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 03-26-20**		
Lee Blvd.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 03-26-20**		
Matthews Rd	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 04-08-20 calbrated 03-26-20**		
Charlestown Oaks	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 01-23-20**		
Charlestown Med.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 02-28-20**		
North Ridge	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 02-27-20 calbrated 03-26-20**		

CALIBRATION TRACKING FORM							
FULL REPORT ON ALL CUSTOMERS FOR EAST WHITELAND TWP.							
Revision Date:	**6/26/2019**				**Quarterly**		
Revised By:	**D. Reilly**	Cell Phone 215-803-6459					
Wood View							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Korman Corp.	Flow Meter (E Whiland x100)	Badger	2100	2534	Parking lot (Wood View)	0-50 GPM. = 4-20 Ma.	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951052544C03	Gen.room(Woodview) **OUT OF SERVICE**	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951053863C03	Generator room (Wood View)	4-20 Ma. = 0 - 400 GPM	Quarterly
	Flow Meter (Tredyffrin)	Rosemount	8712	860180575	Meter pit	0-400 GPM = 4-20 Ma.	Quarterly
Totalizer tested 5-13-20					**NOTE: Left all units within spec.**	**6/2/2020**	
Unisys							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Exeter Prop.Mang.	Flow Meter / Totalizer x100	Badger	2100	2792	Parking lot (Unisys)	0 - .45 MGD = 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 312.50 GPM	
FAILED					**FAILED**		
Erin Glenn							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391	Parking lot (Erin) Freq. 1140	0 to 50.0 GPM	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 5-13-20					**NOTE: Left Flow Meter within spec.**	**5/13/2020**	
Malvern Hunt							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x10	Sparling	FM656	M028224500	Pump House	0 to 590.0 GPM	Quarterly
East Whiteland (Irrigation.)	Flow Meter / Totalizer x100	Sparling	FM656	M028223500	Lab Bldg **NOTE Failed to be Replaced**	0 to 500.0 GPM	Quarterly
	Chart Recorder	Chessel	392	950953090C03	Lab Bldg	0 to 500.0 GPM	Quarterly
	Level Meter	Sigma	SDM680	009713/9329-7	Lab Bldg	0 to 20 Feet	Quarterly
					NOTE: Left all units within spec.	**6/3/2020**	
Mill Lane							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x100	Rosemount	8712	2792	Pump House	0 - 1000 GPM= 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	860128428	Mill Lane	0 to 1000.0 GPM	
Totalizer tested 5-13-20					**NOTE: Left all units within spec.**	**6/3/2020**	
Old Lincoln	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 06-23-20**		
Warren Ave.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 06-23-20**		
Lee Blvd.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 06-23-20**		
Matthews Rd	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 06-23-20**		
Charlestown Oaks	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 05-13-20**		
Charlestown Med.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 05-05-20**		
North Ridge	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 05-13-20 calbrated 06-23-20**		

CALIBRATION TRACKING FORM							
FULL REPORT ON ALL CUSTOMERS FOR EAST WHITELAND TWP.							
Revision Date:	**9/30/2020**				**Quarterly**		
Revised By:	**D. Reilly**	Cell Phone 215-803-6459					
Wood View							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Korman Corp.	Flow Meter (E Whiland x100)	Badger	2100	2534	Parking lot (Wood View)	0-50 GPM. = 4-20 Ma.	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951052544C03	Gen.room(Woodview) **OUT OF SERVICE**	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951053863C03	Generator room (Wood View)	4-20 Ma. = 0 - 400 GPM	Quarterly
	Flow Meter (Tredyffrin)	Rosemount	8712	860180575	Meter pit	0-400 GPM = 4-20 Ma.	Quarterly
Totalizer tested 7-29-20					**NOTE: Left all units within spec.**	**9/9/2020**	
Unisys							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Exeter Prop.Mang.	Flow Meter / Totalizer x100	Badger	2100	2792	Parking lot (Unisys)	0 - .45 MGD = 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 312.50 GPM	
					No contact for Calb.		
Erin Glenn							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391	Parking lot (Erin)	0 to 50.0 GPM	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 7-29-20					**NOTE: Left Flow Meter within spec.**	**10/3/2019**	
Uptown Worthington M1							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391	Parking lot	0 to 50.0 GPM	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 7-29-20					**NOTE: Left Flow Meter within spec.**	**9/8/2020**	
Uptown Worthington M2							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391		0 to 50.0 GPM	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 7-29-20					**NOTE: Left Flow Meter within spec.**	**9/8/2020**	
Malvern Hunt							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x10	Rosemount	8712	46783	Pump House	0 to 590.0 GPM	Quarterly
East Whiteland (Irrigation.)	Flow Meter / Totalizer x100	Flow Motion	BE6300	180531	Lab Bldg Replaced under Warranty	0 to 500.0 GPM	Quarterly
	Chart Recorder	Chessel	392	950953090C03	Lab Bldg	0 to 500.0 GPM	Quarterly
	Level Meter	Sigma	SDM680	009713/9329-7	Lab Bldg	0 to 20 Feet	Quarterly
Totalizer tested 9-09-20					**NOTE: Left all units within spec.**	**9/9/2020**	
Mill Lane							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x100	Rosemount	8712	2792	Pump House	0 - 1000 GPM= 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	860128428	Mill Lane	0 to 1000.0 GPM	
Totalizer tested 7-29-20					**NOTE: Left all units within spec.**	**9/9/2020**	
Old Lincoln	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
Warren Ave.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
Lee Blvd.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
Matthews Rd	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
Charlestown Oaks	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
Charlestown Med.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		
North Ridge	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 07-29-20 calbrated 09-30-20**		

CALIBRATION TRACKING FORM							
FULL REPORT ON ALL CUSTOMERS FOR EAST WHITELAND TWP.							
Revision Date:	**12/29/2019**				**Quarterly**		
Revised By:	**D. Reilly**	Cell Phone 215-803-6459					
Wood View							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Korman Corp.	Flow Meter (E Whiland x100)	Badger	2100	2534	Parking lot (Wood View)	0-50 GPM. = 4-20 Ma.	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951052544C03	Gen.room(Woodview) **OUT OF SERVICE**	4-20 Ma. = 0 - 50 GPM	Quarterly
Totalizer x 10	Chart Recorder / Totalizer	Chessel	392	951053863C03	Generator room (Wood View)	4-20 Ma. = 0 - 400 GPM	Quarterly
	Flow Meter (Tredyffrin)	Rosemount	8712	860180575	Meter pit	0-400 GPM = 4-20 Ma.	Quarterly
Totalizer tested 12-17-20					**NOTE: Left all units within spec.**	**12/17/2020**	
Unisys							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
Exeter Prop.Mang.	Flow Meter / Totalizer x100	Badger	2100	2792	Parking lot (Unisys)	0 - .45 MGD = 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 312.50 GPM	
Totalizer tested					**All units have Failed**		
Erin Glenn							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland	Flow Meter / Totalizer x10	Badger	2100	4391	Parking lot (Erin) Freq. 1140	0 to 50.0 GPM	Quarterly
Totalizer x 10	SCADA	Maple System	HM15070	120609618	Mill Lane	0 to 50 GPM	Quarterly
Totalizer tested 12-17-20					**NOTE: Left Flow Meter within spec.**	**12/17/2019**	
Malvern Hunt							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x10	Rosemount	8712	46783	Pump House	0 to 590.0 GPM	Quarterly
East Whiteland (Irrigation.)	Flow Meter / Totalizer x100	Flow Motion	BE6300	180531	Lab Bldg Replaced under Warranty	0 to 500.0 GPM	Quarterly
	Chart Recorder	Chessel	392	950953090C03	Lab Bldg	0 to 500.0 GPM	Quarterly
	Level Meter	Sigma	SDM680	009713/9329-7	Lab Bldg	0 to 20 Feet	Quarterly
					NOTE: Left all units within spec.	**12/29/2020**	
Mill Lane							
Loop Description or Tag	**Equipment Description**	**Manufacturer**	**Model#**	**Serial #**	**Location (Bldg/Flr/Panel)**	**Calibration Range**	**Freq.**
East Whiteland (Pump St.)	Flow Meter / Totalizer x100	Rosemount	8712	2792	Pump House	0 - 1000 GPM= 4-20 Ma.	Quarterly
Totalizer x 100	SCADA	Maple System	HM15070	860128428	Mill Lane	0 to 1000.0 GPM	
Totalizer tested 12-17-20					**NOTE: Left all units within spec.**	**12/17/2020**	
Old Lincoln	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 12-22-20**		
Warren Ave.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 12-22-20**		
Lee Blvd.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 12-22-20**		
Matthews Rd	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 12-22-20**		
Charlestown Oaks	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 10-20-20**		
Charlestown Med.	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 10-08-20**		
North Ridge	**Valley Forge Report**	**Found With in spec at Mill Lane**			**NOTE: Totalizer readings test ok 12-17-19 calbrated 12-22-20**		

1900 Market Street
Suite 300
Philadelphia, PA 19103
T: 215-222-3000
F: 215-222-3588

www.pennoni.com

EWTPX 00030 March 15, 2021

Mr. Steve O'Neil, Chief, Operations Section
PA DEP, Clean Water
Southeast Regional Office
Two East Main Street
Norristown PA 19401-4915

RE: Township of East Whiteland
2020 Chapter 94 Report

Dear Mr. O'Neil:

On behalf of the Township of East Whiteland, please find enclosed two (2) copies of the 2020 Chapter 94 Annual Report for the Township's sewerage facilities.

Should you have any questions concerning this, please feel free to contact the undersigned.

Sincerely,

PENNONI

Charles Faulkner

Charles Faulkner, PE
Township Wastewater Engineer

CF/rg

cc: Richard Taylor, Valley Forge Sewer Authority via email
John Neild, Director of Public Works – East Whiteland, via email

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	**EAST WHITELAND TOWNSHIP**	Permit No.:	**PA N/A**
Mailing Address:	**209 CONESTOGA ROAD**	Effective Date:	**N/A**
City, State, Zip:	**FRAZER, PA 19355**	Expiration Date:	**N/A**
Contact Person:	**John Nagel**	Renewal Due Date:	**N/A**
Title:	**TOWNSHIP MANAGER**	Municipality:	**EAST WHITELAND**
Phone:	**610-897-4205**	County:	**CHESTER**
Email:	**JNAGEL@EASTWHITELAND.ORG**	Consultant Name:	**PENNONI ASSOCIATES INC.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   - ☐ Line graph for flows attached (**Attachment**)
   - ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   - ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   - ☐ Line graph for organic loads attached (**Attachment**)
   - ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   - ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   Attachment A shows the historic and projected hydraulic demand for the service area of East Whiteland Township. The hydraulic projections were calculated based on the 2020 annual average flow and the proposed connections for the next five years.

   East Whiteland Township owns and operates a wastewater treatment plant associated with the Malvern Hunt subdivision. The WWTP consists of aerated lagoons and land application of effluent. A separate Chapter 94 report will be submitted which addresses this WWTP.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment B**)

   ☒ List summarizing each extension or project attached (**Attachment C**)

   ☒ Schedules describing how each project will be completed over time and effects attached (**Attachment C**)

   Comments:

   Attachment B - East Whiteland Sanitary Sewer Collection System has been updated to include all sewer extensions completed in 2020.

   Attachment C provides a list of projects which were constructed in 2020, under construction currently, or will be constructed and connect to the system within the next five years.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   See Attachment D

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

See Attachment E

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **12**)

☒ Discussion of condition of each pump station attached (**Attachment F**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment G**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

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9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

John Nagel	John Nagel
Name of Responsible Official	Signature
610-897-4205	3/15/2021
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Faulkner, P.E.	Charles Faulkner
Name of Preparer	Signature
215-254-7751	3/15/2021
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

ATTACHMENT A

ATTACHMENT A

East Whiteland Township

Historical Hydraulic Loading

	2016		2017		2018		2019		2020	
	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)
Jan	1.524	3.15	1.665	3.25	1.521	2.43	2.179	4.48	1.477	3.390
Feb	2.155	5.14	1.772	1.57	1.833	6.18	2.111	3.23	1.511	2.650
Mar	1.840	1.83	1.373	5.22	1.992	4.09	2.256	5.22	1.437	4.45
Apr	1.814	2.49	1.587	2.78	1.782	3.76	1.654	3.09	1.508	5.92
May	1.803	4.49	1.600	5.30	1.926	6.36	1.823	6.21	1.265	2.84
Jun	1.678	1.46	1.608	4.81	1.979	6.04	1.834	8.29	1.121	2.87
Jul	1.640	4.63	1.387	5.46	1.852	6.13	1.788	5.66	1.110	8.61
Aug	1.620	3.05	1.569	4.79	2.043	9.82	1.493	1.95	1.446	9.38
Sep	1.720	4.88	1.638	1.84	2.417	9.53	1.391	2.25	1.168	2.47
Oct	1.451	1.29	1.515	4.54	2.041	2.48	1.428	6.05	1.173	4.19
Nov	1.513	3.76	1.538	1.83	2.205	8.32	1.360	1.72	1.272	5.95
Dec	1.659	3.48	1.512	1.96	2.291	5.99	1.448	4.81	1.480	6.50
Annual Average	1.701	39.65	1.564	43.35	1.990	71.13	1.730	52.96	1.331	59.22
Max Month	2.155		1.772		2.417		2.256		1.511	
Max 3 Month	1.936		1.603		1.936		2.221		1.485	
Hydraulic Ratio	1.138		1.025		0.973		1.284		1.116	
									1.107	
								5 - year Hydraulic Annual Average Annual Flow	1.663	

Monthly Rainfall data from recordings taken from USGS 01473169 Valley Creek water information collection station.

East Whiteland Township Projected Hydraulic Loading

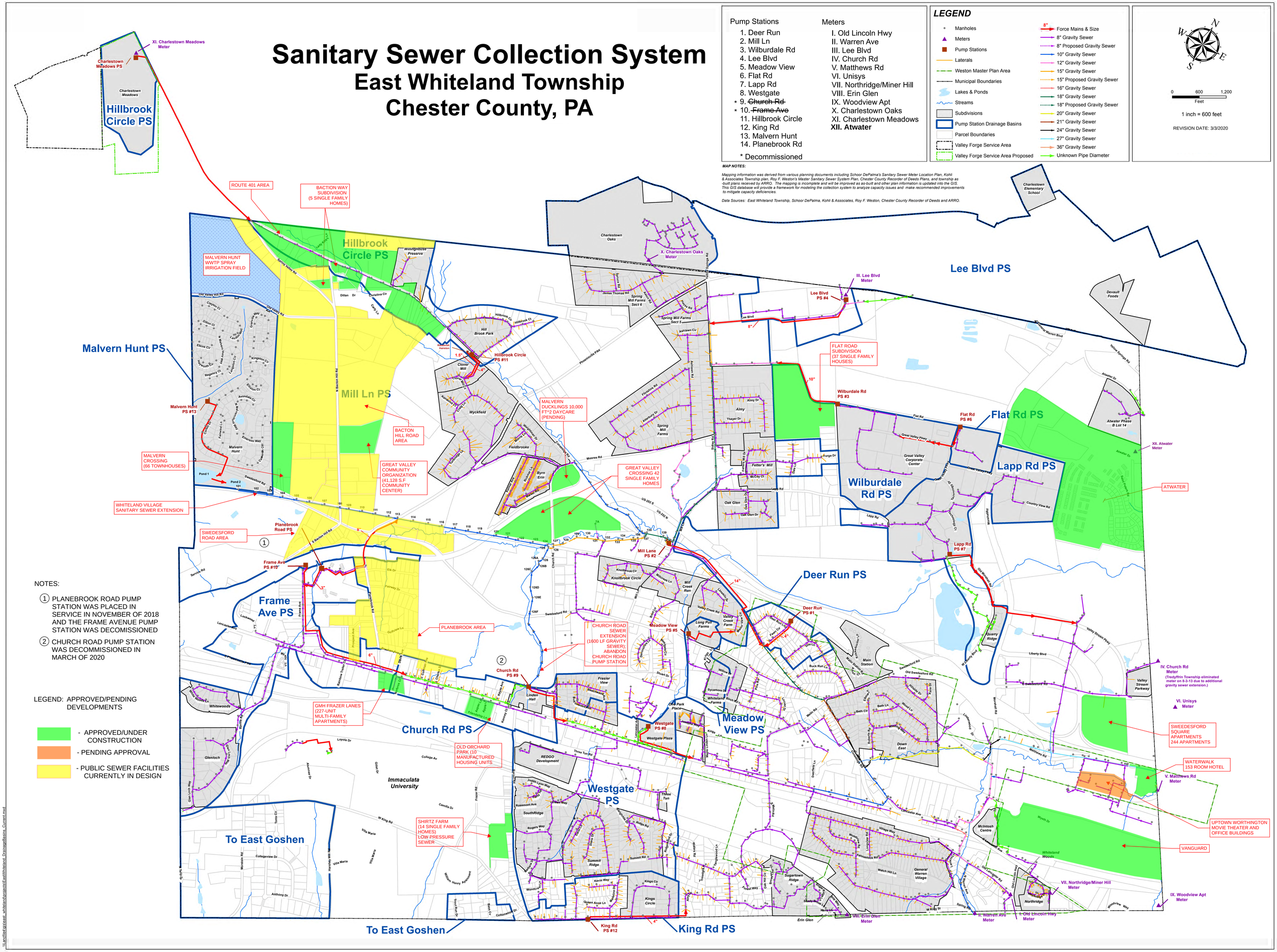
Year	Previous Year's Annual Average Flow	New EDU's	Increased Flow (MGD)	Projected Annual Average Flow (MGD)	Hydraulic Ratio	Projected Max Month (MGD)
2021	1.331	550.4	0.093	1.423	1.107	1.576
2022	1.423	740.5	0.125	1.548	1.107	1.714
2023	1.548	681	0.115	1.662	1.107	1.841
2024	1.662	427.5	0.072	1.734	1.107	1.920
2025	1.734	43	0.007	1.742	1.107	1.928

(1) Calculated Flow Rate Per EDU 168.27 (gal/EDU)

(2) Calculated 5-year Hydrualic Ratio 1.107

ATTACHMENT B

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA



NOTES:

1. PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2. CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020

LEGEND: APPROVED/PENDING DEVELOPMENTS

- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN

ATTACHMENT C

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
McIntosh	40	0.0	40.0	10.0	10.0	10.0	10.0	-
RedGo Development - Lot 1 Site	20.5	20.5	0.0	-	-	-	-	-
Winthrop Corporation	25	0.0	25.0	15.0	10.0	-	-	-
Whiteland Village - Phase I	200	0.0	200.0	-	-	100.0	100.0	-
King/Carol/Summit	250	240.0	10.0	3.0	3.0	3.0	1.0	-
Commitment: Pre-2008 @ 364 EDUs, Post-2008 @ 480	480	281.4	198.6	-	75.0	75.0	48.6	-
Glasgow Tract	23	0.0	23.0	-	8.0	5.0	5.0	5.0
Swedesford/Church Road	24	17.0	7.0	-	4.0	3.0	-	-
Hillbrook Circle	35	33.0	2.0	-	2.0	-	-	-
Shirtz Farm Subdivision	14	0.0	14.0	5.0	9.0	-	-	-
Linden Hall	60	60.0	0.0	-	-	-	-	-
Liberty Property (Quarry Ridge)	144	132.5	11.5	5.0	4.5	2.0	-	-
Quarry Ridge - Additional	15	2.0	13.0	-	5.0	5.0	3.0	-
O'Neill Offices	39.5	13.0	26.5	-	9.0	9.0	8.5	-
O'Neill/Rubino (Deerfield Commons)	40	0.0	40.0	10.0	10.0	10.0	10.0	-
Veterans Life (Aegon)	22	0.0	22.0	-	8.0	8.0	6.0	-
Misc. EDUs from re-rate & agreed 1990 Capacity	76.4	16.0	60.4	15.0	15.0	15.0	15.4	-
Remaining EDUs from Rt. 30 Development	142	92.0	50.0	15.0	15.0	10.0	10.0	-
Poplar Development	29	21.0	8.0	3.0	5.0	-	-	-
Willinghouse Preserve (Tattersall Development)	11	11.0	0.0	-	-	-	-	-
Touchstone Office Complex	1	1.0	0.0	-	-	-	-	-
Trinity Christian Complex	11	0.0	11.0	5.0	6.0	-	-	-
Micron technologies **	33	33.0	0.0	-	-	-	-	-
JMP Malvern (19 Morehall Road)	30	23.0	7.0	-	7.0	-	-	-
EDUs of which 46,393 gpd {168.7 EDUs} are Tredyffrin Twp	380.3	364.3	16.0	16.0	-	-	-	-
Atwater Village - Commercial	77	32.0	45.0	15.0	15.0	15.0	-	-
Atwater Village - The Haven [326 ea. Apartments @ 190 gpd/275 gpd/EDU = 225.2 EDUs]	225.2	225.2	0.0	-	-	-	-	-
Townes at Malvern (Section 1 - Cockerham)	52	51.0	1.0	1.0	-	-	-	-
8 Lee Boulevard - new EDUs (3 existing)	5	3.0	2.0	2.0	-	-	-	-
80 Watch Hill Lane	1	1.0	0.0	-	-	-	-	-
Raymour & Flanigan - 1 Lee Boulevard	6	2.4	3.6	3.6	-	-	-	-
EWT Fire Station #5	1	1.0	0.0	-	-	-	-	-
Swedesford 66	66	8.0	58.0	14.0	14.0	14.0	14.0	10.0
Chester Valley Golf Club	38	0.0	38.0	-	-	-	38.0	-
Ward (Ciorletti) Parcel (634 Lancaster Avenue)	1	1.0	0.0	-	-	-	-	-
Malvern Court Mobile Home Park	110	110.0	0.0	-	-	-	-	-
427 Conestoga Rd	1	1.0	0.0	-	-	-	-	-
Janssen Pharmaceutical - Building M9	0	0.0	0.0	-	-	-	-	-
Aldi	0	0.0	0.0	-	-	-	-	-
Veternary Clinic	1	1.0	0.0	-	-	-	-	-
Cubesmart	20	20.0	0.0	-	-	-	-	-
Public Works Building	1	1.0	0.0	-	-	-	-	-
20 Moores Road (Office Building)	1	1.0	0.0	-	-	-	-	-
Frazer Mennonite (53 & 55 Maple Linden Lane)	2	2.0	0.0	-	-	-	-	-
Covenant Presbyterian Church Land Devel.	1	1.0	0.0	-	-	-	-	-
The Malvern School	3	3.0	0.0	-	-	-	-	-
The Vanguard Group	59	59.0	0.0	-	-	-	-	-
Liberty Property Trust - 6 Great Valley Parkway	16.6	0.0	16.6	7.6	9.0	-	-	-
Townes at Malvern (a.k.a. Section 2 - Malvern Walk)	64	64.0	0.0	-	-	-	-	-
existing flow)	228	0.0	228.0	50.0	50.0	50.0	50.0	28.0
Willets Farm - 99 Church Road	44	33.0	11.0	11.0	-	-	-	-
RedGo Development - Lot 2 Site	7.6	4.0	3.6	3.6	-	-	-	-
RedGo Development - Lot 3 Site	6.6	0.0	6.6	6.6	-	-	-	-
Bacton Hill Subdivision	6	0.0	6.0	3.0	3.0	-	-	-
Exeter 8 Lee L.P.	1	0.0	1.0	1.0	-	-	-	-
Great Valley Corporate Center Redevelopment	650	0.0	650.0	200.0	200.0	200.0	50.0	-
Great Valley Community Organization Rec. Center	1	0.0	1.0	1.0	-	-	-	-
Accolade Properties	1	0.0	1.0	1.0	-	-	-	-
Swedesford Square Land Development	170	170.0	0.0	55.0	19.0	-	-	-
Lincoln Court Shopping Center	11	11.0	0.0	-	-	-	-	-
Aegon/St. Gobain (Office Buildings)	22	0.0	22.0	11.0	11.0		-	-
401 Corridor Extension	25	4.0	21.0	5.0	5.0	11.0	-	-
Planebrook Road Sewer Extension	75	0.0	75.0	-	25.0	25.0	25.0	-

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
Bacton Hill / Swedesford Road Sewer Extension	100	0.0	100.0	-	34.0	33.0	33.0	-
6 Frame Avenue	1	1.0	0.0	-	-	-	-	-
7 Frame Avenue	1	0.0	1.0	-	-	-	-	-
15 Frame Avenue	1	0.0	1.0	-	-	-	-	-
Flat Road Subdivision	37	11.0	37.0	15.0	15.0	7.0	-	-
473 Conestoga Road	3	1.0	2.0	2.0	-	-	-	-
458 & 476 Lancaster Ave (Eadah)	11	0.0	11.0	11.0	-	-	-	-
Frazer Lanes (548-554 Lancaster Ave)	115	0.0	115.0	20.0	80.0	15.0	-	-
Loch- Aerie (700 Lancaster Ave)	8	0.0	8.0	-	-	-	-	-
East Side of 7 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
2 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
215 South Phoenixville Pike	3	0.0	3.0	-	3.0	-	-	-
Waterwalk Hotel	106	0.0	106.0	-	50.0	56.0	-	-
105 Church Street	3	0.0	3.0	3.0	-	-	-	-
17 Spring Road	2	0.0	2.0	2.0	-	-	-	-
400 Three Tun Road	2	0.0	2.0	-	2.0	-	-	-
4 Charles Street	1	1.0	0.0	-	-	-	-	-
512 Lapp Road	2	0.0	2.0	2.0	-	-	-	-
COMMITTED EDU TOTALS	**4,543.7**	**2,184.3**	**2,370.4**	**550.4**	**740.5**	**681.0**	**427.5**	**43.0**

Total EDUs in 2019 Chapter 94 Report	7,601.6
Total EDUs Connected in 2020	306.3
Total EDUs in 2020	7,907.9
Annual Average Flow (MGD)	1.331
Flow Rate Per EDU	168.27

ATTACHMENT D

Program for Sanitary Sewer Monitoring, Maintenance and Repair

[25 Pa. Code § 94.12(a)(5)]

The Township monitors sewer flow leaving and entering the Township via flow meters on a daily basis. Flow Reports are compiled on a monthly basis. Any irregular patterns are investigated and corrected as soon as possible. Meter pits are checked on a routine basis to determine if the meters are functioning properly and that there is no debris accumulating within the flumes.

The Townships Public Works Department is responsible for normal daily maintenance and preventative maintenance of the sewage collection system including pump stations. The Public Works Department also is responsible for handling emergency conditions on a 24-hour basis. Ongoing visual inspections indicate the sewer is generally in good condition.

The Township Sewer Department uses video inspection equipment to inspect sewer mains for infiltration, roots and grease and locate areas of I/I. The Department is able to determine areas of concern, clean lines and make any necessary repairs as required. As an on-going practice, the Township periodically flushes the sanitary sewer lines throughout the Township.

Manhole covers are adjusted and/or watertight gaskets are being installed in low-lying areas. As part of the township's street resurfacing program, manhole covers and frames are being replaced with new gaskets covers as required and are adjusted to the new pavement grades to help eliminate inflow. Manhole inserts have been added in areas that were experiencing inflow through manhole covers.

By ordinance, all new sewer lines, laterals and building sewer must be inspected and air tested by the Township Sewer Engineer or Code Official before the lines are put into service. This procedure had allowed the Township to detect potential defective workmanship and materials, and/or in the process eliminate any potential for future I/I.

The Township is continuing the corrective measures necessary to prevent unwanted runoff from entering into the system, thus reducing the I/I in the system. The Township has created a numbering system for all manholes in its sanitary sewer system and located each manhole with GPS. A sewer system layer had been developed in its GIS data map with each manhole located and identified. The Township is beginning to televise its system again and is inputting this information onto the new GIS layer to allow the Township to better detect and remedy excessive infiltration and inflow if encountered.

ATTACHMENT E

Condition of the Sewer System

[25 Pa. Code § 94.12(a)(6)]

The Mill Lane Sewer Main Replacement Phase 1 construction project was operational as of November 2013, and the Sidley Road Sewer Main Replacement Phase 2 construction project was operational as of March 2014.the completion of the Phase 1 and 2 projects eliminated the hydraulic restriction in the East Whiteland Township sewer mains in the Mill Land and Sidley Road areas. Consequently, the connection restriction for East Whiteland has also been eliminated for the Mill Lane and Sidley Road areas.

The Improvements to the Mill Lane and Sidley Road sewer system also completed Phase 1 and 2 aspects of the Corrective Action Plan (CAP) currently on file with PaDEP. Phase 3 of the CAP related to improvements to the Lee Boulevard Pump Station are still to be implemented. The conditions of the Connection Management Plan Currently on file with PaDEP are still in effect for the contributory drainage areas from Charlestown that flows through the Mill Lane and Sidley Road Sewer Systems.

In 2016, upgrade improvements were made to the sanitary sewer within Conestoga Road. Approximately 3,780 L.F. of new 18-inch, 20-inch and 24-inch pipe were installed to replace existing deteriorating sewer.

During 2017, the following sanitary sewer system work was done.

- Wilburdale Pump Station and Force main improvements were completed,
- Planebrook Pump Station force main improvements were completed.
- Deer Run Pump Station emergency generator replacement was started and were completed in 2018

During 2018 , the following sanitary sewer system work was done.

- On August 23, 2018, a portion of a 10-inch sewer main collapsed on Warren Avenue. The repair consisted of replacing approximately 100 L.F. of the deteriorated main.
- Construction of Planebrook Pump Station was complete.
- On November 30, 2018, Frame Ave Pump Station was decommissioned and flow was diverted to the Planebrook Pump Station.

During 2019, the following sanitary sewer system work was done.

- Flat Road Pump Station was shut down on January 24, 2019 due to a sinkhole which developed at the station and jeopardized the integrity of the station. A new pump station was built and put into service in October of 2019.
- Construction of the Chester Valley Golf Course Sewer Extension began in December of 2019.

During 2020, the following sanitary sewer system work was done.

- Pump #1 at Westgate Pump Station was replaced on April 14, 2020 with a new pump.

- Church Road Pump Station was turned off on March 14, 2020 and flow was diverted through the new gravity sewer installed line through Chester Valley Golf Course.

There were no Sanitary Sewer Overflows (SSOs) in 2020.

ATTACHMENT F

Sewage Pumping Stations

[25 Pa. Code § 94.12(a)(7)]

There are currently twelve (12) pumping stations in operation that convey sanitary sewage flow within the Township. In 2018 Frame Ave Pump Station was abandoned/demolished and all flow was diverted to the newly constructed Planebrook Pump Station. The twelfth pump station is associated with the Malvern Hunt WWTP, which is covered under its own Chapter 94 Report

All pump stations, except Mill Lane, have two pumps that alternate lead-lag. The Mill Lane Pump Station has three variable speed pumps. Two pumps operate and one pump is standby.

Only the Mill Lane, Wilburdale and newly constructed Planebrook Pump Station are equipped with a magnetic flow meter to measure the pump station flows. Flow at the other eight (8) pump stations are calculated based on the monthly pump run-time data multiplied by the pump design capacity.

Township staff visits all pump stations on a regular basis to determine the condition and document the flow. If a discrepancy is noted during these visits, the Township investigates the cause and takes appropriate action. Heavy maintenance and repairs are handled by outside personnel under contract with the Township. The emergency generators are checked for readiness by exercising the units once a week.

All Township pump stations are equipped with emergency alarms. In the event of an alarm, an automatic dialer contacts Township personnel to alert them of the condition.

ATTACHMENT F

East Whiteland Township Pump Station Hydraulic Performance

PUMP STATION	PUMP STATION NO.	WQM PART 2 PERMIT NUMBER	NO. OF PUMPS [3]	ANNUAL AVERAGE PERMITTED CAPACITY (gpd)	HYDRAULIC DESIGN CAPACITY (excluding capacity of backup pump) (gpm)	STATION CAPACITY (gpd)	PUMP #1		PUMP #2		PUMP #3		PUMP MAX RUN TIME	ANNUAL AVERAGE FLOW (gpd)	MAX DAILY FLOW (gpd) [6][7]	HYDRAULIC RATIO	PEAKING FACTOR	2-YEAR ANNUAL AVERAGE FLOW (gpd)	2-YEAR MAX DAILY FLOW (gpd) [8]
							AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)							
Deer Run [5]	P.S. 1		2	23,450	90	129,600	52.7	17,973	55.3	18,929			157	9,099	28,260	1.107	3.11	10,074	31,288
Mill Lane [4]	P.S. 2		3	2,073,600	1754	2,525,760	294.5		283.0		268.5		756	718,197	2,652,048	1.107	3.69	795,157	2,936,234
Wilburdale [4]	P.S. 3		2	623,502	930	1,339,200	74.8		73.1				164	125,767	305,040	1.107	2.43	139,243	337,727
Lee Boulevard [5]	P.S. 4		2	350,000	470	676,800	126.1	45,033	129.8	46,330			284	117,646	266,960	1.107	2.27	130,252	295,567
Meadowview [5]	P.S. 5		2	115,200	80	115,200	119.3	42,159	91.8	32,235			363	16,306	58,080	1.107	3.56	18,053	64,304
Flat Road [5]	P.S. 6		2	427,500	275	396,000	14.5	5,280	14.3	5,238			46	7,925	25,300	1.107	3.19	8,774	28,011
Lapp Road [5]	P.S. 7		2	472,000	315	453,600	77.1	27,485	80.7	28,789			199	48,565	125,370	1.107	2.58	53,769	138,804
Westgate [5]	P.S. 8		2	890,000	700	1,008,000	54.8	21,176	55.1	19,784			199	78,553	278,600	1.107	3.55	86,971	308,454
Church Road [5][9]	P.S. 9		2	700,000	540	777,600	15.4	4,611	12.2	4,389			129	13,315	139,320	1.107	10.46	14,742	154,249
Frame Avenue [1]	P.S. 10		2																
Hillbrook Circle [5]	P.S. 11		2	250,000	295	424,800	120.6	41,346	110.4	37,986			282	64,118	166,380	1.107	2.59	70,988	184,209
King Road [5]	P.S. 12		2	250,000	258	371,520	104.1	36,517	88.3	30,746			397	47,545	204,852	1.107	4.31	52,640	226,803
Malvern Hunt [2]	P.S. 13		2																
Planebrook Road [4][5]	P.S. 14		2	151,325	394	567,360	61.3	22,442	47.1	17,247			121	42,842	95,348	1.107	2.23	47,433	105,565

[1] Pump Station Abandoned November 30, 2018; All flows were diverted to Planebrook Road Pump Station

[2] Pump Station included under MVH Chapter 94 Report

[3] Two pumps alternate lead-lag at each pump station, except Mill Lane Pump Station, which was upgraded to a three-pump system

[4] Annual Average Flow based on meter data

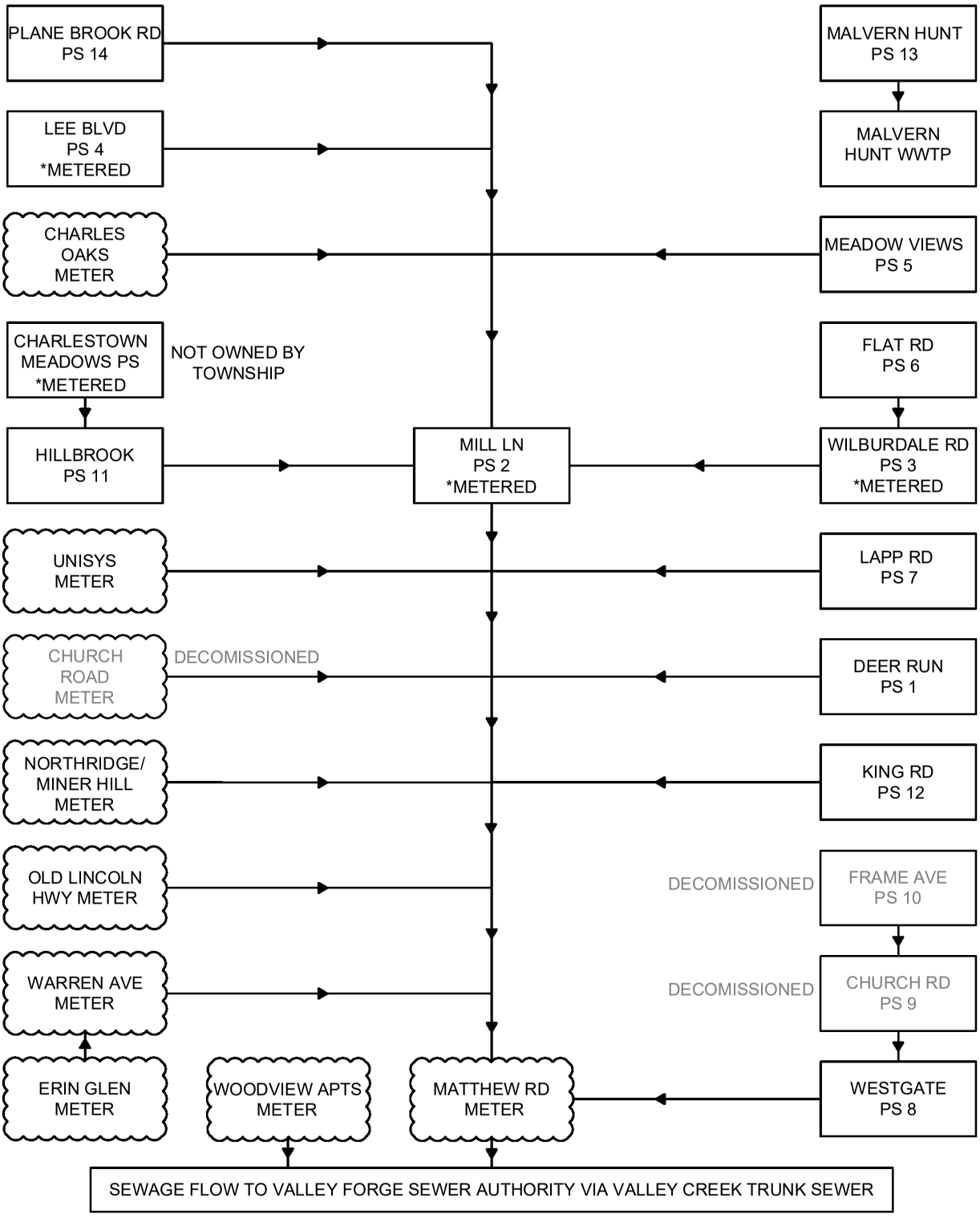
[5] Annual Average Flow based on pump run times

[6] Maximum flow at each pump station with one pump out of service that can handle peak instantaneous flow.

[7] Mill Lane Pump Station upgraded in October 2013 to three-pump system. Maximum flow with two pumps that can handle peak instantaneous flow.

[8] 2-year Annual Average Flow x Peaking Factor (Present Maximum Daily Flow to Annual Average Flow ratio)

[9] Existing Pump Station was taken out of service on March 13, 2020. Data reflects flows from January 1, 2020 through March 13, 2020.



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PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

EAST WHITELAND TOWNSHIP
CHAPTER 94 REPORT

ATTACHMENT F
PUMP STATION FLOW CHART

EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, PA 19355

PROJECT	EWPTX00030
DATE	2021-02-19
DRAWING SCALE	N.T.S
DRAWN BY	RG
APPROVED BY	CF

SK-0001

U:\ACCOUNTS\EWTPX\EWTPX00030 - CHAPER 94 REPORTING\DOC PREP\2020\ATTACHMENTS\EAST WHITELAND PUMP STATION FLOW CHART - 2020.DWG
PLOTTED: 3/15/2021 11:26:17 AM, BY: RYAN GASPARINI PLOTSTYLE: PENNONI NCS.STB, PROJECT STATUS: —

ATTACHMENT G

Industrial Waste

[25 Pa. Code § 94.12(a)(8)]

A. A copy of the Townships ordinance regulating industrial waste discharges to the sewer system is as follows

§154-107 Exclusion of industrial waste

Industrial wastes may be discharged into the sewer system only pursuant to written agreement with the Township and the Valley Forge Sewer Authority and upon obtaining an industrial waste discharge permit from Valley Forge Sewer Authority; provided that rules, regulations and acceptability standards which may from time to time be adopted by the Township and Valley Forge Sewer Authority prescribed for the pretreatment of Industrial Waste are fully complied with to the satisfaction of the Township and Valley Forge Sewer Authority. Industrial wastes to be acceptable for collection and/or treatment must not exceed the characteristics set forth in Part 2, Sewer Use, of this Chapter 154. Industrial waste surcharges will be imposed and collected by the Valley Forge Sewer Authority and will be in addition to the rentals imposed herein.

B. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township. Industrial customers monitor their own systems and send quarterly records to the Valley Forge Sewer Authority (VFSA) to verify compliance with the Authority's effluent guidelines. VFSA and the Township have agreements in place with each industrial customer which establishes their discharge guidelines, responsibilities for maintaining effluent quality and consequences should they fail to comply with the agreement. In addition, both entities have the right to spot check the industrial effluent at any time to verify compliance. VFSA samples the Township's effluent at such time it considers it necessary to check compliance with the inter-community agreement.

C. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township.

EXHIBIT E2

CHAPTER 94 REPORT FOR 2020
VALLEY FORGE SEWER AUTHORITY

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**VALLEY FORGE SEWER AUTHORITY REGIONAL TREATMENT PLANT REPORT**	Permit No.:	**PA0043974**
Mailing Address:	**333 PAWLING ROAD**	Effective Date:	**1/1/20**
City, State, Zip:	**PHOENIXVILLE, PA 19460**	Expiration Date:	**12/31/24**
Contact Person:	**Mr. Martin F. Goldberg**	Renewal Due Date:	**7/4/24**
Title:	**Operations Manager**	Municipality:	**Schuylkill Township**
Phone:	**610-935-1553**	County:	**Chester**
Email:	**mgoldberg@vfsa.com**	Consultant Name:	

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

Check the appropriate boxes:

☒ Line graph for flows attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

Check the appropriate boxes:

☒ Line graph for organic loads attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Not applicable

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Please see individual partner reports included as Section 3 of the 2020 VFSA Chapter 94 Municipal Wastelaod Management Annual Report.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☒ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment 2**)

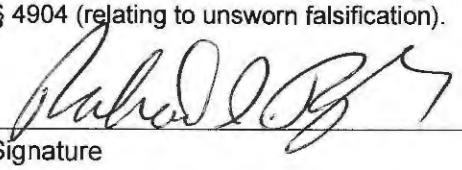
RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Martin F. Goldberg	Martin F Goldberg
Name of Responsible Official	Signature
610-935-1553	5/25/21
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Richard D. Taylor	
Name of Preparer	Signature
610-935-1553	5-25-21
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT
(In PADEP Format)

CALENDAR YEAR 2020

For: **THE VALLEY FORGE SEWER AUTHORITY**
WASTEWATER TREATMENT PLANT
CHESTER COUNTY, PENNSYLVANIA
333 PAWLING ROAD
PHOENIXVILLE, PA 19460

INTRODUCTION

The Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Schuylkill, East Pikeland, and Charlestown Townships. Additionally, wastewater treatment (not conveyance) is provided to the Partner Municipalities which include Easttown, East Whiteland, Tredyffrin and Willistown Townships and Malvern Borough. On December 19, 2018, Aqua Resources, Inc. purchased the assets of the Valley Creek Trunk Sewer (VCTS) and took over operations December 20, 2018. Beginning with the 2019 VFSA Regional Chapter 94 Report an additional collection system Chapter 94 report submitted by Aqua Resources for the Valley Creek Trunk Sewer (VCTS) system is included.

The VFSA treatment plant began treatment of wastewater during or about January 1978. The plant receives flow from the municipalities listed above from two force mains. There is one thirty inch diameter force main from the Partner Municipalities, containing wastewater flow from the Wilson Road and Valley Creek pump stations. There is also a twenty inch diameter force main from the Member Municipalities containing wastewater flow from the Pickering and Perkiomen pump stations. Flow from the two force mains combines immediately prior to the raw influent structure. The raw influent structure meters and diverts the flow into one of two primary clarifiers (operated in parallel) for gravity settling to remove heavy inorganic and organic solids, also reducing Biochemical Oxygen Demand (BOD_5). Following the primary clarifiers, further reduction of BOD_5, sufficient to also allow Nitrification, occurs biologically in the two activated sludge aeration tanks. Final settling is achieved following the aeration tanks in four final clarifiers also operated in parallel. The final treatment step prior to discharge to the Schuylkill River is ultraviolet light (UV) disinfection. Wastewater solids produced during primary clarification are pumped through cyclone degritters where grit is removed from the wastewater, sent to one of three treatment plant gravity thickeners where it is combined with other plant solids (scum, trucked wastewater and waste activated sludge).

In addition to its connected customers, VFSA also receives regulated and non-regulated (residential) trucked waste at a designated receiving station for preliminary treatment and equalization prior to combination with other plant solids in gravity thickeners. The gravity thickened solids produced in the sludge thickeners are pumped to centrifuges for dewatering. The resulting cake solids produced by the centrifuge dewatering process are alkaline stabilized by mixing dewatered sludge solids with hydrated lime, resulting in a biosolids product registered with the Pennsylvania Department of Agriculture as a fertilizer product. For more than ten years all of the VFSA biosolids have been land applied for beneficial agricultural reuse.

Act 537 Sewage Facility Planning

The long-term wastewater treatment needs for the areas served by the Valley Forge Sewer Authority (VFSA) were described in the Act 537 Plan, which was approved by the PADEP on March 10th of 2009. The basis for the 2009-approved Plan included the expansion of the VFSA treatment plant including the addition of a third aeration tank and a fourth final clarifier,

additional solids handling capacity, and new UV disinfection. UV disinfection was added in the summer of 2011 on an expedited basis in order to provide the required capacity for future disinfection as well as eliminate the risks inherent by the use of liquid chlorine.

In the winter of 2012 after discussions with its partners and the PADEP, VFSA conducted testing which successfully documented the treatment plant's capability to adequately treat wastewater for BOD5 and ammonia removal without the addition of a third aeration tank. With PADEP's concurrence the third aeration tank remains a part of the Act 537 plan, but construction has been deferred to a later date when this capacity may be required. Other items added consist of a third gravity thickener and a new third centrifuge. Final design – consisting of contracts for general construction, mechanical and electrical components - were completed in late 2012 with public bids occurring in January 2013. The three contracts were awarded and construction began in 2013 with substantial completion of the project achieved by October 20, 2016.

Construction of the VFSA influent chamber fine screen for rag and debris removal was substantially completed and placed in operation January 2020. Although this doesn't relate directly to capacity, it will improve upon process stability and reduce O & M costs.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion
Annual Average Capacity	11.75 mgd
Hydraulic Design Capacity	11.75 mgd
Organic Design Capacity	26,700 lbs/day

The 2020 VFSA Annual Chapter 94 spreadsheet attached as Attachment A of Section 1 contains the summary of VFSA's treatment plant flows for the years 2016 through 2020. The Annual Average (AA) flow for 2020 was **6.801** MGD, which is fifty-eight percent of the post-expansion permitted AA capacity of **11.75** MGD.

The 2020 VFSA wastewater treatment plant flow was generated by an average of 30,399 EDUs. The year end baseline EDUs used in the projected flow calculations is 30,518.

By PADEP defimition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any 3 consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2020.

The VFSA treatment plant is not currently in a hydraulic overload condition therefore a Corrective Action Plan (CAP) or Connection Management Plan (CMP) are not applicable.

During 2020 there were ten days on which there were precipitation totals of one inch or greater. There were **no** exceedances of the NPDES permit due to High Flow conditions during 2020.

The annual hydraulic loading from trucked wastes is less than one percent of the total annual plant's influent, is not considered significant in regards to overall plant flow and is not included in the hydraulic projections in the VFSA DEP Chapter 94 spreadsheet.

2. ORGANIC LOADING

VFSA's Annual Average (AA) organic loading for 2020, including trucked in waste loading, was **9,994,** LB/day BOD_5, which is thirty-seven percent of the post-expansion permitted AA capacity of **26,700** LB/day BOD_5.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2020.

Treatment plant influent $CBOD_5$ and BOD_5 samples are twenty-four hour flow proportioned composite samples collected, preserved and analyzed in accordance with

the Title 40 of the Code of Federal Regulations, Part 136. These $CBOD_5$ and BOD_5 samples are collected for analysis from the plant's raw influent structure, after initial mixing of the two force mains tributary to the treatment plant and treatment by the influent fine screen, but prior to any treatment units and recycle/return flows from the treatment plant.

VFSA calculates influent organic loadings for each day on which samples are collected for both influent $CBOD_5$ and BOD_5 utilizing PADEP's recommended method. The results are summarized in the VFSA DEP Chapter 94 spreadsheet.

Trucked waste contributes a BOD_5 load on the plant which should be accounted for and included in the Chapter 94 organic projections. This report maintains that assumption and is confirmed in the 5 year look back table below:

VALLEY FORGE SEWER AUTHORITY
Chapter 94 Historic Organic Loading
Monthly Organic Loading (ppd) Trucked Wastewater

MONTH	2016	2017	2018	2019	2020	Five Year Avg BOD5
JANUARY	2,722	488	707	1,541	773	1,246
FEBRUARY	2,731	457	343	1,393	699	1,125
MARCH	2,176	366	635	1,899	796	1,174
APRIL	2,571	442	586	1,326	671	1,119
MAY	2,452	446	623	1,110	557	1,038
JUNE	1,678	390	708	978	625	876
JULY	679	332	982	1,030	527	710
AUGUST	565	386	641	710	425	546
SEPTEMBER	488	335	594	661	512	518
OCTOBER	632	380	534	1,141	743	686
NOVEMBER	904	431	890	989	763	795
DECEMBER	1,240	240	1,704	1,155	538	975
AVERAGE	1,570	391	746	1,161	636	901
MAX MONTH	2,731	488	1,704	1,899	796	2,731

All values are in Lbs/Day BOD_5

The 2020 monthly average organic loading was calculated by adding the estimated organic loading from trucked in waste to the influent loading and is included in the DEP Chapter 94 spreadsheet monthly organic BOD_5 loads.

All contributing Partners of the regional treatment plant responded to the request for data necessary to compile this report. VFSA coordinates the responses within this submittal. The hydraulic and organic loading projections to establish treatment plant projections were prepared on the basis of wastewater treatment plant flow records and EDU projections supplied by the individual Partner municipalities. Please see Section 3 of the

2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report for copies of the VFSA Member Municipalities and individual Partner Municipality reports.

3. **NOT APPLICABLE**
4. **SEWER EXTENSIONS**
5. **PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION**
6. **CONDITION OF THE SEWER SYSTEM**
7. **SEWAGE PUMPING STATIONS**

Information For Components 4 Through 7, Including The Requested Maps, Data And Supporting Information For Those Components, Can Be Found In The Valley Forge Sewer Authority and Partner Municipality Portions Of Section 3 Of The 2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report.

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the individual member reports attached the following member municipalities currently either have CAP/CMP plans submitted or approved by PADEP, while Malvern Borough, Tredyffrin Township, Valley Forge Sewer Authority and Willistown are currently not in overload conditions and do not require a CAP/CMP plan:

1) Easttown Twp - CAP/CMP approved by PADEP October 25, 2011.
2) East Whiteland Twp - CAP/CMP in effect.

(See the individual partner municipality Chapter 94 Municipal Chapter 94 Wasteload Management Annual Reports in Section 3 for more details.)

10. SEWAGE SLUDGE MANAGEMENT INVENTORY – NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, most meters are calibrated on a quarterly basis). Please see Attachment No. 2 of Section 1 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2020 calibration reports. Meter calibration reports for the whole year are available for review at the VFSA administration building.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 1

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

SPREADSHEET AND GRAPHS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2020

Facility Name: VALLEY FORGE SEWER AUTHORITY

Permit No.: PA0043974

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 11.75 MGD
Upgrade Planned in Next 5 Years? NO **Year:**
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 26,700 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO **Year:**
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2016	2017	2018	2019	2020
January	7.01981	5.825	5.373	9.798	6.606
February	10.25414	5.538	7.411	8.916	7.101
March	7.87968	5.848	8.071	9.790	6.948
April	6.72367	6.492	7.301	7.665	8.088
May	7.29419	5.980	7.603	8.259	7.238
June	6.08067	5.565	8.043	8.026	6.288
July	5.6371	5.211	7.021	7.692	6.225
August	5.50581	5.279	8.115	6.213	6.857
September	5.51233	5.211	9.288	5.704	5.660
October	5.272	5.520	7.874	5.611	5.688
November	5.05633	5.927	9.773	5.805	6.444
December	5.55548	5.908	9.313	6.707	8.466
Annual Avg	6.482600204	5.691911201	7.932132613	7.515421967	6.800774851
Max 3-Mo Avg	8.384540601	6.106903226	8.986622238	9.627785346	7.42445119
Max : Avg Ratio	1.29	1.07	1.13	1.28	1.09
Existing EDUs	26,890.0	28,434.0	28,941.0	29,569.9	30,517.9
Flow/EDU (GPD)	241.1	200.2	274.1	254.2	222.8
Flow/Capita (GPD)	68.9	57.2	78.3	72.6	63.7
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2016	2017	2018	2019	2020
January	14,599	8,569	12,512	14,779	12,830
February	16,042	8,103	12,395	11,060	11,832
March	13,941	9,503	10,437	11,647	10,851
April	12,207	7,742	12,160	10,374	11,052
May	11,429	8,046	9,850	9,307	9,656
June	10,033	6,740	10,413	9,167	8,714
July	7,581	6,365	10,817	12,094	9,812
August	7,596	6,494	8,678	8,933	8,170
September	8,600	8,092	10,371	9,685	8,783
October	8,835	8,727	10,734	12,109	8,371
November	9,638	12,006	10,575	11,696	9,103
December	9,543	8,447	11,600	13,362	10,752
Annual Avg	10,837	8,236	10,879	11,185	9,994
Max Mo Avg	16,042	12,006	12,512	14,779	12,830
Max : Avg Ratio	1.48	1.46	1.15	1.32	1.28
Existing EDUs	26,890	28,434	28,941	29,570	30,518
Load/EDU	0.403	0.290	0.376	0.378	0.327
Load/Capita	0.115	0.083	0.107	0.108	0.094
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2021	2022	2023	2024	2025
New EDUs	814.9	1168.6	818.5	547.0	136.5
New EDU Flow	0.1943	0.2787	0.1952	0.1304	0.0326
Proj. Annual Avg	7.07887	7.35757	7.55277	7.68317	7.71577
Proj. Max 3-Mo Avg	8.31345	8.64075	8.87	9.02314	9.06142
Proj. Overload?	NO	NO	NO	NO	NO

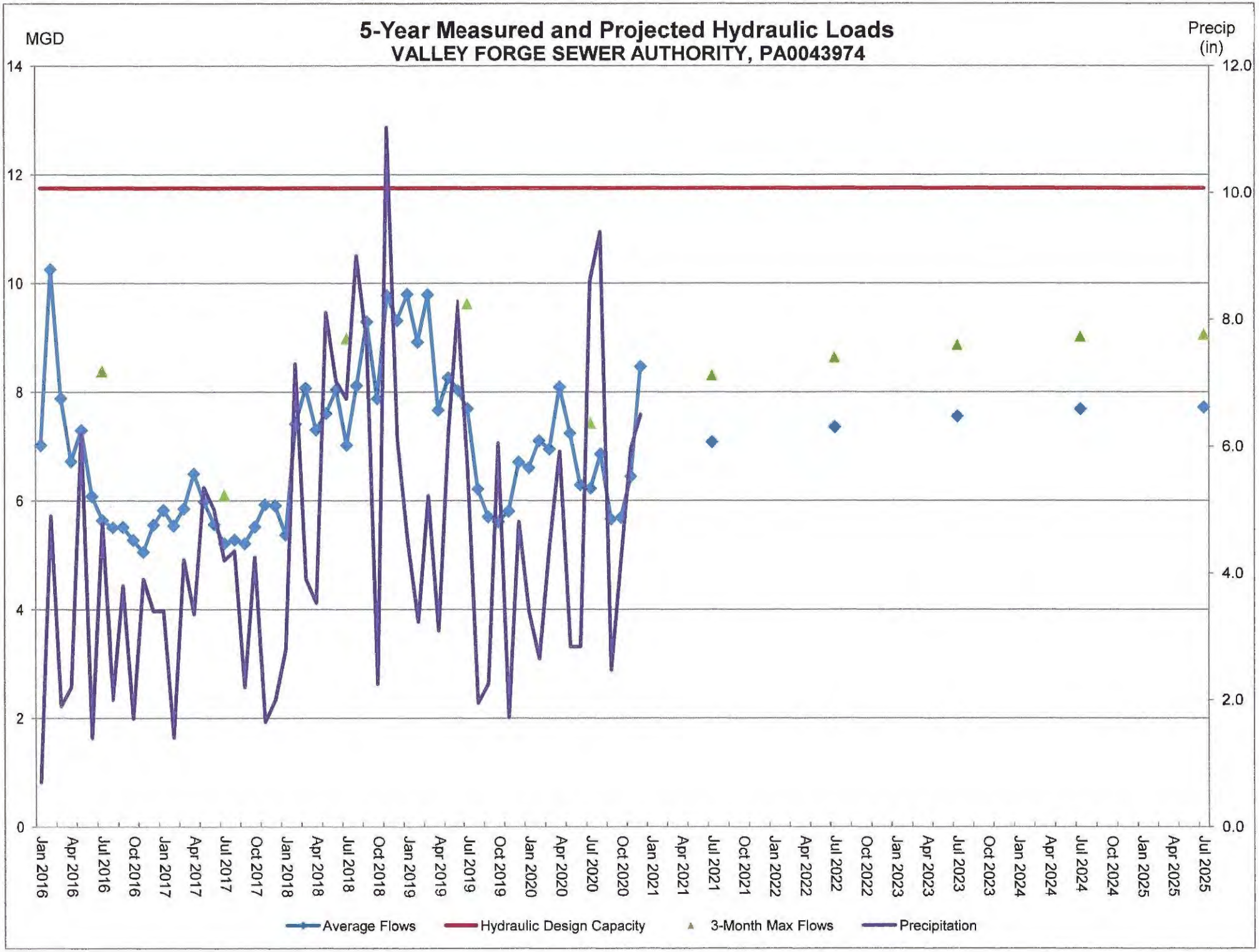
Projected BOD5 Loads for Next Five Years (lbs/day)

	2021	2022	2023	2024	2025
New EDUs	814.9	1168.6	818.5	547	136.5
New EDU Load	289.170	414.681	290.447	194.105	48.438
Proj. Annual Avg	10,515	10,930	11,220	11,414	11,463
Proj. Max Avg	14,076	14,631	15,020	15,280	15,345
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2016	2017	2018	2019	2020
January	0.7	3.4	2.8	4.5	3.4
February	4.9	1.4	7.3	3.2	2.7
March	1.9	4.2	3.9	5.2	4.5
April	2.2	3.4	3.5	3.1	5.9
May	6.2	5.4	8.1	6.2	2.8
June	1.4	5.0	7.0	8.3	2.8
July	4.8	4.2	6.8	5.7	8.6
August	2.0	4.4	9.0	2.0	9.4
September	3.8	2.2	7.7	2.3	2.5
October	1.7	4.3	2.3	6.1	4.2
November	3.9	1.7	11.0	1.7	6.0
December	3.4	2.0	6.1	4.8	6.5


5-Year Measured and Projected Hydraulic Loads
VALLEY FORGE SEWER AUTHORITY, PA0043974
MGD
Precip (in)
14
12
10
8
6
4
2
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
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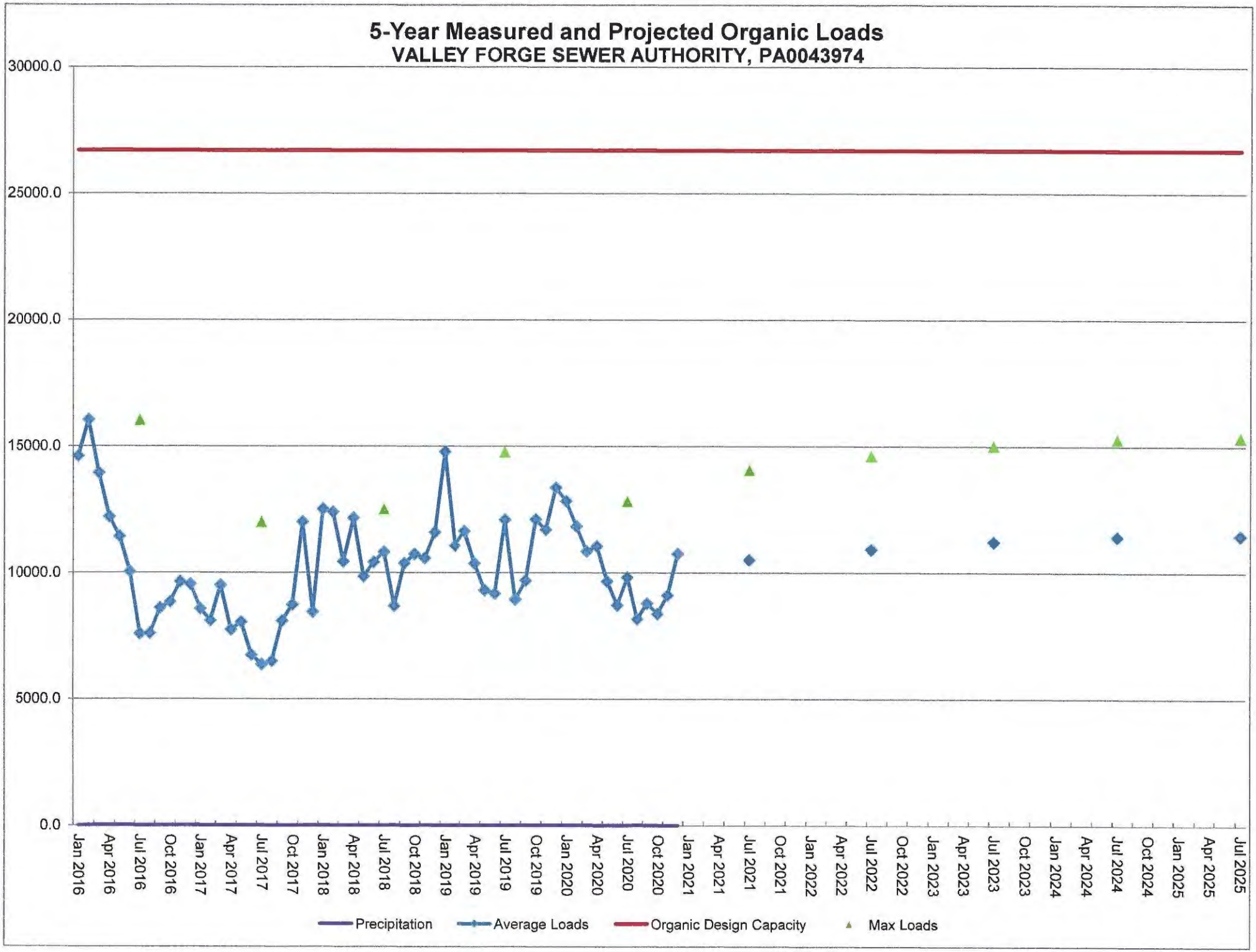
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation


5-Year Measured and Projected Organic Loads
VALLEY FORGE SEWER AUTHORITY, PA0043974
30000.0
25000.0
20000.0
15000.0
10000.0
5000.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
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Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
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Jan 2022
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Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Precipitation
Average Loads
Organic Design Capacity
Max Loads

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

ATTACHMENT NO. 2

METER CALIBRATION DOCUMENTATION

RECEIVED
JAN 12 2021
By

ALLIED CONTROL SERVICES, INC.

611 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

DOCUMENT TRANSMITTAL

TO:
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

ATTN: Mr. Martin Goldberg

TRANSMITTAL NO.: 4
PROJECT NO.:
DATE: 1/6/2021
CARRIER: USPS
REF/P.O. NO.:

ITEM	SIZE	QTY/ TYPE	DRAWING NUMBER	REV NO.	TITLE	TRANS CODE
1		1	Set		Calibration Schedule – 4th Qtr. 2020	1

REMARKS:
Please find the enclosed Booklets/set per the above list

SUBMITTED BY: J. Dapper via D. Reilly

TRANSMITTAL CODES	VENDOR TRAMSMITTAL CODES	SIZE CODES	TYPE CODES
0 – FOR INFO. ONLY	9 – WORK MAY PROCEED	A – 8.5 x 11	C – COPY
1 – FOR REVIEW	10 – REVISE & RESUBMIT	B – 11 x 17	B – BLUELINE
2 – FOR APPROVAL	Work may proceed subject to	C – 18 x 24	S – SEPIA
3 – FOR DESIGN	Incorporation of changes indicated	D – 24 x 36	V – VELLUM
4 – FOR BID	11 – REVISE & RESUBMIT	E – 36 x 48	M – MANUAL
5 – FOR FABRICATION	Work may not proceed		D – DISK
6 – FOR CONSTRUCTION	12 – REVIEW NOT REQUIRED		O - OTHER
7 – AS BUILT	Work may proceed		
8 - OTHER			

/jlpd:20 #4 210106

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:

Section A: Equipment calibrated quarterly (VFSA Pump Stations)
Section B: Equipment calibrated quarterly (EASTTOWN Township)
Section C: Equipment calibrated quarterly (EAST WHITELAND Township)
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section E: Equipment calibrated quarterly (TREDYFFRIN Township)
Section F: Equipment calibrated quarterly (WILLISTOWN Township)

Date: Third Quarterly 2020 Calibration Data

"Section A"

Valley Forge Sewer Authority
Pickering Creek Pump Station
Phone # 610-993-9475
Magnetic Flow meters #1
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Serial #: 0264549
Cal: 1002005509795005
Max Flow: 5000 GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Creek Pump Station
Magnetic Flow meter #3
Instrument Data:

Manufacturer: Sparling
Model #: FM656
Serial #: M156262611
Max Flow: 5000 GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Creek Pump Station
Magnetic Flow meter #2

Instrument Data:

Manufacture: Sparling
Model #: FM655-085-110-0
Serial #: H40050191
Max Flow: 5000 GPM
Sign: Minus
Coil Freq 4
K factor 31.42 PPG
Offset 1.06
D: 7.7500000K Factor:

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Pump Station
O I T
Instrument Data:

Manufacturer: Allen Bradley
Model #: Panelveiw Plus 1000
Serial #: (21)AWOGN5VL
Counter: NONE
Range: 0-5000GPM

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Pickering Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	10-08-20
% of Error:	Less than .2%
Comments:	10-08-20 Ma. = 0 / 5,001/10,000 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Perkiomen Pump Station {935-2150}
Magnetic Flow
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Serial #: 0860131213
Counter: Electronic Totalize X 1
Cal: #0929605509081011
Max Flow: 1500 GPM

Date of Calibration:	12-29-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Perkiomen Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	12-29-20
% of Error:	Approx. avg. Low .30%
Comments:	4-08-20 Ma. = -0 / 748 /1495 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Valley Creek Pump Station (phone:#610-291-0587)
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemoun7
Model #: 8712C
Serial #: 0860250715
Cal#: 115560491152011
Max Flow: 300 GPM

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Valley Creek Pump Station
Recorder
Instrument Data:

Manufacture: Chessel
Model #: 392
Serial #D8950-001-03-03
Counter: Electronic Totalize X 10
Chart: 0-300

Date of Calibration: 10-20-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Valley Forge Sewer Authority
Valley Creek Pump Station
Totalize
Instrument Data:

Manufacturer: AGM
Model #: 4011-10
Serial #: 314-553A
Multiplier X 10

Date of Calibration: 10-20-20
% of Error: Less than .2%
Corrective Action: none

Comments: none

Valley Forge Sewer Authority
Valley Creek Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration: 10-20-20
% of Error: Approx. avg. Low .26%
Comments: Ma. = -.6 / 149.8 / 298.7 GPM
Corrective Action: none

Valley Forge Sewer Authority
Charlestown Meadows Station
Magnetic Flow meters Instrument Data:
Manufacturer: Sparling CODE 1563
Model #: FM656
Serial #: M078233104
Max Flow: 500 GPM
4 inch
K Factor: 256.01 PPG
Offset: 2.37

Date of Calibration: 10-08-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Valley Forge Sewer Authority
Charlestown Meadows Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Sparling CODE 1563
Model #: FM656
Serial #: M078233104
Max Flow: 500 GPM

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Meadows Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	10-08-20
% of Error:	Approx. avg. Low .4%
Comments:	10-08-20 Ma. = -.4 / 248.7 / 498.6 GPM
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: Hydro-Ranger
Serial #:021805130VU
Primary Device: 6" Palmer Bowlus Flume
Max Flow: 130 GPM
Totalize Multiplier: X 10

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Miltronics
Model #: Hydro-Ranger
Serial #:021805130VU

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Lee Boulevard Pump Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	
% of Error:	
Comments:	Not in Operation
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 1007
Primary Device: 6" Palmer Bowlus Flume
Max Flow: 100 GPM
Totalize Multiplier: X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Mission Control
Instrument Data:

Manufacturer: Mission Control
Model #: M110/800

Date of Calibration:	
% of Error:	
Comments:	Not in Operation
Corrective Action:	none

Valley Forge Sewer Authority
Charlestown Oaks Station
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 1007
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	01-05-21
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

"Section C"

East Whiteland Township
Lee Boulevard Pump Station
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Warren Avenue Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Minor Hill
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Matthews Road Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Max Flow: 10.0 MGD
Primary: 36" Leopold Lagco Flume
Output: 4-20 MADC (tot x 1000)

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

East Whiteland Township
Matthews Road Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 1eeeern00

Date of Calibration: 10-20-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

East Whiteland Township
Woodveiw Apts
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 2534
Max Flow: 50 G.P.M.
Primary:
Output: 4-20 MADC (tot x 100)

Date of Calibration: 12-17-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

East Whiteland Township
Woodveiw Apts
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 2534
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	none
Comments:	none
Corrective Action:	none

East Whiteland Township
Woodveiw Apts
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4391
Max Flow: 590.0 G.P.M.
Primary:
Output: 4-20 MADC (tot x 100)

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4391
Relay output x 100

Date of Calibration:	10-20-20
% of Error:	none
Comments:	none
Corrective Action:	none

East Whiteland Township
Erin Glen
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	10-20-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Charlestown Oaks Meter Pit
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

East Whiteland Township
Charlestown Meadows Station
Totalize / Display
SCADA (LOCATED AT MILL LANE)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 10

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20	
Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comment10-07-20s:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration:	12-27-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section E"

Tredyffrin Township
Wilson Rd. Pump Station
Magnetic Flow meter/ Totalizer
Instrument Data:

Manufacturer: Siemens
Model #: 5100W
Serial #: 7ME6910-1AA10-1AA0
Max Flow: 1000 GPM

Date of Calibration:	9-10-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Tredyffrin Township
Wilson Rd. Pump Station
SCADA: Display
Manufacturer: Allen Bradley
Model #: 1771 P7

Date of Calibration:	9-10-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

"Section F"

Willistown Township (610-647-5300 Ext.245) Jim cell (610-656-2074)
Cedar Hollow Road Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Mobrey
Model #: MCU 900
Serial #: 1780418
Max Flow: 3.000 MGD
Primary: 18" Open Flow Nozzle
Multiplier: X 1000

Date of Calibration:	12-22-19
% of Error:	Less than .5%
Comments:	none
Corrective Action:	none

Willistown Township (610-647-5300)
Cedar Hollow Road Meter Pit
Recorder
Instrument Data:

Manufacturer: Future Design Controls
Model #: 5000
Serial: #: 11-02710FD
Max Flow: 3.00 MGD
Chart: 0-100

Date of Calibration:	12-22-19
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2020
VALLEY FORGE SEWER AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

SECTION 2

Environmental Protection by Caring Professionals

Valley Forge Sewer Authority

333 Pawling Road
Phoenixville, Pennsylvania 19460
610-935-1553 Phone
610-983-9684 Fax

March 18, 2021

CERTIFIED MAIL RETURN RECEIPT REQUESTED
Parcel Number 7018 1130 0002 0580 9465

U.S. EPA Region 3 NPDES Pretreatment
Clean Water Branch | Water Division
U.S. EPA Region 3 (3WD41)
1650 Arch St., Philadelphia, PA, 19103

RE: Annual Pretreatment Report for Calendar Year 2020

Attention:

Enclosed please find one (1) copy of the required signatory page, SNC publication and analytical data for Valley Forge Sewer Authority's 2020 Annual Pretreatment Report. The report in electronic format has been already sent along with the analytical data summary.

If you have any further questions please contact me at the number listed above.

Very truly yours,

Richard D. Taylor
Laboratory Supervisor

ENCLOSURES

S:\LAB\LAB\Connected\Ius\Y IU Master Files\Annual Pretreatment Reports\2020 Report\VFSA 2020 Annual Pretreatment Report Cover Page.Doc

21ST CENTURY media

MediaNews Group

PHILADELPHIA GROUP

AFFIDAVIT OF PUBLICATION

307 Derstine Avenue • Lansdale, PA 19446

VALLEY FORGE SEWER AUTHORITY
333 PAWLING ROAD
PHOENIXVILLE, PA 19460
Attention:

STATE OF PENNSYLVANIA,
COUNTY OF MONTGOMERY

The undersigned Sharon Deeth, being duly sworn the he/she is the principal clerk of The Mercury, The Mercury Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

VALLEY FORGE SEWER AUTHORITY

Published in the following edition(s):

The Mercury	03/14/21
The Mercury Digital	03/14/21

PUBLIC NOTIFICATION OF SIGNIFICANT NONCOMPLIANCE OF PRETREATMENT REQUIREMENTS

Pursuant to the requirements of the federal General Pretreatment Regulations For Existing and New Sources of Pollution, 40 C.F.R. 403.8 (f) (2) (viii), Valley Forge Sewer Authority must publish, at least annually, the names of industrial facilities in significant noncompliance of federal and/or local pretreatment requirements.

During 2020, the following industry was determined to be in Significant Noncompliance:

Devault Foods for violation of the requirements to sample, analyze and report the results of certain process discharge parameters during the 2nd quarter of 2020.
MERC March 14 -a1

Sworn to the subscribed before me this 3/15/21.

Maureen Schmid

Notary Public, State of Pennsylvania
Acting in County of Montgomery

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MAUREEN SCHMID, Notary Public
Lansdale Boro., Montgomery County
My Commission Expires March 31, 2021

Advertisement Information

Client Id: 890156 **Ad Id:** 2142739 **PO:** **Sales Person:** 018304

HEALTHCARE

HUMAN SERVICES ASSISTANT

Trenton Psychiatric Hospital is seeking applicants who, under the guidance and direction of a Registered Nurse, will assist in the care of our adult patients who are undergoing treatment for acute and persistent mental illnesses.

All positions are hourly and earn sick leave time. Depending on the needs of our facility at the time of your employment, you may be scheduled to work one of the three shifts: 6:45AM- 3:15 PM, 2:45 PM-11:15 PM, or 10:45 PM-7:15 AM. Some weekend and holiday work will be required.

The pay rate is $16.85 per hour.

Preference will be given to candidates with at least one year of experience in a healthcare related field, or who are currently enrolled in an educational program that is considered to have a healthcare focus.

You must possess a valid driver's license to apply for the position.

Applications can be obtained from the first floor of the Parker Building at the address indicated below or can be requested via e-mail from Deborah.Kidd@doh.nj.gov

Applications cannot be requested via phone call.

Trenton Psychiatric Hospital
100 Sullivan Way
West Trenton, NJ 08628

RESTAURANT FOOD SERVICE

HOST/HOSTESS, SERVERS
Part Time - Must be experienced & dependable.
Call 610-789-7770

ITALIAN DELIGHT-FT/PT-ALL positions. Apply betw 2PM-5PM, 2603 MacDade Blvd. Holmes, PA 19043

SKILLED LABOR

Competitive wage for **full time experienced maintenance mechanic.** Plumbing, carpentry, electrical. Pkg incl available residency (not required) & medical ins, vac and sick time. Please apply at
Pickering Run Apartments
500 Knotterton Road,
Phoenixville PA 19460
610-933-0848

GENERAL LABORER & CARPENTERS. DRIV lic a plus. **CALL 610-428-7942.**

THIS IS THE PLACE FOR CASH! So if you have merchandise to sell, call the classified department today!

SKILLED TRADES

30 YR EST. LANDSCAPE CO. is seeking Foreman/Laborers. No grasscutting. Driv Lic. & transp. Get start pay for qual indiv. 610-494-5204

EXPERIENCED ONLY HARDWOOD FLOOR INSTALLERS/ FINISHERS
to join our team full-time with benefits, excellent starting wage. ***Signing Bonus $500-$1000 for experienced installers.*** If interested please email us your resume at office@mansuetohardwood.com or contact our office at 610 696-6557.

LAWN AND LANDSCAPE POSITIONS AVAILABLE for qualified individuals to operate commercial lawn mowing equipment, string trimming, blowing, raking, installation of plant material, weeding, mulching, general clean-ups, pruning. Experience preferred, but not necessary. Valid PA drivers license required. Operating hours begin at 7:30 am and end between 4:30 pm and 7:30 pm Monday through Friday. Occasional Sat hours are required. Benefits to qualified individuals include paid vacation time, 50% major medical insurance paid by employer. **Contact Jim Baxter at 610-524-9744 or email at baxterlandscape@comcast.net for interview appointment.**

TECHNOLOGY

Sr. Clinical Data Manager, MS. deg. in Healthcare Infor., Pharmacy., w/ 1 yr. of exp., instr. Clin. Dev. team to create & deliver sys. Specif. on EDC sys. using Medidata RAVE, Oracle clinical, RDC & Phase forward. Inform in building database, query mngt. & data cleaning processes; Train clin. trial team on Data Sciences trial-specific sys. like LSH, ECE, SAS GRID & Clinix tools; Guide SAS prog. & clin. biostats in dev. SAS datasets, analyze data, generate TLFs for both safety & efficacy analysis output; Oversee func. groups to review & create cust. reports of clin. data using diff. reporting tool; (J-Review, i-Review, R-Programming, Spears & Spotfire); Mon. jr. clin. data team to dev. SDTM data mapping, & to validate SDTM & ADaM datasets to ensure compl. w/ submission std.; Inspect clin. data mngt. related doc. to ensure compl. to archival/bling req. using TMF & eTMF (Veeva vault tool). Must be willing to travel and/or relocate to work in unanticipated locations throughout the US. Send Resume to PVR Technologies, Inc, 501 Allendale RD, Ste 201, King Of Prussia, PA 19406

CAN'T FIND IT? Find it the easy, effective way. Use a low cost "Wanted to Buy" classified ad.

RESIDENTIAL SALES

All Real Estate advertising in this newspaper is subject to the Federal Fair Housing Act of 1968 which makes it illegal to advertise "any preference, limitation or discrimination, based on race, color, religion, age or familial status, sex or national origin or an intention to make any such preference limitation or discrimination".

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. Phrases like: family room, walk-in closet, private, etc. are meant as descriptive copy only and are not intended to show preference for or exclusion of anyone. To complain of discrimination, call FHCSP at 610-604-4411.

If you have a property you no longer want, CALL ME NOW. I AM A REAL PERSON WHO BUYS PROPERTIES. Single family, multi-family, mixed use, commercial, land/lots, I will buy it. We figure out a solution that works for you.
Call now. 215-326-9186

APARTMENTS FOR RENT (UNFURNISHED)

AMBLER - 1 BR Apartment, 2nd Fl., $900/mo. We provide heat, hot water, and cooking gas, minutes to RR, 309, & PA TPK. **Call 215-646-4109**

BOYERTOWN: A Country Setting, remodeled 1BR (one floor) with new cabinets and appliances and tile kitchen, new carpet in living room and fresh paint, tile bathroom with new vanity, tile laundry room, new carpet in bedroom, front porch to relax on and access to back yard for gardening showing by appointment with basic goods $800 per month plus utilities ask about garage 610-304-5787

CHESTER - 204 West 5th St. ALL NEW!!! 3BR $1000/month. Call Franny 856-341-6516, or Henry 267-997-4466

GILBERTSVILLE- 1ST Floor 1Br, heat incl., LR, EIK, large closet, tiled BA, washer/dryer in basement, $790/mo. available May 1 **610-304-5787**

GLENOLDEN: 1 BR, 1st Flr, WW, No smking/pets. $835/mo. incl ht/wtr. 484-480-3628

Classified Ads get Results!

APARTMENTS FOR RENT (UNFURNISHED)

LINDEN APARTMENTS
(Pottstown, PA) 1 BR $890/mo & 2BR $985/mo. No Pets. HT/HW incl. (610-458-5012)

MEDIA- 2 BR, 1st flr duplex, $1150/mo + utils. Hd flrs, new kitch, micro, new windows, icemaker, tile BA, ceiling fans. N/S, No Pets. **610-368-9278**

NORCO APARTMENTS
(Pottstown, PA)- 1 BR- $900/m & 2 BR- $995/mo., No Pets. Ht/HW incl. **(610) 458-5012**

Ridley Park - Drexel Hill - Sharon Hill - Glenolden: Newly renov 1 & 2 BR's, 700sf, hw. $790-$950. Pets ok. Call **570-703-1087 or 215-964-8089**

YORKSHIRE APTS. (Pottstown PA) - 1 BR, Starting $850/mo 2 BR $1050 No pets. Elevator on Premises. ht/HW incl. **610-458-5012**

HOUSES FOR RENT (FURNISHED)

ALL REAL ESTATE advertising in this newspaper is subject to the Federal Fair Housing Act of 1965, which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, age or familial status, sex or national origin, or an intention to make any such preference, limitation or discrimination."

ROOMS FOR RENT

CHATEAU - Boyertown area. Clean, secure, private parking. $100wk+ (610)367-5112

CHESTER - 714 W. 5th St. Room for rent $400 /month Call Henry 267-997-4466.

CEMETERY LOTS

EDGEWOOD MEMORIAL CEMETERY LOT
Section I, lot 14, unit C4, lots valued $5,100 each great location sell for $2,500 each
CALL 610-395-2674
offers accepted

GARAGE/RENTAL

SPRING CITY - Storage Garage $100/mo + sec. dep. Outdoor drive-up access. Well lit, security cameras **610-469-4668**

COMMERCIAL RENTALS

FOLSOM - 1200 Sq.Ft. SHOP/WRENSE. 1 Ovrhd Dr., 1 Walk Dr. Office w/Pwdr Rm. Off street parking. $895. Mo+Utils. 610-461-0603

PASSENGER CARS

1973 FORD MACH 1
351C rebuilt replacement motor, less than 200 miles, 4 speed, new clutch, needs paint $17,500, 484-942-3551

2004 BUICK PARK AVENUE 137,000. Miles Inspected. Clean Car. $2,000
Contact phone: 610-909-6418

HONDA 2003 ACCORD COUPE-EX-L, V6, AUTO W/ NAVIGATION, 24K, JUST SVCD & INSP, NICE CHEAP RELIABLE CAR. $2800 OBO. 610-566-6981 DAYTIME only.

ANTIQUE & VINTAGE

61 CHEVROLET BISCAYNE
370 HP, 350 Cubic Inch Rebuilt M21 4 Spd. Rebuilt 373 Posi 12 Bolt Rear. New Front Springs, Bushings & Ball Joints, Front Disc Brake Conversion, Weld Wheels, New Tires, New Gas Tank, 3" Exhaust. Asking $13,500.00 Call 610-793-2958 (Please leave message)

JUNKERS & CLUNKERS



WE BUY JUNK CARS
Free Pickup
609-395-4200

AUTOS WANTED

#1 AAA BEST CASH DEAL - I Want your Used Car or Truck. Call Me First before you Sell or Trade-in. **Cash Paid - Prompt Service**
610-532-2054 OR 610-203-7719

ANTHONY'S AUTO SALVAGE
$450-$1800 for most cars & trucks. (484)886-1971

AUTOS & TRUCKS
$500-$3,000
CALL 609-526-3175
OR 609-737-3621

CALL JOHNNY'S JUNK
Cash for Junk cars

LEGAL NOTICES

LEGAL NOTICE

NOTICE IS HEREBY GIVEN in accordance with the Limerick Township Zoning Ordinance of 1961, as amended, of a hearing before the Limerick Township Zoning Hearing Board on Wednesday, March 24, 2021, at 6:30 p.m., at the Limerick Township Municipal Building, 646 W. Ridge Pike, Limerick Township, Montgomery County, Pennsylvania, on the Application of John R. Maddonni, Jr., 333 River Road, Collegeville, Pennsylvania, 19426.

The Applicant is the owner of property located at 40 Penn Road, Limerick Township, Montgomery County, Pennsylvania, identified as Tax Parcel Number 37-00-03498-00-2 (hereinafter referred to as "Subject Property"). The Subject Property is located in an O/LI – Office/Limited Industrial Zoning District, is approximately 5.31 acres in size and is improved with a 25,200 square foot warehouse. The Applicant proposes to convert a portion of the existing warehouse to an indoor recreation facility and is requesting the following relief from the Limerick Township Zoning Ordinance:

1. A variance from § 184-87 to permit the existing 21 parking spaces to satisfy the requirement of off-street parking.

2. A variance from § 184-155 to permit an indoor recreational facility to occupy 10,800 square feet of the existing 25,200 square feet structure.

At the time of the hearing, any person or party interested will be given full opportunity to be heard. The Board reserves the right to conduct such other business as may come before it.

LIMERICK TOWNSHIP ZONING HEARING BOARD
Mark J. John, Chairman

Charles D. Garner, Jr., Esquire
Wolf, Baldwin & Associates, P.C., Solicitor
Merc march 7, 14 a-1

PUBLIC NOTIFICATION OF SIGNIFICANT NONCOMPLIANCE OF PRETREATMENT REQUIREMENTS

Pursuant to the requirements of the federal General Pretreatment Regulations For Existing and New Sources of Pollution, 40 C.F.R. 403.8 (f) (2) (viii), Valley Forge Sewer Authority must publish, at least annually, the names of industrial facilities in significant noncompliance of federal and/or local pretreatment requirements.

During 2020, the following industry was determined to be in Significant Noncompliance:

Devault Foods for violation of the requirements to sample, analyze and report the results of certain process discharge parameters during the 2nd quarter of 2020.
MERC March 14 -a1

SHERIFF SALES

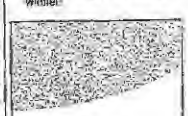
SHERIFF'S SALE
By virtue of a Writ of Execution No. 2019-13474 issued out of the Court of Common Pleas of Montgomery County, Pa., to me directed will be sold at Public on-line auction conducted by Bid4Assets, 8757 Georgia Ave., Suite 520, Silver Springs, MD 20910
WEDNESDAY, MARCH 31, 2021
At 1:00 p.m., prevailing time, by accessing the web address: www.bid4assets.com/MontcoPASheriff the following described Real Estate:
ALL THAT CERTAIN brick dwelling house and the lot or piece of ground on which the same is erected, situated on the Northerly side of Spruce Street, Eastward of Diamond Street, being #847 Spruce Street, in the Borough of Pottstown, County of Montgomery and Commonwealth of Pennsylvania, more fully bounded and described in accordance with a survey thereof made by Ralph E. Shaner and Son on October 24, 1942, as follows, to wit:
BEGINNING at a point on the Northern lot line of Spruce Street (50 feet wide) Eastward a distance of 37.42 feet from the intersection of the Northern lot line of Spruce Street with the Northeasterly lot line of Diamond Street (50 feet wide); thence along property

SHERIFF SALES

CONVEYED UNTO JULIA J. LAWRENCE.
PARCEL NO. 16-00-28272-02-6
LOCATION OF PROPERTY: 847 Spruce Street, Pottstown, PA 19464
IMPROVEMENTS THEREON ARE: A single family residential dwelling
SEIZED AND TAKEN IN execution as the property of JULIA J. LAWRENCE
REAL DEBT: $49,017.02
And to be sold by Sheriff of Montgomery County
Down money: Prospective bidder must complete the Bid4Assets on-line registration to participate in the auction. The highest bid shall be paid to them, on their website, as the purchase price for the property sold by the Sheriff's Office, Norristown, PA
To all parties in interest and claimants: Notice is hereby given that a schedule of distribution will be filed by the sheriff 30 days after the date of the Sale. Distribution will be made in accordance with the schedule unless exceptions are filed hereto within ten (10) days thereafter.
Merc-Mar 7, 14, 21

SHERIFF'S SALE
By virtue of a Writ of Execution No. 2020-04941 issued out of the Court of Common Pleas of Montgomery County, PA., to me directed will be sold at a Public on- line auction conducted by Bid4Assets, 8757 Georgia, Ave., Suite 520, Silver Springs, MD 20910.
Wednesday, March 31, 2021
At 1:00 p.m., prevailing time, by accessing the web address: www.bid4assets.com/MontcoPASheriff
the following described Real Estate:
ALL THAT CERTAIN condominium situated in Borough of Schwenksville, Montgomery County, Commonwealth of Pennsylvania, being known and designated as lot 1b, block 1, section 126, metes and bounds property, as more fully described in deed book 5636, page 1179, dated 02/07/2007 and recorded 02/22/2007, Montgomery County records, Commonwealth of Pennsylvania.
PARCEL ID # 2000000060109
BEING KNOWN AS (for informational purposes only): 4522 Forest Lane a/k/a 4522 Forest Lane Condo B-1, Schwenksville, PA 19473
BEING THE SAME PREMISES which Barry Yost by Deed dated February 7, 2007 and recorded February 22, 2007 Book 5636, Page 01179 in the Office of the Recorder of Deeds in and for the County of Montgomery, Pennsylvania granted and conveyed unto Kurt T. Dannerth, in fee.
Parcel no.: 20-00-00060-10-9
Location of property: 4522 Forest Lane a/k/a 4522 Forest Lane Condo B-1, Schwenksville, PA 19473
The improvements thereon are: A RESIDENTIAL DWELLING
Seized and taken in execution as the property of: Kurt T. Dannerth
Real debt: $125,128.36
And to be sold by the Sheriff of Montgomery County
Down money: Prospective bidder must complete the Bid4Assets on-line registration process to participate in the auction. The highest bid shall be paid to them, on their website, as the purchase price for the property sold by the Sheriff's Office, Norristown, PA.
To all parties in interest and claimants: Notice is hereby given that a schedule of distribution will be filed by the Sheriff 30 days after the date of the Sale. Distribution will be made in accordance with the schedule unless exceptions are filed hereto within ten (10) days thereafter.
Merc-Mar 7, 14, 21

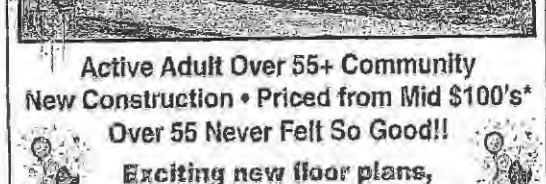
CLASSIFIEDS WIN!!
When it comes to saving time, energy and money. Classifieds are in first place! Place your classified and see how easy it is to be a winner!



Be Safe.

FINAL PHASE 30 NEW LOTS

DOUGLASS VILLAGE



Active Adult Over 55+ Community
New Construction • Priced from Mid $100's*
Over 55 Never Felt So Good!!
Exciting new floor plans, 3 car garage now available

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Return to Home

Print/File to EPA Region 3

The signature certification page must be printed, signed, and sent in hard copy to US EPA Region 3 at the following address:

Pretreatment Coordinator
US EPA Region 3
Mail Code 3WD41
1650 Arch Street
Philadelphia, PA 19103-2029

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

#N/A

Leonard Pinchok

Authorized Signatory Official

03/18/2021
Date

Leonard Pinchok/General Manager
Print or type name and title

Note: The Signatory Official is the person authorized by the POTW to sign the Annual Report (see 40 CFR Section 403.12(m)).

The following documents may be attached to the email or hard copies can be mailed to US EPA Region 8

1. A copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.
2. The results of all influent monitoring results that were performed as required in the Pretreatment section of your state issued NPDES permit. The results must include the name of the pollutant, measured concentration, analytical method used, detection limit, date
3. The results of all effluent monitoring results from the monitoring required by the Pretreatment section of your state issued NPDES permit. Provide monitoring results for those pollutants that were reported above the detection limit. The results must include the
4. The results of all monitoring results for biosolids (sludge) monitoring for any pollutants listed in 40 CFR Part 122, Appendix D, Table II, III, and V. This is for final sludge to disposal only. This monitoring may have been required by your state issued NPDES permit, or

Time Stamp: 03/18/2021 11:53:43 AM
User Stamp: #N/A

EPA Region 3
Industrial Pretreatment Program

Annual Report of POTW Implementation

Last Updated: 01-08-2021

Disclaimer
This model is intended to be used as a tool to submit the Pretreatment Annual Report of the EPA Region 3 Industrial Pretreatment Program. All other uses are strictly prohibited. Unless specified otherwise, enter data for the reporting year.

Accept

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

Press Ctrl-h to return to this sheet from any other sheet

POTW

POTW Contacts

POTW Information

Send Copies To

///End of Sheet

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Reporting Period

January 1 to December 31 of year	2020

POTW Contacts

Control Authority Name	VALLEY FORGE SEWER AUTHORITY
NPDES Permit No	PA0043974
Permit Issuance Date	12/11/2019
Permit Expiration Date	12/31/2024
Facility Name	VALLEY FORGE SEWER AUTHORITY
Facility Address1	333 Pawling Road
Facility Address2	
Facility City	Phoenixville
Facility State	Pennsylvania
Facility Zip	19460-2656

Pretreatment Contact(s) - List all Pretreatment Personnel

	Name	Title	Email
1	Richard D. Taylor	Laboratory Supervisor	rtaylor@vfsa.com
2	Robin D. Heffner	Compliance Specialist	pretreat@vfsa.com
3	Shelly A. Herman	Compliance Specialist	pretreat@vfsa.com
4			
5			
6			

Permit Signatory	Leonard Pinchok
Permit Signatory Title	General Manager
Contact Phone	610-935-1553
Contact Email	lpinchok@vfsa.com
POTW Site Address	333 Pawling Road, Phoenixville, PA 19460-2656

Additional Information

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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POTW Information

NPDES Effluent Violations?	Yes	**Parameter(s)**	Fecal coliform
Date of Violations	June 4, 2020; August 5, 2020; October 30, 2020		
Cause of NPDES permit violations?	June 4, 2020: Violations of the Instantaneous Maximum limitation for fecal coliform		
Sludge Disposal Method 1	Land Application Class A		
Sludge Disposal Method 2	Land Application Class B		
Sludge Disposal Method 3	Landfill (only if necessary)		
Highest Treatment Level	Advanced Secondary		

Treatment Types

Primary Clarification?	X	**Lagoon?**	
Secondary Clarification?	X	**Anaerobic Digestion?**	
Activated Sludge?	X	**Aerobic Digestion?**	
Trickling Filter?		**Chlorination?**	
Oxidation Ditch?		**Dechlorination?**	
Biotowers?		**UV Disinfection?**	X
Rotating Biological Contacts?			
Other?	Influent Fine Screen, Primary Sludge Degrit, Gravity Sludge Thickening, C		

POTW Design Flow (mgd)	11.75	
POTW Actual Flow (mgd)	6.514	
Total SIU Flow (mgd)	0.265	
% Industrial Flow	4	%
POTW Organic (BOD) Design Capacity (lbs/day)	26700	
POTW TSS Design Capacity (lbs/day)	19599	
POTW Ammonia (NH3) Design Capacity (lbs/day)		
Actual or Estimated total Flow for Commercial (Non-SIU) Dischargers		

Additional Information

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Program Implementation

Number of Permitted Industrial Users as of December 31

CIUs	4	
Total SIUs	8	includes CIUs + SIUs
Other Permitted IUs	0	
Zero-Discharge CIUs	0	
Permitted Zero-Discharge CIUs	0	
Middle-Tier CIUs	0	
Non-Significant CIUs	0	

SIUs with No/Expired Permit as of December 31	0
SIUs with Administratively Extended Permits >180 Days	0
Number of SIUs with current control mechanisms	8
Number of NSCIUs that have violated any pretreatment standard	0

Number of SIUs in significant non-compliance (SNC) as of December 31

	CIUs	Non Categorical SIUs	Total SIUs
SNC Self-monitoring			0
SNC Reporting			0
SNC PT Standards			0
SNC Prohibitions			0
SNC Compliance Schedule			0
SNC Pass Through/interference			0
SNC Other SNC Violations			0

Number of SIUs in significant non-compliance (SNC) at any time	1
Number of non-SIUs in significant non-compliance (SNC) at any time	0
Number of SIUs in SNC during the previous calendar year	0
SNC during the July to December period	0

# Permitted Non-SIUs With Unknown Compliance Status	0
# SIUs With Unknown Compliance Status	0
Does the ERP include escalating enforcement actions for SNC	YES

	CIUs	Non Categorical SIUs	Total SIUs
Number of SIUs with compliance schedule as of December 31	0	0	0

Additional Information

Two of the CIUs are trucked waste only as they are not connected to the sanitary sewer system.

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Enforcement Actions

	Non-SIUs	SIUs	CIUs
Number of NOVs	2	2	0
Number of Formal Enforcement Actions	0	0	0
Number of different IUs with Formal Enforcement Actions	0	0	0
Number of SIUs on formal compliance schedule	0	0	0

Formal actions include Administrative Orders, show cause hearings, out-of-court settlements that are formal settlements, termination of service, formal compliance schedules, penalty actions EXCEPT civil or criminal suits.

	Civil	Criminal	Total
Number of suits filed against SIUs	0	0	0

	Non-SIUs	SIUs
Number of Different IUs From Whom Penalties Were Collected	0	0
Total Penalties Collected	$-	$-

Number of IUs Published As Being In SNC	1	Please complete Attachment B

Additional Information

Devault Foods failed to complete and report results for all 2nd quarter 2020 parameters, as required by the

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Compliance Monitoring

	Non-SIU	SIU
Number of individual permits issued	0	0
Number of general permits issued	0	0
Number of inspections in the reporting year	8	8

Overview description of Non-SIU inspections	Not applicable
Number of SIUs not inspected during the reporting year	0
Number of SIUs that submitted required Self-Monitoring Reports	6
Number of SIUs not sampled during the reporting year	0
Number of SIUs in SNC With Self-Monitoring Requirements That Were Not Inspected or Sampled	0

Additional Information

VFSA conducts the monitoring for the trucked CIU's and does not require self-monitoring reports.

Facility Name:
Permit Number:
Reporting Period:
POTW Name:

Return to Home

Program Implementation - Resources

Number of Pretreatment FTEs

Significant Changes (+/- 20%) to The POTW's Pretreatment Program Budget or Staffing?

Source of Budget

Total Pretreatment Program Budget

Number of Jurisdictions Covered By Pretreatment Program

Adequate delegation in each jurisdiction?

Miscellaneous Developments and Special Initiatives?

One VFSA laboratory employee position is designated as full time for industrial pretreatment, although industrial pretreatment program implementation and enforcement is accomplished through the collaborative efforts of the laboratory staff. As required, other VFSA laboratory and admininstrative employees are also available to ensure implementation.

Additional Information

VFSA has three full time laboratory/pretreatment employees including the laboratory supervi

#N/A
PA0043974
2020
VALLEY FORGE SEWER AUT

1
NA
Initial, Annual and Re-perm
NA

8
YES
NA

sor. VFSA does r

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Program Implementation - Hauled Waste

Does the POTW receive any discharges of

Receive Groundwater From Hydrocarbon Cleanup Site?	NO
Receive Hauled Septage (Domestic Only)?	YES
Receive Hauled Waste From Industrial Sources?	YES
Receive Hauled Waste From Commercial Sources?	YES
Receive Hauled Categorical Waste?	YES
Receive Hauled Grease Interceptor/Trap Waste?	NO
Receive Landfill Leachate?	YES
Receive CERCLA Cleanup Wastes?	NO
Receive Hazardous (RCRA) Waste?	NO
RV Dump Stations in Service Area?	NO
Receive Other Unique Waste?	NO
Receive Oil & Gas Waste from Stripper wells?	NO

As defined at 40 CFR

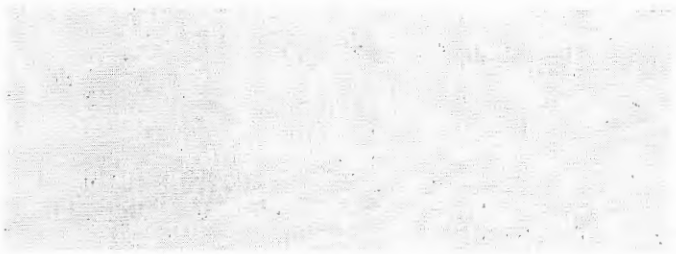
If you accept any trucked or hauled waste, indicate all of the following that apply to your POTW

Legal Authority To Control Hauled Waste?	YES
POTW Issues Permits For Hauled Wastes?	YES
POTW Has A Designated Disposal Site For Hauled Wastes?	YES
POTW Controls Access At The Designated Disposal Station?	YES
POTW Uses A Manifest System To Track/Control Hauled Wastes?	YES
POTW Believes That Illegal Dumping May Be Occurring In Its Jurisdiction?	NO

What parameter if any do you surcharge

Surcharge for BOD?	YES
Surcharge for TSS?	YES
Surcharge for Oil and Grease?	NO
Surcharge for Flow?	NO
Surcharge for Ammonia?	NO
Surcharge for COD?	NO
Surcharge for TKN?	NO
Surcharge for Other Parameters?	NO

Additional Information



{ Part 261 and delivered by truck, rail or dedicated pipeline

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUT

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Program Implementation - Pass/INTF

Instances Of Interference At The POTW?	NO
Instances Of Pass Through At The POTW?	NO

Receive Notification Of The Discharge Of Any Hazardous Waste?	NO

If so, names of IUs

1	
2	
3	
4	
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10	
11	

Additional Information

Facility Name:
Permit Number:
Reporting Period:
POTW Name:

Return to Home

Attachment A: List of CIUs/SIUs

		PERMIT INFO					SIU Info			
	SIU	Issued	Effective	Expires	Permit Type	Address	Sampled	Inspected	MRS	# of self-monitorings conducted/ required
1	Beyond Meat	11/1/2018	11/1/2018	6/30/2021	IP	Devault Lane,	1	1		54/52
2	Fujirebio Diagnostics,	11/1/2018	11/1/2018	6/30/2021	IP	201 Great Val	1	1		4/4
3	LOPAREX	11/1/2018	11/1/2018	6/30/2021	IP	2400 Contine	1	1		4/4
4	Janssen Biotech Inc.	11/1/2018	11/1/2018	6/30/2021	IP	90 Great Valle	1	1		12/12
5	Catalent	11/1/2018	11/1/2018	6/30/2021	IP	333 Phoenixv	1	1		4/4
6	Paoli Memorial Hospi	11/1/2018	11/1/2018	6/30/2021	IP	255 W Lancas	1	1		2/2
7	Accupac, Inc.	2/18/2021	2/1/2021	1/31/2024	IP	1501 Industria	2	1		0/0
8	Colorcon	2/18/2021	2/1/2021	1/31/2024	IP	415 Moyer Bl	2	1		0/0
9										

#N/A
PA0043974
2020
VALLEY FORGE SEWER AUTHORITY

Limits Type	MWG	Jurisdiction	SIC Code1	SIC Code2	Categorical Standard	Total Average Process Flow (gpd)
Concentration-based		Charlestown Twp				31100
Concentration-based		East Whiteland Twp	2835			4000
Concentration-based		Tredyffrin Twp				0
Concentration-based		East Whiteland Twp			4O CFR PART 439	121115
Concentration-based		East Whiteland Twp	2834		4O CFR PART 439	1650
Concentration-based		Willistown Twp				0
Concentration-based		Lower Salford Twp			4O CFR PART 439	19936
Concentration-based		Upper Gwynedd Twp			40 CFR PART 414	10304

Total Average Facility Flow (gpd)	MTCIU or NSCIU?	Justification	Discharge Status	Description	SNC?
31100				Formerly Devault Foods - Beyon	NO
10296					NO
571				Formerly Infiana USA.	NO
121115					NO
3242				Formerly Micron Technologies,	NO
68860					NO
19936				VFSA conducts all sampling and	NO
10304				VFSA conducts all sampling and	NO

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORI

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Attachment B: Copy of Newspaper Notice of SNC

Provide a copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.

Copy of Newspaper Notice of SNC submitted?	YES

Additional Information

Devault Foods failed to complete and report results for all 2nd quarter 20

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUT

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Attachment C: Description of Each Incidence of Pass Through or Interference

Provide a description of each incidence of Pass Through or Interference at the wastewater treatment plant or collection system during the year, the cause if determined, and any actions taken by the POTW in response to the Pass Through or Interference.

	Description of Pass Through/Interference
1	NA
2	
3	
4	
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10	
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Additional Information
NA

Facility Name: #N/A
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SI

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Attachment D: Description of Significant Change in Program Funding/Staffing
An explanation of any significant decrease (20% or greater) in pretreatment funding or staffing of the POTW's Pretreatment Program.

Description of Significant Change in Program Funding/Staffing

NA

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Attachment E1: Permitted Industrial Users (part 1 of 2)
Provide a printout or listing of all permitted non-SIUs

	Permitted Non-SIUs	Rationale for permitting these non-SIUs
1	NA	
2		
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Add more rows

Additional Information

NA

Facility Name: VALLEY FORGE SEWER AUTHORITY
Permit Number: PA0043974
Reporting Period: 2020
POTW Name: VALLEY FORGE SEWER AUTHORITY

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Attachment E2: Permitted Industrial Users (part 2 of 2)
Provide a printout or listing of all SIUs covered by a General Permit

	SIUs covered by a General Permit	Justification Criteria
1	NA	
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Add more rows

Additional Information

NA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
REGIONAL TREATMENT PLANT ANNUAL REPORT

CALENDAR YEAR 2020
VALLEY FORGE SEWER AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

SECTION 3

Birdsboro Office
321 North Furnace Street, Ste. 200
Birdsboro, PA 19508
T 610.374.5285
F 717.560.2778

March 12, 2021

Richard Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

RE: Easttown Township
2020 Chapter 94 Report
ARRO # 5080.95

Dear Mr. Taylor:

On behalf of our client, Easttown Municipal Authority, please find enclosed the Authority's 2020 Annual Report for inclusion within the 2020 VFSA Chapter 94 Report. We trust that you will find the enclosed information satisfactory.

As always, if you have any questions or require any additional information, please feel free to contact me via email at brady.flaharty@arroconsulting.com or telephone at 610.495.2118.

Sincerely,

Brady L. Flaharty

Brady L. Flaharty, P.E.
ARRO Consulting, Inc., Easttown Municipal Authority Engineer

BLF:

Enclosure

c: Donald C. Curley, Administrator – Easttown Municipal Authority (w/ encl.)

Corporate Headquarters • 108 West Airport Road • Lititz, PA 17543
T 717.569.7021 • F 717.560.0577 • www.arroconsulting.com

OUT IN FRONT

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

2020
EASTTOWN MUNICIPAL AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

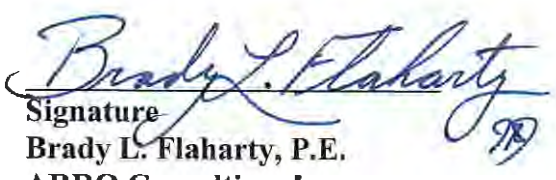
Prepared by:

ARRO CONSULTING, INC.
1450 East Boot Road
Building 100-B
West Chester, Pennsylvania 19380
(484) 999-6150

Prepared for:

EASTTOWN MUNCIPAL AUTHORITY
566 Beaumont Road
Devon, Pennsylvania 19333
(610) 687-3000

Preparer



Signature
Brady L. Flaharty, P.E.
ARRO Consulting, Inc.
Authority Engineer

EASTTOWN MUNICIPAL AUTHORITY
CHESTER COUNTY, PENNSYLVANIA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT
OPERATING YEAR 2020

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EXHIBITS

A. EMA – Past and Present Hydraulic Loading Data

B. EMA – Past, Present and Projected EDUs, Flows and Organic Loadings

C. Easttown Township – Approved and Projected Connections

D. EMA – Flow Information for Each Pump Station

E. EMA – Monthly Flow Total to VFSA Versus Rainfall - Graph

F. EMA – Pump Stations Flow to VFSA Versus Rainfall – Summary and Graphs

G. EMA – Small Metered Pump Stations Flow Versus Rainfall – Summary and Graphs

H. EMA – 1-Inch Plus Rainfall Versus Flow at Metered Pump Stations – Summary

I. EMA – 1-Inch Plus Rainfall Versus Flow at Large Metered Pump Stations – Graphs

J. EMA – 1-Inch Plus Rainfall Versus Flow at Small Metered Pump Stations – Graphs

K. EMA – Pump Station Flow Meter Calibration Reports

1. INTRODUCTION

This Municipal Wasteload Management Annual Report is prepared in accordance with the Pennsylvania Department of Environmental Protection (Department) Chapter 94 for the Easttown Municipal Authority sewerage collection and conveyance system tributary to the Valley Forge Sewer Authority Wastewater Treatment Plant.

Easttown Municipal Authority (Authority) owns the sanitary sewer collection and conveyance systems within Easttown Township under Water Quality Management Permit No. 1503401. Easttown Township operates and maintains the facilities.

The Authority sanitary sewer collection system provides for collection of domestic sewage from Easttown Township, a suburban residential area encompassing several watersheds. Wastewater from each of these watersheds flows by gravity to one of twelve pumping stations, which ultimately convey the wastewater to a wastewater treatment plant operated by the Valley Forge Sewer Authority via the Aqua Resources, Inc.'s Valley Creek Trunk Sewer (VCTS) collection system. There is a small portion of the system, consisting of approximately 50 homes in the Valley Forge Road area, which drains through the Tredyffrin Township collection system into the Radnor-Haverford-Marple Authority system. There is also a small portion of the system, comprised of approximately 176.4 EDUs, that drains through Tredyffrin Township to Upper Merion Township's Trout Run Water Pollution Control Center.

The sanitary sewer collection system is comprised of roughly 319,415 lineal feet of Authority gravity sewer and 15,980 lineal feet of private gravity sewer, with approximately 1,743 manholes, and 8,011 lineal feet of low pressure force main. There are approximately 2,945 residential homes and 317 small businesses connected to the collection system. The conveyance systems are comprised of twelve (12) sewage pump stations with approximately 41,344 lineal feet of force main.

2. HYDRAULIC LOADINGS

Sewage flow from the Authority system is measured at three pumping stations, Berwyn, Daylesford and Saybrook, which each convey wastewater directly into the Tredyffrin Township collection system.

Exhibit 'A' contains a summary of Easttown total monthly flow to VFSA for 2020 and the previous 4 years, along with the 2020 monthly rainfall. The 2020 monthly flow and rainfall is charted in Exhibit 'E'.

During 2020 the measured sewage flow from the Authority sewer system averaged 1,283,410 gallons-per-day. This represents a decrease of approximately 66,581 gallons-per-day versus 2019 flows.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The total number of EDUs connected at the end of 2020 was 3857.4, which produced an average annual flow of 1.283 MGD and 332.7 gpd/EDU.

The number of EDUs and total average daily flow over the next five (5) years are both projected to increase as follows:

		Additional # of EDUs	*Total # of EDUs*	*Total Flow (MGD)**
Actual	*2020*	6.7	3,857.4	1.283
Projected	*2021*	60.5	3,917.9	1.304
Projected	*2022*	60.5	3,978.4	1.324
Projected	*2023*	60.5	4,038.9	1.344
Projected	*2024*	60.5	4,099.4	1.364
Projected	*2025*	60.5	4,159.9	1.384

* Projected flows are based on 2020 average gpd/EDU.

The increase in the number of connections was derived by interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the *Act 537 Supplement for Wilson Road Force Main*, Table 3-3, Average Daily Wastewater Flow Projections.

A summary of the EDUs, flows and organic loadings over the last five years and those projected for the next five years, along with graphs depicting the past and projected flows

and loadings, are included in Exhibit 'B'. The 2020 average annual loading was estimated to be 2,408 lbs./day based on an assumed BOD5 concentration of 225 mg/l. The maximum 1-month loading was estimated to be 3,257 lbs./day. The average 5-year ratio organic peaking factor is 1.38.

4. SEWER EXTENSIONS

There were three sewer extensions constructed in 2020, which were in the Berwyn Pump Station drainage area (Berwyn Village, Phase 1; 200 Church Road; 616 Leopard Road Subdivision).

Exhibit 'C' contains an updated Easttown Township Approved and Projected EDU map and an accompanying tracking list for the sanitary sewer system. EDUs are tracked by both Authority pump station drainage area and unmetered drainage area to the Valley Forge Sewer Authority wastewater treatment plant, by unmetered drainage area to the Radnor-Haverford-Marple Sewer Authority wastewater treatment plant and by unmetered drainage area to the Upper Merion Township Trout Run water pollution control plant. There are currently 4,114.9 EDUs connected to the Easttown Township sanitary sewer system with 4,732 projected to be connected by 2040. The tracking list and map is updated periodically as requests for connections are made and the Department approves EDUs.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

The sewer system is maintained by the Township Sewer Crew. The basic operation force consists of one (1) Crew Chief, and three (3) Pump Station Operators. This group is responsible for routine sewer and pump station maintenance and repairs. The Sewer Crew personnel on a daily basis check all pump stations with various readings and notations made for each station as well as conditions and status of major operational components. Each pump station is equipped with various alarms and an automatic dialer to notify Sewer Crew personnel in the event of an equipment malfunction or an unusual system condition. The Sewer Crew also has computer software installed at the Municipal

Garage and at the Crew Chief's home that allow real-time monitoring of each pump station. Additionally, a weekly "on-call" rotation is in place whereby two of the four-man crew is available at any given time to handle emergency situations.

The Township contracts with Municipal Maintenance Company (MMC) to provide quarterly detailed inspections of each station within the system. MMC generates a report detailing specific conditions and suggested corrective measures. Township personnel formulate a plan to perform the necessary maintenance and repair, either in-house or contracted services. All necessary repairs are made in a timely manner.

6. CONDITION OF THE SEWER SYSTEM

During 2020, six sanitary sewer overflow events were reported within the Authority's collection system.

- Four (4) overflow events occurred within the Berwyn Pump Station drainage area. The existing WQM permit issued by PADEP prevents the Township from setting the pump variable frequency drives to ultimate station capacity. PADEP directed the Township to submit an Act 537 Special Study, which was submitted and approved in 2020. The resetting of the VFDs to ultimate capacity would likely mitigate the likelihood of future wet weather events.
  - **January 25, 2020**: A total of 2.21 inches of rain fell. The station went into high-water alarm. For approximately 1 ½ hours an unknown amount of sewage leaked from MH #1267 into the adjacent unnamed tributary to the Darby Creek.
  - **July 10, 2020**: A total of 3.21 inches of rain fell. The station went into high-water alarm. For approximately 2 hours an unknown amount of sewage leaked from MH #1267.
  - **August 4, 2020**: A total of 5.86 inches of rain fell. The station went into high-water alarm. For approximately 3 ½ hours an unknown amount of sewage leaked from MH #1267.
  - **December 24, 2020**: A total of 2.65 inches of rain fell. The station went into high-water alarm. For approximately 2 hours an unknown amount of sewage

leaked from MH #1267. After the rain subsided the station was able to maintain incoming flow.

- Two (2) overflow events occurred within the Daylesford Pump Station drainage area. The existing WQM permit issued by PADEP prevents the Township from setting the pump variable frequency drives to ultimate station capacity. The resetting of the VFDs to ultimate capacity would likely mitigate the likelihood of future wet weather events.
  - **August 4, 2020**: A total of 5.86 inches of rain fell. For approximately 2 hours an unknown amount of sewage leaked from MH #1146. After the rain subsided the station was able to maintain incoming flow.
  - **December 24, 2020**: A total of 2.65 inches of rain fell. For approximately 2 hours an unknown amount of sewage leaked from MH #1146.

The Authority has televised certain portions of the sanitary sewer system in the Berwyn, Daylesford, Devon Hunt, Exeter, Millbrook, Newtown, Pinecroft, Saybrook and Spring Knoll Pump Station drainage areas. From 2012 through 2017 approximately 79,369 ft. of sanitary sewer has been televised. The televising found 80 pipe segment defects, 72 lateral defects and 23 manhole defects that were allowing or had potential to allow infiltration into the sanitary sewer system. Inflow/Infiltration (I/I) mitigation repair activities to correct defects found during the televising were started in July 2011 and continued through 2020.

7. SEWAGE PUMPING STATIONS

The Township operates twelve (12) pumping stations owned by the Municipal Authority. All pumping stations are equipped with magnetic flow meters that measure the flows. Exhibit 'D' contains the 2020 flow information for each pump station.

During 2020 no overflow event was reported at any of the Authority pumping stations.

The Daylesford Pump Station's Sharps Woods Gravity and Force Main Replacement project was substantially completed in November 2020.

As a result of completed and planned I/I reduction work it is anticipated that there will be no need to upgrade or expand the Saybrook Pump Station.

8. PUMPING STATION FLOW DURING MAJOR STORM EVENTS

The Department requires Chapter 94 reports to include a discussion of metered flow data for the collection and conveyance systems, specifically during major storm events (greater than 1.0 inch of rain).

Exhibit 'F' contains a summary of Easttown total monthly flow versus rainfall to VFSA from its three major pump stations – Berwyn, Daylesford and Saybrook – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'G' contains a summary of monthly flow versus rainfall at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens – and also the charts of the monthly and average yearly flow for these pump stations.

Exhibit 'H' contains a summary of the rainfall and the metered flows at all twelve (12) of the Authority's pump stations for the ten (10) days in 2020 where rain fell more than 1-inch plus in a 24-hour period. The charts in Exhibits 'I' and 'J' were developed from this data.

Exhibit 'I' contains a chart for the Berwyn, Daylesford, and Saybrook Pump Stations during the ten (10) rain events. As related to yearly average flow, the peaking factors for the three pump station meters during the rain events are as follows:

Pump Station	Yearly Avg. Flow (MGD)	Rain Events Peaking Factor	
		High	Average
Berywn	0.8102	2.22	1.34
Daylesford	0.2823	1.82	1.19
Saybrook	0.1078	1.48	1.08

In conclusion, the peaking factors for Berwyn, Daylesford and Saybrook Pump Stations during the high rain event are within the Department's current peaking factor guidelines. However, as part of its CMP program, the Authority will continue to actively pursue I/I

in the drainage areas of contributing upstream pump stations to Berwyn Pump Station, especially Devon Hunt and Exeter.

Exhibit 'J' contains the charts of peak rain event flows at the nine (9) small metered satellite pump stations – Berwyn Estates, Devon Hunt, Exeter, Fox Creek, Millbrook, Newtown, Pinecroft, Spring Knoll, and The Greens. As related to yearly average flow, the peaking factors for the nine (9) pump stations during the rain events are as follows:

Pump Station	Yearly Avg. Flow (MGD)	Rain Events Peaking Factor	
		High	Average
Berwyn Estates	0.007	1.44	1.11
Devon Hunt	0.072	2.17	1.38
Exeter	0.009	2.74	1.39
Fox Creek	0.014	1.75	1.17
Millbrook	0.003	1.55	1.06
Newtown	0.174	2.47	1.41
Pinecroft	0.003	1.86	1.15
Spring Knoll	0.044	2.42	1.46
The Greens	0.021	1.35	1.10

9. INDUSTRIAL WASTES

There are no known industrial waste dischargers within Easttown Township.

10. CORRECTIVE ACTION PLAN

The Department mandated the Authority to develop a CMP/CAP in December 2010. ARRO Consulting, Inc. prepared a Capacity Management Plan (CMP) and an associated Strategic I/I Reduction Plan, which collectively makes up the Corrective Action Plan (CAP) that sets forth the actions the Authority would take to reduce overloads and provide additional capacity in its sanitary sewer system. The CAP/CMP that was submitted to PADEP by transmittal letter dated February 10, 2011 and, after minor revisions, was approved by PADEP by letter, dated October 25, 2011.

All of Easttown's CAP milestone work within the Berwyn Pump Station and Saybrook Pump Station drainage areas is complete. The CAP milestone work at Daylesford Pump Station, including the Sharp's Woods gravity and force main, is complete. The Valley

Creek Trunk Sewer gravity system upgrade in Tredyffrin Township and the Wilson Road Force Main Rehabilitation, into which flow the effluent from Berwyn Pump Station and Saybrook Pump Station, are also complete.

An Act 537 Special Study was prepared for the Township to establish the average annual capacities for the Township's pump stations. The Act 537 Special Study was submitted in October 2020. PADEP submitted comments in November 2020 and responses to the comments were submitted in December 2020. Final PADEP approval of the study was received by letter, dated January 11, 2021.

ARRO recently submitted Water Quality Management (WQM) Permit Applications for the Berwyn, Daylesford, Devon Hunt, Newtown and Spring Knoll Pumping Stations at the request of the Department relative to the Authority's request to turn each of these pumping stations up to full pumping capability. With the submission of the WQM Permit Applications, completion of CAP milestone work and Department approval of the Act 537 Special Study, and based on the measured flow in 2020 as discussed herein, Easttown respectfully requests to be released from the CAP/CMP requirements for the Daylesford Pumping Station, Saybrook Pumping Station and VFSA Unmetered drainage areas as identified in the Exhibit C *Easttown Township Approved and Projected Connections* map contained in this report. Easttown is embarking on a broad scope I/I project in 2021, and assuming the intended results are achieved, will be requesting to be released from the CAP/CMP in the Berwyn Pumping Station drainage area and its subdrainage areas in the 2021 Chapter 94 Report.

11. CALIBRATION REPORTS

The flow meters at Berwyn, Daylesford and Saybrook Pump Stations were calibrated during 2020. Copies of the calibration reports are included in Exhibit 'K'.

EXHIBITS

Exhibit A

Easttown Municipal Authority

Past & Present Hydraulic Loading Data

Table 1

TABLE 1

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING DATA (MGD)
2016 - 2020

Month	2016	2017	2018	2019	2020	2020 Rainfall (in.)
January	1.049568	0.966575	0.869454	1.875846	1.211785	3.23
February	1.554747	0.911219	1.219988	1.687558	1.298683	2.65
March	1.281880	0.966853	1.440283	1.861268	1.284201	4.45
April	1.101526	1.157713	1.301480	1.404904	1.507989	5.92
May	1.175391	1.116036	1.292485	1.435977	1.337310	2.84
June	0.981711	0.974413	1.316415	1.432152	1.204028	2.87
July	0.859479	0.879162	1.066002	1.371074	1.142099	8.61
August	0.810786	0.816475	1.197483	1.101469	1.271304	9.37
September	0.787647	0.760021	1.534737	0.927255	1.045891	2.48
October	0.790326	0.765258	1.309936	0.909008	1.080144	4.19
November	0.799209	0.799465	1.761154	0.988588	1.281834	5.95
December	0.931850	0.796040	1.777788	1.204795	1.735651	6.50
Average Annual Flow (MGD)	**1.010343**	**0.909103**	**1.340600**	**1.349991**	**1.283410**	
					Total	**59.06**
Max. 3 Month Ave. Flow (MGD)	**1.312718**	**1.082721**	**1.616293**	**1.808224**	**1.376500**	
PEAKING FACTOR						
Max. 3 Month Ave. Flow / Ave. Annual Flow	**1.300**	**1.190**	**1.210**	**1.340**	**1.070**	

Flow Peaking Factor:	
Average 5 Year Ratio	**1.222**

Jan - Dec 2020: Rain Data from USGS Site 01473169 Valley Creek near Valley Forge.

Exhibit B

Easttown Municipal Authority

Past, Present & Projected

EDUs, Flows and Organic Loadings

Table 2 & Table 3 and Graph 1 & Graph 2

TABLE 2

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING DATA (lbs/Day)
2016 - 2020

Month	2016	2017	2018	2019	2020
January	1,970	1,814	1,632	3,520	2,274
February	2,917	1,710	2,289	3,167	2,437
March	2,405	1,814	2,703	3,493	2,410
April	2,067	2,172	2,442	2,636	2,830
May	2,206	2,094	2,425	2,695	2,509
June	1,842	1,828	2,470	2,687	2,259
July	1,613	1,650	2,000	2,573	2,143
August	1,521	1,532	2,247	2,067	2,386
September	1,478	1,426	2,880	1,740	1,963
October	1,483	1,436	2,458	1,706	2,027
November	1,500	1,500	3,305	1,855	2,405
December	1,749	1,494	3,336	2,261	3,257
Average Annual BOD (lbs/Day)	**1,896**	**1,706**	**2,516**	**2,533**	**2,408**
Max. 1 Month BOD5 Loading (lbs/Day)	**2,917**	**2,172**	**3,336**	**3,520**	**3,257**
RATIO: Max. 1 Month BOD5 / Ave. Annual BOD5	**1.54**	**1.27**	**1.33**	**1.39**	**1.35**

Organic Peaking Factor: Average 5 Year Ratio	**1.38**

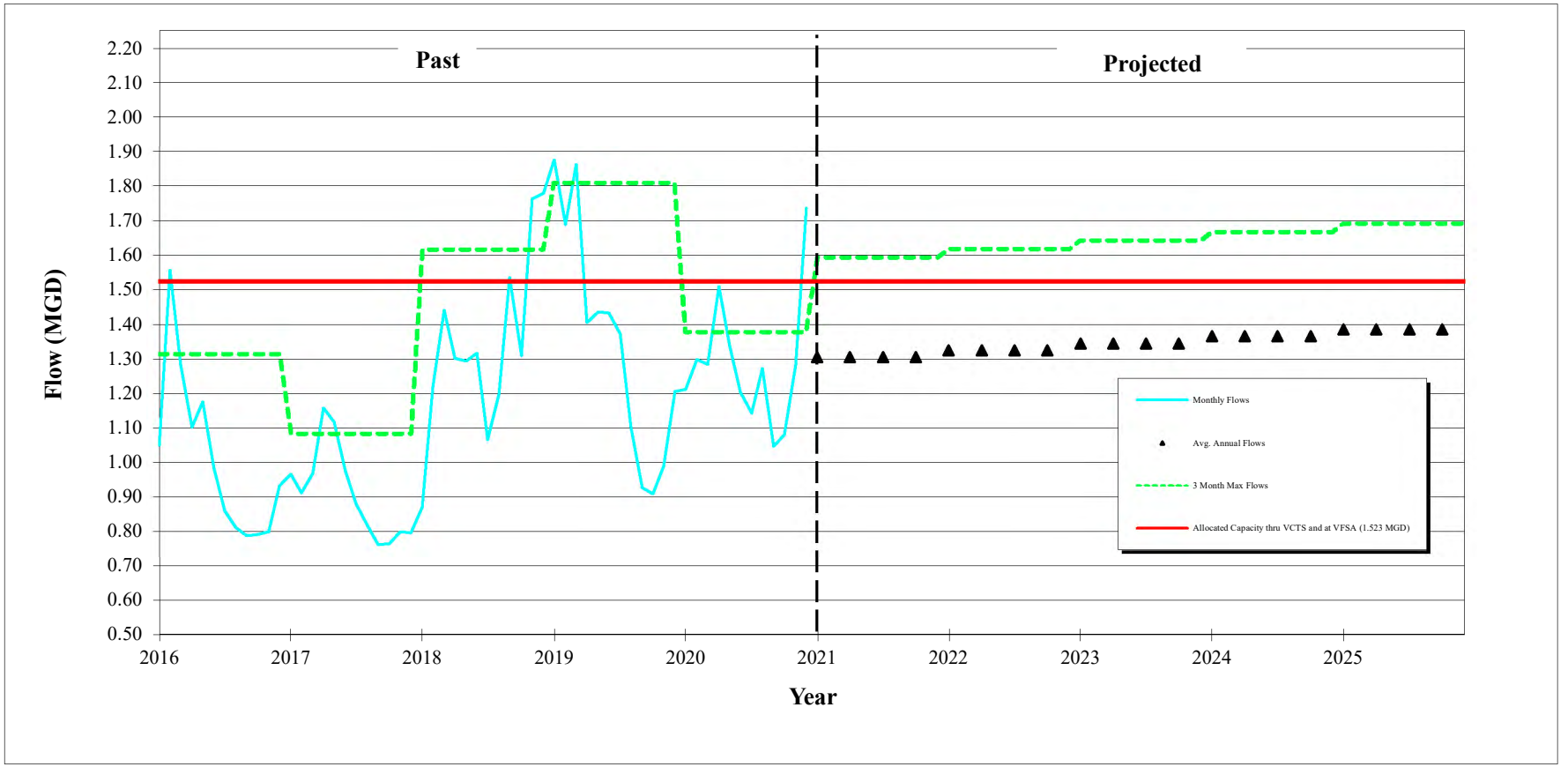
TABLE 3

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
PAST AND PROJECTED LOADINGS

Year	EDUs	Connected Population	Average Total Flow (mgd)	Max. 3 Month Ave. Flow (mgd)	Per Capita Flow (gpcd)	Average Total BOD5 (lbs/day)	Per Capita BOD5 (lbs/day)
2016	3,786.7	10,918	1.010	1.31	93	1,896	0.174
2017	3,804.7	10,959	0.909	1.08	83	1,706	0.156
2018	3,841.7	10,999	1.341	1.62	122	2,516	0.229
2019	3,850.7	11,040	1.350	1.81	122	2,533	0.229
2020	3,857.4	11,040	1.283	1.38	116	2,408	0.218
Average		**10,991**	**1.179**		**107**	**2,212**	**0.201**
Projected Loadings							
2021	3,917.9	11,213	1.304	1.59	116	2,255	0.201
2022	3,978.4	11,386	1.324	1.62	116	2,290	0.201
2023	4,038.9	11,559	1.344	1.64	116	2,325	0.201
2024	4,099.4	11,732	1.364	1.67	116	2,360	0.201
2025	4,159.9	11,906	1.384	1.69	116	2,395	0.201

GRAPH - #1

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING



GRAPH - #2

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING

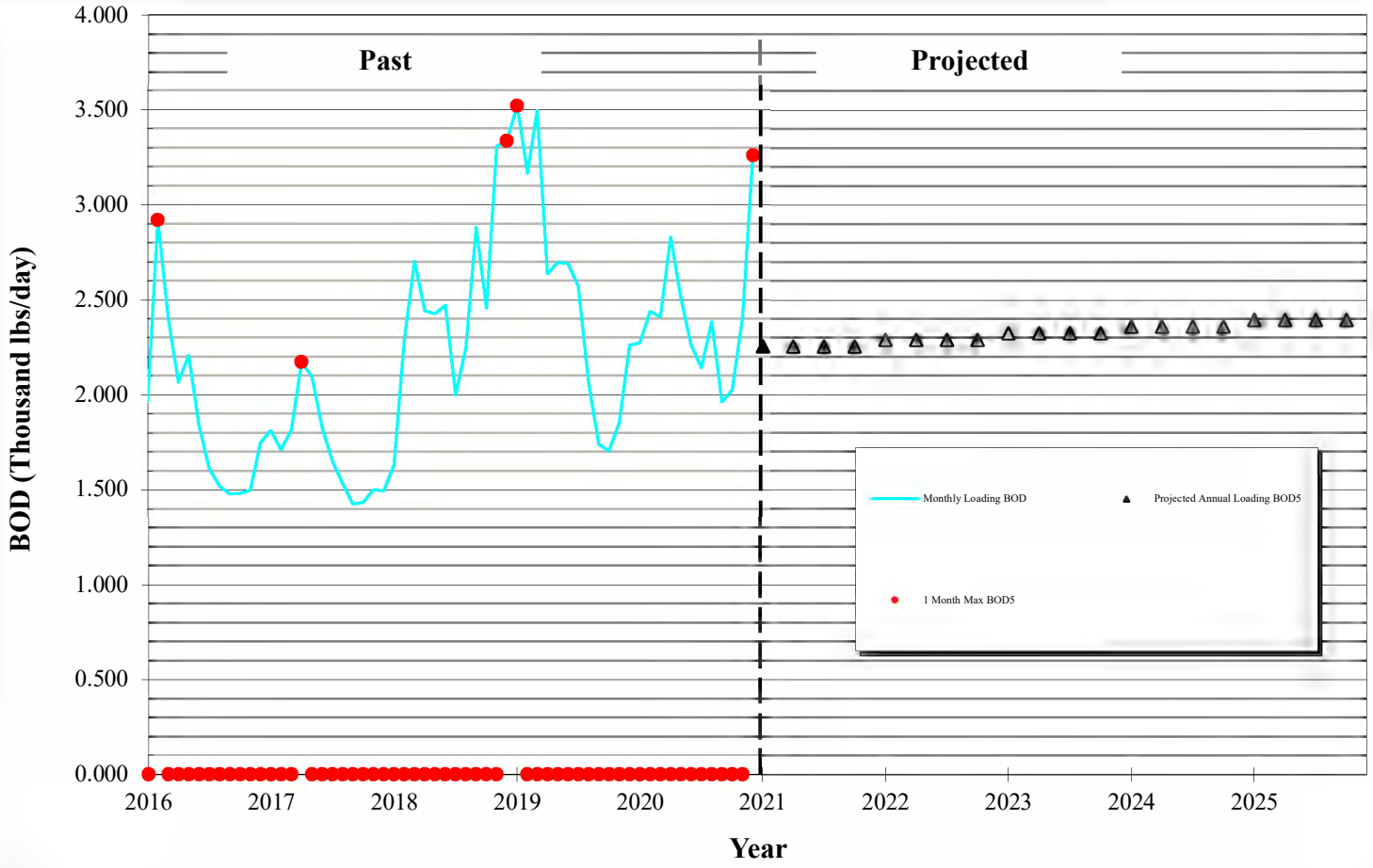


Exhibit C

Easttown Township

Approved and Projected Connections

EASTTOWN TOWNSHIP

APPROVED and PROJECTED EDU TRACKING LIST

Map ID	Development Name	Development Address	Development Tax Parcel	Total EDUs Approved	Total EDUs Connected Thru 2020	Approved EDUs Already Connected Thru 2020	Potential EDUs Connected 2020 - 2021	Potential EDUs Connected 2021 - 2040	Total Potential EDUs Connected 2020 - 2040	Total EDUs 2040
Berwyn Estates Pump Station Drainage Area					**42.00**	0.00	0.00	11.00	**11.00**	**53.00**
-	Projected/Potential Connections					0.00	0.00	11.00		
-	Miscellaneous EDUs							0.00		
Berwyn Pump Station Drainage Area					**1,524.10**	4.00	57.00	286.91	**343.91**	**1,868.01**
M	Boathouse Realty Assoc. (222 Waterloo Rd)	220 Berkley Avenue	55-3J-64.4	5.00		4.00	1.00			
M	Boathouse Realty Assoc. (222 Waterloo Rd)	216 Waterloo Road	55-3J-64.5	1.00		0.00	1.00			
M	Boathouse Realty Assoc. (222 Waterloo Rd)	210 Berkley Avenue	55-3J-64.6	1.00		0.00	1.00			
N	SD 498/Gersbach	207 S. Waterloo Road	55-3J-70.1	1.00		0.00	1.00			
U	Denise Lehmann & Andrew Holder	13 Woodside Avenue	55-2L-179	1.00		0.00	1.00			
W	Midland Ave. Development, LLC	4 Midland Ave.	55-2G-43	16.00		0.00	16.00			
-	John & Patricia Imbesi 2016 Children's Trust	1060 Newtown Road	55-5-30	12.00		0.00	12.00			
-	Stonehaven Homes (Armstrong)	218 Francis Avenue	55-2H-107	12.00		0.00	12.00			
-	Ted Babby	28 South Fairfield	55-3J-23	1.00		0.00	1.00			
-	Bison Head Partners	749 First Avenue	55-2L-123	1.00		0.00	1.00			
-	Purdy Investment Partners, L.P.	218 Berkley Avenue	55-3J-64.8	1.00		0.00	1.00			
-	Daniel & Susan Schuller	200 Church Road	55-5B-73	1.00		0.00	1.00			
-	Keech Property	501 S. Waterloo Road	55-3P-5	1.00		0.00	1.00			
-	Ludin White LLC	729 First Avenue	55-2L-139.1	3.00		0.00	3.00			
-	Daggett Property	500 S. Waterloo Road	55-3-54	4.00		0.00	4.00			
-	**Projected/Potential:** Berwyn Village (Mack Oil)	50 Price Avenue	55-2G-10					12.00		
-	**Projected/Potential:** Fritz Lumber	631 Lancaster Avenue	55-2G-5					75.00		
-	**Projected/Potential:** Handel's Redevelopment	576 Lancaster Avenue	55-2G-42					29.00		
-	**Projected/Potential:** Other Connections							**159.91**		
-	Miscellaneous EDUs							**11.00**		
Darby Pump Station Drainage Area					**139.50**	0.00	4.00	17.00	**21.00**	**160.50**
-	Projected/Potential Connections			128.17		0.00	4.00	17.00		
-	Miscellaneous EDUs							0.00		
Daylesford Pump Station Drainage Area					**672.20**	0.00	7.00	15.37	**22.37**	**694.57**
-	Kelly Group Builders, Inc.	2291 S. Valley Road	54-04-0008	4.00		0.00	4.00			
-	Moser Land Development	616 Leopard Road	55-4-55	1.00		0.00	1.00			
-	Moser Land Development	616 Leopard Road	55-4-55	1.00		0.00	1.00			
-	Rahr Property	549 Morris Lane	55-4-66.7	1.00		0.00	1.00			
-	Projected/Potential Connections							**15.37**		
-	Miscellaneous EDUs							**0.00**		
Devon Hunt Pump Station Drainage Area					**173.10**	0.00	3.00	55.74	**58.74**	**231.84**
B	Lewis Subdivision	120 South Devon Avenue	55-3-63.1	3.00		0.00	3.00			
-	Projected/Potential Connections							55.74		
-	Miscellaneous EDUs							0.00		
Exeter Pump Station Drainage Area					**32.20**	4.00	5.00	3.00	**8.00**	**40.20**
D	Hill Custom Homes	550 Waterloo Avenue	55-3-43	8.00		4.00	4.00			
I	Keyes	393 Church Road	55-5-55	1.00		0.00	1.00			
-	Projected/Potential Connections							3.00		
-	Miscellaneous EDUs							0.00		
Fox Creek Pump Station Drainage Area					**44.60**	0.00	0.00	1.00	**1.00**	**45.60**
-	Projected/Potential Connections						0.00	1.00		
-	Miscellaneous EDUs							0.00		
Millbrook Pump Station Drainage Area					**36.00**	0.00	0.00	0.00	**0.00**	**36.00**
-	Projected/Potential Connections					0.00	0.00	0.00		
-	Miscellaneous EDUs							0.00		
Newtown Pump Station Drainage Area					**395.60**	6.00	4.00	55.00	**59.00**	**454.60**
A	South Leopard Road Associates***			9.00		5.00	4.00			
-	Tim and DeDe Veale	1220 S. Leopard Rd	55-4-118.2A	1.00		1.00	0.00			
-	Projected/Potential Connections							54.00		
-	Miscellaneous EDUs							1.00		
Pinecroft Pump Station Drainage Area					**17.00**	1.00	0.00	0.00	**0.00**	**17.00**
-	William & Kathy Crager	2040 Buttonwood Rd	55-4-184.1	1.00		1.00	0.00			
-	Projected/Potential Connections							0.00		
-	Miscellaneous EDUs							0.00		
Saybrook Pump Station Drainage Area					**328.10**	0.00	5.00	6.00	**11.00**	**339.10**
T	Alessandra Nicolas	49 Walnut Av.	55-2L-29	2.00		0.00	2.00			
-	Mary Nixon	1135 Sugartown Road	55-2-143	3.00		0.00	3.00			
-	**Projected/Potential:** Benson Homes & Development	15 Leopard Road	55-2L-11					0.00		
-	Projected/Potential Connections							6.00		
-	Miscellaneous EDUs							0.00		
Spring Knoll Pump Station Drainage Area					**225.00**	0.00	12.00	24.00	**36.00**	**261.00**
-	John & Patricia Imbesi	1016 Newtown Rd	55-5-30	12.00		0.00	12.00			
-	Projected/Potential Connections							6.00		
-	Miscellaneous EDUs							18.00		
The Greens Pump Station Drainage Area					**116.00**	0.00	0.00	14.00	**14.00**	**130.00**
-	Projected/Potential Connections						0.00	14.00		
-	Miscellaneous EDUs							0.00		
VFSA Unmetered Drainage Area					**112.00**	0.00	3.00	23.00	**26.00**	**138.00**
F	Peter A. Talman	435 Conestoga Road	55-2H-49	1.00		0.00	1.00	0.00		
-	YMCA	Berwyn Paoli Road		2.00		0.00	2.00	0.00		
-	Projected/Potential Connections							23.00		
-	Miscellaneous EDUs							**0.00**		
		VFSA Total EDUs =		**239.17**	**3,857.40**	**15.00**	**100.00**	**512.02**	**612.02**	**4,469.42**
		VFSA Metered EDUs =			**3,605.90**	**15.00**	**93.00**	**472.02**	**565.02**	
		VFSA Unmetered EDUs =			**251.50**	**0.00**	**7.00**	**40.00**	**47.00**	
RHM Unmetered Drainage Area					**81.10**		0.00	3.00	**3.00**	**84.10**
-	Projected/Potential Connections						0.00	3.00		
-	Miscellaneous EDUs							0.00		
		RHM Unmetered Subtotal EDUs =		**0.00**	**81.10**		**0.00**	**0.00**	**0.00**	**84.10**
Trout Run Unmetered Drainage Area					**176.40**		0.00	2.00	**2.00**	**178.40**
-	Projected/Potential Connections						0.00	2.00		
-	Miscellaneous EDUs							0.00		
		Trout Run Unmetered Subtotal EDUs =		**0.00**	176.40		**0.00**	**0.00**	**0.00**	178.40
		Grand Total EDUs =		**239.17**	**4,114.90**		**100.00**	**512.02**	**612.02**	**4,731.92**

EASTTOWN TOWNSHIP

APPROVED AND PROJECTED CONNECTIONS

Darby PS

Note: Darby PS owned and operated by Tredyffrin Township.

VFSA Unmetered

Saybrook PS

VFSA Unmetered

Station Ave Sewer PS (Owned and Operated by Tredyffrin)

Trout Run PS

Tredyffrin Township

Daylesford PS

The Greens PS

Berwyn PS

Newtown PS

Fox Creek PS

Pinecroft PS

Spring Knoll PS

Berwyn Estates PS

Millbrook PS

Exeter PS

RHM

Devon Hunt PS

Willistown Township

Newtown Township (Delaware County)

Radnor Township (Delaware County)

Chester County

Delaware County

LEGEND

- Manhole
- Air Release Valve
- Grinder Pump
- Gate Valve
- Sampling Meter Pit
- Pump Station
- Private Gravity Sewer
- Gravity Sewer
- Force Main
- Low Pressure Sewer
- Lateral (EDU=1)
- Lateral (EDU>1)
- Drainage Basin
- Areas Flowing to RHM
- Approved Subdivisions/ Projects not Connected
- Private Sewers
- Projected Connections 2025
- Potential Connections 2035
- Municipal Boundaries

0 500 1,000

Feet

1 inch = 500 feet

NOTES:

*Please reference the "Approved and Projected EDU Tracking List" spreadsheet.

The following subdivisions/projects have been approved, but are not connected:

A. South Leopard Road Associates (south side)
B. Lewis Subdivision (Dorset & South Devon)
D. Hill Custom Homes (Mundi Property, Winfield Rd.)
E. Blackburn Farm - 1135 Sugartown Rd.
F. Chen Wang Mei-Han - 435 Conestoga Rd.
H. Thompson - Subdivision
I. Keyes - Church Road.
K. J. B. A. Properties - 34 Leopard Rd.
M. Boathouse Realty Associates, LP (222 S. Waterloo Road)
N. 207 South Waterloo Rd.
S. Corkhill
U. 13 Woodside Avenue
W. 4 Midland Avenue

Original Map Produced: January 25, 2011
Revised Date: March 9, 2021

ARRO

Exhibit D

Easttown Municipal Authority

Flow Information for Each Pump Station

EXHIBIT - D

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
FLOW INFORMATION FOR EACH PUMPING STATION

		Pump Station Capacities						Present Flows	2-Year Projected Ann. Avg. Daily Flow			Future Projected Ann. Avg. Daily Flow		
Pumping Station Name[1]	No. of Pumps	Permit Design Capacity (gpm)	Ultimate Design Capacity (gpm)	Current Permit Peak Flow Capacity[2]	Ultimate Permit Peak Flow Capacity[2]	PADEP Peaking Factor[5]	Current Permit Annual Average Daily Flow Capacity	Actual Annual Average Daily Flow - 2020[3]	Projected Annual Average Daily Flow - 2022[4]	PADEP Peaking Factor[5]	Projected Peak Flow - 2022	Projected Annual Average Daily Flow - 2040[4]	PADEP Peaking Factor[5]	Projected Peak Flow - 2040
Berwyn	3	**920**	**1,019**	2,649,600	2,936,000	2.50	1,059,840	810,205	827,051	3.00	2,481,154	978,667	3.00	2,936,000
Berwyn Estates	2	73	73	105,120	105,120	2.50	42,048	7,058	7,243	4.20	30,420	8,907	4.20	37,407
Devon Hunt	2	**220**	**252**	316,800	362,880	2.50	126,720	71,850	74,288	3.77	280,067	96,233	3.77	362,800
Exeter	2	100	100	144,000	144,000	2.50	57,600	8,579	8,792	4.19	36,865	10,710	4.19	44,909
Fox Creek	2	50	50	72,000	72,000	2.50	28,800	13,857	13,879	4.16	57,725	14,082	4.16	58,567
Millbrook	2	40	40	57,600	57,600	2.50	23,040	3,477	3,477	4.20	14,603	3,477	4.20	14,603
Newtown	2	**550**	**690**	792,000	994,000	2.50	316,800	168,606	170,979	3.66	626,468	192,338	3.66	704,725
Pinecroft	2	32	32	46,080	46,080	2.50	18,432	3,359	3,359	4.20	14,108	3,359	4.20	14,108
Spring Knoll	2	**100**	**270**	144,000	388,800	2.50	57,600	43,619	44,221	3.93	173,610	49,635	3.93	194,869
Daylesford	2	**590**	**718**	849,600	1,033,620	2.50	339,840	282,294	283,597	3.50	992,588	295,320	3.50	1,033,620
The Greens	2	200	200	288,000	288,000	2.50	115,200	20,904	21,156	4.07	86,021	23,427	4.07	95,254
Saybrook	2	**275**	**275**	396,000	396,000	2.50	158,400	107,828	108,190	3.55	384,439	111,443	3.55	396,000

Notes:

(1) Berwyn, Daylesford and Saybrook pumping stations convey flow to the Vally Creek Trunk Sewer. The stations listed directly under those whose names are in bold type are tributary to that station whose name is in bold type.

(2) Current and Ultimate Permit Peak Flow Capacity based on one pump always on stand-by.

(3) Actual Annual Average Daily Flows are as per flow meter readings for all pumping stations.

(4) Projected Annual Average Daily flow in 2022 and at buildout (2040) is based on an interpolation of the Year 2040 Easttown Projected Flow, specified as 1.686 MGD, which is contained in the *Act 537 Supplement for Wilson Road Force Main*, Table 3-3, Average D

(5) PADEP Peaking Factor is interpolated from PADEP Southeast Regional Office's "Sewage Pumping Station Guidance (Rev. 3/24/99)".

(6) All flow rates above are in gallons per day (gpd).

Exhibit E

Easttown Municipal Authority

Monthly Flow Total to VFSA

Versus Rainfall - Graph

Graph 3

GRAPH - #3

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY TOTAL FLOW TO VFSA VERSUS RAINFALL

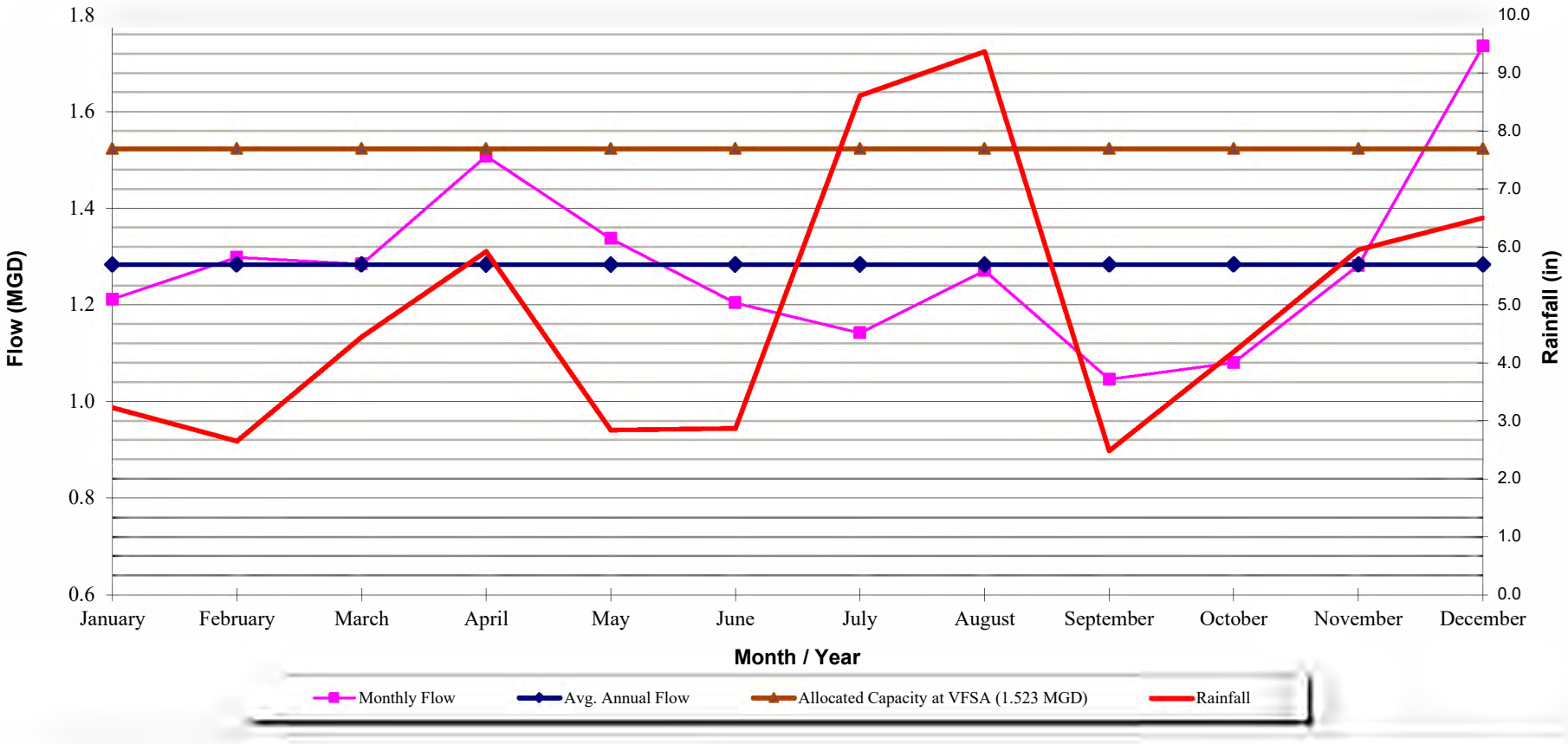


Exhibit F

Easttown Municipal Authority

Pump Stations Flow to VFSA

Versus Rainfall - Summary and Graphs

Berwyn Pump Station
Daylesford Pump Station
Saybrook Pump Station

Table 4A, Graphs 4A, 4B and 4C

Table 4A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY PUMP STATION FLOW TO VFSA

BERWYN, DAYLESFORD and SAYBROOK PUMP STATIONS

Year	Month	Monthly Flow, MGD			Rainfall
		Berwyn	Daylesford	Saybrook	
2020	January	0.7762	0.2582	0.0995	3.23
	February	0.8311	0.2826	0.1015	2.65
	March	0.8216	0.2804	0.0997	4.45
	April	0.9475	0.3409	0.1226	5.92
	May	0.8380	0.3049	0.1085	2.84
	June	0.7634	0.2604	0.1029	2.87
	July	0.7247	0.2421	0.1008	8.61
	August	0.8172	0.2566	0.1147	9.37
	September	0.6515	0.2327	0.0935	2.48
	October	0.6765	0.2378	0.0953	4.19
	November	0.7997	0.2910	0.1075	5.95
	December	1.0750	0.4000	0.1475	6.50
Avg Annual Flow (MGD) =		**0.8102**	**0.2823**	**0.1078**	

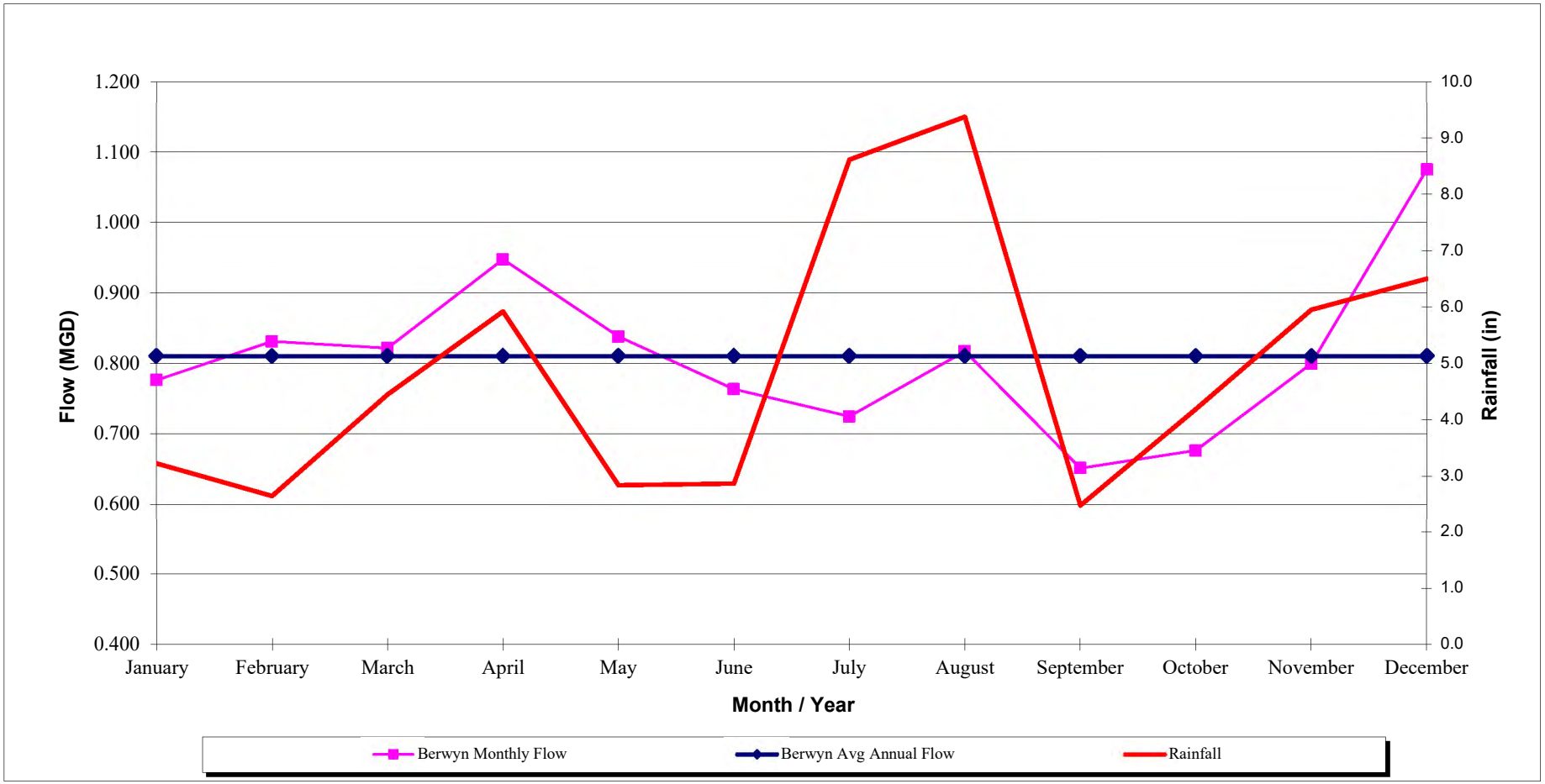
GRAPH - #4A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

BERWYN PUMP STATION



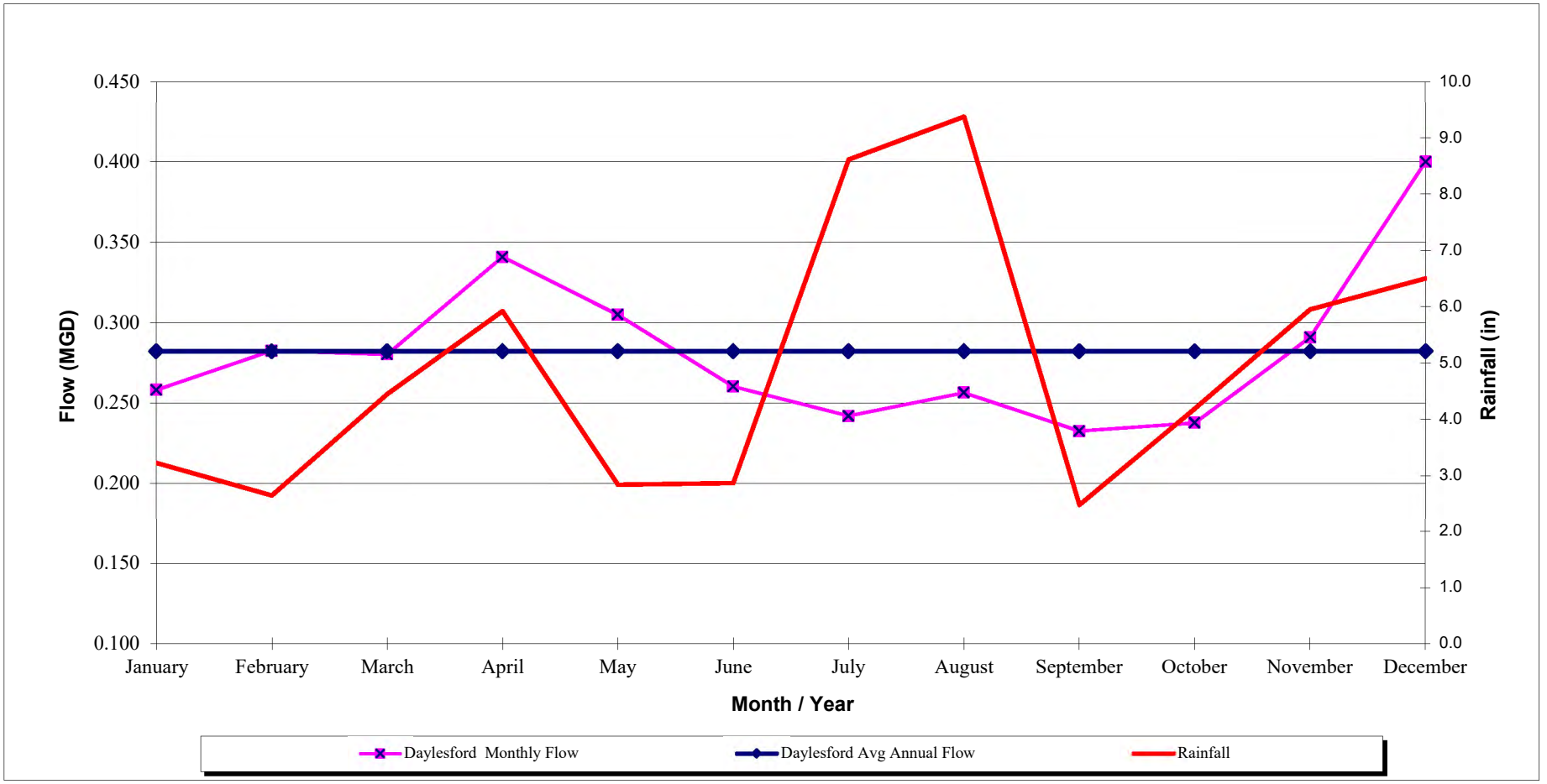
GRAPH - #4B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

DAYLESFORD PUMP STATION



GRAPH - #4C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY FLOW FROM METERED PUMP STATIONS TO VFSA VERSUS RAINFALL

SAYBROOK PUMP STATION

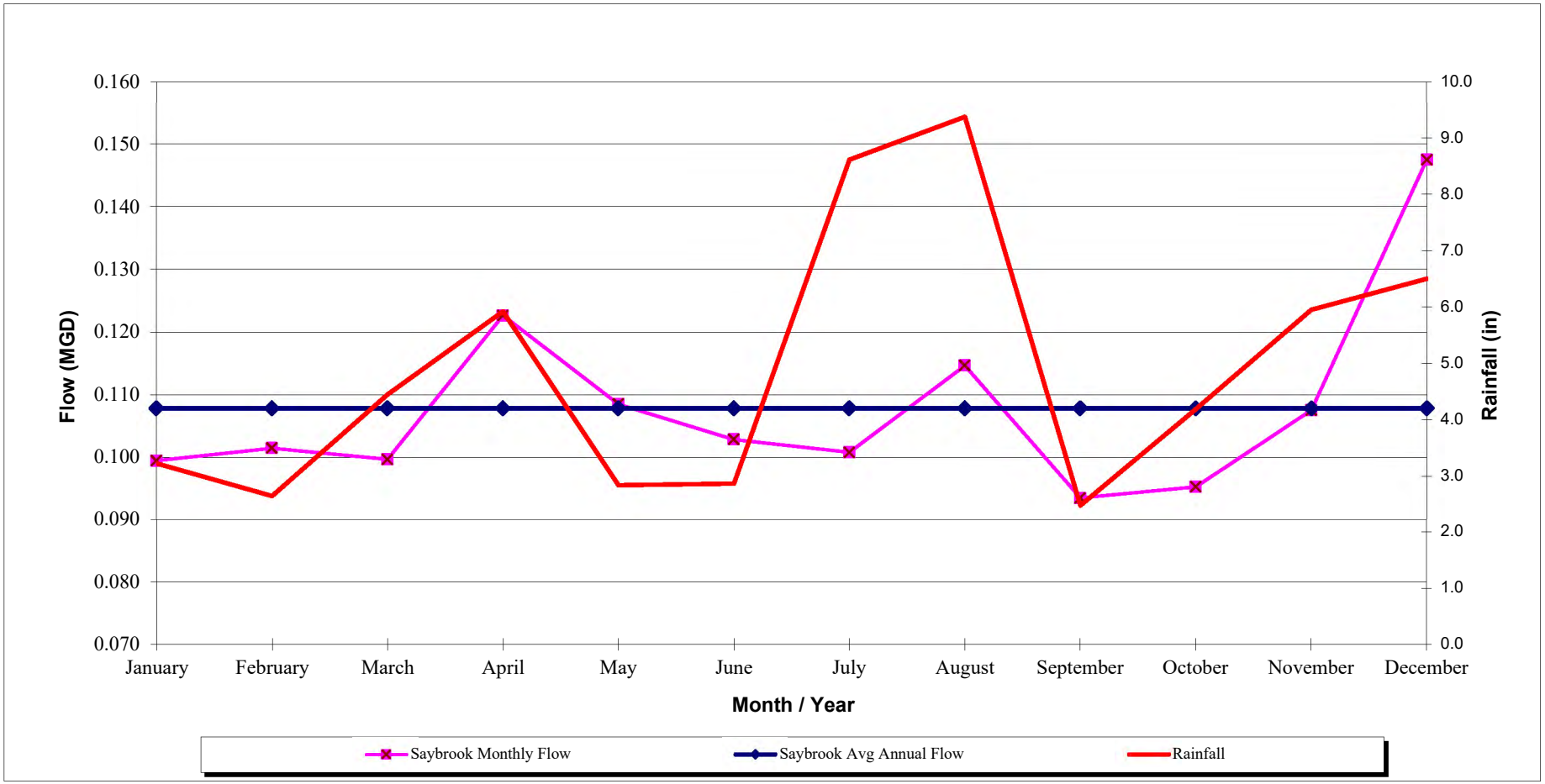


Exhibit G

Easttown Municipal Authority

Small Metered Pump Stations Flow Versus Rainfall - Summary and Graphs

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Table 4B, Graphs 4D to 4L

Table 4B

EASTTOWN MUNICIPAL AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY SATELLITE PUMP STATION FLOWS

Year	Month	Monthly Flow, GPD									Rainfall
		Berwyn Estates	Devon Hunt	Exeter	Fox Creek	Millbrook	Newtown	Pinecroft	Spring Knoll	The Greens	
2020	January	6,963	67,456	7,681	13,390	3,343	156,288	3,698	39,399	17,545	3.23
	February	6,437	69,816	8,399	12,231	3,216	156,667	3,046	38,123	17,904	2.65
	March	7,087	74,152	8,827	13,208	3,414	167,553	3,317	42,486	20,688	4.45
	April	7,688	82,773	9,833	14,413	3,812	195,559	3,316	49,138	22,216	5.92
	May	7,532	76,294	8,823	13,760	3,543	174,662	3,246	44,641	22,327	2.84
	June	7,153	70,820	8,733	12,432	3,515	161,187	2,881	42,497	21,520	2.87
	July	6,591	66,213	7,516	13,131	3,289	150,782	3,317	41,303	21,687	8.61
	August	7,050	71,510	8,773	14,893	2,883	173,387	3,844	45,270	20,459	9.37
	September	6,704	62,170	7,382	13,003	3,951	138,719	3,511	38,221	20,358	2.48
	October	6,774	64,441	6,773	13,386	3,723	146,623	3,561	39,900	21,093	4.19
	November	7,171	71,256	8,756	14,757	3,375	173,898	3,206	45,051	23,048	5.95
	December	7,542	85,295	11,455	17,685	3,663	227,943	3,369	57,398	22,005	6.50
Avg Annual Flow (GPD) =		**7,058**	**71,850**	**8,579**	**13,857**	**3,477**	**168,606**	**3,359**	**43,619**	**20,904**	

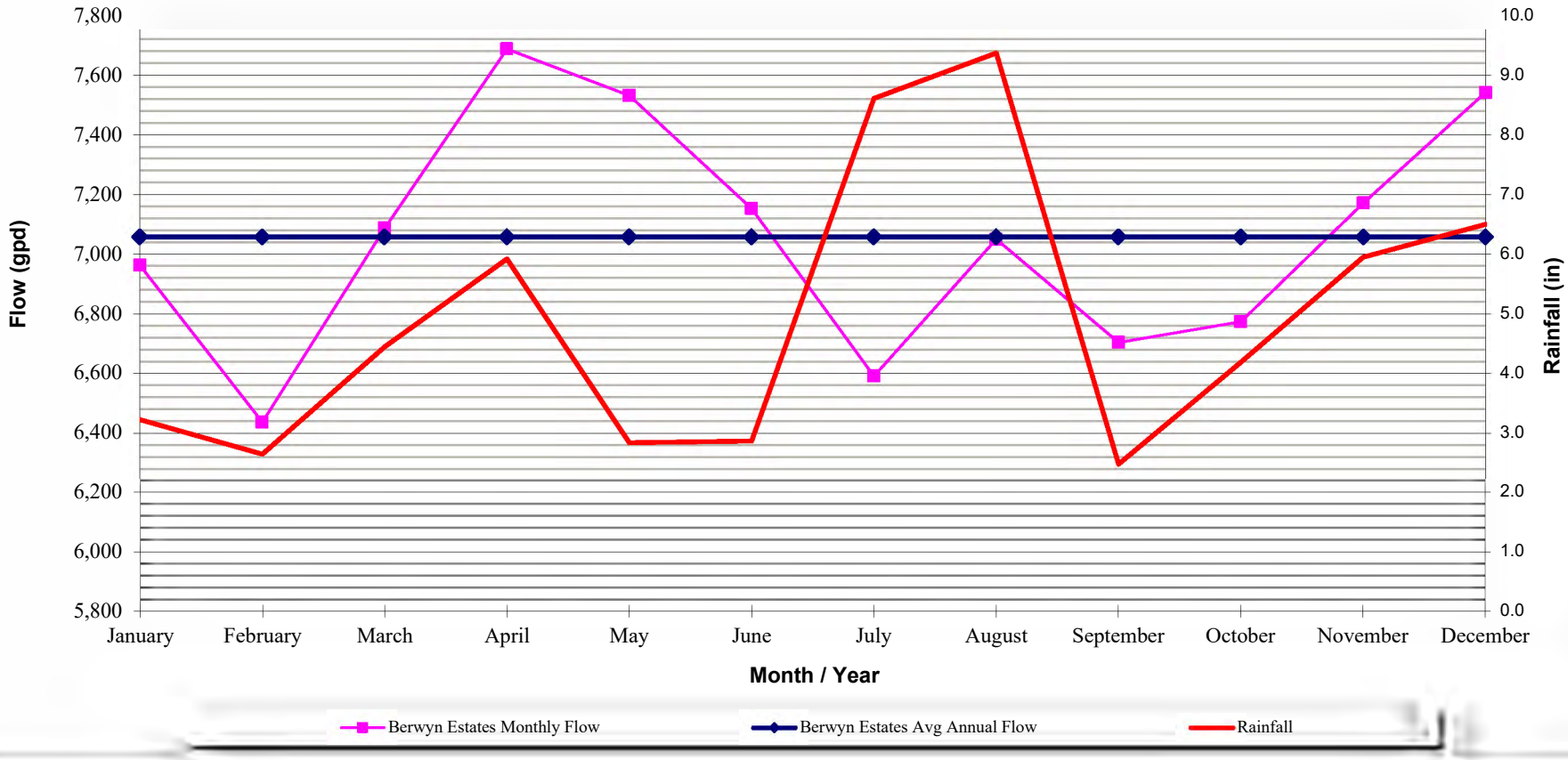
GRAPH - #4D

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

BERWYN ESTATES PUMP STATION



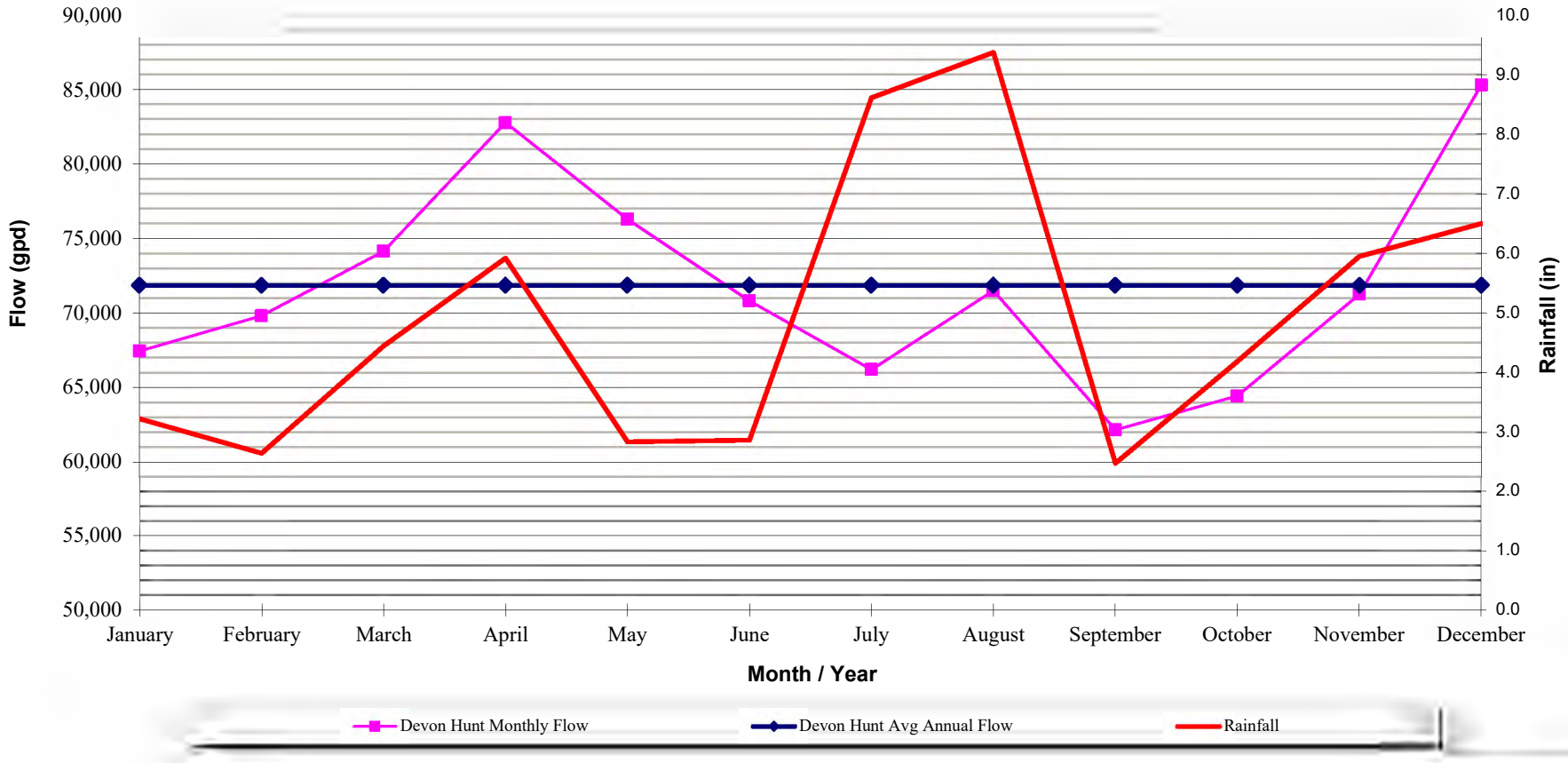
GRAPH - #4E

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

DEVON HUNT PUMP STATION



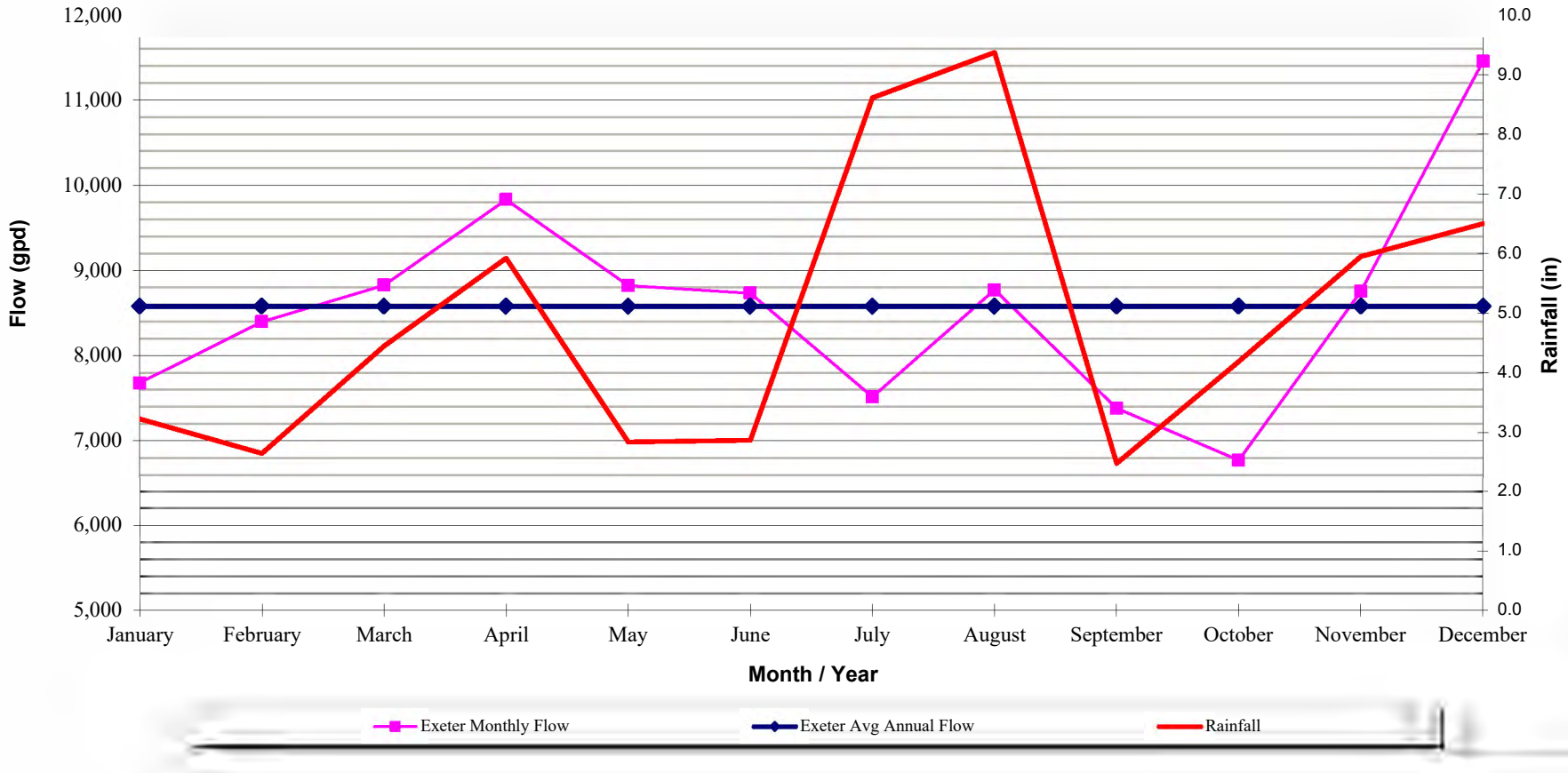
GRAPH - #4F

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

EXETER PUMP STATION



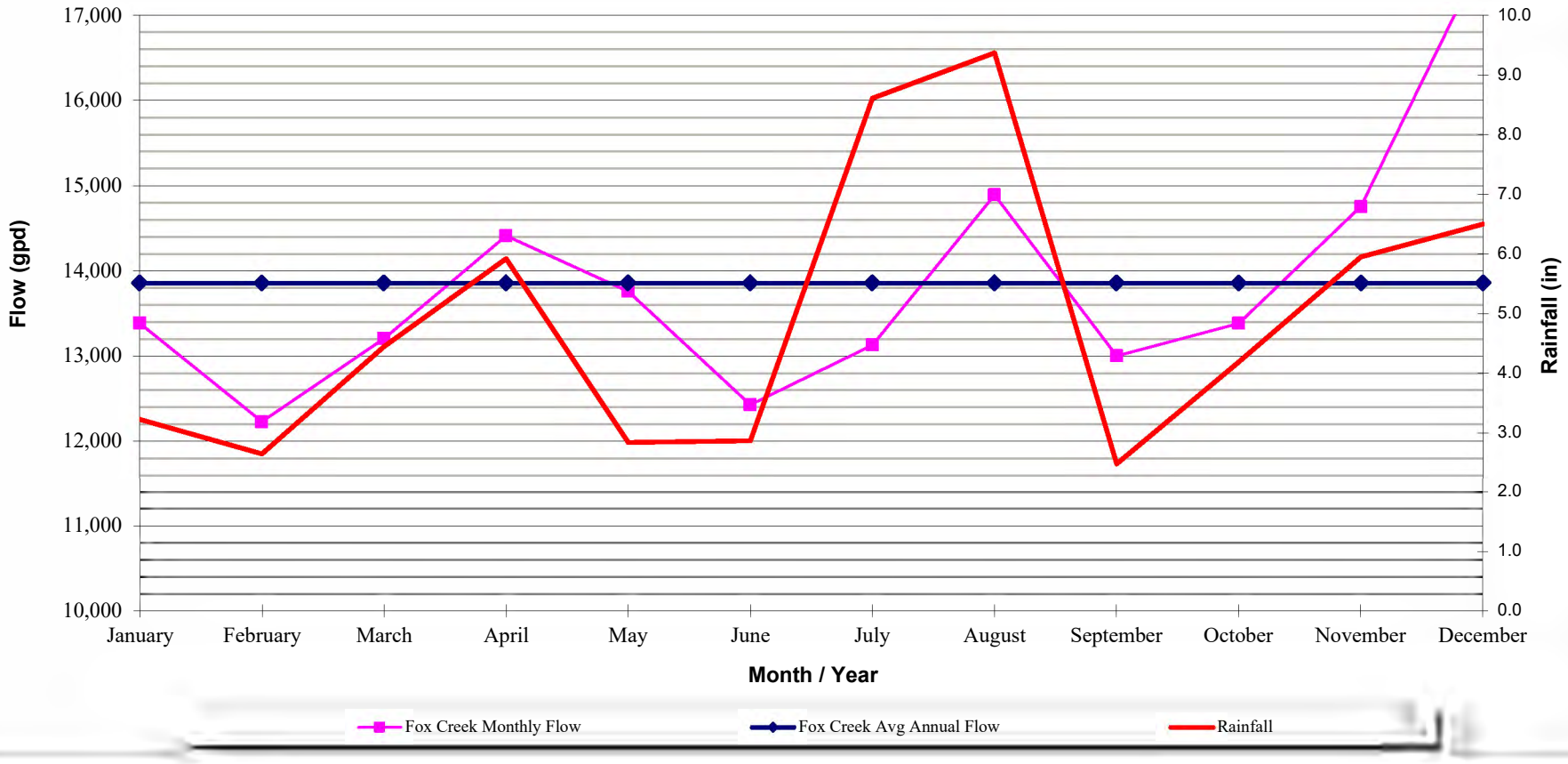
GRAPH - #4G

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

FOX CREEK PUMP STATION



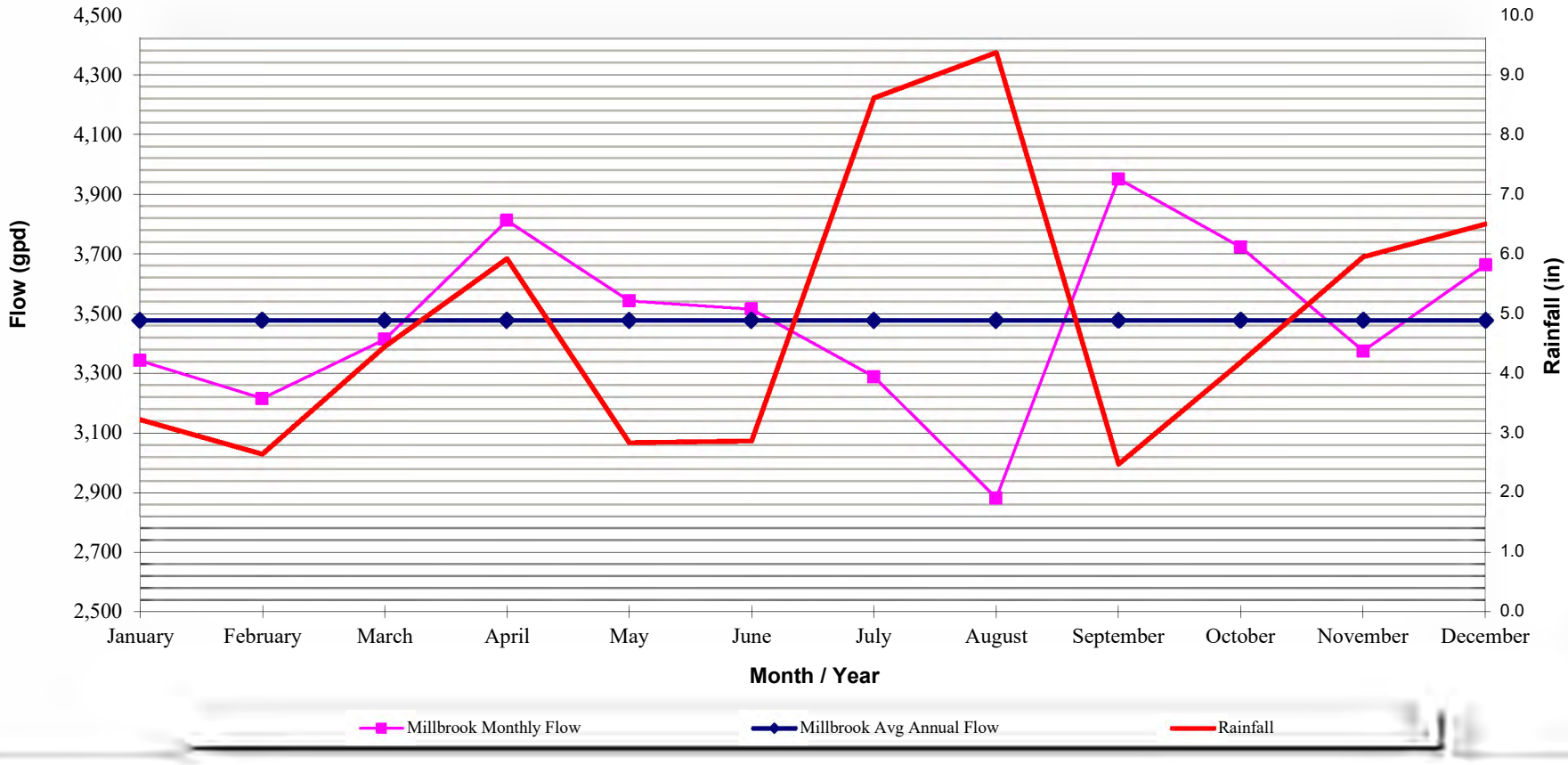
GRAPH - #4H

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

MILLBROOK PUMP STATION



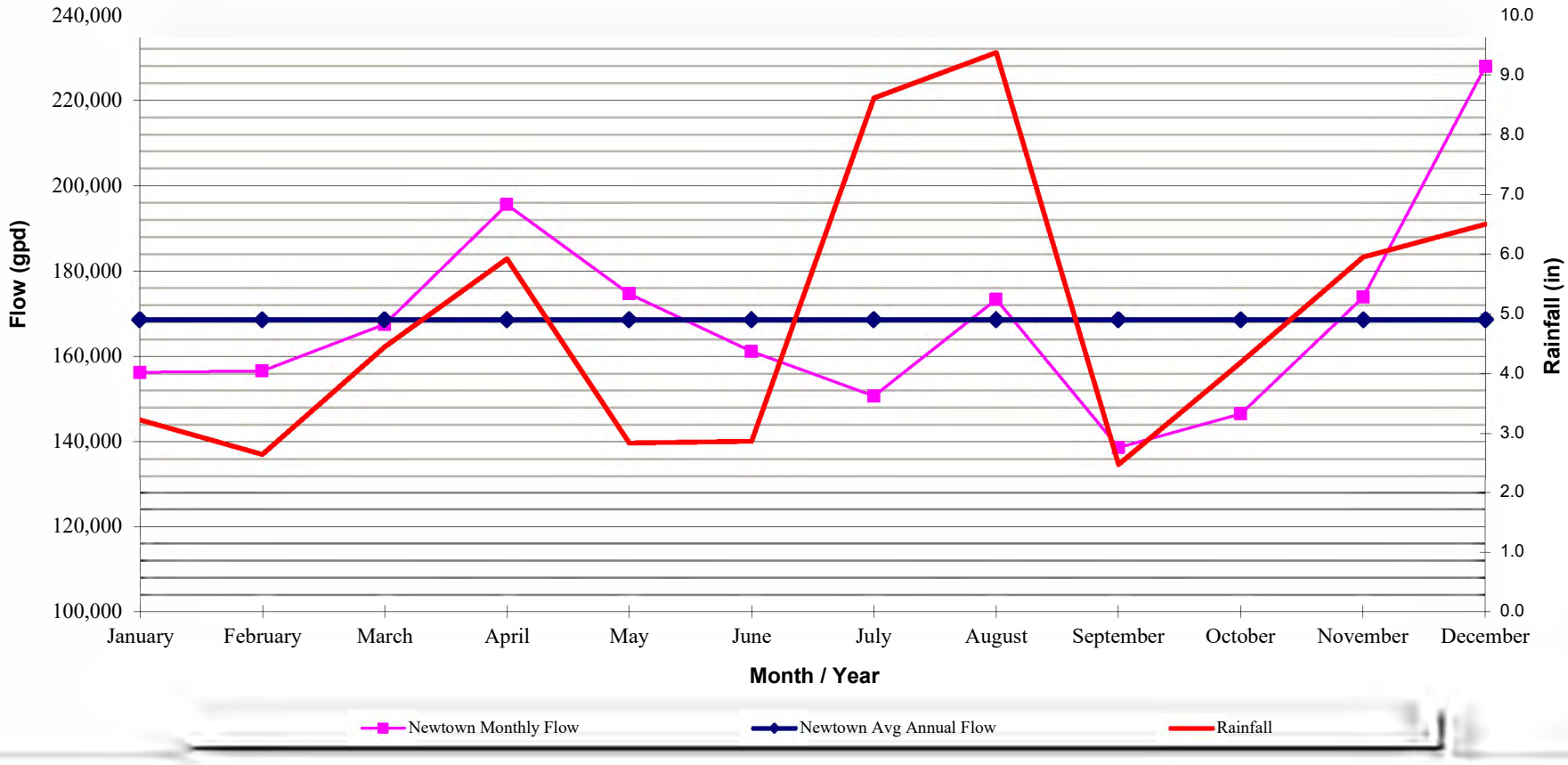
GRAPH - #4I

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

NEWTOWN PUMP STATION



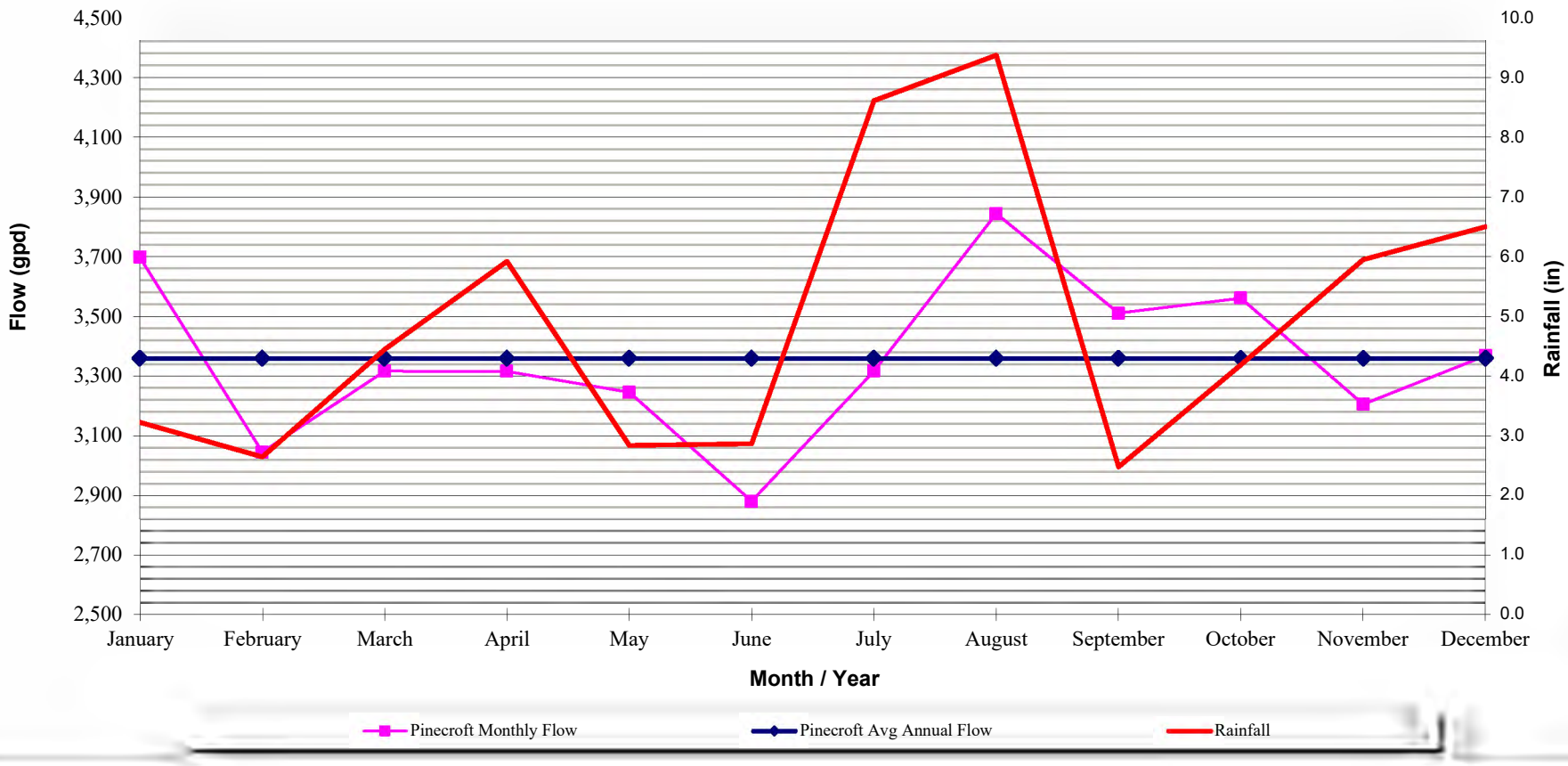
GRAPH - #4J

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

PINECROFT PUMP STATION



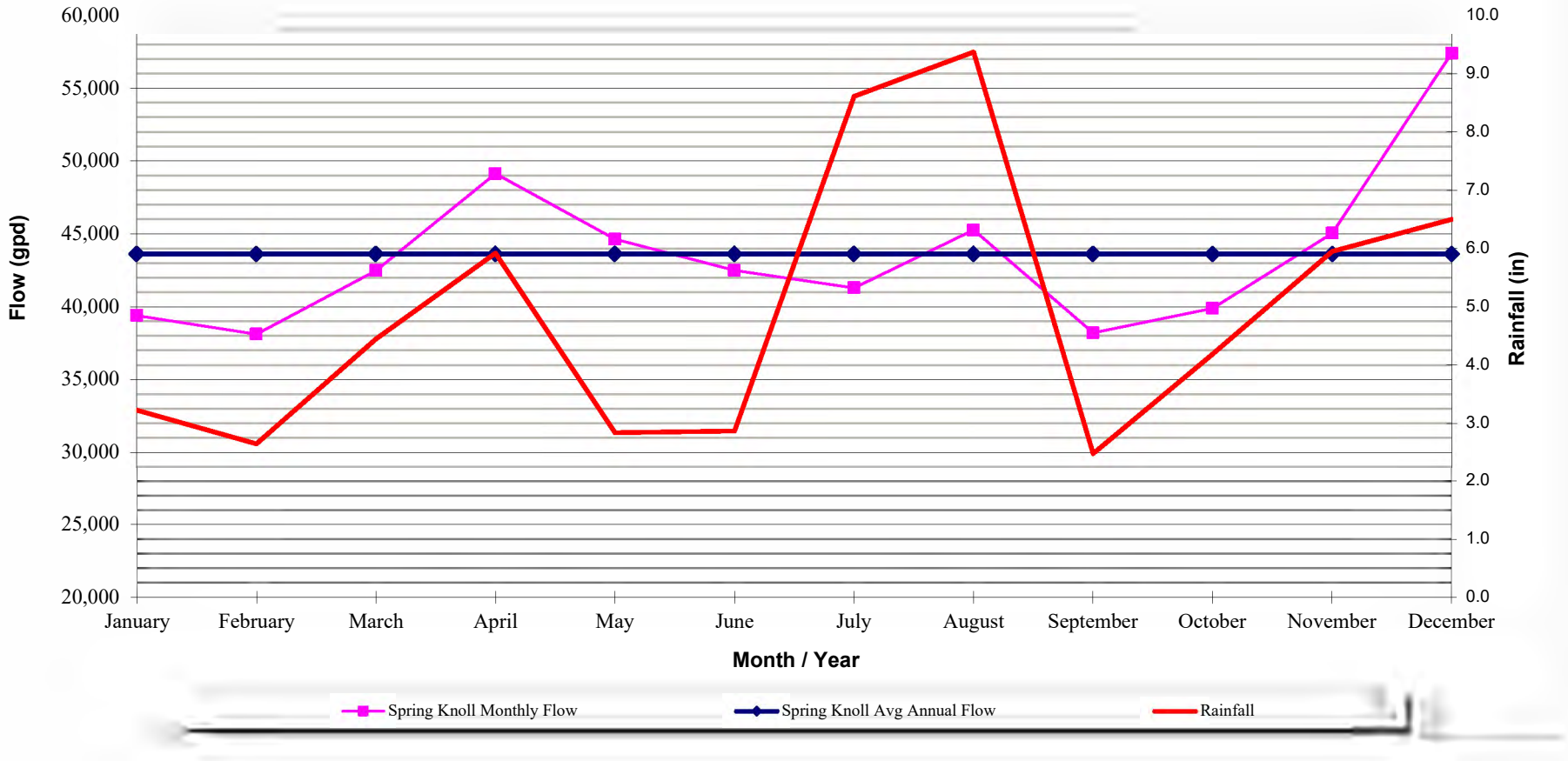
GRAPH - #4K

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

SPRING KNOLL PUMP STATION



GRAPH - #4L

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

MONTHLY SATELLITE PUMP STATION FLOWS

THE GREENS PUMP STATION

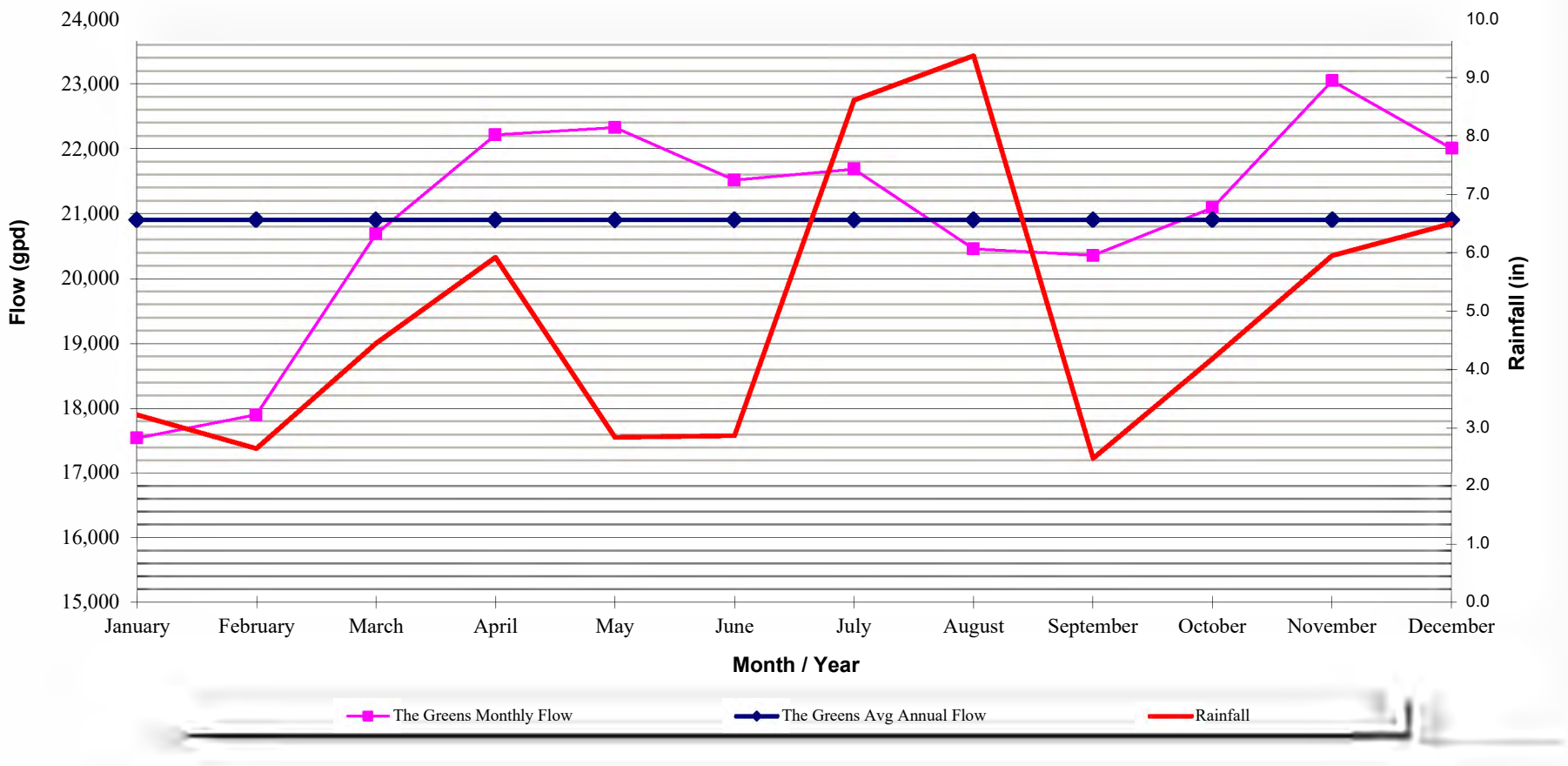


Exhibit H

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Metered Pump Stations – Summary

Berwyn Pump Station
Berwyn Estates Pump Station
Daylesford Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Saybrook Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Table 5

Table 5

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

SUMMARY OF MAXIMUM DAILY FLOW (MGD) AT METERED PUMP STATIONS

DURING DAYS WHEN RAINFALL > 1.0 INCH PER DAY

		Berwyn PS		Berwyn Estates PS		Daylesford PS		Devon Hunt PS		Exeter PS		Fox Creek PS	
Rain Date	Rain (in.)	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
01/25/20	2.21	0.689	0.85	0.010	1.44	0.216	0.76	0.071	0.98	0.010	1.15	0.012	0.88
03/28/20	1.31	1.398	1.73	0.010	1.39	0.359	1.27	0.122	1.70	0.015	1.74	0.023	1.69
04/13/20	2.49	1.310	1.62	0.006	0.87	0.409	1.45	0.118	1.64	0.014	1.60	0.020	1.43
04/30/20	1.09	1.492	1.84	0.008	1.17	0.468	1.66	0.146	2.03	0.017	1.98	0.024	1.75
07/06/20	3.43	0.732	0.90	0.008	1.07	0.274	0.97	0.067	0.93	0.008	0.89	0.012	0.87
07/10/20	3.21	0.907	1.12	0.006	0.88	0.318	1.13	0.083	1.15	0.009	1.09	0.012	0.83
08/04/20	5.86	0.816	1.01	0.009	1.23	0.292	1.03	0.081	1.13	0.008	0.89	0.012	0.88
10/29/20	2.07	1.801	2.22	0.009	1.32	0.513	1.82	0.156	2.17	0.024	2.74	0.022	1.55
11/30/20	2.52	0.828	1.02	0.006	0.89	0.251	0.89	0.069	0.96	0.007	0.82	0.013	0.93
12/24/20	2.65	0.924	1.14	0.006	0.86	0.271	0.96	0.076	1.06	0.008	0.97	0.012	0.84
Yearly Avg Flow (MGD) =		**0.810**		**0.007**		**0.282**		**0.072**		**0.009**		**0.014**	
Meter Max (MGD) =		**5.000**		**0.140**		**1.400**		**0.560**		**0.280**		**0.140**	
High Peaking Factor =			**2.22**		**1.44**		**1.82**		**2.17**		**2.74**		**1.75**
Average Peaking Factor =			**1.34**		**1.11**		**1.19**		**1.38**		**1.39**		**1.17**

		Millbrook PS		Newtown PS		Pinecroft PS		Saybrook PS		Spring Knoll PS		The Greens PS	
Rain Date	Rain (in.)	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
01/25/20	2.21	0.003	0.94	0.159	0.94	0.004	1.05	0.094	0.87	0.049	1.13	0.023	1.09
03/28/20	1.31	0.004	1.09	0.356	2.11	0.006	1.86	0.116	1.07	0.106	2.42	0.026	1.24
04/13/20	2.49	0.004	1.02	0.291	1.73	0.004	1.25	0.122	1.13	0.076	1.75	0.018	0.88
04/30/20	1.09	0.005	1.55	0.368	2.18	0.006	1.75	0.131	1.21	0.095	2.18	0.028	1.35
07/06/20	3.43	0.004	1.15	0.150	0.89	0.003	1.02	0.095	0.88	0.044	1.00	0.022	1.04
07/10/20	3.21	0.003	0.77	0.147	0.87	0.003	0.78	0.111	1.03	0.036	0.84	0.017	0.79
08/04/20	5.86	0.004	1.17	0.151	0.90	0.003	0.96	0.114	1.06	0.045	1.04	0.023	1.10
10/29/20	2.07	0.004	1.21	0.416	2.47	0.004	1.17	0.160	1.48	0.094	2.15	0.026	1.24
11/30/20	2.52	0.003	0.86	0.165	0.98	0.003	0.93	0.108	1.01	0.046	1.05	0.023	1.10
12/24/20	2.65	0.003	0.88	0.170	1.01	0.002	0.70	0.113	1.05	0.047	1.07	0.024	1.15
Yearly Avg Flow (MGD) =		**0.003**		**0.169**		**0.003**		**0.108**		**0.044**		**0.021**	
Meter Max (MGD) =		**0.140**		**2.100**		**0.140**		**1.400**		**0.490**		**0.560**	
High Peaking Factor =			**1.55**		**2.47**		**1.86**		**1.48**		**2.42**		**1.35**
Average Peaking Factor =			**1.06**		**1.41**		**1.15**		**1.08**		**1.46**		**1.10**

Exhibit I

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Large Metered Pump Stations - Graphs

Berwyn Pump Station
Daylesford Pump Station
Saybrook Pump Station

Graphs 5A, 5B and 5C

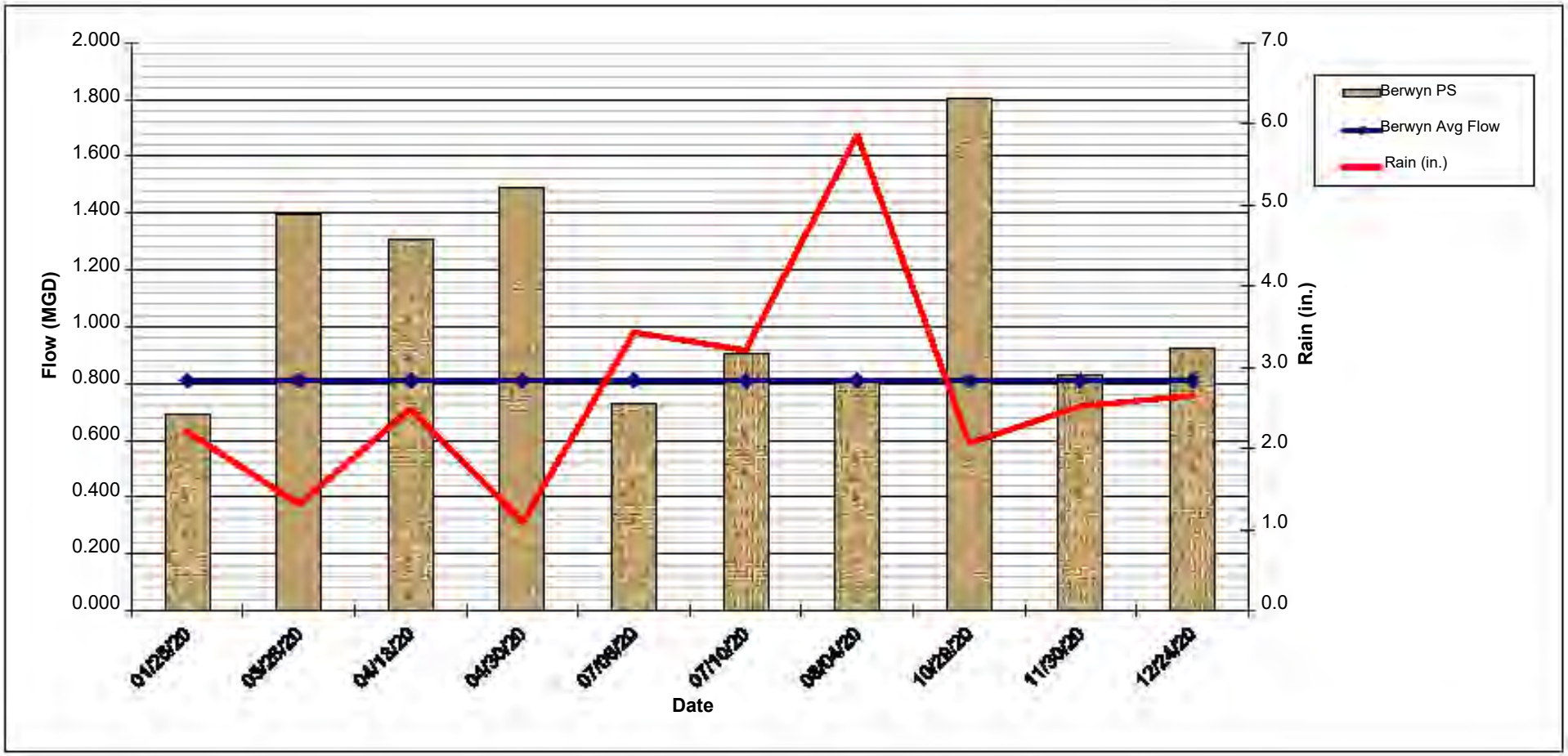
GRAPH - #5A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

BERWYN PUMP STATION



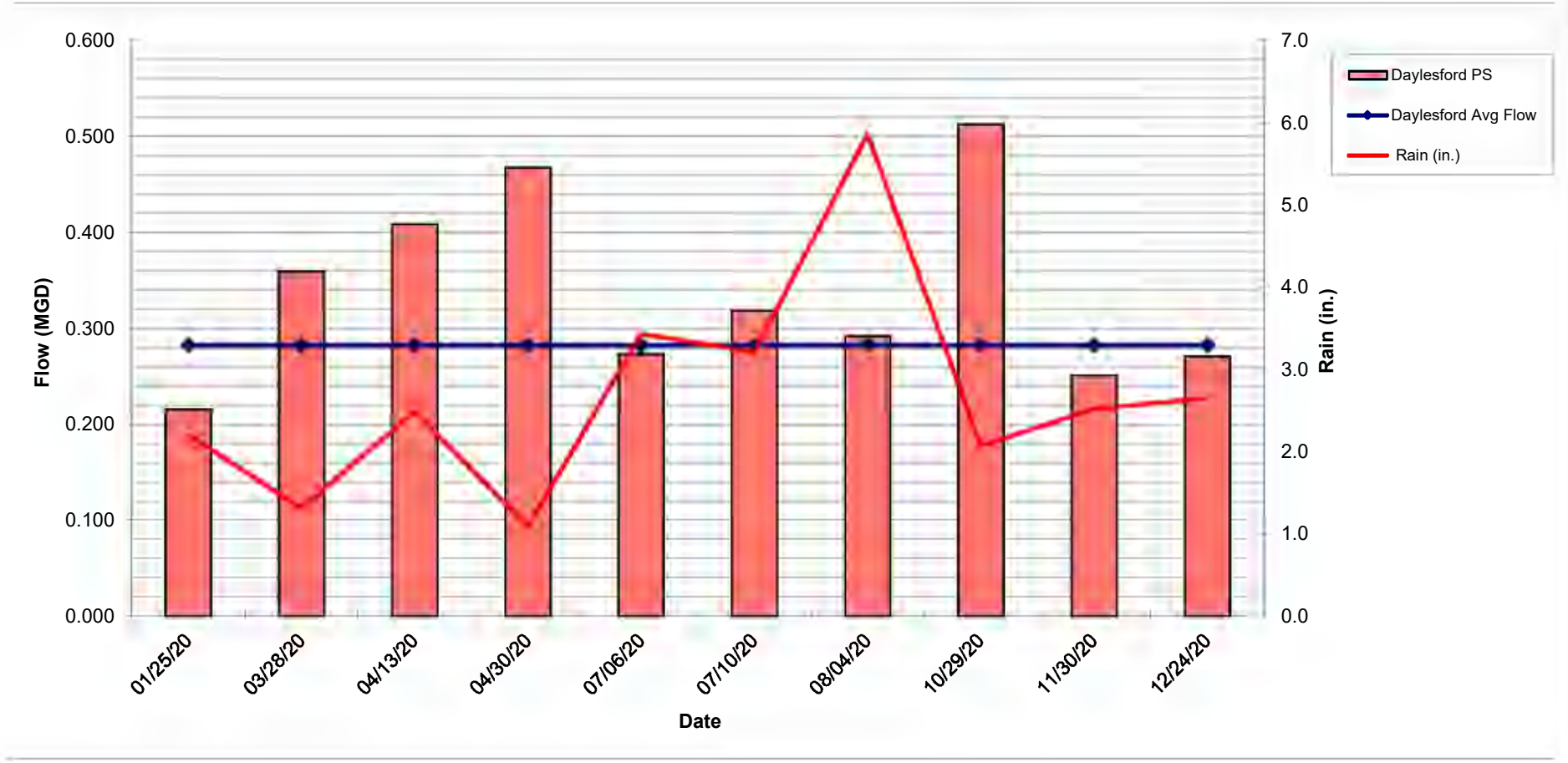
GRAPH - #5B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

DAYLESFORD PUMP STATION



GRAPH - #5C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

SAYBROOK PUMP STATION

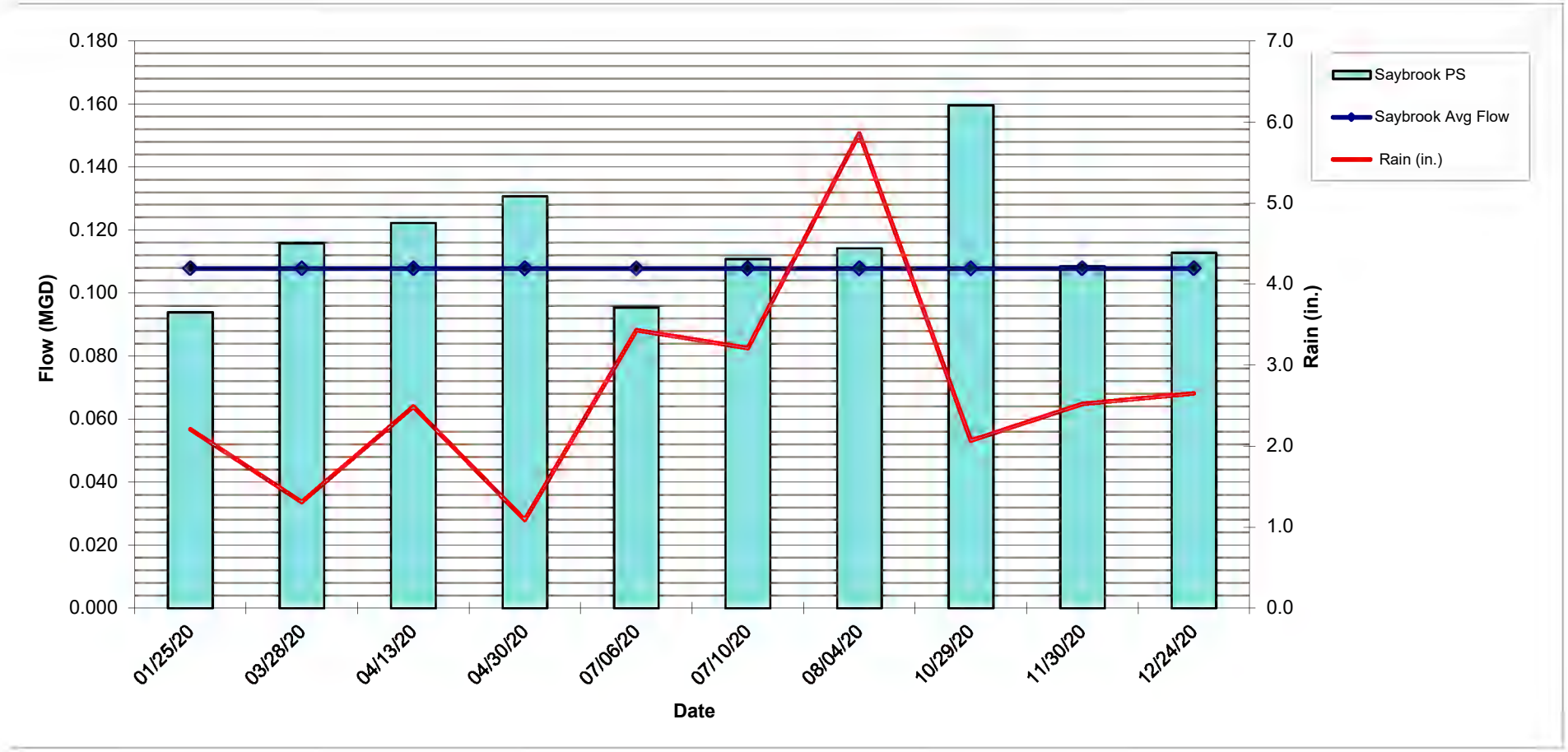


Exhibit J

Easttown Municipal Authority

1-Inch Plus Rainfall Versus Flow

At Small Metered Pump Stations - Graphs

Berwyn Estates Pump Station
Devon Hunt Pump Station
Exeter Pump Station
Fox Creek Pump Station
Millbrook Pump Station
Newtown Pump Station
Pinecroft Pump Station
Spring Knoll Pump Station
The Greens Pump Station

Graphs 6A to 6I

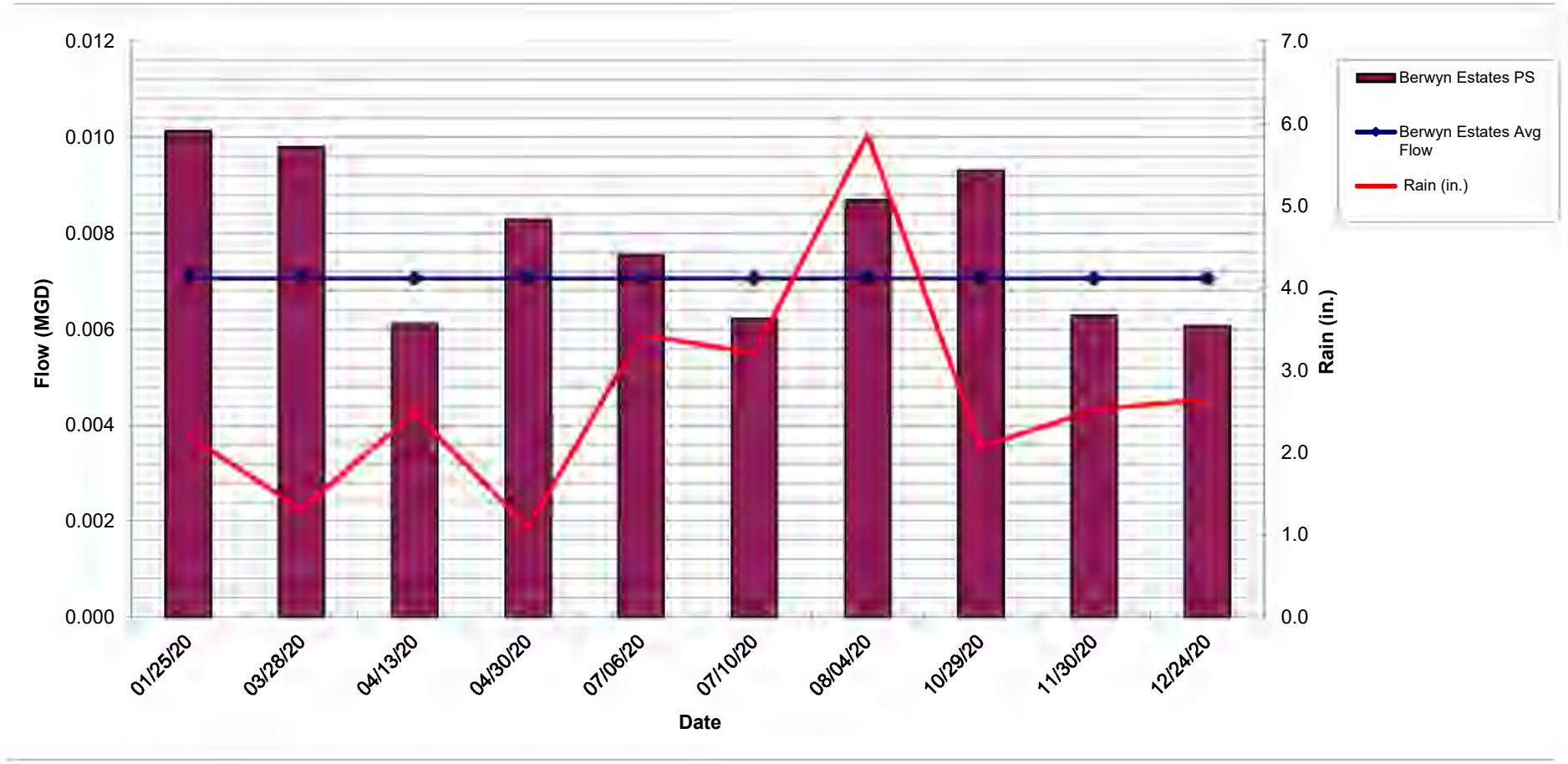
GRAPH - #6A

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

BERYWN ESTATES PUMP STATION



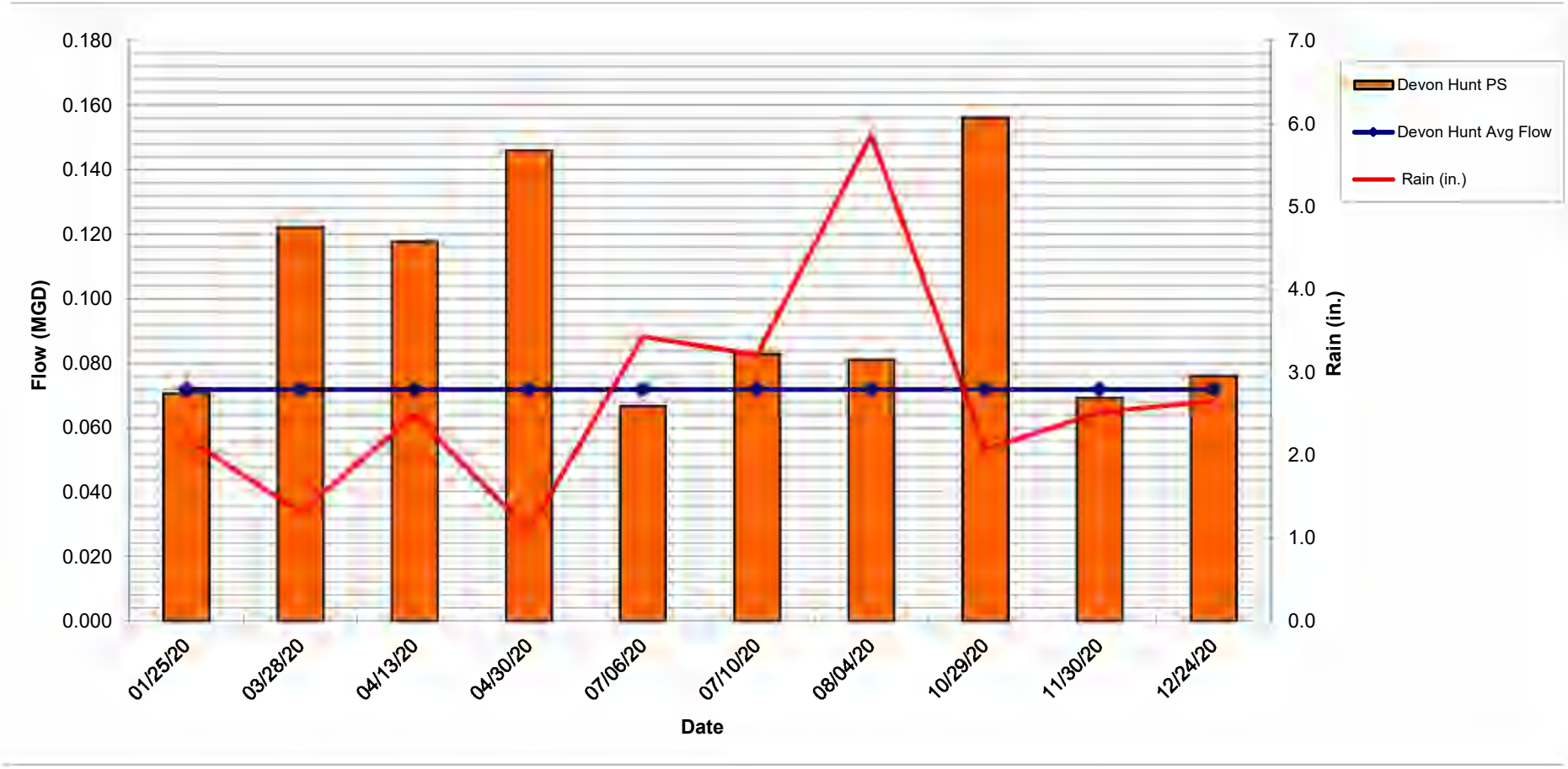
GRAPH - #6B

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

DEVON HUNT PUMP STATION



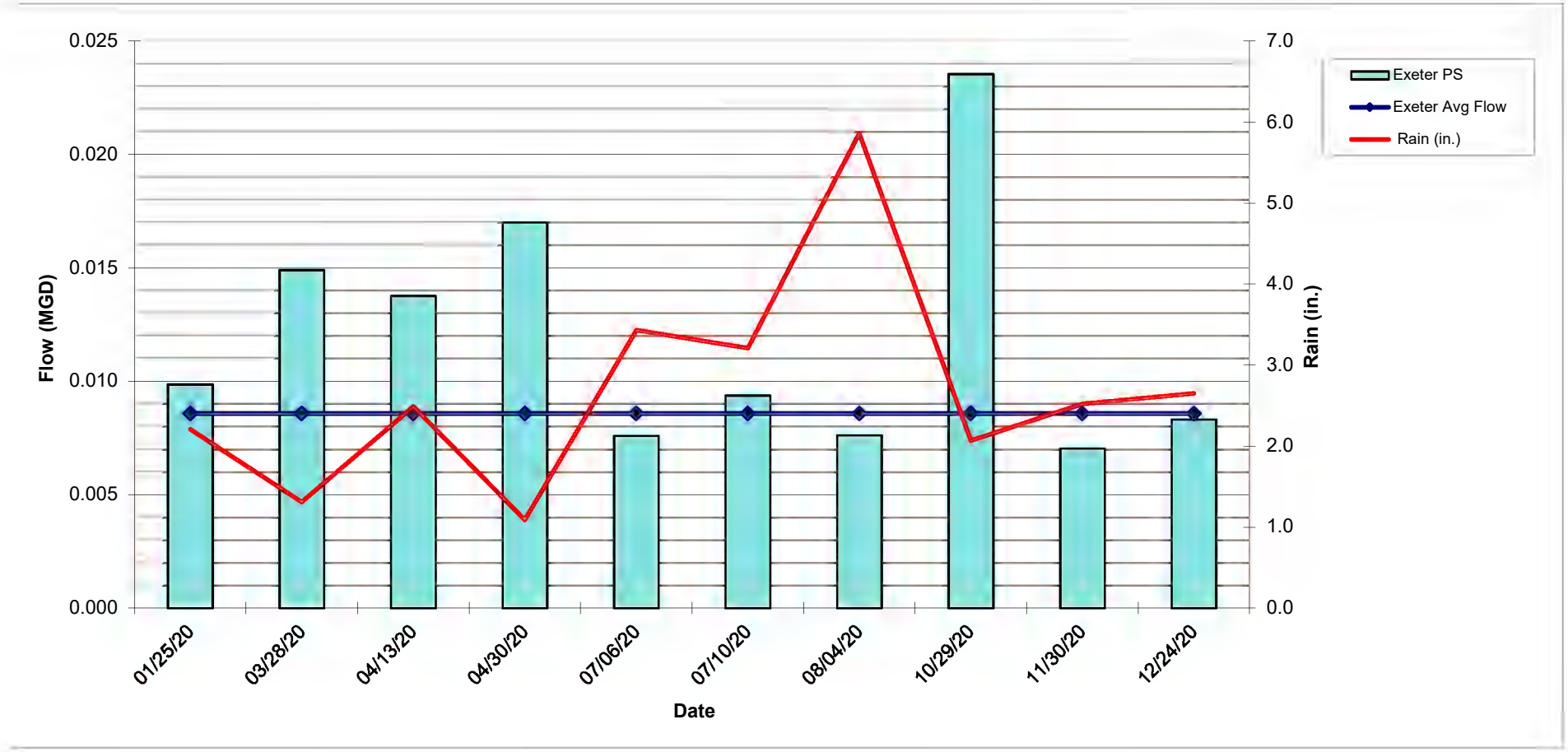
GRAPH - #6C

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

EXETER PUMP STATION



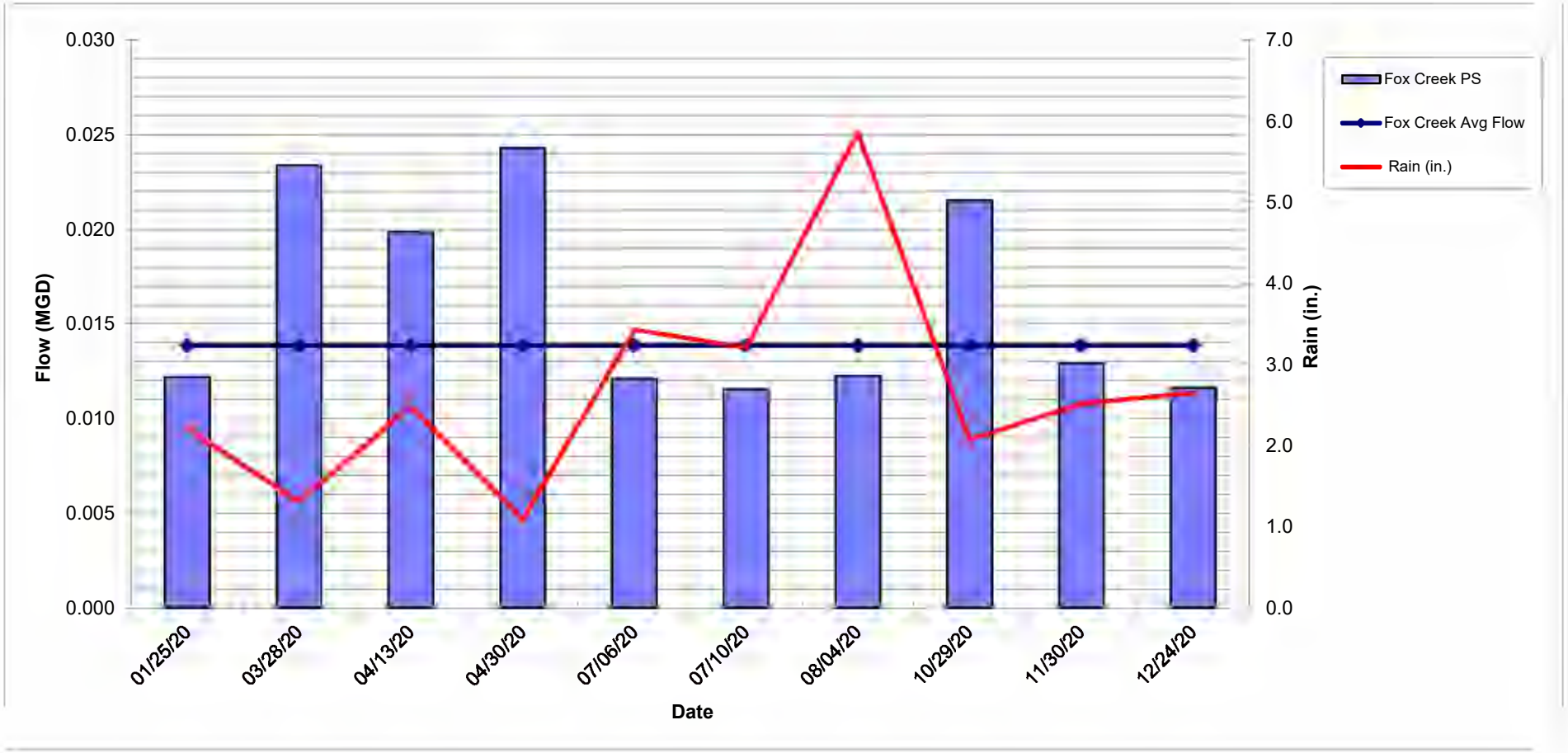
GRAPH - #6D

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

FOX CREEK PUMP STATION



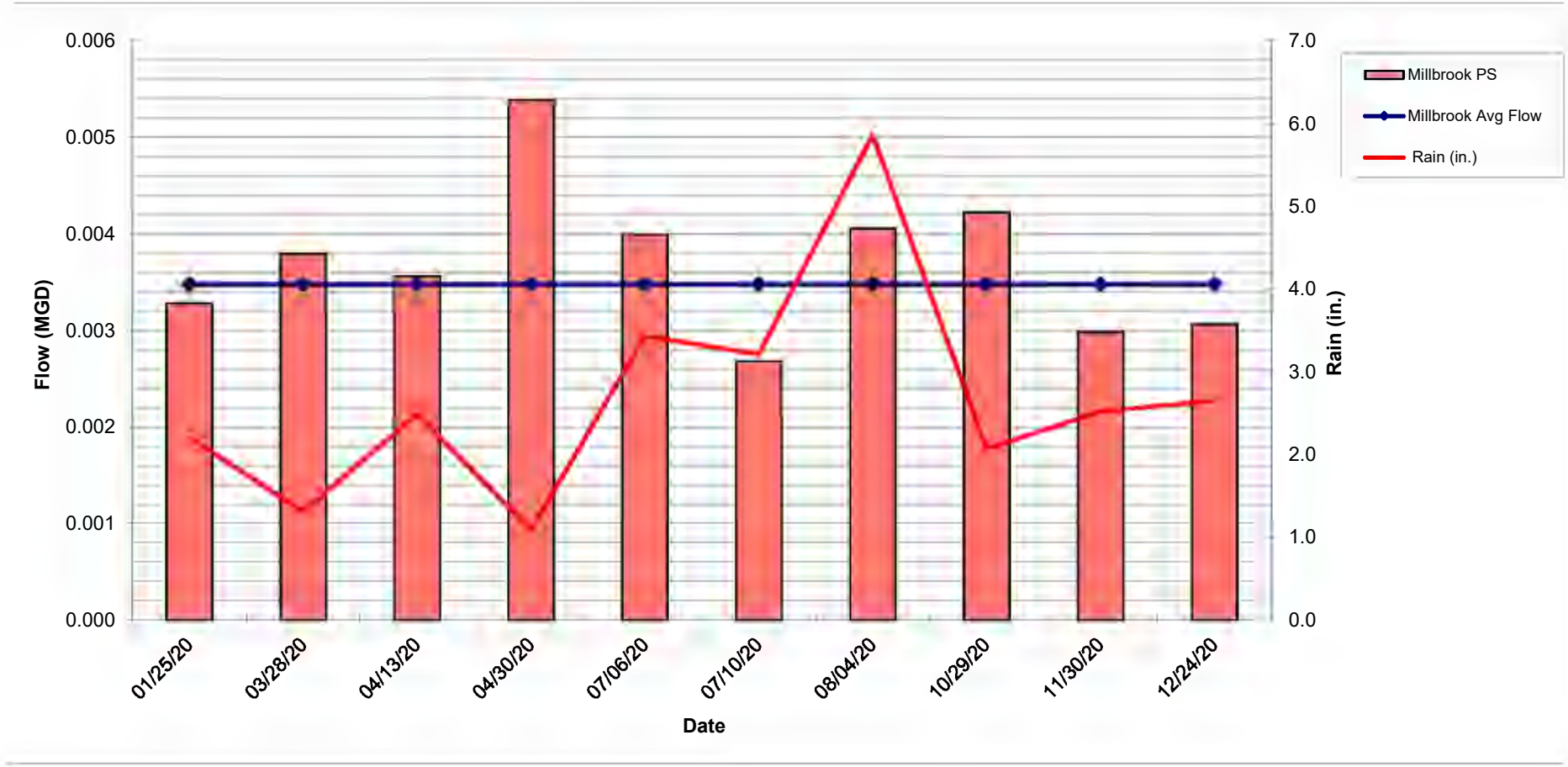
GRAPH - #6E

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

MILLBROOK PUMP STATION



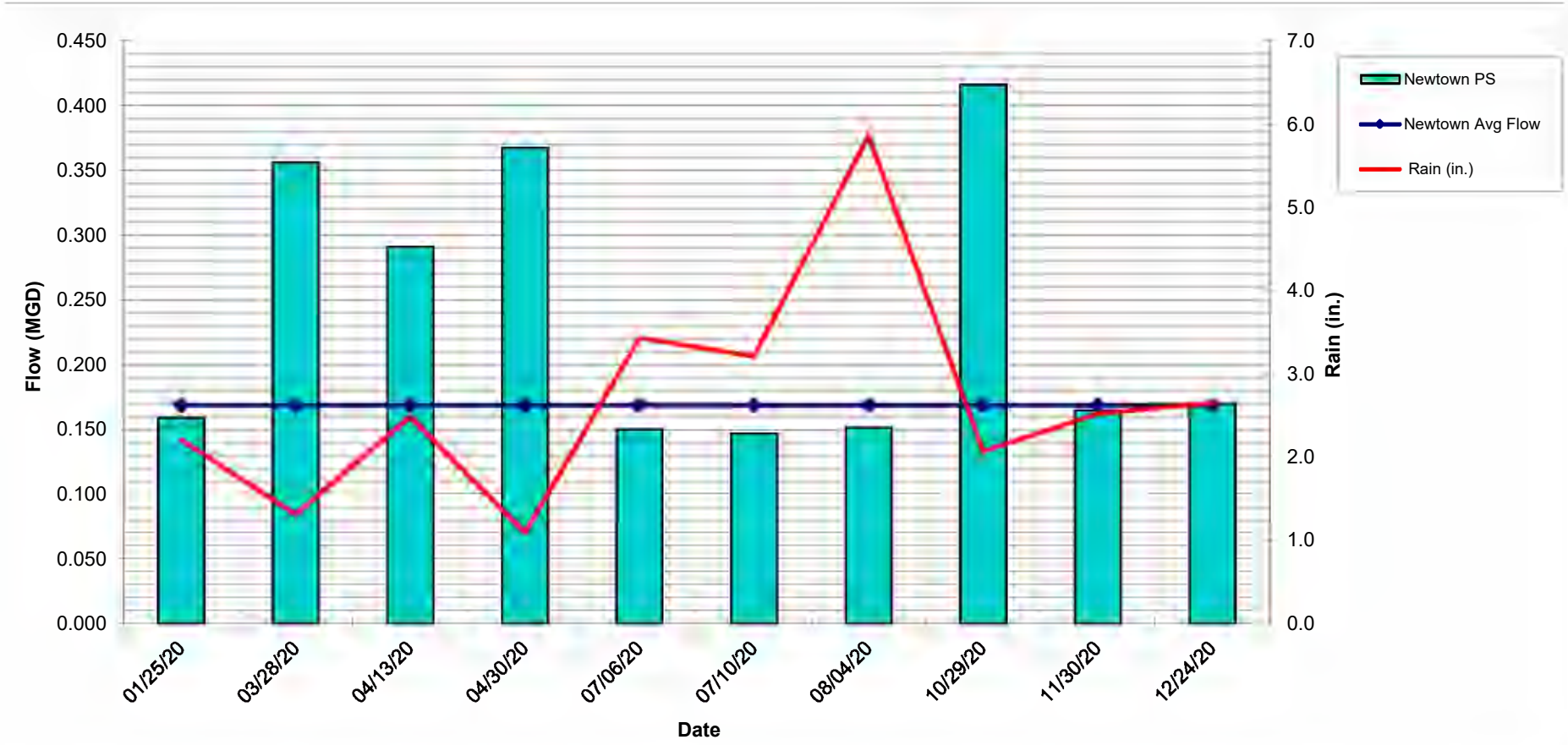
GRAPH - #6F

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

NEWTOWN PUMP STATION



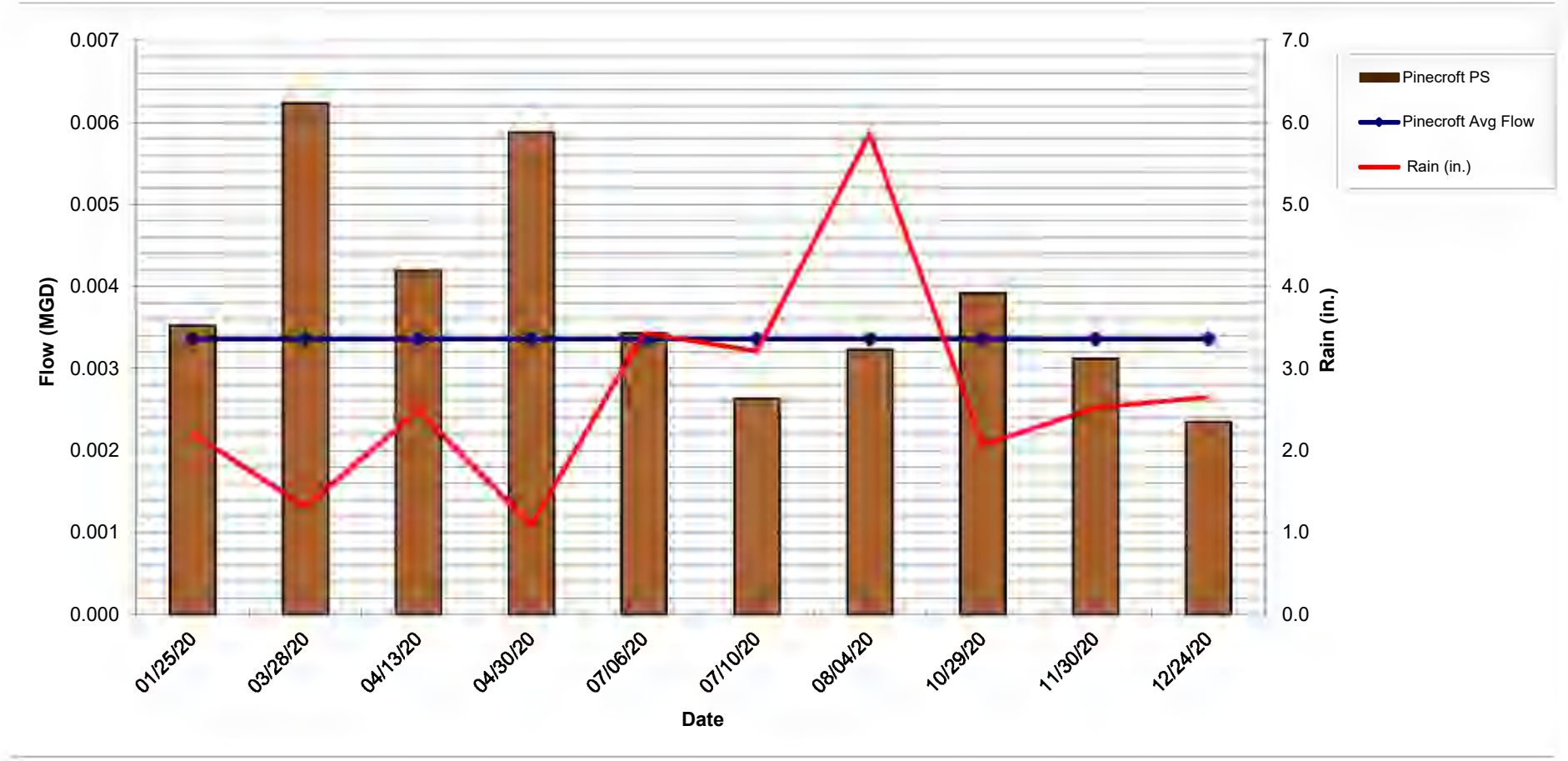
GRAPH - #6G

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

PINECROFT PUMP STATION



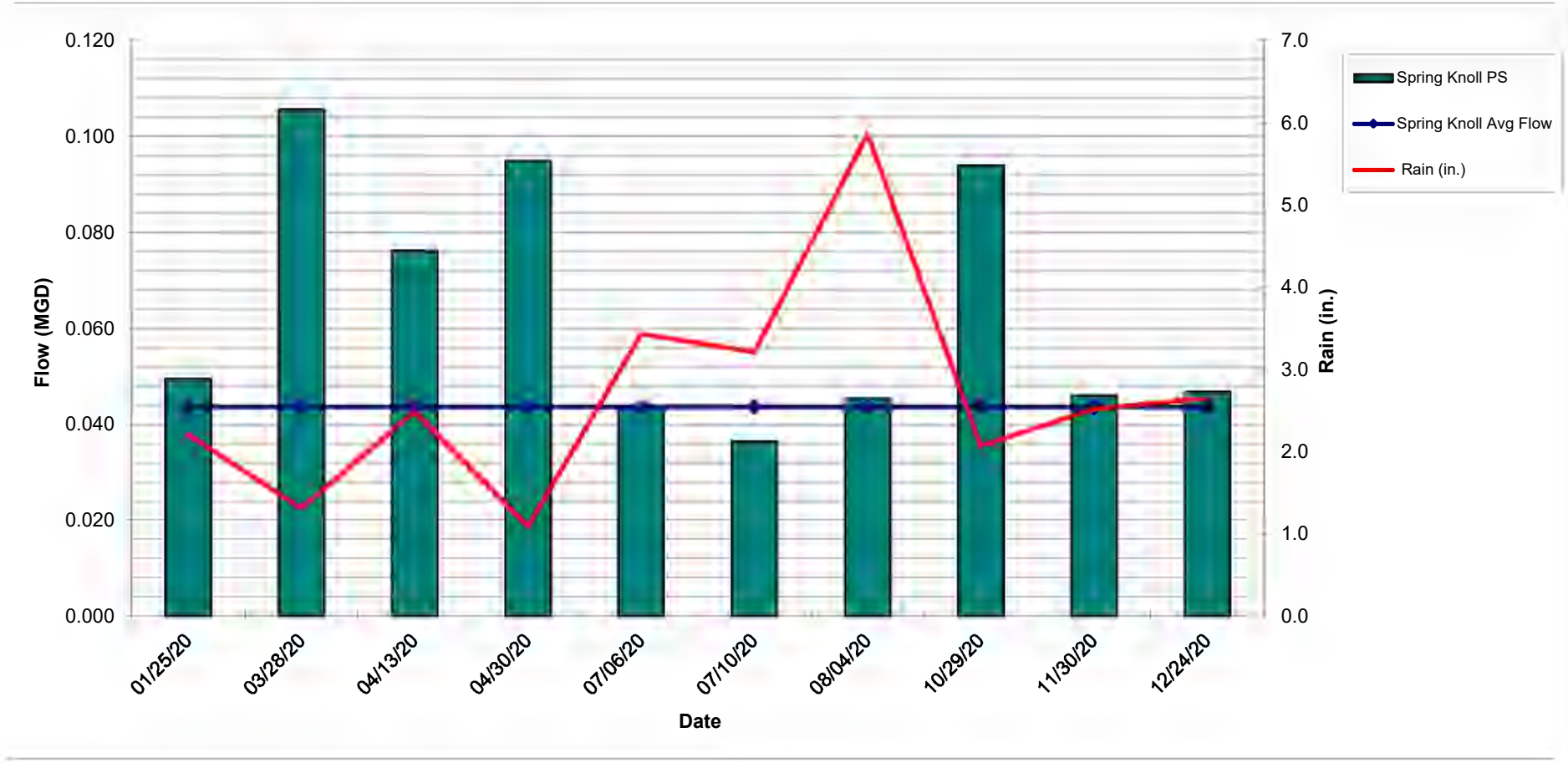
GRAPH - #6H

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

SPRING KNOLL PUMP STATION



GRAPH - #6I

EASTTOWN MUNICIPAL AUTHORITY

2020 ANNUAL CHAPTER 94 REPORT

1 INCH PLUS RAINFALL VERSUS FLOW

THE GREENS PUMP STATION

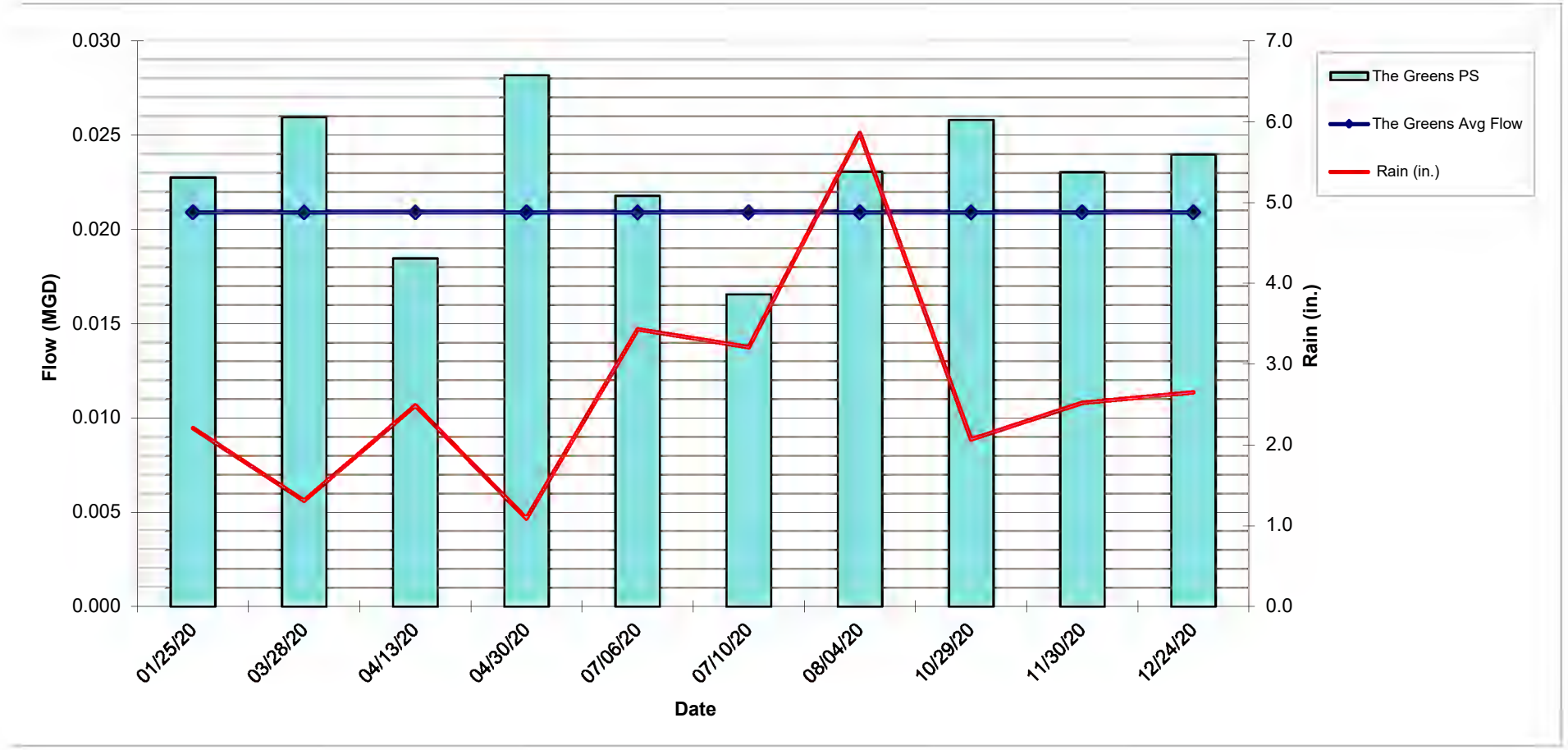


Exhibit K

Easttown Municipal Authority

Pump Station Flow Meter

Calibration Reports

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: First Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	04-08-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	04-08-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+2
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	04-08-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	04-08-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Second Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	06-19-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	06-19-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	06-19-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	06-19-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Third Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	08-05-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	08-05-20
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	08-05-20
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	08-05-20
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

EASTTOWN Twp.

CALIBRATION SCHEDULE:

Section B: Equipment calibrated quarterly (EASTTOWN Township)

Date: Fourth Quarter 2020 Calibration Data

"Section B"

Easttown Township (610-687-3000) Garage: 610-495-5841 (Eddie cell) 610-656-2534
Daylesford Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: L406F616000
Cal: 1.0969-9
Max Flow: 1200GPM

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Daylesford Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: RSG40
Serial #: L503EB04267
Chart: 0-1200GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: HC045B16000
Cal: 2.627 9+205-26-19
Max Flow: 2500GPM
Tot x 1

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Berwyn Pump Station
Recorder
Instrument Data:

Manufacture: Endress Hauser
Model #: 6400
Serial #: 76B4109J4
Chart: 0-2500GPM

Date of Calibration:	01-05-21
Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Magnetic Flow meter
Instrument Data:

Manufacturer: Rosemount
Model #: 8712C
Max Flow: 1000 GPM
Serial #0860156434
Output: 4-20 MADC

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Easttown Township
Saybrook Road Pump Station
Recorder / Totalizer
Instrument Data:

Manufacturer: Honeywell
Model #: DR 4300
Serial #: 0336Y360322600001
Counter: Electronic Totalize X 100
Chart: 0-100
Max Flow: 0-1000 GPM

Date of Calibration:	01-05-21
% of Error:	Less than .2%
Comments:	none
Corrective Action	none

1900 Market Street
Suite 300
Philadelphia, PA 19103
T: 215-222-3000
F: 215-222-3588

www.pennoni.com

EWTPX 00030 March 15, 2021

Mr. Steve O'Neil, Chief, Operations Section
PA DEP, Clean Water
Southeast Regional Office
Two East Main Street
Norristown PA 19401-4915

RE: Township of East Whiteland
2020 Chapter 94 Report

Dear Mr. O'Neil:

On behalf of the Township of East Whiteland, please find enclosed two (2) copies of the 2020 Chapter 94 Annual Report for the Township's sewerage facilities.

Should you have any questions concerning this, please feel free to contact the undersigned.

Sincerely,

PENNONI

Charles Faulkner

Charles Faulkner, PE
Township Wastewater Engineer

CF/rg

cc: Richard Taylor, Valley Forge Sewer Authority via email
John Neild, Director of Public Works – East Whiteland, via email

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	**EAST WHITELAND TOWNSHIP**	Permit No.:	**PA N/A**
Mailing Address:	**209 CONESTOGA ROAD**	Effective Date:	**N/A**
City, State, Zip:	**FRAZER, PA 19355**	Expiration Date:	**N/A**
Contact Person:	**John Nagel**	Renewal Due Date:	**N/A**
Title:	**TOWNSHIP MANAGER**	Municipality:	**EAST WHITELAND**
Phone:	**610-897-4205**	County:	**CHESTER**
Email:	**JNAGEL@EASTWHITELAND.ORG**	Consultant Name:	**PENNONI ASSOCIATES INC.**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:

   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:

   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   Attachment A shows the historic and projected hydraulic demand for the service area of East Whiteland Township. The hydraulic projections were calculated based on the 2020 annual average flow and the proposed connections for the next five years.

   East Whiteland Township owns and operates a wastewater treatment plant associated with the Malvern Hunt subdivision. The WWTP consists of aerated lagoons and land application of effluent. A separate Chapter 94 report will be submitted which addresses this WWTP.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

   Check the appropriate boxes:

   ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment B**)

   ☒ List summarizing each extension or project attached (**Attachment C**)

   ☒ Schedules describing how each project will be completed over time and effects attached (**Attachment C**)

   Comments:

   Attachment B - East Whiteland Sanitary Sewer Collection System has been updated to include all sewer extensions completed in 2020.

   Attachment C provides a list of projects which were constructed in 2020, under construction currently, or will be constructed and connect to the system within the next five years.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

   See Attachment D

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

See Attachment E

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☒ The collection system does contain pump stations (Number – **12**)

☒ Discussion of condition of each pump station attached (**Attachment F**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment G**)

☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

DocuSign Envelope ID: 0626E1A3-5A63-4A89-91B0-9D6EE86AA83D

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

John Nagel	John Nagel
Name of Responsible Official	Signature
610-897-4205	3/15/2021
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Charles Faulkner, P.E.	Charles Faulkner
Name of Preparer	Signature
215-254-7751	3/15/2021
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

ATTACHMENT A

ATTACHMENT A

East Whiteland Township

Historical Hydraulic Loading

	2016		2017		2018		2019		2020	
	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)	Average Monthly Flow (MGD)	Rainfall (in)
Jan	1.524	3.15	1.665	3.25	1.521	2.43	2.179	4.48	1.477	3.390
Feb	2.155	5.14	1.772	1.57	1.833	6.18	2.111	3.23	1.511	2.650
Mar	1.840	1.83	1.373	5.22	1.992	4.09	2.256	5.22	1.437	4.45
Apr	1.814	2.49	1.587	2.78	1.782	3.76	1.654	3.09	1.508	5.92
May	1.803	4.49	1.600	5.30	1.926	6.36	1.823	6.21	1.265	2.84
Jun	1.678	1.46	1.608	4.81	1.979	6.04	1.834	8.29	1.121	2.87
Jul	1.640	4.63	1.387	5.46	1.852	6.13	1.788	5.66	1.110	8.61
Aug	1.620	3.05	1.569	4.79	2.043	9.82	1.493	1.95	1.446	9.38
Sep	1.720	4.88	1.638	1.84	2.417	9.53	1.391	2.25	1.168	2.47
Oct	1.451	1.29	1.515	4.54	2.041	2.48	1.428	6.05	1.173	4.19
Nov	1.513	3.76	1.538	1.83	2.205	8.32	1.360	1.72	1.272	5.95
Dec	1.659	3.48	1.512	1.96	2.291	5.99	1.448	4.81	1.480	6.50
Annual Average	1.701	39.65	1.564	43.35	1.990	71.13	1.730	52.96	1.331	59.22
Max Month	2.155		1.772		2.417		2.256		1.511	
Max 3 Month	1.936		1.603		1.936		2.221		1.485	
Hydraulic Ratio	1.138		1.025		0.973		1.284		1.116	
									1.107	
								5 - year Hydraulic Annual Average Annual Flow	1.663	

Monthly Rainfall data from recordings taken from USGS 01473169 Valley Creek water information collection station.

East Whiteland Township Projected Hydraulic Loading

Year	Previous Year's Annual Average Flow	New EDU's	Increased Flow (MGD)	Projected Annual Average Flow (MGD)	Hydraulic Ratio	Projected Max Month (MGD)
2021	1.331	550.4	0.093	1.423	1.107	1.576
2022	1.423	740.5	0.125	1.548	1.107	1.714
2023	1.548	681	0.115	1.662	1.107	1.841
2024	1.662	427.5	0.072	1.734	1.107	1.920
2025	1.734	43	0.007	1.742	1.107	1.928

(1) Calculated Flow Rate Per EDU 168.27 (gal/EDU)

(2) Calculated 5-year Hydrualic Ratio 1.107

ATTACHMENT B

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA

Pump Stations
1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
* 9. ~~Church Rd~~
* 10. ~~Frame Ave~~
11. Hillbrook Circle
12. King Rd
13. Malvern Hunt
14. Planebrook Rd

* Decommissioned

Meters
I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows
XII. Atwater

LEGEND
- Manholes
- Meters
- Pump Stations
- Laterals
- Weston Master Plan Area
- Municipal Boundaries
- Lakes & Ponds
- Streams
- Subdivisions
- Pump Station Drainage Basins
- Parcel Boundaries
- Valley Forge Service Area
- Valley Forge Service Area Proposed
- 8" Force Mains & Size
- 8" Gravity Sewer
- 8" Proposed Gravity Sewer
- 10" Gravity Sewer
- 12" Gravity Sewer
- 15" Gravity Sewer
- 15" Proposed Gravity Sewer
- 16" Gravity Sewer
- 18" Gravity Sewer
- 18" Proposed Gravity Sewer
- 20" Gravity Sewer
- 21" Gravity Sewer
- 24" Gravity Sewer
- 27" Gravity Sewer
- 36" Gravity Sewer
- Unknown Pipe Diameter

N W E S

0 600 1,200 Feet

1 inch = 600 feet

REVISION DATE: 3/3/2020

MAP NOTES:

Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohli & Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as-built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.

Data Sources: East Whiteland Township, Schoor DePalma, Kohli & Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.

NOTES:

1. PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2. CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020

LEGEND: APPROVED/PENDING DEVELOPMENTS

- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN

Charlestown Meadows PS
XI. Charlestown Meadows Meter
Hillbrook Circle PS
ROUTE 401 AREA
BACTON WAY SUBDIVISION (5 SINGLE FAMILY HOMES)
MALVERN HUNT WWTP SPRAY IRRIGATION FIELD
Malvern Hunt PS
Malvern Hunt PS #13
MALVERN CROSSING (66 TOWNHOUSES)
WHITELAND VILLAGE SANITARY SEWER EXTENSION
Mill Ln PS
BACTON HILL ROAD AREA
GREAT VALLEY COMMUNITY ORGANIZATION (41,128 S.F COMMUNITY CENTER)
SWEDESFORD ROAD AREA
Planebrook Road PS
Frame Ave PS #10
Frame Ave PS
PLANEBROOK AREA
GMH FRAZER LANES (227-UNIT MULTI-FAMILY APARTMENTS)
Church Rd PS
Church Rd PS #9
CHURCH ROAD SEWER EXTENSION (1600 LF GRAVITY SEWER); ABANDON CHURCH ROAD PUMP STATION
OLD ORCHARD PARK (10 MANUFACTURED HOUSING UNITS)
SHIRTZ FARM (14 SINGLE FAMILY HOMES) LOW PRESSURE SEWER
To East Goshen
To East Goshen
King Rd PS #12
King Rd PS
Westgate PS
Westgate PS #8
Westgate Plaza
MALVERN DUCKLINGS 10,000 FT^2 DAYCARE (PENDING)
GREAT VALLEY CROSSING 42 SINGLE FAMILY HOMES
Hillbrook Circle PS #11
Clover Mill
Wyckfield
Fieldbrooke
Byrn Erin
Hill Brook Park
Wwynnehouse Preserve
Charlestown Oaks
X. Charlestown Oaks Meter
Spring Mill Farms Sect 6
Spring Mill Farms Sect 5
Spring Mill Farms
Lee Blvd PS #4
III. Lee Blvd Meter
Lee Blvd
Lee Blvd PS
Charlestown Elementary School
Devault Foods
FLAT ROAD SUBDIVISION (37 SINGLE FAMILY HOUSES)
Wilburdale Rd PS #3
Wilburdale Rd PS
Flat Rd PS #6
Flat Rd PS
Lapp Rd PS
Lapp Rd PS #7
ATWATER
Atwater Phase B Lot 14
XII. Atwater Meter
Great Valley Corporate Center
Fetter's Mill
McCoy Ct
Oak Glen
Oak Glen Dr
Deer Run PS
Deer Run PS #1
Mill Lane PS #2
Meadow View PS #5
Meadow View PS
Knollbrook Circle
Mill Creek Run
Valley Creek Farm
Long Pool Farms
Quarry Ridge
Main Station
Whiteland Farms
Old Park Place
Frazier View
Linden Hall
REDGO Development
Immaculata University
SouthRidge
Summit Ridge
Sugartown Ridge
Watch Hill Ln
General Warren Village
Down East
Beth Ln
Wood Ln
Whitewoods
Glenloch
Fieldstone
Whiteland Woods
Northridge
McIntosh Centre
Valley Stream Parkway
IV. Church Rd Meter
(Tredyffrin Township eliminated meter on 8-3-13 due to additional gravity sewer extension.)
VI. Unisys Meter
SWEEDESFORD SQUARE APARTMENTS 244 APARTMENTS
WATERWALK 153 ROOM HOTEL
V. Matthews Rd Meter
UPTOWN WORTHINGTON MOVIE THEATER AND OFFICE BUILDINGS
VANGUARD
VII. Northridge/Miner Hill Meter
IX. Woodview Apt Meter
VIII. Erin Glen Meter
II. Warren Ave Meter
I. Old Lincoln Hwy Meter

ATTACHMENT C

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
McIntosh	40	0.0	40.0	10.0	10.0	10.0	10.0	-
RedGo Development - Lot 1 Site	20.5	20.5	0.0	-	-	-	-	-
Winthrop Corporation	25	0.0	25.0	15.0	10.0	-	-	-
Whiteland Village - Phase I	200	0.0	200.0	-	-	100.0	100.0	-
King/Carol/Summit	250	240.0	10.0	3.0	3.0	3.0	1.0	-
Commitment: Pre-2008 @ 364 EDUs, Post-2008 @ 480	480	281.4	198.6	-	75.0	75.0	48.6	-
Glasgow Tract	23	0.0	23.0	-	8.0	5.0	5.0	5.0
Swedesford/Church Road	24	17.0	7.0	-	4.0	3.0	-	-
Hillbrook Circle	35	33.0	2.0	-	2.0	-	-	-
Shirtz Farm Subdivision	14	0.0	14.0	5.0	9.0	-	-	-
Linden Hall	60	60.0	0.0	-	-	-	-	-
Liberty Property (Quarry Ridge)	144	132.5	11.5	5.0	4.5	2.0	-	-
Quarry Ridge - Additional	15	2.0	13.0	-	5.0	5.0	3.0	-
O'Neill Offices	39.5	13.0	26.5	-	9.0	9.0	8.5	-
O'Neill/Rubino (Deerfield Commons)	40	0.0	40.0	10.0	10.0	10.0	10.0	-
Veterans Life (Aegon)	22	0.0	22.0	-	8.0	8.0	6.0	-
Misc. EDUs from re-rate & agreed 1990 Capacity	76.4	16.0	60.4	15.0	15.0	15.0	15.4	-
Remaining EDUs from Rt. 30 Development	142	92.0	50.0	15.0	15.0	10.0	10.0	-
Poplar Development	29	21.0	8.0	3.0	5.0	-	-	-
Willinghouse Preserve (Tattersall Development)	11	11.0	0.0	-	-	-	-	-
Touchstone Office Complex	1	1.0	0.0	-	-	-	-	-
Trinity Christian Complex	11	0.0	11.0	5.0	6.0	-	-	-
Micron technologies **	33	33.0	0.0	-	-	-	-	-
JMP Malvern (19 Morehall Road)	30	23.0	7.0	-	7.0	-	-	-
EDUs of which 46,393 gpd {168.7 EDUs} are Tredyffrin Twp	380.3	364.3	16.0	16.0	-	-	-	-
Atwater Village - Commercial	77	32.0	45.0	15.0	15.0	15.0	-	-
Atwater Village - The Haven [326 ea. Apartments @ 190 gpd/275 gpd/EDU = 225.2 EDUs]	225.2	225.2	0.0	-	-	-	-	-
Townes at Malvern (Section 1 - Cockerham)	52	51.0	1.0	1.0	-	-	-	-
8 Lee Boulevard - new EDUs (3 existing)	5	3.0	2.0	2.0	-	-	-	-
80 Watch Hill Lane	1	1.0	0.0	-	-	-	-	-
Raymour & Flanigan - 1 Lee Boulevard	6	2.4	3.6	3.6	-	-	-	-
EWT Fire Station #5	1	1.0	0.0	-	-	-	-	-
Swedesford 66	66	8.0	58.0	14.0	14.0	14.0	14.0	10.0
Chester Valley Golf Club	38	0.0	38.0	-	-	-	38.0	-
Ward (Ciorletti) Parcel (634 Lancaster Avenue)	1	1.0	0.0	-	-	-	-	-
Malvern Court Mobile Home Park	110	110.0	0.0	-	-	-	-	-
427 Conestoga Rd	1	1.0	0.0	-	-	-	-	-
Janssen Pharmaceutical - Building M9	0	0.0	0.0	-	-	-	-	-
Aldi	0	0.0	0.0	-	-	-	-	-
Veternary Clinic	1	1.0	0.0	-	-	-	-	-
Cubesmart	20	20.0	0.0	-	-	-	-	-
Public Works Building	1	1.0	0.0	-	-	-	-	-
20 Moores Road (Office Building)	1	1.0	0.0	-	-	-	-	-
Frazer Mennonite (53 & 55 Maple Linden Lane)	2	2.0	0.0	-	-	-	-	-
Covenant Presbyterian Church Land Devel.	1	1.0	0.0	-	-	-	-	-
The Malvern School	3	3.0	0.0	-	-	-	-	-
The Vanguard Group	59	59.0	0.0	-	-	-	-	-
Liberty Property Trust - 6 Great Valley Parkway	16.6	0.0	16.6	7.6	9.0	-	-	-
Townes at Malvern (a.k.a. Section 2 - Malvern Walk)	64	64.0	0.0	-	-	-	-	-
existing flow)	228	0.0	228.0	50.0	50.0	50.0	50.0	28.0
Willets Farm - 99 Church Road	44	33.0	11.0	11.0	-	-	-	-
RedGo Development - Lot 2 Site	7.6	4.0	3.6	3.6	-	-	-	-
RedGo Development - Lot 3 Site	6.6	0.0	6.6	6.6	-	-	-	-
Bacton Hill Subdivision	6	0.0	6.0	3.0	3.0	-	-	-
Exeter 8 Lee L.P.	1	0.0	1.0	1.0	-	-	-	-
Great Valley Corporate Center Redevelopment	650	0.0	650.0	200.0	200.0	200.0	50.0	-
Great Valley Community Organization Rec. Center	1	0.0	1.0	1.0	-	-	-	-
Accolade Properties	1	0.0	1.0	1.0	-	-	-	-
Swedesford Square Land Development	170	170.0	0.0	55.0	19.0	-	-	-
Lincoln Court Shopping Center	11	11.0	0.0	-	-	-	-	-
Aegon/St. Gobain (Office Buildings)	22	0.0	22.0	11.0	11.0		-	-
401 Corridor Extension	25	4.0	21.0	5.0	5.0	11.0	-	-
Planebrook Road Sewer Extension	75	0.0	75.0	-	25.0	25.0	25.0	-

ATTACHMENT C

EDU Tracking Summary: 5 Year Proposed EDU Connections

DEVELOPMENT/EXTENSION	TOTAL COMMITMENT	NUMBER BUILT	BALANCE	PROPOSED 2021	2022	2023	2024	2025
Bacton Hill / Swedesford Road Sewer Extension	100	0.0	100.0	-	34.0	33.0	33.0	-
6 Frame Avenue	1	1.0	0.0	-	-	-	-	-
7 Frame Avenue	1	0.0	1.0	-	-	-	-	-
15 Frame Avenue	1	0.0	1.0	-	-	-	-	-
Flat Road Subdivision	37	11.0	37.0	15.0	15.0	7.0	-	-
473 Conestoga Road	3	1.0	2.0	2.0	-	-	-	-
458 & 476 Lancaster Ave (Eadah)	11	0.0	11.0	11.0	-	-	-	-
Frazer Lanes (548-554 Lancaster Ave)	115	0.0	115.0	20.0	80.0	15.0	-	-
Loch- Aerie (700 Lancaster Ave)	8	0.0	8.0	-	-	-	-	-
East Side of 7 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
2 Frame Ave	1	0.0	1.0	1.0	-	-	-	-
215 South Phoenixville Pike	3	0.0	3.0	-	3.0	-	-	-
Waterwalk Hotel	106	0.0	106.0	-	50.0	56.0	-	-
105 Church Street	3	0.0	3.0	3.0	-	-	-	-
17 Spring Road	2	0.0	2.0	2.0	-	-	-	-
400 Three Tun Road	2	0.0	2.0	-	2.0	-	-	-
4 Charles Street	1	1.0	0.0	-	-	-	-	-
512 Lapp Road	2	0.0	2.0	2.0	-	-	-	-
COMMITTED EDU TOTALS	**4,543.7**	**2,184.3**	**2,370.4**	**550.4**	**740.5**	**681.0**	**427.5**	**43.0**

Total EDUs in 2019 Chapter 94 Report	7,601.6
Total EDUs Connected in 2020	306.3
Total EDUs in 2020	7,907.9
Annual Average Flow (MGD)	1.331
Flow Rate Per EDU	168.27

ATTACHMENT D

Program for Sanitary Sewer Monitoring, Maintenance and Repair

[25 Pa. Code § 94.12(a)(5)]

The Township monitors sewer flow leaving and entering the Township via flow meters on a daily basis. Flow Reports are compiled on a monthly basis. Any irregular patterns are investigated and corrected as soon as possible. Meter pits are checked on a routine basis to determine if the meters are functioning properly and that there is no debris accumulating within the flumes.

The Townships Public Works Department is responsible for normal daily maintenance and preventative maintenance of the sewage collection system including pump stations. The Public Works Department also is responsible for handling emergency conditions on a 24-hour basis. Ongoing visual inspections indicate the sewer is generally in good condition.

The Township Sewer Department uses video inspection equipment to inspect sewer mains for infiltration, roots and grease and locate areas of I/I. The Department is able to determine areas of concern, clean lines and make any necessary repairs as required. As an on-going practice, the Township periodically flushes the sanitary sewer lines throughout the Township.

Manhole covers are adjusted and/or watertight gaskets are being installed in low-lying areas. As part of the township's street resurfacing program, manhole covers and frames are being replaced with new gaskets covers as required and are adjusted to the new pavement grades to help eliminate inflow. Manhole inserts have been added in areas that were experiencing inflow through manhole covers.

By ordinance, all new sewer lines, laterals and building sewer must be inspected and air tested by the Township Sewer Engineer or Code Official before the lines are put into service. This procedure had allowed the Township to detect potential defective workmanship and materials, and/or in the process eliminate any potential for future I/I.

The Township is continuing the corrective measures necessary to prevent unwanted runoff from entering into the system, thus reducing the I/I in the system. The Township has created a numbering system for all manholes in its sanitary sewer system and located each manhole with GPS. A sewer system layer had been developed in its GIS data map with each manhole located and identified. The Township is beginning to televise its system again and is inputting this information onto the new GIS layer to allow the Township to better detect and remedy excessive infiltration and inflow if encountered.

ATTACHMENT E

Condition of the Sewer System

[25 Pa. Code § 94.12(a)(6)]

The Mill Lane Sewer Main Replacement Phase 1 construction project was operational as of November 2013, and the Sidley Road Sewer Main Replacement Phase 2 construction project was operational as of March 2014.the completion of the Phase 1 and 2 projects eliminated the hydraulic restriction in the East Whiteland Township sewer mains in the Mill Land and Sidley Road areas. Consequently, the connection restriction for East Whiteland has also been eliminated for the Mill Lane and Sidley Road areas.

The Improvements to the Mill Lane and Sidley Road sewer system also completed Phase 1 and 2 aspects of the Corrective Action Plan (CAP) currently on file with PaDEP. Phase 3 of the CAP related to improvements to the Lee Boulevard Pump Station are still to be implemented. The conditions of the Connection Management Plan Currently on file with PaDEP are still in effect for the contributory drainage areas from Charlestown that flows through the Mill Lane and Sidley Road Sewer Systems.

In 2016, upgrade improvements were made to the sanitary sewer within Conestoga Road. Approximately 3,780 L.F. of new 18-inch, 20-inch and 24-inch pipe were installed to replace existing deteriorating sewer.

During 2017, the following sanitary sewer system work was done.

- Wilburdale Pump Station and Force main improvements were completed,
- Planebrook Pump Station force main improvements were completed.
- Deer Run Pump Station emergency generator replacement was started and were completed in 2018

During 2018 , the following sanitary sewer system work was done.

- On August 23, 2018, a portion of a 10-inch sewer main collapsed on Warren Avenue. The repair consisted of replacing approximately 100 L.F. of the deteriorated main.
- Construction of Planebrook Pump Station was complete.
- On November 30, 2018, Frame Ave Pump Station was decommissioned and flow was diverted to the Planebrook Pump Station.

During 2019, the following sanitary sewer system work was done.

- Flat Road Pump Station was shut down on January 24, 2019 due to a sinkhole which developed at the station and jeopardized the integrity of the station. A new pump station was built and put into service in October of 2019.
- Construction of the Chester Valley Golf Course Sewer Extension began in December of 2019.

During 2020, the following sanitary sewer system work was done.

- Pump #1 at Westgate Pump Station was replaced on April 14, 2020 with a new pump.

- Church Road Pump Station was turned off on March 14, 2020 and flow was diverted through the new gravity sewer installed line through Chester Valley Golf Course.

There were no Sanitary Sewer Overflows (SSOs) in 2020.

ATTACHMENT F

Sewage Pumping Stations

[25 Pa. Code § 94.12(a)(7)]

There are currently twelve (12) pumping stations in operation that convey sanitary sewage flow within the Township. In 2018 Frame Ave Pump Station was abandoned/demolished and all flow was diverted to the newly constructed Planebrook Pump Station. The twelfth pump station is associated with the Malvern Hunt WWTP, which is covered under its own Chapter 94 Report

All pump stations, except Mill Lane, have two pumps that alternate lead-lag. The Mill Lane Pump Station has three variable speed pumps. Two pumps operate and one pump is standby.

Only the Mill Lane, Wilburdale and newly constructed Planebrook Pump Station are equipped with a magnetic flow meter to measure the pump station flows. Flow at the other eight (8) pump stations are calculated based on the monthly pump run-time data multiplied by the pump design capacity.

Township staff visits all pump stations on a regular basis to determine the condition and document the flow. If a discrepancy is noted during these visits, the Township investigates the cause and takes appropriate action. Heavy maintenance and repairs are handled by outside personnel under contract with the Township. The emergency generators are checked for readiness by exercising the units once a week.

All Township pump stations are equipped with emergency alarms. In the event of an alarm, an automatic dialer contacts Township personnel to alert them of the condition.

ATTACHMENT F

East Whiteland Township Pump Station Hydraulic Performance

PUMP STATION	PUMP STATION NO.	WQM PART 2 PERMIT NUMBER	NO. OF PUMPS [3]	ANNUAL AVERAGE PERMITTED CAPACITY (gpd)	HYDRAULIC DESIGN CAPACITY (excluding capacity of backup pump) (gpm)	STATION CAPACITY (gpd)	PUMP #1		PUMP #2		PUMP #3		PUMP MAX RUN TIME	ANNUAL AVERAGE FLOW (gpd)	MAX DAILY FLOW (gpd) [6][7]	HYDRAULIC RATIO	PEAKING FACTOR	2-YEAR ANNUAL AVERAGE FLOW (gpd)	2-YEAR MAX DAILY FLOW (gpd) [8]
							AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)	AVG. RUN TIME	YEARLY RUN TIME (MIN)							
Deer Run [5]	P.S. 1		2	23,450	90	129,600	52.7	17,973	55.3	18,929			157	9,099	28,260	1.107	3.11	10,074	31,288
Mill Lane [4]	P.S. 2		3	2,073,600	1754	2,525,760	294.5		283.0		268.5		756	718,197	2,652,048	1.107	3.69	795,157	2,936,234
Wilburdale [4]	P.S. 3		2	623,502	930	1,339,200	74.8		73.1				164	125,767	305,040	1.107	2.43	139,243	337,727
Lee Boulevard [5]	P.S. 4		2	350,000	470	676,800	126.1	45,033	129.8	46,330			284	117,646	266,960	1.107	2.27	130,252	295,567
Meadowview [5]	P.S. 5		2	115,200	80	115,200	119.3	42,159	91.8	32,235			363	16,306	58,080	1.107	3.56	18,053	64,304
Flat Road [5]	P.S. 6		2	427,500	275	396,000	14.5	5,280	14.3	5,238			46	7,925	25,300	1.107	3.19	8,774	28,011
Lapp Road [5]	P.S. 7		2	472,000	315	453,600	77.1	27,485	80.7	28,789			199	48,565	125,370	1.107	2.58	53,769	138,804
Westgate [5]	P.S. 8		2	890,000	700	1,008,000	54.8	21,176	55.1	19,784			199	78,553	278,600	1.107	3.55	86,971	308,454
Church Road [5][9]	P.S. 9		2	700,000	540	777,600	15.4	4,611	12.2	4,389			129	13,315	139,320	1.107	10.46	14,742	154,249
Frame Avenue [1]	P.S. 10		2																
Hillbrook Circle [5]	P.S. 11		2	250,000	295	424,800	120.6	41,346	110.4	37,986			282	64,118	166,380	1.107	2.59	70,988	184,209
King Road [5]	P.S. 12		2	250,000	258	371,520	104.1	36,517	88.3	30,746			397	47,545	204,852	1.107	4.31	52,640	226,803
Malvern Hunt [2]	P.S. 13		2																
Planebrook Road [4][5]	P.S. 14		2	151,325	394	567,360	61.3	22,442	47.1	17,247			121	42,842	95,348	1.107	2.23	47,433	105,565

[1] Pump Station Abandoned November 30, 2018; All flows were diverted to Planebrook Road Pump Station

[2] Pump Station included under MVH Chapter 94 Report

[3] Two pumps alternate lead-lag at each pump station, except Mill Lane Pump Station, which was upgraded to a three-pump system

[4] Annual Average Flow based on meter data

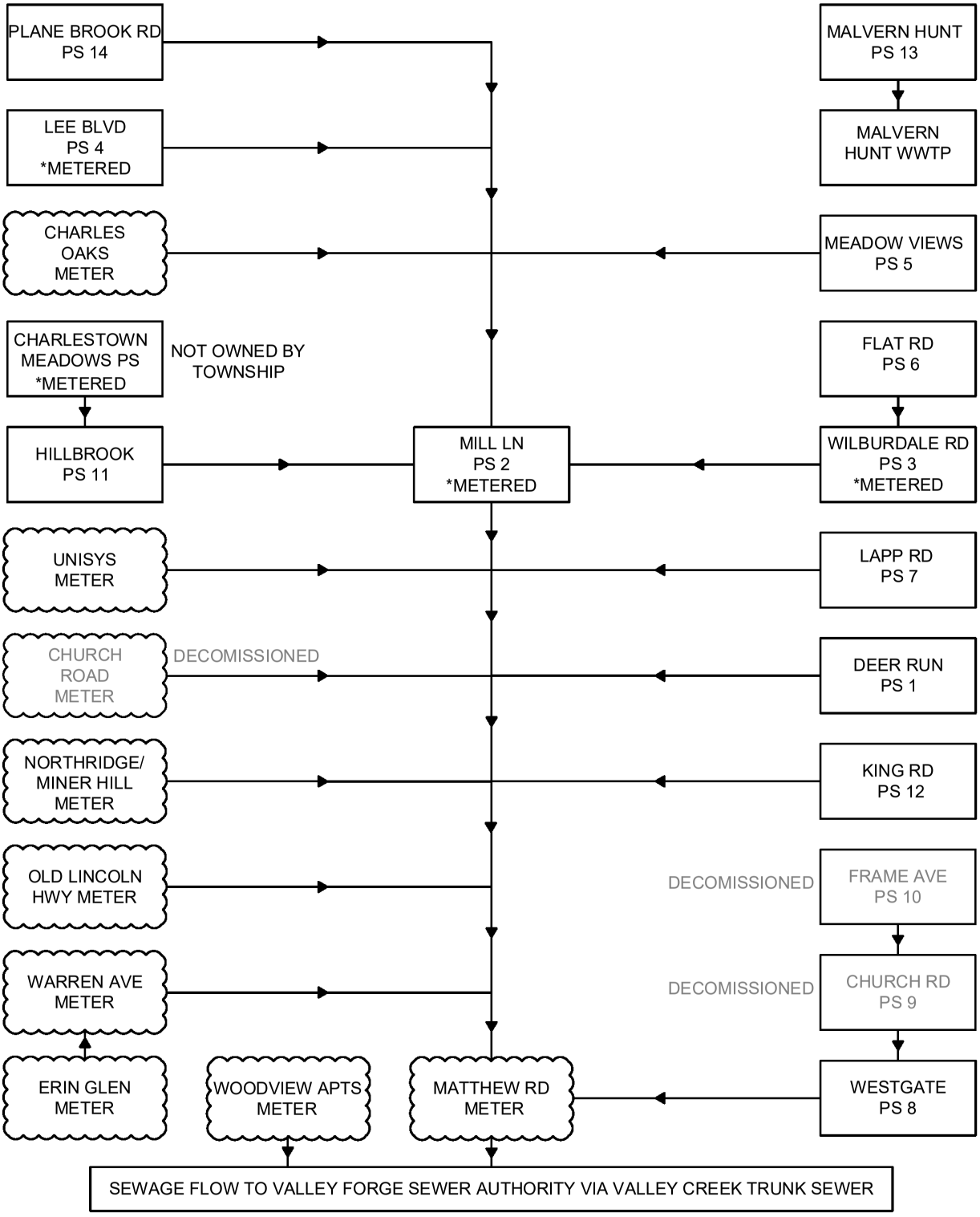
[5] Annual Average Flow based on pump run times

[6] Maximum flow at each pump station with one pump out of service that can handle peak instantaneous flow.

[7] Mill Lane Pump Station upgraded in October 2013 to three-pump system. Maximum flow with two pumps that can handle peak instantaneous flow.

[8] 2-year Annual Average Flow x Peaking Factor (Present Maximum Daily Flow to Annual Average Flow ratio)

[9] Existing Pump Station was taken out of service on March 13, 2020. Data reflects flows from January 1, 2020 through March 13, 2020.



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EAST WHITELAND TOWNSHIP
CHAPTER 94 REPORT

ATTACHMENT F
PUMP STATION FLOW CHART

EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, PA 19355

PROJECT	EWPTX00030
DATE	2021-02-19
DRAWING SCALE	N.T.S
DRAWN BY	RG
APPROVED BY	CF

SK-0001

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PLOTTED: 3/15/2021 11:26:17 AM, BY: RYAN GASPARINI PLOTSTYLE: PENNONI NCS.STB, PROJECT STATUS: —

ATTACHMENT G

Industrial Waste

[25 Pa. Code § 94.12(a)(8)]

A. A copy of the Townships ordinance regulating industrial waste discharges to the sewer system is as follows

§154-107 Exclusion of industrial waste

Industrial wastes may be discharged into the sewer system only pursuant to written agreement with the Township and the Valley Forge Sewer Authority and upon obtaining an industrial waste discharge permit from Valley Forge Sewer Authority; provided that rules, regulations and acceptability standards which may from time to time be adopted by the Township and Valley Forge Sewer Authority prescribed for the pretreatment of Industrial Waste are fully complied with to the satisfaction of the Township and Valley Forge Sewer Authority. Industrial wastes to be acceptable for collection and/or treatment must not exceed the characteristics set forth in Part 2, Sewer Use, of this Chapter 154. Industrial waste surcharges will be imposed and collected by the Valley Forge Sewer Authority and will be in addition to the rentals imposed herein.

B. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township. Industrial customers monitor their own systems and send quarterly records to the Valley Forge Sewer Authority (VFSA) to verify compliance with the Authority's effluent guidelines. VFSA and the Township have agreements in place with each industrial customer which establishes their discharge guidelines, responsibilities for maintaining effluent quality and consequences should they fail to comply with the agreement. In addition, both entities have the right to spot check the industrial effluent at any time to verify compliance. VFSA samples the Township's effluent at such time it considers it necessary to check compliance with the inter-community agreement.

C. The Township does not sample or test the discharge from the industrial customers or the sewage leaving the Township.

EDWARD B. WALSH & ASSOCIATES, INC.
Complete Civil Engineering Design / Consultation Services
Whiteland Business Park
855 Springdale Drive, Suite 202
Exton, PA 19341

March 8, 2021

Mr. Richard D. Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
610.935.1553

Re: Borough of Malvern 2020 Chapter 94 Report
EBWA Project No. 2780-16

Dear Mr. Taylor:

In accordance with the Valley Forge Sewer Authority's request, enclosed please find Malvern Borough's Chapter 94 Report for the year 2020. The report should contain the necessary information required to assist the Authority in the preparation of your Annual Report under Chapter 94 of Title 25, Section 94.12 Municipal Wasteload Management.

Also enclosed per your request are an updated Growth Projection Table and a Flow Projection Table for the Borough of Malvern as of December 31, 2020.

If you should have any questions require additional information, please do not hesitate to contact me.

Very truly yours,
EDWARD B. WALSH & ASSOCIATES, INC.
Malvern Borough Engineers

Daniel H. Daley, P.E.

encl.

cc: Chris Bashore, Borough Manager, w/ encl.

Chapter 94 Municipal Wasteload Management Annual Report

2020 Chapter 94 Annual Report
Borough of Malvern
Valley Forge Sewer Authority
Chester County

Prepared by:
Edward B. Walsh and Associates, Inc.
855 Springdale Drive, Suite 202
Exton, PA 19341

Prepared for:
Valley Forge Sewer Authority
Valley Forge Wastewater Treatment Plant
333 Pawling Road
Phoenixville, PA 19464

Preparer

Daniel H. Daley

Signature
Name: Daniel H. Daley, P.E.
Company: E. B. Walsh & Associates, Inc.

Permittee

Christopher Bashore

Signature
Name: Christopher Bashore
Permittee: Malvern Borough

March 8, 2021

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1. INTRODUCTION

Malvern Borough currently has an allocation of 543,650 GPD at the Valley Forge Sewer Authority Regional Treatment Plant. All of Malvern Borough is designated as being within the Public Sewer Service Area. Malvern Borough is the Owner and Operator of the Collection and Conveyance Systems within the Borough.

2. HYDRAULIC AND ORGANIC LOADINGS

Valley Forge Sewer Authority conducts influent sampling for BOD_5 and hydraulic loadings at the wastewater treatment plant.

Malvern Borough's average sewage flow for 2020 was 393,613 GPD, as per Valley Forge Sewage Treatment Flow Report for 2020 (supplied to the Borough on February 19, 2021).

Malvern Borough estimates their BOD_5 as follows:

The total number of pounds of BOD_5 collected each day is estimated to be 1,109.1 pounds per day, which was calculated by using a factor of 0.17 pounds per day per capita X (times) the estimated number of persons.

1,864 EDU's x 3.5 Persons = 6,524 Persons

6,524 X 0.17 = 1,109.1 Pounds

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The 2020 Average Sewage flow of 393,613 GPD excludes:

- 2 EDU's from East Whiteland Township which flow to the Old Lincoln Highway sewage meter.
- EDU's from East Whiteland Township's portion of Erin Glen Subdivision which flows to the Warren Avenue sewage meter.

The 2020 Average Sewer flow of 393,613 includes:

- Unmetered flow from Malvern Prep (15 EDUs) and Village of Pennwyck – Vintage Subdivision (12 EDUs) to Willistown Township.

A summary of the total number of EDU's is as follows:

EQUIVALENT DWELLING UNIT (EDU) SUMMARY

	METERED EDU'S	UNMETERED EDU'S+	TOTAL EDU'S
2016	1796	27	1823
2017	1802	27	1829
2018	1805	27	1832
2019	1828	27	1855
2020	1837	27	1864

+Unmetered EDU's - Discharge into Willistown Township

Malvern Prep	15 EDUs
Village of Pennwyck - Vintage Subdivision	12 EDUs
Total	27 EDUs

ADDITIONAL EDU'S

2016	F Joseph Rubino-361 Old Lincoln Hwy. (2-4-43)	1
2017	Gables - 217 S. Warren Ave. (2-7-36)	2
	F Joseph Rubino - 361 Old Lincoln Hwy. (2-4-43)	1
	Hughes 326 Old Lincoln Hwy. (2-4-91.1)	1
	347 Old Lincoln Hwy. - Rubino Holdings (2-4-41)	2
2018	Sheet (323 Old Lincoln Hwy.-Hopkins (2-4-38)	2
	Lagrie - Building Permits (2-4-34 - Lot 1)	1
2019	400 E. King Street - Brick and Brew	8
	203 Management LLC. - 156 W. King Street	5
	Wolfe - 151 Channing Avenue	1
	Gables - 217 S. Warren Ave.	2
	Chambers - 346 E. King Street	7
2020	11 Griffith Ave Subdivision (17 Griffith Ave)	1
	Rubino (13 Lovers Ln Sub) (15 & 17)	2
	Lagrie - Building Permits (353 Old Lincoln Hwy.)	1
	51 Ruthland Ave. Subdivision (53, 55, 57 & 59)	4
	Renehan - 320 W. First Ave Permit Plan	1

During the next five (5) years, the number of EDU's is projected to increase as follows:

Year	Projected Number of EDU's to be Added in Calendar Year		Accumulative Total of the Number of EDU's *	Accumulative Total of Sewage Flow MGD
2020	---		1864	0.394
2021	13	*3575 GPD*	1877	0.397
2022	5	*1375 GPD*	1882	0.399
2023	17	*4675 GPD*	1899	0.403
2024	21	*5775 GPD*	1920	0.409
2025	15	*4125 GPD*	1935	0.413
Total:	71	19525 *GPD*		

The increase in the number of equivalent dwelling units and associated sewage flow was derived in the following manner:

1. All residential, commercial, and industrial facilities that are presently connected to the sewer system are included in the 2020 metered flow. Uncompleted developments and subdivisions and proposed developments and subdivisions under consideration have their associated sewage flow projected into each of the above referenced calendar years.

2. For each additional EDU, a sewage flow of 275 gallons per day (GPD) was used for planning purposes.

For the period of 2021 to 2025, the additional sewage flow was based upon the development of proposed and subdivisions and developments along with unanticipated projects in the manner indicated on the attached Table 1.0 entitled "Malvern Borough 2020 Growth Projection Table December 31, 2020." The location of each of the various subdivisions and developments is shown on the attached "Location Map" for Malvern Borough's 2020 Chapter 94 Report.

4. SEWER EXTENSIONS

a. No sewer main extensions were completed in 2020.

b. *A map showing sewer extensions approved or exempted in the past year in accordance with the PA Sewage Facilities Act (35 P.S. §§ 750.1—750.20) and Chapter 71 (relating to administration of the sewage facilities program), but not yet constructed.*
See Attached Map

c. *A map showing all known proposed projects which require public sewers but are in the preliminary planning stages.*
See Attached Map

d. *A list summarizing each extension or project.*
See Table 1.0

e. If a sewer extension approval or proposed project includes schedules for completing the project over time, the list should describe the projects projected build-out over time.
See Table 1.0

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

Discussion of I & I Problems

Malvern Borough monitors the flow rates in their sewer system in order to detect sources of infiltration, and when sources of infiltration are detected, Malvern Borough takes the necessary measures to remove the cause and source of the infiltration. The balance of Malvern Borough's sanitary sewer system is in good condition. The amount of infiltration flowing into the sanitary sewer system was estimated to be at the rate of fifty (50) gallons per inch of diameter of pipe per 24 hours. Using the above described infiltration rate, the total estimated amount of infiltration into the sanitary sewer system was calculated to be as indicated below:

8" sanitary sewer 33,219 L.F. = 6.29 miles X 400 =	2,516 gallons
10" sanitary sewer 4,327 L.F. = 0.82 miles X 500 =	410 gallons
	2,926 gal/day

Measures Taken to Alleviate Infiltration Problems

The sewage flows listed in Item 1 above, Hydraulic and Organic Loading Contribution do not exceed Malvern Borough's allocated sewage flow capacity which is 0.544 MGD.

Malvern Borough will continue to take the necessary measures to eliminate infiltration problems.

Monitoring, Maintenance and Inspection of System

Twice a year a manhole inspection is performed. Once every two years or when necessary; selective video inspections of sections of the sanitary sewer system are made where infiltration problems are suspected. Low-lying manholes are

checked periodically for surface water infiltration. There are four (4) employees available for maintenance.

The Borough flow meters (installed in early 2015) were maintained / calibrated quarterly.

In 2019, the Borough replaced 2,400 linear feet of 4" forcemain from the Ruthland Avenue Pump Station to the gravity sanitary sewer manhole on Channing Avenue. The cost of this project was approximately $288,000. Also, a flow meter was installed on the Ruthland Avenue Pump Station.

Pump Station Maintenance

Stations are checked twice a day. Every week air tanks are drained in stations. Every six months pumps and motors are lubricated. There are four (4) people available for maintenance on the sanitary sewer system. In case of emergency, there is always one (1) person available on stand-by duty.

Overall Condition of Malvern Borough's Sanitary Sewer System

Malvern Borough continues to monitor and maintain their sanitary system and the overall condition of the system is good.

6. CONDITION OF THE SEWER SYSTEM

This section requires a discussion of the condition of the sewer system, including portions where conveyance capacity is exceeded or will be exceeded in the next 5 years. It should include a discussion of those portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate:

a.	*Bypassing;*	**None Known**
b.	*Combined sewer overflows;*	**None Known**
c.	*Sanitary sewer overflows;*	**None Known**
d.	*Excessive infiltration;*	**None Known**
e.	*Other system problems.*	**None Known**

Discussion of available existing and future capacity.

f. *The age of the sewer system.*

The majority of the sanitary sewer system was installed in 1975-1976.

g. *The type of material of which the system is made (i.e., brick, vitrified clay, PVC, Orangeburg, etc.).*

The existing sanitary sewer system consists of terracotta pipe. Any recent extensions or repairs to the system were made with PVC pipe.

h. *An analysis that determines whether the existing sewer lines are sized properly for the connected population.*

Based on existing flow data for the Borough as compared to the projected flow, no known capacity issues are anticipated. As re-development or new development is proposed, the capacity of the system is analyzed to ensure capacity.

i. A discussion of any portions of the system that should be repaired, replaced or rehabilitated, including a timeframe by which any proposed actions are expected to be completed.

At this time there are no portions of the system that are known to be in need of repair or replacement.

Discussion regarding any portions of the sewer system in which surcharging occurs:

j. How often does the system surcharge in each location?
There are no known areas of the system that have surcharged.

k. What size storm events create surcharging sewer lines?
Not Applicable

l. What is the cause of the surcharging?
Not Applicable

m. Sewer systems that surcharge during wet weather indicate a lack of hydraulic capacity and are considered to be in a projected hydraulic overload. For such conditions, permittees should submit a CAP and CMP with the annual report, as required by 25 Pa Code § 94.22.
Not Applicable

Provide a list of all SSOs that occurred during the calendar year, including their cause and location (a copy of the Southeast Regional Office's SSO Report Form submitted by the permittee is acceptable). SSOs related to wet weather should be discussed:

n. Explain if there is a history of SSOs at each reported location. If a trend of SSOs at specific locations during rain events is documented, this indicates a lack of hydraulic capacity and is considered a hydraulic overload condition.
There are no known areas of the system that have had an overflow.

o. *Why are SSOs occurring at each location? Has a hydraulic analysis been conducted, and if so, what were the results and recommendations for corrective action?*
Not Applicable

p. *Provide an analysis of flow metering that has been conducted.*
Not Applicable

q. *Sewer systems that experience SSOs are considered to be in an existing hydraulic overload. A CAP and CMP should be submitted with the annual report, as required by 25 Pa Code § 94.21.*
Not Applicable

The Department strongly recommends that existing capacity be documented with flow meter data. Whether flow meters are in place, or are proposed to be used throughout the system to gather data on a sub-basin approach-existing capacity should be documented with data that describes actual flow conditions during dry-weather and wet-weather conditions:

r. *Dry weather flows should be monitored to document baseline flows and for comparison purposed, to determine the extent of I/I within the collection system.*
The Borough had the five gravity flow metering stations within the Borough replaced. The meters were brought online February 21, 2015 and fully functional by the end of the First Quarter 2015.

In addition, a new meter was installed in the fall / winter of 2019 at the Ruthland Avenue Pump Station to further evaluate the Borough flows.

s. *Wet weather capacity should be determined by documenting the peak instantaneous (or peak hourly) flow rates as compared to the hydraulic carrying capacity of the sanitary sewer (i.e., Manning's equation).*

The Borough has plans to further evaluate peak flows during wet weather conditions and complete analysis related to I/I.

The Borough Engineer has begun assembling the data for the hydraulic carrying capacity of the existing sewer.

7. SEWAGE PUMPING STATIONS

Pumping Stations

There are two pump stations and two ejector stations located within Malvern Borough's sanitary sewer system.

	PUMPING STATION 1	PUMPING STATION 2	EJECTOR STATION 1	EJECTOR STATION 2
Rated Max. capacity:	500 GPM @ 120' TDH	200 GPM @ 135' TDH	50 GPM @ 35' TDH	100 GPM @ 56' TDH
Current Ave. daily flow	101.4 GPM *(1)*	43.2 GPM *(1)*	*(2)*	8 GPM *(3)*
Current peak flow	253.6 GPM *(4)*	108.1 GPM *(4)*	*(2)*	32 GPM *(3)*
Peak instantaneous flow during wet weather:	(2)	(2)	*(2)*	*(2)*
Footnotes:				
(1)	Not metered flow. Calculated on EDU basis. 781 EDU's at Station No. 1 and 333 EDU's at Station No. 2 (187 GPD_{AVG} per EDU based on Warren Avenue metered flow after deduction for Erin Glen metered flow).			
(2)	The Borough is currently working on providing information regarding these Items.			
(3)	The numbers for this Ejector Station are based on the Design Calculations			
(4)	Calculated average daily flow multiplied by a peak factor of 2.5			

8. INDUSTRIAL WASTES

If applicable, the report on industrial wastes (IW) should include:

a. *A copy of an ordinance or regulation governing IW.*
Industrial Wastes are ultimately governed by the Rules and Regulations of the Valley Forge Sewer Authority. The Rules and Regulations of Valley Forge have been adopted by Adopted by Malvern Borough via Ordinance No. 2002-2 and 2009-2, see attached.

b. *A discussion of the permittee's program for surveillance and monitoring of IW discharges to the sewer system during the past year.*
No specific program for surveillance / monitoring exists. The Borough's Public Works Department monitors the sewer system on a regular basis and if issues are observed, they are reported to the Public Works Director and the issue is investigated.

c. *A discussion of specific problems in the sewer system or at the WWTF, known or suspected to be caused by IW discharges and a summary of steps being taken to alleviate or eliminate the problems.*
No known issues within Malvern Borough's sewer system.

d. A list of any such industries known to be discharging wastes that create a problem and actions taken to prevent potential or recurring problems caused by the IW dischargers.
Not Applicable

e. *Provide documentation regarding any actions taken against IW dischargers.*
Not Applicable

9. CORRECTIVE ACTION PLAN

Malvern Borough does not have an existing or projected overload condition within their collection and or conveyance system; therefore a CAP or CMP Plan is not required.

10. CALIBRATION REPORTS

Allied Controls conducts quarterly calibrations for the flow meters within Malvern Borough. The Calibrations are done via a contract through Valley Forge Sewer Authority. The calibration reports are attached to this Chapter 94 Report.

ARTICLE III

Industrial Waste, Holding Tank Waste and Septage [Adopted 9-20-1994 by Ord. No. 94-4 (Part 11, Ch. 2, Art. B, of the 1975 Code of Ordinances)]

§ 168-11. Purpose; policy.

A. This article requires all users and use of the Borough's sewer facilities to comply with the regulations (collectively "applicable regulations" or any one individually "applicable regulation") promulgated by the Valley Forge Sewer Authority (VFSA), the United States Environmental Protection Agency (USEPA), which include, without limitation, the pretreatment standards promulgated by the USEPA as set forth in 40 Code of Federal Regulations (CFR) 403 et seq. and the Pennsylvania Department of Environmental Resources (PADER); and

B. This article establishes the means of enforcing those regulations.

§ 168-12. Amended VFSA regulations adopted. [Amended 6-18-2002 by Ord. No. 2002-2[1]; 2-17-2009 by Ord. No. 2009-2; 12-21-2010 by Ord. No. 2010-5]

The standards established by the Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage, dated May 31, 2002, and amended by Resolution No. 2 of 2008 of the Board of Directors of the Valley Forge Sewer Authority (VFSA) and further amended by Resolution No. 1 of 2010, are hereby adopted as the minimal standards of the Borough, applicable to all users and use of the Borough’s sewer facilities, and any user or use of the Borough facilities must comply with all of the VFSA's requirements with respect to these amended regulations, as well as all other applicable regulations.

§ 168-13. Violations.

Without limiting any other section hereof, a person (as defined by the VFSA regulations) violates this article:

A. By discharging sewage or waste into the Borough's sewage facilities when such discharge is not in compliance with this

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1. **Editor's Note: Section 2 of this ordinance provided for the deletion of existing Appendix XXII of the 1975 Code of Ordinances and replacement with a copy of the "Valley Forge Sewer Authority Rules and Regulations Governing the Acceptance of Industrial Waste, Trucked Industrial Waste, Hauling Tank Waste and Septage dated May 31, 2002." Said document has not been codified; it is on file in the office of the Borough Secretary.**

article, any applicable industrial permit requirements or National Categorical Pretreatment Standards, any applicable regulation or any Borough order; or

B. By otherwise failing or refusing to comply in any way with the VFSA regulations, including but not limited to achieving all permits, licenses and approvals and filing all reports, when and as required.

§ 168-14. Solicitor authorized to commence action; cost of action.

The Borough Solicitor is authorized to commence actions against any violator of this article for appropriate legal and/or equitable relief from the violation. If the Borough is granted any relief in any such action, the violator shall, in addition to any fine or penalty, pay all the Borough's costs thereof, including but not limited to attorney fees.

§ 168-15. Penalties.

A. Any person (as defined by VFSA regulations) who violates any provision of this article shall, upon conviction thereof, be sentenced to pay a fine of not more than $1,000 and/or to imprisonment for a term not to exceed 90 days. Every day that any violation of this article continues shall constitute a separate offense.

B. Any person (as defined by VFSA regulations) who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this article or any industrial waste permit or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required under this article shall be in violation of this article and may be prosecuted in accordance with the provisions of the Pennsylvania Crimes and Offenses Code, 18 Pa.C.S.A. § 4901 et seq. pertaining to perjury and falsification in official matters.

§ 168-16. Severability.

If any provision, paragraph, word or section of this article is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words and sections of this article shall not be affected and shall continue in full force and effect.

§ 168-17. Repealer.

All other ordinances or parts of other ordinances and provisions of this Code inconsistent or conflicting in any part with this article are hereby repealed to the extent of such inconsistency or conflict.

§ 168-18. Adoption of future amendments of VFSA regulations. [Added 6-18-2002 by Ord. No. 2002-2]

In the event that the Valley Forge Sewer Authority further amends its rules and regulations, or otherwise undertakes regulatory action governing wastewater treatment within the Borough of Malvern, said proposed regulations must be forwarded to and adopted by Borough Council prior to becoming effective.

TABLE 1.0 BOROUGH OF MALVERN 2020 GROWTH PROJECTION TABLE
December 31, 2020

ID	Property Owner / Project	Tax Parcel	Tot. Est. EDU's	EDU's Previously Connected	EDU's Connected in 2020	EDU's to be Connected	EDU's REMAINING TO BE CONNECTED				
							2021	2022	2023	2024	2025
	Completed Projects										
1	Santoleri	2-4-262.1	1	1	0	0					
2	Hibernia Homes (Formerly Yasgur-Levis)	2-4-71	1	1	0	0					
3	Hibernia Homes (Formerly Yasgur-Levis)	2-4-67	2	2	0	0					
4	Greenstone (Formerly TAG)	2-6-102,101, 91.1	5	5	0	0					
5	Hibernia Homes (Formerly Building Block)	2-4-69	1	1	0	0					
6	Rittenhouse	2-4-337.2	1	1	0	0					
9	Buerkel (1 Previously Approved & 2 New EDU's)	2-3-3.1E	3	3	0	0					
11	East King Street Redevelopment	2-4-148	128	128	0	0					
22	Frindt	2-3-24	1	1	0	0					
25	Greenstone (Formerly Deflavis)	2-6-91	1	1	0	0					
27	Hughes 326 Old Lincoln Hwy.	2-4-91.1	1	1	0	0					
29	Pots of Green	2-3-22	1	1	0	0					
32	SEPTA R5	2-3-84 E	1	1	0	0					
33	101 Church Street (Andrews Management)	2-4-287	3	3	0	0					
38	347 Old Lincoln Highway (Rubino Holdings)	2-4-41	2	2	0	0					
39	Moffat-144 Church Street (TAG Builders)	2-2-27	4	4	0	0					
40	F Joseph Rubino (361 OLH)	2-4-43	2	2	0	0					
13	Sheets (323 OLH - Hopkins)	2-4-38	2	2	0	0					
45	400 E. King Street - Brick and Brew	2-4-355	10	10	0	0					
43	203 Management LLC. - 156 W. King Street	2-3-29, 29.1	5	5	0	0					
50	Wolfe - 151 Channing Avenue	2-4-235.1	1	1	0	0					
44	51 Ruthland Ave. Subdivision (Haly)	2-4-360.1	4	0	4	0					
46	11 Griffith Ave Subdivision - Renehan	2-3-25	1	0	1	0					
47	Renehan - 320 W. First Avenue Permit Plan	2-6-96.1	1	0	1	0					
42	Chambers - 346 E. King St	2-4-297	7	7	0	0					
24	Rubino (Hopkins - 13 Lovers Lane Subdivision)	2-4-43.1	2	0	2	0					
	Projects Approved but Not Complete										
7	Cifa	2-4-84	1	0	0	1				1	
8	Bean (Formerly approved as part of Hough - Loew)	2-3-3	1	0	0	1					1
10	Lagrie - Building Permits	2-4-34, 36, 2-1-35	3	1	1	1	1				
34	Malvern Prep (Maintenance Building)	2-7-34 E	1	0	0	1					1
35	Simmons	2-4-105	1	0	0	1					1
37	Gables-217 S. Warren Ave.	2-7-36	5	4	0	1			1		
49	Traynor Capital Management - 418 E. King Street	2-4-356	5	0	0	5	5				
48	523 Monument Ave. Subdivision - Coughlin	2-6-37	1	0	0	1	1				

							EDU's REMAINING TO BE CONNECTED				
ID	Property Owner / Project	Tax Parcel	Tot. Est. EDU's	EDU's Previously Connected	EDU's Connected in 2020	EDU's to be Connected	2021	2022	2023	2024	2025
	Projects being Reviewed										
	n/a										
	Anticipated Projects										
14	Remed	2-9-1	7	0	0	7					7
36	Gugliemi (connect existing garage)	2-4-36	1	0	0	1			1		
41	ZMC Partners, LP	2-4-204,205,206	25	0	0	25			10	15	
51	631 Monument Avenue (convert from cess pool)	2-6-31	1	0	0	1	1				
	Vacant Parcel Analysis*										
15	Francis (Formerly Longford/Old Lincoln)	2-4-68	6	0	0	6					
17	Atwin	2-3-1.1	6	0	0	6					
18	Birchell	2-3-7	2	0	0	2					
19	Ilex	2-3-29.1	1	0	0	1					
20	Buckley	2-4-276	2	0	0	2					
23	Finegan	2-4-266.1	1	0	0	1					
26	Priddy	2-7-8	1	0	0	1					
36	Gugliemi (redevelopment)	2-4-36	2	0	0	2					
	Miscellaneous										
30	Adaptive Reuse/ Change in Use		150	0	0	150	5	5	5	5	5
31	Potential Redevelopments**		420	0	0	420					
	TOTAL EDU's		**834**	**188**	**9**	**637**	**13**	**5**	**17**	**21**	**15**

* Sewage flows for the Vacant Parcels were determined by the Maximum allowable density based on current zoning.

** Potential Developments include Malvern Prep site (97 acres) and the Malvern Retreat site (106 acres). Based upon current zoning regulations, a permitted use on both parcels is a retirement community with 8 du/acre. Malvern Prep permitted density based upon zoning exceeds 440 dwelling units. Malvern Retreat permitted density based upon zoning also exceeds 440 dwelling units.

TABLE 2.0

BOROUGH OF MALVERN 30-YEAR FLOW PROJECTIONS December 2020
VALLEY FORGE SEWER AUTHORITY
2020 CHAPTER 94 REPORT

WASTEWATER FLOW PROJECTIONS

	PRESENT 2020	5-YEAR 2025	10-YEAR 2030	20-YEAR 2040	ULTIMATE 30-YEAR 2050
GPD	393,613	413,138	454,388	502,513	528,638
EDUs	1864	1935	2085	2260	2355
New EDUs	---	*71*	*150*	*175*	*95*

NOTES:

1. **Includes unmetered flow into Willistown Township** and excludes 2 EDU's from East Whiteland Twp and Erin Glen Flow from East Whiteland Twp.
   Malvern Borough has 27 EDUs that flow unmetered into Willistown Twp.
   15 EDUs - Malvern Prep= 4,125 gpd
   12 EDUs - Vintage Development = 3,300 gpd
   Total = 7,425 gpd
2. Projected flows based upon a flow of 275 gallons per day (gpd) per equivalent dwelling unit (EDU).

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
			94.12 Annual Report	
		X	**Section (a)(1)** A line graph depicting monthly average flows (expressed in millions of gallons per day (MGD)) for each month for the past 5 years.	
		X	The graph should include projected flows for the next 5 years.	
		X	The graph shall include a line depicting the hydraulic design flow in MGD.	
		X	**Section (a)(2)** A line graph depicting monthly average organic loading (expressed in pounds per day of BOD5) for each month for the past 5 years.	
		X	The graph shall include projected loadings for the next 5 years.	
		X	The graph shall include a line depicting the organic loading design of the plant in lbs/day BOD5.	
		X	**Section (a)(3)** A discussion of the basis for the flow and organic loading projections to the plant as referred to in Sections a(1) and a(2).	
		X	A description of the time needed to expand the plant to meet the load projections, if applicable.	
		X	Data used to support the projections are included in an appendix to the report.	
		X	**Section (a)(4)** A map showing all sewer extensions constructed in the past calendar year.	
		X	The map should show sewer extensions approved or exempted in the past year in accordance with 537 but not yet constructed.	**See attached map**
X			The map should show all known proposed projects that require public sewers but that are in the preliminary planning stages.	**See attached map in report and Table 1.0**
X			A list accompanying the map summarizing each extension or project and the population to be served.	**See Table 1.0**

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
X			The list should include any schedules describing how the project will be completed over time, and the effect that this built-out-rate will have on the populations served.	**See Table 1.0**
X			**Section (a)(5)** A discussion of the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, and infiltration/inflow monitoring.	**See Item 5 of the report**
	X		A calibration report shall be included for all flow measuring, indicating and recording equipment within the collection and conveyance system. Calibrations should occur annually.	**See Item 10 of the report**
X			A discussion of the maintenance and control of combined sewer regulators during the past year.	**See Item 5 of the report**
X			**Section (a)(6)** A discussion of the condition of the sewer system, including portions of the sewer system where conveyance capacity is being exceeded or is projected to be exceeded in the next 5 years.	**See Item 6 of the report**
	X		Existing capacity should be documented with actual metering of present maximum flows. If not already existing, the permittee should consider the best placement of flow meters to document the capacity of major interceptors (greater than 10 inches in diameter) and/or where lines cross municipal borders. A discussion of present maximum flows should be documented with hourly or instantaneous peak readings taken during major storm events (greater than 1.0 inch of rain). Auto dialers may be installed to alert of high flow conditions. The Chapter 94 Report should compare the peak instantaneous flow for each major storm event to the design hydraulic conveyance capacity of the sewer in order to determine whether sufficient capacity is available. The ratio of peak (hourly or instantaneous) to annual average flows should be determined to assess the actual peaking factor for the system.	**See Item 6 of the report**

Tributary Municipality – Malvern Borough
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
X			A discussion of portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate bypassing, combined sewer overflow, sanitary sewer overflow, excessive infiltration, and other system problems.	**See Items 5 and 6 of the report – There are no known problems within the Borough's system**
X			**Section (a)(7)** A discussion of the condition of sewage pumping Stations, including: A comparison of the maximum pumping rate with present maximum flows.	**See Item 7 of the report**
	X		Present maximum flows should be documented with the peak hourly or instantaneous readings taken during major storm events (greater than 1.0 inch of rain). Auto dialers may be installed to alert of high flow conditions.	**The Borough is currently working on providing this information**
	X		A discussion of metered flow data obtained during the report's calendar year to illustrate the ratio of peak flow to annual average flow. The permittee should use these figures to determine the actual peaking factor for the pumping station.	**The Borough is currently working on providing this information**
	X		Provide documentation that the pump station can convey maximum flows with any one pump out of service.	**The Borough is currently working on providing this information**
	X		The projected two-year maximum flows for each station.	**The Borough is currently working on providing this information**
	X		The two-year projection should use the estimated new flows to the system (annual average flows), multiplied by the peaking factor derived from metered flow data.	**The Borough is currently working on providing this information**
		X	**Section (a)(8)** A report of industrial wastes discharged into the sewer system.	**Completed by VFSA**
X			The report shall include: **(i)** A copy of any ordinance or regulation governing industrial waste discharges into the sewer system, including a copy of any amendments adopted.	**Included in report**
		X	**(ii)** A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.	**Completed by VFSA**

Tributary Municipality
Chapter 94 Report Checklist

Items marked YES are complete. Items marked NO are incomplete. Items marked NA are not applicable to this project

YES	NO	NA	Annual Report Requirements	Comments
		X	**(iii)** A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges, including a summary of the steps being taken to alleviate or eliminate the problems, as well as pollution prevention techniques.	**Completed by VFSA**
		X	The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and actions taken to eliminate the problem or prevent its recurrence.	**Completed by VFSA**
		X	**Section (a)(9)** A proposed plan to reduce or eliminate present or projected overloaded conditions under Chapters 94.21 and 94.22.	**The Borough is not projecting any overloads**
X			**Section (b)** Permittees of sewer systems which contribute sewage flows to the plant shall submit information to the permittee of the plant as required to facilitate preparation of the annual report.	
			94.13 Measuring, indicating and recording devices.	
		X	**Section (a)** A plant which receives or will receive in the next five years, monthly average flows exceeding 100,000 gallons per day (gpd) shall be equipped to continuously measure, indicate and record the flow.	
		X	The permittee shall install the necessary equipment for those measurements within 6 months after the date when such a flow becomes evident.	
		X	Section (b) A calibration report shall be included in the annual report for flow measuring, indicating and recording equipment. Calibrations should occur annually.	

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 1 rst. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	05-13-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	06-04-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	06-23-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	06-02-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 06-04-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 06-04-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 06-04-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 3 rd. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	07-29-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration: 10-07-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20
Date of Calibration: 07-21-20
% of Error: Less than .2%
Comment10-07-20s: none

Corrective Action: none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8” Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration: 10-07-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration: 07-21-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	10-07-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	07-21-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 07-21-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 09-30-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 09-30-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Report

Valley Forge Sewer Auth.

CALIBRATION SCHEDULE:
Section D: Equipment calibrated quarterly (MALVERN Borough)
Section A1: Meters not covered under Valley Forge Contract (MALVERN Borough)

Date: 4 rth. Quarter 2020 Calibration Data

"Section D"

Malvern Borough (644-1819)
Tide Water Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: PBD/X7070003
Max Flow: 50 GPM
Counter: Electronic Totalize X 10
Primary: 4" Palmer Bowlus Flume
Output: 4-20 MADC

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X7070003
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Tide Water Meter Pit
Totalize / Display

SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Miltronics
Model #: HydroRanger 200
Serial #: 110904179VU
Max Flow: 750 GPM
Primary: 21" Leopold Lagco Flume
Output: 4-20 MADC

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Warren Avenue Meter Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: 110904179VU
Relay output x 100

10-07-20
Date of Calibration: 12-17-20
% of Error: Less than .2%
Comment10-07-20s: none

Corrective Action: none

Malvern Borough
Warren Avenue Receiver
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System

Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Max Flow: 0-200 GPM
Primary: 8” Palmer Bowlus Flume
Output: 4-20 MA10-07-20DC same

Date of Calibration: 12-27-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Pit
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Seimens
Model #: Hydro Ranger 200
Serial #: PBD/X65982013
Relay output x 100

Date of Calibration: 12-17-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

Malvern Borough
Old Lincoln Meter Pit
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070

Serial #120609618
Multiplier X 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Ultrasonic Flow meter
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Max Flow: 0-90.0 GPM
Primary: 8" Palmer Bowlus Flume
Output: 4-20 MADC same

Date of Calibration:	12-22-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalizer transmitter (Thru SCADA)
Instrument Data:

Manufacturer: Badger
Model #: 2100
Serial #: 4002
Relay output x 100

Date of Calibration:	12-17-20
% of Error:	Less than .2%
Comments:	none
Corrective Action:	none

Malvern Borough
Minor Hill
Totalize / Display
SCADA (LOCATED AT MALVERN)
Instrument Data:

Manufacture: Maple System
Model #: HM15070
Serial #120609618
Multiplier X 100

Date of Calibration: 12-17-20
% of Error: Less than .2%

Comments: none

Corrective Action: none

"Section A1"

Malvern Borough
Injector Station No. 2
Magnetic Flow meter/totalizer
Instrument Data:

Manufacturer: Endress Hauser
Model #: Pro Mag 50
Serial #: 7B04A416000
Cal: 104515010000000
Max Flow: 150 GPM

Date of Calibration: 12-22-20
% Of Error: Less than .2%
Comments: none

Corrective Action: none

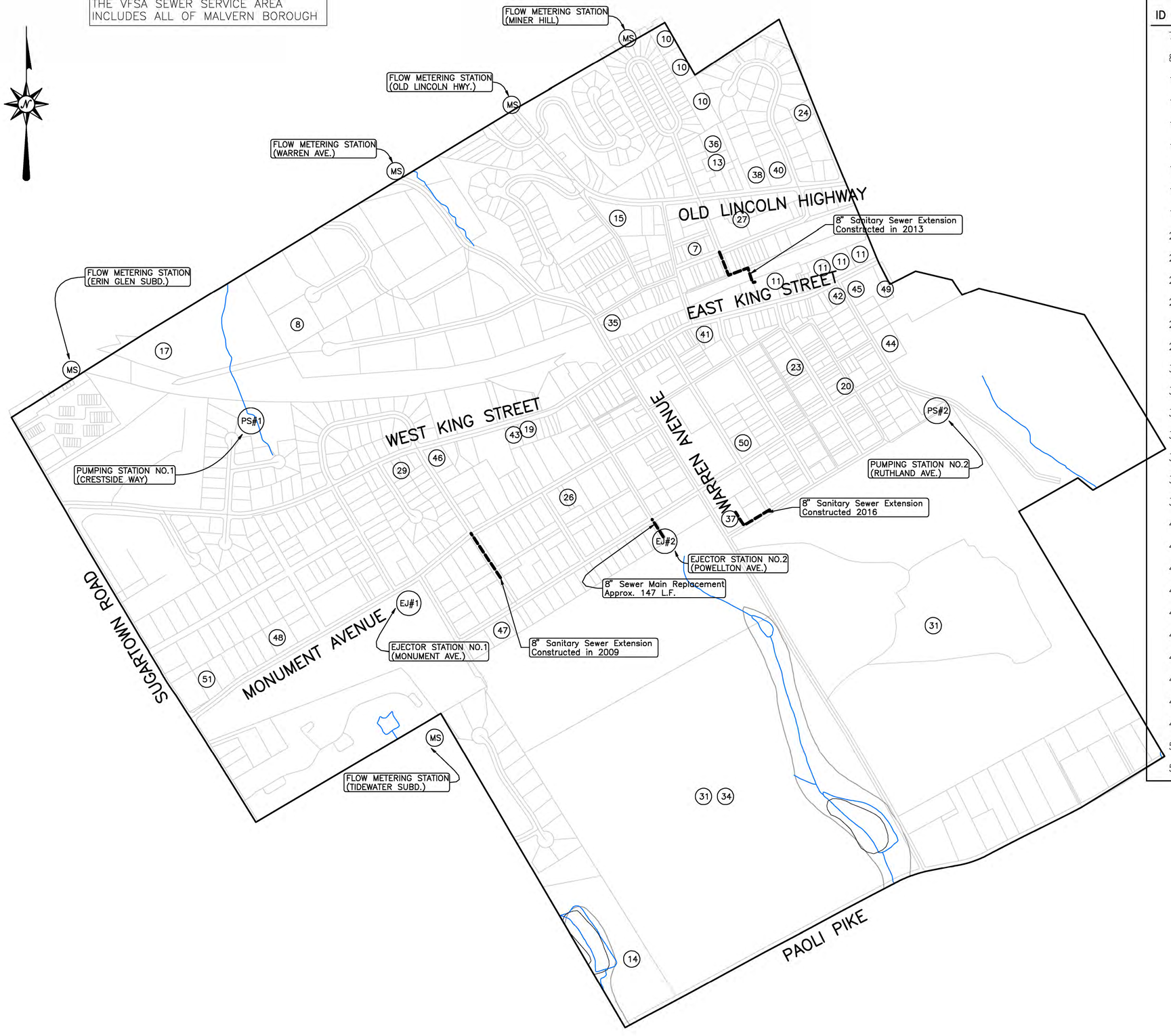
Malvern Borough
Injector Station No. 2
Circular Chart Recorder
Instrument Data:

Manufacture: Fisher + Porter
Model #: 392
Serial #: D17787-001-01-01-4500-F5
Counter: Electronic Totalizer x 10
Range: 0-150 GPM

Date of Calibration: 12-22-20
% of Error: Less than .2%
Comments: none

Corrective Action: none

NOTE:
THE VFSA SEWER SERVICE AREA
INCLUDES ALL OF MALVERN BOROUGH



ID NO.	DEVELOPMENT	TAX PARCEL
7	Cifa	2-4-84
8	Bean (Formerly approved as part of Hough - Loew)	2-3-3
10	Lagrie	2-4-34, 2-1-35,36
11	East King Street Redevelopment	2-4-148
13	Sheets	2-4-38
14	Remed	2-9-1
15	Francis (Formerly Longford/Old Lincoln)	2-4-68
17	Atwin	2-3-1.1
19	Ilex	2-3-29.1
20	Buckley	2-4-276
23	Finegan	2-4-266.1
24	Rubino	2-4-43.1
26	Priddy	2-7-8
27	Highes	2-4-91.1
29	Pots of Green	2-3-22
30	Adptive Reuse / Change in Use	Various
31	Potential Redevelopments**	Various
34	Malvern Prep Maintenance Building	2-7-34 E
35	Simmons	2-4-105
36	Gugliemi	2-4-36
37	Gables-217 S. Warren Ave,	2-7-36
38	347 Old Lincoln Highway (Rubino Holdings)	2-4-41
40	F Joseph Rubino (361 Old Lincoln Highway)	2-4-43
41	ZMC Partners, LP	2-4-204, 205, 206
42	Chambers - 346 E. King St	2-4-297
43	203 Management LLC.	2-3-29, 29.1
44	51 Ruthland Ave.	2-4-360
45	400 E. King St. - Brick and Brew	2-4-355
46	11 Griffith Ave - Renehan	2-3-25
47	Renehan - 320 W. First Avenue Permit Plan	2-6-96.1
48	523 Monument Ave. Subdivision - Coughlin	2-6-37
49	Traynor Capital Management - 418 E. King Street	2-4-356
50	Wolfe - 151 Channing Avenue	2-4-235.1
51	631 Monument Avenue	2-6-31

DEVELOPMENT LOCATION PLAN

LOCATION PLAN
FOR

MALVERN BOROUGH 2020 CHAPTER 94 REPORT

MALVERN BOROUGH — CHESTER COUNTY, PA

Edward B. Walsh & Associates, Inc.
CIVIL ENGINEERS & SURVEYORS
Whiteland Business Park
855 Springdale Drive, Suite 202
Exton, Pennsylvania 19341
Phone (610) 903-0060
Fax (610) 903-0080
www.ebwalshinc.com

Project-	2780-16
Date-	03/5/21
Scale-	NTS
Drawn-	C.E.
Checked-	D.H.D.
Sheet-	1 OF 1

Plotted: 3/5/2021 | File:F:\JB\2780-16\2021 Report\07-2780-15 CHAP 94 PLAN-2020.pro

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITIES REPORT**	Permit No.:	**PA0043974**
Mailing Address:	**333 PAWLING ROAD**	Effective Date:	**1/1/20**
City, State, Zip:	**PHOENIXVILLE, PA 19460**	Expiration Date:	**12/31/24**
Contact Person:	**Mr. Martin F. Goldberg**	Renewal Due Date:	**7/4/24**
Title:	**Operations Manager**	Municipality:	**Schuylkill Township**
Phone:	**610-935-1553**	County:	**Chester**
Email:	**mgoldberg@vfsa.com**	Consultant Name:	

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

Check the appropriate boxes:

☒ Line graph for flows attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

Check the appropriate boxes:

☒ Line graph for organic loads attached (**Attachment 1**)
☒ DEP Chapter 94 Spreadsheet used (**Attachment 1**)
☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Not applicable

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Please see report following.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Please see report following.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☒ Discussion of condition of each pump station attached (**Attachment**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☒ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☒ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment 2**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Martin F. Goldberg	Martin F Goldberg
Name of Responsible Official	Signature
610-935-1553	5/25/21
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Richard D. Taylor	Richard D Taylor
Name of Preparer	Signature
610-935-1553	5-25-21
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES ANNUAL REPORT
(In PADEP Format)

CALENDAR YEAR 2020

For: **THE VALLEY FORGE SEWER AUTHORITY**
MEMBER MUNICIPALITIES REPORT
CHESTER COUNTY, PENNSYLVANIA
333 PAWLING ROAD
PHOENIXVILLE, PA 19460

INTRODUCTION

Valley Forge Sewer Authority (VFSA) owns and operates an advanced secondary regional publicly owned treatment works permitted by the Pennsylvania Department of Environmental Resources (PADEP), in conjunction with the United States Environmental Protection Agency (USEPA), under Discharge Permit # PA0043974.

The VFSA provides both wastewater conveyance and treatment to its Member Municipalities consisting of Schuylkill, East Pikeland, and Charlestown Townships. The Member Municipalities allocation of the total treatment plant hydraulic and organic loading is 18.1 percent.

1. HYDRAULIC LOADING

The current permitted capacities of the VFSA treatment plant are:

	Post Expansion	**Member Municipality Allocation**
Annual Average Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Hydraulic Design Capacity	11.75 mgd	2.128 MGD (18.1% of total)
Organic Design Capacity	26,700 lbs/day	4,833 lbs/day (18.1% of total)

The Annual Average (AA) flow for 2020 for the VFSA Member Municipalities was **1.671** MGD, which is seventy-eight percent of the post-expansion AA capacity of **2.128** MGD.

The 2020 VFSA Member Municipalities wastewater treatment plant flow was generated by an average of 7,462 EDUs. The number of baseline EDUs used in the projected flow calculations is 7,521, corresponding to the 2020 end-of-year EDU count.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template, a hydraulic overload condition at the WWTP exists when, during any three consecutive month period, the average flow exceeds the hydraulic design capacity of the WWTP. This condition did not occur during 2020.

2. ORGANIC LOADING

The Annual Average (AA) organic loading for 2020 for the VFSA Member Municipalities was **2,787** LB/day BOD_5, which is fifty-eight percent of the post-expansion permitted AA capacity of **4,833** LB/day BOD_5. Organic loading was estimated utilizing an average value of 200 mg/L BOD_5.

By PADEP definition in the Chapter 94 Municipal Wasteload Management Annual Report template an organic overload condition at the WWTP exists when, during any month the average organic loading exceeds the permitted organic design capacity of the WWTP. This condition did not occur during 2020.

3. NOT APPLICABLE

4. SEWER EXTENSIONS

The total number of EDUs connected at the end of 2020 was 7521. The EDU count at the end of the year was 215 EDUs.

During the next five years, the number of EDUs is projected to increase as follows:

2021	141
2022	159
2023	45
2024	25
2025	18

Please see the spreadsheet and graphs included in Appendix A at the end of this section.

Information and updates on the progress of the sewer extensions is presented in Table 1, below:

VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITY SEWER EXTENSIONS - 2020 CHAPTER 94 REPORT						
Development Name	**Developer**	**Municipality**	**# of new connections completed in 2020**	**Length of Sewer Cleaned and TV'd (Lineal Feet)**	**Dedication status**	**Notes**
Pickering Crossing	Southdown Homes	Charlestown Township	6	1250	Construction in progress Dedication expected in 2022	10 lots remain to be connected in 2021 & 2022 and beyond.
Spring Oak	JP Orleans	Charlestown Township	13	2850	Phases 2 & 3 dedication are completed. Phase 1 dedication is projected be completed in the fall of 2021 with recordation of ROW Agreement	19 new homes to be connected in 2021 & 2022 and beyond.
Devault Village at Spring Oak	JP Orleans	Charlestown Township	0	0	Agreements anticipated prior to star date. Expexded start fall of 2021	Received PADEP planning approval in December 2018 for 15,950 gpd.
Kimberton Glen	Toll Brothers	East Pikeland Township	55	3100	Phase 1 dedication to the Authority will be completed upon successful fulfillment of the 18-month Maintenance Warranty. Projected 2021.	81 lots remain to be connected in 2021 & 2022 and beyond. Phases 2 & 3 are currently under construction.
400 Westside	Longview	East Pikeland Township		1800	Deed of Dedication and Right-of Way agreement to Authority was completed in the fall of 2020 and recorded at Chester County.	Completed final closeout of this development project occurred in the fall of 2020 with VFSA Board approval.
Valley Forge Greene	Pulte	Schuylkill Township	8	625	Agreements are in place and sanitary sewer construction activities are in progress.	Received PADEP planning approval in February 2020 for 32 - unit townhomes totalling 8,800 gpd. To date, 24 units remain to be connected in 2021 & 2022.

5. PROGRAM for SANITARY SEWER MONITORING, MAINTENANCE, REPAIR AND REHABILITATION

In late 2019, the Authority, with their Engineer of Record, Buchart-Horn, Inc., completed a study which was documented in a report entitled, "Valley Forge Sewer Authority, French Creek Interceptor System Evaluation". The evaluation included manhole inspections and flow monitoring in various subbasins within the overall French Creek Drainage Basin. In 2020 to address items highlighted in the BH study, the Authority initiated field work to repair and improve key portions of the basin. The project activities included:

- Clearing all right-of-ways of overgrown vegetation.
- Utilizing a Global Positioning System (GPS) to locate manholes and marking all manhole locations within the study area.
- Installing portable flow meters in strategic areas to evaluate inflow and infiltration (I&I) quantities at these locations during storm events.
- Utilizing the Authority's Engineer of Record, Buchart Horn Inc., to provide manhole condition assessments according to industry-accepted methodologies.
- Utilizing a contractor to clean and televise sanitary sewers in the targeted drainage areas and to perform spot repairs.
- Installing new water proof manhole frames and covers.

In 2020, approximately 60% of the entire French Creek Pump Station sanitary sewer drainage basin including 13 miles of pipe and 302 manholes had been cleaned, televised and inspected. This work also included performing 35 spot repairs to gravity sewer pipes and manholes and installing 40 new manhole frame and covers.

Some conclusions of this work to date include the following:

- The gravity sewers and manholes appear to be in generally good condition, and while some defects were found and repaired, they were generally minor.
- An expanded maintenance program which includes identification of system defects and repair will be beneficial going forward.
- In addition to I&I related to precipitation events, there is also a relationship between groundwater level and wastewater flow in the French Creek sewer system.
- Significant additional work is needed to identify and repair I&I throughout the entire VFSA system. However, gaining significant capacity through I&I reduction may be unlikely. More important is the maintenance of system condition in order to avoid

degradation which may result in reduced capacity and increase the risk of sewer overflows. Future planning will include capacity equaling 275 gpd/edu.

In addition to continuing with the I&I activities that are described above, the additional work anticipated in the future includes the following:

- Establish and implement appropriate activities to evaluate and address potential sources of I&I from private sewer lateral connections and potentially illegal connections to the sanitary sewer system from private households. The Authority is also evaluating developing ordinances which would require, as part of the real estate transaction process, inspections of internal plumbing in customer homes to assure no illegal connections.

In 2021 the Authority intends to continue its work in the French Creek basin, as well as initiating evaluation and repair work in other parts of its overall system. A program to address manholes along stream corridors in the Pickering Creek and White Horse pumping station basins including manhole survey and inspection is planned for 2021.

In addition to the I&I Analysis and Repair activities described above, the Authority also performed two significant sanitary pipeline and manhole repairs in 2020 which are summarized below:

1. **Replacement of Gravity Sewer Line on West Pothouse Road between West Evergreen Drive and East of Potters Pond Drive from Manholes 104 to 103 (August 2020).** This gravity sewer segment, consisting of approximately 370 feet of 18" asbestos cement pipe, was identified to be partially collapsed as a result of sulfide corrosion. The Authority contracted with their on-call contractor, Blooming Glenn Construction, to perform expedited work to excavate and replace this segment with 26 SDR PVC pipe and reconnect the 2 sanitary laterals that were connected to this pipe segment. In addition, both the upstream and downstream manholes were found to be damaged as a result of hydrogen sulfide corrosion. They were rebuilt with corrosion resistant materials.

   Following this work activity, the Authority televised all of the gravity sewers on Pothouse Road between Township Line Road and the Pothouse Pumping Station. Repairs are anticipated to be performed in 2021 based on the findings of the television inspection work.

2. **Sinkhole repair at 3222 Phoenixville Pike (November 2020).** A gravity sewer segment consisting of 150 feet of 10" PVC pipe was found to be exposed as a result of significant sinkhole undermining of the pipe in an Authority right-of way. Once identified, the Authority contracted with Earth Engineering to establish the best course of action to safely stabilize the partially undermined gravity sewer line. The recommendation was to excavate and expose a significant portion of the pipe, and then stabilize the pipe with mechanical joint reinforcements and partially backfill with flow-able fill material. Once accomplished the segment was backfilled with clean soil to grade and then re-

vegetated. This work was performed for the Authority on an expedited basis by Blooming Glen Construction.

6. CONDITION OF THE SEWER SYSTEM

As indicated in Section 5 above, a conclusion of the French Creek Evaluation was that the gravity sewers and manholes in the French Creek drainage basin appear to be in generally good condition. It is the Authority's opinion that its entire system is also in a generally good state of repair, and further detailed study will occur in subsequent years.

During 2020, no bypassing occurred in the Member Municipalities sanitary sewer system. VFSA has a sanitary sewer system only, not a combined system, so no CSOs occurred. During 2020, there were three Sanitary Sewer Overflow (SSOs) which were promply reported to PADEP. These occurred on the following dates: January 25, August 4, and August 4-5. Copies of the submitted reports are in Appendix B:

In 2019 the Authority excavated to expose key locations in its force main which runs from its Pickering Pumping Station to the WWTP in order to better evaluate forcemain pipe conditions and establish recommendations for system maintenance. Results of this testing indicated a need to install a new air release valve (ARV) at a vulnerable location (which was completed in 2020). Further evaluation will be performed in 2021.

7. SEWAGE PUMPING STATIONS

Please see the table (attached) regarding VFSA member municipality pump stations. Additional flows are based on the Member Municipalities 5 year average EDU rate of 231 gpd/EDU. Data for the Maximum Day Flow has been obtained from the cloud based real time monitoring system for the pump stations from the heavy precipitation event of approximately 5.9 inches which occurred on August 4, 2020.

Overall 2020 was an above average year for precipitation with annual rainfall totals in excess of 59 inches versus average rainfall amounts of approximately 48 inches. This resulted in high maximum day flows at the pumping stations, but still below their hyrdraulic design capacities. All four of the large pump stations in VFSA's system contain three (3) pumps which enables two (2) pumps to operate simultaneously if required.

Please see the tables and graphs included as Appendices C and D which include monthly flows at the 4 major pump stations and flows at all of the Authority's pump stations in regards to rainfall events of one inch or more during 2020.

VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 HYDRAULIC LOADING
BASED ON MISSION COMMUNICATION DATA
PUMP STATION DATA

PUMP STATION NAME	No. of Pumps	PERMITTED CAPACITIES			PRESENT FLOWS 2020			PROJECTED FLOWS		
		Annual Average Permitted Capacity (gpd)	Hydraulic Capacity (excluding capacity of backup pump), (gpm)	(gpd)	2020 Annual Average Flow (gpd)	2020 Max. Day Flow (gpd)	2020 Max. Day to Avg. Day Ratio	Contributing New EDUs next 2 years	2 year Annual Avg Flow (gpd)	2 Year Max. Daily Flow (gpd)
Pickering Creek	3	2,686,560	5,597	8,059,680	1,366,193	5,298,000	3.88	147	1,406,618	5,454,765
White Horse	3	2,350,080	4,896	7,050,240	1,015,551	3,983,400	3.92	147	1,055,976	4,141,963
Pot House	3	2,040,000	4,250	6,120,000	863,957	2,973,500	3.44	147	904,382	3,112,632
French Creek	3	1,570,994	3,382	4,870,080	731,350	2,584,400	3.53	147	771,775	2,727,251
Perkiomen	2	214,920	597	859,680	79,132	553,300	6.99	24	85,732	599,448
Valley Creek	2	67,680	188	270,720	18,003	148,800	8.27	0	18,003	148,800
Kimbel Drive	2	37,440	104	149,760	17,308	56,127	3.24	0	17,308	56,127
Charlestown Rd	2	92,520	257	370,080	33,722	143,318	4.25	0	33,722	143,318
VF Woods*	2	112,680	313	450,720	62,694	250,776	3.69	0	62,694	231,588
Charestown Meadows	2	97,200	270	388,800	27,411	34,200	1.25	0	27,411	34,200
Charlestown Oaks	0	METER STATION ONLY			40,865		NA	0		
Kimberton Meadows	2	18,000	50	72,000	14,575	36,209	2.48	0	14,575	36,209

* For smaller pumping stations with limited flow recording data, Max. Day was calculated using average ratio of 4 regional stations (Pickering, White Horse, Pothouse, French Creek. Max. Day/Avg. Day= 3.69

8. INDUSTRIAL WASTES

The Industrial Pretreatment Program as approved by the United States Environmental Protection Agency (USEPA) is administered by the Valley Forge Sewer Authority on behalf of all partner municipalities. Included in the Industrial Wastes section is a comprehensive report of the activities conducted by the Authority in regards to this program. The VFSA Board of Directors has adopted by resolution a USEPA approved industrial waste pretreatment program as part of the VFSA's rules and regulations. Each Member and Partner municipality has adopted, at a minimum, the VFSA's rules and regulations regarding sewer system use as a part of their local ordinance structure. VFSA's rules and regulations and the tributary municipalities' ordinances are periodically amended to address new or revised federal, state or local rules and regulations. VFSA maintains current copies of Member and Partner municipality ordinances on file at the administrative/laboratory building adjacent to the treatment plant. Please see Section 2 of the VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report.

9. EXISTING OR PROJECTED OVERLOAD

Per the VFSA Member Municipalities PADEP Chapter 94 Spreadsheet hydraulic and organic historical data and projections, the VFSA member municipalities are projected to slightly exceed their hyrdraulic capacity allocation for 2022 through 2025. However, a hydraulic overload of the wastewater treatment plant is not projected for these years since the plant is only currently at 58% of its capacity and the other partner municipalities are well below their projected hydraulic capacity allocations. This situation also occurred in 2018 and 2019 and is allowed under the Wastewater Treatment Plant Rental Pool Agreement where unused allocated capacity is automatically rented to the municipalities in need. There are no projected organic overload conditions through 2025.

There are no projected hydraulic overloads at the Pumping Stations for the next 2 years or the Wastewater Treatment Plant.

10. SEWAGE SLUDGE MANAGEMENT INVENTORY – NOT APPLICABLE

11. FACILITIES WITH CSOs – NOT APPLICABLE

12. ANNUAL CALIBRATION REPORT

VFSA has a contract with Allied Control Services, Inc. to check and calibrate the meters serving the WWTP and the municipal collections systems at least annually. (As a matter of course, these meters are calibrated on a quarterly basis). Please see Attachment No. 2 of Section 1 of the 2020 VFSA Chapter 94 Municipal Wasteload Management Regional Treatment Plant Annual Report for a copy of the fourth quarter 2020 calibration reports. Meter calibration reports are available upon request.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

HISTORICAL HYDRAULIC AND ORGANIC LOADING DATA AND FUTURE PROJECTIONS

APPENDIX A

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2020

Facility Name: VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES

Permit No.: PA0043974

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 2.128 MGD
Upgrade Planned in Next 5 Years? NO **Year:**
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 4,833 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO **Year:**
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2016	2017	2018	2019	2020
January	1.517	1.38439	1.250	2.457	1.638
February	2.473	1.24812	2.226	2.242	1.860
March	1.567	1.42886	2.363	2.649	1.854
April	1.311	1.8689	1.729	1.757	2.150
May	1.616	1.46658	2.117	1.959	1.802
June	1.204	1.38323	2.276	1.696	1.387
July	1.081	1.23158	1.905	1.526	1.446
August	1.049	1.25565	2.262	1.265	1.641
September	1.065	1.16308	2.514	1.175	1.235
October	1.026	1.14594	1.761	1.245	1.285
November	1.043	1.20121	2.706	1.363	1.528
December	1.246	1.16872	2.393	1.740	2.225
Annual Avg	1.35	1.328855177	2.125306121	1.756055787	1.670894487
Max 3-Mo Avg	1.852	1.588112075	2.327174079	2.518788247	1.954486961
Max : Avg Ratio	1.37	1.20	1.09	1.43	1.17
Existing EDUs	6,780.0	6,959.0	6,997.0	7,306.0	7,521.0
Flow/EDU (GPD)	199.1	191.0	303.7	240.4	222.2
Flow/Capita (GPD)	56.9	54.6	86.8	68.7	63.5
Exist. Overload?	NO	NO	NO	YES	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2016	2017	2018	2019	2020
January	2,530	2,309	2,085	4,098	2,732
February	4,125	2,082	3,712	3,740	3,102
March	2,614	2,383	3,942	4,418	3,092
April	2,187	3,117	2,885	2,930	3,586
May	2,696	2,446	3,532	3,267	3,006
June	2,009	2,307	3,797	2,828	2,313
July	1,803	2,054	3,177	2,545	2,413
August	1,749	2,094	3,774	2,111	2,737
September	1,776	1,940	4,194	1,959	2,060
October	1,712	1,911	2,938	2,076	2,143
November	1,740	2,004	4,514	2,274	2,549
December	2,078	1,949	3,992	2,902	3,712
Annual Avg	2,252	2,217	3,545	2,929	2,787
Max Mo Avg	4,125	3,117	4,514	4,418	3,712
Max : Avg Ratio	1.83	1.41	1.27	1.51	1.33
Existing EDUs	6,780	6,959	6,997	7,306	7,521
Load/EDU	0.332	0.319	0.507	0.401	0.371
Load/Capita	0.095	0.091	0.145	0.115	0.106
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2021	2022	2023	2024	2025
New EDUs	141.0	158.6	45.0	25.0	18.0
New EDU Flow	0.0326	0.0367	0.0104	0.0058	0.0042
Proj. Annual Avg	1.67882	1.71552	1.72592	1.73172	1.73592
Proj. Max 3-Mo Avg	2.1039	2.14989	2.16293	2.1702	2.17546
Proj. Overload?	NO	YES	YES	YES	YES

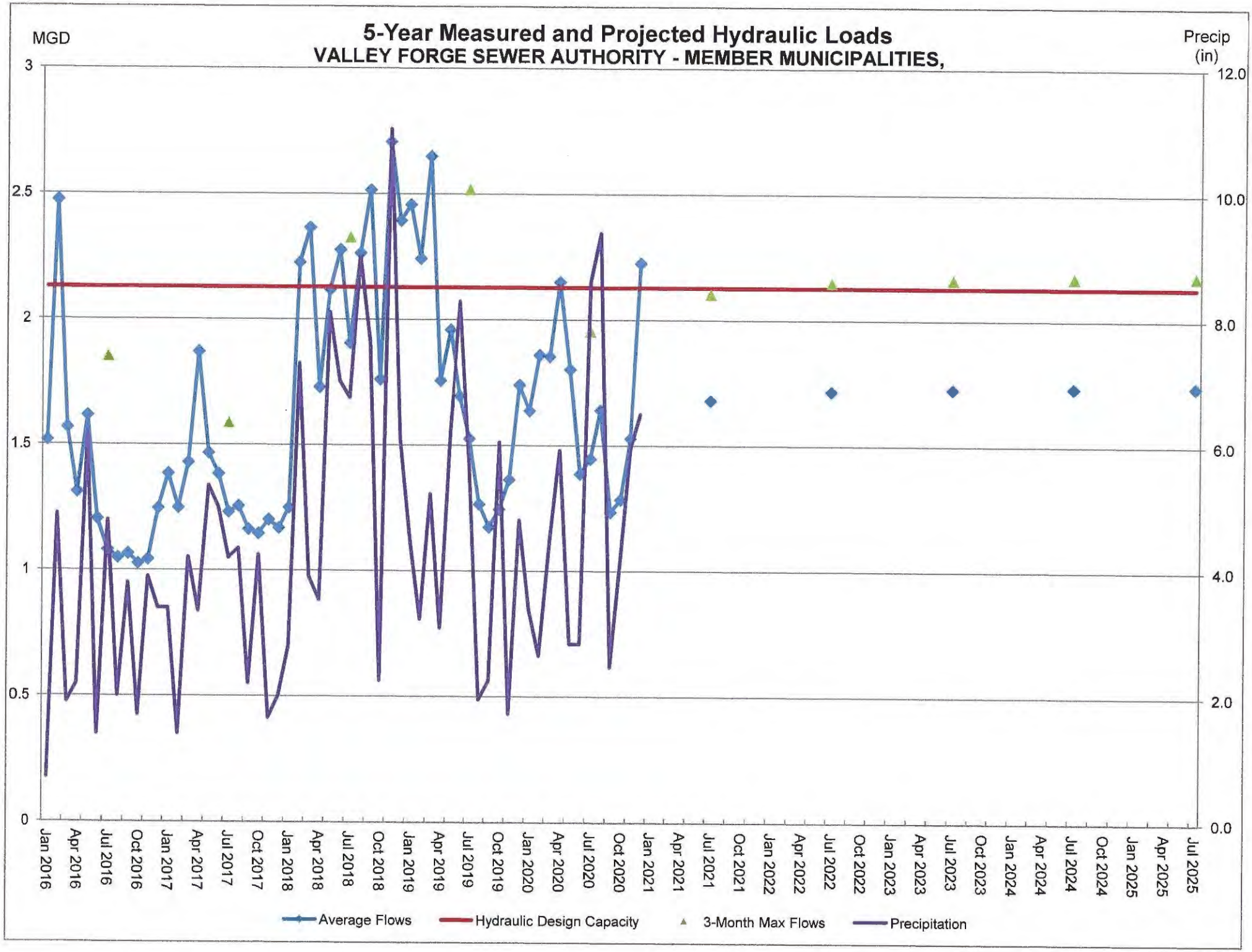
Projected BOD5 Loads for Next Five Years (lbs/day)

	2021	2022	2023	2024	2025
New EDUs	141	158.6	45	25	18
New EDU Load	54.390	61.179	17.359	9.644	6.943
Proj. Annual Avg	2,800	2,861	2,879	2,888	2,895
Proj. Max Avg	4,117	4,207	4,233	4,247	4,257
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2016	2017	2018	2019	2020
January	0.7	3.4	2.8	4.5	3.4
February	4.9	1.4	7.3	3.2	2.7
March	1.9	4.21	3.9	5.2	4.5
April	2.2	3.35	3.5	3.1	5.9
May	6.2	5.35	8.1	6.2	2.8
June	1.4	5.0	7.0	8.3	2.8
July	4.8	4.2	6.8	5.7	8.6
August	2.0	4.35	9.0	2.0	9.4
September	3.8	2.2	7.7	2.3	2.5
October	1.7	4.25	2.3	6.1	4.2
November	3.9	1.65	11.0	1.7	6.0
December	3.4	2.0	6.1	4.8	6.5


5-Year Measured and Projected Hydraulic Loads
VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES,
MGD
Precip (in)
3
2.5
2
1.5
1
0.5
0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
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Jan 2020
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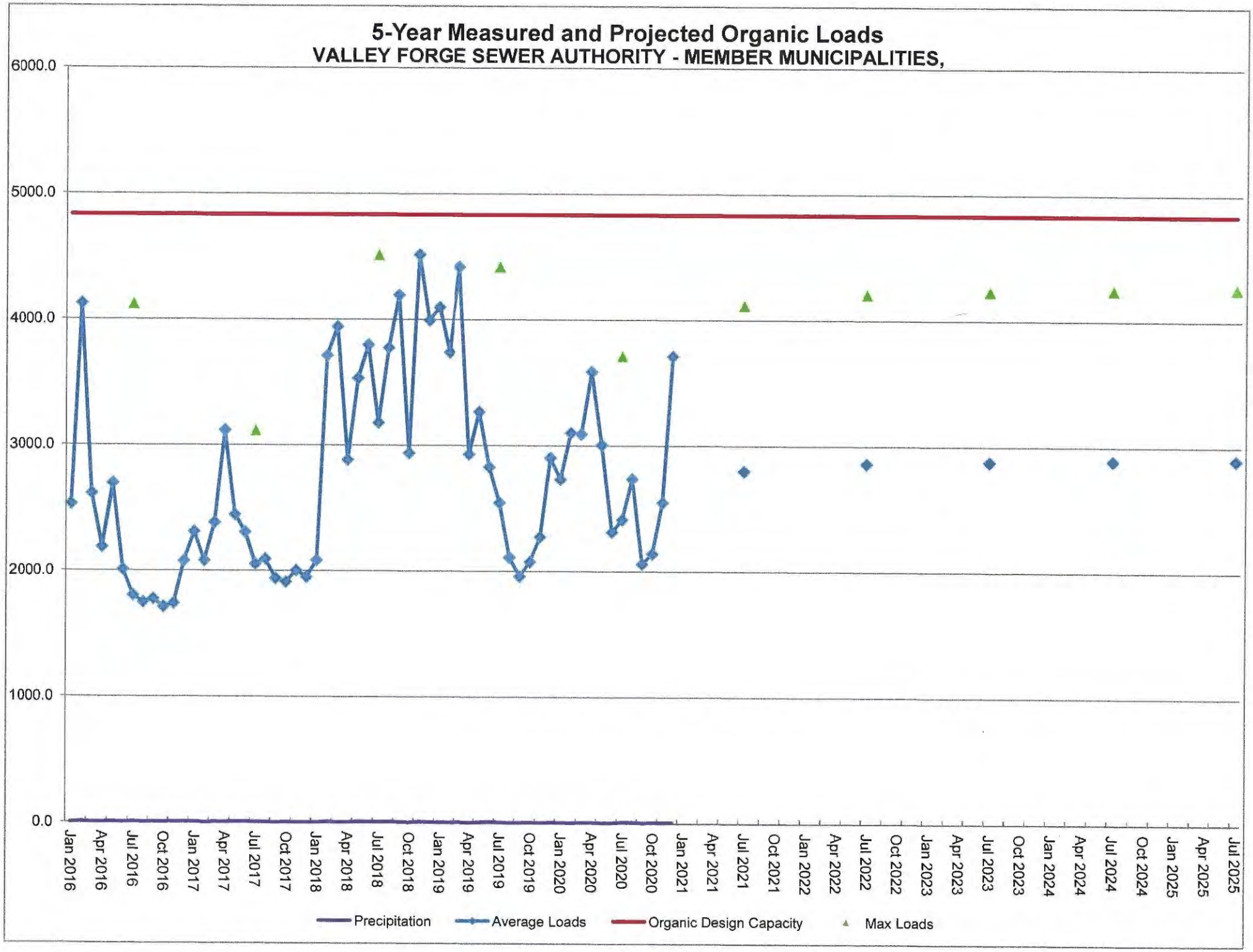
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
Precipitation


5-Year Measured and Projected Organic Loads
VALLEY FORGE SEWER AUTHORITY - MEMBER MUNICIPALITIES,
6000.0
5000.0
4000.0
3000.0
2000.0
1000.0
0.0
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
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Jan 2019
Apr 2019
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Jan 2020
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Oct 2021
Jan 2022
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Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Precipitation
Average Loads
Organic Design Capacity
Max Loads

Updated: 3/18/2021

TABLE 1
PROJECTED EDU GROWTH WITHIN THE MEMBER MUNICIPALITIES

The estimated EDUs for the years 2020 through 2024 and beyond are as follows:

Development	Status	Twp.	Approved EDUs Total	Remaining EDUs - Total	2021	2022	2023	2004	2025	Beyond	Type of Ext.	Drainage Basin
Campbell (26-2-169)	P	EP	9	9	0	0	2	7	0	0	R	FC-2009
Celluci	P	CH	16	16	0	0	0	0	0	16	R	LT-3010
19 Oakwood Lane (27-7-10.13A)	A	S	1	1	0	0	0	0	0	0	R	VC
Connell Property (26-2-160,161)	P	EP	2	2	0	0	0	2	0	0	R	FC-2009
Commons at Great Valley	E	CH	73	10	5	5	0	0	0	0	C	LT-3010
Croft @ Rt 113 & 7 Stars	N	EP	2	2	0	2	0	0	0	0	R	FC-2009
Cutler (Kimberton Glen)	A	EP	332	135	50	50	20	10	5	0	R	FC-2009
Deer Run Lane	E	EP	9	3	0	0	0	0	0	3	R	FC-2009
Devault Meats	E	CH	134	134	0	0	0	0	0	134	I	LT-3010
Emmanuel/Dodie	N	EP	13	13	0	0	0	0	0	13	R	FC-2009
Ferry Lane (Masters)	P	S	4	4	2	2	0	0	0	0	R	PER-1009
Fillipo Tract (Devault Village)	A	CH	78	78	28	50	0	0	0	0	R	LT-3010
French Creek Business Park	E	S	25	10	10	0	0	0	0	0	C	FC-2009
Gappa @ Rapps Dam Rd (26-3-106)	P	EP	3	3	0	0	2	0	0	1	R	FC-2009
GPT Properties (566 & 574 Schuylkill Rd	N	EP	3	3	3	0	0	0	0	0	R	FC-2009
Heritage (Coccia)	P	EP	22	22	0	0	0	0	0	22	R	FC-2009
Holy Ascension Church	P	CH	6.6	6.6	0	6.6	0	0	0	0	R/C	LT-3010
Jugan Property (26-2-170.2,170.3,170.4	P	EP	17	17	0	0	0	0	0	17	R	FC-2009
Kaiserman/Condign	N	EP	15	15	0	10	5	0	0	0	R	FC-2009
Kimberton Square	E	EP	10	10	0	3	2	5	0	0	R	FC-2009
Late Spring Development	E	CH	10	8	0	0	0	0	0	8	R	LT-3010
Laurabrooke	P	CH	20	20	0	0	0	0	0	20	R	LT-3010
Lee/Brook/Pheasant Run	N	EP	52	52	0	0	0	0	0	52	R	FC-2009
505 Pawlings Road	A	S	1	1	0	0	0	0	0	0	R	PER-1009
Meadow Lane	N	EP	12	12	0	0	0	0	12	0	R	FC-2009
Meadowbrook Farm (PASD)	P	S	3	3	0	0	0	0	0	0	R/C	WH-1004
Mill Lane	P	S	3	2	1	0	0	0	0	1	R	WH-1004
Miller Pond Subdivision	A	EP	2	1	1	0	0	0	0	0	R	FC-2009
Miscellaneous**			51	21	1	1	1	1	1	16	R/C	
Morehall @ VF	E	S	148	1	0	0	0	0	0	1	R	PK-1003
Phoenixville Area School District	P	EP	15	15	0	0	0	0	0	15	R/C	FC-2009
Phoenixville Crossing	P	EP	79	79	0	0	0	0	0	79	R	FC-2009
Piazza 26-2-194.3,194.4	P	EP	15	15	5	10	0	0	0	0	I	FC-2009
Pickering Crossing	P	CH	78	9	4	4	1	0	0	0	R	LT-3010
Pleasant Valley Acres	N	EP	27	27	0	0	0	0	0	27	R	FC-2009
Pothouse Road (26-3-147)	P	EP	10	10	0	2	8	0	0	0	R	FC-2009
Reeves Property	P	S	93	93	0	0	0	0	0	93	R	PK-1003
Route 23 Commercial	E	S	6	2	0	0	0	0	0	2	C	PK-1003
Shick (26-2-96)	P	EP	3	1	0	1	0	0	0	0	R	FC-2009
Snyder Avenue	N	EP	10	10	0	0	0	0	0	10	R	FC-2009
Spring Oak	P	CH	184	23	15	8	0	0	0	0	R	LT-3010
Thoroughbred Drive	P	EP	4	4	0	0	0	0	0	4	R	FC-2009
Valley Forge Greene Townhomes	P	S	32	24	16	4	4	0	0	0	R	PER-1009
Warner Lane	P	CH	16.9	16.9	0	0	0	0	0	16.9	R/C	LT-3010
Zone Dist I/O	P	CH	175	175	0	0	0	0	0	175	R/C	LT-3010
Zone Dist B-1, FR, LI/B, RC	P	CH	228.5	228.5	0	0	0	0	0	228.5	R/C	LT-3010
		Totals:	**1,347.0**	**141.0**	**158.6**	**45.0**	**25.0**	**18.0**	**954.4**			

TYPE
C- COMMERCIAL
I - INDUSTRIAL
R - RESIDENTIAL
R/C - RESIDENTIAL/COMMERCIAL

STATUS
E = EXISTING (INCLUDED ON COMP MAP)
A = APPROVED BY VFSA (ON COMP MAP)
P = IN NEEDS ANALYSIS - NO FORMAL APPLICATION TO VFSA - REQUIRES PUBLIC SEWER BUT ARE IN PRELIMINARY PLANNING STAGE) SHOWN WITH BUBBLE ON COMPREHENSIVE MAP
N = NEW, NAMED BY TOWNSHIP

MUNICIPALITIES
EP - EAST PIKELAND TOWNSH
CH - CHARLESTOWN TOWNSH
S - SCHUYLKILL TOWNSHIP
WV - WEST VINCENT
EP&WV - EAST PIKELAND & WE

DRAINAGE BASIN
CC - COUNTRY CLUB
FC -FRENCH CREEK
KD - KIMBLE DRIVE
LT - LEE TIRE BLVD
PER - PERKIOMEN
PH - POT HOUSE
PK - PICKERING
RT-401 = ROUTE 401
SYDLEY RD - TO E. WHITELAND
VC - VALLEY CREEK
WH - WHITEHORSE

5 YEAR PROJECTION	
2021	141.0
2022	158.6
2023	45.0
2024	25.0
2025	18.0
Beyond	954.4
Total	1,342

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

SANITARY SEWER OVERFLOWS (SSOs)

APPENDIX B

3800-FM-BCW0440 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: Valley Forge Sewer Authority Month: January Year: 2020

Municipality: Schuylkill Township County: Chester Permit No.: PA 0043974

☐ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

☒ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified
1/25/20	Sanitary Sewage	630 West Pothouse Rd 2 manholes Adjacent to Pothouse Rd PS	<35000 (EST)	0.25 (EST)	Caines Creek	None observed.	See attached detail of event.	1/25/20

☐ **Other Permit Violations***

- ☐ Sample collection less frequent than required — Explain
- ☐ Sample type not in compliance with permit — Explain
- ☐ Violation of permit schedule — Explain
- ☐ Other — Explain
- ☐ Other — Explain

***If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Martin F. Goldberg/Lloyd R. Knauer Signature: Martin F Goldberg Lloyd R. Knauer

Title: Operations Manager/O & M Supervisor Date: 1/31/20 1/31/2020

Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
NPDES # PA 0043974

Pothouse Road Sanitary Sewer Overflow (SSO) Event

1/25/20

At about 11am on Saturday 25 January 2020, during a heavy rain event, the Authority experienced a sewer system overflow (SSO) of less than 35,000 gallons to the Caines Creek near the Pothouse Pumping Station at 630 West Pothouse Road in Schuylkill Township PA. The pump station is designed with three pumps, with 2 electrical pumps and a third diesel powered self priming emergency pump. Two electric pumps may pump the design flow from the wet well. If there is a failure of an electric pump, the self priming emergency pump should engage to pump the design flow from the wet well.

On 25 January the relatively high flows from a storm would have resulted in the need to operate 2 electric pumps simultaneously. However when this occurred, the lag pump failed to start. Once the emergency pump engaged, it self-primed, and pumped down the pump station wet well. But this occurred too late to prevent an SSO. Had either the lag electric pump or the diesel powered emergency pump activated sooner, the SSO could have been avoided. It is unclear why the lag electric pump didn't start. In order to prevent a future SSO, the Authority is performing the following activities:

- Review the settings and controls on all of our pumping stations. Consider activating the emergency pump at a lower wet well level.
- Consider utilizing a device that was part of the original emergency pump design which maintains pump prime by keeping the suction pipe full at all times. Consider adding equipment to prevent freezing in the suction line which will allow for maintaining pump prime in winter weather. If successful, this will shorten the time necessary for the engaged emergency pump to pump down the wet well.
- Consider adding a third electric pump at the Pothouse pump station.

Per the requirements of the treatment plant's NPDES permit, PADEP and three potable water plants located on the Schuylkill River downstream from the entry point of the sewer overflow were notified.

3800-FM-BCW0440 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NON-COMPLIANCE REPORTING FORM

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Facility Name: Valley Forge Sewer Authority Month: August Year: 2020

Municipality: Schuylkill Township County: Chester Permit No.: PA 0043974

☒ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken
8/5/20	Fecal coliform	1000	No./ 100 mL	Instantaneous Maximum	>2420	col/ 100 mL	Power Outage of Approximately 23 hours - See Attachment	

☒ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified
8/4/20	Sanitary Sewage	Manhole Adacent to Pothouse Pump Station	152,019 (est)	6.0 (est.)	Caines Creek	None observed	Heavy Rain Event - Tropical Storm Isiasis	8/4/20
8/4-5/20	Sanitary Sewage	Manholes Adjacent to VFSA Admin Building	77,640 (est.)	14.5 (est.)	Tributary to Schuylkill River	None observed	Heavy Rain Event - Tropical Storm Isiasis	8/4/20

☐ **Other Permit Violations***

- ☐ Sample collection less frequent than required — Explain
- ☐ Sample type not in compliance with permit — Explain
- ☐ Violation of permit schedule — Explain
- ☐ Other — Explain
- ☐ Other — Explain

***If the space provided is not sufficient to record all information, please attach additional sheets.**

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Martin F. Goldberg Signature: Martin F Goldberg

Title: Operations Manager Date: 8/14/20

Attachment 1
VFSA Power Outage - Chronology of Major Events
August 4-6 2020

Date	Time	Activity at the Plant and Collection System
4 August 2020	1000	SSO estimated to have started at manholes on lane adjacent to VFSA Admin building.
4 August 2020	1200	SSO estimated to have started at manhole on Pothouse Rd adjacent to Pothouse Pump Station.
4 August 2020	1305	Power out on both sides of the treatment plant.
4 August 2020	1310	VFSA Contacts BSI and requests portable generator for Plant UV.
4 August 2020	1515	Temporary generator installed at Plant UV System
4 August 2020	1800	SSO on Pothouse Rd ends. Length of SSO estimated to be about 6.0 hours and 152,019 gallons.
5 August 2020	0030	SSO at manholes on lane adjacent to VFSA Admin building ends. Length of SSO estimated to be about 14.5 hours and 77,640 gallons.
5 August 2020	1200	Power restored to one supply source of the treatment plant. UV still on generator power.
6 August 2020	1250	Power restored to both plant sources. UV building on plant power.

Estimate of SSO from Pothouse PS 4 August 2020					
Data from Flow Report Mission System					
Overflow Event Hours 8/4/20	**French Creek Total Gallons Pumped**	**Pothouse Total Gallons Pumped**	***Whitehorse Total Gallons Pumped**	**Pothouse Required Pumped Gallons at 91% of Whitehorse**	**Estimated SSO for Pothouse Station in Gallons**
12:00	185,630	218,816	268,451		
13:00	189,282	222,429	281,118		
14:00	190,662	225,057	286,690		
15:00	190,672	225,057	283,510		
16:00	190,663	225,812	282,796		
17:00	190,409	224,111	286,540		
Sum Gallons Pumped (6 hours total)	1,137,318	1,341,282	1,689,105	1,537,086	***152,019***
Percentage of Whitehorse	67	79	100		(Equals Required Minus Actual Pumped)
July 2020 Total Flows Pumped (gallons)	18,910,760	22,326,394	24,475,573		
Percentage of Whitehorse Rate	77	**91**	100		
*** There was no SSO observed at the downstream Whitehorse Pump Station.**					

Estimate of SSO from VFSA Admin Lane 4-5 August 2020				
Manhole Closest to Perkiomen PS -Data from Visual Observations				
Overflow Event Hours 8/4/20-8/5/20	SSO Estimated Depth (Inches)	Estimated SSO Flow Based on Open Manhole (gpm)	Estimated SSO Flow Based on Open Manhole (MGD)	Estimated SSO Flow Total (gallons)
8/4/2020 10:00	1/8	28	0.04	1,680
8/4/2020 11:00	1/4	62	0.09	3,720
8/4/2020 12:00	1/2	160	0.23	9,600
8/4/2020 13:00	1/2	160	0.23	9,600
8/4/2020 14:00	1/2	160	0.23	9,600
8/4/2020 15:00	1/2	160	0.23	9,600
8/4/2020 16:00	1/2	160	0.23	9,600
8/4/2020 17:00	1/4	62	0.09	3,720
8/4/2020 18:00	1/4	62	0.09	3,720
8/4/2020 19:00	1/4	62	0.09	3,720
8/4/2020 20:00	1/4	62	0.09	3,720
8/4/2020 21:00	1/8	28	0.04	1,680
8/4/2020 22:00	1/8	28	0.04	1,680
8/4/2020 23:00	1/8	28	0.04	1,680
8/5/2020 0:00	1/8	28	0.04	1,680
8/5/2020 0:30	1/8	28	0.04	1,680
Sum Gallons	------	------	------	*76,680*

Estimate of SSO from VFSA Admin Lane 4-5 August 2020				
Manhole Closest to RR Tracks - Data from Visual Observations				
Overflow Event Hours 8/4/20-8/5/20	SSO Estimated Depth (Inches)	Estimated SSO Flow Based on Covered Manhole (gpm)	Estimated SSO Flow Based on Covered Manhole (MGD)	Estimated SSO Flow Total (gallons)
8/4/2020 10:00	1/4	1	0.001	60
8/4/2020 11:00	1/4	1	0.001	60
8/4/2020 12:00	1/4	1	0.001	60
8/4/2020 13:00	1/4	1	0.001	60
8/4/2020 14:00	1/4	1	0.001	60
8/4/2020 15:00	1/4	1	0.001	60
8/4/2020 16:00	1/4	1	0.001	60
8/4/2020 17:00	1/4	1	0.001	60
8/4/2020 18:00	1/4	1	0.001	60
8/4/2020 19:00	1/4	1	0.001	60
8/4/2020 20:00	1/4	1	0.001	60
8/4/2020 21:00	1/4	1	0.001	60
8/4/2020 22:00	1/4	1	0.001	60
8/4/2020 23:00	1/4	1	0.001	60
8/5/2020 0:00	1/4	1	0.001	60
8/5/2020 0:30	1/4	1	0.001	60
Sum Gallons	------	------	------	*960*

TOTAL SSO FLOW=	77,640

ESTIMATED SSO FLOW OUT OF MH WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

The formula used to develop Table 1 measures the maximum height of the water coming out of the maintenance manhole above the rim. The formula was taken from Hydraulics and its Application by A.H. Gibson (Constable & Co. Limited).

Partially Covered Manhole

Sometimes an SSO will occur that only lifts one side of the manhole cover. This is especially true of manholes where the cover is on an incline with the cover lifting on the downward side of the manhole. To estimate the volume of an SSO under these conditions, calculate the area (in square feet) from where the wastewater is escaping and the velocity (in feet per second) that the wastewater is normally traveling in the sewer at half the pipe depth. The velocity is estimated from visual observation with 2 feet/second or less being a small velocity, 4 to 5 feet/second being a medium velocity, and 7 feet/second or higher being a large velocity. Velocities in the sewer above 7 feet/second may be strong enough to blow the manhole cover off. Higher velocities also tend to raise the manhole lid higher. Next, multiply by the duration

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.67	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

VFSA MAJOR PUMP STATION FLOWS
VERSUS RAINFALL – SUMMARY AND GRAPHS

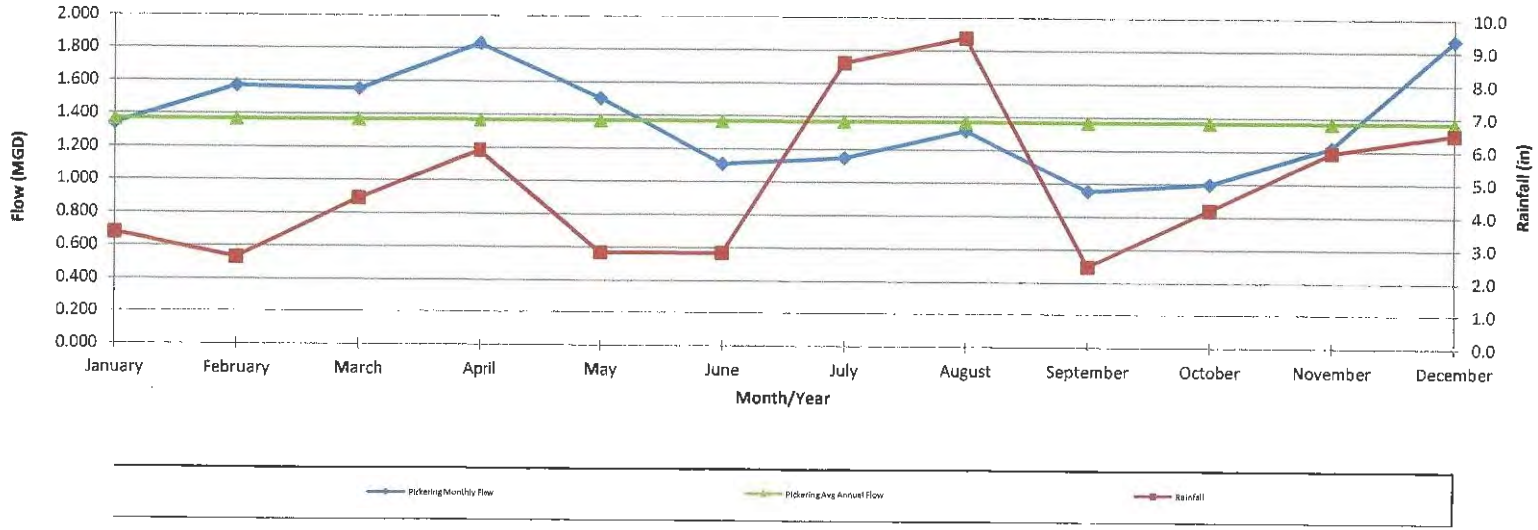
APPENDIX C

Pickering Pump Station
White Horse Pump Station
Pot House Pump Station
French Creek Pump Station

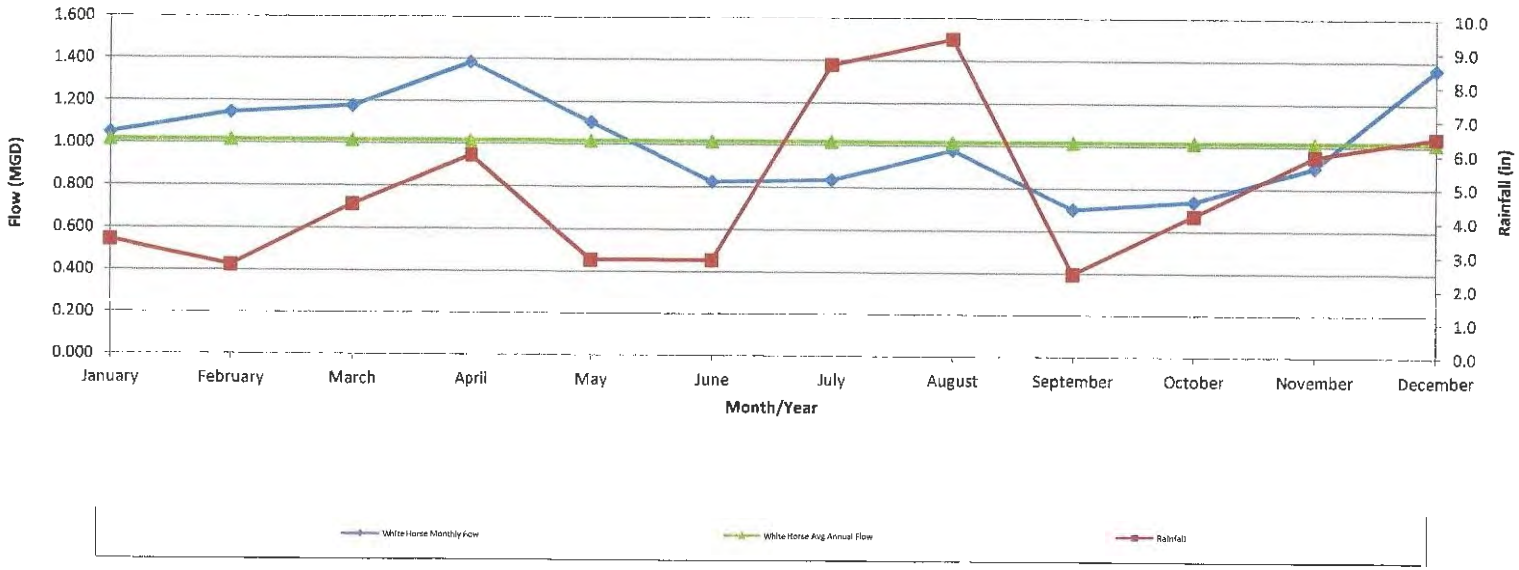
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY PUMP STATION FLOW

Year	Month	Monthly Flow at Major Pump Stations, MGD				
		Pickering	Whitehorse	Pot House	French Ck	Rainfall
2020	January	1.338	1.047	0.714	0.821	3.39
	February	1.568	1.143	0.969	0.811	2.65
	March	1.551	1.175	0.990	0.826	4.45
	April	1.830	1.383	1.150	0.960	5.92
	May	1.500	1.103	0.931	0.766	2.84
	June	1.108	0.824	0.724	0.597	2.84
	July	1.147	0.835	0.935	0.606	8.61
	August	1.315	0.978	0.823	0.701	9.38
	September	0.951	0.700	0.607	0.517	2.47
	October	0.997	0.738	0.640	0.553	4.19
	November	1.221	0.900	0.764	0.668	5.95
	December	1.869	1.363	1.121	0.951	6.50
Avg Annual Flow (MGD) =		**1.366**	**1.016**	**0.864**	**0.731**	

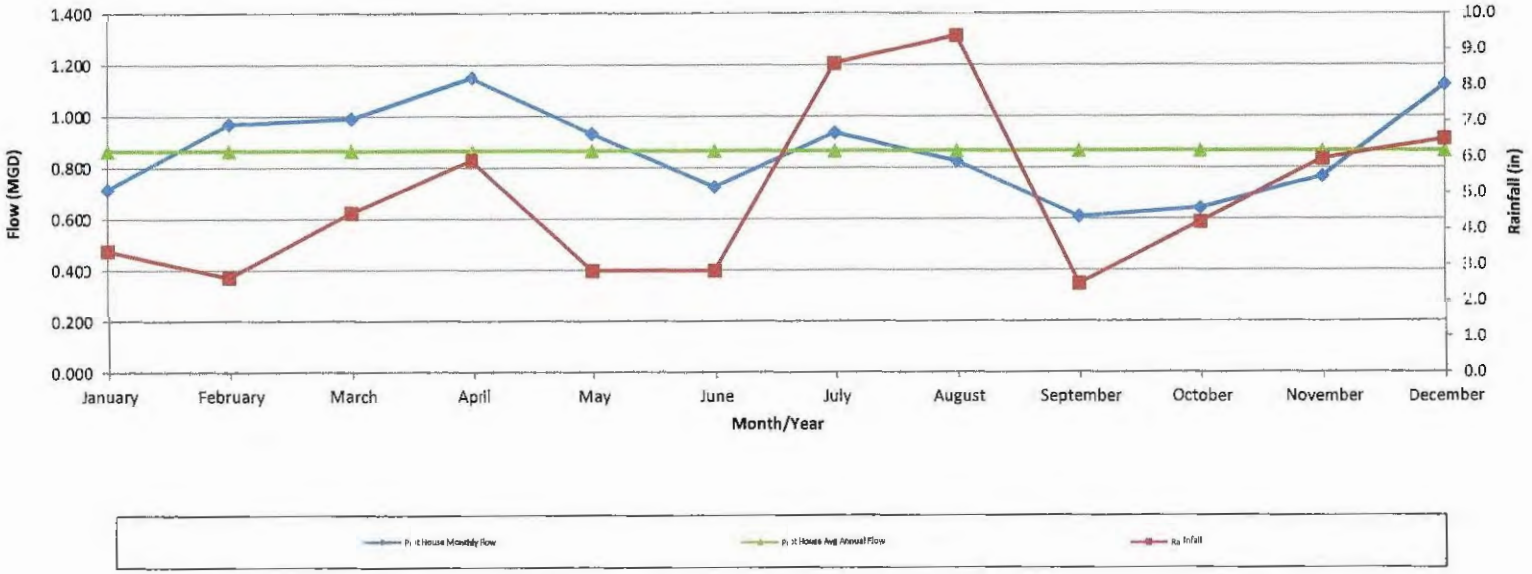
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM PICKERING PUMP STATION VERSUS RAINFALL



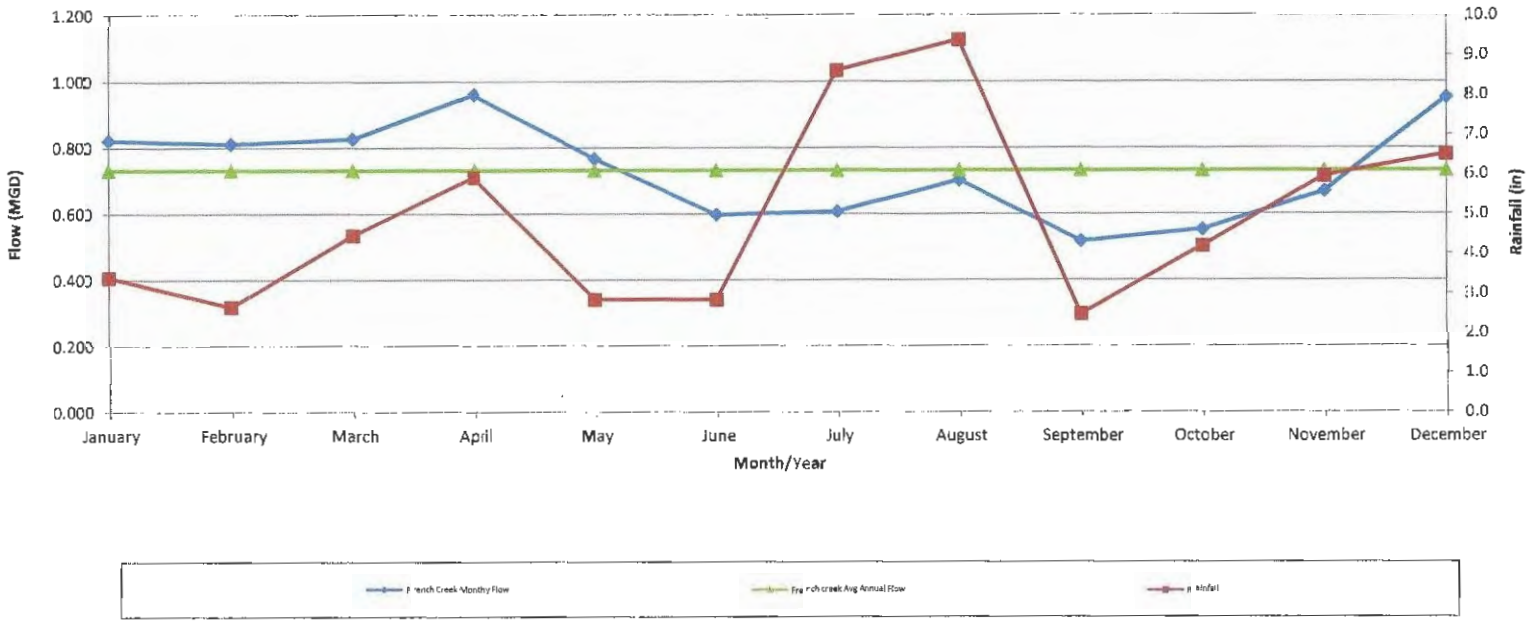
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM WHITE HORSE PUMP STATION VERSUS RAINFALL



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM POT HOUSE PUMP STATION VERSUS RAINFALL



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
MONTHLY FLOW FROM FRENCH CREEK PUMP STATION VERSUS RAINFALL



2020 VFSA CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
MEMBER MUNICIPALITIES REPORT

1 INCH PLUS RAINFALL VERSUS FLOW AT METERED PUMP STATIONS – SUMMARY AND GRAPHS

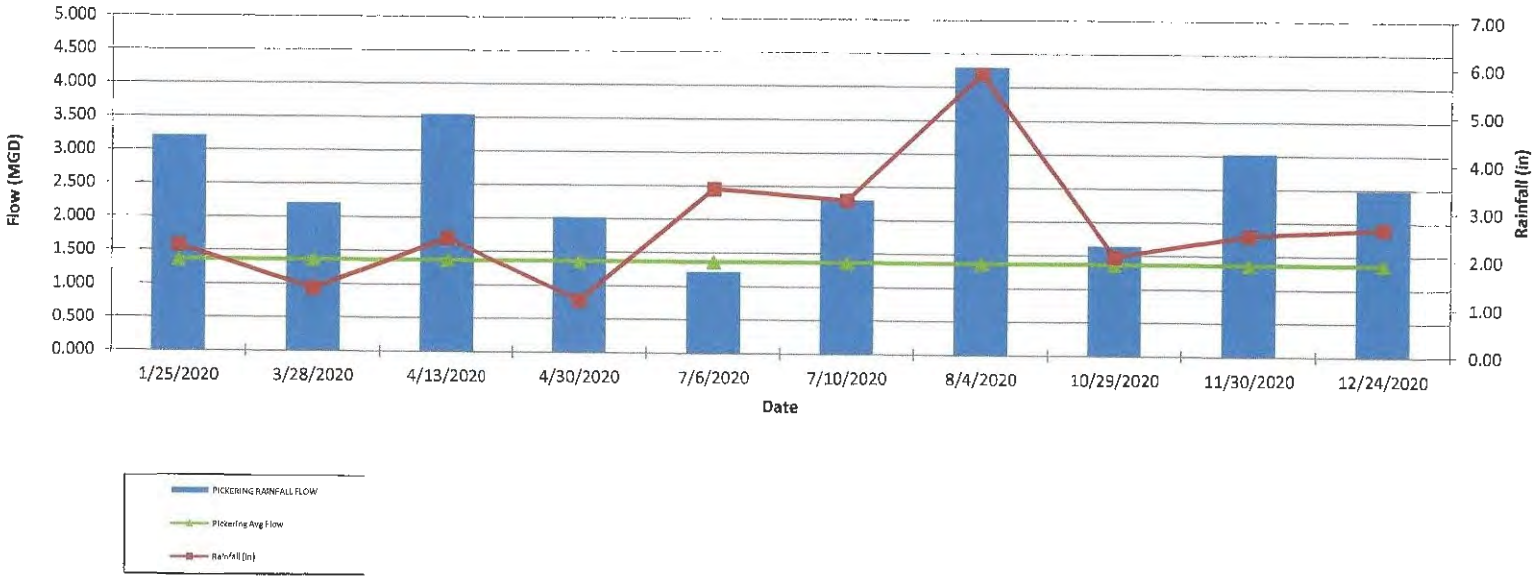
APPENDIX D

Pickering Pump Station
White Horse Pump Station
Pot House Pump Station
French Creek Pump Station
Charlestown Meadows Pump Station
Charlestown Pump Station
Kimberton Meadows Pump Station
Kimbel Drive Pump Station
Perkiomen Pump Station
Valley Creek Pump Station
Valley Forge Woods Pump Station

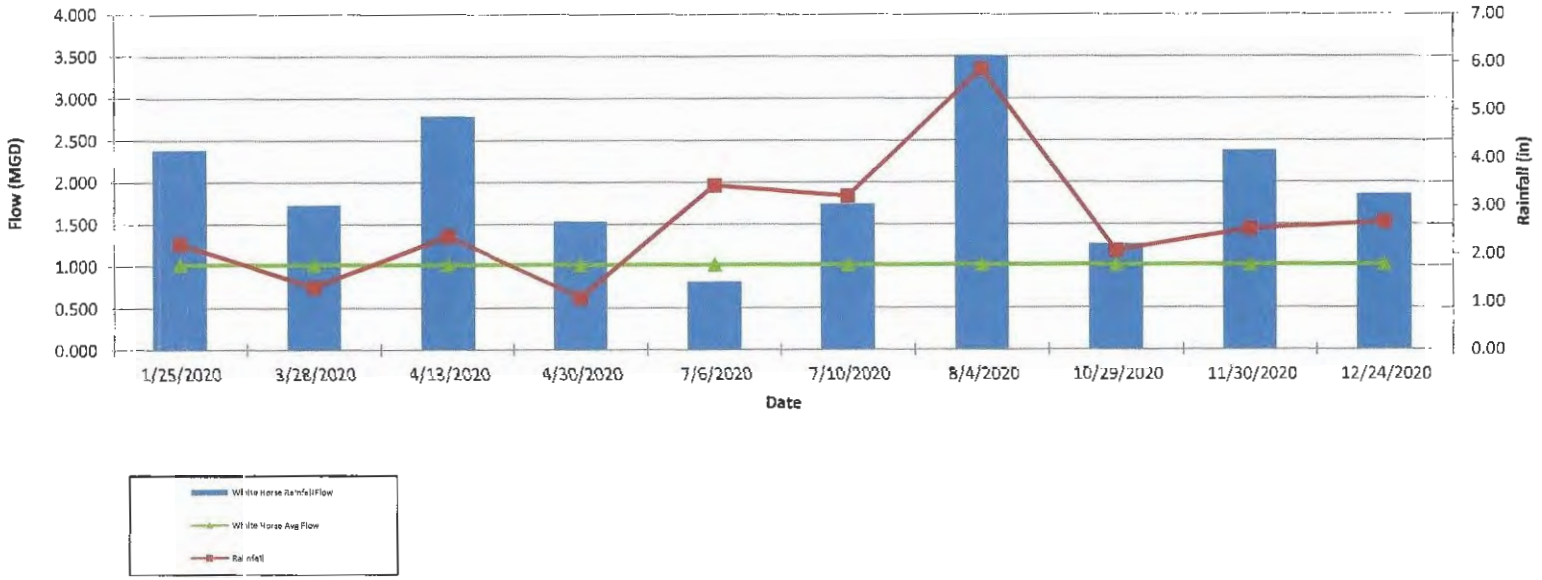
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW SUMMARY AT PUMP STATIONS

		Pickering PS Rainfall Flow		White Horse PS Rainfall Flow		Pot House PS Rainfall Flow		French Creek PS Rainfall Flow		Charlestown Meadows Rainfall Flow		Charlestown PS Rainfall Flow		Kimberton Meadows PS Rainfall Flow		Kimbel Drive PS Rainfall Flow		Perkiomen PS Rainfall Flow		Valley Creek PS Rainfall Flow		Valley Forge Woods PS Rainfall Flow	
Rain Date	Rainfall	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor	Peak (MGD)	Peaking Factor
1/25/2020	2.21	3.208	2.35	2.387	2.35	1.436	1.66	1.823	2.49	0.029	1.06	0.102	3.02	0.022	1.27	0.040	2.29	0.186	2.35	0.050	2.76	0.075	1.20
3/28/2020	1.31	2.205	1.61	1.729	1.70	1.413	1.64	1.185	1.62	0.032	1.16	0.062	1.84	0.022	1.29	0.029	1.65	0.117	1.47	0.027	1.49	0.077	1.23
4/13/2020	2.37	3.535	2.59	2.788	2.75	2.305	2.67	1.976	2.70	0.031	1.12	0.102	3.03	0.034	1.98	0.044	2.53	0.169	2.14	0.052	2.86	0.085	1.36
4/30/2020	1.09	2.016	1.48	1.534	1.51	1.251	1.45	1.050	1.44	0.029	1.04	0.055	1.64	0.020	1.17	0.024	1.38	0.102	1.28	0.024	1.33	0.075	1.20
7/6/2020	3.43	1.215	0.89	0.816	0.80	0.692	0.80	0.573	0.78	0.025	0.90	0.026	0.76	0.018	1.01	0.018	1.04	0.204	2.58	0.030	1.65	0.070	1.12
7/10/2020	3.21	2.295	1.68	1.740	1.71	1.444	1.67	1.238	1.69	0.036	1.31	0.060	1.77	0.021	1.18	0.037	2.12	0.201	2.54	0.053	2.93	0.082	1.30
8/4/2020	5.86	4.293	3.14	3.508	3.45	2.354	2.72	2.323	3.18	0.028	1.03	0.143	4.24	0.013	0.74	0.056	3.24	0.737	9.30	0.123	6.84	0.105	1.68
10/29/2020	2.07	1.643	1.20	1.263	1.24	1.069	1.24	0.935	1.28	0.031	1.12	0.033	0.97	0.020	1.14	0.029	1.68	0.098	1.24	0.033	1.80	0.069	1.10
11/30/2020	2.52	3.026	2.21	2.376	2.34	1.949	2.26	1.658	2.27	0.030	1.09	0.089	2.63	0.022	1.26	0.044	2.53	0.190	2.40	0.060	3.33	0.082	1.31
12/24/2020	2.66	2.479	1.81	1.854	1.83	1.499	1.74	1.250	1.71	0.031	1.14	0.066	1.96	0.022	1.26	0.034	1.99	0.200	2.52	0.039	2.15	0.090	1.44
Yearly Avg Flow (MGD) =		**1.366**		**1.016**		**0.864**		**0.731**		**0.027**		**0.034**		**0.017**		**0.017**		**0.079**		**0.018**		**0.063**	
High Peaking Factor =			**3.14**		**3.45**		**2.72**		**3.18**		**1.31**		**4.24**		**1.98**		**3.24**		**9.30**		**6.84**		**1.68**
Average Peaking Factor =			**1.90**		**1.97**		**1.78**		**1.92**		**1.10**		**2.19**		**1.23**		**2.05**		**2.78**		**2.71**		**1.29**

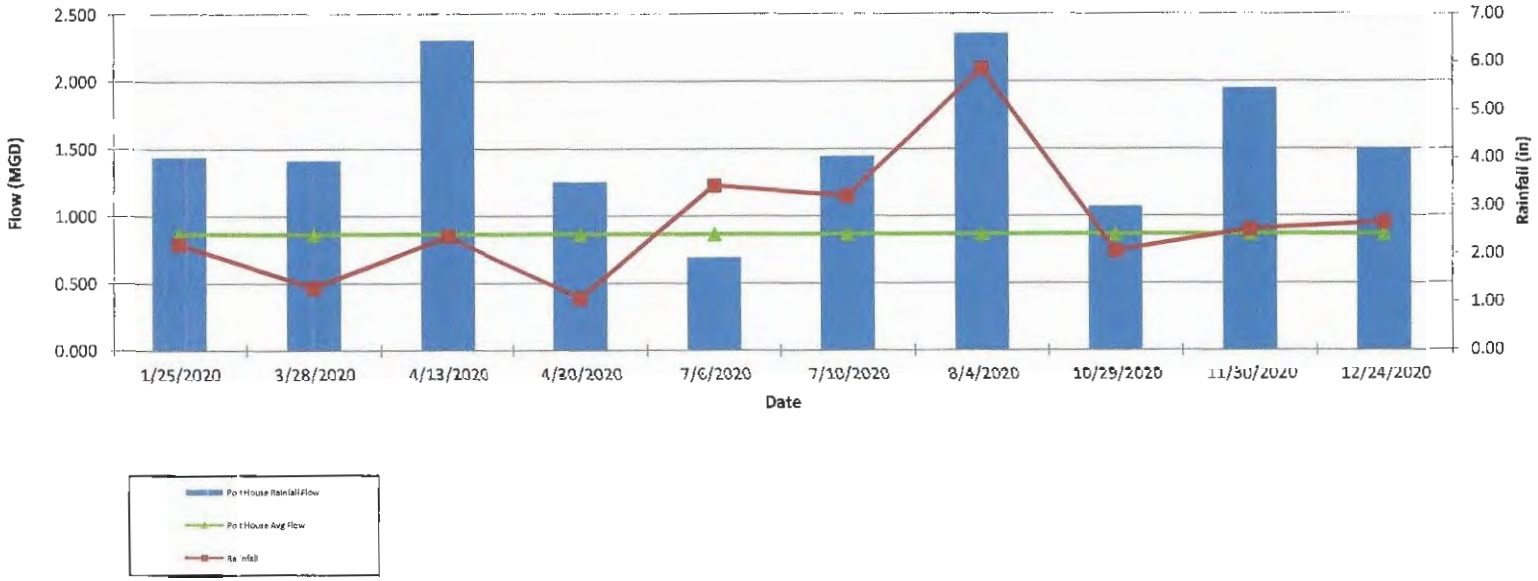
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR PICKERING PUMP STATION



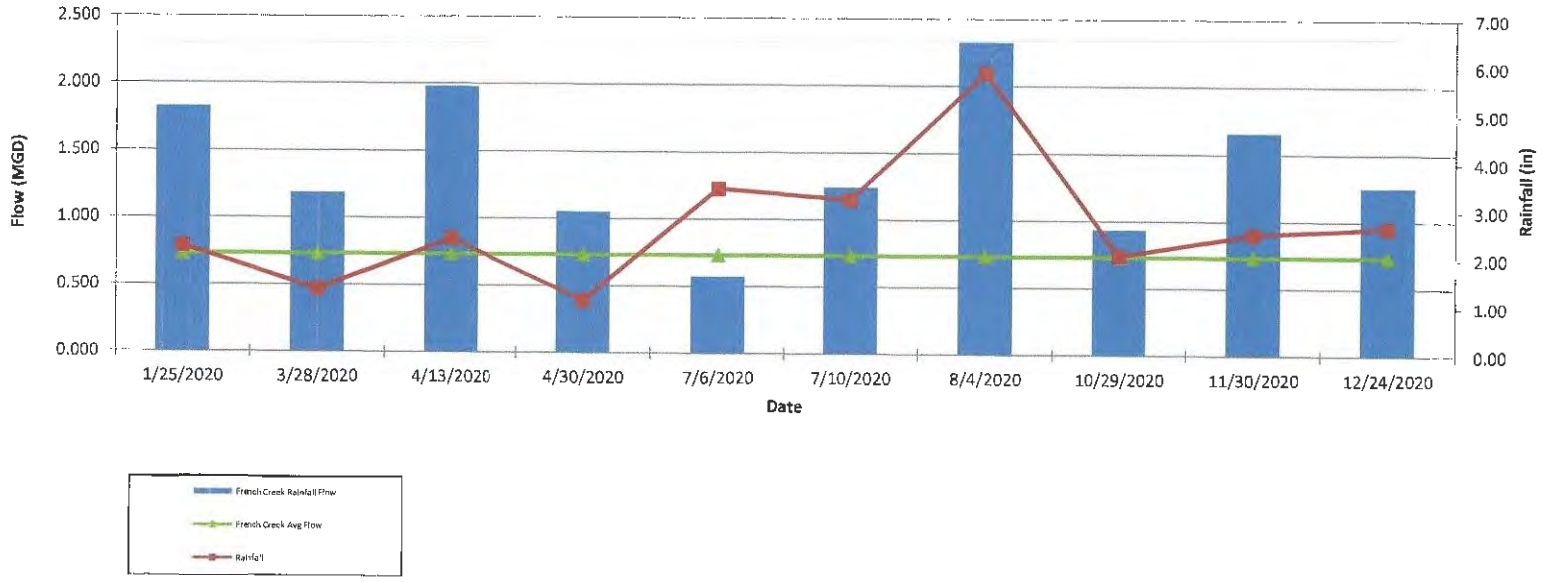
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR WHITE HORSE PUMP STATION



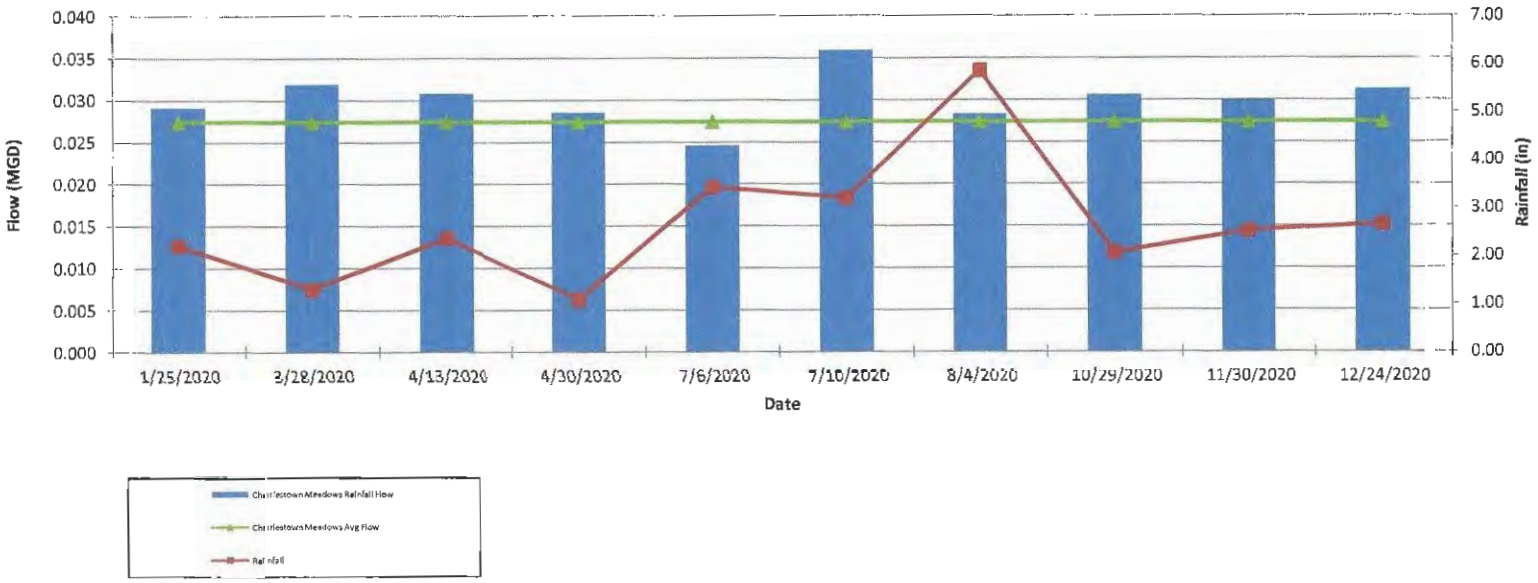
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR POT HOUSE PUMP STATION



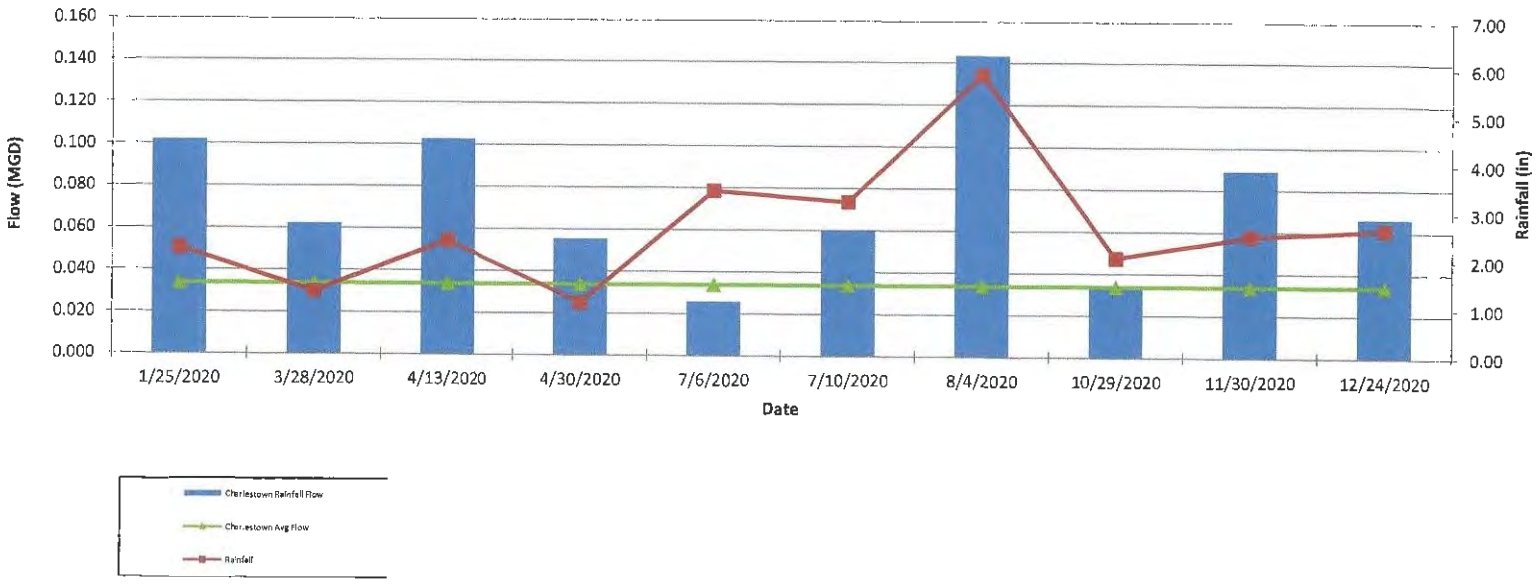
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR FRENCH CREEK PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR CHARLESTOWN MEADOWS PUMP STATION



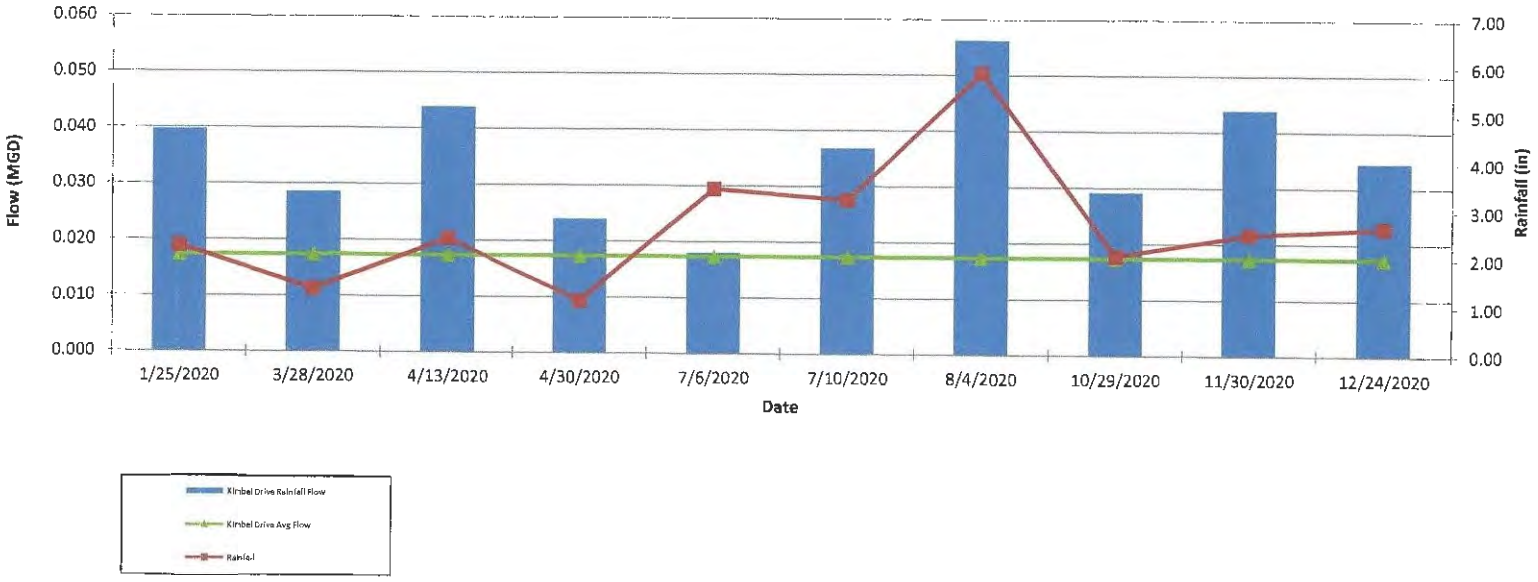
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR CHARLESTOWN PUMP STATION



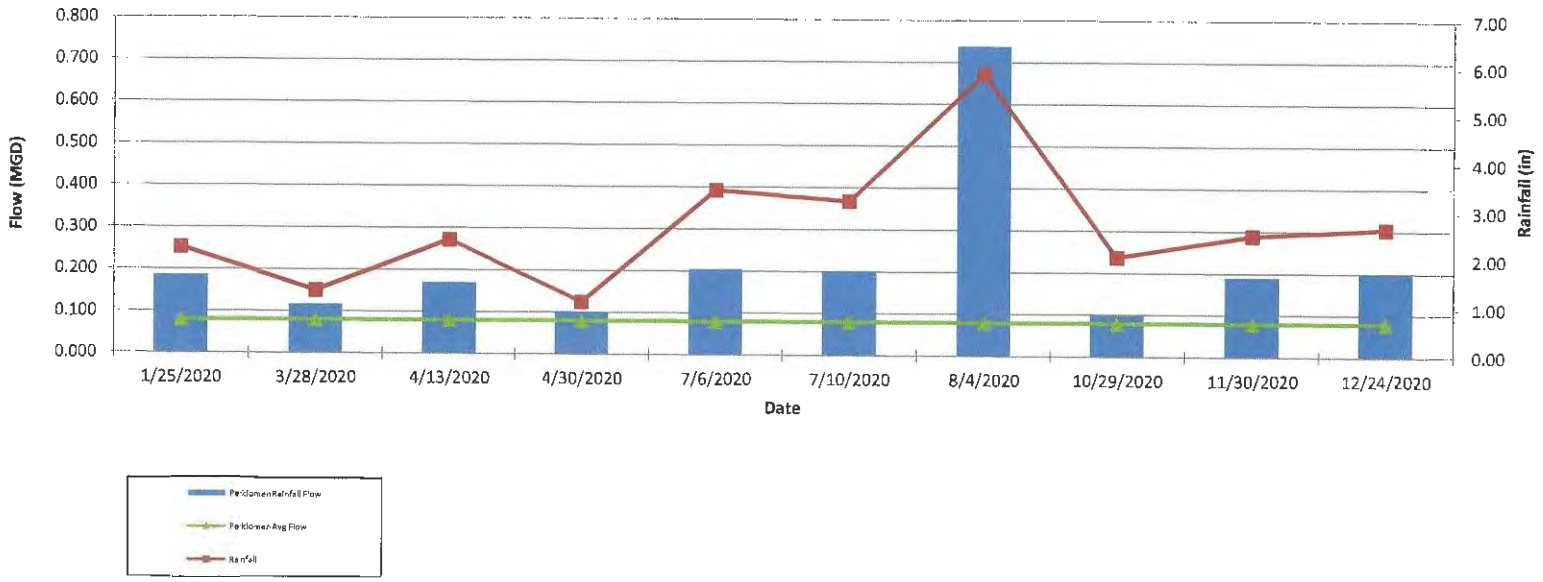
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR KIMBERTON MEADOWS PUMP STATION



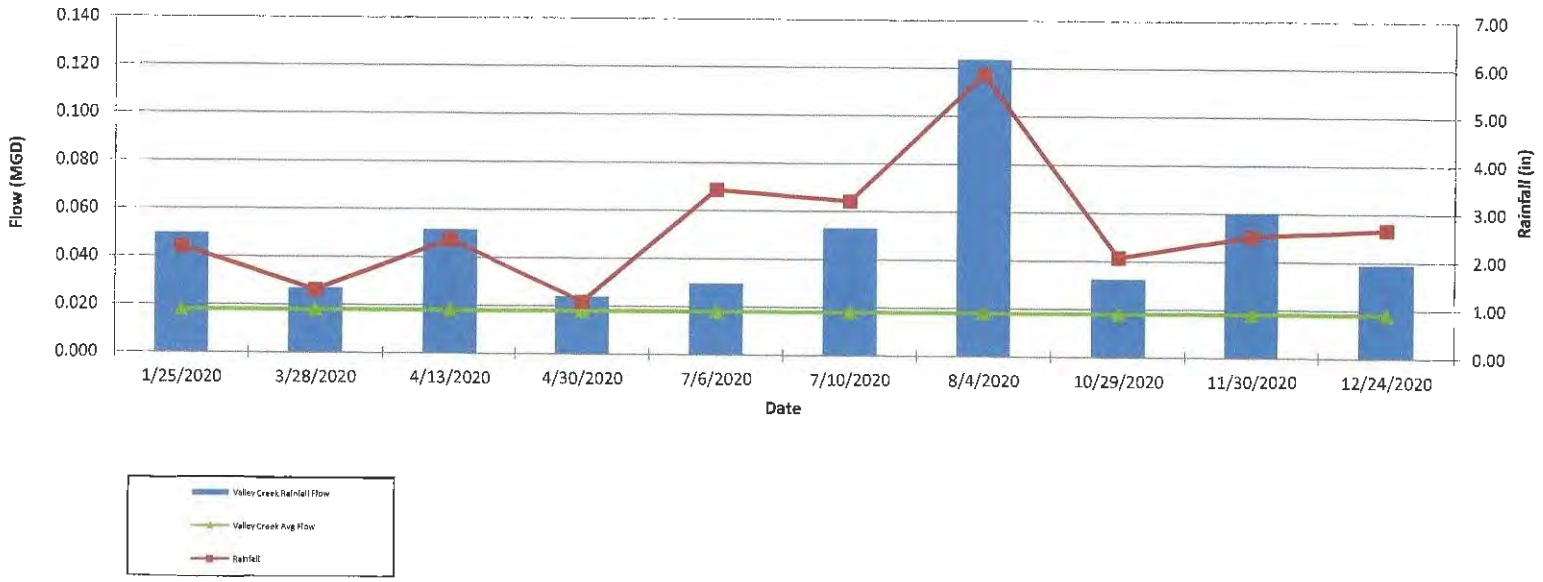
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR KIMBEL DRIVE PUMP STATION



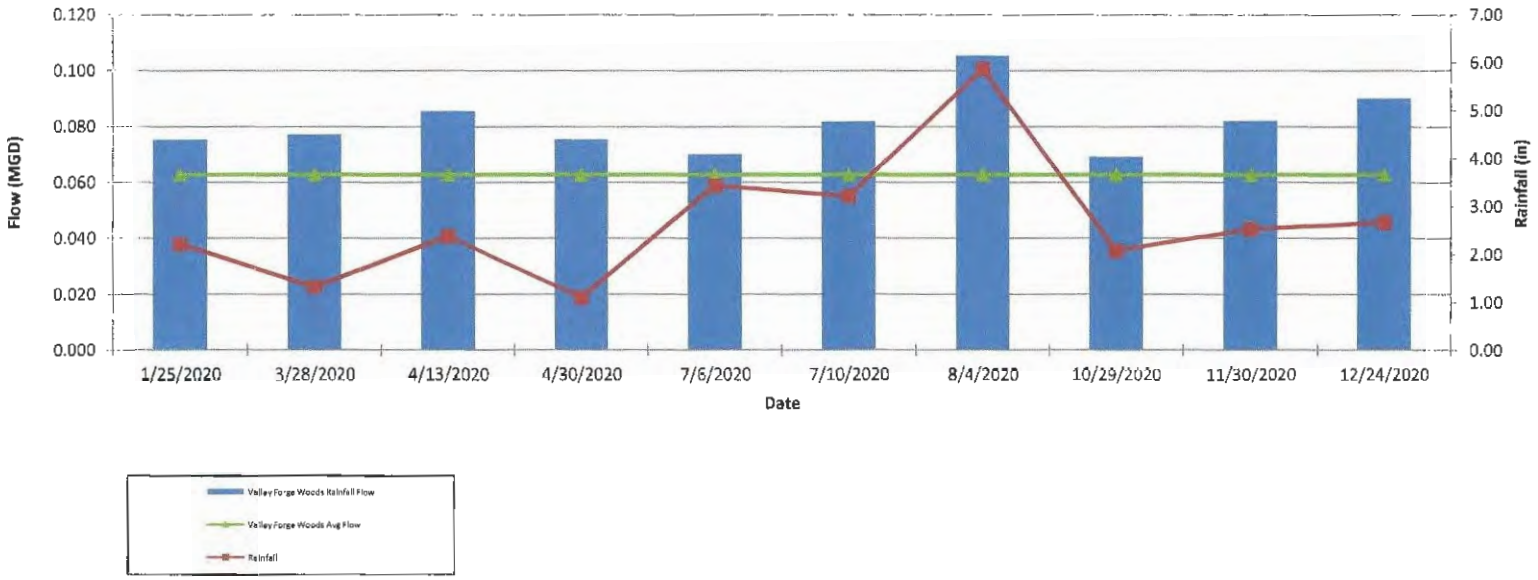
GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR PERKIOMEN PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR VALLEY CREEK PUMP STATION



GRAPH
VALLEY FORGE SEWER AUTHORITY
2020 ANNUAL CHAPTER 94 REPORT
1 INCH PLUS RAINFALL VERSUS FLOW FOR VALLEY FORGE WOODS PUMP STATION



Two Radnor Corporate Center
100 Matsonford Road, Ste 250
Radnor, PA 19087

T: 484.253.4700

March 2, 2021

Mr. Richard Taylor, Laboratory Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460 [153258]

Subject: Tredyffrin Township, Paoli Drainage Basin, 2020 Municipal Wasteload Management Annual Report

Dear Mr. Taylor:

Enclosed please find two copies of the above-referenced report for the calendar year 2020. This information is submitted on behalf of Tredyffrin Township for the Valley Forge Sewer Authority's (VFSA) information and use.

Please send a copy of the VFSA Chapter 94 report to Tredyffrin Township once completed.

If you have any questions, please do not hesitate to contact me either via phone at 443.223.7308 or email: Slockhart@brwncald.com. Thank you!

Very truly yours,

Brown and Caldwell

Susanne Lockhart, P.E.
Project Manager

cc: Stephen Burgo, P.E., Tredyffrin Township
Gabrielle Ignarri, Tredyffrin Township

Valley Forge Sewer Authority
2020 Municipal Wasteload Management Annual Report

Prepared for

Tredyffrin Township

Chester County, Pennsylvania

March 2, 2021

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**Tredyffrin Township**	Permit No.:	**PA**
Mailing Address:	**1100 Duportail Road**	Effective Date:	
City, State, Zip:	**Berwyn, PA 19312**	Expiration Date:	
Contact Person:	**Stephen Burgo, PE**	Renewal Due Date:	
Title:	**Township Engineer**	Municipality:	**Tredyffrin**
Phone:	**610-644-1400**	County:	**Chester**
Email:	**Sburgo @tredyffrin.org**	Consultant Name:	**Brown and Caldwell**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☐ DEP Chapter 94 Spreadsheet used (**Attachment**)
   ☒ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

   See Exhibit 1 for Hydraulic and Organic Loadings

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)

☒ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

See Exhibit 2 Sewer Extensions

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

See Exhibit 3 Program for Sewer System Monitoring, Maintenance and Repair

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments: See Exhibit 4 - Condition of the Sewer System

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations
☒ The collection system does contain pump stations (Number – **5**)
☒ Discussion of condition of each pump station attached (**Exhibit 5**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)
☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Stephen Burgo, PE	SBM
Name of Responsible Official	Signature
610-644-1400	3/3/2021
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Susanne Lockhart, PE	Susanne Lockhart
Name of Preparer	Signature
443-223-7308	**03/02/21**
Telephone No.	Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located and the name of the consultant (company name), if any, who assisted in the preparation of the form

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94 12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

Valley Forge Sewer Authority
2020 Municipal Wasteload Management Annual Report

Prepared for
Tredyffrin Township
Chester County, Pennsylvania
March 2, 2021

Brown AND Caldwell
Two Radnor Corporate Center
100 Matsonford Road, Ste 250
Radnor, PA 19087

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Exhibit 1. Hydraulic and Organic Loading

The total number of equivalent dwelling units (EDUs) connected to the Paoli sanitary sewer basin in 2020 was 7,318.6. These connected EDU's contributed 0.706 million gallons per day (MGD). The projected flows are found in Table 1-1.

Table 1-1. Valley Creek Trunk Sewer - Paoli Basin EDU Projections

Year	Additional Number of EDUs	Total Number of EDUs	Total MGD
Actual 2020[1]	389	7318.6	0.811
Projected 2021[2]	49	7367.6	0.824
Projected 2022[2]	191	7558.6	0.877
Projected 2023[2]	2	7560.6	0.877
Projected 2024[2]	0	7560.6	0.877
Projected 2025[2]	0	7560.6	0.877

1. Source is 2020 4th Quarter Flow Report from VFSA on Feb 19, 2021.

2. Estimated additional flows are based on EDUs of 275 gallons per day per EDU.

The increase in number of connections was based on Tredyffrin Township records of proposed developments.

The organic load projections are based on a 5-day biochemical oxygen demand (BOD_5) of 200 milligrams per liter (mg/L), which is used in the loading calculation of:

Total MGD per year x 200 mg/L BOD_5 x 8.34 pounds per gallon (lb/gallon) = X lbs/day

Table 1-1A. Valley Creek Trunk Sewer - Paoli Basin 5-year Hydraulic and Organic Loading Projections

YEAR	Projected Flow (MGD)	BOD_5 (mg/L)	BOD_5 (lbs/day)
2020	0.811	200	1,352
2021	0.824	200	1,375
2022	0.877	200	1,462
2023	0.877	200	1,463
2024	0.877	200	1,463
2025	0.877	200	1,463

Exhibit 2. Sanitary Sewer Extensions

Table 2-1 lists the 5-year projections for sewer connections/extensions within the Paoli drainage basin.

Table 2-1. Valley Creek Trunk Sewer - Paoli Basin Sewer Extensions							
Development/Extensions	TOTAL EDUs 2021 - 2025	2020	2021	2022	2023	2024	2025
Highgrove	5	1	1	2	2		
Station Square	0	153					
Howellville Road	24			24			
Sage Atwater	0	108					
Atwater 11A and 11B	18		18				
Lancaster Chestnut Assoc.	17		17				
341 Beechwood	2		2				
585 Berkshire	1		1				
598-600 Upper Gulph Road	0	2					
1237 Lancaster Ave	10		10				
Swedesford Plaza (ECHO Realty)	125	125		125			
1690 Russell Road Assisted Living	40			40			
TOTAL	242	389	49	191	2	0	0

Exhibit 3. Sewer System Monitoring and Maintenance

In 2020, Tredyffrin Township Department of Public Works had five full time staff including the Public Works Director who are dedicated to the operation and maintenance of the sanitary sewer collection system. Other departments within Tredyffrin Township may assist as needed. Tredyffrin Township subcontracts with Municipal Maintenance to perform the non-routine maintenance on the sewer pumping stations. Tredyffrin Township has performed extensive closed-circuit television (CCTV) inspection of the Township's sewer piping, hundreds of manhole inspections and has a flusher truck for removing blockages and other debris.

Exhibit 4. Condition of the Sewer System

The rehabilitation of the Wilson Road Force Main was completed in December 2016. In general, the system is in good condition with consistent maintenance activities being performed.

In December 2018, the Valley Creek Trunk Sewer System was sold to Aqua Resources, Inc. The assets included in the sale are: Valley Creek Trunk Sewer, Wilson Road Force Main and Wilson Road Pumping Station, Darby Road Pumping Station and Force Main, the Glenn Avenue Force Main and the Lancaster Avenue Force Main. Glenn Avenue Pumping Station and Lancaster Avenue Pumping Station were not included in the sale.

Exhibit 5. Wastewater Pumping Stations

Within the Township's Sewer Collection System, there are five pumping stations that contribute flow to the Valley Forge Sewer Authority Pawling Road Wastewater Treatment Plant. Darby Road and Wilson Road Pumping Stations were included in the VCTS sale.

Table 5-1. Valley Creek Trunk Sewer - Paoli Basin Pumping Stations					
Pumping Station	Capacity (MGD)	2020 Average Flow (MGD)	2020 Peak Flow[1] (MGD)	Projected 2022 Average Flow[2] (MGD)	Projected 2022 Peak Flow[1] (MGD)
Lancaster Avenue	0.300	0.014	0.034	0.040	0.101
Glenn Avenue	0.313	0.036	0.090	0.063	0.157
Chesterbrook	0.909	0.088	0.220	0.115	0.287
Summerhill	0.144	0.006	0.016	0.033	0.082
Atwater/Church Road	0.274	0.023	0.059	0.050	0.125

1. Peak flow = 2.5x average daily flow.

2. Projected flow based on Table 1A 5 Year Flow Projections incorporating planned development.

3. Flow calculations are based on pump run time.

Exhibit 6. Flow Meter Calibration Documentation

The Township maintains multiple flow meters within their system. Attached is the documentation that regular calibration of these meters occurs as part of ongoing maintenance of the system.

Attachment A:
Exhibit 6: Flow Meter Calibration Documentation

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5157

CERTIFICATE OF CALIBRATION

CUSTOMER: TredyFFRin Township

LOCATION: Pump Stations

LOOP OR SYSTEM ID: Remote Pump Station

CALIBRATED RANGE: _____ TOTALIZER MULTIPLIER _____

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 60 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	HACH	FL-9000	N/A	Ultrasonic
2	Sparling	Tiger Mag	M141394509	Magmeter
3	Badger	M2000	0716200	Magmeter
4	Thermo Dynamic	SX-40		Doppler

REMARKS: _____

CALIBRATION DATE: 10 / 26 / 20 TECHNICIAN: George Buch

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022
Empire	Calibrated Rule	403	
Endress Hauser	Verificator Field Check		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

CUSTOMER SERVICE REPORT # SR 37948

ALLIED CONTROL SERVICES, INC.

611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.
REFERENCE NO.

BILL TO

Tredyffrin Township

CONTACT:

CUSTOMER SITE/LOCATION

Richards Rd. Boxwood PS
Pine Hill Glen Ave
Church Rd
Somerhill PS

CONTACT:

REQUESTED SERVICES

Semi-Annual Flow meter Calibrations

CODES

DEM	PMP	PMB
QRT	COB	CON
WAR	SAL	ENG
OTHER:		

WORK PERFORMED

Completed Semi-Annual Flow meter calibrations. Found all meters operating correct. Richards Rd metering chamber was dirty. Removed grit from flume. Need to set spray chamber. All other stations were clean and meters in good working order.

EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT

[A] PARTS TOTAL ➤	
LABOR (REG.) 8 HRS@ /HR	
LABOR (O.T.) HRS@ /HR	
LUMP SUM:	
[B] LABOR TOTAL ➤	
EXPENSES (TOLLS, ROOMS, MEALS)	
MILEAGE 60 MILES@ /MILE	
AIR AND/OR CAR RENTAL	
[C] EXPENSE TOTAL ➤	
[D] SHIPPING CHARGES ➤	
TOTAL [A] + [B] + [C] + [D] ➤	
SALES TAX OR TAX ID # ( )	
OTHER:	
FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)

CERTIFICATIONS REQUIRED: YES ☐ NO ☐ NIST: YES ☐ NO ☐

FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP ☐

SERVICE REPRESENTATIVE	CUSTOMER SIGNATURE	MO.	DAY	YR.
[signature]	X [signature]	10	26	20

CUSTOMER COPY

CUSTOMER SERVICE REPORT # SR53340

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.	
REFERENCE NO.	

BILL TO
Reddy FF Rin Twp

CONTACT:

CUSTOMER SITE/LOCATION
Richards Rd
Pine Hill
Church
Somerdale

CONTACT:

REQUESTED SERVICES
Quarterly Flow meter calibrations

CODES
DEM PMP PMB
QRT COB CON
WAR SAL ENG
OTHER:

WORK PERFORMED
Completed inspection & calibration of all Flow meters at pump stations and open channel pits.

Installed temporary Hach FL-900 at Richards Rd. Checked actual flow to Hach display. No problems found

Performed calibration to Somerdale and Church PS's. no problems found

Boxwood sparling flowmeter has defective display. Unable to calibrate due to display. meter is no longer reparable by factory. Meter is working - parts may be found on E-Bay?

EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT

[A] PARTS TOTAL ➤	
LABOR (REG.) ½ HRS@ /HR	
LABOR (O.T.) HRS@ /HR	
LUMP SUM:	
[B] LABOR TOTAL ➤	
EXPENSES (TOLLS, ROOMS, MEALS)	
MILEAGE 85 MILES@ /MILE	
AIR AND/OR CAR RENTAL	
[C] EXPENSE TOTAL ➤	
[D] SHIPPING CHARGES ➤	
TOTAL [A] + [B] + [C] + [D] ➤	
SALES TAX OR TAX ID # ( )	
OTHER:	
FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)
CERTIFICATIONS REQUIRED: YES ☑ NO ☐ NIST: YES ☐ NO ☐
FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP

SERVICE REPRESENTATIVE	CUSTOMER SIGNATURE	MO.	DAY	YR.
		3	30	20

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5314

CERTIFICATE OF CALIBRATION

CUSTOMER: Treadyffrin Township

LOCATION: Pump Stations

LOOP OR SYSTEM ID: Sewage Flow

CALIBRATED RANGE: _____ TOTALIZER MULTIPLIER _____

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of _____deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Hach	FL900	N/A	Ultrasonic
2	Sigma	950	41	Ultrasonic
3	Badger	M2000	0716100	Magnetic Signal Converter
4	Endress Hauser	[illegible]	N/A	Magnetic Signal Converter

REMARKS: _____

CALIBRATION DATE: 3 / 30 / 2020 TECHNICIAN: [illegible]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	Dum	787	
[illegible]	Calibrator	1703.[illegible]	
Endress Hauser	Calibrator Field Check		[illegible]

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

ALLIED CONTROL SERVICES, INC.

511 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

INVOICE

Invoice Number: 314225
Invoice Date: 03/30/2020

Sold To:
Township of Tredyffrin
1100 Duportail Road
Berwyn, PA 19312

Ship To: DEM-00-1027
Richards Road, Pine Hill, Church,
Boxwood and Somerdale

Customer ID	Customer PO	Payment Terms	
TRED01	D. Fitzgerald	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	3/30/2020	4/29/2020

Qty	P/N	Description	Unit Price	Extension
2.50	DEMAND ITM	Richards Road on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #533 40 for more details.	124.00	310.00
1.00	DEMAND ITM	Pine Hill on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	124.00
1.00	DEMAND ITM	Church Road on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #533 40for more details.	124.00	124.00
1.00	DEMAND ITM	Somerdale on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	124.00
2.50	DEMAND ITM	Boxwood on-site semi annual calibration services as provided by G. Buchser on 3/30/2020. Please refer to CSR #53340 for more details.	124.00	310.00
25.00	MILEAGE	Total Mileage Charge	0.88	22.00

Semi annual
Calibration

Subtotal	$1,014.00
Sales Tax	0.00
Total Invoice Amount	1,014.00
Payment/Credit Applied	0.00
TOTAL	$1,014.00

Check/Credit Memo No.

CUSTOMER SERVICE REPORT

SR53340

314225

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.

REFERENCE NO.

BILL TO

Reddy FFRin Twp

CUSTOMER SITE/LOCATION

Richards Rd
Pine Hill
Church
Somerdale

CONTACT:

CONTACT:

REQUESTED SERVICES

dem 101027
259003

Quarterly Flow meter calibrations

CODES: (DEM) PMP PMB / QRT COB CON / WAR SAL ENG / OTHER:

WORK PERFORMED

Completed inspection & calibration of all Flow meters at pump stations and open channel pits.

Installed temporary HACH FL-900 at Richards Rd. Checked actual flow to Hach display. No problems

Performed verification to Somerdale and Church Rd P.S. no problems found

Boxwood sparling magmeter has defective display. Unable to calibrate due to display. meter is no longer repairable by factory. Meter is working - Parts may be found on E-Bay?

EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT
	[A] PARTS TOTAL ➤	
8	LABOR (REG.) HRS@ 12.4 /HR	992.00
	LABOR (O.T.) HRS@ /HR	
	LUMP SUM:	
	[B] LABOR TOTAL ➤	
	EXPENSES (TOLLS, ROOMS, MEALS)	
25	MILEAGE MILES@ .88 /MILE	22.00
	AIR AND/OR CAR RENTAL	
	[C] EXPENSE TOTAL ➤	
	[D] SHIPPING CHARGES ➤	
	TOTAL [A] + [B] + [C] + [D] ➤	
	SALES TAX OR TAX ID # ( )	
	OTHER:	
	FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)

CERTIFICATIONS REQUIRED: YES ☑ NO ☐ NIST: YES ☐ NO ☐

FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP

SERVICE REPRESENTATIVE

CUSTOMER SIGNATURE

WILLISTOWN TOWNSHIP
MUNICIPAL WASTELOAD MANAGEMENT REPORT
VALLEY FORGE SEWER AUTHORITY
DRAINAGE AREA
CALENDAR YEAR 2020

MARCH 2021

PREPARED FOR:

WILLISTOWN TOWNSHIP
688 SUGARTOWN ROAD
MALVERN, PA 19355

SALLY SLOOK, TOWNSHIP MANAGER

PREPARED BY:

CARROLL ENGINEERING CORPORATION
949 EASTON ROAD
WARRINGTON, PA 18976

WILLIAM N. MALIN, P.E., VICE PRESIDENT

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WASTEWATER FACILITIES PLAN

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PLANS

WASTEWATER FACILITIES PLAN

SECTION 1
INTRODUCTION

Pursuant to Pennsylvania Chapter 94 Municipal Wasteload Management regulations and requirements, Willistown Township has prepared this 2020 Municipal Wasteload Management Annual Report for the Valley Forge Sewer Authority (VFSA) service area.

The Valley Forge Sewer Authority service area covers the northern one-third of the Township adjacent to Tredyffrin Township and Malvern Borough and generally east of Sugartown Road to the Easttown Township border. In addition, there is a small portion along the East Goshen Township Boundary that straddles Paoli Pike. Wastewater in the VFSA service area is conveyed via the Valley Creek Trunk Sewer (VCTS) to VFSA for treatment. In addition to collecting and conveying wastewater in Willistown Township, flows from East Whiteland and Malvern Borough are conveyed (wheeled flow) through Willistown to the VCTS and VFSA. The Valley Forge Sewer Authority service area is shown on the Wastewater Facilities Plan.

The Valley Forge Sewer Authority service area includes approximately 20 miles of 8" through 18" gravity sewers and 9 miles of pressure sewers. There are four municipal owned and one privately owned sewage pump stations in the VFSA service area. The private pump station is part of the Dovecote development and will be dedicated to the Township.

Wastewater from the VFSA service area enters Tredyffrin and Easttown Townships at five locations identified on the Wastewater Facilities Plan:

- Flow from Tredyffrin Township Drainage Area 1 is metered at the Cedar Hollow flow meter located on Cedar Hollow Road just north of Jacqueline Drive. Approximately 97% of all Willistown Township flow to VFSA flows through the Cedar Hollow meter.

- Seven un-metered EDU's on Central Avenue in Tredyffrin Township Drainage Area 2 connect to Tredyffrin Township's sewer system.

- Fifty-six EDU's on Plank Avenue, Paoli Pike, Richmond Drive, Wistar Road and Cobblestone Drive in Tredyffrin Township Drainage Area 3 connect directly to Tredyffrin Township's sewer system.

- Flow from Easttown Township Drainage Area 1 is metered at the Pheasant Run flow meter located in Pheasant Run Drive.

- One EDU on South Valley Road in Easttown Township Drainage Area 2 connects directly to Easttown Township's sewer system.

SECTION 2
HYDRAULIC LOADING

Willistown Township is allocated 1,438,000 gallons per day (GPD) of capacity in VFSA's treatment plant. In 2020, Willistown conveyed a monthly average daily flow of 1,305,107 GPD to VFSA. Currently, Willistown is using 90.8% of their allocated capacity. Flows conveyed to VSFA is summarized in Table No. 1.

The monthly average daily flow in 2020 decreased by approximately10% (141,727 GPD). The flow reduction is attributed to the completion of sewer system repairs. Willistown's long term (January 2015 through December 2020) monthly average daily flow is 1,227,965 GPD.

In 2020, one new EDU was connected in the VFSA service area. Projected flows for the new connections for the period 2021 through 2025 are shown in Table No. 2. Flows are projected to increase by 11,000 GPD in the next 5-years.

SECTION 3
CONDITION OF THE SEWER SYSTEM

Willistown's sewer system dates to the 1970's. Older portions of the system primarily consist of vitrified clay or asbestos cement pipe (VCP & ACP). New portions are PVC pipe. In 2014, the gravity sewer system was televised by a third-party contractor. In 2015 sewer defects and needed repairs were catalogued. Construction drawings for sewer repairs are being prepared. The previously identified emergency sewer repairs were completed between August 2018 and February 2019. Eight-hundred thirty feet of sewer and 6 manholes were replaced. In 2019, an additional 555' and 5 manholes were replaced.

SECTION 4
SEWAGE PUMPING STATIONS

There are four municipal owned and one privately owned pump stations in the VFSA service area. Pump Stations Nos. 1, 2, 4, and the privately-owned Dovecote Pump Station pump flow to Pump Station No. 3. Pump Station No. 3 pumps flow to the gravity sewer system tributary to the Cedar Hollow flow meter. The pump stations are shown on the Wastewater Facilities Plan.

Pump station flows are summarized as follows:

1. PUMP STATION No. 1:

Design Capacity:	288,000 GPD
Current 5-year Maximum Flow:	98,294 GPD
Projected 2-year Maximum Flow:	98,294 GPD

2. PUMP STATION No. 2:

Design Capacity:	720,000 GPD
Current 5-year Maximum Flow:	446,209 GPD
Projected 2-year Maximum Flow:	446,209 GPD

3. PUMP STATION No. 3:

Design Capacity:	2,880,000 GPD
Current 5-year Maximum Flow:	910,313 GPD
Projected 2-year Maximum Flow:	910,863 GPD

Current and projected pump station flows include flow from Pump Station Nos. 1, 2, 4 & Dovecote.

4. PUMP STATION No. 4:

Design Capacity:	288,000 GPD
Current 5-year Maximum Flow:	65,828 GPD
Projected 2-year Maximum Flow:	65,828 GPD

5. DOVECOTE PUMP STATION:

Pump station capacity and flow data is not currently available. There will be no additional flow in the next 2-years.

SECTION 5
INDUSTRIAL WASTES

Currently, there are no industrial users in the VFSA service area, nor are any planned in the future.

Table No. 1
Willistown Township
Valley Forge Sewer Authority Service Area
2020 Monthly Flow Summary

	Metered Flow								Un-Metered Flow							
	Metered Flows			Wheeled Flows												
Month	Cedar Hollow Flow (GPD)	Pheasant Run Flow (GPD)	Total Flow (GPD)	Woodview Flow (GPD)	Tidewater Flow (GPD)	Malvern Prep Flow (GPD)	Total Flow GPD	Net Metered Flow (GPD)	Cedar Hollow Flow (MGD)	Flow Analysis z-scale	Flow Analysis Corres. Flow	Peaking Factor ADF= 1.052	Total Un-metered EDU's	Base EDU Flow 275 Gal/EDU (GPD)	Corrected Un-metered Flow (GPD)	Total Willistown Flow (GPD)
January	1,174,735	96,014	1,270,749	6,888	9,503	8,810	25,201	1,245,548	1.175	0.322	1.127	1.042	73	20,075	20,921	1,266,469
February	1,234,623	73,089	1,307,713	6,818	10,241	8,810	25,869	1,281,844	1.235	0.533	1.214	1.123	73	20,075	22,541	1,304,385
March	1,224,793	81,871	1,306,664	7,197	10,135	8,810	26,142	1,280,522	1.225	0.499	1.193	1.103	73	20,075	22,149	1,302,671
April	1,458,294	91,861	1,550,155	7,947	10,977	7,014	25,938	1,524,217	1.458	1.240	1.506	1.393	73	20,075	27,957	1,552,174
May	1,370,957	95,685	1,466,642	7,768	10,658	7,014	25,440	1,441,201	1.371	0.978	1.406	1.301	73	20,075	26,112	1,467,314
June	1,221,635	91,040	1,312,675	7,920	9,745	7,014	24,679	1,287,996	1.222	0.488	1.192	1.102	73	20,075	22,127	1,310,123
July	1,148,937	85,604	1,234,541	7,970	12,139	12,287	32,396	1,202,145	1.149	0.227	1.106	1.023	73	20,075	20,534	1,222,679
August	1,036,251	71,068	1,107,318	8,648	12,139	12,287	33,074	1,074,244	1.036	-0.211	1.008	0.932	73	20,075	18,717	1,092,962
September	1,260,503	86,381	1,346,884	10,477	12,673	12,287	35,437	1,311,448	1.261	0.621	1.254	1.160	73	20,075	23,279	1,334,727
October	995,847	86,381	1,082,228	9,734	13,542	8,717	31,993	1,050,236	0.996	-0.380	0.974	0.901	73	20,075	18,080	1,068,316
November	1,129,241	86,381	1,215,622	13,162	12,663	8,717	34,542	1,181,080	1.129	0.154	1.094	1.011	73	20,075	20,305	1,201,386
December	1,452,196	86,381	1,538,577	7,600	11,926	8,717	28,243	1,510,334	1.452	1.222	1.495	1.382	73	20,075	27,749	1,538,084
Average																1,305,107

Table No. 2
Willistown Township
5-year Flow Projections

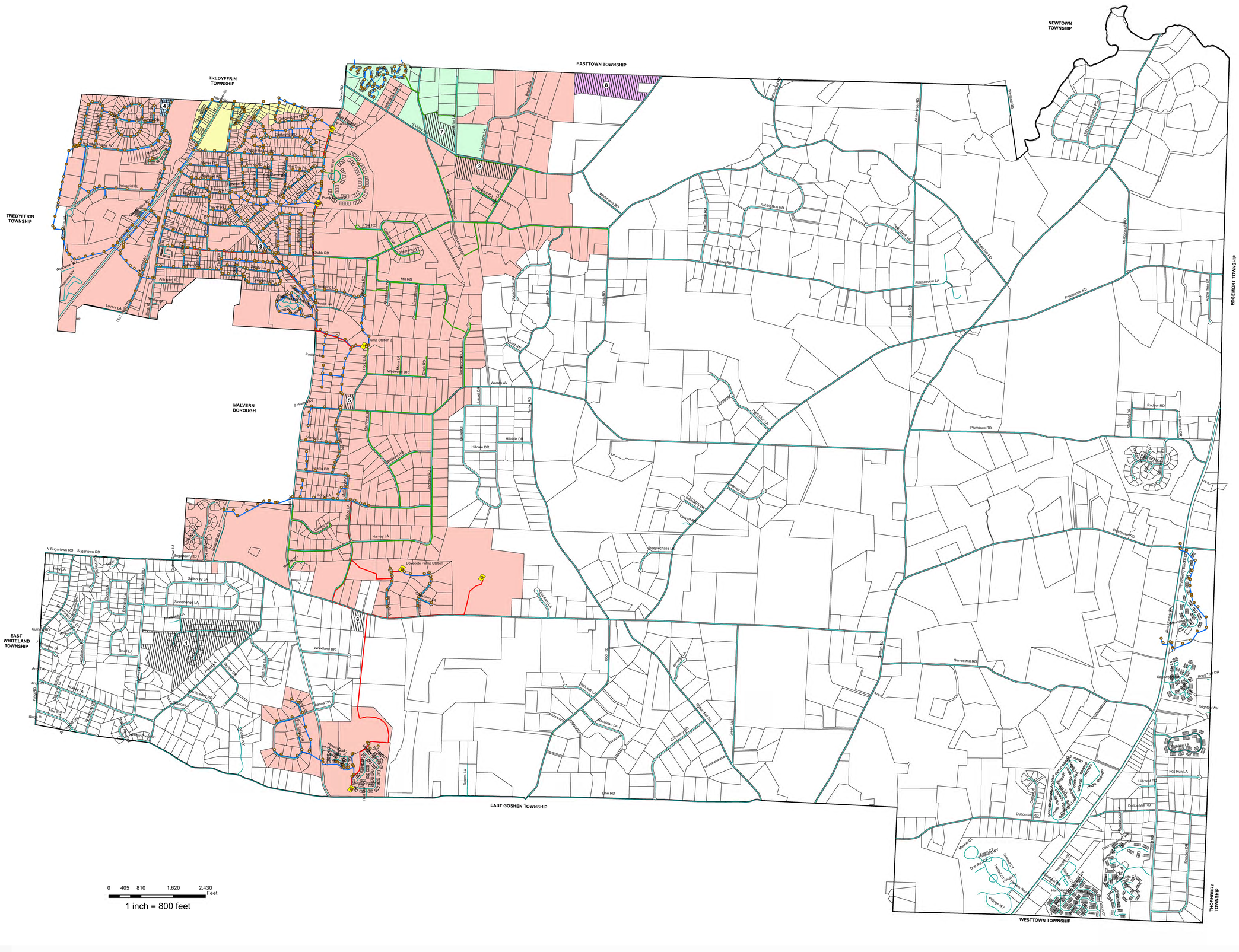
Project Name	Status	Projected EDU's	Projected Connections				
			2021	2022	2023	2024	2025
Troutbeck Farm	Preliminary	36		12	12	12	
59 Grubb Road	Preliminary	1					
107 Central Avenue	Preliminary	1					
1 Greenbriar Lane	Preliminary	4					
2291 South Valley Road	Preliminary	4	1	1	1	1	
Projected Annual EDU's			1	13	13	13	0
Projected Annual Flow @275 gallons per EDU (GPD)			275	3,575	3,575	3,575	0
Projected Cumulative EDU's			1	14	27	40	40
Projected Cumulative flow @275 gallons per EDU (GPD)			275	3,850	7,425	11,000	11,000
Existing Average Daily Flow January 2016 - December 2020 (GPD)			1,227,956	1,227,956	1,227,956	1,227,956	1,227,956
Projected Average Daily Flow (GPD)			1,228,231	1,231,806	1,235,381	1,238,956	1,238,956

Legend

Drainage Areas

- Tredyffrin Township 1
- Tredyffrin Township 2
- TredyffrinTownship 3
- Easttown Township 1
- Easttown Township 2
- Pressure Sewer
- Gravity
- Force Main
- Manholes
- Pump Stations

Map Identifier	Project Name	Status	Projected EDU's
1	Troutbeck Farm	Preliminary	38
3	59 Grubb Road	Preliminary	1
4	107 Central Avenue	Preliminary	1
7	1 Greenbriar Lane	Preliminary	4
8	2291 South Valley Road	Preliminary	4



AQUA RESOURCES, INC.

VALLEY CREEK TRUNK SEWER

SANITARY SEWER COLLECTION SYSTEM

CHESTER COUNTY

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

FOR CALENDAR YEAR 2020

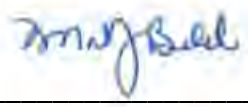
Prepared By:
Aqua Resources, Inc.
762 West Lancaster Avenue
Bryn Mawr, PA 19010

Aqua Resources, Inc.
762 West Lancaster Avenue
Bryn Mawr, PA 19010

Valley Creek Trunk Sewer
Sanitary Sewer Collection System
Chester County

This Chapter 94 Report for calendar year 2020 has been prepared by Aqua Resources, Inc. for the Valley Creek Trunk Sewer Sanitary Sewer Collection System in Chester County.

Respectfully Submitted,



Mark J. Bubel, P.E.
Project Engineer III - Wastewater
Aqua Resources, Inc.



Kyle Roberts
Manager, Wastewater Operations
Aqua Resources, Inc.

Aqua Resources, Inc.
Valley Creek Trunk Sewer
Sanitary Sewer Collection System
Chester County

Chapter 94 Municipal Wasteload Management Annual Report 2020

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1. INTRODUCTION

In December 2018, Aqua Resources, Inc. (Aqua) acquired the Valley Creek Trunk Sewer (VCTS). The assets included are: Valley Creek Trunk Sewer (VCTS), Wilson Road Force Main (WRFM) and Wilson Road Pumping Station (WRPS), Darby Road Pumping Station (DRPS) and Force Main. The facilities included in this Chapter 94 document are those assets included in the 2018 system sale.

2. SEWER EXTENSIONS

There were no sewer extensions of the VCTS in 2020 and there are no proposed sewer extensions within the next five years. Partner municipalities will be submitting their own Chapter 94 reports to Valley Forge Sewer Authority (VFSA) with detailed information on their proposed sewer connections/extensions. Aqua will be requesting a copy of these Chapter 94 reports to monitor flow and connections into the VCTS. Projected flows within the VCTS are based on the 2017 Act 537 Supplement for the Wilson Road Force Main as shown in **Table 2**.

3. SEWER SYSTEM MONITORING, MAINTENANCE, AND REPAIR

Routine maintenance and monitoring of the sewer system was conducted in 2020. There were no major repairs required during the 2020 operating year. There are two flow meters that are utilized for flow monitoring. One meter is located at the DRPS and the other is located at the WRPS. The WRPS is critical because that is the final flow monitoring location within the VCTS sewer shed prior to entering the WRFM and finally the VFSA Pawling Road Plant for treatment.

In 2020, Aqua began working with Brown and Caldwell to develop a hydraulic model of the VCTS system in order to make more informed capacity evaluations. This model is currently being used for capacity evaluations for Act 537 Sewage Facility Planning Modules.

4. CONDITION OF THE SEWER

The rehabilitation of the WRFM was completed in December 2016. No SSO occurred in the VCTS system in 2020. In general, the system is in good condition with consistent maintenance activities being performed.

5. SEWAGE PUMPING STATIONS

Within the VCTS System, there are two pumping stations that contribute flow to the VFSA Pawling Road Wastewater Treatment Plant. Those two stations are Darby Road and Wilson Road Pumping Stations. **Table 1** presents the Permitted Capacity, Present Flow, and the 2-Year Projected Flow for each Pump Station. **Table 2** shows the flow projections for each pump station for the next five years. And, **Table 3** shows the monthly flow data for both pump stations for 2019 and 2020.

Wilson Road Pump Station

The Wilson Road Pump Station has three (3) pump and a design capacity of 14,000 GPM. This pump station coveys all flow from the VCTS to the VFSA WWTP. Based on the 2020 flow, the pump station is not hydraulically overloaded, and it's not projected to be overloaded within the next 2 years.

Pump station influent is divided between two channels, each housing a high-flow sewage grinder. In 2020, one of the grinders failed and was subsequently replaced. During grinder down time, influent channels could be isolated, and flow was sent through a single channel. A temporary secondary backup generator and an accompanying temporary switchgear were also installed in 2020 which allowed for upgrade of the existing backup generator. A generator control panel was also installed to allow operations staff to toggle between generators and utility power. Planned future upgrades include the replacement of the temporary switchgear and generator with permanent fixtures as well as an upgraded PLC.

Darby Road Pump Station

The Darby Road Pump Station has two (2) pumps and a design capacity of 700 GPM. Based on 2020 flows, the pump station is not hydraulically overloaded, and it's not projected to be overloaded within the next 2 years. Additionally, there are no major upgrades anticipated at this time.

6. INDUSTRIAL WASTES

Industrial wastes are managed by the VFSA as part of their Industrial Pretreatment Program.

7. CORRECTIVE ACTION PLAN

No Corrective Action Plan is warranted for the collection system and pump stations.

8. METER CALIBRATION REPORTS

Aqua maintains meters at the Darby Road Pump Station and Wilson Road Pump Station. These flow meters are that regularly calibrated, and **Appendix A** contains the meter calibration reports for 2020.

Table 1: Pump Station Present/Projected Flows								
Pump Station	Pump Station Capacity[1]		Present Flows			2-Year Projected Flows		
	Design Capacity (MGD)	Design Capacity (GPM)	Annual Average Flow (MGD)	Max Month Flow (MGD)	Peak Hourly Flow (GPM)[2]	Annual Average Flow (MGD)[3]	Max Month Flow (MGD)[4]	Peak Hourly Flow (GPM)[2]
Wilson Road Pump Station	20.16	14,000	5.34	6.46	8,525	5.70	7.05	9,102
Darby Road Pump Station	1.008	700	0.307	0.382	534	0.328	0.416	570

Notes:

1. Design capacities according to WQM permit No. 1571407 T-1.
2. Peak Hourly Flow was calculated using a peaking factor of 2.3 for the Wilson Road Pump Station and 2.5 for the Darby Road Pump Station
3. See Table 2 for future flow projections.
4. See Table 3 for Max Month to Annual Average Flow Ratio calculation.

Table 2: Flow Projections				
	Wilson Road Pump Station		Darby Road Pump Station	
	Actual/Projected Flow (MGD)	Projected Increase in Flow (MDG)[2]	Actual/Projected Flow (MGD)	Projected Increase in Flow (MDG)[3]
2020 [1]	5.34		0.31	
2021	5.52	0.1807	0.32	0.010
2022	5.70	0.1807	0.33	0.010
2023	5.88	0.1807	0.34	0.010
2024	6.06	0.1807	0.35	0.010
2025	6.24	0.1807	0.36	0.010

Notes:

1. Actual flows from 2020, see table 3
2. Projected flow based on Act 537 linear projection of 0.1807 MGD per increase for the Wilson Road PS
3. Projected flow increase per year for the Darby Road PS is 5.76% of the projection for the Wilson Road PS. This percentage is the 2020 Darby Rd PS flow divided by the 2020 Wilson Rd PS flows.

Table 3: Pump Station Monthly Flow Data				
Month	Wilson Road Pump Station[1]		Darby Road Pump Station[1]	
	2019	2020	2019	2020
Jan	7,538,146	5,175,664	408,958	276,552
Feb	6,868,244	5,441,979	327,043	303,039
Mar	7,336,703	5,300,408	364,532	312,694
Apr	6,104,184	6,147,236	356,717	335,622
May	6,496,086	5,643,927	330,483	311,481
Jun	6,527,558	5,104,476	291,010	319,267
Jul	6,357,218	4,986,043	407,281	288,523
Aug	5,147,039	5,425,162	285,055	320,132
Sep	4,727,014	4,632,663	277,897	277,897
Oct	4,562,321	4,608,627	233,268	258,235
Nov	4,639,715	5,125,251	241,267	303,520
Dec	5,177,742	6,457,927	277,897	381,552
Annual Average Flow	5,956,831	5,337,447	316,784	307,376
Max Month	7,538,146	6,457,927	408,958	381,552
Avg to Max Ratio	1.27	1.21	1.29	1.24
Average Max Month to Annual Avg Flow Ratio:		1.24		1.27

Notes:

1. Monthly flow data for the Wilson Rd PS and Darby Rd PS were not provided in previous Chapter 94 Reports and Aqua does not have monthly flow records for these pump station prior to taking ownership in December 2018.

Appendix A: Flow Meter Calibration Reports

1. Flow Meter Calibration Report for Darby Road Pump Station: 3/23/2020
2. Flow Meter Calibration Report for Darby Road Pump Station: 6/11/2020
3. Flow Meter Calibration Report for Darby Road Pump Station: 9/10/2020
4. Flow Meter Calibration Report for Wilson Road Pump Station: 3/23/2020
5. Flow Meter Calibration Report for Wilson Road Pump Station: 6/11/2020
6. Flow Meter Calibration Report for Wilson Road Pump Station: 9/10/2020

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5310

CERTIFICATE OF CALIBRATION

CUSTOMER: KBX Gordon

LOCATION: Darby, BD Pump Station

LOOP OR SYSTEM ID Pumped Flow

CALIBRATED RANGE: 0-1400 GPM TOTALIZER MULTIPLIER X100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 50 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3573	9803-27485-1-2	Magnetic Signal Converter
2	Precision Digital	PD6200	1103-0032163	Totalizer

REMARKS:

CALIBRATION DATE: 3/23/2020 TECHNICIAN: George Bruckner

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5151

CERTIFICATE OF CALIBRATION

CUSTOMER: KBX Golden

LOCATION: DARBY RD

LOOP OR SYSTEM ID: Pump Station Flow

CALIBRATED RANGE: 0-1400 GPM TOTALIZER MULTIPLIER X100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of 70 deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3570	NA	Signal Converter
1	Precision Digital	PDG57	NA	Digital Display / Totalizer

REMARKS: No Problems Found

CALIBRATION DATE: 6 / 11 / 2010 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	770102
Brooks	Calibrator		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844
Fax 215-699-9030

Certificate # 5153

CERTIFICATE OF CALIBRATION

CUSTOMER: K B & Golden

LOCATION: DARBY RD PUMP STATION

LOOP OR SYSTEM ID: EFFluent

CALIBRATED RANGE: 0-1400 GPM TOTALIZER MULTIPLIER: 100

The following equipment has been accurately calibrated under ambient conditions at an ambient temperature of _____ deg. F, in accordance with the manufacturers documented procedures and specifications.

ITEM	MANUFACTURER	MODEL #	SERIAL #	DESCRIPTION
1	Brooks	3570	9802-2985-12	Magnetic
2	Precision Digital	PDG57		Digital Totalizer

REMARKS: no problems found

CALIBRATION DATE: 9 / 10 / 88 TECHNICIAN: [signature]

TEST EQUIPMENT USED:

MANUFACTURER	DESCRIPTION	MODEL	SERIAL #
Fluke	DVM	787	7701022
Brooks	Calibrator		

WHITE – ORIGINAL YELLOW – CUSTOMER COPY

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbx golden
Address	kennett square pa
Phone	610 444 3551
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson rd p.s.

Results:

Verification file name or No.		Wilson rd
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	**Current Output**			**Frequency Output**		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.799mA	-0.11%	0.500kHz	0.498kHz	-0.34%
1.0m/s	5.600mA	5.597mA	-0.16%	1.000kHz	0.998kHz	-0.22%
3.0m/s	8.800mA	8.800mA	0.00%	3.000kHz	3.001kHz	0.04%

Current Output 4-20mA Frequency Output 0-10kHz

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		17320.57588481 US MG
Totalizer 1 value after test		17320.57588481 US MG
Totalizer 2 value before test		15718.35019534 US MG
Totalizer 2 value after test		15718.35019534 US MG
Operating time in days		3265

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.03.24 George Buchser

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbr golden
Address	
	mike
Phone	484 431 4616
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson rd

Results:

Verification file name or No.		wilson rd
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	**Current Output**			**Frequency Output**		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.797mA	-0.40%	0.500kHz	0.498kHz	-0.46%
1.0m/s	5.600mA	5.599mA	-0.04%	1.000kHz	1.000kHz	-0.01%
3.0m/s	8.800mA	8.798mA	-0.04%	3.000kHz	3.001kHz	0.03%
	Current Output 4-20mA			Frequency Output 0-10kHz		

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		17780.15706141 US MG
Totalizer 1 value after test		17780.15706141 US MG
Totalizer 2 value before test		16177.93137193 US MG
Totalizer 2 value after test		16177.93137193 US MG
Operating time in days		3342

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.06.11 george buchser

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	kbr golden
Address	
	mike
Phone	484 431 4616
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	046401U400
Transmitter Code No.	7ME691
Transmitter Serial No.	091030U400
Location	wilson 9-2020

Results:

Verification file name or No.		Wilson rd 9-2020
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	Current Output			Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.796mA	-0.44%	0.500kHz	0.498kHz	-0.45%
1.0m/s	5.600mA	5.599mA	-0.06%	1.000kHz	1.000kHz	0.00%
3.0m/s	8.800mA	8.798mA	-0.05%	3.000kHz	3.001kHz	0.05%

Current Output 4-20mA Frequency Output 0-10kHz

Transmitter Settings:

Basic	Qmax.	20000.0 US G /min
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	OFF
Output	Current Output	ON (4-20mA)
	Time Constant	10.0 Sec.
	Relay Output	Error Level
	Digital Output	OFF
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.0 m³/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		18247.08856119 US MG
Totalizer 1 value after test		18247.08856119 US MG
Totalizer 2 value before test		16644.86392841 US MG
Totalizer 2 value after test		16644.86392841 US MG
Operating time in days		3432

Sensor Details:

Size	DN 600 24 IN
Cal. Factor	323.94500732
Correction Factor	1.0
Excitation Freq.	1.875Hz

Verificator Details (083F5061)

Serial No.	N1J6120001
Device No.	170020
Software Version	1.40
PC-Software Version	5.01
Cal. date	2018.07.02
ReCal. date	2019.07.02

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2020.09.10 george buchser

EXHIBIT E3

CHAPTER 94 REPORT FOR 2020
EAST GOSHEN TOWNSHIP

Chapter 94
Municipal Wasteload Management
Annual Report

2020
East Goshen Municipal Authority
RIDLEY CREEK SEWAGE TREATMENT PLANT
Chester County, Pennsylvania

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EGMAU20003

2020 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
East Goshen Municipal Authority
Chester County, Pennsylvania

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A	2020 Connections
B	5-Year Projected Connections
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E	Township Code 188: Sewers (Regarding Industrial Waste)
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FIGURES

Figure 1	Chapter 94 Township Wastewater Facilities
Drawing G-1	RCSTP Upgrade & Expansion Process Flow Diagram

2020 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
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Chester County, Pennsylvania

1.0 INTRODUCTION

This report is provided to comply with the Title 25, Chapter 94 Municipal Wasteload Management regulations of the Pennsylvania Department of Environmental Protection (PADEP) concerning wastewater facilities. The subject of this report is the Ridley Creek Sewage System and Treatment Plant, owned by East Goshen Municipal Authority (Authority). The Authority assigns East Goshen Township (Township) to run the sewer system and Ridley Creek Sewage Treatment Plant (RCSTP). The Authority contracted with Big Fish Environmental Inc. to operate the RCSTP in 2020.

The Authority provides wastewater service to a majority of East Goshen Township and a limited number of residents in neighboring East Whiteland, West Goshen, West Whiteland, and Willistown Townships, Chester County. The remaining public wastewater customers have their wastewater treated by West Goshen Township (West Goshen Service Area) or Westtown Township (Westtown Service Area) through intermunicipal agreements with East Goshen.

The areas served by the Ridley Creek, West Goshen, and Westtown Sewage Treatment Plants are depicted below, with the Ridley Creek Service Area shaded:

Summary of Drainage Basins

Drainage Basins, Meter Pits (M.P.) and Pump Stations (P.S.)					*Discharge Point*
RIDLEY CREEK SERVICE AREA					
			Hershey's Mill P.S. →		Ridley Creek STP
			Hunt Country P.S. →		
WEST GOSHEN SERVICE AREA					
Barkway P.S. →		Hicks M.P. →		Reservoir Rd M.P. →	Westtown Way M.P. West Goshen Township
Wilson Dr. M.P. (from West Goshen) →					
Paoli Pike M.P. (from West Goshen) →					
		Ellis Ln. M.P. (from West Goshen) →			
			Ashbridge P.S. →		
WESTTOWN SERVICE AREA (Summit House and Cider Knoll condominiums) →					Westtown Township

1.1 Treatment Plant Description

The Ridley Creek Sewage Treatment Plant (RCSTP) provides wastewater treatment for the portion of East Goshen Township in the Ridley Creek Watershed, 24 homes in East Whiteland (the Ridley Creek Service Area), and 19 homes in Willistown Township (the Ridley Creek Service Area). The plant was upgraded and expanded from an extended aeration treatment system to a sequencing batch reactor (SBR) treatment system in 2010. The plant has been in continuous operation since 1985.

The permit for the RCSTP (NPDES Permit #0050504) was issued in September of 2006 as a two-phase permit. During the first phase, the planning and construction of the plant's

expansion and upgrade, the permit allowed for an annual average flow of 0.40 million gallons per day (MGD). After the completion of construction and final acceptance, which occurred in 2011, the plant's permitted annual average flow increased to 0.75 MGD. The current permit for the RCSTP (NPDES Permit #0050504) became effective on March 1, 2012. A NPDES Permit Renewal was issued on April 18, 2017.

The upgraded RCSTP is an SBR activated sludge facility consisting of an influent grinder and screen, 2,100 gpm (3.0 MGD) influent pumping station, four tank SBR system, post equalization tanks, effluent filtration, and UV disinfection. Solids treatment consists of the previously mentioned influent grinder and screen; aerobic sludge digestion; and a dewatering centrifuge with polymer addition. Screenings and dewatered sludge are hauled off-site for disposal at a properly permitted solid waste landfill. There are both influent and effluent flow meters at the treatment plant. Refer to the attached Drawing G-1 "RCSTP Upgrade & Expansion Process Flow Diagram" for a diagram of the treatment process.

1.2 Sewer System Description

The collection system in the Ridley Creek Service Area has been constructed in phases since 1985 and consists of primarily PVC gravity sewers and precast concrete manholes. The collection system was constructed in accordance with the then current Township Specifications and under the professional inspection and surveillance of the Authority's Engineer.

Two pump stations, the Hunt Country Pump Station and the Hershey's Mill Pump Station, are located within the Ridley Creek Service Area. Both pump stations have a typical duplex submersible pump arrangement. The Hunt Country Pump Station has a rated capacity of 0.025 MGD, and the Hershey's Mill Pump Station has a rated capacity of 0.083 MGD.

In addition to the flow meters at the RCSTP and on the Hershey's Mill Pump Station discharge piping, there is one permanent flow meter in the Ridley Creek Service Area gravity conveyance system between MH R-217 and R-218 located near Hibberd Lane and Boot Road that was installed in January 2021.

1.3 Engineering Studies and Sewer Diversion Plans

2007 Township Wastewater Needs Evaluation

The Township Wastewater Needs Evaluation identified wastewater needs in the Township and evaluated alternatives for future wastewater management. Existing wastewater capacity commitments currently planned and potential development and their associated wastewater management needs were identified. Multiple wastewater disposal alternatives, including the utilization of treatment capacity at facilities in other municipalities, were identified and evaluated.

The study estimated that the maximum potential wastewater generation from the Township may be as much as 1,700,000 gpd with an estimated 1,300,000 gpd in the West Goshen Service Area and approximately 400,000 gpd that would flow to the RCSTP. The study

reaffirmed the 1999 Act 537 Plan Update's conclusion to expand the RCSTP to 750,000 gpd and recommended the diversion of flows in excess of 1,000,000 gpd (the maximum flow under the East Goshen-West Goshen intermunicipal agreement) from the West Goshen Service Area to the RCSTP. Implementation of the diversion of flows is described hereafter.

2012 Closure and Diversion of the Lockwood Chase Sewage Treatment Plant (LCSTP)

The PADEP issued a draft permit amendment in 2007 for the Lockwood Chase Sewage Treatment Plant (LCSTP) requiring a significant number of upgrades. Given the potential cost of upgrading the LCSTP, the Authority elected to close and decommission the LCSTP and divert wastewater from Lockwood Chase to an existing public sewer system, abandon the aged sewage treatment plant and spray irrigation facilities, and convey wastewater for treatment at another existing sewage treatment facility. A gravity sewer diversion to convey all flows from the Lockwood Chase development to the existing sewer system tributary to the Authority's Hershey's Mill Pump Station was constructed in spring 2012 and became operational in May 2012 when Lockwood Chase wastewater was diverted into the new sewers. The LCSTP closure/ decommissioning was completed in fall 2012.

2013 Diversion of the Hershey's Mill and Reserve Pump Stations

The Hershey's Mill and Reserve Pump Stations previously discharged to the West Goshen Service Area and were diverted to the Ridley Creek Service Area in 2013. The Hershey's Mill Pump Station diversion was completed in July 2013 and was accomplished by diverting the 6-inch force main to an existing gravity sewer in the Ridley Creek collection system at Cornwallis Drive. This connection required the construction of approximately 1,000 feet of new force main through a private right-of-way and crossing a tributary of Ridley Creek.

The Reserve Pump Station diversion was completed in October 2013 and was accomplished by demolishing the pump station and constructing an approximate 700-linear foot, 8-inch PVC gravity sewer extension to an existing Ridley Creek collection system gravity sewer at Forrest Lane. The route of the new sewer runs parallel to a tributary of Ridley Creek and crosses approximately 300 feet of private property with the remainder in dedicated open space and public right-of-way. The Reserve Pump Station previously discharged into the gravity sewer system upstream of the Hershey's Mill Pump Station. Following the Reserve Pump Station diversion, the Reserve wastewater is now conveyed directly into the Ridley Creek Service Area and is no longer conveyed through the Hershey's Mill Pump Station.

2013 Diversion of the Marydell Pump Station

The Marydell Pump Station previously discharged to the West Goshen Service Area and was also diverted to the Ridley Creek Service Area in 2013. This pump station served 31 homes in the Marydell Farms development, and due to its age, required replacement. The diversion was completed in July 2013 and was accomplished by demolishing the pump

station and constructing an approximate 950-linear foot, 8-inch PVC gravity sewer extension to an existing Ridley Creek collection system gravity sewer at Saratoga Drive. The route of the gravity diversion starts at the pump station, runs east along Paoli Pike, and connects to the existing public sewer at Saratoga Drive.

Proposed Reservoir Road Pump Station Diversion

The Authority is proposing a pump station at the intersection of Reservoir Road and Strasburg Road to divert a portion of flows from the Chester Creek Interceptor (West Goshen Service Area) to the Ridley Creek Service Area. The diversion is planned to occur when the flows conveyed to West Goshen exceed 1.0 MGD which is projected to be beyond the next five years. The diversion is proposed to be accomplished by constructing an approximate 8,500-linear foot force main to convey up to 300,000 gpd. The diverted flow is proposed to be adjusted on a weekly or bi-weekly basis to maintain flows to West Goshen at 1.0 MGD.

An Act 537 Plan Update for the Reservoir Road Pump Station Diversion was approved by PADEP on January 7, 2015. The Water Quality Management (WQM) permit (WQM Permit #1516404) was issued on March 10, 2017.

2.0 HYDRAULIC AND ORGANIC LOADINGS

2.1 Hydraulic Loading

The RCSTP is permitted for an annual average flow of 0.750 MGD, a design hydraulic (maximum day) capacity of 0.750 MGD, and a peak hourly flow of 3.0 MGD.

Table 1 summarizes the RCSTP's hydraulic loading data and the current calendar year's rainfall. Refer to the attached Chart 1 for a line graph depicting the plant's average flows for the past five years.

With the exception of periods referenced below and in the Table 1 footnotes, the influent hydraulic loading prior to November 2012 was measured at the permanent influent flow meter located on the force main between the influent pump station and the SBR tanks. The permanent influent flow meter not only captured the influent flow but also side stream and backwash flows recycled to the head of the plant. The process return flows are recycled to the head of the plant downstream of the influent grinder and fine screen but upstream of the influent pump station. The flows include spray wash from the influent fine screen unit, disk filter back wash and sludge wasting cycles; decanted water from the twin aerobic sludge digesters; centrate from the centrifuge; utility sinks; utility water blow off; and the laboratory bathroom and sink. The volume of recycled water could not be reasonably estimated or excluded from the influent metered flows during this time period.

In fall 2012, the Authority installed a new permanent inflow meter upstream of the recycle feed to comply with PADEP's request to not include recycle flows in the influent hydraulic loading. The influent hydraulic loadings in Table 1 from 2016 through 2020 therefore do <u>not</u> include recycle flows unless noted otherwise in the table's footnotes. However, it should be noted that this meter has become unreliable in 2019 and 2020 and a new meter is planned to be installed soon. The meter will be placed on the influent piping in a location that is expected to provide reliable operation in accordance with metering manufacturer recommendations.

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Chester County, Pennsylvania

Table 1						
	Hydraulic Loading (MGD)					Rainfall (inches)
Month	**2016**	**2017**	**2018**	**2019**	**2020**	**2020**
January	0.466	0.435	0.429	0.688	0.394	3.8
February	0.602	0.404	0.495 (1)	0.616	0.422	3.3
March	0.498	0.443	0.527 (1)	0.647	0.477	4.8
April	0.437	0.470	0.613	0.519	0.522	7.2
May	0.451	0.442	0.510	0.527	0.477	2.6
June	0.273	0.404	0.550	0.552	0.452	4.7
July	0.248	0.372	0.431	0.487	0.453	5.9
August	0.307	0.355	0.490	0.415	0.416	12.8
September	0.334	0.385	0.591	0.463	0.427	4.2
October	0.354	0.452	0.527	0.383	0.420	7.6
November	0.387	0.399	0.656 (1)	0.430	0.512	5.8
December	0.443	0.415	0.648 (1)	0.423	0.559	7.1
Annual Average (AA)	0.400	0.415	0.539	0.513	0.461	5.8
3 Month Max. Average	0.522	0.452	0.610	0.650	0.497	
Ratio (3 Month Max to AA Ratio)	1.305	1.089	1.132	1.269	1.078	
5-Year Average Hydraulic Ratio =					1.175	

(1) The field influent meter (prior to recycle) was offline for February and March 2018 as well as November and December 2018. Flows for this period are from the RCSTP influent pump station flow meter which includes recycle flows.

The 2020 average hydraulic load for the entire year was 0.461 MGD, which is well below the permitted capacity of 0.750 MGD. Additionally, there were no months when the monthly average flow exceeded or even approached the design hydraulic loading of 0.750 MGD. At the end of 2020, there were approximately 2,007 EDUs connected to the Ridley Creek collection system with an average flow rate of 230 gpd/EDU.

2.2 Organic Loading

The RCSTP is permitted for a design organic loading capacity of 2,098 lbs/day.

Table 2 and Table 3 summarize the RCSTP organic loading data. Refer to the attached Chart 2 for a line graph depicting the average organic loading for the past five years.

Influent organic loading (lbs/day) is calculated using the influent BOD_5 (mg/L) concentrations and the influent flow on the day sampled. The influent sampling frequency is typically once per week. Influent samples are 24-hour composite, flow-proportioned, and sampled for BOD_5 (not $CBOD_5$). The influent organic sampling location is upstream of the recycle; therefore the samples do not contain recycled flows, unless noted otherwise in the Table 2 footnotes.

The RCSTP did not receive any hauled-in septage in 2020.

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Table 2				
Organic Loading Sampling Data				
	A	**B**	**C = A x B x 8.34**	
Date of Sample	**BOD_5 (mg/L)**	**Flow (MGD)**	**Daily BOD_5 (lbs/day)**	**Monthly Average (lbs/day)**
1/7/2020	303	0.375	948	
1/14/2020	223	0.347	646	
1/21/2020	49	0.365	149	
1/28/2020	143	0.396	472	554
2/4/2020	165	0.362	498	
2/11/2020	267	0.465	1,036	
2/18/2020	122	0.448	456	
2/25/2020	133	0.430	476	617
3/3/2020	291	0.432	1,049	
3/10/2020	285	0.445	1,059	
3/17/2020	194	0.438	709	
3/24/2020	227	0.485	918	
3/31/2020	259	0.498	1,076	962
4/7/2020	144	0.477	572	
4/14/2020	233	0.562	1,092	
4/21/2020	180	0.532	799	
4/28/2020	216	0.488	879	836
5/5/2020	131	0.527	575	
5/12/2020	269	0.470	1,055	
5/19/2020	318	0.444	1,178	
5/25/2020	259	0.472	1,020	957
6/2/2020	253	0.453	955	
6/9/2020	172	0.485	695	
6/16/2020	248	0.468	968	
6/23/2020	169	0.467	658	
6/30/2020	197	0.444	729	801

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Table 2				
Organic Loading Sampling Data				
	A	**B**	**C = A x B x 8.34**	
Date of Sample	**BOD_5 (mg/L)**	**Flow (MGD)**	**Daily BOD_5 (lbs/day)**	**Monthly Average (lbs/day)**
7/7/2020	229	0.483	922	
7/14/2020	155	0.420	543	
7/21/2020	223	0.446	829	
7/28/2020	183	0.478	729	756
8/4/2020	229	0.629	1,202	
8/11/2020	205	0.356	608	
8/18/2020	87.7	0.329	241	
8/25/2020	270	0.468	1,053	776
9/1/2020	218	0.426	774	
9/8/2020	189	0.419	660	
9/15/2020	184	0.461	707	
9/22/2020	382	0.368	1,171	828
10/6/2020	295	0.396	973	
10/13/2020	211	0.420	740	
10/20/2020	297	0.428	1,060	
10/27/2020	233	0.410	796	892
11/6/2020	258	0.439	944	
11/10/2020	237	0.386	762	
11/17/2020	182	0.434	659	
11/24/2020	216	0.497	896	815
12/3/2020	219	0.508	928	
12/8/2020	234	0.484	945	
12/15/2020	348	0.445	1,292	
12/22/2020	298	0.553	1,374	
12/29/2020	239	0.539	1,075	1,123

The maximum monthly average organic loading was 1,123 lbs BOD_5/day, which is less than the permitted design organic loading capacity of 2,098 lbs/day. The RCSTP is therefore not organically overloaded.

Table 3 provides the 5-year organic loading of the RCSTP.

Table 3					
Organic Loading (lbs/day)					
Month	**2016**	**2017**	**2018**	**2019**	**2020**
January	761	589	524	888	554
February	1,021	336	492	810	617
March	634	475	556	650	962
April	519	329	1,169	476	836
May	570	596	809	641	957
June	636	725	580	406	785
July	263	582	640	947	756
August	415	419	750	778	776
September	642	670	655	963	828
October	275	753	482	910	892
November	561	565	875	120	815
December	382	781	781	998	1,123
Annual Average	557	569	693	716	825
Ratio (Max. Month to Annual Average Ratio)	1.83	1.37	1.69	1.39	1.36
5-Year Average Organic Ratio =					1.48

The 2020 annual average daily organic loading at the RCSTP was 825 lbs BOD_5/day. The peak loading occurred in December 2020 with an average organic load of 1,123 lbs BOD_5/day. This one-month peaking ratio is 1.36.

At the end of 2020, there were approximately 2,007 EDUs connected, contributing an average organic load of 0.411 lbs/day/EDU.

3.0 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

3.1 Organic Loading Projections

The 5-year organic loading projections at the RCSTP are summarized in Table 4. Historic and projected organic loadings are presented graphically on the attached Chart 2.

The RCSTP's 2020 annual average loading rate, 0.411 lbs/day/EDU, is used to calculate projected organic loadings. Refer to Appendix B for a table of "Ridley Creek STP Projected EDUs and Hydraulic Load", which details the specific EDUs anticipated to be connected in each of the next five years.

The projected annual average organic loading at the RCSTP in Table 4 is calculated using the 2020 annual average organic load, 825 lbs/day, and adding the organic loading from each projected connection and diversion in the applicable year. The projected annual average organic loading is then multiplied by the 5-year average organic ratio of 1.48 (from Table 3) to determine the maximum monthly organic load projection.

Table 4
RCSTP Organic Loading Projections

Year	Annual Average BOD_5 Loading Projections [(1)] (lbs/day)	Maximum Monthly BOD_5 Loading Projections [(2)] (lbs/day)
2021	828	1,225
2022	829	1,227
2023	830	1,228
2024	830	1,229
2025	831	1,230

[(1)] AA Projections = (Current report year's AA Loadings) + (Loadings from Proposed EDUs).

[(2)] Max Month Projections = (AA Projection) x (5-year Average Organic Ratio)

Based on the permitted design organic loading capacity of 2,098 lbs/day, the RCSTP is not projected to be organically overloaded in the next five years.

3.2 Historical and Projected Connections

There was one new connection added to the Ridley Creek Service Area in 2020 for a total of 2,007 EDUs. The annual average flow of 0.461 MGD in 2020 results in an average hydraulic loading rate of 230 gpd/EDU. Refer to Appendix A for a list of the new connections in 2020.

Table 5 lists the number of EDUs that were connected in each calendar year for the last five years. The annual gpd/EDU rate was determined by dividing the total average daily flow for the respective calendar year by the number of EDUs connected to the system that year.

Table 5

Year	# of EDUs Connected	gpd/EDU	New Flow (MGD)
2016	5	200	0.0010
2017	3	207	0.0006
2018	0	269	0.0000
2019	0	255	0.0000
2020	1	230	0.0002

The actual gpd/EDU flow rate for 2020 exceeds the Authority's 225 gpd/EDU design flow rate. However, the flow rate notably decreased from the prior two years, which experienced excessive precipitation. There was above average precipitation in 2020 also. The Township has continued an aggressive inflow and infiltration reduction program, but the actual flows indicate the ongoing presence of inflow and infiltration. This is considered the result of the excessive precipitation in 2020 and resultant inflow and infiltration (I&I). For planning purposes in this report, future new connections are projected at 225 gpd/EDU since new connections are not anticipated to contribute any I&I to the system.

Refer to Appendix B for a table of "Ridley Creek STP Projected EDUs and Hydraulic Load", which details the specific EDUs anticipated to be connected in each of the next five years.

3.3 Hydraulic Loading Projections

PADEP has requested the 5-year hydraulic loading projections be determined using a 5-year adjusted annual average flow. Per the PADEP Chapter 94 Report Template, several tables (including Table 5 above) and steps are required to calculate the 5-year adjusted annual average flow.

Table 6 determines the 5-Year Adjusted Annual Average Flow of 0.466 MGD in accordance with the Chapter 94 Template.

Table 6

Year	AA Flow (MGD)	All projects connected (provide flows approved in planning modules or exemptions in MGD-include any connected projects that did not require planning)					Adjusted AA Flow (MGD)
		2016	2017	2018	2019	2020	
2016	0.400		0.0006	0.0000	0.0000	0.0002	0.401
2017	0.415		0.0006	0.0000	0.0000	0.0002	0.415
2018	0.539				0.0000	0.0002	0.539
2019	0.513					0.0002	0.513
2020	0.461						0.461
Total	**2.327**					**Total**	**2.329**
5-Year Average	**0.465**					**5-Year Adj Average**	**0.466**

Table 7 determines the 5-Year Adjusted Hydraulic Projection in accordance with the Chapter 94 Report Template.

Table 7
Adjusted Projections

Year	Previous Year's Annual Average Flow[(1)]	New EDUs	Increased Flow[(2)] (MGD)	Projected Annual Average Flow[(3)] (MGD)	Projected Max Month Flow[(4)] (MGD)
2021	0.466	4	0.0009	0.467	0.548
2022	0.467	2	0.0002	0.467	0.548
2023	0.467	2	0.0005	0.467	0.549
2024	0.467	2	0.0005	0.468	0.549
2025	0.468	2	0.0005	0.468	0.550

(1) The 2021 Previous Year's Annual Average Flow is the 5-Year Adjusted Average Flow from Table 6.
(2) The Increased Flow is calculated by multiplying the number of New EDUs by the 225 gpd/EDU sewage planning flow rate.
(3) Projected Annual Average Flow = Previous Year's AA Flow + Increased Flow
(4) Projected Max Month = Projected Annual Avg. Flow x 5-Year Average Hydraulic Ratio

The Projected Annual Average Flow and the Projected Max Month Flow are below the RCSTP's annual average and maximum daily permit limit of 0.750 MGD.

4.0 SEWER EXTENSIONS

No public sewer extensions occurred in the Ridley Creek Service Area in 2020.

The proposed Reservoir Road Pump Station is designed and permitted to divert a portion of flows from the Chester Creek Interceptor (West Goshen Service Area) to the Ridley Creek Service Area. This diversion is not projected to occur within the next five years. No other future extensions are planned.

5.0 PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

The Township monitors daily meter readings at the treatment plant and pump stations during the week as well as daily rainfall with a rain gauge located at the Township building. Should daily flows increase, Township staff then inspect the system for leaks. Sewer lines are routinely cleaned and inspected by television cameras. The Township frequently reminds customers against discharging sump pumps into the sewer system via the Township newsletter.

The Township has eight people along with sundry equipment, all of which can be made available under emergency conditions. Should technical assistance be needed, the Authority Engineer,

Pennoni, an engineering consulting firm with a staff of professional engineers, provides technical assistance.

The Authority utilized the services of a contract operator, Big Fish Environmental, Inc., to operate the RCSTP in 2020. This contract included daily maintenance, recording data, laboratory analysis, and submitting all reports to the Township, Authority, and the PADEP that are required under the permits.

The treatment plant alarm systems are tied into an auto dialer that has the ability to dial five numbers in succession. It begins with the plant operator and ends with the Township maintenance staff.

Routine maintenance is performed at the treatment plant on a daily basis. Maintenance includes the following:

- Grease equipment.
- All electrical equipment is inspected and cleaned by an electrical contractor twice a year.
- Wet well is cleaned and skimmed.
- Weirs are scrubbed and cleaned.
- Ultra Violet bulbs are cleaned regularly and replaced.
- All blowers are greased daily, and filters are changed twice a year.
- All pumps are pulled apart and checked for wear. Plates are typically replaced twice a year. Depending on wear, impellers may also be replaced.
- Comminutor and screen are serviced annually.
- All meters calibrated quarterly.
- Centrifuge is run with regular maintenance.

The Township has their meters checked and calibrated on a quarterly basis. The calibration reports are included in Appendix D.

5.1 I&I Monitoring

The RCSTP does receive increased influent volume during wet weather. This is an indication of potential inflow and infiltration (I&I) from one or more sources including leaks in sewer joints and manholes, failed house connections, direct inflow into low manholes, and illegal connections from building sump pumps.

A Consent Order & Agreement (CO&A) was executed between the PADEP and the Authority in December 2008. The Authority, with direct assistance from the Township, agreed to investigate and remediate I&I in the collection system tributary to the RCSTP. Elements of the program outlined in the CO&A included:

1. Metering
2. Televising
3. System Hydraulic Characterization
4. Rehabilitation (as necessary)

5. Post Rehabilitation Metering (as necessary)
6. House Lateral Investigation Program
7. Semi-annual Reporting

The five-year CO&A period expired on March 31, 2012. However, the Authority concluded that a formalized program to meter, televise, rehabilitate, and perform post rehabilitation metering had merit so they continued with the process set forth in the CO&A. A list of the sanitary sewer cleaning and televising work performed in 2020 is included in the semi-annual sewer system report in Appendix C.

5.2 Maintenance & Repair

The Township has an ongoing program of repairing and/or replacing broken sewer laterals caps and stacks as they are identified. Repairs are typically performed by the Township's Public Works Department while specialty repairs and large projects are contracted to qualified firms.

In 2020, the Township performed miscellaneous repairs to the sewer system. In various areas of the Ridley Creek sewer system, 29 laterals were repaired, and 1 cleanout was repaired.

The contract operator is on-site at the treatment plant daily to check process controls, equipment hour-meter readings, influent, effluent, and process flow meter readings, and to perform process control testing, amongst other things. This information is maintained on-site in the form of daily operations reports and a bound log book. The contract operator is also responsible for notifying Township personnel, who are frequently on-site themselves, if any repairs are required. The Township is responsible for equipment repair and scheduled warranty and contract work at the plant as required.

Township staff visits the pump stations daily to check for operational problems and to perform required maintenance. The Township's normal practice is to change the pumps out twice a year for inspection and maintenance. Pump stations are drained and cleaned on a quarterly basis. The Township's electrical contractor, Lenni Electric, is on-site twice a year to inspect all of the electrical components.

6.0 CONDITION OF THE SEWER SYSTEM

The RCSTP is generally operating as designed and is in good condition.

The collection and conveyance system in the Ridley Creek Service Area is in fair condition. The television inspections revealed some problems with the originally installed sanitary sewer mains. This includes cracking and damaged sections of pipe. In addition, several manholes and numerous damaged laterals and cleanouts were discovered that required repair. The Township is actively identifying and repairing aged and problematic portions of the sanitary sewer collection system.

There are no bypassing conditions or combined sanitary sewer systems within the Ridley Creek Service Area. There was one sanitary sewer overflow (SSO) reported in the Township in 2020.

The SSO occurred at Greenhill Road due to Tropical Storm Isaias, which recorded approximately 7.90 inches of rain. Tropical Storm Isaias caused the Ridley Creek to flood resulting in a back up at the Hershey's Mill Pump Station and in sanitary sewer bubbling out of a manhole into Greenhill Road. The sanitary sewer overflow was cleaned, and no solids were evident within the overflow.

6.1 Ridley Creek Sewage Treatment Plant Collection System Hydraulic Characterization

The hydraulic condition of the sanitary sewer collection and conveyance system tributary to the RCSTP was analyzed in 2009 as part of the CO&A discussed in Section 5.1. A hydraulic model of the collection and conveyance system was developed to determine if any physical constraints exist that would restrict conveyance of dry weather and peak wet weather flows given existing connections at that time. The impact of flows from proposed future connections (from diverting existing flows from other collection systems into the RCSTP collection system) was also analyzed to determine if the additional flows will create any overload conditions. The flows from anticipated future connections and flow diversions into the RCSTP system (including the diversions constructed in 2013 and the future Reservoir Road Pump Station diversion) are as stated in the current Chapter 94 Report. A copy of the text from the Hydraulic Characterization report was provided as an appendix to the 2009 Chapter 94 Report. The hydraulic model projected that all sewers within the Ridley Creek Service Area had adequate capacity to convey current and future dry and wet weather flows.

7.0 SEWAGE PUMPING STATIONS

The Hershey's Mill Pump Station was diverted from the Chester Creek Collection System (West Goshen Service Area) to the Ridley Creek Service Area in 2013. The other pump stations in the Ridley Creek Service Area are the Hunt Country Pump Station and the influent pump station at the RCSTP.

The Average Annual Daily Flow at the Hershey's Mill Pump Station in 2020 was 74,610 gpd. The peak daily flow of 137,596 gpd was recorded on December 28, 2020 and equates to a daily peaking factor of 1.84. This peak day flow may not be the actual peak experienced within the system during 2020, since there are a number of days when flow was not recorded. Over the last five years the daily peak factor for this pump station has varied between 1.5 and 2.1. The area tributary to the Hershey's Mill Pump Station contains 367 EDUs. The 2-year projected maximum flow at the Hershey's Mill Pump Station is 137,972 gpd. The Hershey's Mill Pump Station flow rate decreased in 2020 compared to the prior 2-years to a flow rate that is comparable to the flow rates from 2014 to 2017. This is presumably due to decreased precipitation and I&I coupled with I&I repairs.

The area tributary to the Hunt Country Pump Station contains 67 single family homes, and no additional connections are expected. The pump station does not have a permanent meter. The Township replaced the pumps and other equipment at the Hunt Country Pump Station in 2016 with salvaged equipment from the demolished Reserve Pump Station. The annual average flow in Table 8 is estimated based on the 2020 average flowrate at the RCSTP of 230 gpd/EDU. Peak flows are

calculated with a peaking factor of 4.2, which PADEP considers a typical peaking factor for a pump station of this size. Since there are no additional connections expected, the 2-year projected maximum flow at the Hunt Country Pump Station is the same as the present peak flow.

The Township intends to install a permanent flow meter at the Hunt Country Pump Station in 2020.

Table 8

Pump Stations

Pump Station Name	Number of Pumps	Permitted Capacities		Present Flows		Projected Flows
		AA Permitted Capacity (gpd)	Hydraulic Design Capacity *(excluding capacity of backup pump) (gpm)*	Annual Average Flows (gpd)	Peak Flow (gpd)	2-Year Projected Maximum Flow (gpd) [(1)]
Hershey's Mill	2	83,000	230 gpm	74,610	137,596	137,972
Hunt Country	2	25,000		15,387	64,625	64,625

[(1)] 2-Year Projected Maximum Flow = 2-Year Projected AA flow * peaking factor
Hershey's Mill P.S. = 74,610 gpd + (1 EDUs x 225 gpd/EDU)) x 1.84 peaking factor = 137,972 gpd
Hunt Country P.S. = Maximum 2020 Daily Flow since no connections are projected.

8.0 INDUSTRIAL WASTES

Although there are presently no industrial waste contributors to the wastewater system, Chapter 188 of the Code of the Township of East Goshen addresses the strength of industrial wastes and permits only discharge of domestic strength. See Appendix E for a copy of the Township Ordinance.

9.0 CORRECTIVE ACTION PLAN

The collection/conveyance system and the treatment plant are not currently and are not projected to be, hydraulically or organically overloaded. The proposed Reservoir Road Pump Station diversion will utilize most of the remaining permitted capacity at the RCSTP as per the PADEP-approved Act 537 Plan Update for the project. Therefore, no Corrective Action Plan or Connection Management Plan is required.

10.0 CALIBRATION REPORTS

As required by 25 PA Code §94.12, flow measuring, indicating, and recording equipment should be calibrated annually, and the calibration report should be included in the annual report submitted under §94.12. Calibration reports are included in Appendix D.

11.0 TRIBUTARY MUNICIPALITY REPORTS

The tributary municipality report from Willistown Township is in Appendix F.

2019 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
East Goshen Municipal Authority
Chester County, Pennsylvania

CHARTS

Chart 1 – Ridley Creek STP Hydraulic Loading
Chart 2 – Ridley Creek STP Organic Loading

Chart 1 - Ridley Creek STP Hydraulic Loading

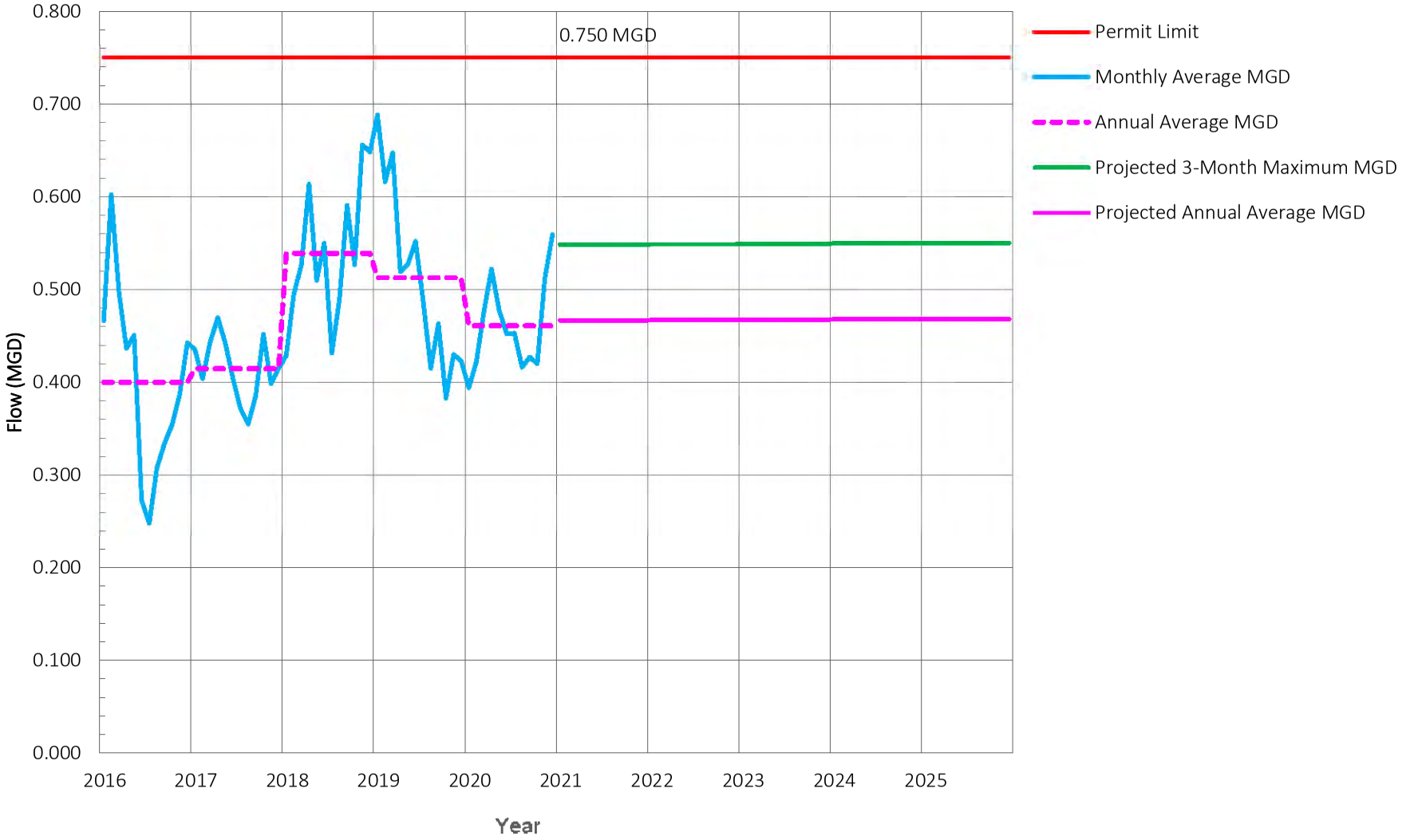
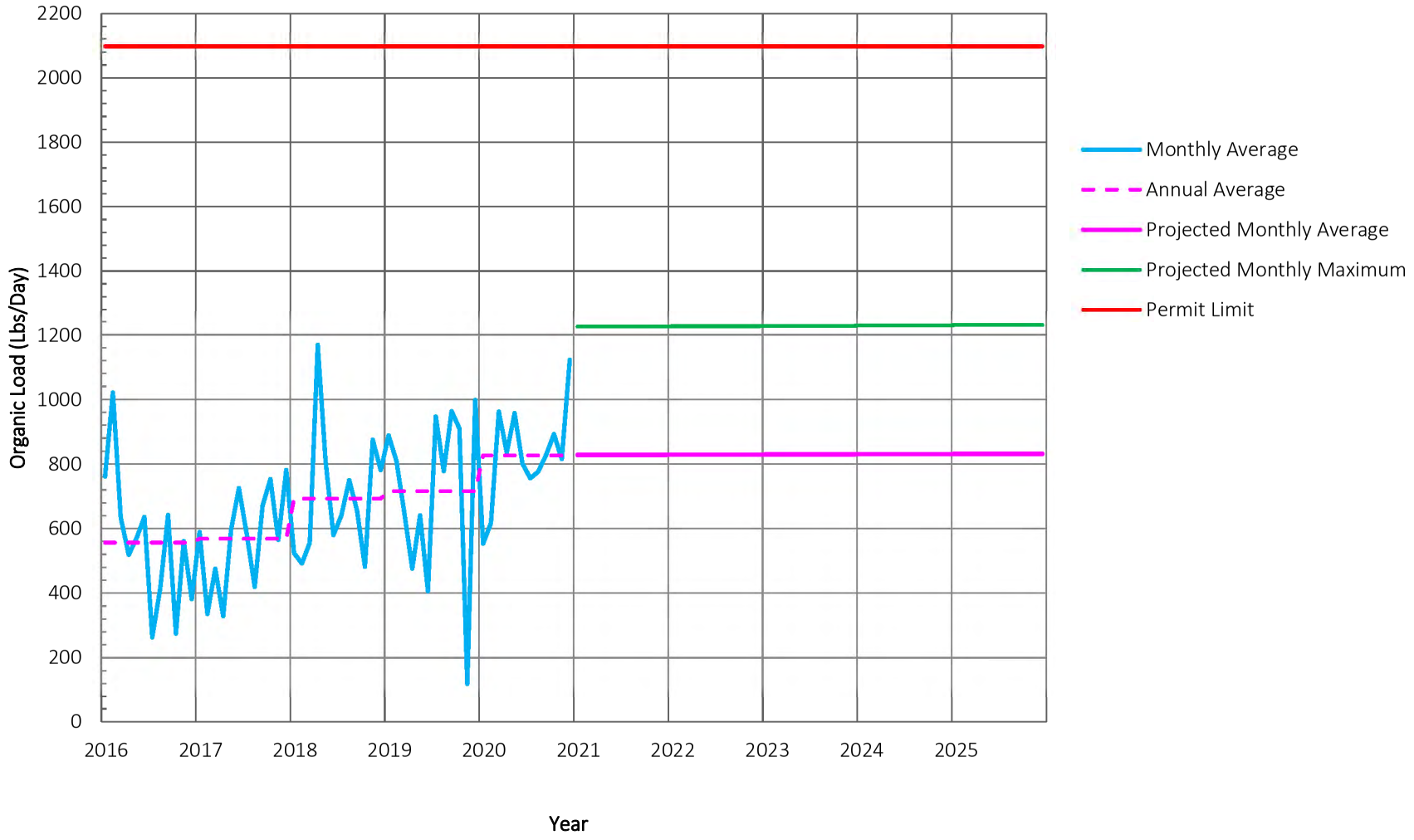


Chart 2 - Ridley Creek STP Organic Loading



2020 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
East Goshen Municipal Authority
Chester County, Pennsylvania

APPENDIX A

2020 Connections

NEW UTILITY (SEWER/REFUSE) ACCTS - 2020	
ADDRESS	**Service Area**
Single Resident along Line Road	Ridley Creek

APPENDIX B

5-Year Projected Connections

2020 Ridley Creek STP Service Area Chapter 94 Report Appendix

Ridley Creek STP Projected EDUs and Hydraulic Load [1]

Connections	Actual		Projected									
	2020		2021		2022		2023		2024		2025	
	EDU	(MGD)	EDU	(MGD)	EDU	(MGD)	EDU	(MGD)	EDU	(MGD)	EDU	(MGD)
1680 E. Boot Road (Knauer)			1	0.0002								
Applebrook Golf Course Learning Center			1	0.0002								
1506 Meadowbrook Lane			1	0.0002								
1040 King Road			1	0.0002								
Single Residential Property along Line Road	1	0.0002										
Other Potential Connections					2	0.0005	2	0.0005	2	0.0005	2	0.0005
Reservoir Road P.S. Diversion												
Added Flow	1	0.0002	4	0.0009	2	0.0005	2	0.0005	2	0.0005	2	0.0005
Ridley Creek STP Flow	2,007	0.4660	2,011	0.4669	2,013	0.4674	2,015	0.4678	2,017	0.4683	2,019	0.4688

[1] The Authority's design flow rate (225 gpd/EDU) is used for flow projections.

2020 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
East Goshen Municipal Authority
Chester County, Pennsylvania

APPENDIX C

Semi-Annual Sewer System Status Report #19

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www.pennoni.com

August 5, 2020

EGMAU20002

East Goshen Municipal Authority
Attn: Mark Miller, Public Works Director
1580 Paoli Pike
West Chester, PA 19380

RE: Semi-Annual Sewer System Status Report #19
East Goshen Municipal Authority

Dear Mr. Miller:

The following Semi-Annual Sewer System Status Report is a continuation of the reports previously required under the Consent Order & Agreement (CO&A) executed between the Pennsylvania Department of Environmental Protection (PADEP) and the East Goshen Municipal Authority in December 2008. Mandatory reporting to the PADEP ended on March 31, 2012, but the reporting was requested to continue to serve as an internal reference document for the Township.

Our reports in past were formatted to describe all actions (maintenance, monitoring, etc.) taken within the previous period and those which will be taken in the subsequent monitoring period. However, this report has been reformatted to specifically address our inflow and infiltration (I & I) analysis based on the data provided by the Municipal Authority and our recommendations biased on this analysis. We have removed all action items related to televising and rehabilitation within the service areas from this report. These items are addressed in your monthly reports to the Municipal Authority and in the Annual Chapter 94 Reports. We also removed the action item related to the ongoing house lateral investigation program originally implemented in 2008. As you know this program routinely inspects properties within each service area to ensure cleanouts, vent caps, and laterals are in proper condition and any broken cleanouts, vent caps, or lateral are repaired or replaced.

This report will continue to document any suspected I & I within the service areas and provide recommendations to isolate and eliminate suspected I & I. The report is broken into three sections. Section one will address our analysis of provided portable meter data from the service areas. Section two will address an overall analysis of each service area by analyzing the permanent meter data within the service areas over a 13 month period and a five year period. Section 3 will address recommended corrective actions or investigations to implement within the service areas.

EXECUTIVE SUMMARY

Permanent meter data from 2020 indicates I & I continues to occur within both the Ridley Creek and continues Chester Creek Service Areas, particularly in the subarea CC-2, as depicted in the attached Figure 1.

In the Chester Creek Service Area, the average flow from the East Goshen portion of the Chester Creek Service Area in 2020 increased by approximately 24,700 gpd (9%) compared to the average flow from 2014 to 2016, and the 2020 average flow decreased by approximately 74,500 gpd (20%) compared to the average daily flow

from 2019. The average flow from the East Goshen portion of the Chester Creek Service Area in 2019 was significantly higher than the average flow from 2014 to 2016, possibly due significant amount of rain in 2019. The total annual rainfall has been lower in 2020 (21.59 inches) than in 2019 (62.01 inches).

Seven portable meters were installed between January 2020 to June 2020 to isolate areas of I & I within the Ridley Creek Service Area. Observations and analysis from those meters are summarized in the flowing table.

Table 1 - RCSA Portable Meter Summary Table

Portable Meter Location	Dry-Weather Infiltration	Wet-Weather Infiltration	Inflow	Comments
MH R-589	☐	☒	☒	Minimal I & I during storm events greater than one inch
MH R-568	☒	☐	☐	Approximately 12,000 gpd unaccounted flow upstream of meter location; Recommend investigation (televising)
MH R-569	☐	☒	☐	Flows increased by up to 183% 1 to 2 days follow larger storm events (greater than 0.5-inches)
MH R-625	☐	☒	☐	Flows increased by up to 200% 1 to 2 days follow larger storm events (greater than 0.5-inches)
MH R-238	☒	☒	☒	Approximately 4,000 gpd unaccounted flow upstream of meter location; Flows increased by up to 150% during larger storm events (greater than 1 inch)
MH R-265	☐	☐	☐	No suspected I & I
Ridley Creek STP	☐	☐	☐	There appears to be an error with the portable meter.

Based on the analysis we suggest the Township should focus on analysis of permanent metering in the Chester Creek Service Area and continue to install and monitor portable meters in the Ridley Creek Service Area over the next six months. Visual observation of flows within manholes during overnight hours should also continue with follow-up televising as needed.

DEFINITIONS

Base flow – Base flow is the untreated wastewater discharge from residential, commercial, and industrial facilities that enter the sanitary sewer collection system to be transported to a wastewater treatment plant. This flow value does not include wastewater from inflow or infiltration and tends to fluctuate throughout the day depending on the amount of wastewater created. Typically, the lowest base flow occurs during the early hours of the morning when most people are asleep.

Infiltration – Infiltration occurs when groundwater seeps into sewer pipes through crack, leaky pipe joint and/or deteriorated manholes. There are two types of infiltration dry weather and wet weather infiltration. Dry weather infiltration is present if the flows in the system are greater than the base water flows during periods of little to know rain. When an area is determined to have dry infiltration investigations such as televising can occur to determine the source of the infiltration. Wet weather infiltration is present if the flows in the system significantly increase and slowly decrease one to three days after a rain event.

Inflow – Inflow is stormwater that enters the sewer system through rain leaders, basement sump pumps, or foundation drains illegally connected to the sewer during a rain event. If an area is expected to have inflow investigations such as smoke testing can occur to determine the source of the inflow.

TEMPORARY METERING

Ridley Creek Service Area

Six portable meters were installed between January 2020 through June 2020. Refer to the attached Figure 1 showing a map of past and future meter locations.

- *Double Pond MH R-589 (Bow Tree)*

  A portable meter was installed within Manhole R-589 on February 8, 2019 and removed on April 16, 2019 and then re-installed in March 2020.

  In the first period, the meter appears to be functioning continuously from February 8, 2019 to April 16, 2019 recording an average flow of 20,271 gpd (14.1 gpm) and a maximum flow of 81,187 gpd (56.4 gpm) resulting in a peaking factor of 5.3. The expected base flow is estimated to be 17,688 gpd based on the 2016 sewer billing records. Therefore, when comparing the average flow to the expected base flow there is approximately 3,000 gpd of unaccounted flow. From March 19, 2019 to April 16, 2019, there appears to be no dry-weather infiltration, but there does appear to be inflow and wet-weather infiltration occurring upstream of this location.

  In the second period, the meter appears to be functioning continuously from March 2020 to mid-April 2020 recording an average flow of 14,098 gpd and a maximum flow of 24,668 gpd resulting in a peaking factor of 1.75. There does not appear to be any dry-weather infiltration occurring upstream of this location given that the average flow was less than the expected base flow. There are a few instances in the second period where the flow increases by around 160% during storm events greater than one inch, inducing inflow. **Therefore, it can be concluded that there is likely minimal inflow and wet-weather infiltration upstream of R-589 during wet weather conditions.**

- *Eldridge MH R-568 (Bow Tree)*

  A portable meter was installed within Manhole R-568 on February 8, 2019 and removed on April 16, 2019 and then re-installed in March 2020 to early April.

  In the first period, the meter appears to be functioning continuously from February 8, 2019 to April 16, 2019. recording an average flow of 13,606 gpd (9.45 gpm) and a maximum flow of 16,235 gpd (11.27 gpm) resulting in a peaking factor of 1.19. The expected base flow is estimated to be 12,261 gpd based on the 2016 sewer billing records. Therefore, when comparing the average flow to the expected base flow there is approximately 1,000 gpd of unaccounted flow.

  In the second period, the meter appears to be functioning continuously from March 2020 to mid-May 2020 recording an average flow was 28,383 gpd and a maximum flow of 37,901 gpd resulting in a peaking factor of 1.34. Therefore, when comparing the average flow to the expected base flow there is approximately 13,000 gpd of unaccounted flow. Due to the significant increase in unaccounted flow within the last year, we question whether the meter data is indicative of continuous dry-weather infiltration. There was no correlation observed between precipitation and flow at this meter to indicate wet weather I & I. **There appears to be dry-weather infiltration occurring upstream of this meter location. We recommend an investigation of the pipes and laterals upstream of this meter location.**

- *Forest Lane MH R-569 (Bow Tree)*

  A portable meter was installed within Manhole R-569 in mid-January 2020 to late-February 2020.

  The meter appears to be functioning continuously from mid-January 2020 to late-February 2020recording an average flow of 5,445 gpd and a maximum flow of 9,979 gpd resulting in a peaking factor of 1.83. The expected base flow is estimated to be 8,241 gpd based on the 2016 sewer billing records. There does not appear to be any dry-weather infiltration occurring upstream of this location given that the average flow was less than the expected base flow.

  There was a correlation observed between precipitation and flow at this meter location. There is an instance where the flow increased by around 183% approximately 1 to 2 days following a storm. **Therefore, it can be concluded that minimal wet weather infiltration is occurring upstream of R-569.**

- *Bow Tree Road MH R-625 (Bow Tree)*

  A portable meter was installed within Manhole R-589 on February 8, 2019 and removed on April 16, 2019 and then re-installed in March 2020.

  The meter appears to be functioning continuously from March 2020 to early-April 2020 recording an average flow of 5,085 gpd and a maximum flow of 22,435 gpd resulting in a peaking factor of 4.41. The expected base flow is estimated to be 4,824 gpd based on the 2016 sewer billing records. There appears to be minimal dry-weather infiltration occurring upstream of this location given that the average flow and expected base flow are virtually the same.

  There was a correlation observed between precipitation and flow at this meter location. There are a few instances where the flow increases by around 200% approximately 1 to 2 days following storm events greater than a half inch. **Therefore, it can be concluded that wet weather infiltration is occurring upstream of R-625 during wet weather conditions.**

- *Line Road MH R-238*

  It should be noted that a portable meter was installed in this manhole in August 2014 to March 2015. The flow data from that period indicated that there was little to no infiltration upstream during dry weather periods. A portable meter was installed within Manhole R-569 in mid-January 2020 to late-February 2020 which collected about 31 days of flow data during that period. The following analysis is based on the limited data set. We suggest the portable meter be re-installed for at least 4 months for more accurate analysis.

  The meter appears to be functioning continuously from mid-January 2020 to late-February 2020recording an average flow of 51,042 gpd and a maximum flow of 80,914 gpd resulting in a peaking factor of 1.59. The expected base flow is estimated to be 47,436 gpd based on the 2016 sewer billing records. Therefore, when comparing the average flow to the expected base flow there is approximately 4,000 gpd of unaccounted flow.

  Based on the limited amount of flow data during this period, there appears to be a correlation observed between precipitation and flow at this meter location. There are a few instances where the flow increases by around 120% to 150% during storm events greater than one inch. **Therefore, it can be concluded that I & I is occurring upstream of R-238 of this meter location.**

- *Sorrell Hill MH R-265*

  A portable meter was installed within Manhole R-569 in mid-January 2020 to late-February 2020.

  The meter appears to be functioning continuously from mid-January 2020 to late-February 2020recording an average flow of 11,600 gpd and a maximum flow of 18,014 gpd resulting in a peaking factor of 1.55. There is no observed unaccounted flow when comparing the average daily to the expected flow of 21,909 gpd from the 2016 sewer billing records.

  There is likely no I & I occurring upstream of this location. **Therefore, it can be concluded that no I & I is occurring upstream of R-265.**

- *RCSTP Portable Influent Meter*

  A portable meter was installed in a doghouse manhole upstream of the Ridley Creek Sewage Treatment Plant. The portable meter was installed to validate the accuracy of the permanent "Field" influent meter for flow entering the plant. However, it appears that the average flow indicated by the portable flow meter is significantly lower than the average flow indicated by the permanent "Field" influent flow meter. **The portable meter location should be revisited and/or the portable meter should be re-calibrated.**

Chester Creek Service Area

No portable meters were installed in the collection and conveyance system between January 2020 through June 2020.

PERMANENT METERING

Ridley Creek Service Area

The permanent "field" influent meter is located on the Ridley Creek Interceptor in Manhole R-001, the first manhole upstream of the Plant. It meters all flow into the Plant's influent pump station except recycled flow. We were provided average daily flows for approximately 4 to 5 days a month from January 2019 to June 2020 as taken from the "Big Fish" monthly reports included in the East Goshen Municipal Authority meeting agendas. Additionally, we were provided average daily flow for the months of May and June 2020.

The "Big Fish" reports do not have continuous data, but we do have enough data to make a general assumption. The average flow was 464,601 gpd with a maximum flow of 741,000 resulting in a peaking factor of 1.60. There appears to be some unaccounted flow when comparing the average daily to the expected flow of 402,603 gpd from the 2016 sewer billing records. This unaccounted flow appears to occur after a significant amount of precipitation either over one day or combined over several days, thus it can be concluded that the Ridley Creek Service Area experiences I & I due to wet weather conditions. This type of infiltration can be caused by an increased groundwater table or by an increase in surface water elevation.

The additional provided average daily flows for the months of May and June 2020indicated an average flow of 497,077 gpd and a maximum flow of 671,760 gpd resulting in a peaking factor of 0.74. There appears to be some unaccounted flow when comparing the average daily flow to the expected flow of 402,603 gpd from the 2016 sewer billing records. This unaccounted flow appears to occur after a significant amount of precipitation either over one day or combined over several days, but the limited amount of data makes it difficult to draw any conclusions regarding the cause of the unaccounted flow.

Chester Creek Service Area

Flow data from the eight permanent meters throughout the Chester Creek Service Area were analyzed for the previous 13 months and the previous five years; six of the meters are in gravity interceptor sewers and two are on pump station discharge pipes. Instantaneous or hourly meter data is not recorded on these meters; therefore, only a rough flow analysis can be performed because inflow and instantaneous peaks, and continuous base flows are unknown.

The Westtown Way meter records the total flow from the Chester Creek Service Area including flow from West Goshen Township. The average flow at Westtown Way in 2020 was 1,046,105 gpd with the average flow from the East Goshen portion of the Chester Creek Service Area comprising 744,905 gpd (71%). East Goshen's portion of the flow in the Chester Creek Service Area has comprised approximately 72% of the total flow to the Westtown Way meter consistently from 2013 to 2018. The flow from West Goshen in 2020 averaged 301,200 gpd.

The average flow in the Chester Creek Service Area to date in 2020 was lower than the average flows in 2019. The average from the East Goshen portion of the Chester Creek Service Area in 2019 was 774,632 gpd, which is 4% higher than the average flow in 2020. The average flow from West Goshen in 2019 was 375,694 gpd, which is 20% higher than the average flow in 2020. This decrease in the flows within the Chester Creek Service Area is mostly likely caused by the decrease in rainfall between 2019 (62.01 inches) and 2020 (21.59 inches).

When analyzing the flow within the Chester Creek Service Area over the most recent 5-year period there does not appear to be any continuous infiltration. However, continuous infiltration has been observed in previous reports when analyzing portable meters data within the Chester Creek Service Area. Therefore, although there does not appear to be continuous infiltration in the overall service area there could be isolated cases within subareas. The largest spikes in the flow rate appear to be preceded by either one day of increased precipitation or several days of increased precipitation in a row. This indicates that there is I & I occurring within the system as the result of wet weather flow.

We also analyzed East Goshen's sewer billing information from 2016 compared to the flow data from the permanent meters during 2020. This analysis consisted of using the sewer billing information from 2016 to determine how many billing units were located upstream of each permanent meter. This billing unit value was then multiplied by the Chapter 94 report gpd/EDU rate from 2019 to determine the expected flow upstream of the permanent meter. This expected flow was then compared to the actual flow data from the permanent meters during 2020 to determine if there was any unaccounted flow likely caused by I & I.

In previous reports we separated the Chester Creek Service Areas into four sub-areas, as seen in Figure #1, however during this period a meter was not installed between CC-3 and CC-1. Therefore, we were unable to analyze the isolated flow from CC-3 and CC-1. However, we were able to separate CC-3 into CC-3A and CC-3B as shown in Figure #1. We can analyze CC-4, CC-2, CC-3A and combined flow from CC-3B and CC-1. Based on this analysis, CC-4 has some unaccounted flow (16,285 gpd) and the combined flow from CC-3B and CC-1 and the flow from CC-3A has little to no unaccounted flow, and the CC-2 continues to have a significant amount of unaccounted flow (184,793 gpd), consistent with prior years' analyses. Therefore, sub-area CC-2 is considered to have the highest amount of I & I and should continue to be the focus of investigations in the service area.

RECOMMENDATIONS

The Bow Tree Development should be investigated via either televising and/or smoke testing to determine the source of the I & I observed in all four portable meters placed within the development over the previous

four months. Additionally, it should be noted that a majority of the I & I observed appears to be the result of wet weather I & I, which is the result of high groundwater table or sump pumps being connected to the sanitary sewer system.

A portable meter should be re-installed at MH R-238 on Line Road to provide a larger data set to accurately verify our analysis.

Visual observation of flows within manholes during overnight hours should also continue with follow-up televising as needed.

Over the next six months, the Township should install and monitor portable meters in the Chester Creek Service Area. Visual observation of flows within manholes during overnight hours should also continue with follow-up televising as needed. Additionally, the Chester Creek interceptor should be televised and/or smoke tested. We believe that a majority of the I & I occurring during wet weather conditions is occurring along the interceptor which runs adjacent to Chester Creek.

This Semi-Annual Status Reports is submitted by copy to the East Goshen Municipal Authority to describe the progress made towards achieving the previous Corrective Action milestone events. We anticipate preparation and submission of Semi-Annual Sewer System Status Report #20 by January 30, 2021.

If you should have any questions, please do not hesitate to contact me.

Sincerely,

PENNONI ASSOCIATES INC.



Michael J. Ellis, PE
Authority Engineer

cc: Rick Smith, Township Manager
Jon Altshul, Assistant Township Manager
East Goshen Municipal Authority

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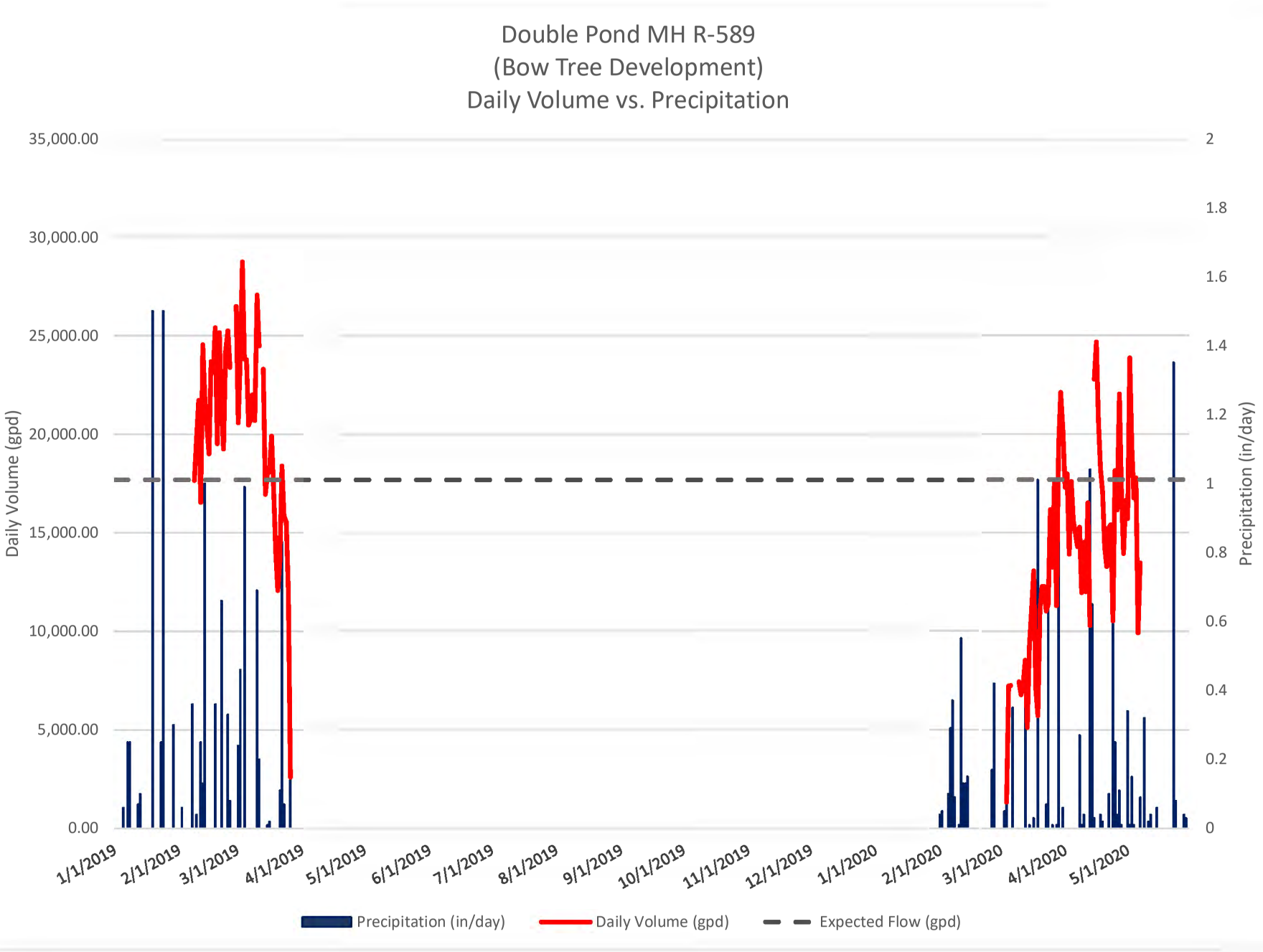
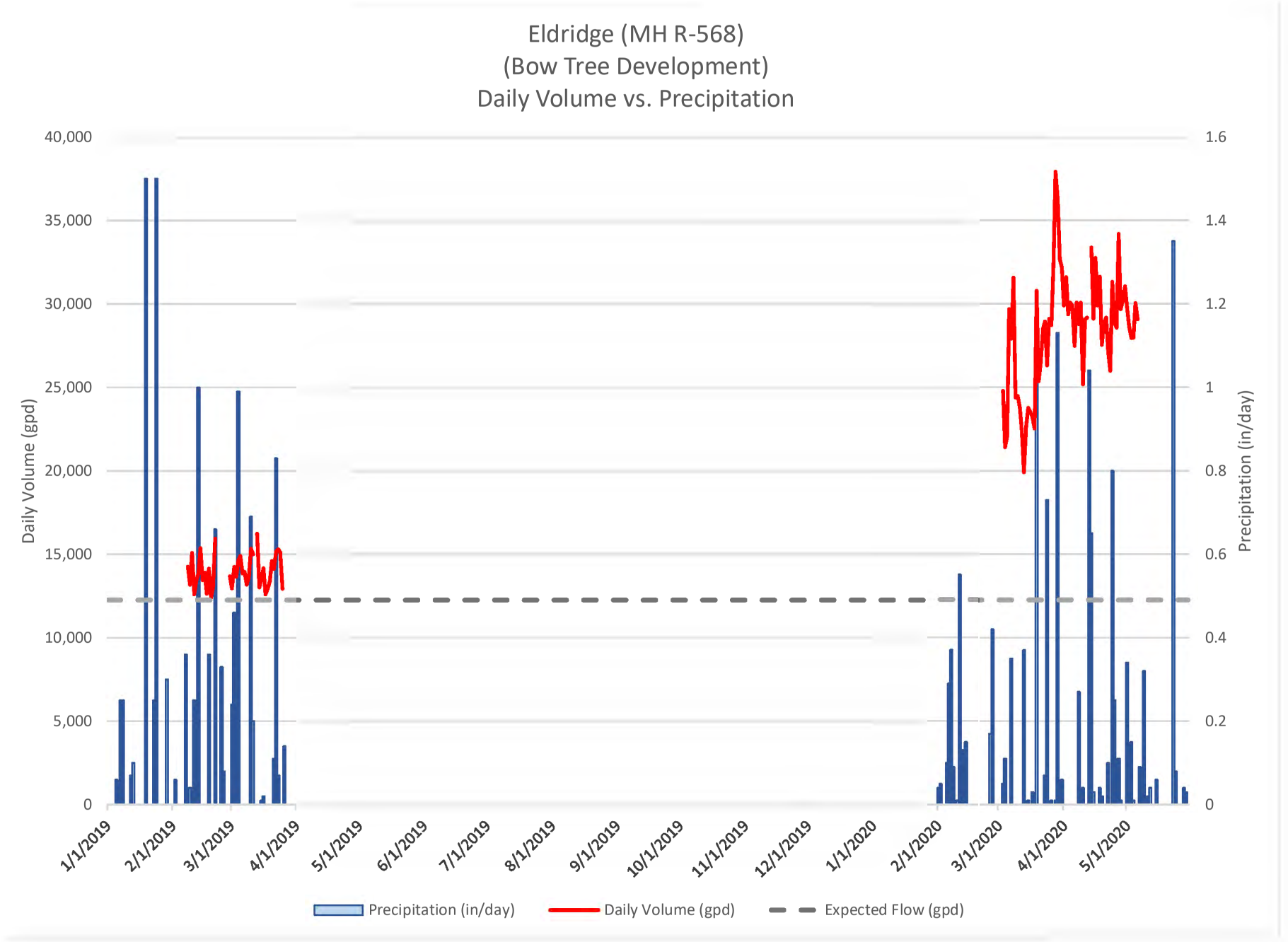
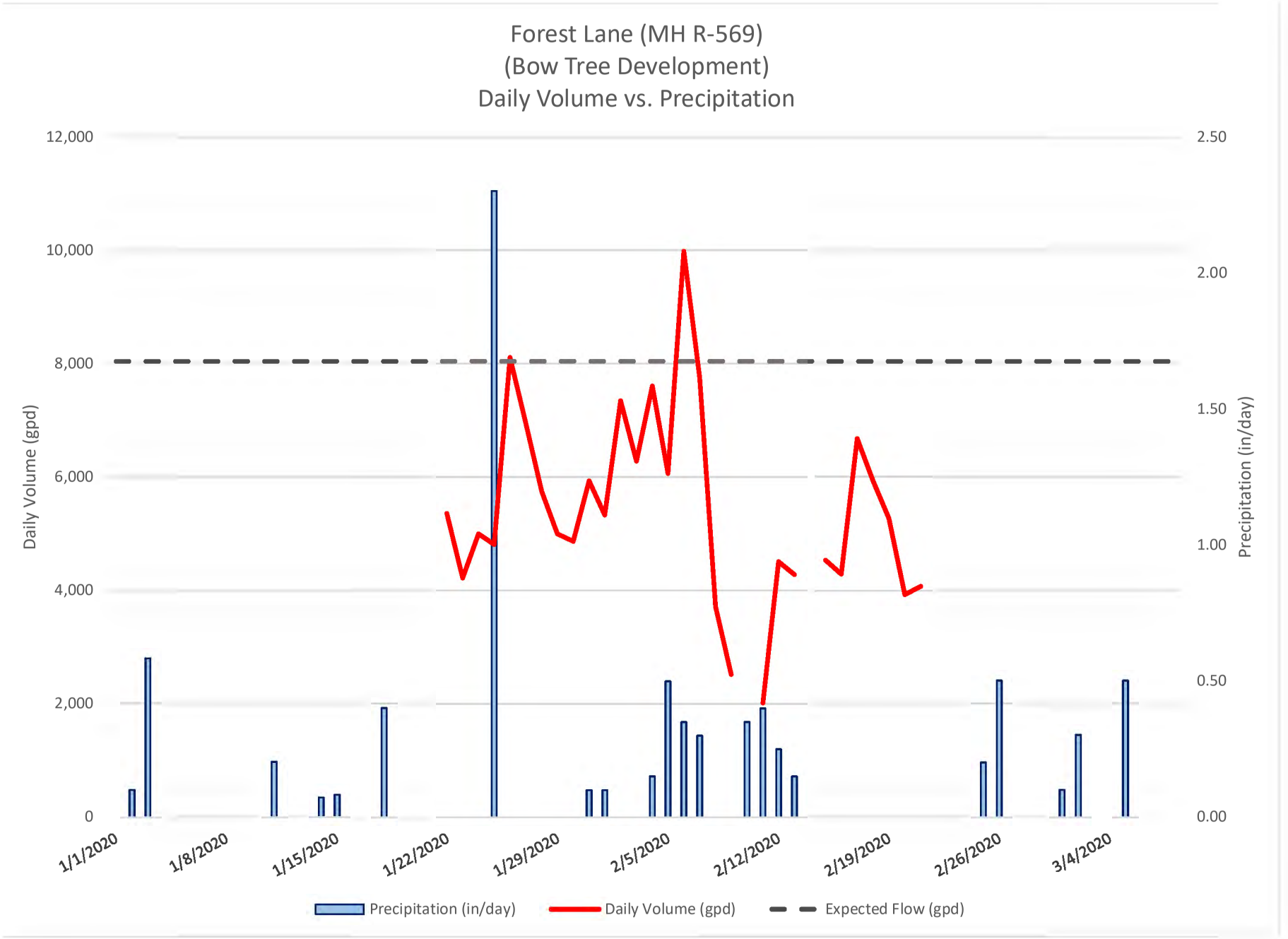
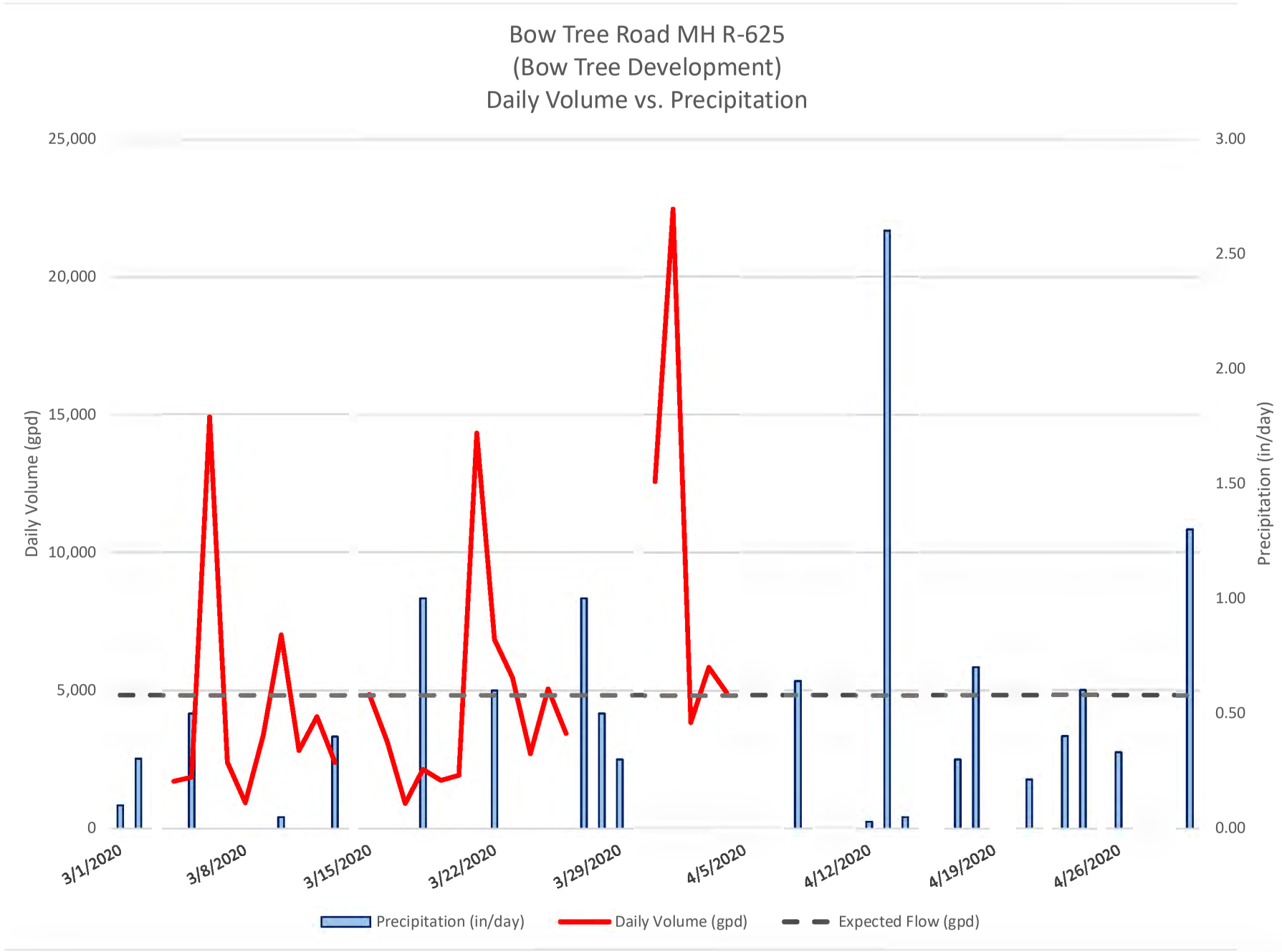
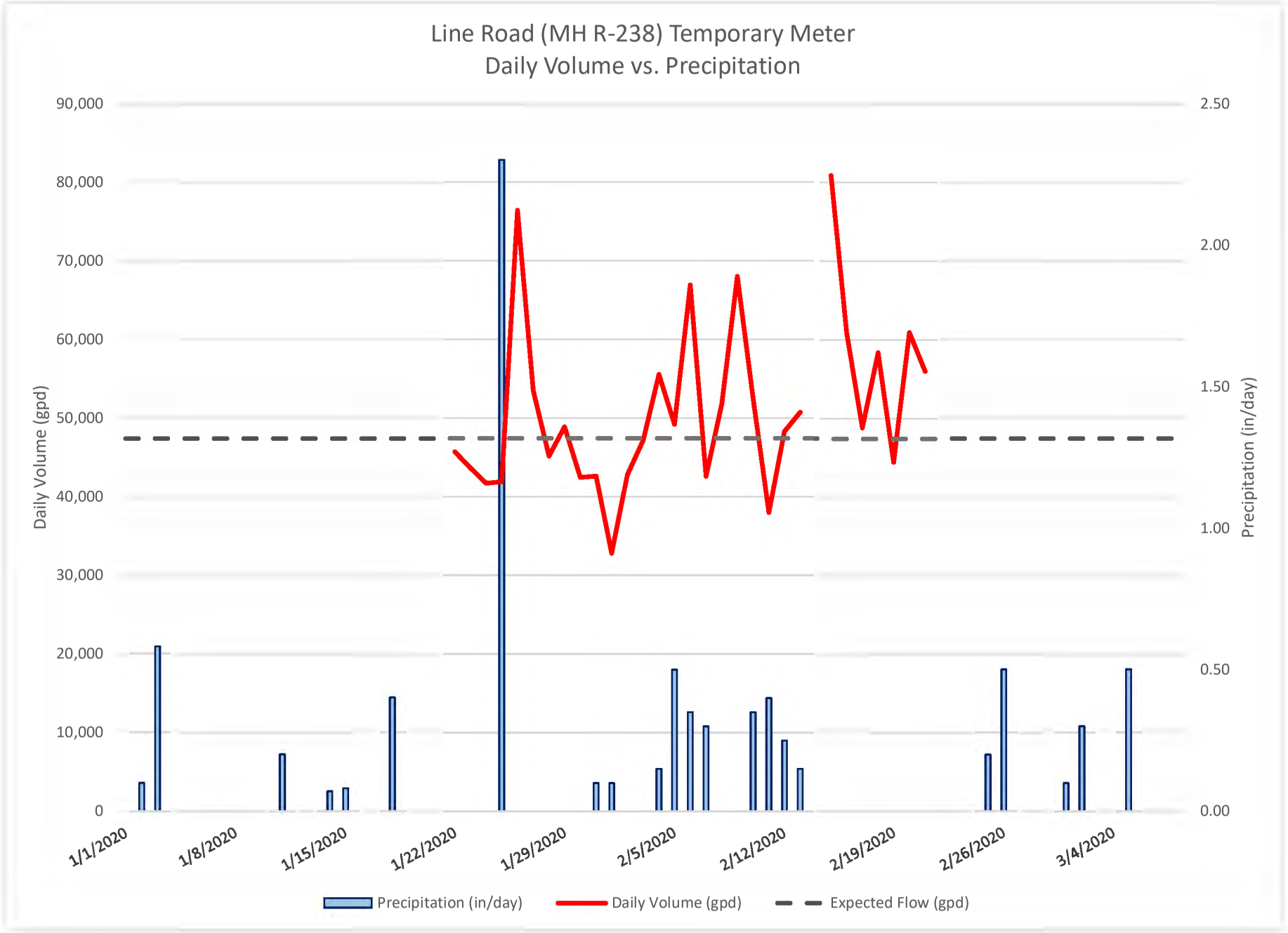
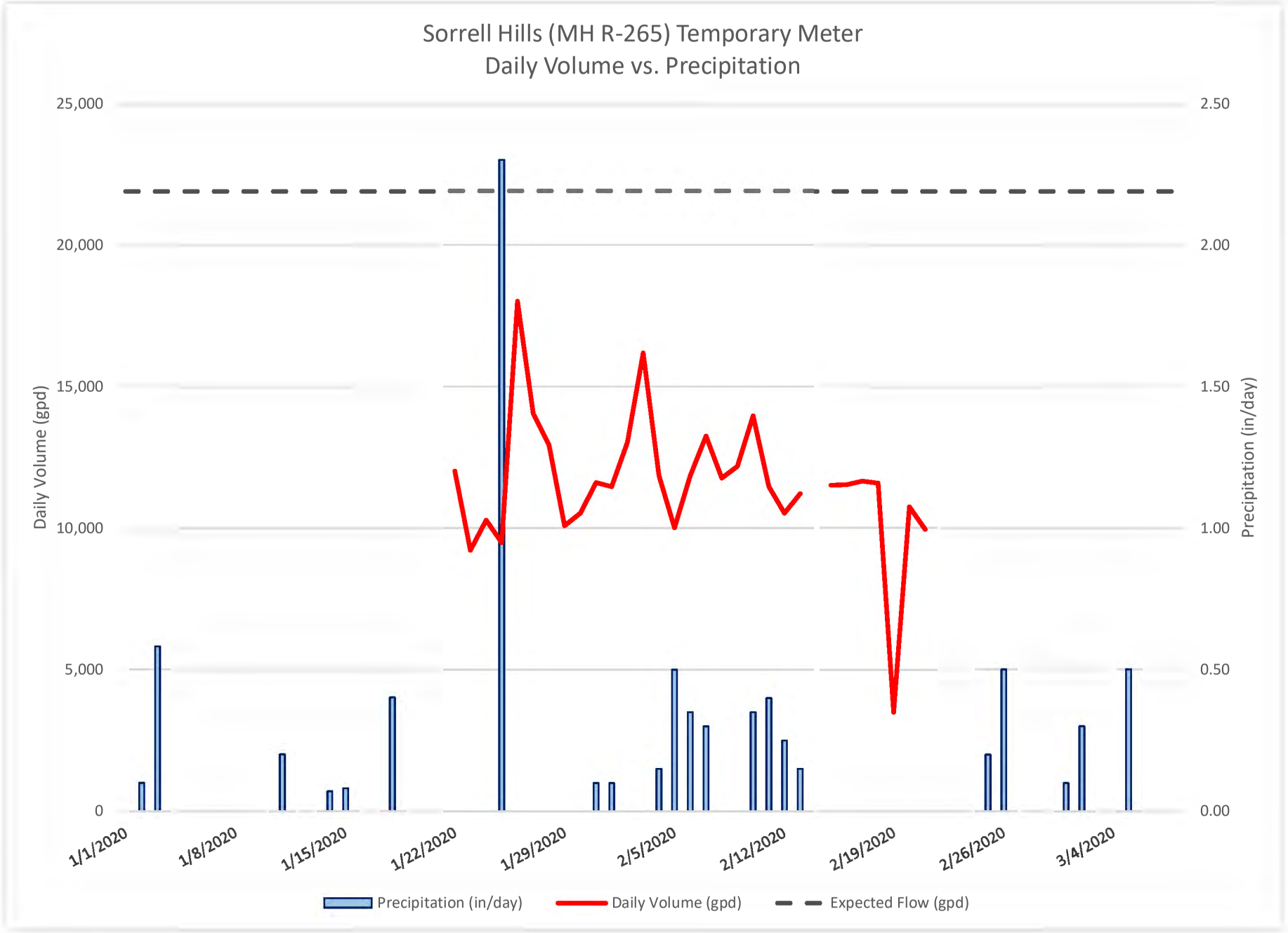

Double Pond MH R-589
(Bow Tree Development)
Daily Volume vs. Precipitation
Daily Volume (gpd)
Precipitation (in/day)
35,000.00
30,000.00
25,000.00
20,000.00
15,000.00
10,000.00
5,000.00
0.00
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)

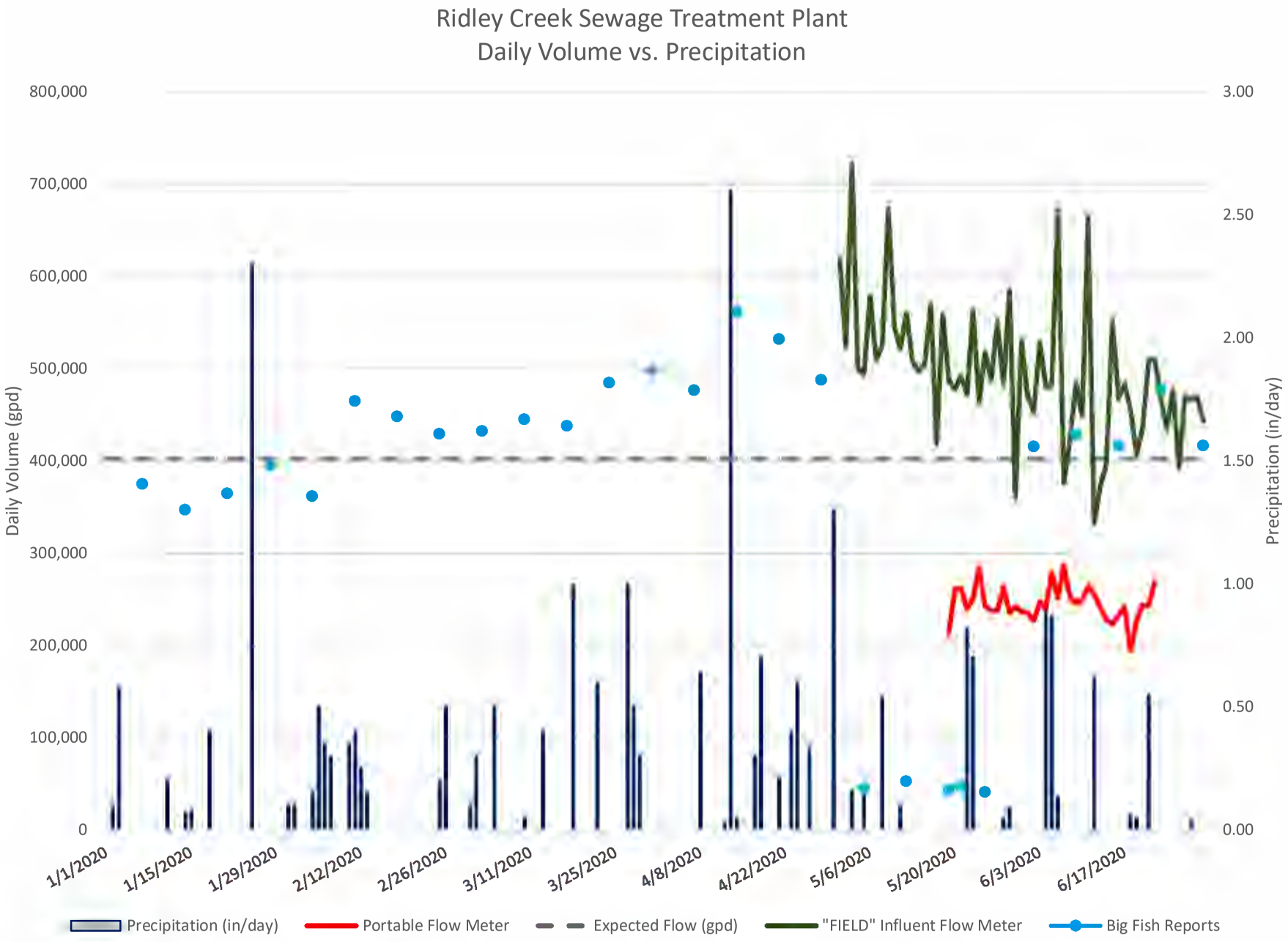

Eldridge (MH R-568)
(Bow Tree Development)
Daily Volume vs. Precipitation
Daily Volume (gpd)
Precipitation (in/day)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)

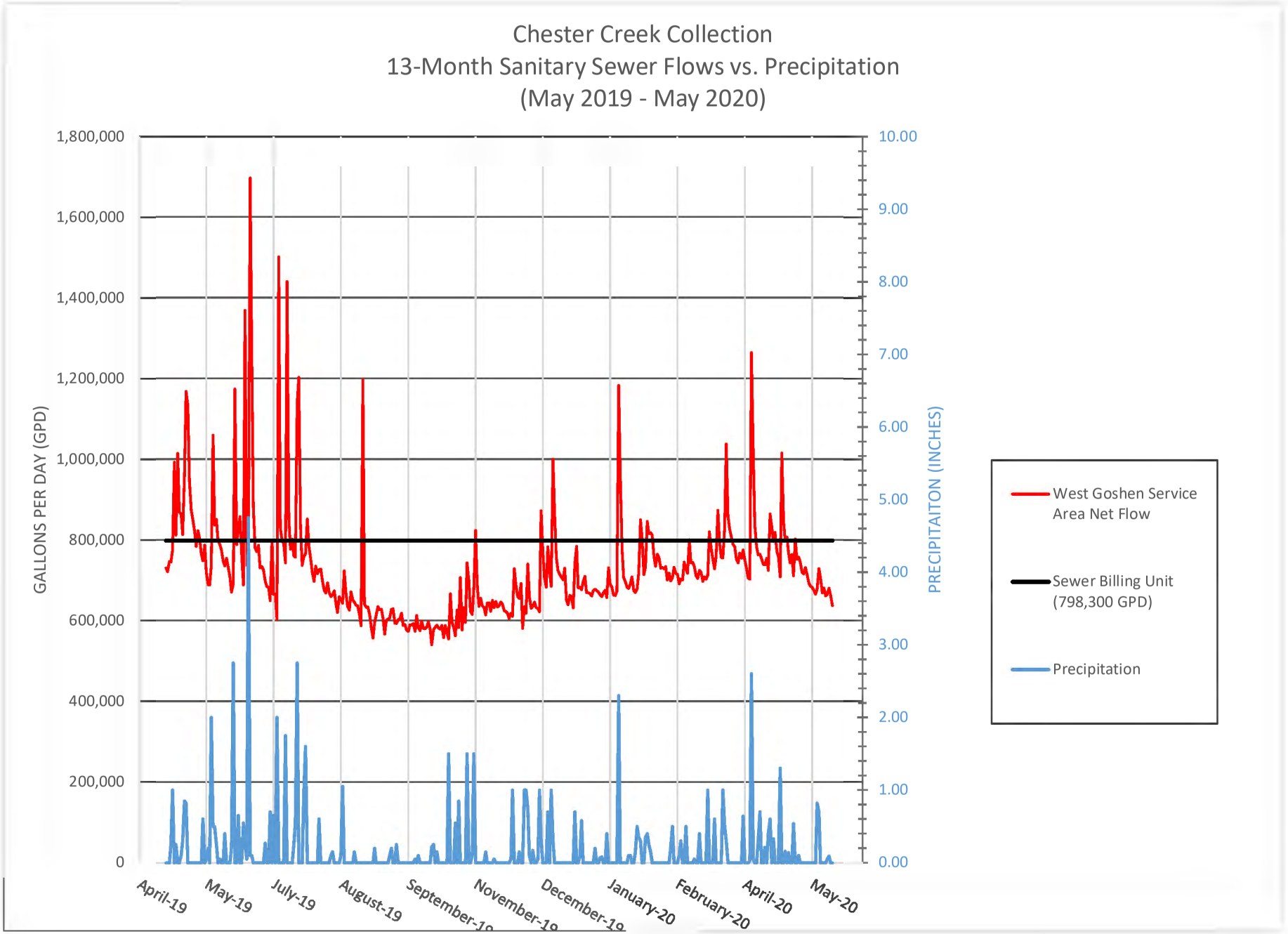

Forest Lane (MH R-569)
(Bow Tree Development)
Daily Volume vs. Precipitation
Daily Volume (gpd)
Precipitation (in/day)
12,000
10,000
8,000
6,000
4,000
2,000
0
2.50
2.00
1.50
1.00
0.50
0.00
1/1/2020
1/8/2020
1/15/2020
1/22/2020
1/29/2020
2/5/2020
2/12/2020
2/19/2020
2/26/2020
3/4/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)

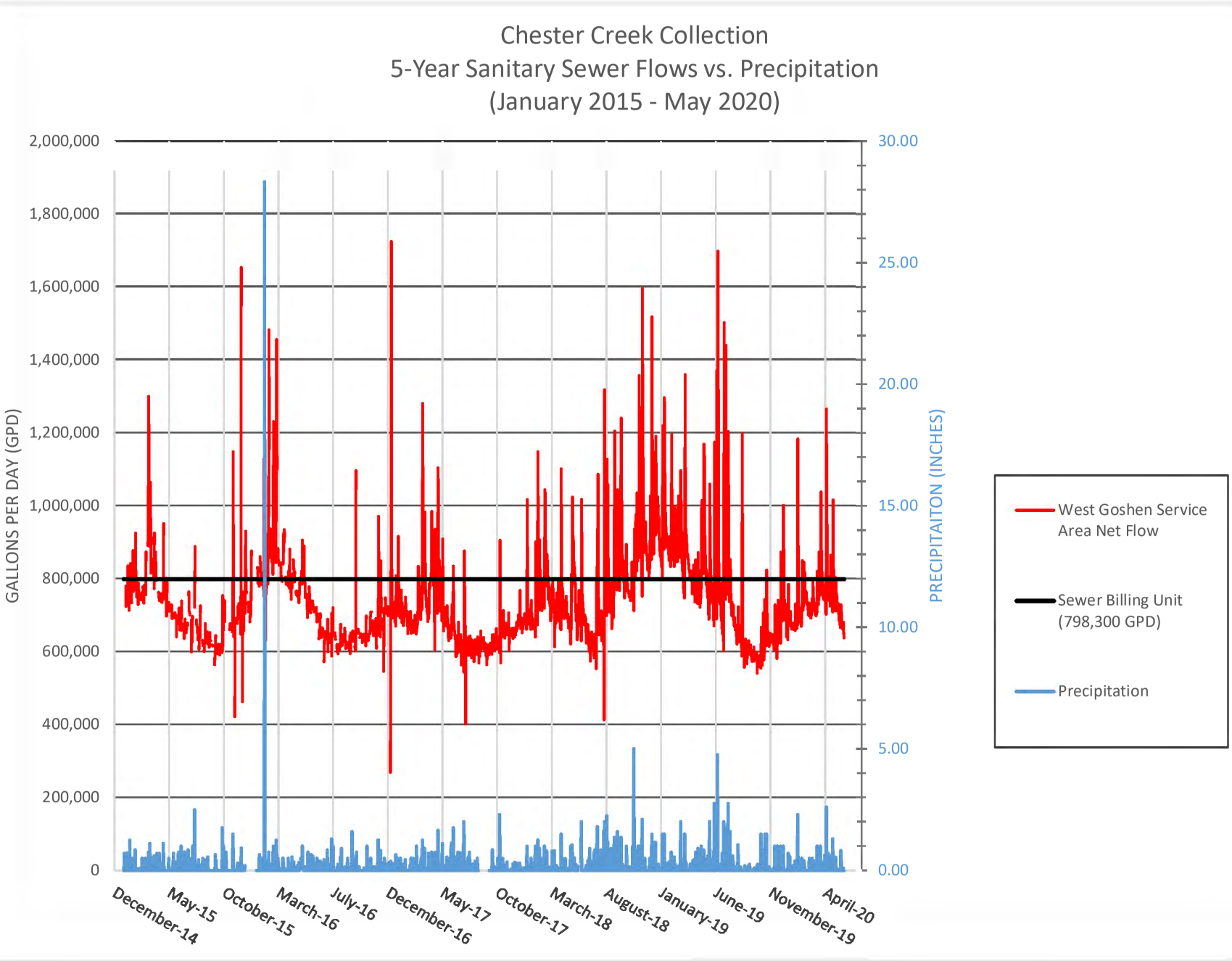

Bow Tree Road MH R-625
(Bow Tree Development)
Daily Volume vs. Precipitation
25,000
20,000
15,000
10,000
5,000
0
Daily Volume (gpd)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Precipitation (in/day)
3/1/2020
3/8/2020
3/15/2020
3/22/2020
3/29/2020
4/5/2020
4/12/2020
4/19/2020
4/26/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)

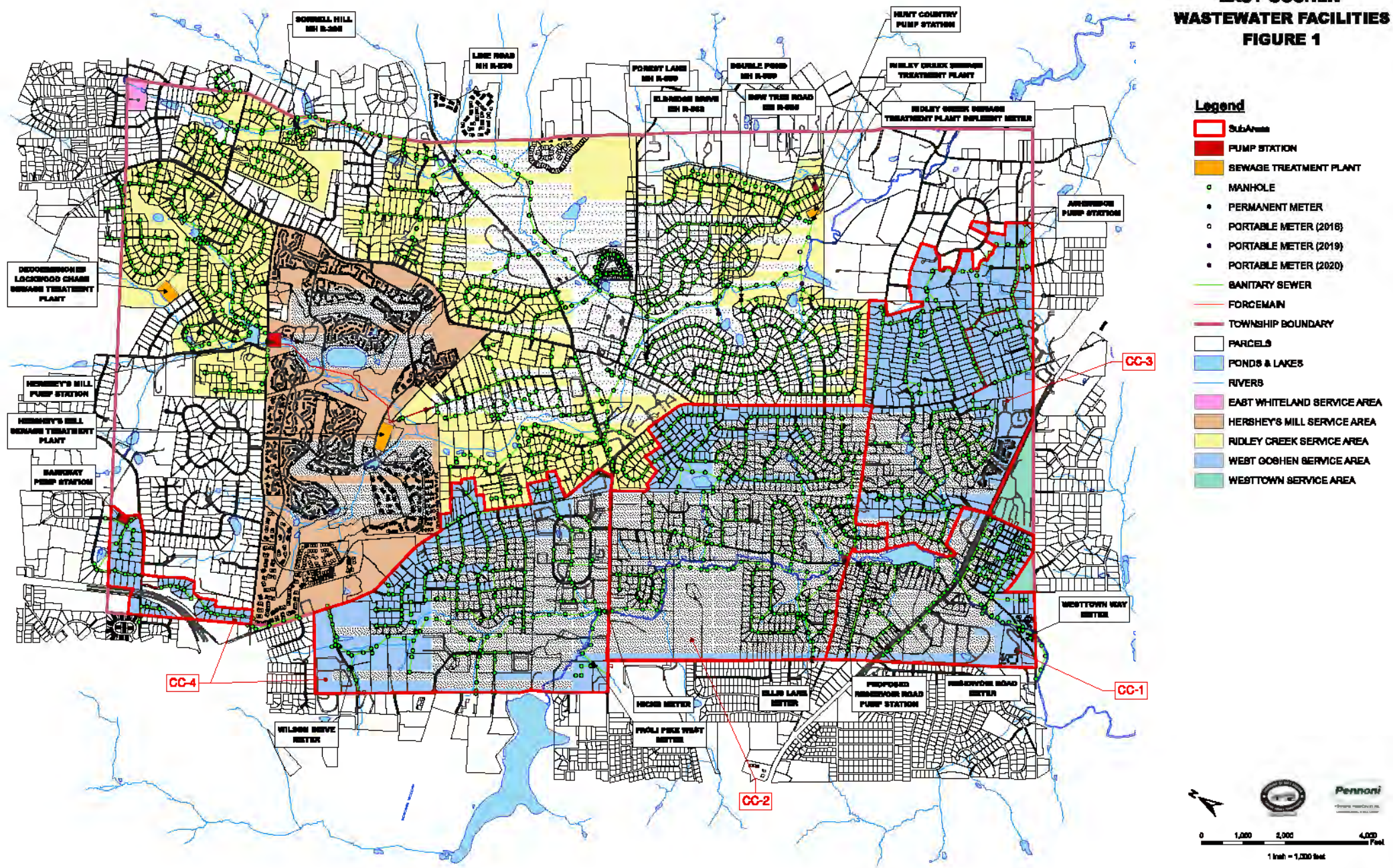

Line Road (MH R-238) Temporary Meter
Daily Volume vs. Precipitation
Daily Volume (gpd)
Precipitation (in/day)
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2.50
2.00
1.50
1.00
0.50
0.00
1/1/2020
1/8/2020
1/15/2020
1/22/2020
1/29/2020
2/5/2020
2/12/2020
2/19/2020
2/26/2020
3/4/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)


Sorrell Hills (MH R-265) Temporary Meter
Daily Volume vs. Precipitation
25,000
20,000
15,000
10,000
5,000
0
2.50
2.00
1.50
1.00
0.50
0.00
Daily Volume (gpd)
Precipitation (in/day)
1/1/2020
1/8/2020
1/15/2020
1/22/2020
1/29/2020
2/5/2020
2/12/2020
2/19/2020
2/26/2020
3/4/2020
Precipitation (in/day)
Daily Volume (gpd)
Expected Flow (gpd)


Ridley Creek Sewage Treatment Plant
Daily Volume vs. Precipitation
Daily Volume (gpd)
Precipitation (in/day)
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1/1/2020
1/15/2020
1/29/2020
2/12/2020
2/26/2020
3/11/2020
3/25/2020
4/8/2020
4/22/2020
5/6/2020
5/20/2020
6/3/2020
6/17/2020
Precipitation (in/day)
Portable Flow Meter
Expected Flow (gpd)
"FIELD" Influent Flow Meter
Big Fish Reports


Chester Creek Collection
13-Month Sanitary Sewer Flows vs. Precipitation
(May 2019 - May 2020)
GALLONS PER DAY (GPD)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
PRECIPITAITON (INCHES)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
April-19
May-19
July-19
August-19
September-19
November-19
December-19
January-20
February-20
April-20
May-20
West Goshen Service Area Net Flow
Sewer Billing Unit (798,300 GPD)
Precipitation


Chester Creek Collection
5-Year Sanitary Sewer Flows vs. Precipitation
(January 2015 - May 2020)
GALLONS PER DAY (GPD)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
PRECIPITAITON (INCHES)
30.00
25.00
20.00
15.00
10.00
5.00
0.00
December-14
May-15
October-15
March-16
July-16
December-16
May-17
October-17
March-18
August-18
January-19
June-19
November-19
April-20
West Goshen Service Area Net Flow
Sewer Billing Unit (798,300 GPD)
Precipitation


EAST GOSHEN
WASTEWATER FACILITIES
FIGURE 1
Legend
SubAreas
PUMP STATION
SEWAGE TREATMENT PLANT
MANHOLE
PERMANENT METER
PORTABLE METER (2018)
PORTABLE METER (2019)
PORTABLE METER (2020)
SANITARY SEWER
FORCEMAIN
TOWNSHIP BOUNDARY
PARCELS
PONDS & LAKES
RIVERS
EAST WHITELAND SERVICE AREA
HERSHEY'S MILL SERVICE AREA
RIDLEY CREEK SERVICE AREA
WEST GOSHEN SERVICE AREA
WESTTOWN SERVICE AREA
CC-1
CC-2
CC-3
CC-4
Pennoni
0
1,000
2,000
4,000
Feet
1 inch = 1,000 feet

APPENDIX D

Meter Calibration Records

ALLIED CONTROL SERVICES, INC.
511 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

63829

INVOICE

Invoice Number: 314792
Invoice Date: 09/02/2020
Page: 1

SCANNED

Sold To:
East Goshen Municipal Auth.
1580 Paoli Pike
West Chester, PA 19380

Ship To: DEM-00-1009
Ridley STP, Westtown Way, Hickes Reservoir, Ellise Ave, Wilson Barkway, Hershey Mills

Customer ID	Customer PO	Payment Terms	
EASG01	Mark Miller	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	9/2/2020	10/2/2020

Qty	P/N	Description	Unit Price	Extension
8.00	DEMAND ITM	On-site quarterly flow meter calibration services as provided by G. Buchser on 9/2/2020. Please refer to CSR #54256 for more detaile.	124.00	992.00
30.00	MILEAGE	Total Mileage Charge	0.88	26.40

APPROVED BY: MM
DATE PAID:
CHECK #:
CHARGED TO: 05420.3700

Check/Credit Memo No.

Subtotal	$1,018.40
Sales Tax	0.00
Total Invoice Amount	1,018.40
Payment/Credit Applied	0.00
TOTAL	$1,018.40

ALLIED CONTROL SERVICES, INC.

611 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

62857

INVOICE

Invoice Number: 314374
Invoice Date: 05/18/2020
Page: 1

SCANNED

Sold To:
East Goshen Municipal Auth.
1580 Paoli Pike
West Chester, PA 19380

Ship To: DEM-00-1009
Ridley STP, Wilson Rd, Westtown Way
Hershey Mill, Ellise Ave, Rese
Paoli Pike

Customer ID	Customer PO	Payment Terms	
EASG01	Mark Miller	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	5/18/2020	6/17/2020

Qty	P/N	Description	Unit Price	Extension
8.00	DEMAND ITM	On-site 2nd quarter calibration services as provided by G. Buchser on 5/18/2020. Please refer to CSR #53369 for more details.	124.00	992.00
25.00	MILEAGE	Total Mileage Charge	0.88	22.00

APPROVED BY: [signature]
DATE PAID: _____
CHECK #: _____
CHARGED TO 5420-3700

Check/Credit Memo No.

Subtotal	$1,014.00
Sales Tax	0.00
Total Invoice Amount	1,014.00
Payment/Credit Applied	0.00
TOTAL	$1,014.00

ALLIED CONTROL SERVICES, INC.
611 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

Invoice Number: 314118
Invoice Date: 03/03/2020
Page: 1

SCANNED

Sold To:
East Goshen Municipal Auth.
1580 Paoli Pike
West Chester, PA 19380

Ship To: DEM-00-1009
E Goshen Demand Services
, PA

Customer ID	Customer PO	Payment Terms	
EASG01	Mark Miller	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	3/3/2020	4/2/2020

Qty	P/N	Description	Unit Price	Extension
4.00	DEMAND ITM	On-site 4th site portable HACH FL9000 installation services as provided by G. Buchser on 3/3/2020. Please refer to CSR #5317 8 for more details.	124.00	496.00
25.00	MILEAGE	Total Mileage Charge	0.88	22.00

APPROVED BY: [signature]
DATE PAID:
CHECK #:
CHARGED TO: 05422.3702

Subtotal	$518.00
Sales Tax	0.00
Total Invoice Amount	518.00
Check/Credit Memo No. Payment/Credit Applied	0.00
TOTAL	$518.00

SERVICE REPRESENTATIVE [signature] | CUSTOMER SIGNATURE [signature] | MO. 2 | DAY 2 | YR. 20

LLIED CONTROL SERVICES, INC.

GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
ne: 215-699-2855
: 215-699-9030

61201

INVOICE

Invoice Number: 313998

Invoice Date: 01/13/2020

Page: 1

Sold To:
East Goshen Municipal Auth.
1580 Paoli Pike
West Chester, PA 19380

Ship To: DEM-00-1009
Forest Rd, Sorrel Hill
and Climbers Woods

Customer ID	Customer PO	Payment Terms	
EASG01	Mark Miller	Net 30 Days	
Sales Rep ID	Shipping	Ship	Due Date
GBUCHSER	Field Service	1/13/2020	2/12/2020

Qty	P/N	Description	Unit Price	Extension
5.50	DEMAND ITM	On-site HACH FL9000 remote logger installations as provided by G. Buchser on 1/13/2020. Please refer to CSR #53151 for more details.	124.00	682.00
25.00	MILEAGE	Total Mileage Charge	0.88	22.00

APPROVED BY: _____
DATE PAID: _____
CHECK #: _____
CHARGED TO: 05 422-3702
05 420-3704

Subtotal	$704.00
Sales Tax	0.00
Total Invoice Amount	704.00
Payment/Credit Applied	0.00
TOTAL	$704.00

Check/Credit Memo No.

ALLIED CONTROL SERVICES, INC.
1 GARFIELD AVE. • P.O. BOX 234 • WEST POINT, PA 19486
Phone: 215-699-2855
Fax: 215-699-9030

60754

INVOICE

Invoice Number: 313810
Invoice Date: 12/06/2019
Page: 1

SCANNED

Sold To:
East Goshen Municipal Auth.
1580 Paoli Pike
West Chester, PA 19380

Ship To: DEM-00-1009
Hicks

Customer ID	Customer PO	Payment Terms	
EASG01	Mark Miller	Net 30 Days	
Sales Rep ID	Shipping	Ship Date	Due Date
GBUCHSER	Field Service	12/6/2019	1/5/2020

Qty	P/N	Description	Unit Price	Extension
1.00	DEMAND ITM	On-site Hicks meter high flows troubleshooting services as provided by G. Buchser on 12/6/19. Please refer to CSR #53130 for more details.	119.00	119.00
15.00	MILEAGE	Total Mileage Charge	0.85	12.75

APPROVED BY: MH
DATE PAID:
CHECK #:
CHARGED TO: 06420 3100

Subtotal	$131.75
Sales Tax	0.00
Total Invoice Amount	131.75
Payment/Credit Applied	0.00
TOTAL	$131.75

Check/Credit Memo No.

CUSTOMER SERVICE REPORT # SR 54253

ALLIED CONTROL SERVICES, INC.
611 Garfield Avenue • P.O. Box 234, West Point, PA 19486
24 Hour Emergency Service 800-441-4844

CUSTOMER'S ORDER NO.
REFERENCE NO.

BILL TO

CUSTOMER SITE/LOCATION

CONTACT: _____

CONTACT: _____

REQUESTED SERVICES	CODES
	DEM PMP PMB
	QRT COB CON
	WAR SAL ENG
	OTHER:

WORK PERFORMED	EQUIPMENT REMOVED OR DELIVERED DESCRIPTION/REF #	SERIAL/ID #	DEL	REM

QTY	PART/PRODUCT NUMBER	AMOUNT

APPROVED BY: MM

DATE PAID: _____

CHECK #: _____

CHARGED TO: 05420-3700

	[A] PARTS TOTAL ➤	
	LABOR (REG.) HRS@ /HR	
	LABOR (O.T.) HRS@ /HR	
	LUMP SUM:	
	[B] LABOR TOTAL ➤	
	EXPENSES (TOLLS, ROOMS, MEALS)	
	MILEAGE _____ MILES@ /MILE	
	AIR AND/OR CAR RENTAL	
	[C] EXPENSE TOTAL ➤	
	[D] SHIPPING CHARGES ➤	
	TOTAL [A] + [B] + [C] + [D] ➤	
	SALES TAX OR TAX ID # ( )	
	OTHER:	
	FINAL AMOUNT DUE ➤	

FOLLOW-UP REQUIRED: YES ☐ NO ☐ (ATTACH CCR FORM)

CERTIFICATIONS REQUIRED: YES ☐ NO ☐ NIST: YES ☐ NO ☐

FUTURE ACTION/WORK REQUIRED: YES ☐ NO ☐ % COMP ☐

SERVICE REPRESENTATIVE	CUSTOMER SIGNATURE	MO.	DAY	YR.
		9	29	20

APPENDIX E

Township Code 188: (Regarding Industrial Waste)

Chapter 188: SEWERS

[HISTORY: Adopted by the Board of Supervisors of the Township of East Goshen as indicated in article histories. Amendments noted where applicable.]

§ 188-6. Industrial waste.

A. Industrial wastewater discharge permit. Prior to the discharge of any industrial waste or other waste not defined as sanitary sewage into the sewer system, the discharger shall first obtain an industrial wastewater discharge permit issued by the Township.

B. Exclusion of industrial waste:

(1) Permissible discharges. All wastewater discharged into the sewer system shall be of a domestic strength and composition. Any wastewater which is not of domestic origin shall be pretreated to domestic strength and composition or a level acceptable to the Authority. Discharges of nondomestic strength origin will be permissible by permit only.

(2) The Township reserves the right to refuse connection to the sewer system, to disconnect a sewer or to compel pretreatment of industrial waste in order to prevent discharge to the sewer of industrial waste deemed to be harmful to the sewage collection system or sewage plant or to have a deleterious effect on the sewage treatment or sludge-handling processes or the receiving stream or which would cause a violation of any existing sewage treatment agreement or permit of the Township.

C. Industrial waste rates. In the event that the Township consents to accept industrial waste into the sewer system, having total suspended solids (tss) in excess of 300 parts per million (ppm) and biochemical oxygen demand (BOD) in excess of 250 ppm the total charge shall be determined in accordance with the following formula:

Total charge =

Q + [(0.001 x Q) x (BOD in ppm - 250)] + [(0.001 x Q) x (tss in ppm - 300)]

Where:

Q	=	metered quantity charge
BOD	=	biochemical oxygen demand
tss	=	total suspended solids
ppm	=	parts per million

D. Surcharge for extra strength **[Added 11-16-2004 by Ord. No. 129-S-04]**

The total charge for sewage having concentrations in excess of the levels set forth in Subsection C above shall be determined in accordance with the following formula: Total charge = Q + 0.001 Q (BOD in ppm - 250) + 0.001 Q (SS in ppm - 300)

Q	=	Metered quantity charge (§ 188-6.C)
SS	=	Suspended solids.
ppm	=	Parts per million.”

§ 188-7. Exclusion of harmful waste.

No person shall discharge into the sewer system any exhaust steam or any oils, tar, grease, gas, benzene or other combustible gases or liquids, any garbage (unless treated in an approved manner), offal, insoluble solids or other dangerous or harmful substances which would adversely affect the functioning of the sewer system or the processes of sewage treatment or the receiving stream.

ARTICLE IV Pretreatment Standards and Regulations for Industrial Wastewater Discharges [Adopted 11-6-2004 by Ord. No. 129-S-04]

§ 188-35. Legislative intent.

A. East Goshen Township entered an intermunicipal agreement with West Goshen Township on February 28, 1996, titled, "Agreement Between West Goshen Township and East Goshen Township Governing Compliance with Implementation and Enforcement of Industrial Waste Pretreatment Regulations" (the "agreement") whereby West Goshen Township agreed to accept sanitary sewage from East Goshen Township into the West Goshen Township Wastewater Treatment Plant. Pursuant to the Agreement, East Goshen Township is required to develop, implement and enforce a federally mandated pretreatment program in compliance with the federal regulations (codified at 40 Code of Federal Regulations Part 403) to control wastewater discharges from all industrial users in East Goshen Township whose sewage is discharged into the West Goshen Township Sewage Collection System for treatment at the West Goshen Township Wastewater Treatment Plant.

B. The East Goshen Township Municipal Authority currently owns the Ridley Creek Sewer Treatment Plant along Towne Drive and the Lockwood Sewer Treatment Plant along Dolphin Drive (collectively, the "East Goshen Plants") which the Municipal Authority leases to the Township. As of the effective date of this article, the East Goshen Plants do not accept sewage from any industrial users. If in the future the Township and the East Goshen Township Municipal Authority agree to accept industrial waste for treatment at the East Goshen Plants, the regulations set forth in this Article IV shall apply and such industrial user(s) shall comply with all standards and regulations in this Article IV.

§ 188-36. Definitions; word usage.

A. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this article, shall have the meanings hereinafter designated.

ACTS — The Federal Water Pollution Control Act, as amended, also known as the "Clean Water Act," as amended, 33 U.S.C. § 1251 et seq. (the "Act"); and the Pennsylvania Sewage Facilities Act, Act of January 24, 1966, P.L. (1965) 1535, as amended (the Sewage Facilities Act).

APPROVAL AUTHORITY — The Environmental Protection Agency (EPA), Region III.

AUTHORIZED REPRESENTATIVE OF USER — An authorized representative of a user is:

(1) A principal executive officer of at least the level of vice president if the user is a corporation.

(2) A general partner or proprietor if the user is a partnership or proprietorship, respectively.

(3) A principal executive officer or a person having responsibility for the overall operation of the user's facility if the user is a governmental agency, unincorporated organization or other similar entity.

(4) A duly authorized representative of the individual designated in Subsections (1) through (3) above if:

(a) The authorization is made in writing;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the industrial discharge originates, such as the position of plant manager, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and

(c) The written authorization is submitted to the East Goshen Township Sewer Manager.

AVERAGE DAILY FLOW — The wastewater discharge volume for the most recent calendar month

divided by the number of calendar days in that month.

BOD (denotes "biochemical oxygen demand") — The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five days at 20° C., expressed in terms of weight and concentration [milligrams per liter (mg/L)]. The standard laboratory procedure shall be found in the latest edition of Standard Methods for the Examination of Water and Sewage, published by the American Public Health Association.

BYPASS — The intentional diversion of waste streams from any portion of an industrial user's facility for pretreatment.

CATEGORICAL INDUSTRY — Any industry subject to pretreatment standards as specified in 40 CFR (the "United States Code of Federal Regulations"), Chapter 1, Subchapter N, establishing quantities or concentrations of pollutants or pollutant properties which may be discharged or introduced to a treatment plant by existing or new industrial users in specific industrial subcategories.

CATEGORICAL STANDARDS — National Categorical Pretreatment Standards.

COD (denotes "chemical oxygen demand") — The quantity of oxygen, expressed in mg/L, required to chemically oxidize the organic and inorganic matter in a water or wastewater sample under the standard laboratory procedure. The standard laboratory procedure shall be that in the latest edition of Standard Methods for the Examination of Water and Sewage, published by the American Public Health Association.

COMPATIBLE POLLUTANT — BOD, COD, total suspended solids, total Kjeldahl nitrogen, total phosphorus, fecal coliform bacteria and oil and grease.

COMPOSITE SAMPLE — The sample resulting from the combination of individual wastewater samples taken at selected intervals based on an increment of either flow or time.

CONTROL AUTHORITY — The East Goshen Township Board of Supervisors.

ENGINEER — Any consulting engineer appointed by East Goshen Township or the East Goshen Municipal Authority.

EPA — The United States Environmental Protection Agency, including, where appropriate, the Administrator or other duly authorized official of said agency.

EXTRA-STRENGTH WASTEWATER — A wastewater having total suspended solids (tss) in excess of 300 parts per million (ppm) and biochemical oxygen demand (BOD) in excess of 250 ppm, which may be acceptable for discharge to the sewerage system, subject to prior approval of the Sewer Manager and the discharger's payment of a surcharge as established in this article. The concentration levels set forth in this definition may be revised from time to time by resolution of the control authority.

GARBAGE — Solid wastes from the domestic and commercial preparation, cooking and dispensing of food and from the commercial handling, storage and sale of produce.

GRAB SAMPLE — A sample which is taken from a waste stream on a one-time basis, with no regard to the flow in the waste stream, over a period of time not to exceed 15 minutes.

INDUSTRIAL USER — Any person discharging anything other than domestic waste to the sewerage system.

INDUSTRIAL WASTEWATER — Any water which, during a manufacturing or processing operation, including those regulated under Sections 307(b), (c) or (d) of the Act, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product or waste product, or any other water contaminated by an industrial and/or commercial process, and distinct from domestic wastewater.

INDUSTRIAL WASTE DISCHARGE PERMIT — A permit authorizing a person to deposit or discharge industrial wastewater into the sewerage system.

INTERFERENCE — A discharge which alone or in conjunction with a discharge or discharges from

other sources inhibits or disrupts the treatment, conveyance, processes or operations of the sewerage system or a decrease in treatment efficiency or which contributes to a violation of any requirement of an NPDES permit, or which prevents the use or disposal of sewage sludge in compliance with any of the following statutory or regulatory provisions or permits issued thereunder: Section 405 of the Act (33 U.S.C. § 1317), any criteria, guidelines or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), including Title II and Title IV, commonly referred to as the "Resource Conservation and Recovery Act" (RCRA), the Clean Air Act, the Toxic Substances Control Act and the Marine Protection, Research and Sanctuaries Act.

LOCAL DISCHARGE LIMITS — Numerical limitations on the concentration, mass or other characteristics of wastewater, wastes or pollutants discharged to the sewerage system by industrial users, and which are developed by East Goshen Township in compliance with National Categorical Pretreatment Standards, National Prohibitive Discharge Standards or other applicable federal and state regulations. For users who are connected to the West Goshen Township Sewerage System, the local discharge limits shall be developed by West Goshen Township in compliance with National Categorical Pretreatment Standards, National Prohibitive Discharge Standards or other applicable federal and state regulations.

MILLIGRAMS PER LITER (mg/L) — The ratio of weight to volume expressing the concentration of a specified component in a wastewater; also known as "parts per million" (PPM).

MUNICIPAL AUTHORITY — The East Goshen Township Municipal Authority.

NATIONAL CATEGORICAL PRETREATMENT STANDARD — Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. § 1317), as from time to time amended, and which are defined in 40 CFR Chapter 1, Subchapter N, Parts 405-471, as from time to time amended.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT or NPDES PERMIT — A permit issued pursuant to Section 402 of the Act (33 U.S.C. § 1342), as from time to time amended.

NATIONAL PROHIBITED DISCHARGE STANDARD OR PROHIBITED DISCHARGE — Any regulation developed under the authority of Section 307(b) of the Act and 40 CFR 403.5.

NEW SOURCE — Any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Categorical Pretreatment Standards under Section 307(c) of the Act, which standards will be applicable to such source if such categorical standards are thereafter promulgated in accordance with that section. Determination of the applicability of new source standards shall be made as provided in the Act and 40 CFR 403.3.

NONCONTACT COOL1NG WATER — Water used for cooling purposes which does not come into direct contact with any raw material, intermediate product, waste product or finished product.

OWNER — Any person vested with ownership, legal or equitable, sole or partial, of any property, or his agent.

PASS-THROUGH — Discharge through the sewerage system which exists in quantities or concentrations, alone or with discharges from other sources, which causes a violation of any condition of an NPDES permit issued to a municipality or municipal authority, including an increase in magnitude or duration of a violation.

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) — The Department of Environmental Protection of the Commonwealth of Pennsylvania, or any department or agency of the commonwealth succeeding to the existing jurisdiction or responsibility of that Department.

PERSON — Any individual, firm, company, partnership, copartnership, corporation, association, joint-stock company, trust, estate, group, society or other legal entity whatsoever, government entity, either commonwealth or local, and their agencies, commissions, departments and instrumentalities, or the legal representatives, heirs, successors and assigns thereof.

pH — The logarithm of the reciprocal of the hydrogen-ion concentration expressed as moles per liter,

which indicates the degree of acidity or alkalinity of a substance.

POLLUTANT — Any dredged soil, solid waste, incinerator residue, sewage, sewage sludge, garbage, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt or industrial, municipal and agricultural waste discharged into water.

PRETREATMENT — The reduction of the amount of pollutants, the elimination of pollutants or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the sewerage system. The reduction or alteration may be obtained by physical, chemical or biological processes, process changes or by other means, except as prohibited by the Federal Water Pollution Control Act and 40 CFR 403.6(d), as amended from time to time.

PRETREATMENT COORDINATOR — The East Goshen Township Sewer Manager or authorized designee. For users who are connected to the West Goshen Township Sewerage System, West Goshen Township or its Sewer Manager shall serve as the pretreatment coordinator.

PRETREATMENT REQUIREMENT — Any substantive or procedural requirement related to pretreatment, other than a pretreatment standard imposed on an industrial user.

PRETREATMENT STANDARD — Any regulation containing pollutant discharge limits promulgated by the control authority in accordance with Sections 307(b) and (c) of the Act, or by East Goshen Township, which applies to industrial users. This term includes National Categorical Pretreatment Standards, local discharge limits and prohibited discharge limits established by this article or other regulatory authority having jurisdiction.

QUALIFIED PROFESSIONAL — A registered professional engineer skilled in the field of wastewater treatment.

SANITARY SEWAGE, DOMESTIC SEWAGE or SEWAGE — The normal water-carried household and toilet wastes from residences, businesses, buildings, institutions and commercial and industrial establishments.

SEWERAGE SYSTEM or SEWER SYSTEM — All facilities leased by the Township from the Municipal Authority and operated by the Township for the collection, transportation, treatment or disposal of sanitary sewage. For users in East Goshen Township whose sewage is treated by West Goshen Township pursuant to an intergovernmental agreement dated February 26, 1996, such term shall include the West Goshen Township Sewerage System as defined herein.

SIGNIFICANT INDUSTRIAL USER — Any industrial user that is subject to National Categorical Pretreatment Standards: or discharges 25,000 gallons or more per day of industrial wastewater; or contributes a waste stream which makes up 5% or more of the average dry weather hydraulic or organic (compatible pollutant) capacity of the sewerage system; or any other industrial user that is designated as such by the pretreatment coordinator on the basis that the industrial user has a reasonable potential to adversely affect the sewerage system by interference, pass-through of pollutants or sludge contaminations sufficient to endanger the sewerage system or Township personnel or to violate any applicable pretreatment standard. By definition, every significant industrial user is an industrial user.

SIGNIFICANT NONCOMPLIANCE (SNC) — An industrial user is in significant noncompliance if it violates one or more of the following criteria:

(1) Chronic violations of wastewater discharge limits, defined as those in which 66% or more of all the measurements taken during a six-month period exceed (by any magnitude) the daily maximum limit or the average limit for the same pollutant.

(2) Technical review criteria (TRC) violations, defined as those violations in which 33% or more of all of the measurements for each pollutant taken during a six-month period equal or exceed the product of the daily average maximum limit or the average limit times the applicable TRC (TRC-1.4 for BOD, TSS, fats, oil and grease, and 1.2 for all other pollutants, except pH).

(3) Any other violation of a pretreatment standard or requirement (daily maximum or longer-term average) that the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, determines has caused, either alone or in combination with other discharges, an interference or pass-through in the sewerage system.

(4) Any discharge of a pollutant that has caused imminent endangerment to the health of the Township personnel, the environment or the general public; or has resulted in exercising any emergency authority to halt or prevent such a discharge.

(5) Failure to meet, within 90 days after the scheduled date, a compliance schedule date or a compliance schedule milestone contained in the user's industrial waste discharge permit or enforcement action for starting construction, completing construction or attaining final compliance.

(6) Failure to accurately and timely report incidents of noncompliance.

(7) Any one or more violations of this article not otherwise specified in this definition, any regulation promulgated pursuant to the authority herein authorized or any regulations imposed by EPA in the implementation and/or enforcement of this article, provided that prior to any enforcement action by the Township, it shall give 30 days' prior written notice to the permittee of the alleged violation and provide the permittee a period of 60 days to correct the violation, unless the violation constitutes in the Sewer Manager's reasonable discretion an emergency presenting a threat of imminent harm to the treatment plant or other municipal sewerage facilities.

(8) Failure to provide within 30 days after the due date any required reports, such as baseline monitoring reports, ninety-day compliance reports, periodic self-monitoring reports and reports on compliance with compliance schedules.

SLUG LOAD — Any discharge at a flow rate or concentration that may cause a violation of any pretreatment requirement or pretreatment standard set forth in this article.

SLUG CONTROL PLAN — A report prepared by an industrial user and provided to the Township in accordance with this article which details the existing and proposed facility plans and operating procedures to be followed by that user in the event of a slug load.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) — A classification pursuant to the latest Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget.

STANDARD METHODS — The latest edition of Standard Methods for the Examination of Water and Wastewater (Standard Methods), a manual published by the American Public Health Association specifying analytical procedures for testing and analysis of wastewater.

STATE — Commonwealth of Pennsylvania.

STORMWATER — Any flow occurring during or following any form of natural precipitation and resulting exclusively therefrom.

SURCHARGE — An additional charge for the treatment of extra-strength wastewater in excess of the basic charge for the treatment of wastewater.

TOTAL SUSPENDED SOLIDS (TSS) — The total suspended matter that either floats on the surface of, or is in suspension in, water or wastewater and is removable by laboratory filtration as prescribed in Standard Methods.

TOTAL KJELDAHL NITROGEN (TKN) — The sum of the organic nitrogen and ammonia nitrogen present in wastewater, as measured by standard laboratory procedure as described in Standard Methods.

TOWNSHIP — East Goshen Township, a political subdivision of the Commonwealth of Pennsylvania.

USER — Any person who contributes wastewater into the sewerage system.

WASTEWATER — The combined flow of sanitary sewage and industrial wastewater, together with such quantities of infiltration and inflow as may be present.

WEST GOSHEN TOWNSHIP — A political subdivision of the Commonwealth of Pennsylvania who, pursuant to an intermunicipal agreement with West Goshen dated February 28, 1996, has agreed to accept sanitary sewage from East Goshen Township for treatment at the West Goshen Township Wastewater Treatment Plant.

WEST GOSHEN TOWNSHIP SEWERAGE SYSTEM — The sewage collection and treatment system of West Goshen Township and West Goshen Township Sewer Authority and any pipe, conduit or other equipment which carries wastewater to the West Goshen Township publicly owned treatment plant (POTW) or any of its component parts.

B. Words in the present tense include the future. The singular number includes the plural number. The plural number includes the singular number. The word "shall" is mandatory, while the word "may" is permissive.

§ 188-37. Prohibitions and restrictions on all users.

Except as otherwise provided in this article, no user shall discharge or cause to be discharged to the sewerage system any sewage, industrial wastewater or other matter or substance:

A. Having a temperature which will inhibit biological activity in the sewerage system resulting in interference, but in no case with a temperature at the introduction into the sewerage system which exceeds 120° F. or is less than 40° F., and in no case heat in such quantities that the temperature of the influent to the POTW exceeds 104° F.

B. Containing petroleum oils, nonbiodegradable cutting oils or other products of mineral origin, animal fats, oil, wax or grease or other similar substances (collectively called "oil and grease") in amounts that will cause pass-through or interference.

C. Containing any liquids, solids or gases at concentrations which are, or may be sufficient, either alone or by interaction with other substances, to cause fire or explosion or be injurious in any other way to the sewerage system or to the operation of the POTW. Prohibited materials include, but are not limited to, gasoline, fuel oil, kerosene, naphtha, paint products, sulfides and any substance having a closed cup flashpoint of less than 140° F. using the test methods specified in 40 CFR, Chapter 1, Subpart C, Section 261.21.

D. Containing solid or viscous substances at concentrations which will cause obstruction to the flow in a sewer or other interference, such as but not limited to ashes, cinders, spent lime, stone dust, sand, mud, straw, shavings, metals, glass, rags, grass clippings, feathers, tar, plastics, wood, whole blood, paunch manure, bentonite, lye, building materials, rubber, asphalt residues, hairs, bones, leather, porcelain, china, ceramic wastes, polishing wastes or glass grindings.

E. Having a pH, stabilized, lower than 6.0 or higher than 9.0 or having any other corrosive or scale-forming property capable of causing damage or hazard to structures, equipment, bacterial action or personnel of the sewerage system.

F. Containing pollutants, including oxygen-demanding pollutants, (BOD etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants, may injure or cause either interferences or a pass-through or interference in the sewerage system, constitute a hazard to humans, animals, plants, create a toxic effect in the receiving waters of the POTW or exceed any limitation set forth in a National Categorical Pretreatment Standard.

G. Containing any noxious or malodorous liquids, gases or solids which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or result in toxic gases, vapors or fumes in the sewerage system in a quantity that will cause worker health and safety problems.

H. Containing objectionable color not removed in the treatment process, such as but not limited to dye

wastes and vegetable tanning solutions.

I. Containing radioactive substances of such half-life or concentration as may exceed limits which are prohibited by applicable state or federal regulations.

J. Prohibited by any permit, statute, rule, regulation, ordinance or resolution issued or promulgated by the Township or any public agency having jurisdiction, including the state and the EPA.

K. Containing any substance which will cause the sewerage system to violate the Municipal Authority's NPDES permit, the West Goshen Township Sewer Authority's NPDES permit (for users who are connected to the West Goshen Township Sewerage System) or the receiving water quality standards.

L. Containing any substance which shall cause the sewerage system to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 or other applicable or amended sections of the Act, or be in noncompliance with any criteria, guidelines or regulations affecting sludge use or disposal promulgated pursuant to the Solid Waste Control Act, or State Clean Air Act, the Toxic Substances Control Act or state criteria applicable to the sludge management method being used.

M. Containing nonbiodegradable complex carbon compounds.

N. Constituting a slug load.

O. Containing stormwater, surface water, uncontaminated groundwater, roof runoff, foundation drain water or drainage from the fields.

P. Containing any garbage with particles greater than 1/2 inch in size.

Q. Containing pesticides, unless upon written request, special permission is obtained from the Township.

§ 188-38. Trucked or hauled wastewater.

A. Tank truck or hauled waste discharges to the sewerage system are prohibited, except as authorized hereinafter.

B. Tank truck or hauled wastes may only be discharged into sewerage system upon the issuance of a discharge permit by the Township.

C. Tank truck or hauled wastes authorized for discharge shall be discharged only at the location, time and at a rate fixed by the discharge permit.

D. Tank truck or hauled waste discharges shall not include any industrial wastewater except as authorized in writing by the Township.

E. Prior to discharge, the tank truck or hauled waste shall be subject to inspection and sampling by the Township.

F. Tank truck or hauled waste discharges shall be subject to rates and charges in accordance with a schedule established by the Township, as amended from time to time.

§ 188-39. Strength of waste surcharge.

A. Any user discharging wastewater to the sewerage system defined as extra-strength wastewater in this article or as revised in such resolutions as the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall adopt from time to time shall pay the surcharge established in this chapter or as amended by resolution of the Board of Supervisors. The effective date of any change in definitions or fees shall be stated in all such resolutions.

B. No user shall discharge into the sewerage system any extra-strength wastewater without a written permit from the Township providing for sampling and the payment of a surcharge to the Township or

West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System), in accordance with the formulas set forth in the current pretreatment chapter. The Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) shall retain and have the right at any time to give notice to the industrial user that extra-strength discharges will no longer be accepted.

C. The surcharge computations shall be based on the wastewater sample analyses for the most recent complete calendar quarter. Surcharges shall be based on wastewater sample analyses (or, in the absence thereof, on the Township estimates) for the calendar quarter which they apply. The surcharge formulas are independent of each other and measure different characteristics of the same wastewater. Surcharges measured by each formula are cumulative.

D. The surcharge billings shall be in addition to any other quarterly sewer use charge paid by the user to the Township. Payment of a surcharge shall not relieve the user of its obligation to comply with the local loading limits promulgated by resolution in § 188-40B of this article.

§ 188-40. Prohibitions and restrictions on industrial users.

A. Permit required for discharge of industrial wastewater. Prior to the discharge of any industrial waste or other waste not defined as sanitary sewage into the sewerage system, the discharger shall first obtain an industrial wastewater discharge permit issued by the Township.

B. Local discharge limits.

(1) The Township shall, by resolution adopted by the Township's Board of Supervisors, establish and promulgate local discharge limits regulating the discharge of specific pollutants to the sewerage system by industrial users. Local discharge limits may be established for any substance which is discharged, or likely to be discharged, to the sewerage system. Such limits shall be calculated as mandated by the pretreatment coordinator and the Engineer, and may be amended from time to time by the control authority.

(2) Local discharge limits may limit concentration, mass or a combination of the two.

(3) The procedure for the calculation of local discharge limits shall be as recommended by the EPA.

(4) Local discharge limits shall be calculated to prevent interference; pass-through; the discharge of toxic materials in toxic amounts; threats to worker health and safety; physical, chemical or biological damage to the sewerage system; and noncompliance with the Municipal Authority's NPDES permit or the West Goshen Township Sewer Authority's NPDES permit (in the case where the user is connected to the West Goshen Township Sewerage System).

(5) Local discharge limits applicable to industrial users shall be adopted by resolution of the Township. Local discharge limits applicable to all industrial users shall be included in all industrial waste discharge permits.

(6) Discharging any pollutant in excess of a local discharge limit established for that pollutant shall be a violation of this article.

§ 188-41. Spills or slug loads.

A. All industrial users shall provide and maintain at their own expense facilities adequate to prevent an accidental discharge or slug load of any substance stored or used at the industrial user's facilities that, if discharged into the sewerage system, will violate any of the provisions of §§ 188-37 and 188-40 of this article. Slug control plans shall be submitted, as requested, to both the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, detailing the facility plans and operating procedures to be utilized by the industrial user for this protection. Slug control plans shall contain, at a minimum, the following information, in addition to such additional data as shall be required from time to time by the pretreatment coordinator:

(1) A description of discharge practices, including nonroutine discharges; and a complete description of stored chemicals.

(2) Procedures for immediately notifying the pretreatment coordinator and the municipality to whose sewer collection system the industrial user is connected of accidental discharges and slug loads into the sewerage system.

(3) Procedures to prevent adverse impacts from such discharges and procedures to prevent reoccurrence of all such discharges.

B. An industrial user proposing to connect to the sewerage system after the effective date of this article shall submit a copy of its slug control plan to the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, and to the pretreatment coordinator for approval, or demonstrate to the satisfaction of the pretreatment coordinator they are not needed, before connection to the sewerage system. Review of such plans and operating procedures shall not relieve the industrial user from the responsibility to modify the industrial user's facility as necessary to meet the requirements of this article.

C. In the case of an accidental discharge or slug load to the sewerage system of any pollutant, the industrial user shall immediately (within not more than 30 minutes) notify by telephone the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, and the pretreatment coordinator of the incident. The notification shall include information regarding the location of the discharge, the kind of pollutants involved, the concentration and volume of the discharge and corrective actions planned or taken.

D. Within five days following an accidental discharge or slug load, the industrial user shall submit to the the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, and to the pretreatment coordinator a detailed written report describing the cause of the discharge and the measures to be taken by the industrial user to prevent similar future occurrences. Such notification shall not relieve the industrial user of any liability on account thereof.

E. A notice shall be permanently posted by each industrial user on a bulletin board or other prominent place advising employees whom to call in the event of an accidental discharge or slug load. Employers shall inform all employees who may cause or suffer such an accidental discharge to occur of the emergency notification procedure and shall keep a log verifying the method, manner and frequency of such notification.

§ 188-42. National Categorical Pretreatment Standards.

If the National Categorical Pretreatment Standards, located in 40 CFR Chapter 1, Subchapter N, Parts 405-471, as amended from time to time, for any industrial user are more stringent than limitations imposed under this article for industrial users in that subcategory, then the pretreatment standards shall apply and are hereby incorporated in this article. The Township shall notify all affected industrial users of the applicable reporting requirements under 40 CFR 403.12. If an industrial user subject to a National Categorical Pretreatment Standard has not previously submitted an application for an industrial waste discharge permit, the industrial user shall apply for a permit within 90 days of the promulgation of the National Categorical Pretreatment Standard.

§ 188-43. Dilution prohibition.

Except where expressly authorized to do so by an applicable pretreatment standard or pretreatment requirement, no industrial user shall increase the use of process water or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with a pretreatment standard or requirement. The Township may impose mass limitations on industrial users in cases where the imposition of mass limitations is appropriate.

§ 188-44. State requirements.

State requirements and limitations on industrial wastewater discharges shall apply in any case where they are more stringent than federal requirements and limitations or those established and imposed in this article.

§ 188-45. Township's right of revision.

The Township reserves the right to establish more stringent limitations or requirements on discharges to the sewerage system.

§ 188-46. Industrial waste discharge permits.

A. General.

(1) No industrial users shall connect to or discharge wastewater to the sewerage system without an industrial waste discharge permit.

(2) Upon written application to the Township, but prior to discharge, the pretreatment coordinator may determine that industrial users which are not significant industrial users or do not have industrial wastewater do not require an industrial waste discharge permit and may discharge industrial wastewater to the sewerage system, but are required to comply with all other provisions of this article. If an industrial user makes changes to the processes, flow, wastewater concentration, wastewater characteristics or other operations reported in the most recent industrial waste discharge questionnaire filed by the industrial user with the Township, and those changes result in its meeting the definition of an industrial user, the industrial user shall immediately upon becoming aware that such a change has occurred, or 90 days prior to such a change if it is planned, notify in writing both the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, and, if the application and proposed discharge are in compliance with this article, obtain an industrial waste discharge permit, which shall be issued within 90 days of submission of the permit application.

(3) Where an industrial user, subject to a newly promulgated National Categorical Pretreatment Standard, has not previously submitted an application for an industrial waste discharge permit, the user shall, within 90 days after the promulgation of the applicable National Categorical Pretreatment Standard:

(a) Obtain an industrial waste discharge permit; and

(b) Provide the baseline monitoring information required by 40 CFR 403.12(b), as amended from time to time. This information shall be incorporated into the application for an industrial waste discharge permit.

B. Permit application.

(1) Industrial users shall file with the pretreatment coordinator a complete and accurate industrial waste discharge permit application in the form prescribed by the Township.

(2) The application for an industrial waste discharge permit shall be fully completed and verified in writing by the industrial user or a duly authorized and knowledgeable officer, agent or representative thereof. The application shall contain, in units and terms appropriate for evaluation, such scientific or testing data or other information as may be required by the Township, and the industrial user shall pay an application fee to and shall reimburse the Township for all expenses incurred as a result of the processing of the signed application. The Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall have, at their discretion, the right to inspect the premises, equipment and material and laboratory testing facilities of the applicant.

(3) Notwithstanding the above, the applicant shall provide the following minimum information to the

pretreatment coordinator:

(a) Name and address of the user; name, title and telephone number of responsible official; name, title and phone number of person to contact for information about the industrial waste discharge.

(b) Description of the industry and the manufacturing processes or operations that occur there and the types of products that are produced.

(c) Applicable standard industrial classification codes for activities conducted at the facility.

(d) Statement as to whether the industry is subject to compliance with National Categorical Pretreatment Standards, and if so, which ones apply.

(e) Indication and description of the sources of or the processes that produce industrial wastewaters.

(f) Wastewater constituents and characteristics as required by the Township and as determined by a reliable analytical laboratory; sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304(g) of the Act and contained in 40 CFR 136, as amended. If the discharge is from a proposed new discharge, wastewater characteristics shall be reliably estimated in accordance with accepted procedures.

(g) Volume of industrial wastewater to be discharged to the sewerage system and the methods of measuring the same. Flow volume information shall include the time and duration of the discharge and the average daily and thirty-minute peak wastewater flow rates, including monthly and seasonal variations, if any.

(h) Description of any wastewater treatment facilities or processes used or proposed to be used to treat the industrial wastes prior to their discharge to the sewerage system.

(i) Schematic flow diagram showing the existing and proposed sources of industrial wastewater and the on-site treatment processes.

(j) The quantity of sludges removed from the industrial user's facility system and their method and location of disposal.

(k) Description of any other wastes that are removed from the industrial user's facility system, their quantities and methods and locations of disposal.

(l) List of raw materials used or stored on the premises, their material safety data sheets, their approximate quantity of usage on a monthly basis and what they are used for.

(m) Plans and specifications for a sampling manhole.

(n) A list of any additional environmental control permits held by or for the facility, such as air quality permits, RCRA permits, stormwater management permits and all other required permits.

(o) Such additional information as the Township shall require.

(4) Review and approval.

(a) The industrial waste discharge permit application shall be reviewed by the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, and if acceptable to such municipality, shall be submitted to the pretreatment coordinator for review and approval.

(b) No industrial waste discharge permit shall be issued to an industrial user whose discharge of materials to sewers, whether shown upon the application or determined after inspection and testing conducted by the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, is not in conformance

with federal, state or the Township's ordinances and resolutions. If an application is denied, the Township shall state in writing the reason or reasons for denial, and said written communication shall be delivered to the applicant, and if applicable, to the municipality to whose sewer system the industrial user is proposing to connect.

(5) If the Township denies an application for an industrial waste discharge permit, the industrial user may, within 60 days after its receipt of the Township's denial, request review by the control authority of such denial. The request for review shall be in writing and shall specify the grounds for review, and shall be accompanied by such appropriate supporting information and documents as shall be sufficient to apprise the control authority of the substance of the industrial user's position. The control authority at a public hearing shall review the industrial waste discharge permit application, the Township's written denial and such other evidence and matters as the industrial user shall present at a public hearing. It shall also consider all evidence offered by the Township or the pretreatment coordinator and any interested party. The public hearing shall take place no later than 45 days following receipt of the industrial user's written request for the review. The control authority's written decision shall be provided to the industrial user within 20 days of the close of the public hearing or hearings and shall be final.

(6) If, based on the characteristics of the industrial user's waste discharge, additional pretreatment and/or operation and maintenance procedures are required to meet any Township, municipal, state or federal pretreatment standards, the industrial user shall submit to the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) prior to issuance of the industrial waste discharge permit the shortest, reasonable schedule by which the industrial user will provide such additional pretreatment. The Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) shall include a compliance schedule acceptable to the Township and/or West Goshen Township, as the case may be, in the user's industrial waste discharge permit, which shall be conditional upon compliance with timely implementation of the additional pretreatment required. The following conditions shall apply to this schedule:

(a) The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the industrial user to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

(b) No increment shall exceed nine months.

(c) Not later than 14 days following each date in the schedule and the final date for compliance, the industrial user shall submit to both the pretreatment coordinator and the municipality to whose sewer system it is connected a written report, including, as a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay and the steps being taken by the industrial user to return the construction and implementation to the schedule established. In no event shall more than three months elapse between such progress reports to the pretreatment coordinator and the municipality to whose sewer system it is connected.

C. Permit action. A permit issued under this section may be modified, revoked and reissued or terminated for good cause, including but not limited to the following:

(1) To incorporate any new or revised federal, state or local pretreatment standards or requirements.

(2) Material or substantial alterations or additions to the discharger's operation which were not covered in its current permit.

(3) A change in any condition that requires either a temporary or permanent reduction or elimination

of the authorized discharge.

D. Permit conditions.

(1) Industrial waste discharge permits shall be expressly subject to all provisions of this article and all other applicable regulations, resolutions, user charges and fees established by the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System. Permits shall contain the following:

(a) Limits on the average and maximum wastewater constituents and characteristics, as based on applicable general pretreatment standards in 40 CFR, Part 403, as amended from time to time, categorical standards, local limits and state and local law;

(b) Requirements for submission of technical reports or discharge reports, including the information to be contained and the signatory requirements of these reports;

(c) Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the Township and affording the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, access thereto;

(d) Requirements for notification of the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, in advance of any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the sewerage system;

(e) Requirements for notification of slug discharges;

(f) List of prohibited discharges;

(g) Statement of duration of the permit;

(h) Notification of the rules regarding transferability, if allowed;

(i) Notification of penalties provided for noncompliance;

(j) Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;

(k) Right of entry requirements upon the property and within the facility for which the permit is issued by authorized representatives of the Township and the municipality to whose sewer system the user is connected; and

(l) Indemnification of the Township and such municipality from all liability resulting from or on account of any discharge.

(2) Permits may also contain other requirements, including but not limited to:

(a) Limits on the average and maximum rate and time of discharge or requirements for flow regulation and equalization;

(b) Requirements for installation and maintenance of inspection and sampling facilities and pretreatment facilities;

(c) Compliance schedules; and

(d) Other conditions as deemed appropriate by the Township or the municipality to whose sewer system the industrial user is connected to ensure compliance with this article, applicable municipal ordinances or other requirements.

(3) Issuance of an industrial waste discharge permit in no way relieves the industrial user from any liability on account of its discharge into the sewerage system, whether such discharge is permitted thereby or not.

E. Permit duration and permit fees.

(1) Industrial waste discharge permits shall be issued for an initial one-year period and shall expire at the end of that one-year period unless the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, elects to revoke the permit on or before its expiration. Upon the user's payment of the requisite permit fee to the Township, renewal permits shall be issued for a period not to exceed five years upon written application of the permittee made at least 60 days prior to the permit's expiration. Subsequent permits may be issued upon payment to the Township of the requisite fee for up to five-year periods upon prior written application made to the Township at least 90 days before the permit's scheduled expiration. The terms and conditions of the permit shall be subject to modification by the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, during the term of the permit. The industrial user shall be informed of any proposed changes in its permit at least 30 days prior to the effective date of the change. However, the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall use their best efforts to inform the industrial user of such change at least 60 days prior to the effective date of the change, but its/their failure to do so shall not preclude or delay implementation of the required change. In the event that such changes require major changes in pretreatment by the industrial user, and the industrial user's failure to comply with the amended discharge requirements does not itself or with other failures to comply put the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, in substantial danger of violating any agreement, permit, regulation, ordinance or law, then the pretreatment coordinator may grant the industrial user a period not to exceed six months from the date otherwise required for compliance within which to effect such changes to its pretreatment facilities as are necessary to comply with the permit's terms and conditions. Upon demonstration of justifiable cause proven by the permittee within the said six-month period, the pretreatment coordinator may extend the date otherwise required for compliance for such additional reasonable period of time as he determines necessary. No extensions shall be considered or granted unless the industrial user makes written request for a time extension and submits to the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, an implementation schedule acceptable to the Township and such municipality contemporaneously with the extension request.

(2) Permit fees and renewal fees shall be established by resolution adopted and amended from time to time by the control authority and shall include but not necessarily be limited to the following: an application review fee, an administrative fee, a sampling fee, an analytical costs fee, any surcharges and/or fines and any miscellaneous expenses incurred from the purchase or utilization of any sampling apparatus and/or activities.

F. Permit transfer. Industrial waste discharge permits are issued to a specific industrial user for a specific operation. An industrial waste discharge permit shall not be reassigned or transferred or sold to a new owner, new user, different premises, different facilities or a new or changed operation without the approval of the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System. The succeeding owner or industrial user shall file a new application and, until permit or modification thereof is issued, shall comply with the terms and conditions of the existing industrial waste discharge permit and such additional permit conditions as the Township and such municipality shall require.

G. Waste characteristic change. Any industrial user who plans or becomes aware of a change in the method of operation or in the pretreatment facilities which will increase the concentration of pollutants which are regulated by this article or the volume of wastewater discharged to the sewerage system shall notify the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, of the change at least 90 days prior to such change. If required by the Township or the municipality, the industrial user shall apply for an industrial waste discharge permit that reflects the proposed changes. The new industrial waste discharge permit will be subject to a fee to reimburse the Township and such municipality for all expenses incurred as a result of the processing of the permit and permit application. Approval or denial of a new industrial

waste discharge permit shall be regulated by the procedures established hereunder for the issuance of an original permit.

H. Files. The Township shall maintain files in which copies of all industrial waste discharge permits, revisions thereto and supporting data will be filed for reference. Files shall be maintained for a period of at least five years. This period of retention shall be extended during the course of any unresolved litigation regarding the industrial user or when requested by EPA.

§ 188-47. Reporting requirements for industrial users.

A. Compliance date report under National Categorical Pretreatment Standards. Within 90 days following the date for final compliance with applicable National Categorical Pretreatment Standards or, in the case of a new source, following commencement of the introduction of wastewater into the sewerage system, any industrial user subject to National Categorical Pretreatment Standards shall submit to the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, a written report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by categorical standards, and the average and maximum daily flow from these process units in the user's facility which are limited by such categorical standards. The report shall state whether the applicable categorical standards are being met on a consistent basis and, if not, what additional operations and maintenance and/or pretreatment are scheduled to bring the industrial user into compliance with the applicable categorical standards. This statement shall be signed by an authorized representative of the user and, when requested by the Township, certified by a qualified professional.

B. Periodic compliance reports.

(1) Each industrial user shall submit to the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, during the months of April, July, October and January, or by such date as otherwise specified in the industrial users industrial waste discharge permit or otherwise by the Township, a complete and accurate written report, in form and content as prescribed by the Township, indicating the nature and concentration of pollutants in the discharge during the reporting period which are regulated by the industrial waste discharge permit. All monitoring data obtained for purposes of determining compliance with the industrial waste discharge permit by certified analytical techniques must be reported by the industrial user. In addition, this report, where applicable, shall include a record of all daily flows which, during the reporting period, exceeded the maximum daily flow listed in the industrial user's industrial waste discharge permit. At the discretion of the pretreatment coordinator, and in consideration of such factors as high or low flow rates, holidays, budget cycles, etc., the Township, upon written request from the industrial user, may, but shall not be required to, agree to alter the months during which the above reports are to be submitted. The report shall also contain the following certification statement signed by the authorized representative of the user:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a procedure designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the facilities proposed to be connected to the sewerage system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations relating to unsworn falsifications."

(2) The Township may impose mass limitations where the imposition of mass limitations is appropriate. In such cases, the periodic compliance report required by Subsection B(1) shall state the mass of pollutants regulated in the industrial user's discharge permit to the sewerage system. These reports shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration, or, where requested by the Township,

production and mass of pollutants contained therein, which are limited by the applicable pretreatment standards. The frequency of monitoring shall be prescribed in the industrial users industrial waste discharge permit. All sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304(g) of the Act and contained in 40 CFR 136, and amendments thereto, or with any other test procedures approved by the EPA.

(3) For categorical industries that have mass limits as categorical standards, the Township may specify equivalent concentrations to regulate the strength of the industrial user's discharge. If concentration limits are regulated in lieu of mass discharge limits, the industrial user must provide the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) with the following information as part of each written compliance report:

(a) For the reporting period, the rate of production of the process for which categorical standards have been established.

(b) The average wastewater flow rate generated by the regulated production activity for the reporting period.

(c) Thirty days' notice of any anticipated change in production.

(4) The industrial wastewater discharged into the sewerage system shall be sampled and analyzed by and at the expense of the industrial user, and copies of the original laboratory reports listing the results of the analyses and the analytical methods used shall be submitted to the pretreatment coordinator and to the municipality to whose sewer system the industrial user is connected, with the industrial user's periodic compliance report required in Subsection B(1). Frequency of sampling and analyses shall be quarterly, or as otherwise specified by the industrial waste discharge permit by the Township. Unless otherwise stated in the industrial waste discharge permit, all samples are to be time composite samples for the period of discharge or for 24 hours, whichever is less, with sampling intervals of not more than one hour. The samples shall be analyzed for the substances and characteristics required by the industrial user's industrial waste discharge permit and shall be representative of the conditions occurring during the reporting period. The industrial user shall follow the proper sample preservation and analysis techniques detailed in 40 CFR 136, as from time to time amended, or other techniques approved by the Township.

(5) All records and information resulting from the monitoring activities required by the industrial waste discharge permit shall be retained by the industrial user for at least five years. This period of retention shall be extended during the course of any unresolved litigation regarding the industrial user or the Township or when requested by either the Township or the EPA.

C. Baseline monitoring report.

(1) Where an industrial user, subject to a newly promulgated National Categorical Pretreatment Standard, has not previously submitted the baseline monitoring information required by 40 CFR 403.12(b), as from time to time amended, the industrial user shall, within 180 days after the promulgation of the applicable National Categorical Pretreatment Standard, provide this information to the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System). The report shall include all items required by 40 CFR 403.12(b).

(2) A new source, or an industrial user proposing to discharge wastes into the sewerage system that is subject to a National Categorical Pretreatment Standard, shall submit to the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) the baseline monitoring report required by 40 CFR 403.12(b) at least 90 days prior to commencement of discharge from the regulated process or facility.

D. Noncompliance discharge report. If sampling performed by an industrial user indicates a violation of this article, an applicable pretreatment standard or the industrial user's industrial waste discharge permit, the industrial user shall notify the pretreatment coordinator and West Goshen Township, in the

case where the user is connected to the West Goshen Township Sewerage System, within 24 hours of becoming aware of the violation. The industrial user shall also repeat the sampling and analysis and submit the results of the repeat analysis to the pretreatment coordinator and to the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, within 30 days after becoming aware of the violation.

§ 188-48. Monitoring facilities.

A. When requested by the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, all industrial users shall provide and operate, at their own expense, monitoring facilities to allow inspection, sampling and flow measurements of its industrial waste discharge. The monitoring facility should normally be situated on the industrial user's premises, but the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, may, when such a location would be impractical or cause undue hardship on the industrial user, allow the facility to be constructed in the public street or sidewalk area, subject to the issuance of proper permits for such purpose, and located so that it will not be obstructed by landscaping or parked vehicles.

B. The monitoring facility shall be constructed in accordance with plans and specifications approved by the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System. There shall be ample room in or near such facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the industrial user. The facility shall be located as to be accessible at all times to persons authorized by the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System. By obtaining an industrial waste discharge permit, the industrial user consents to the entry upon its land and facility and agrees to facilitate such entry by representatives of the Township and such municipality, and further consents to the use of the monitoring facility for observation, sampling and measuring of the wastewater discharge at all times. Construction of the monitoring facility shall be completed within 120 days following issuance of the industrial waste discharge permit.

§ 188-49. Inspection and sampling.

The Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, may inspect the facilities of any industrial user. Persons or occupants of premises where wastewater is created or discharged shall allow the Township or its representative, or West Goshen Township in the case where the user is connected to the West Goshen Township Sewerage System or its representatives, as a condition of the permit issued by the Township authorizing any discharge to the sewerage system, ready access at all reasonable times, and in the event of emergency situations posing an immediate threat to the sewerage system, to all parts of the premises, buildings and facilities for the purpose of inspection, sampling records examination and copying, or in the performance of any of their duties. The Township, such municipality and EPA shall have the right to set up on the industrial user's property such devices as are necessary to conduct sampling, inspection, compliance monitoring and/or metering operations. Where an industrial user has security measures in force which would require proper identification and clearance before entry onto their premises, the industrial user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the Township, such municipality or EPA will be permitted to enter, without delay.

§ 188-50. Pretreatment.

A. Industrial users shall provide necessary pretreatment and flow-equalizing facilities as required to

comply with this article and shall achieve compliance with all applicable National Categorical Pretreatment Standards within the time limitations as specified by the appropriate federal regulations, or as otherwise required by the Township. Any industrial user required to pretreat or flow-equalize wastewater to a level in compliance with the provisions of this article shall be provided, operated and maintained at the industrial users sole expense. Detailed plans and other materials and documents showing the pretreatment facilities and operating procedures shall be submitted to the pretreatment coordinator and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, for review before construction of the facility. The review of such plans and operating procedures shall in no way relieve the industrial user from the responsibility of modifying the facility as necessary to produce an effluent in compliance with the provisions of this article. Any subsequent changes in the pretreatment facilities, flow-equalizing facilities or method of operation shall be reported to and be reviewed and commented on by the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, prior to the industrial user's initiation of the changes.

B. The industrial user may allow a bypass which does not cause pretreatment standards to be violated, but only for essential maintenance to assure efficient operation. If an industrial user knows in advance of the need for a bypass, it shall submit prior written notice to the pretreatment coordinator and to the municipality to whose sewer system it is connected at least 10 days before the date of the bypass. The industrial user shall give oral notice of an unanticipated bypass that exceeds applicable pretreatment standards to the pretreatment coordinator and the municipality to whose sewer system it is connected immediately after an unanticipated bypass incident is brought under control, but in no event later than four hours from the time the industrial user becomes aware of the bypass. A written report shall also be provided to the pretreatment coordinator within five working days of the time the industrial user becomes aware of the bypass. The written report shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and, the steps taken or planned to reduce, eliminate and prevent reoccurrence of the bypass.

C. The Township shall annually publish in the local daily newspaper of largest circulation within the Township's service area a list of industrial users serviced by the Township which were in significant noncompliance with any applicable pretreatment standards or pretreatment requirements during the preceding twelve-month period.

D. All records relating to compliance with pretreatment standards and pretreatment requirements shall be made available to the Township, West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) and the EPA upon request.

E. The Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) shall have access to all such pretreatment facilities and flow-equalizing facilities as required by this article at all reasonable times for purposes of inspection and testing and, in the event of an emergency posing a threat to the sewerage system, at any time.

§ 188-51. Hazardous waste discharge.

A. It shall be a violation of this article and the industrial user's discharge permit for an industrial user to discharge any quantity of waste to the sewerage system, which, if otherwise disposed of, would be a hazardous waste under 40 CFR, Chapter 1, Section 261.1 et seq., Subparts A through D, as from time to time amended. In the event of an accidental discharge, the industrial user shall provide an immediate written notification of such discharge, but in no event later than four hours from the time the user becomes aware of or in the exercise of reasonable prudence should have become aware of the discharge, to the Township, to West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, to the EPA Region III Waste Management Division Director and to DEP. Failure to provide such notice shall constitute a violation of this article.

B. The notification required by Subsection A shall include the name of the hazardous waste as in 40 CFR, Chapter 1, Section 261.1 et seq., Subparts A through D, as from time to time amended, the EPA

hazardous waste number, the type of discharge (continuous, batch or other) and a certification under penalties of perjury that the industrial user has a program in place to reduce to compliance levels the volume and toxicity of hazardous wastes illegally discharged to the sewerage system. If the industrial user's discharge to the sewerage system constitutes more than 100 kilograms of such waste, the notification shall also include an identification of the hazardous constituents contained in the waste and an estimation of the mass and concentration of such constituents.

§ 188-52. Confidential information.

A. Information and data on an industrial user obtained from reports, questionnaires, permit applications, permits, notifications, monitoring programs and inspections shall be available to the public or any governmental agency upon written request unless the industrial user specifically requests in writing and is able to demonstrate to the Township's satisfaction that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the industrial user.

B. When requested by the person furnishing a written report, those portions of a report that have been accepted by the Township as confidential shall not be made available for inspection by the public, but shall be made available upon written request to governmental agencies for uses related to this article, the NPDES permit, state disposal system permits and/or the state or federal pretreatment programs; provided, however, that such portions of any report shall be available for use by the state or any state agency in judicial review or enforcement proceedings involving the person or industrial user furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

C. When information accepted by the Township as confidential is transmitted to any governmental agency by the Township, a written notification to the industrial user shall be provided by the Township listing the confidential information transmitted and the governmental entity requesting the information.

§ 188-53. Measuring volumes of wastewater.

A. The flow volume used to determine wastewater flows and surcharges shall be specified in the industrial waste discharge permit and be based on:
   (1) Direct wastewater metering;
   (2) Metered water use; or
   (3) Such other method acceptable to the Township.

B. Both the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System may, in their discretion, require that each industrial user connected to its sewer system which has been issued an industrial waste discharge permit install, calibrate, maintain and use any meter or measuring device specified therein at the industrial user's own expense. The municipality which accepts the industrial waste shall be responsible for the reading of all meters or measuring devices. The Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall have the absolute right, but not the duty, of reading the meters, from time to time, at its discretion. The meters and devices shall be made available for meter reading at any reasonable time and, in the event of an emergency posing a threat to the sewerage system, at any time.

§ 188-54. Enforcement.

A. Immediate suspension of discharge presenting imminent danger.
   (1) The Township and West Goshen Township, in the case where the user is connected to the West

Goshen Township Sewerage System, shall order the immediate suspension of discharge of wastewater to the sewer system when such suspension is necessary, in the opinion of the Township or West Goshen Township, as the case may be, in order to stop or prevent an actual or threatened discharge which presents an imminent danger of harm to people, to the sewerage system or to the environment, or interference ("dangerous discharge").

(2) Any industrial user notified of an order to suspend shall comply therewith immediately. In the event of a failure of the industrial user to comply voluntarily with the suspension order, the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall take such steps as it deems necessary to enforce compliance with the order to effect the suspension of discharge of the industrial user's wastewater into the sewerage system, including immediate severance of the industrial user's sewer connection to the Township's or to West Goshen Township's Sewerage System. The Township or West Goshen Township shall permit reinstatement of the discharge upon satisfactory proof of the elimination of the imminent and substantial danger referred to above. The industrial user shall submit a detailed written report to the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) describing the causes of the actual or threatened discharge and the measures taken to prevent any future occurrence within 15 days of the date of the first such discharge or threat of discharge. The Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) shall have the concurrent right and power to suspend discharge by such industrial user to the sewerage system and to enforce the requirements of this subsection.

(3) Nothing herein shall be construed to prohibit the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System) from enforcing this article, or any part hereof, or from enjoining and preventing the discharge of any hazardous waste or any other discharge deemed unlawful or dangerous to the sewerage system by any legal process selected by the Township and West Goshen Township (in the case where the user is connected to the West Goshen Township Sewerage System), including but not limited to an action or actions at law or in equity for injunctive relief and damages, administrative enforcement proceedings, criminal enforcement proceedings authorized by any federal or state statute or law, or through any other authorized legal proceeding. All remedies of the Township and West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, shall be cumulative.

B. Termination of service. Any user who violates any provision of this article, any regulation promulgated by the Township pursuant to this article or any enabling legislation, any resolution promulgated by the Board of Supervisors pursuant to or related to this article, any applicable state or federal regulations or an industrial waste discharge permit or any condition thereof shall be subject, in addition to any civil or criminal penalties which may be imposed, to severance of its sewer connection to the sewerage system, termination of its sewage service and revocation of its industrial waste discharge permit.

C. Notification of violation. Whenever the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, finds that the industrial user has violated or is violating this article, an industrial waste discharge permit or any prohibition, limitation, condition or requirements contained herein, or has failed to timely provide the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, with the information needed to accurately determine compliance with any pretreatment standard or pretreatment requirement, the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, or both, may serve upon such person or industrial user who is in violation a written notice of violation. The notice may require a response in the form of a plan, explanation, compliance schedule or other appropriate response within a specified time period. Compliance with any such requirement shall be mandatory.

D. Legal action by municipalities. If any industrial user violates the provisions of this article, Township, federal or state pretreatment standards or pretreatment requirements, its industrial waste discharge

permit, any prohibition, limitation, condition or requirements contained therein or herein or any order issued by the Township or other governmental authority having jurisdiction related to the sewerage system or the sewer service of the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, either the Township or West Goshen Township, in the case where the user is connected to the West Goshen Township Sewerage System, or both, may commence an action or actions at law or in equity for appropriate legal and/or equitable relief in the Court of Common Pleas of Chester County, and may, in addition, take such other enforcement action as provided for in this section.

§ 188-55. Enabling regulations.

As a precondition to the Township's acceptance of sewage effluent containing industrial wastewater from another municipality, each such municipality connected to the sewerage system shall, within 90 days after adoption of this article, enact regulations imposing the discharge restrictions (and require compliance with industrial waste discharge permits), charges, reporting and monitoring requirements no less stringent than those set forth in this article on all users within its jurisdiction, and establishing procedures for compliance with this article. Such requirement shall be embodied in a written agreement between the Township and such municipality. All such regulations so adopted shall be amended within 60 days, as necessary, to impose the same standards and requirements as those imposed by the Township through amendment of this article. Such municipality shall, upon adoption of the required regulations, give written notice to all commercial and industrial dischargers connected to the municipality's sewerage system of all of the regulatory compliance requirements related to industrial waste discharge permits.

§ 188-56. Civil penalties for industrial users.

A. The Township may establish, by resolution adopted by the Board of Supervisors, a recommended schedule of civil penalties which may be imposed by the Township against any industrial user who violates a provision of this article or its industrial waste discharge permit that is in significant noncompliance or which fails to respond timely and adequately to any notice of violation issued by the Township in accordance with the Township's civil assessment policy. In assessing such penalties, the Township shall provide the noncomplying industrial user with the opportunity to show cause why a civil penalty pursuant to § 188-58 hereof should not be assessed. Notice shall be served upon the industrial user specifying the time and place of a hearing to be held by the Township's Board of Supervisors, or a hearing officer designated by the Board for that purpose. Notice of the hearing shall be served by the Township's administrative staff upon the industrial user and any other party in interest at least 10 days before the hearing by regular United States Mail, postage prepaid.

B. In furtherance of any such proceeding, the Board or hearing officer, as the case may be, shall have the following powers:
   (1) Issue in the name of the Township notices of hearings requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;
   (2) Issue subpoenas and take the evidence; and
   (3) Make findings of fact, conclusions of law and render a decision and order, which may include the imposition of a civil penalty or such other order as the Board shall direct.

C. Testimony at the hearing shall be under oath and recorded stenographically. A transcript shall be made available to any party to the proceeding upon payment of the charges therefor. All other administrative costs of the proceedings, including but not limited to stenographer attendance fees, advertising, postage and notices and similar costs, shall be paid for by the user, who shall deposit with its request for hearing a deposit escrow fee of $1,000 from which the administrative fees shall be paid. Any balance remaining after payment of all such costs shall be returned to the user requesting the hearing.

§ 188-57. Injunctions against violations of pretreatment standards.

The Township may seek injunctive relief in a proceeding in equity for the prevention, abatement or termination of any prohibited discharge to the sewerage system, for a violation of any pretreatment standard or for violation of any other provision of this article in any of the following circumstance. In any such proceeding, the Township may seek to collect any civil penalties assessed, or unpaid, pursuant to §§ 188-56 and 188-58 hereof.

A. A discharge from an industrial user presents an imminent danger of substantial harm to the sewerage system, Township personnel, the environment or the public or imperils or results or may result in a violation of any federal or state permits held by the Township or the West Goshen Township Sewer Authority relating to the use, operation and maintenance of the sewerage system.

B. A discharge from an industrial user presents an imminent or substantial endangerment to the environment.

C. A discharge from an industrial user causes the Municipal Authority or the West Goshen Township Sewer Authority to violate any condition of their NPDES permit.

D. An industrial user has shown a lack of ability or intention to comply with a pretreatment standard.

§ 188-58. Violations and penalties.

A. Fines to be established by Township and by municipalities. As a precondition to the Township's acceptance of sewage effluent containing industrial wastewater from another municipality, each municipality that discharges or is connected to the sewerage system shall, within 90 days of the adoption of this article, enact an ordinance which provides that any industrial user who is found to have violated the ordinance specified by § 188-55 hereof shall be liable to a fine of up to $1,000, together with the costs of prosecution and the municipality's reasonable attorney's fees, for each offense in a criminal enforcement proceeding commenced before a District Justice. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. Such requirement shall be embodied in a written agreement between the Township and such municipality. In addition to all other remedies and penalties provided for in this article, the Township may commence and prosecute an enforcement action before any District Justice for a violation of this article as provided for in this section wherein the violator shall be subject to the fine, costs and fees provided for herein; provided, however, that should any violation of this article constitute a violation of the Sewage Facilities Act, a District Justice shall be authorized to impose a fine of up to $5,000, together with the costs of prosecution and the municipality's reasonable attorney's fees, for each such offense.

B. Action to enforce municipalities' ordinances applicable to any user. Each municipality shall, at the direction of the Township, take any action permitted by law or in equity to enforce any ordinance enacted pursuant to § 188-55 or 188-58A of this article.

C. Civil penalties for violations by industrial users. To the extent that any provisions of this article are enabled by the Pennsylvania Sewage Facilities Act, Act of January 24, 1966, P.L. (1965) 1535, as amended, any industrial user who violates any substantive or procedural provision of § 188-40 et seq. hereof or any term or condition of any industrial waste discharge permit may, in addition to all other civil and criminal penalties authorized by this article, be assessed a civil penalty of up to $5,000 for each such violation, as is determined by the Township depending upon the severity of the violation, pursuant to the procedures and standards set forth in Section 13.1 of the Sewage Facilities Act, 35 P.S. § 750.13a and 13b(b). In addition, the Township may assess against and collect from such violator the cost of damages caused by such violation and the cost of correcting the violation. Each violation for each separate day shall constitute a separate and distinct violation. Notwithstanding the foregoing, a single operational upset which gives rise to simultaneous violations shall be treated as a single violation.

D. Uses of civil penalties collected by Township. Civil penalties collected pursuant to this section shall be placed in a restricted account and shall only be used for the repair of damage and any additional maintenance needed or any additional costs imposed as a result of the violation for which the penalty was imposed, to pay any penalties imposed upon the Township by the federal or state governments for violation of pretreatment standards, for the costs incurred by the Township to investigate and take enforcement action that resulted in a penalty being imposed and for the monitoring of discharges in a pretreatment program. Funds remaining in the restricted account after the foregoing uses have been met may be used for capital improvements to the Township's sewerage system.

APPENDIX F

Willistown Township Tributary Municipality Report

WILLISTOWN TOWNSHIP
MUNICIPAL WASTELOAD MANAGEMENT REPORT
EAST GOSHEN TOWNSHIP
RIDLEY CREEK WWTP
SERVICE AREA
CALENDAR YEAR 2020

MARCH 2021

PREPARED FOR:

WILLISTOWN TOWNSHIP
688 SUGARTOWN ROAD
MALVERN, PA 19355

SALLY SLOOK, TOWNSHIP MANAGER

PREPARED BY:

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WARRINGTON, PA 18976

WILLIAM N. MALIN, P.E., VICE PRESIDENT

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Appendix A East Goshen Township Service Area Plans

ITEM 1 - EXECUTIVE SUMMARY

Flow from Willistown Township is conveyed to the East Goshen Township sanitary sewer system at three (3) locations. This flow is ultimately treated at the Ridley Creek Wastewater Treatment Plant. The three locations are Line Road north of Paoli Pike, Willow Pond Road, and Wyllpen Place west of Dutton Mill Road. Four (4) homes are connected on Line Road; fourteen (14) homes are connected on Willow Pond Road; and two (2) homes are connected on Wyllpen Place. The maps included in Appendix A show the locations of the properties providing flow to East Goshen Township.

The total number of Equivalent Dwelling Units (EDUs) Connected at the end of 2018 was twenty (21). At 262.5 gallons per day (GPD) per EDU, the estimated average flow for the twenty-one (21) homes is 5,250 GPD.

The homes along Line Road and Wyllpen Place are connected to sanitary sewers owned and operated by East Goshen Township.

The sanitary sewer in Willow Pond Road is owned and operated by Willistown Township. The flow is conveyed to sewer in Pond View Lane, which is owned and operated by East Goshen Township.

ITEM 2 - SEWER EXTENSIONS

There were no sewer extensions during 2018. Willistown Township is not currently planning any further sewer connections to East Goshen Township.

ITEM 3 - SEWER SYTEM MAINTENANCE

Willistown Township performs basic monitoring and maintenance on the sewer in Willow Pond Road. This sewer is in good condition with no sign of inflow/infiltration. Due to the low number of homes connected to the system, the flows are not metered or sampled. Flows can be estimated from water meter readings.

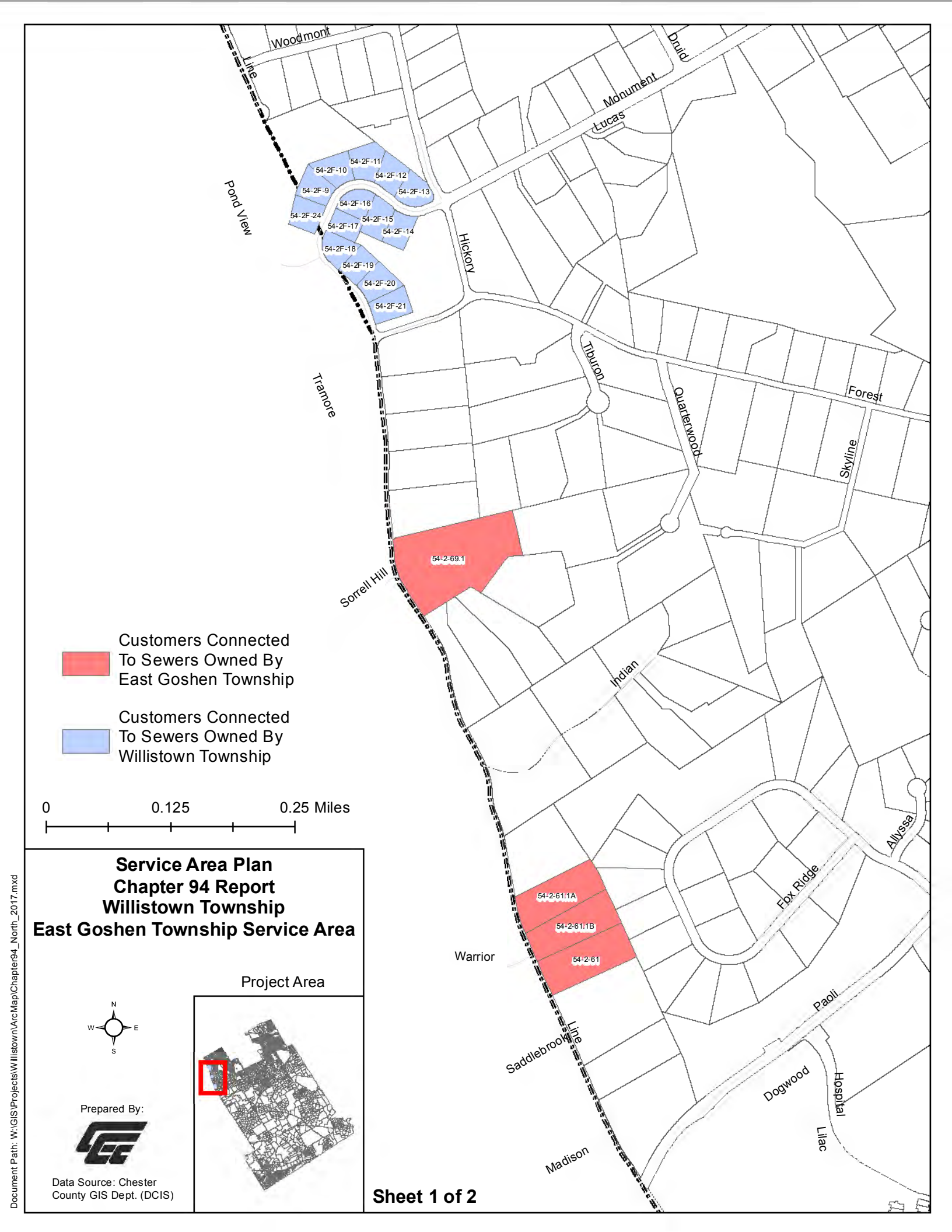
Willistown Township is not responsible for maintenance of the sewer connections on Line Road or Wyllpen Place.

ITEM 4 - OVERALL SEWER SYSTEM CONDITION

The system is in good condition. There are no portions of the system where rehabilitation or cleaning is needed, or where conveyance capacity will be exceeded in the next five (5) years.

APPENDIX A

EAST GOSHEN TOWNSHIP SERVICE AREA PLANS


Woodmont
Line
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Lucas
Pond View
Hickory
Tramore
Tiburon
Quarterwood
Forest
Skyline
Sorrell Hill
Indian
Allyssa
Fox Ridge
Warrior
Paoli
Saddlebrook
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Dogwood
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Lilac
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54-2F-9
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54-2F-16
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54-2F-14
54-2F-18
54-2F-19
54-2F-20
54-2F-21
54-2-69.1
54-2-61.1A
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Customers Connected To Sewers Owned By East Goshen Township
Customers Connected To Sewers Owned By Willistown Township
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Service Area Plan
Chapter 94 Report
Willistown Township
East Goshen Township Service Area
Project Area
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Data Source: Chester County GIS Dept. (DCIS)
Sheet 1 of 2
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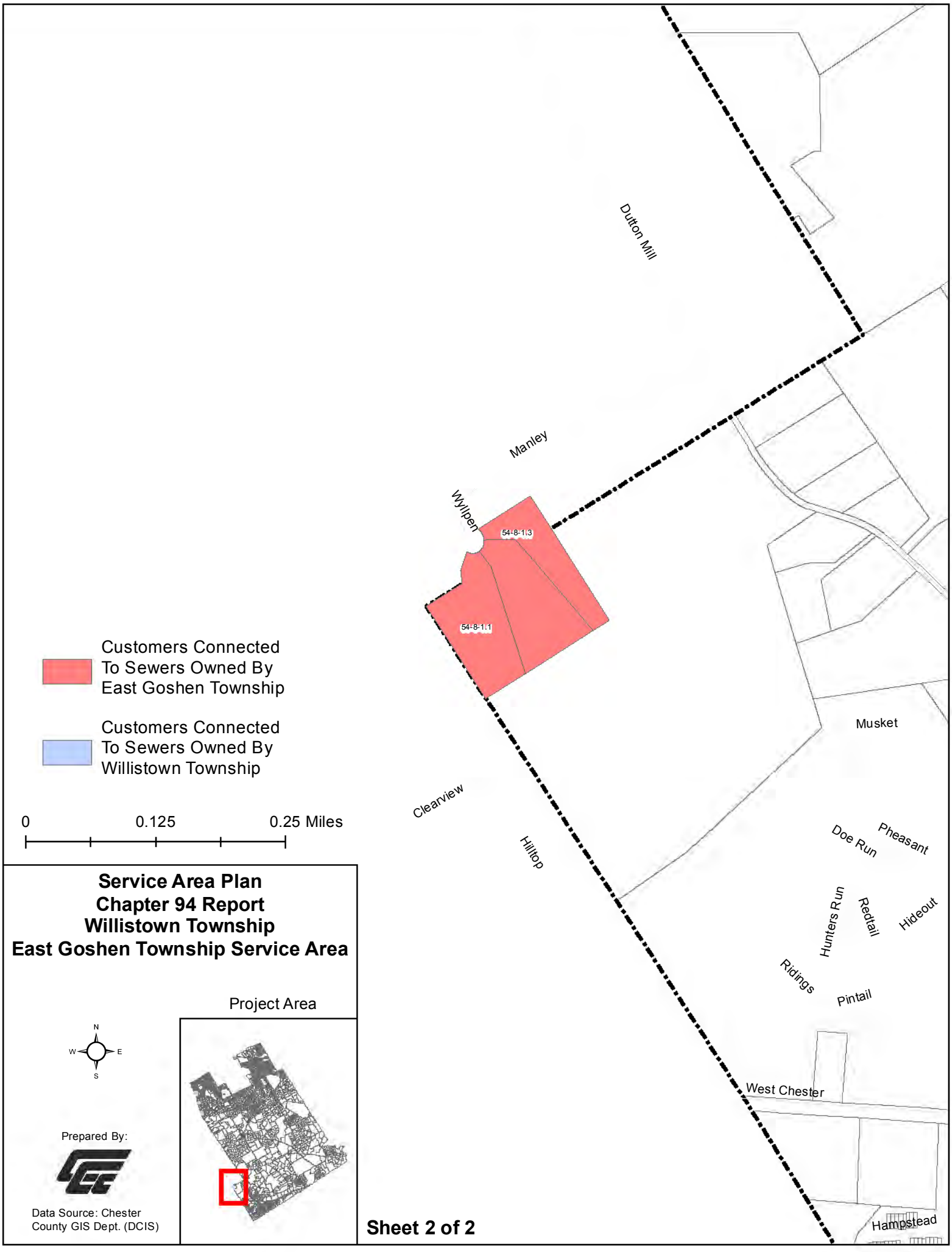
Dutton Mill
Manley
Wyllpen
54-8-1.3
54-8-1.1
Musket
Clearview
Hilltop
Doe Run
Pheasant
Hunters Run
Redtail
Hideout
Ridings
Pintail
West Chester
Hampstead
Customers Connected To Sewers Owned By East Goshen Township
Customers Connected To Sewers Owned By Willistown Township
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Service Area Plan
Chapter 94 Report
Willistown Township
East Goshen Township Service Area
Project Area
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Prepared By:
Data Source: Chester County GIS Dept. (DCIS)
Sheet 2 of 2
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2020 Chapter 94 Report for Ridley Creek Sewage Treatment Plant
East Goshen Municipal Authority
Chester County, Pennsylvania

FIGURES

Figure 1 – Chapter 94 Township Wastewater Facilities
Drawing G-1 – RCSTP Upgrade & Expansion Process Flow Diagram

EAST GOSHEN WASTEWATER FACILITIES FIGURE 1

MH R-265 PORTABLE METER

LINE ROAD MH R-238 PORTABLE METER

MH R-022 PORTABLE METER

E. BOOT RD MH R-214 PORTABLE METER

ELDRIDGE DRIVE MH R-568 PORTABLE METER

ACHCOM MH R-636 PORTABLE METER

HUNT COUNTRY PUMP STATION

RIDLEY CREEK SEWAGE TREATMENT PLANT

RIDLEY CREEK SEWAGE TREATMENT PLANT INFLUENT METER

ASHBRIDGE PUMP STATION

DECOMMISIONED LOCKWOOD CHASE SEWAGE TREATMENT PLANT

HERSHEY'S MILL PUMP STATION

HERSHEY'S MILL SEWAGE TREATMENT PLANT

BARKWAY PUMP STATION

RESERVOIR ROAD METER

WESTTOWN WAY METER

WILSON DRIVE METER

HICKS METER

PAOLI PIKE WEST METER

ELLIS LANE METER

PROPOSED RESERVOIR ROAD PUMP STATION

Legend

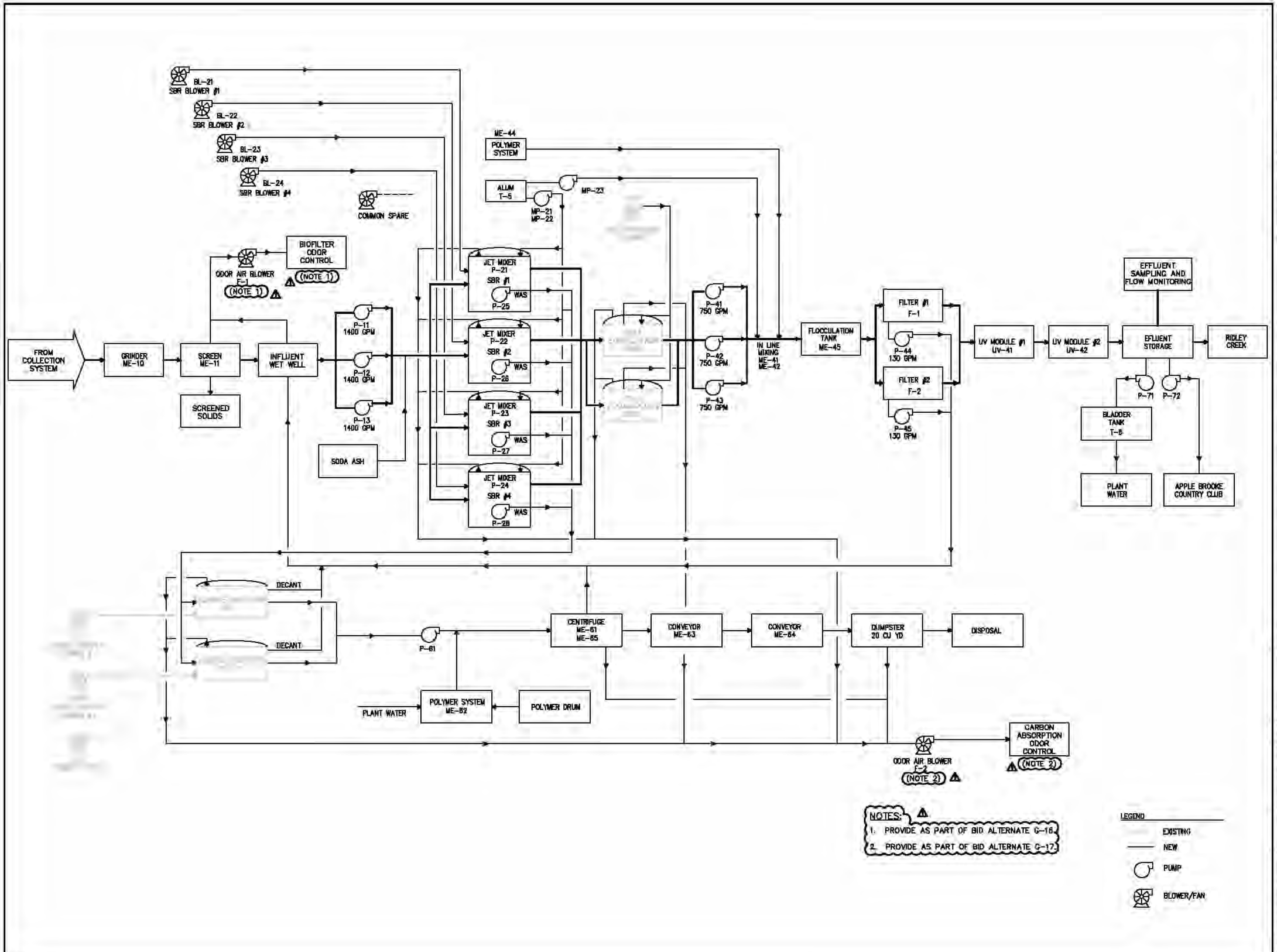
- PUMP STATION
- SEWAGE TREATMENT PLANT
- SANITARY MANHOLES
- PERMANENT METERS
- PORTABLE METERS (2020)
- SANITARY SEWER
- FORCEMAIN
- TOWNSHIP BOUNDARY
- SubAreas
- Parcels
- PONDS & LAKES
- RIVERS
- EAST WHITELAND SERVICE AREA
- HERSHEY'S MILL SERVICE AREA
- RIDLEY CREEK SERVICE AREA
- WEST GOSHEN SERVICE AREA
- WESTTOWN SERVICE AREA

N

0 1,000 2,000 4,000 Feet

1 inch = 1,000 feet

Pennoni ASSOCIATES INC. CONSULTING ENGINEERS



Pennoni Associates Inc. One Drexel Plaza, 3001 Market Street Phila., Pa. 19104 Consulting Engineers

Pennoni

DATE	REVISIONS	BY
10/22/08	1 ADDED NOTES 1 AND 2	TD

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

RCSTP UPGRADE & EXPANSION
TOWNE DRIVE
EAST GOSHEN TOWNSHIP

PROCESS FLOW DIAGRAM

EAST GOSHEN MUNICIPAL AUTHORITY
1580 PAOLI PIKE
WEST CHESTER, PA 19383

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PLAN NORTH

JOB NO. ECMA 0707

SHEET 3 OF 86

SCALE: NONE
DRAWN BY: DTP
DATE: 7/3/08
APPROVED: TD

DRAWING NO. G-1

EXHIBIT F1

VALLEY FORGE TREATMENT PLANT AGREEMENT, DATED NOVEMBER 1, 1970, BY AND BETWEEN VALLEY FORGE SEWER AUTHORITY; THE TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, TREDYFFRIN, WILLISTOWN, AND EASTOWN; THE BOROUGH OF MALVERN; MALVERN MUNICIPAL AUTHORITY; EAST WHITELAND MUNICIPAL AUTHORITY; TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY; AND EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

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EXECUTED IN 40 COUNTERPARTS
OF WHICH THIS IS COUNTERPART 2

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VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

THIS AGREEMENT, dated as of the first day of November, A.D. 1970, by and between VALLEY FORGE SEWER AUTHORITY, a joint municipality authority organized by the Townships of Schuylkill, East Pikeland, and Charlestown and operating under the provisions of the Municipality Authorities Act of 1945, Act of May 2, 1945, P.L. 382, its supplements and amendments (hereinafter referred to as the "Authority" and a "municipality"), the TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, TREDYFFRIN, WILLISTOWN, and EASTTOWN, second class townships (each of which is hereinafter called "Township" and "municipality"), the BOROUGH OF MALVERN (hereinafter called "Borough" and "municipality"), MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY, TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY, and EASTTOWN MUNICIPAL AUTHORITY (each of which is hereinafter called "municipality authority"), all of which are municipality authorities or political subdivisions within the County of Chester, Commonwealth of Pennsylvania.

WHEREAS, the parties have provided for or constructed, or are about to provide for or construct sanitary sewer collection systems; and

WHEREAS, the parties desire to dispose of sewage described hereinafter by a Treatment Plant to be located on the Schuylkill River in Schuylkill Township, Chester County, Pennsylvania; and

WHEREAS, Malvern, Tredyffrin, East Whiteland, and Easttown have each formed a municipality authority; and

WHEREAS, Willistown Township is about to form a municipality authority and all parties desire that it become a party upon its formation; and

WHEREAS, all parties desire that Valley Forge Sewer Authority shall operate said Treatment Plant but desire to exercise

control over major decisions concerning the design, construction, operation, and expansion of said Treatment Plant; and

WHEREAS, various economies will inure to the benefit of each party from the joint construction and use of the Treatment Plant.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, the parties hereto, intending to be legally bound hereby, covenant and agree as follows:

ARTICLE I

JOINT BOARD AND CONSTRUCTION OF TREATMENT PLANT

1.01 Joint Board. In order to ensure that all parties hereto shall have voice and information concerning the financing, construction, and operation of the Treatment Plant, a Joint Board constituted as set forth in Exhibit "A" attached hereto is hereby created which shall have the powers and duties set forth hereinafter and in said Exhibit "A".

1.02 Engineering Services. Each party hereby approves a contract dated March 20, 1969, between Authority and Buchart-Horn, Consulting Engineers, York, Pennsylvania, for engineering services necessary to design for the use of the municipalities an eight MGD Treatment Plant to be located on the Schuylkill River in Schuylkill Township, Chester County, Pennsylvania. A copy of said contract having been delivered to each party, the municipalities and municipality authorities set forth in Exhibit "B" agree to share the cost of such engineering design in accordance with the percentages set forth in Exhibit "B" attached hereto. The parties hereto likewise agree to share the cost of surveys and test borings incident to the aforesaid design in accordance with said percentages. When payments for such engineering design, surveys, and test borings fall due from time to time, each such municipality, upon receipt of a copy of an invoice from the Consulting Engineers, shall

promptly pay or cause to be paid to Authority for delivery to the Consulting Engineers (or, upon request of Authority, directly to the Consulting Engineers) that percentage of such invoice as is set forth in said Exhibit. The Joint Board shall make arrangements for collecting said payments. Nothing herein contained shall be construed so as to make a party hereto (other than the Authority) a party to the said contract between the Authority and the Consulting Engineers. If any payment required of a party hereto under this Section 1.01 is not made within thirty (30) days of the receipt of the aforesaid copy of invoice, interest shall accrue at the rate of six per cent (6%) per annum from such date.

1.03 Design Capacity; Construction of Treatment Plant. For each municipality listed in Exhibit "C", said Treatment Plant shall provide the design capacity (reserved capacity) set forth after the name of each municipality in said Exhibit. Authority, in accordance with said contract with the Consulting Engineers, shall cause plans and specifications for said Treatment Plant to be completed. Authority, upon receipt of capital contributions as provided in Article II hereof, shall award construction contracts and cause the Treatment Plant to be constructed with reasonable dispatch, all in accordance with said plans and specifications and sound engineering principles.

1.04 Review and Inspection. Throughout the term of this Agreement, Authority shall cause the Consulting Engineers to make available at reasonable times and places any information concerning the design, construction, and operation of the Treatment Plant reasonably requested by the Joint Board. Members of the Joint Board and the consulting engineers, employees and representatives of any party shall have the right at all reasonable times during construction and thereafter to inspect the construction and operation of the Treatment Plant and all records of Authority in respect thereof. The Authority, at reasonable times, shall receive and

consider the opinions, comments and suggestions of the Joint Board, of any party's consulting engineer and of the representatives of any party.

1.05 Date of Completion of Treatment Plant. Authority and the Joint Board shall make every reasonable effort to cause the Treatment Plant to be completed with reasonable dispatch.

ARTICLE II

CAPITAL CONTRIBUTIONS

2.01 Percentages. Subject to limitations hereinafter provided, each of the municipalities or municipality authorities listed in Exhibit "D" attached hereto (hereinafter referred to in this Article II as the "municipalities") shall pay the percentage of the total project cost of constructing the Treatment Plant set forth after its name in Exhibit "D" (said percentages being referred to hereinafter as "said percentages"). The estimated total project cost of constructing the Treatment Plant is set forth in Exhibit "D". The total project cost of constructing the Treatment Plant shall include construction contract payments, land costs, engineering, surveying, boring and construction supervision fees and expenses (other than those paid for under Section 1.02 hereof), legal fees incident to the construction (including preparation and review of documents needed before construction can commence), a reasonable contingency fund and all other charges, costs and expenses incident to such construction and which are properly chargeable thereto under sound accounting practice but excluding (i) financing costs and (ii) all costs and expenses properly chargeable to the Authority for construction of its sewage collection system under sound accounting practice. Allocation of costs and expenses between the cost of constructing the Treatment Plant and the cost of constructing said collection system shall be subject to adjustment upon

audit as provided for hereinafter.

2.02 Payment of Capital Contributions. No capital contribution in respect of construction shall be due hereunder unless prior to the date of payment plans and specifications for the Treatment Plant and revisions thereof, if any, have been approved by the Joint Board. Disapproval may be based only on sound engineering reasons. Within sixty (60) days of the date on which construction bids are received by the Authority (or, in the event of increased costs requiring approval pursuant to Section 2.03 hereof, within sixty [60] days of approval pursuant thereto), time being of the essence of this Agreement, each of said municipalities listed in Exhibit "D" shall pay to Authority the total of (i) the share of the estimated total project cost of constructing the Treatment Plant set forth in dollars after its name in Exhibit "D", (ii) said percentage of the amount by which the total project cost of constructing the Treatment Plant as stated by the Consulting Engineers after the receipt of construction bids exceeds the estimate set forth in Exhibit "D", up to an increase of fifteen (15%) per cent of said estimate, and (iii) such amount as may be due pursuant to the next succeeding Section hereof.

2.03 Change in Project Cost. In the event, after receipt of construction bids, the total project cost of constructing the Treatment Plant (before deducting any federal or state grant) is increased by more than fifteen (15%) per cent of the estimate set forth in Exhibit "D", and such a revision is approved by the Joint Board (with approval being deemed to have been given if disapproval is not given in writing within thirty [30] days of the date construction bids are received by the Authority), each of the municipalities listed in Exhibit "D" shall pay said percentage of said increase to Authority by the time set forth in the preceding Section. In the event, after receipt of construction bids, the total project cost of constructing the Treatment Plant is less than the estimate set forth in Exhibit "D", the payment to be made by each such municipality

under Sections 2.01 and 2.02 hereof shall be reduced proportionately and refunds of payments made under Section 1.02 shall be made proportionately.

2.04 Grants. Each party authorizes and directs the Authority on behalf of each such municipality or municipality authority from time to time to apply for and accept any one or more grants in aid towards any Treatment Plant construction costs and any Treatment Plant operating costs of any nature to be used in accordance with this Agreement. All federal and state grants received by any such municipality properly allocable to and to be applied to the project cost of constructing the Treatment Plant shall be paid to Authority and the total payment to be made by each municipality under Sections 2.01 and 2.02 hereof shall be reduced proportionately by such grant or grants.

All federal and state grants received by the Authority which are properly allocable to the project cost of constructing the Treatment Plant shall be applied by the Authority to the payment of such project cost or in reimbursement of expenditures so made and the total payment to be made by each municipality under Sections 1.02, 2.01, and 2.02 hereof shall be reduced accordingly. If any such federal or state grants shall have been awarded to the Authority and an agreement with the appropriate federal or state agency executed on or before the date capital contributions are to be made under Section 2.02, then such total payment to be made by each municipality shall be reduced appropriately. If any such federal or state grant is awarded or the agreement with the appropriate federal or state agency executed by the Authority after the aforesaid payments have been made by the municipalities under Section 2.02, such grants shall be applied in the computation of any surplus or deficiency of capital contribution pursuant to Section 2.03 hereof.

All federal and state contributions or grants in aid

received by any of said municipalities properly allocable to and to be applied towards any cost of operation, maintenance, repair, replacement, or other expenses relating to the Treatment Plant shall be paid over to Authority and shall be deducted in determining actual annual operating expenses of the Treatment Plant in accordance with Section 4.07 hereof.

2.05 Construction Fund. Authority shall deposit all amounts delivered by all parties to it pursuant to this Article, together with Authority's share and all amounts received in payment of federal and state grants allocable to the project cost of constructing the Treatment Plant, in a special Treatment Plant Construction Fund (hereinafter called "Construction Fund"). Such Construction Fund moneys shall be held and invested by a Trustee selected by Authority subject to the approval of the Joint Board and to the extent not insured by the Federal Deposit Insurance Corporation or other federal agency, or invested as hereinafter provided, shall be continuously secured by the pledge of direct obligations of the United States of America or of the Commonwealth of Pennsylvania having an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys. Such moneys may be wholly or partially invested by said Trustee only in direct obligations of the United States of America and certificates of deposit which shall mature or shall be subject to redemption at the option of the holder not later than one year from the date of such investment. Any securities so purchased shall be a part of the Construction Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added or charged to the Construction Fund and such interest, income, profit or loss shall be considered in the computation of any surplus or deficiency as provided in Section 2.08. Moneys paid pursuant to this Agreement shall at all times be segregated in books of account

from Authority moneys received for any other purpose.

2.06 Construction Fund Requisitions. Authority agrees that payments from the Treatment Plant Construction Fund shall be made only upon requisitions, copies of which shall be available to the Joint Board, duly executed by the Treasurer, Assistant Treasurer or other designated representative of the Authority stating: (a) the amount requested; (b) the obligation for or on account of which the requisition is made, showing separately the total obligation, the amount already paid, if any, and the balance remaining to be paid; (c) the person to whom the payment shall be made and his address; (d) that the item for which requisition is made has not been paid; and (e) that, with respect to such item, there are no vendors', mechanics' or other liens or secured transactions which will not be discharged by such payment.

In the case of payments under construction contracts, such requisitions shall also contain a certificate of the Consulting Engineers certifying approval of the requisition and further certifying that such obligation has been properly incurred and is then due and unpaid and that insofar as such obligation was incurred for work, materials, supplies or equipment, such work was actually performed or such materials, supplies or equipment were actually installed in or about the construction of the Treatment Plant, or delivered at the site of the work for that purpose, or delivered for fabrication at the place approved by the Consulting Engineers; and that all work done and materials, supplies or equipment furnished for which such obligation was incurred are, in the Consulting Engineers' opinion, in accordance with the plans and specifications.

2.07 Change Orders. Authority agrees to notify the Joint Board of all changes or alterations in the Treatment Plant plans and specifications. No change order concerning said plans and specifications in excess of $25,000 shall be approved by Authority unless it has previously been approved by the Joint Board;

provided, however, that if written notification of disapproval is not received by the Consulting Engineers within ten (10) days of the date request for approval of any change order is delivered to an officer of the Joint Board, such change order shall be deemed to have been approved by the Joint Board. Authority further agrees that, without the prior approval of the Joint Board, no change or alteration will be made in any of the plans and specifications of the Consulting Engineers, in respect to the Treatment Plant, which will cause the cost of construction to exceed the amount available in the Treatment Plant Construction Fund.

2.08 Distribution of Construction Fund. Upon completion of the construction of the Treatment Plant, Authority shall deliver to the Joint Board and to each party a certificate of the Consulting Engineers stating: (a) the fact of such completion and (b) in reasonably itemized form, the actual project costs of constructing the Treatment Plant (i) after deducting therefrom the unexpended contingency fund, if any, and the amount of any applicable federal or state grants paid into the Construction Fund and not previously used to reduce payments in accordance with Section 2.04 and (ii) after making appropriate adjustments in respect of net income, gain or loss from investments. If any municipality's share of the actual cost of constructing the Treatment Plant after adjustments (i) and (ii) is less than the total amount deposited by it as required by this Agreement, the excess of such deposits shall forthwith be refunded to such municipality if no municipality, within sixty (60) days of receipt of said certificate, has requested a readjustment or audit, and, in the event of such a request, shall be refunded promptly after the matter is resolved. A deficiency, if any, incurred in accordance with this Agreement shall be charged to and paid by each such municipality in said percentages and shall be due within thirty (30) days of notice to pay, and if not then paid shall be subject to interest at the rate of six per cent (6%) per annum

until paid. Prior to completion of the Treatment Plant, Authority may make one or more interim distributions on the basis of information then available, which distributions shall be subject to adjustment at the time of final distribution.

2.09 Audit of Project Cost. The said certificate of the Consulting Engineers as to the actual project cost of constructing the Treatment Plant and the records from which it is compiled shall be audited by a certified public accountant selected by the Authority with the approval of the Joint Board, and the expense of such audit shall constitute part of the project cost.

ARTICLE III

DELIVERY AND ACCEPTANCE OF SEWAGE

3.01 Delivery. Each party, at its own expense shall, during the term of this Agreement, cause all sewage emanating from its area designated by diagonal lines on the attached map marked Exhibit "E" to be delivered to the Treatment Plant and may cause so much of the sewage emanating from other areas to be delivered to the Treatment Plant as it desires from time to time. Except as permitted pursuant to Article VII hereof, no municipality or municipality authority shall at any time exceed the capacity then reserved by it.

3.02 Acceptance. Each party operating a sewage collection system shall commence delivering its sewage to the Treatment Plant as soon as practicable after (a) the Treatment Plant is sufficiently complete to provide service (as certified by the Consulting Engineers) and (b) the Valley Creek Trunk Sewer is sufficiently complete to provide service (as certified by the consulting engineers engaged by Tredyffrin Township Municipal Authority). Authority, as soon as practicable after said conditions are met, shall permit connections at the locations shown on Exhibit "E" (and at such other

locations as Authority may agree to, which agreement shall not be unreasonably withheld) and shall accept sewage for treatment and disposal subject to the terms and conditions herein set forth.

ARTICLE IV

OPERATING EXPENSES OF TREATMENT PLANT

4.01 Proportion. Authority, Borough and the Townships of East Whiteland, Tredyffrin, Willistown, and Easttown (which in this Article are referred to as "said municipalities") shall share the operating expenses of the Treatment Plant (as defined in Section 4.06) as follows: the proportion that the volume of sewage (determined as provided herein and by other agreement of the parties) emanating from each said municipality bears to the total volume of sewage received at the Treatment Plant (determined by meter as hereinafter provided) shall be used in calculating the amount that such municipality shall pay for sewage treatment services. Operating expenses of the Treatment Plant for the first two years of operation shall be paid as set forth in Section 4.13 hereof.

4.02 Estimates of Volume of Sewage. In order to provide Authority with working capital for payment of operating expenses of the Treatment Plant, at least one hundred twenty (120) days prior to the end of the first two years of operation of the Treatment Plant, and at least one hundred twenty (120) days prior to the start of each calendar year ~~thereafter~~ during the term of this Agreement, each said municipality shall supply or cause to be supplied to Authority and the Joint Board an estimate of the volume of sewage to be discharged from its sewage collection system and to be delivered to the Treatment Plant during the next succeeding calendar year (or portion of a calendar year remaining after the end of the first two years of operation).

4.03 Estimated Treatment Plant Operating Expenses.

Within sixty (60) days after receipt of the estimates provided under the preceding Section, Authority shall prepare, subject to the approval of the Consulting Engineers and the Joint Board (which may approve or disapprove [for reasonable cause] individual items of the budget), and furnish to each of the said municipalities, a budget setting forth (a) the estimated annual operating expenses of the Treatment Plant (including at least ten per cent [10%] for contingencies) and (b) the share of each said municipality of such operating expenses (the share of each said municipality being an amount which is in the same ratio to the total of such expenses as the estimated volume of sewage from such municipality is to the total estimated volume of sewage from all of the said municipalities). If at any time it appears on the basis of past or current meter readings that the estimate of a municipality is substantially inaccurate, the Authority, subject to the approval of the Joint Board, may revise said estimate and such a municipality shall promptly make payments in accordance with the revised estimate. In the event of an unusual contingency, an upward revision of the budget may be made by the Authority with the approval of the Joint Board, which approval shall not be withheld unreasonably; provided, however, that the budget may be exceeded without such prior approval of the Joint Board in an emergency directly affecting operation of the Treatment Plant and certified by the Consulting Engineers to require immediate action. Each such municipality shall make payments in accordance with the revised budget within sixty (60) days of receipt of notice thereof. In the event a municipality is not able legally to obtain funds with which to pay all of its share of the budget increase, any unpaid amount shall be paid by it in the following year together with interest at the rate of six per cent (6%) per annum until paid.

4.04 Payments on Account of Estimated Operating Expenses. On or before each January 1, April 1, July 1, and October 1 during the term of this Agreement, each such municipality shall pay to Authority (out of legally available current revenues and from sewer rentals) one-quarter (1/4) of its share of the estimated annual operating expenses of the Treatment Plant as determined in accordance with the preceding Section (prorated if the two-year period referred to in Section 4.01 ends during rather than at the start of a quarter). Amounts not paid when due shall be subject to interest in the amount of six per cent (6%) per annum of the amount due. Said interest shall be due from time to time upon the receipt of invoices from Authority. In the event of a default in payment under this Section, Authority may borrow all or part of the amount of such payment due hereunder and may use said interest to pay, or reimburse itself for paying, interest on such borrowed funds. Interest not so used shall be treated as a deduction under Section 4.07 hereof in determining actual annual operating expenses of the Treatment Plant.

Authority shall deposit all moneys delivered by all parties to it pursuant to this Article, together with Authority's share and all amounts received in payment of federal and state contributions or grants in aid to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the Treatment Plant, in a special Treatment Plant Operating Fund (hereinafter called "Operating Fund"). Such Operating Fund moneys shall be invested by Authority and to the extent not insured by the Federal Deposit Insurance Corporation or other federal agencies, or invested as hereinafter provided shall be continuously secured by the pledge of direct obligations of the United States of America or the Commonwealth of Pennsylvania having an aggregate market value exclusive of accrued interest at all times at least equal to the amount of such moneys. Such moneys may

be wholly or partially invested by said Authority subject to the same limitations set forth in Section 2.05. Any securities so purchased shall be a part of the Operating Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added to or charged to the Operating Fund and such interest, income, profit or loss shall be considered in determining the actual annual operating expenses of the Treatment Plant pursuant to Section 4.06 hereof.

4.05 Annual Statement. Within one hundred twenty (120) days of the close of each calendar year, Authority shall cause to be prepared and submitted to the Joint Board and each of the said municipalities a detailed statement, certified by a certified public accountant engaged by Authority with the approval of the Joint Board, showing the actual annual operation expenses of the Treatment Plant (as defined in the next succeeding Section) and the apportionment of the cost among the said municipalities on the basis of Section 4.01.

4.06 Actual Annual Operating Expenses of the Treatment Plant. "Actual annual operating expenses of the Treatment Plant" shall mean the sum of the costs referred to in sub-sections (a) through (g) hereof minus the deductions referred to in Section 4.07 hereof:

(a) All the actual reasonable expenses and costs of the adequate, proper operation, maintenance and repair of the Treatment Plant as the same may be constituted from time to time, determined in accordance with sound accounting practices and shall include, without limiting the generality of the foregoing, salaries and wages of operating, supervisory and administrative personnel directly charged to the operation, maintenance and repair of the Treatment Plant (but in the event such personnel are also engaged in other activities of a municipality, shall include only that

proportion of such salaries and wages as is properly allocable to such operation, maintenance and repair on the basis of time spent or services performed; pensions; Social Security or unemployment taxes; chemicals; power; taxes (if any); insurance; administrative expenses; materials and supplies; maintenance; and repairs, improvements and betterments (including ordinary or routine repairs and replacements but not extraordinary replacements or additions of a capital nature which latter shall be treated in the manner provided for expansion in Section 7.02, except to the extent that Article VIII shall apply);

(b) The fees and expenses of the Consulting Engineers employed by Authority billed by the Consulting Engineers to the Treatment Plant concerning the operation, maintenance and repair of the Treatment Plant and in preparing reports and determinations required by this Agreement or the Joint Board;

(c) The fees and expenses of the certified public accountant engaged by the Authority with the approval of the Joint Board to prepare the annual statement;

(d) Fees of consultants of the Joint Board employed in accordance with Exhibit "A";

(e) Interest paid by Authority pursuant to Section 4.04 hereof;

(f) The cost of that portion of the bond of the Treasurer and other officers or employees of the Authority attributable to his or their duties in connection with the Treatment Plant, under sound accounting practice; and

(g) Reasonable Authority expenses incurred in providing service pursuant to this Agreement and attributable to Treatment Plant operating expenses under sound accounting practices.

4.07 Deductions. Any federal or state contribution or grant in aid received by any party which is to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the Treatment Plant shall be paid to Authority and shall be deducted in determining actual annual operating

expenses of the Treatment Plant. Interest properly allocable hereto pursuant to Section 4.04 and interest earned by Authority on funds deposited in the Operating Expense Fund pursuant to Section 4.03 or Section 4.13 shall be deducted in determining such actual operating expenses.

4.08 Refunds or Additional Payments. If ~~any municipality~~'s share of the actual annual operating expenses of the Treatment Plant is less than (or more than) the total amount paid by it under this Article in such calendar year, the excess shall forthwith be refunded to such municipality (or the deficiency shall forthwith be paid by it) ~~if no municipality within sixty (60) days of receipt of an annual statement has requested arbitration in accordance with Article IX, and in the event of such a request, any excess (or deficiency) shall be refunded (or paid) within thirty (30) days after the matter is resolved.~~ Amounts not paid when due shall be subject to interest ~~in the amount of six per cent (6%) per annum of the amount due and shall be subject to the provisions concerning~~ interest of Section 4.04 hereof.

4.09 Use of Funds. Authority agrees that the payments by the municipalities to the Authority on account of their shares of operating expenses of the Treatment Plant shall be applied only for the payment of actual operating expenses as defined in Section 4.06, subject to Section 4.07, and that such payments shall not be applied towards the payment of any other obligation of Authority.

4.10 Books of Account. In order that expenses of Authority which are not properly allocable to the construction or operation of the Treatment Plant shall not be charged thereto, Authority shall keep separate books of account for its collection system and for the Treatment Plant or such books of account and other records which would readily permit such allocation. Said books and records shall be available for inspection by the Joint Board at all times.

4.11 Sewer Rentals. To insure the availability of current revenues adequate to meet its obligations under this Agreement, each said municipality shall impose and collect annual sewer rentals in an aggregate amount sufficient, together with other legally available funds, to equal (a) all sums payable by it to the Authority during the then current calendar year under this Agreement and (b) all sums payable by it to any other person, firm, corporation, municipality or municipality authority during the then current calendar year for or in respect to sewer purposes.

4.12 Discharge of Sewage. Each party shall make every reasonable effort to be ready to begin discharging sewage to the Treatment Plant by the time it is ready to receive sewage.

4.13 Operating Expenses for the First Two Years. Each municipality set forth in Exhibit "F" shall pay to Authority its share of the estimated operating expenses of the Treatment Plant for the first two years of operation set forth after its name in Exhibit "F" (on the basis of reserved capacity) within thirty (30) days of receipt of the certificate of the Consulting Engineers as provided in Section 2.08. Said operating expense moneys for the first two years of operation shall be deposited in an Operating Expenses Fund in the name of the Authority separate and apart from any other fund of the Authority. Investment of such moneys by the Authority shall be made subject to the same limitations set forth in Section 2.05 hereof. Within one hundred twenty (120) days of the close of each of said first two years of operation, Authority shall cause a certified public accountant to prepare and submit to the Joint Board and each participating municipality a detailed statement showing the actual annual operating expenses of the Treatment Plant (as defined in Sections 4.06 and 4.07 hereof) and the apportionment of the cost among the said municipalities on the basis of reserved capacities as set forth in Exhibit "C" hereof. If at the end of the second year of operation the amount deposited

hereunder by any municipality differs from the amount due, refunds or additional payments shall be made pursuant to Section 4.08 hereof.

ARTICLE V

QUALITY OF SEWAGE

5.01 General. The sewage delivered to the Treatment Plant by any municipality or municipality authority shall be within the maximum limits presented below or pretreated to within the limits of Section 5.04.

5.02 Acceptability Standards. The Valley Forge Sewer Authority shall from time to time establish acceptability standards for sewage and industrial waste entering the collection system of any municipality or municipality authority which discharges sewage (directly or indirectly) to the Treatment Plant for the purpose of prohibiting materials or characteristics which would be deleterious to the Valley Forge Sewage Treatment Plant or the treatment process, which standards shall be reasonable and similar to standards imposed with regard to similar facilities. No municipality or municipality authority shall permit discharge directly or indirectly to the Treatment Plant of any sewage or waste so certified to be deleterious, but such certification shall not preclude the municipality or municipality authority from contesting the reasonableness of such determination.

Subject to the foregoing, all municipalities and municipality authorities agree to enact or adopt or cause to be enacted or adopted uniform ordinances, resolutions, rules or regulations to prohibit users of the respective collection systems serving such municipalities from discharging substances failing to meet such acceptability standards and to require all pre-treatment of sewage or other waste necessary to require the same to conform to the

acceptability standards and agree to take all necessary steps in the design and construction of the collection systems and in the subsequent maintenance and operation thereof (including the exercise of appropriate inspection of and control over building connections) to prevent infiltration of storm water and other improper substances into the collection systems.

5.03 Sampling Manholes. For the purpose of determining the characteristics of sewage or wastes, each municipality or municipality authority shall install or cause to be installed a sampling manhole at the point of discharge at the property of any user which the consulting engineer of such municipality or municipality authority considers capable of discharging sewage or wastes not meeting any of such acceptability standards.

5.04 Industrial Wastes. In order to control admission of industrial wastes, no party to this Agreement shall permit any industrial user to connect to or discharge into its collection system any waters or wastes other than sanitary waste without the prior review and approval of the Consulting Engineers. The Consulting Engineers' review (until such time as the following acceptability standards are amended in accordance with Section 5.02 hereof) shall be based on, but not limited to, the following standards:

Waste Characteristics to be Considered. Characteristics of the industrial waste shall not be in general in excess of those listed below:

(a) The 5-day 20 degree centigrade B.O.D. (bio-chemical oxygen demand) shall not exceed 250 ppm.

(b) The suspended solids content shall not exceed 300 ppm.

(c) The total solids content shall not exceed 1,100 ppm.

(d) The pH shall not be less than 6.0 nor shall it exceed 9.0.

(e) The temperature shall not exceed 150°F.

The waste shall not contain any material requiring unusual processing or expense at the Treatment Plant.

(f) The color shall not be such as to require special treatment to render the effluent acceptable for discharge into the Schuylkill River.

(g) The waste shall not contain grease and oil, inflammable material, non-biodegradable material or any oxygen scavenger, sufficient in quantity to be injurious to the Treatment Plant or interfere with any treatment process or to constitute a hazard to human or animal life.

(h) The waste shall not contain any other solid or viscous material capable of causing obstruction to the flow in the sewers or at the Treatment Plant or any material capable of causing interference with the proper operation of the Treatment Plant.

Where required, in the opinion of the Consulting Engineers, the user shall provide at his expense such preliminary treatment or handling as may be necessary to modify the objectionable characteristics or control the quantities and rates of discharge of such water or wastes as necessary.

Plans, specifications, and any other pertinent information relating to proposed preliminary treatment or handling facilities shall be submitted for review to the Authority and no construction of such facilities shall be commenced until a permit for the connection is obtained in writing from the Authority. Authority shall give a copy of each such permit to Tredyffrin Township and to the municipality in which the industrial user is located.

In order to insure quality compliance and to reduce the possibility of accidental discharges of wastes not conforming each municipality and municipality authority shall sample, test or otherwise examine industrial wastes as often as reasonably necessary to insure quality compliance.

5.05 Combined Sewage and Industrial Wastes. In order to control the sewage entering the Treatment Plant, Authority will sample the discharge from each municipality or municipality

authority periodically to insure that no characteristic is evident which would be deleterious to the Treatment Plant or the treatment process.

The characteristics of each combined sewage and industrial waste discharge shall not be in excess of those listed under Section 5.04 except that the temperature of the combined discharge shall not exceed 100 °F.

Each municipality or municipality authority shall provide facilities to prevent the occurrence of septic conditions in the sewers and the sewage delivered to the Treatment Plant.

Should Authority find either the BOD or suspended solids characteristics exceeded as determined in the tests on the periodically obtained samples, the potentially offending municipality or municipality authority shall be notified of the findings and requested to examine the conditions. If at the end of a quarter, Authority determines that the discharge from the municipality or municipality authority is in excess of the characteristics as determined by average test results by periodic sampling, the suspected offender shall be given written notice that its discharge is in excess and that a comprehensive sampling and testing program will be undertaken by Authority to verify the non-compliance and to notify that steps should be taken to rectify the problem.

If, at the end of the quarterly comprehensive test program the problem has not been rectified, a penalty charge as provided in Section 5.06 will be added to that quarter's billing and until the situation is shown to be corrected.

Should Authority find any of the additional characteristics to be in excess or to find the presence of any other untested deleterious material in the course of periodic sampling and testing, the potential offending municipality or municipality authority shall be given notice to take immediate steps to rectify the problem.

5.06 Penalty Charge for BOD and Suspended Solids Excesses. A penalty charge will be added to the Treatment Plant

operating expense charge of any municipality or municipality authority in violation as described in Section 5.05 based on deviations in excess of 250 ppm. of 5-day 20 degree centigrade B.O.D. and 300 ppm. suspended solids content. The penalty charge will consist of a multiplier factor applied to the quarterly volume.

The multiplier shall be determined as follows:

$$\text{Multiplier} = 1.00 + \frac{BOD_5 - 250}{1000} + \frac{(\text{Suspended Solids} - 300)}{1000}$$

Any member of the formula giving a negative value shall be disregarded. BOD_5 and suspended solids figures shall be the average over a quarterly period based on analyses taken five (5) per week. The method of analyses shall be as described in the most recent edition of "Standard Methods of Analyses of Water and Wastewater."

ARTICLE VI

DETERMINATION OF QUANTITY OF SEWAGE DELIVERED TO THE TREATMENT PLANT

6.01 Meters or Measuring Devices. In order to measure in gallons the quantity of sewage emanating from Valley Forge Sewer Authority, the Borough of Malvern and the Townships of Tredyffrin, East Whiteland, Willistown, and Easttown, which is delivered to the Treatment Plant (directly or indirectly), the Authority and each of said municipalities shall each, at its expense, construct or cause to be constructed, where feasible, a sewage meter or sewage flow measuring device at each point necessary to determine the volume of such sewage. The above sewage meters and related equipment such as recorders and charts shall be as mutually agreed upon by the Consulting Engineers and the consulting engineers of said municipalities. All metering stations shall provide facilities for

sampling the sewage. The quantity of sewage emanating from Tredyffrin Township shall be determined by subtracting from the metered flow at the Wilson Road Pumping Station the flows from the Borough of Malvern and the Townships of East Whiteland, Willistown and Easttown as measured by meter readings or other method pursuant to this Agreement.

6.02 Treatment Plant Meters. Authority shall construct, operate and maintain a meter at the Treatment Plant for the purpose of measuring the total volume of sewage entering said Plant. In cases where the sum of the flows of each separate municipality (including flows calculated on the basis of EDU's under Section 6.05) does not equal the volume registered at the Treatment Plant, the difference shall be divided proportionately by the following equation:

$$\text{Difference} \times \frac{\text{Separate municipality or municipality authority flow}}{\text{Sum of ~~each~~ all municipality or municipality authority flow recorded by Plant meter}} = \text{Amount added to or subtracted from each municipality or municipality authority flow}$$

(Plant Influent Reading)

6.03 Calibration and Readings. All meters or measuring devices constructed or installed by Authority, the Borough and the Townships of Tredyffrin, East Whiteland, Willistown, and Easttown shall be calibrated by Authority at least once each year and, if requested by the Joint Board or Tredyffrin Township, shall be checked at other times as a cost of operating the Treatment Plant. All readings of each such municipality or municipality authority's meter or measuring device shall be performed by a representative of said municipality, of Authority, and of Tredyffrin Township, and the meters or measuring devices installed by Authority, including the meter at the Treatment Plant, shall be read by a representative

Not followed to understand

of Authority, of the Joint Board, and of Tredyffrin Township. Meters or measuring devices shall be read or examined on the date each municipality or municipality authority first connects and on the first day of each quarter of each year during the term of this Agreement to determine the quantity of sewage emanating from each municipality or area served by a municipality authority for the previous quarterly period or portion thereof. Copies of meter readings or measuring device examinations shall forthwith be delivered to each municipality, to Valley Forge Sewer Authority, and to the Joint Board.

6.04 Maintenance and Operation. All meters and measuring devices used for the purpose of determining flows into the Valley Creek Trunk Sewer and used for billing purposes will be routinely serviced and inspected by Authority as a part of the Treatment Plant operating expense. Authority shall undertake to have an inoperative or inaccurate meter or measuring device repaired as soon as practicable with the cost of such repair being charged back to the owner. Valley Forge Sewer Authority shall not be obligated to provide service to any devices other than the primary metering element, recorders, transmitters and other instruments. Each municipality or municipality authority shall at its own expense be responsible for all other maintenance and operation of its sewage metering facilities.

6.05 Missing or Inaccurate Flow Records; Use of Equivalent Dwelling Units as Measurement of Flow. In the case of missing flow records due to faulty meter registration or otherwise, an estimate of flows shall be made by the Consulting Engineers for the purpose of determining volume of sewage discharges. This estimate will be based on a valuation of past flow records as applied to the then existing conditions and as reviewed and approved by the consulting engineer of the respective municipality or municipality authority.

In the absence of meter readings during the early period of low flows, when the sewage recording meters may not register the flow, or where meters cannot practically be installed, flow quantities shall be determined on the basis of the average number of Equivalent Dwelling Units (upon the basis of a discharge rate of 275 gallons per day per Equivalent Dwelling Unit). The number of Equivalent Dwelling Units shall be determined at the beginning and end of each calendar quarter during the term of this Agreement based upon a certification by a responsible officer of the municipality or municipality authority as to the number of such Equivalent Dwelling Units so connected by the municipality or municipality authority at the beginning and end of each quarter and shall be averaged on the basis of the number of units so connected at the beginning and end of each such quarter. Where the initial connection of the collection system of any municipality or municipality authority is made to the Valley Creek Trunk Sewer after the first day of a calendar quarter, the quantity of sewage so discharged shall be based on the number of Equivalent Dwelling Units so connected at the end of such quarter prorated on the basis of the number of days in such calendar quarter that any sewage is so discharged from such municipality or municipality authority. For the purpose of determining the number of Equivalent Dwelling Units represented by schools, churches or municipal buildings, commercial or industrial establishments, etc., the factors set forth in Exhibit "G" shall be applied. The officials and representatives of Authority or Tredyffrin Township may inspect the records of any connecting municipality or municipality authority for the purpose of determining the accuracy of the number of Equivalent Dwelling Units certified by such municipality or municipality authority.

6.06 Partial Check on Faulty Meters. For the purpose of attempting to discover faulty meters, Authority shall undertake to prepare, as a Treatment Plant operating expense, a complete

distribution of the total volume of sewage received and metered at the Treatment Plant during each calendar quarter and during each calendar year, with respect to each municipality or municipality authority which discharges sewage that is treated in the Treatment Plant, such distribution to include all metered and unmetered sewage flows of each municipality or municipality authority and such adjustments as are calculated under Section 6.02.

ARTICLE VII

EXPANSION

7.01 Renting Unused Capacity. Each municipality or municipality authority (hereinafter referred to in this Article VII as "municipalities") discharging from its sewage collection system to the Treatment Plant during a calendar year a volume of sewage less than its reserved capacity, as set forth in Exhibit "C", shall be deemed to have placed its unused capacity in a rental pool. Any municipality (herein called "lessee municipality") discharging sewage to the Treatment Plant in any calendar year in excess of its reserved capacity, as set forth in Exhibit "C", shall rent from the pool for the entire calendar year capacity equal to the volume by which it exceeds its reserved capacity (with the total volume discharged by it being reduced to gallons per day by dividing the total gallons discharged by it in such calendar year by 365). The annual rental fee to be paid by the lessee municipality shall be the representative annual "debt service" (calculated at equal annual payments to amortize the "debt," including seven per cent [7%] interest per annum for a twenty-five (25) year term) for the amount obtained by multiplying the fraction of the rated capacity of the Treatment Plant rented for the current calendar year by the total of capital contributions made by all parties hereto toward the cost of providing the Treatment Plant as then being used. The capacity thus

rented by the lessee municipality shall be rented annually by it until the next expansion of the Treatment Plant, at which time the lessee municipality shall surrender the capacity rented by it and shall, at its expense, replace the capacity rented by it so that each lessor municipality will receive back its reserved capacity placed in the pool. In no event shall any contribution of capacity to the rental pool be construed to decrease the reserved capacity in the Treatment Plant of any lessor municipality.

The rental fees shall be distributed to the contributors to the rental pool in proportion to their contributions (the contribution as to each being the difference between its actual flow during the current calendar year [reduced to gallons per day] and its reserved capacity). The rental fee owed by each lessee municipality, together with the proposed distribution thereof to the lessor municipalities, shall be shown as separate items in the annual statement furnished pursuant to Section 4.05 hereof. Rental fees owed shall be paid by each lessee municipality to Authority within sixty (60) days of receipt of said annual statement unless arbitration has then been requested, and in such event shall be paid within thirty (30) days of the date the matter is resolved pursuant to the procedure set forth in Section 9.01 hereof. Distribution of the rental fees shall be made by Authority promptly thereafter as provided herein.

Although rental payments shall be paid and distributed hereunder on the basis of actual flows, the total estimates of sewage to be discharged to the Treatment Plant in a calendar year pursuant to Section 4.02 hereof shall be used to avoid exceeding the rated capacity of the Treatment Plant. In the event that the total of said estimates, pursuant to Section 4.02, exceeds ninety per cent (90%) of the rated capacity of the Treatment Plant (with the remaining ten per cent [10%] being used as a safeguard against underestimation), the Consulting Engineers shall allocate the capacity in the

pool (as estimated) among the municipalities estimating discharge in excess of their reserved capacities in proportion to their flows during the preceding calendar year; provided, however, that any municipality may continue to rent the number of gallons of capacity previously rented by it. No municipality shall permit any new connection to be made to its collection system or permit increased flow from any existing connection (due to construction and connection to the system of additional facilities) if so permitting might cause its volume of sewage discharged to the Treatment Plant at peak flows during such calendar year to exceed the total of its reserved capacity and the capacity in the pool allocated to it by the Consulting Engineers for such year.

7.02 Increased Capacity. At such times as (a) eighty per cent (80%) of the rated capacity of the Treatment Plant is used or (b) estimates of volume under Section 4.02 exceed ninety per cent (90%) of said rated capacity, or (c) in the event reconstruction, repair, replacement, enlargement or improvement of the Treatment Plant or any part thereof is required to meet standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction, the Authority, after approval by the Joint Board, which may be withheld only for sound engineering reasons, shall take all measures reasonably necessary or appropriate (i) to provide for the replacement of capacity borrowed pursuant to Section 7.01 hereof and to provide increased capacity to meet the reasonably anticipated needs of the parties pursuant to Section 3.01 hereof by the enlargement of structures, the installation of additional tanks or equipment, or other improvement or (ii) to provide for such reconstruction, repair, replacement, enlargement or improvement required to meet such standards; and each municipality or municipality authority named in Exhibit "B" (including, in the event Authority is unable otherwise to obtain the necessary funds, the Townships of Schuylkill,

S.W. 2nd approval is necessary

1st conceptual approval of project
2nd detailed plans and specs

East Pikeland and Charlestown, with the Consulting Engineers determining how the Authority's share is to be apportioned among them) agrees to pay or cause to be paid to the Authority (but only from legally available current revenues, sewer rentals available and funds which can legally be borrowed) its proportionate share of the expenses thus incurred.

The necessity for and the extent of such increased capacity (with a breakdown by municipality or municipality authority on the basis of the respective proportion of the increased reserved capacity) shall be determined by the Consulting Engineers, subject to the approval of the Joint Board (which approval may be withheld only for sound engineering reasons), after consultation with the consulting engineers of each of the municipalities and municipality authorities and written notice of such determination together with the Consulting Engineers' estimate of the cost thereof (with a breakdown by municipality or municipality authority on the basis of the respective proportions of the increased design capacity to be reserved for each municipality) shall be given to each municipality, municipality authority, and Joint Board. To the extent that it is possible to segregate upgrading (to meet standards of a governmental authority) from expansion (to provide increased capacity), the expense of upgrading shall be allocated and paid on the basis of the then current reserved capacities. Adjustment shall be made so that each lessee municipality pursuant to Section 7.01 hereof bears the expense of replacing the capacity rented by it and each lessor municipality receives back its reserved capacity placed in the pool. In the event of failure of Authority and the Joint Board to agree, the Authority may submit the matter to arbitration as provided in Article IX hereof.

Time of payment and calculation of project cost shall be in the same manner as that provided in Article II hereof. Each party authorizes and directs Authority on behalf of each

municipality and municipality authority from time to time to apply for and accept any one or more grants in aid towards the aforesaid provision of increased capacity or reconstruction, repair, replacement, enlargement or improvement.

7.03 Construction Fund. Moneys paid pursuant to this Article shall be deposited, held and disbursed pursuant to the Construction Fund provisions set forth in Article II hereof.

ARTICLE VIII

INSURANCE AND DAMAGE OR DESTRUCTION

8.01 Insurance on Treatment Plant. Authority agrees that (a) during the construction of the Treatment Plant it will at all times cause to be in force builders' risk insurance (or equivalent coverage) upon any work done or materials furnished under construction contracts except foundations and any other structures not customarily covered by such insurance, such policies to be written in completed value form for one hundred per cent (100%) of the insurable value of the contracts and (b) upon completion of such construction it will at all times as a Treatment Plant operating expense cause the Treatment Plant to be insured against loss or damage by fire or other casualty in such amount and against such risks as are usually carried with respect to like properties, provided that the amount of such insurance shall be sufficient to prevent the insured from becoming a co-insurer thereunder by reason of any co-insurance clause in the policies. All such insurance policies shall (a) be written by responsible insurance companies authorized and qualified to do business in Pennsylvania, (b) be non-assessable and (c) name as the insureds the Authority and the Trustee of the trust indenture executed by Authority to secure its bonds issued to provide for the construction in whole or in part of the Treatment Plant and, in addition, during any period of repair or

construction the contractors engaged in such repair or construction, and to the extent procurable shall not be cancellable without at least fifteen (15) days' prior written notice to such named insureds. The Authority agrees to furnish to each municipality before commencing operation of the Treatment Plant and before the start of each year during the term of this Agreement a certificate of the Consulting Engineers stating the amount and kind of such insurance in effect for the ensuing year and that the same, in the opinion of the Consulting Engineers, complies with the provisions of this Section.

8.02 Repair or Reconstruction with Insurance Proceeds. In the event of any damage to the facilities covered by such insurance, the Authority, upon receipt of the necessary funds as provided for herein, shall promptly repair or replace the damaged property unless the Consulting Engineers certify that it would not be practical and advantageous to do so. It is agreed that in the absence of such a certification, the proceeds of all insurance coverage to the extent necessary shall be applied to such repair or reconstruction.

8.03 Repair or Replacement not Covered by Insurance Proceeds. In the event that it shall be necessary in order to treat and dispose of sewage in accordance with the purport and intent of this Agreement to make an extraordinary repair or replacement of the Treatment Plant because of damage or destruction by casualty or otherwise, and there are insufficient funds available from insurance proceeds to pay the costs and expenses thereof, the Authority (or in the event it cannot otherwise obtain funds, the Townships of Schuylkill, East Pikeland and Charlestown with the Authority's share being apportioned among them by the Consulting Engineers), the Borough and the Townships of East Whiteland, Willistown, Tredyffrin and Easttown shall forthwith pay over to Authority (but only from legally available current revenues, sewer rentals available and

borrowed funds) for deposit in a special construction fund such amount as is required for the purpose, in the same proportions as capital contributions toward the construction of the Treatment Plant were made by each. In the event the funds available to any municipality from the above sources are insufficient to pay the amount due from it and it is unable to borrow the same, payment shall be made at such times as shall be determined by the Joint Board.

8.04 Providing Capacity by a Means Other than Repair or Reconstruction of the Treatment Plant. In the event that proceeds of insurance resulting from damage to the Treatment Plant are not applied to the repair or replacement of the damaged property because the same is determined to be impractical and not advantageous (pursuant to Section 8.02 hereof) such proceeds shall be applied toward the provision of capacity pursuant to Section 7.02 hereof. In such event, credit for funds so applied shall be given to the municipalities in the same proportions as capital contributions toward the project cost of the Treatment Plant were made by each.

ARTICLE IX

ARBITRATION

9.01 Arbitration as to Charges under Articles II and IV. In the event any disagreement shall arise concerning the charges provided in Articles II and IV and the parties with the assistance of the Joint Board cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party requests arbitration to a certified public accountant appointed by a method agreed upon by the Authority and the Joint Board. In the event of failure to agree upon an arbitrator within ten (10) days, an arbitrator shall be appointed by the Senior Judge of the Court of Common Pleas of Chester County available at the time either Authority or the Joint Board requests appointment of an arbitrator. The decision of the accountant or arbitrator so chosen shall be binding and shall be rendered within twenty (20) days. Any request for such arbitration shall be made within sixty (60) days after receiving a certificate under Section 2.08 or a statement under Section 4.05, Section 4.13, or Section 7.01, and if no such request is made, the certificate or statement shall be considered correct and not subject to future questions. The fee of said certified public accountant or arbitrator shall be a Treatment Plant operating expense.

9.02 Other Arbitration. In the event any disagreement shall arise as to the interpretation of any provisions hereof or the rights and obligations of the parties hereunder (other than disagreements provided for in Section 9.01) and the parties with the assistance of the Joint Board cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party requests arbitration to a Board of Arbitrators whose decision shall be binding and

shall be rendered within twenty (20) days. Such Board shall consist of the Consulting Engineers, consulting engineers selected by the Joint Board and a third professional engineer licensed in Pennsylvania selected by the two consulting engineers; provided, however, that the Authority and the Joint Board may agree to select arbitrators other than engineers or may agree to submit the matter to a single arbitrator. In the event of failure of the engineers to agree upon a third engineer, the same shall be appointed in the manner set forth in Section 9.01 hereof. The fees of all arbitrators shall be a Treatment Plant operating expense.

ARTICLE X

MISCELLANEOUS PROVISIONS

10.01 Operation of Treatment Plant. The Authority agrees that it will, for and during the term of this Agreement by use of funds provided hereunder, operate and maintain the Treatment Plant and that it will keep the same in good order and repair, save where prevented from doing so by act of God or riot, rebellion, sabotage, act of the public enemy or public calamity, in which event the Authority may suspend operation of the said Treatment Plant until the cause of such suspension shall no longer exist and for such reasonable time thereafter as may be required to effect a resumption of operations. Authority shall at no time and under no circumstances be liable to any party for any damages in case of failure or inadequacies of said Treatment Plant to receive, treat or dispose of sewage.

10.02 Operation of Collection Systems. Each party agrees that during such time as it operates a sewage collection system it will continuously operate and keep and maintain its

collection system at all times in first-class repair, order and efficient operating condition and will meet the standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction. Each party agrees to pay the cost of any damage to the Treatment Plant or fine imposed upon Authority resulting from discharge of improper sewage from such party's collection system in violation of this Agreement or from improper operation or maintenance of such party's collection system. Each party agrees to indemnify and save harmless all of the other parties against all costs, losses or damage on account of any injury to persons or property occurring in the performance of this Agreement due to the negligence of such party or its servants, agents or employees.

10.03 Leases. In the event that any municipality authority shall at any time lease its collection system to a municipality, any right or obligation of such authority under this Agreement may be exercised and shall be performed, as the case may be, by the municipality instead of the municipality authority to the extent that it may legally do so. When, by reason of the termination of any collection system lease, or for any other reason, any municipality authority shall be in possession of its collection system, then without any further act or agreement such municipality authority shall succeed to and become vested with all of the rights, powers, duties and obligations under this Agreement granted to or imposed upon the municipality which created such authority.

10.04 Public Utility Law. In the event that the Commonwealth of Pennsylvania should subsequently lawfully confer jurisdiction of the subject matter of this Agreement upon the Pennsylvania Public Utility Commission in whole or in part, the parties shall, if requested so to do, proceed forthwith to obtain

all necessary power, right and authority from the said Public Utility Commission or other proper agency of such Commonwealth in order to carry out the terms, provisions and intendment hereof.

10.05 Permits. In the event that it may be necessary for the proper performance of this Agreement on the part of the Authority to apply to any governmental or other agency for any permit or license to do or perform any act or thing contemplated hereby, and if such application must be made by a municipality rather than by the Authority, the municipality affected agrees that it will execute the required application upon request by the Authority, it being understood that in executing such application the municipality shall not assume any obligations beyond those for which it would have been responsible had the Authority made the said application.

10.06 No Joint Liability. With the exception of a municipality and a municipality authority organized by such municipality, no party shall be held to be jointly liable in the event of failure of any party to perform and discharge its obligations under this Agreement, it being the intent hereof that this shall constitute the separate agreement of each of the several parties named herein and default by any party in the discharge of any obligation resting upon it hereunder shall not relieve any other party from full performance of and compliance with the terms hereof.

10.07 Connections. Prior to the completion of construction of the Treatment Plant, Borough and each Township which is a party hereto will (to the extent that it has not done so prior thereto) take all action which may be legal and necessary to compel all properties located within its territorial limits and then capable or thereafter becoming capable of being served by the municipality's collection system (or

that of Authority) to be connected therewith. Sewage need be delivered to the Treatment Plant only from areas designated as service areas on the attached Exhibit "E."

10.08 Records. Each party agrees to make available at all reasonable times to the Joint Board, Authority and employees, agents and representatives of either, access to all records relating to matters covered in this Agreement and access to the physical facilities of each party in order to assure compliance with the terms and provisions of this Agreement. A copy of all ordinances, resolutions, rules and regulations adopted by each party from time to time, pursuant to this Agreement, shall be furnished to Authority and the Joint Board within thirty (30) days after enactment.

10.09 Severability. Should any one or more of the provisions of this Agreement for any reason be held illegal or invalid, such illegality or invalidity shall not affect any other provision of this Agreement; and this Agreement shall, in such circumstances, be construed and enforced as if such illegal or invalid provision had not been contained herein.

10.10 Term. This Agreement shall become effective upon its execution and delivery by all the parties hereto and shall remain in effect for forty (40) years and thereafter shall be terminated only by mutual agreement of all parties. Nov 2010

10.11 Joinder of Authority to be Formed by Willistown Township.

A municipality authority to be formed by Willistown Township may become a party hereto by duly executing this Agreement.

10.12 Definitions. The following terms and phrases shall have the following meanings whenever used herein:

(a) "Consulting Engineers" means Buchart-Horn, Consulting Engineers, York, Pennsylvania, and in the event said firm ceases to serve as the Consulting Engineers for

Authority, an engineering firm or professional engineer having a favorable repute for skill and experience in the construction and operation of sewage treatment plants, registered in Pennsylvania and chosen by the Authority with the advice and consent of the Joint Board.

(b) "Equivalent Dwelling Unit" means any room, group of rooms, house trailer or other enclosure occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by persons living alone.

(c) "Industrial User" means any improved property used, in whole or in part, for manufacturing, processing, cleaning, laundering or assembling any product, commodity or article or from which any process waste, as distinct from sanitary sewage, is discharged.

(d) "Industrial Wastes" means any and all wastes discharged from an industrial establishment or by an industrial user, other than sanitary sewage.

(e) "Sewage," "Wastewater," "Sanitary Sewage" and "Sanitary Waste" means normal water-carried household and toilet wastes from any improved property to the extent permitted by Article V and industrial wastes to the extent permitted by Article V.

(f) "Improved Property" means any property upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human being or animals and from which structure sanitary sewage and/or industrial wastes shall be or may be discharged.

(g) "pH" means the logarithm of the reciprocal of the concentration of hydrogen ions, expressed in grams per liter of solution, indicating the degree of acidity or alkalinity of a substance.

(h) "B.O.D." means biochemical oxygen demand.

10.13 Execution. This Agreement may be executed in any number of counterparts each of which may be deemed an original.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed and attested by its proper officers, pursuant to proper action of its proper governing body, as of the day and year first above written.

TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

By: _____
Chairman

ATTEST:

By: _____
Secretary

(AUTHORITY SEAL)

TOWNSHIP OF TREDYFFRIN

By: James V. Kennedy
Chairman, Board of Supervisors

ATTEST:

By Emily J. Price
Secretary

(TOWNSHIP SEAL)

TOWNSHIP OF SCHUYLKILL

by: _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(TOWNSHIP SEAL)

TOWNSHIP OF EAST PIKELAND

By: John F. Creager Chair
Chairman, Board of Supervisors

ATTEST:

By Ralph S Quinter
Secretary

(TOWNSHIP SEAL)

TOWNSHIP OF CHARLESTOWN

By _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(TOWNSHIP SEAL)

TO'NSHIP OF EAST 'HITELAND

By: _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(TO NSHIP SEAL)

TOWNSHIP OF WILLISTOWN

By _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

_____

_____

(TOWNSHIP SEAL)

TOWNSHIP OF EASTTOWN

By: _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(TOWNSHIP SEAL)

BOROUGH OF MALVERN

By: James E. Miller
~~Mayor~~
President of Borough Council

ATTEST:

By Richard D. Sheridan
Secretary

(BOROUGH SEAL)

VALLEY FORGE SEWER AUTHORITY

By: _____
Chairman

ATTEST:

By _____
Secretary

(AUTHORITY SEAL)

MALVERN MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

EAST WHITELAND MUNICIPAL AUTHORITY

By: _____
Chairman

ATTEST:

By _____
Secretary

(AUTHORITY SEAL)

EASTTO'N MUNICIPAL AUTHORITY

By: _____
Chairman

ATTEST:

By _____
Secretary

(AUTHORITY SEAL)

EXHIBIT "A"

JOINT BOARD

The Borough of Malvern and the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown and Easttown shall each appoint one member of the Joint Board for initial terms as follows:

Malvern	1 Year
Schuylkill	2 Years
East Pikeland	3 Years
Charlestown	4 Years
East Whiteland	5 Years
Tredyffrin	1 Year
Willistown	2 Years
Easttown	3 Years

and shall thereafter from time to time, as the term of its representative expires, appoint a member for a term of five (5) years. If a vacancy occurs by reason of the death or resignation of a member, the municipality that appointed him shall appoint a successor to fill his unexpired term. A member may be recalled and replaced by the appointing municipality. In the event a member cannot attend a meeting, the municipality that appointed him may send an informed representative who shall have the right to vote.

Five members shall constitute a quorum and the acts of a majority of the members present at a meeting at which a quorum is present shall be binding acts of the Joint Board. The Joint Board may from time to time adopt Rules and Regulations governing its method of operation but shall hold special meetings as may be required in order not to delay construction of the Treatment Plant. The Joint Board shall not unreasonably withhold or delay approval of any matter requiring its approval.

If the Joint Board desires legal advice in addition to that which is provided by counsel for the Authority or accounting services, it may employ such with the fees being paid as an annual operating expense of the Treatment Plant under Section 4.06(d).

No more than one person shall be at the same time a member of Valley Forge Sewer Authority and of the Joint Board.

The powers and obligations of the Joint Board shall be as set forth inter alia in the following sections of this Agreement:

1.02 (Collecting payments for engineering services)

1.04 (Reviewing, inspecting and advising)

2.02 (Plans and specifications are subject to approval of Joint Board)

2.03 (Total project cost in the event the same exceeds the estimated total project cost as set forth in Exhibit "D" hereof by more than 15% is subject to approval of Joint Board)

2.05 (Selection of Trustee for Construction Fund is subject to approval of Joint Board)

2.06 (Receiving requisitions)

2.07 (Change orders in excess of $25,000 are subject to approval of Joint Board)

2.08 (Receiving certificate as to distribution of Construction Fund with each municipality having the right to request audit)

2.09 (Selection of Certified Public Accountant to prepare said certificate is subject to approval of Joint Board)

4.03 (Budget and revisions thereof are subject to approval of Joint Board)

4.05 (Receiving annual statement with each municipality having the right to request audit)

4.06(c) (Selection of Certified Public Accountant to prepare annual statement is subject to approval of Joint Board)

4.06(d) (Payment of fees of consultants of Joint Board)

4.10 (Inspection of all Authority books of account)

4.13 (Trustee for Operating Expenses Fund is subject to approval of Joint Board)

pages out of order

7.02 (Extent of increased capacity and apportionment of payment therefor is subject to approval of Joint Board)

9.01 and 9.02 (Attempting to resolve disagreements and selecting arbitrators)

10.08 (Access to records and physical facilities)

EXHIBIT B

ESTIMATED
ENGINEERING COST DISTRIBUTION
FOR DESIGN SERVICES

Engineering Cost to Design and Bid Project $260,000

Name of Party	Reserve Capacity MGD	% of total reserve capacity	Engineering Cost
Valley Forge Sewer Authority	2.00	26.60	$ 69,160
Tredyffrin Township Municipal Authority	1.50	19.90	51,740
East Whiteland Municipal Authority	1.60	21.20	55,120
Malvern Municipal Authority	0.53	7.05	18,330
Willistown Township	1.00	13.30	34,580
Easttown Township Municipal Authority	0.90	11.95	31,070
Totals	7.53	100.00	$260,000

EXHIBIT C

RESERVE CAPACITIES

Name of Party	Reserve Capacity MGD
Valley Forge Sewer Authority	2.00
Tredyffrin Township Municipal Authority	1.50
East Whiteland Municipal Authority	1.60
Malvern Municipal Authority	0.53
Willistown Township	1.00
Easttown Township Municipal Authority	0.90
Total Reserve Capacity	7.53 MGD

Nominal Design Capacity of Plant will be 8 MGD but all cost distribution based on 7.53.

EXHIBIT D
ESTIMATED
PROJECT COST DISTRIBUTION

Construction Cost Estimate	$5,120,000
Engineering & Resident Supervision	454,500
Land Acquisition & Right of Way	120,000
Administration and Accounting Costs	35,000
Preliminary Operating Expenses	60,000
Legal Expenses	50,000
Project Contingency	400,000
Project Cost Estimate	$6,239,500
Total P. L. 660 Eligible Cost	$6,119,500
*50% Estimated Total P. L. 660 Grant	$3,059,750
Estimated Project Cost to be Distributed	$3,179,750

DISTRIBUTION

	% of Total Project Cost	Estimated Cost
Valley Forge Sewer Authority	26.60	$ 845,814
Tredyffrin Township Mun. Authority	19.90	632,770
E. Whiteland Municipal Authority	21.20	674,107
Malvern Municipal Authority	7.05	224,172
Willistown Township	13.30	422,907
Easttown Twp. Municipal Authority	11.95	379,980
Total	100.00	$ 3,179,750

*Note: Estimated cost to be distributed is controlled by State and Federal Grants. The 50% is an assumption. For possible variations based on various P. L. 660 grant percentages see the following sheet.

VALLEY FORGE SEWAGE TREATMENT AGREEMENT

Alternates of Exhibit D for Varying P. L. 660 Grants

	Alternate #1	Alternate #2
Federal Grant	30%	30%
State Grant	0%	30%
Federal Grant for Regional	3%	3%
Total	33%	63%
Estimated Project Cost (1)	$6,239,500	$6,239,500
Eligible Cost	6,119,500	6,119,500
P. L. 660 Grant	2,019,435	3,855,285
Estimated Project Cost to be Distributed	4,220,065	2,384,215

Distribution	% of Total Project Cost		
Valley Forge Sewer Authority	26.60	$1,122,537	$ 634,201
Tredyffrin Twp. Mun. Auth.	19.90	839,793	474,459
E. Whiteland Mun. Authority	21.20	894,654	505,454
Malvern Municipal Authority	7.05	297,515	168,087
Willistown Township	13.30	561,268	317,101
Easttown Twp. Mun. Authority	11.95	504,298	284,913
Totals	100.00	$4,220,065	$2,384,215

(1) See Basic Exhibit D for Breakdown

EXHIBIT F

ESTIMATED
FIRST TWO YEAR OPERATING COST
Basis - 3.8 MGD Average Flow

I. Estimated First Two Year Operating Cost		
Personnel	$177,000.00	
Electric Power & Light	150,000.00	
Fuel Costs	10,000.00	
Water	1,200.00	
Ash Disposal	3,000.00	
Chemicals - Chlorine	10,000.00	
Laboratory Supplies	1,350.00	
Building Maintenance	3,250.00	
Equipment Maintenance	45,000.00	
Truck Maintenance	1,000.00	
Miscellaneous	2,000.00	
Total I		$403,700.00
II. Estimated First Two Year Administrative Cost		
Salaries and Expenses - Authority	$ 2,000.00	
Salary - Secretary	9,600.00	
Office Supplies and Expenses	3,000.00	
Consulting Engineer	7,200.00	
Legal	1,500.00	
Audit	2,000.00	
Insurance and Bonds	3,000.00	
Social Security	9,000.00	
Total II		$ 37,300.00
Total I and II		$441,000.00

revised 5/12 B+H

Act 339 Annual Operating Cost Grant - 2% of cost of eligible project items not covered by Grant

$6,113,500	Eligible Items
3,059,750	Grant (50%)
$3,059,750	

$3,059,750 x 0.02 = $61,195/year x 2 years = $122,390

Net First Two Year - Estimated Operating Expense to be distributed = $318,610

	% total reserve cap.	Est. Operating Cost
Valley Forge Sewer Authority	26.60	$ 84,750
Tredyffrin Twp. Mun. Authority	19.90	63,404
E. Whiteland Mun. Authority	21.20	67,545
Malvern Municipal Authority	7.05	22,462
Willistown Township	13.30	42,375
Easttown Township Municipal Authority	11.95	38,074
	100.00	$318,610

FACTORS FOR DETERMINATION OF EQUIVALENT DWELLING UNITS

Classification	Number of E. D. U.
A. Each private dwelling or living unit	1
B. Each fire house or municipal building	1
C. Each church	1
D. Each public or private day school . . . . . Elementary, junior or senior high school Based on the daily average number of pupils enrolled on days when the school was in session during the quarter immediately preceding the date for determination of the number of connections, divided by the factor of 20. Teachers and employees shall be classified as pupils. Average enrollment shall be determined annually.	
E. Each retail gas station without car washing facilities	2
F. Each retail gas station with car washing facilities	3
G. Each commercial establishment, hospital, convalescent home, or institution . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment.	
H. Each motel, hotel, or rooming house . . . . . Each unit or room shall be evaluated as one-half an Equivalent Dwelling Unit. Where a restaurant or bar room is conducted in conjunction with any motel or hotel, a separate determination for such restaurant or bar room shall be made in accordance with paragraph "G" above.	
I. Industrial Establishments . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring	

water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment.

275/day

Where no meter has been installed by the supplier or no other meter or measuring device has been installed, the number of Equivalent Dwelling Units shall be estimated.

J. Multiple Use. In case of a combination of one or more dwelling or living units with a similar unit or units or with one or more commercial establishments in the same or connected building with each thereof having the use of the Treatment Plant (directly or indirectly) through one sewer connection, then each such private dwelling or living unit and each such commercial establishment shall be evaluated on the basis of the applicable factors for each use thereof as if such use were conducted in a separate structure and as if each such use had a direct and separate connection to a sewer ultimately discharging to the Treatment Plant . . . . . .


VALLEY
FORGE
SEWER
AUTHORITY
VALLEY FORGE
SEWAGE TREATMENT PLANT
(POINT OF CONNECTION)
TREDYFFRIN MUNICIPAL AUTHORITY
EAST WHITELAND
MUNICIPAL AUTHORITY
WEST WHITELAND
MALVERN MUNICIPAL
AUTHORITY
EASTTOWN MUNICIPAL
AUTHORITY
EASTTOWN
MUNICIPAL
AUTHORITY

EXHIBIT F2

COMPOSITE AMENDMENT NO. 1 TO VALLEY CREEK TRUNK SEWER AGREEMENT, EAST WHITELAND TRUNK LINE AGREEMENT, AND VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT DATED DECEMBER 1, 1974, BY AND BETWEEN TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY, TOWNSHIP OF TREDYFFRIN, TOWNSHIP OF SCHUYLKILL, TOWNSHIP OF EAST PIKELAND, TOWNSHIP OF CHARLESTOWN, TOWNSHIP OF EAST WHITELAND, TOWNSHIP OF WILLISTOWN, TOWNSHIP OF EASTTOWN, BOROUGH OF MALVERN, VALLEY FORGE SEWER AUTHORITY, MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY, AND EASTTOWN MUNICIPAL AUTHORITY

12-18-74

executed original

VALLEY CREEK TRUNK SEWER AGREEMENT
EAST WHITELAND TRUNK LINE AGREEMENT
VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

subject Valley Creek Construction thru UFNHP

COMPOSITE AMENDMENT NO. 1

This Composite Amendment No. 1 dated as of December 1, 1974, to the Valley Creek Trunk Sewer Agreement dated November 1, 1970 (the "Valley Creek Agreement"), is entered between the parties to said Agreement, namely TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY (the "Tredyffrin Authority") a Pennsylvania municipality authority and the TOWNSHIP OF TREDYFFRIN ("Tredyffrin Township") parties of the first part, and the TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, WILLISTOWN and EASTTOWN (all of said Townships being second class townships in Chester County, Pennsylvania), the BOROUGH OF MALVERN, the VALLEY FORGE SEWER AUTHORITY, MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY and EASTTOWN MUNICIPAL AUTHORITY all being Pennsylvania municipality authorities, parties of the second part. Certain of the aforementioned parties are also parties to the East Whiteland Trunk Line Agreement dated as of February 1, 1971 (the "East Whiteland Agreement") and the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970 (the "Treatment Plant Agreement"), which are also being amended in certain respects hereby. All of the abovementioned Townships and the Borough of Malvern are sometimes herein referred to as the "Municipalities" and the above-named municipality authorities are sometimes referred to as the "Authorities".

BACKGROUND

The background of this Agreement is as follows:

A. The parties hereto entered into the Valley Creek Agreement to provide for sharing the cost of construction of the "Valley

Creek Trunk Sewer" as therein defined, and also in contemplation of the construction of (i) the "Valley Forge Treatment Plant" pursuant to the Treatment Plant Agreement; (ii) the East Whiteland Trunk Line, pursuant to the East Whiteland Agreement; and (iii) the sewage collection systems within each of the Municipalities designed to be served by the aforementioned facilities. All of the aforesaid construction was to have been commenced at substantially the same time because it is all interrelated, and it is herein referred to collectively as the "Project". Construction of the Project has been delayed for various reasons during which time construction costs have risen substantially.

B. It is now expected that the U. S. Government acting through the Environmental Protection Agency ("EPA") will shortly award grants to each of the Authorities in the amount of 75% of the actual eligible costs of the abovementioned collection systems, pursuant to the Federal Water Pollution Control Act Amendments of 1972. In addition, informal assurances have been received from EPA as to the likely increase of the grants for the Valley Creek Trunk Sewer and the Valley Forge Treatment Plant and other interceptors, as previously awarded conditionally, to 75% of the actual eligible costs, even though said grants were originally awarded under prior Federal law.

C. Award of the abovementioned new grants and authorization to proceed with construction under the old grants will be conditioned upon execution of a Supplement to Sewage Facility Grant Agreements, dated as of July 1, 1974 (the "EPA Agreement") between the parties hereto and EPA, which Agreement will also require the enactment of certain Ordinances by the Municipalities on or before December 31, 1974, as more fully provided in Section 2 of the EPA Agreement, substantially in the form of Exhibits A and B thereto.

D. The Valley Creek Trunk Sewer is indispensible to the transportation of sanitary sewage emanating from all the Munici-

palities to the Valley Forge Treatment Plant. The Pennsylvania Historical and Museum Commission (the "Park Commission") has informally indicated however, that it will not permit construction of the portions of the Valley Creek Trunk Sewer located within Valley Forge State Park, consisting of Contract "D" of the Tredyffrin Authority (the "Park Construction") during the years 1976 through 1978 because of the necessity to close completely an arterial road to carry out such construction. The construction will require approximately 12 months to complete.

E. In reviewing the plans for the Valley Forge Sewage Treatment Plant EPA has recently required certain changes which necessitate redesign of said Plant, and it is therefore unlikely that final approval of plans for said Plant will take place before March of 1975, which will prevent award of construction contracts for such construction until early summer of that year.

F. The Consulting Engineers for the parties have advised them that construction costs will continue to increase, and that it will be in their best interests to commence construction of all of the facilities mentioned in paragraph A as soon as possible after award of the abovementioned new grants.

G. Because work on the Park Construction must be commenced before other parts of the Project, the Tredyffrin Authority is willing to commence such construction separately, upon approval thereof by EPA, and subject to the further provisions of this Agreement.

H. The estimated project cost for the Park Construction has been estimated by the Consulting Engineers of Tredyffrin Authority at $2,500,000, approximately 75% of which will be reimbursed by Federal grants. The Tredyffrin Authority has available funds for the non-Federal portion of such costs, but because the Park Construction is intended for the joint use of all the other

parties hereto it is deemed advisable that said Authority be protected against having to bear the full loss in the unlikely event that there should be an indefinite delay in construction of the balance of the Project.

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby agree as follows:

1. All terms defined in the abovementioned Agreements will have the same meaning when used herein.

2. Immediately upon execution hereof by all parties, the Tredyffrin Authority will advertise for construction bids for the Park Construction or at its option such portion thereof as the Park Commission determines must be completed before January of 1976. It will not award such contracts however, until receiving written approval from EPA for such action, including reasonable assurance that Tredyffrin Authority will receive prompt payment on account of the Federal grants for such construction as construction proceeds, at the rate of 75% of actual eligible costs incurred. In order that such approval of EPA may be received, the Municipalities agree to proceed as rapidly as possible with authorization and execution of the EPA Agreement and enactment of the related Ordinances. Tredyffrin Authority will use its best efforts to complete such construction as rapidly as possible, but if construction bids have not been received for the balance of the Project by August 30, 1975, Tredyffrin Authority may at its option suspend work on the Park Construction in order to minimize the damages which might otherwise result.

3. Tredyffrin Authority will pay the non-Federal portion of the costs of such construction from moneys it now has available, subject to reimbursement of their respective shares of the non-Federal portion thereof by the capital contributions of the other Authorities pursuant to Article II of the Valley Creek Agreement.

4. Exhibit "B" to the Valley Creek Agreement, Exhibit "D" of the Treatment Plant Agreement and Exhibit "B" of the East Whiteland Agreement are hereby amended to revise the estimated project cost to the new amounts set forth in Exhibit "A" attached hereto (which amounts have been derived from the original estimated project costs by a comparison of cost index figures in 1970 and 1974 as published in the Engineering News Record in the same manner as is described in the revised Section 2.03 below, and also adjusting for design changes in the Valley Creek Pump Station caused by the change in its location). Section 2.03 of the Valley Creek Agreement and the same numbered sections of the East Whiteland Agreement and the Treatment Plant Agreement are hereby further amended to read as follows:

> "2.03 Change in Project Cost. In the event, after receipt of Construction bids, the total project cost (before deducting any federal or state grants) of constructing the [insert applicable construction] exceeds by more than 15% the estimate as set forth in Amendment No. 1 hereto and as adjusted pursuant to the next paragraph hereof, and such revision in excess of 15% is not disapproved by the majority of said municipalities listed in Exhibit [insert appropriate Exhibit or insert 'Joint Board' in Treatment Plant Agreement] each municipality listed in such Exhibit shall pay its respective share of said increase over 15% to Authority by the time set forth in Section 2.02 hereof. However, in computing the amount to be so paid, each municipality may take credit for its appropriate share of 90% of the anticipated Federal Grants for the construction as calculated by the Consulting Engineers. In the event, after receipt of the last construction bids for the [insert applicable construction] the total project cost of such construction is less than the estimate, as set forth in said Amendment No. 1, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.
>
> The total estimated project cost of constructing the [insert applicable construction], for purposes of the preceding paragraph of this Section 2.03, shall be further adjusted from that set forth in Exhibit 'A' to Amendment No. 1, by multiplying the total project cost appearing in Amendment No. 1 by a factor obtained by dividing the most recent available Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the Engineering News Record, projected on a straight line basis to the date of receipt of the last construction bids for such construction in a manner satisfactory to the Consulting Engineers

for the Tredyffrin Authority and the Valley Forge Authority by the October 1974 Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the December 19, 1974 edution of Engineering News Record, at page 74."

5. To the extent that the Tredyffrin Authority pays any of the costs (as defined in the Original Agreement) for the Park Construction from its own funds, or funds it may borrow, prior to receipt of the Capital Contributions from the other Authorities under the Valley Creek Agreement, such contributions when made will include, not only reimbursement for their respective shares of such cost pursuant to Section 2 above, but also interest on such shares of the amounts advanced by the Tredyffrin Authority, from the dates the respective advances are made to the date of reimbursement, at a rate equal to the highest rate paid by any one of the three following Philadelphia Banks from time to time on 30 day certificates of deposit as determined on the 15th day of each month: Central Penn National Bank; Continental Bank; and The Philadelphia National Bank.

6. In the event that for any reason the openings of construction bids for the balance of the Valley Creek Trunk Sewer and other portions of the Project are delayed for any reason, so that no capital contributions are paid under the Valley Creek Agreement, the other Authorities and Municipalities will reimburse Tredyffrin Authority for their respective percentages of the costs incurred by Tredyffrin Authority (less Federal grant moneys received) for the Park Construction plus interest as aforesaid, said obligations to be several and not joint however, and further provided that said reimbursements will be payable only from the proceeds of the next sewer bond issue, whenever that may occur, by each Authority, by its incorporating Municipality, or by any other municipality authority created by such Municipality, concurrently with the closing in such bond issues or from any other available funds. For this purpose a bond issue by the Valley Forge Authority will be treated as a bond issue for all of its three member Municipalities. Also, independently of the preceding two sentences, the Authorities

(but not the Municipalities) separately agree to make such repayment, without any limitation upon source, not later than two years after the date of the first advance by the Tredyffrin Authority.

7. All the Authorities will proceed to advertise for construction bids for their respective portions of the Project as soon as possible after receipt of Federal grants for the collection systems, but only upon approval of EPA for such advertising, and upon advice by the Valley Forge Authority that EPA has approved or is expected to approve advertising for construction bids for the Valley Forge Treatment Plant in sufficient time that construction bids will be received on the Treatment Plant by a date not more than 60 days after the receipt of bids for all other parts of the Project.

8. Except as modified herein the Valley Creek Agreement, the Treatment Plant Agreement and the East Whiteland Agreement are hereby ratified and confirmed.

9. This Agreement may be executed in any number of counterparts each of which may be deemed an original.

10. This Agreement shall not become effective until the formal Federal grant offers (which under applicable law are required to be in amounts equal to 75% of eligible costs) for the collection system portion of the Project have been received by all the Authorities, which grants however may be conditioned upon the execution of the EPA Agreement by all parties hereto.

11. Execution of this Composite Amendment to the above-mentioned three Agreements shall not be construed as making any Municipality or Authority a party to any Agreement to which it has not previously been a party, nor as merging any of said Agreements, which shall remain separate Agreements for all purposes.

(SEAL)

TOWNSHIP OF SCHUYLKILL

IN WITNESS WHEREOF, each of the parties hereto has caused this Composite Amendment No. 1 Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

TOWNSHIP OF TREDYFFRIN

By: Charles P. Brown
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By: Emily J. Peirce
Secretary

(SEAL)

TREDYFFRIN MUNICIPAL AUTHORITY

By: John Woodcock
Chairman

ATTEST:

By: John O. Mitchell
Secretary

(SEAL)

TOWNSHIP OF SCHUYLKILL

ATTEST:

By_____
Chairman, Board of Supervisors

By_____
Secretary

(SEAL)

TOWNSHIP OF EAST PIKELAND

By Edward A. Oscar
Chairman, Board of Supervisors
Edward A. Oscar

ATTEST:

John D Doyle
By John D. Doyle
Secretary

(SEAL)

TOWNSHIP OF CHARLESTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF EAST WHITELAND

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF WILLISTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF SCHUYLKILL

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By Margaret A. Chicino
Secretary

TOWNSHIP OF EAST PIKELAND

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF CHARLESTOWN

By Harold F. Pyle
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF EAST WHITELAND

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF WILLISTOWN

By_____
Chairman, Board of Supervisors

(SEAL)

TOWNSHIP OF EASTTOWN

By _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(SEAL)

BOROUGH OF MALVERN

By _____
President, Borough Council

ATTEST:

By _____
Secretary

(SEAL)

VALLEY FORGE SEWER AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

MALVERN MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

EAST WHITELAND MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

EASTTOWN MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

TOWNSHIP OF EASTTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

BOROUGH OF MALVERN

By_____
President, Borough Council

ATTEST:

By_____
Secretary

(SEAL)

VALLEY FORGE SEWER AUTHORITY

By Joseph W. Weinstock
Chairman

ATTEST:

By_____
Secretary

(SEAL)

MALVERN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

EAST WHITELAND MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

EASTTOWN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

COMPOSITE AMENDMENT NO. 1

EXHIBIT A
Revised Project Costs

Authority	Valley Creek Trunk Sewer Agreement					Valley Forge Treatment Plant Agreement		East Whiteland Trunk Line Agreement	
	Overall Project		Park Construction						
	% of Total Cost(1)	Estimated Cost (Before Grants)	% of Total Cost (1)	Estimated Cost Before Grants	After Grants	% of Total Cost	Estimated Cost (Before Grants)	% of Total Cost(1)	Estimated Cost (Before Grants)
Valley Forge Sewer Auth.	0.17%	$ 18,931	0.51%	$ 12,821	$ 3,600	26.60%	$ 2,831,432	-	
Tredyffrin Twp. Mun. Auth.	39.03%	4,346,322	31.34%	787,888	220,600	19.90%	2,118,251	-	
East Whiteland Mun. Auth.	28.65%	3,190,421	35.48%	891,967	249,800	21.20%	2,256,630	68.89%	$658,448
Malvern Mun. Auth.	7.47%	831,848	9.34%	234,808	65,700	7.05%	750,436	31.11%	297,348
Willistown Twp. Mun. Auth.	11.83%	1,317,371	14.00%	351,960	98,600	13.30%	1,415,716	-	
Easttown Mun. Auth.	12.85%	1,430,957	9.33%	234,556	65,700	11.95%	1,272,015	-	
Total	100.00%	$11,135,850(2)	100.00%	$2,514,000	$704,000	100.00%	$10,644,480(3)	100.00%	$955,796

(1) Overall percentages are the same as those shown on original Exhibits and are solely for purposes of Section 2.03. Percentages of construction cost for individual sections of line (such as the Park Construction) vary, as shown in said Exhibits, based on relative anticipated use of each section by the various parties.
(2) Estimated construction cost $7,954,180.
(3) Estimated construction cost $7,884,800.

Board of Supervisors

Frank A. Piliero, Chair - Charles A. Philips, Vice Chair
Susan T. Bednar - Kevin R. Kuhn - Hugh D. Willig

July 7, 2021

Susan Posternock
Obermayer Rebmann Maxwell & Hippel
1500 Market Street, Suite 340
Philadelphia, PA 19102

Re: Right to Know Request dated June 18, 2021

Dear Ms. Posternock:

I acknowledge receipt of your request for information pursuant to the Pennsylvania Right to Know Act. You have requested (electronic) copies of the following documents:

1. Composite Amendment No. 1 to the Valley Creek Trunk Sewer Agreement
2. East Whiteland Truck Line Agreement
3. Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974
4. Addendum to Valley Forge Sewage Treatment Plant Agreement dated October 4, 1994

Your request for documents numbered 1 and 2 above is DENIED. The Township is not in possession of these documents.

Your request for document number 3 above is GRANTED and attached; however the Agreement in our possession is dated November, 1, 1970.
Your request for document number 4 above is GRANTED and attached; however the Agreement in our possession is dated May 26, 1994.

You have a right to appeal this denial of information in writing to the Office of Open Records, Commonwealth Keystone Building, 400 North Street, 4th Floor, Harrisburg, PA 17120. If you choose to file an appeal you must do so within 15 business days of the mailing date of the agency's response, as outlined in Section 1101. Please note that a copy of your original Right-to-Know request and this denial letter must be included when filing an appeal. The law also requires that you state the reasons why the record is a public record and address the reasons the Agency denies your request. Visit the Office of Open Records website at http://openrecords.state.pa.us for further information on filing an appeal.

Sincerely,

Linda M. Csete
Open Records Officer/Township Manager

4030 Whitehorse Rd. • P.O. Box 507 • Devault, PA 19432-0507
610.240.0326 • Fax 610.240.0328 • admin1@charlestown.pa.us

Via email to: susan.posternock@obermayer.com

June 18, 2021

Susan Posternock
Obermayer Rebmann Maxwell & Hippel
1500 Market Street, Suite 340
Philadelphia, PA 19102

Re: Right to Know Request dated June 18, 2021

Dear Ms. Posternock:

I acknowledge receipt of your request for information pursuant to the Pennsylvania Right to Know Act. You have requested (electronic) copies of the following documents:

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2. East Whiteland Truck Line Agreement
3. Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974
4. Addendum to Valley Forge Sewage Treatment Plant Agreement dated October 4, 1994

Your request for documents numbered 1 and 2 above is DENIED. The Township is not in possession of these documents. I suggest you reach out to the Valley Forge Sewer Authority directly for these documents.

Your request for document number 3 above is GRANTED and attached; however the Agreement in our possession is dated November 1970.

Your request for document number 4 above is GRANTED and attached; however the Agreement in our possession is dated May 26, 1994.

You have a right to appeal this denial of information in writing to the Office of Open Records, Commonwealth Keystone Building, 400 North Street, 4th Floor, Harrisburg, PA 17120. If you choose to file an appeal you must do so within 15 business days of the mailing date of the agency's response, as outlined in Section 1101. Please note that a copy of your original Right-to-Know request and this denial letter must be included when filing an appeal. The law also requires that you state the reasons why the record is a public record and address the reasons the Agency denies your request. Visit the Office of Open Records website at http://openrecords.state.pa.us for further information on filing an appeal.

Respectfully,

Kimberly Moretti

Open Records Officer/Township Manager

P.O. Box 58 ▪ 1158 Rapps Dam Road ▪ Kimberton, PA 19442
Telephone (610) 933-1770 ▪ Fax (610) 933-0919

RTK 2021-105

RIGHT-TO-KNOW REQUEST FORM

DATE REQUESTED: 6/21/21

REQUEST SUBMITTED BY: x E-MAIL U.S. MAIL FAX IN-PERSON

NAME OF REQUESTOR : Susan Posternock

STREET ADDRESS : 1500 Market Street West, Suite 3400

CITY/STATE/COUNTY (Required): Philadelphia, PA 19102

TELEPHONE (Optional): 215-665-3007

RECORDS REQUESTED:
**Provide as much specific detail as possible so the agency can identify the information.*

Please see attached letter. Electronic delivery is preferred, if possible. Thank you.

DO YOU WANT COPIES? YES or NO

DO YOU WANT TO INSPECT THE RECORDS? YES or NO

DO YOU WANT CERTIFIED COPIES OF RECORDS? YES or NO

DO YOU WANT THE COPIES MAILED TO THE ADDRESS PROVIDED ABOVE OR WILL YOU PICK UP THE COPIES AT THE ADMINISTRATION OFFICE? MAIL or PICK UP

Electronic delivery preferred, if possible; mail as a secondary option

RIGHT TO KNOW OFFICER: _____

DATE RECEIVED BY THE AGENCY: _____

AGENCY FIVE (5)-DAY RESPONSE DUE ON: _____

***Public bodies may fill anonymous verbal or written requests. If the requestor wishes to pursue the relief and remedies provided for under the Right-to-Know Act, the request must be in writing. Written requests need not include an explanation why information is sought or the intended use of the information unless otherwise required by law.*

OBERMAYER

Susan Posternock
Research Librarian
Direct Dial: 215.665.3007
Susan.Posternock@obermayer.com
www.obermayer.com

Obermayer Rebmann Maxwell & Hippel LLP
Centre Square West
1500 Market Street | Suite 340
Philadelphia, PA 19102-2101
P: 215.665.3000
F: 215.665.3165

June 21, 2021

Eugene C. Briggs, Jr.
Township Manager/Open Records Officer
Easttown Township
566 Beaumont Road
Devon, PA 19333

RE: Right-to-Know Request

Township Manager Briggs,

On behalf of Thomas Wyatt, Esquire, I am submitting this Right-to-Know request seeking copies of the following documents:

1. **Composite Amendment No. 1 to the Valley Creek Trunk Sewer Agreement, the East Whiteland Trunk Line Agreement and the Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974** between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority, including all signature pages

2. **December XX, 1999 – Wastewater Service Agreement** between Township of Easttown, Easttown Municipal Authority, and the Township of Willistown, including all dates and signature pages

Electronic delivery is preferred, if possible. Please let me know if there are costs associated with fulfilling this request and, if so, how I can go about remitting payment. Feel free to contact me via phone at (215) 665-3007 or email at susan.posternock@obermayer.com with questions or concerns related to this request.

Regards,
Susan Posternock

From: Sharon Norris <SNorris@easttown.org>
Sent: Wednesday, July 7, 2021 3:05 PM
To: Posternock, Susan <susan.posternock@obermayer.com>
Cc: Eugene Briggs <ebriggs@Easttown.org>; Donald Curley <DCurley@easttown.org>
Subject: Right to Know Request 2021-105

Dear Ms. Posternock:
Attached please find the Township's response to your Right to Know request. Please note that the copy of the Composite Amendment we have in our files is unsigned. I apologize that I am late in responding to your request.
Thank you for your patience and this completes your request.
Have a nice evening,
Sharon

Sharon Norris
Administrative Assistant to the Township Manager
Easttown Township
566 Beaumont Rd.
Devon, PA 19333
610-687-3000 extension 120
www.easttown.org

File/Dr

EASTTOWN TOWNSHIP

RESOLUTION APPROVING THE FORM AND AUTHORIZING THE EXECUTION OF COMPOSITE AMENDMENT NO. 1 TO CERTAIN SEWAGE TRANSPORTATION AND TREATMENT AGREEMENTS RELATED TO THE PROPOSED VALLEY FORGE TREATMENT PLANT.

WHEREAS, Easttown Township is a party to one or more of the following Agreements with various municipalities and authorities relating to the conveyance and treatment of sewage from collector sewers existing or to be built in this municipality at a proposed regional treatment plant (said agreements being referred to collectively herein as the "Original Agreements"):

Valley Creek Trunk Sewer Agreement dated November 1, 1970;
East Whiteland Trunk Line Agreement dated as of February, 1971;
Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970; and

WHEREAS, all of the Original Agreements must be amended to revise the estimated project costs referred to therein and also it has been determined that one portion of the construction must be commenced prior to the balance of the project, but it is necessary that reasonable protection be given to Tredyffrin Township Municipal Authority which will be financing such construction initially with its own money; and

WHEREAS, there has been presented to this meeting a proposed Composite Amendment No. 1 date as of December 1, 1974 (the "Amendment") to the Original Agreement to carry out the above purposes and revise provisions of the Original Agreement as necessary in connection therewith;

Now, Therefore, it is hereby resolved by Easttown Township as follows:

1. The form of the Amendment, as presented to this meeting is hereby approved in all respects, and the Chairman of the Easttown Township Board of Supervisors and its Secretary are hereby authorized and directed on its behalf to execute and deliver the Amendment with any changes therein which they may approve upon the advice of counsel, said approval to be conclusively evidenced by their execution of said Amendment, and provided that such execution shall occur only after receipt of an Opinion by the Township Solicitor that the Township has legal power to execute the Amendment, such execution will not violate any applicable law and the Amendment is in proper form.

2. The proper officers of Easttown Township are authorized and empowered to take such action as they deem necessary or advisable to carry out the intention of the Amendment and this Resolution.

ADOPTED by the Board of Supervisors of Easttown Township this 6th Day of January 1975.

(SEAL)

CHAIRMAN

ATTEST:

SECRETARY

- - - -

12-18-74

VALLEY CREEK TRUNK SEWER AGREEMENT
EAST WHITELAND TRUNK LINE AGREEMENT
VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

COMPOSITE AMENDMENT NO. 1

This Composite Amendment No. 1 dated as of December 1, 1974, to the Valley Creek Trunk Sewer Agreement dated November 1, 1970 (the "Valley Creek Agreement"), is entered between the parties to said Agreement, namely TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY (the "Tredyffrin Authority") a Pennsylvania municipality authority and the TOWNSHIP OF TREDYFFRIN ("Tredyffrin Township") parties of the first part, and the TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, WILLISTOWN and EASTTOWN (all of said Townships being second class townships in Chester County, Pennsylvania), the BOROUGH OF MALVERN, the VALLEY FORGE SEWER AUTHORITY, MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY and EASTTOWN MUNICIPAL AUTHORITY all being Pennsylvania municipality authorities, parties of the second part. Certain of the aforementioned parties are also parties to the East Whiteland Trunk Line Agreement dated as of February 1, 1971 (the "East Whiteland Agreement") and the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970 (the "Treatment Plant Agreement"), which are also being amended in certain respects hereby. All of the abovementioned Townships and the Borough of Malvern are sometimes herein referred to as the "Municipalities" and the above-named municipality authorities are sometimes referred to as the "Authorities".

BACKGROUND

The background of this Agreement is as follows:

A. The parties hereto entered into the Valley Creek Agreement to provide for sharing the cost of construction of the "Valley

Creek Trunk Sewer" as therein defined, and also in contemplation of the construction of (i) the "Valley Forge Treatment Plant" pursuant to the Treatment Plant Agreement; (ii) the East Whiteland Trunk Line, pursuant to the East Whiteland Agreement; and (iii) the sewage collection systems within each of the Municipalities designed to be served by the aforementioned facilities. All of the aforesaid construction was to have been commenced at substantially the same time because it is all interrelated, and it is herein referred to collectively as the "Project". Construction of the Project has been delayed for various reasons during which time construction costs have risen substantially.

B. It is now expected that the U. S. Government acting through the Environmental Protection Agency ("EPA") will shortly award grants to each of the Authorities in the amount of 75% of the actual eligible costs of the abovementioned collection systems, pursuant to the Federal Water Pollution Control Act Amendments of 1972. In addition, informal assurances have been received from EPA as to the likely increase of the grants for the Valley Creek Trunk Sewer and the Valley Forge Treatment Plant and other interceptors, as previously awarded conditionally, to 75% of the actual eligible costs, even though said grants were originally awarded under prior Federal law.

C. Award of the abovementioned new grants and authorization to proceed with construction under the old grants will be conditioned upon execution of a Supplement to Sewage Facility Grant Agreements, dated as of July 1, 1974 (the "EPA Agreement") between the parties hereto and EPA, which Agreement will also require the enactment of certain Ordinances by the Municipalities on or before December 31, 1974, as more fully provided in Section 2 of the EPA Agreement, substantially in the form of Exhibits A and B thereto.

D. The Valley Creek Trunk Sewer is indispensible to the transportation of sanitary sewage emanating from all the Munici-

palities to the Valley Forge Treatment Plant. The Pennsylvania Historical and Museum Commission (the "Park Commission") has informally indicated however, that it will not permit construction of the portions of the Valley Creek Trunk Sewer located within Valley Forge State Park, consisting of Contract "D" of the Tredyffrin Authority (the "Park Construction") during the years 1976 through 1978 because of the necessity to close completely an arterial road to carry out such construction. The construction will require approximately 12 months to complete.

E. In reviewing the plans for the Valley Forge Sewage Treatment Plant EPA has recently required certain changes which necessitate redesign of said Plant, and it is therefore unlikely that final approval of plans for said Plant will take place before March of 1975, which will prevent award of construction contracts for such construction until early summer of that year.

F. The Consulting Engineers for the parties have advised them that construction costs will continue to increase, and that it will be in their best interests to commence construction of all of the facilities mentioned in paragraph A as soon as possible after award of the abovementioned new grants.

G. Because work on the Park Construction must be commenced before other parts of the Project, the Tredyffrin Authority is willing to commence such construction separately, upon approval thereof by EPA, and subject to the further provisions of this Agreement.

H. The estimated project cost for the Park Construction has been estimated by the Consulting Engineers of Tredyffrin Authority at $2,500,000, approximately 75% of which will be reimbursed by Federal grants. The Tredyffrin Authority has available funds for the non-Federal portion of such costs, but because the Park Construction is intended for the joint use of all the other

parties hereto it is deemed advisable that said Authority be protected against having to bear the full loss in the unlikely event that there should be an indefinite delay in construction of the balance of the Project.

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby agree as follows:

1. All terms defined in the abovementioned Agreements will have the same meaning when used herein.

2. Immediately upon execution hereof by all parties, the Tredyffrin Authority will advertise for construction bids for the Park Construction or at its option such portion thereof as the Park Commission determines must be completed before January of 1976. It will not award such contracts however, until receiving written approval from EPA for such action, including reasonable assurance that Tredyffrin Authority will receive prompt payment on account of the Federal grants for such construction as construction proceeds, at the rate of 75% of actual eligible costs incurred. In order that such approval of EPA may be received, the Municipalities agree to proceed as rapidly as possible with authorization and execution of the EPA Agreement and enactment of the related Ordinances. Tredyffrin Authority will use its best efforts to complete such construction as rapidly as possible, but if construction bids have not been received for the balance of the Project by August 30, 1975, Tredyffrin Authority may at its option suspend work on the Park Construction in order to minimize the damages which might otherwise result.

3. Tredyffrin Authority will pay the non-Federal portion of the costs of such construction from moneys it now has available, subject to reimbursement of their respective shares of the non-Federal portion thereof by the capital contributions of the other Authorities pursuant to Article II of the Valley Creek Agreement.

4. Exhibit "B" to the Valley Creek Agreement, Exhibit "D" of the Treatment Plant Agreement and Exhibit "B" of the East Whiteland Agreement are hereby amended to revise the estimated project cost to the new amounts set forth in Exhibit "A" attached hereto (which amounts have been derived from the original estimated project costs by a comparison of cost index figures in 1970 and 1974 as published in the Engineering News Record in the same manner as is described in the revised Section 2.03 below, and also adjusting for design changes in the Valley Creek Pump Station caused by the change in its location). Section 2.03 of the Valley Creek Agreement and the same numbered sections of the East Whiteland Agreement and the Treatment Plant Agreement are hereby further amended to read as follows:

> "2.03 Change in Project Cost. In the event, after receipt of Construction bids, the total project cost (before deducting any federal or state grants) of constructing the [insert applicable construction] exceeds by more than 15% the estimate as set forth in Amendment No. 1 hereto and as adjusted pursuant to the next paragraph hereof, and such revision in excess of 15% is not disapproved by the majority of said municipalities listed in Exhibit [insert appropriate Exhibit or insert 'Joint Board' in Treatment Plant Agreement] each municipality listed in such Exhibit shall pay its respective share of said increase over 15% to Authority by the time set forth in Section 2.02 hereof. However, in computing the amount to be so paid, each municipality may take credit for its appropriate share of 90% of the anticipated Federal Grants for the construction as calculated by the Consulting Engineers. In the event, after receipt of the last construction bids for the [insert applicable construction] the total project cost of such construction is less than the estimate, as set forth in said Amendment No. 1, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.
>
> The total estimated project cost of constructing the [insert applicable construction], for purposes of the preceding paragraph of this Section 2.03, shall be further adjusted from that set forth in Exhibit 'A' to Amendment No. 1, by multiplying the total project cost appearing in Amendment No. 1 by a factor obtained by dividing the most recent available Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the Engineering News Record, projected on a straight line basis to the date of receipt of the last construction bids for such construction in a manner satisfactory to the Consulting Engineers

for the Tredyffrin Authority and the Valley Forge Authority by the October 1974 Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the December 19, 1974 edution of Engineering News Record, at page 74 ."

5. To the extent that the Tredyffrin Authority pays any of the costs (as defined in the Original Agreement) for the Park Construction from its own funds, or funds it may borrow, prior to receipt of the Capital Contributions from the other Authorities under the Valley Creek Agreement, such contributions when made will include, not only reimbursement for their respective shares of such cost pursuant to Section 2 above, but also interest on such shares of the amounts advanced by the Tredyffrin Authority, from the dates the respective advances are made to the date of reimbursement, at a rate equal to the highest rate paid by any one of the three following Philadelphia Banks from time to time on 30 day certificates of deposit as determined on the 15th day of each month: Central Penn National Bank; Continental Bank; and The Philadelphia National Bank.

6. In the event that for any reason the openings of construction bids for the balance of the Valley Creek Trunk Sewer and other portions of the Project are delayed for any reason, so that no capital contributions are paid under the Valley Creek Agreement, the other Authorities and Municipalities will reimburse Tredyffrin Authority for their respective percentages of the costs incurred by Tredyffrin Authority (less Federal grant moneys received) for the Park Construction plus interest as aforesaid, said obligations to be several and not joint however, and further provided that said reimbursements will be payable only from the proceeds of the next sewer bond issue, whenever that may occur, by each Authority, by its incorporating Municipality, or by any other municipality authority created by such Municipality, concurrently with the closing in such bond issues or from any other available funds. For this purpose a bond issue by the Valley Forge Authority will be treated as a bond issue for all of its three member Municipalities. Also, independently of the preceding two sentences, the Authorities

(but not the Municipalities) separately agree to make such repayment, without any limitation upon source, not later than two years after the date of the first advance by the Tredyffrin Authority.

7. All the Authorities will proceed to advertise for construction bids for their respective portions of the Project as soon as possible after receipt of Federal grants for the collection systems, but only upon approval of EPA for such advertising, and upon advice by the Valley Forge Authority that EPA has approved or is expected to approve advertising for construction bids for the Valley Forge Treatment Plant in sufficient time that construction bids will be received on the Treatment Plant by a date not more than 60 days after the receipt of bids for all other parts of the Project.

8. Except as modified herein the Valley Creek Agreement, the Treatment Plant Agreement and the East Whiteland Agreement are hereby ratified and confirmed.

9. This Agreement may be executed in any number of counterparts each of which may be deemed an original.

10. This Agreement shall not become effective until the formal Federal grant offers (which under applicable law are required to be in amounts equal to 75% of eligible costs) for the collection system portion of the Project have been received by all the Authorities, which grants however may be conditioned upon the execution of the EPA Agreement by all parties hereto.

11. Execution of this Composite Amendment to the above-mentioned three Agreements shall not be construed as making any Municipality or Authority a party to any Agreement to which it has not previously been a party, nor as merging any of said Agreements, which shall remain separate Agreements for all purposes.

IN WITNESS WHEREOF, each of the parties hereto has caused this Composite Amendment No. 1 Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

TOWNSHIP OF TREDYFFRIN

By: _____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By: _____
Secretary

(SEAL)

TREDYFFRIN MUNICIPAL AUTHORITY

By: _____
Chairman

ATTEST:

By: _____
Secretary

(SEAL)

TOWNSHIP OF EASTTOWN

By _____
Chairman, Board of Supervisors

ATTEST:

By _____
Secretary

(SEAL)

BOROUGH OF MALVERN

By _____
President, Borough Council

ATTEST:

By _____
Secretary

(SEAL)

VALLEY FORGE SEWER AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

MALVERN MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

EAST WHITELAND MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

(SEAL)

EASTTOWN MUNICIPAL AUTHORITY

By _____
Chairman

ATTEST:

By _____
Secretary

COMPOSITE AMENDMENT NO. 1

EXHIBIT A
Revised Project Costs

Authority	Valley Creek Trunk Sewer Agreement: Overall Project: % of Total Cost(1)	Valley Creek Trunk Sewer Agreement: Overall Project: Estimated Cost (Before Grants)	Valley Creek Trunk Sewer Agreement: Park Construction: % of Total Cost (1)	Valley Creek Trunk Sewer Agreement: Park Construction: Estimated Cost Before Grants	Valley Creek Trunk Sewer Agreement: Park Construction: Estimated Cost After Grants	Valley Forge Treatment Plant Agreement: % of Total Cost	Valley Forge Treatment Plant Agreement: Estimated Cost (Before Grants)	East Whiteland Trunk Line Agreement: % of Total Cost(1)	East Whiteland Trunk Line Agreement: Estimated Cost (Before Grants)
Valley Forge Sewer Auth.	0.17%	$ 18,931	0.51%	$ 12,821	$ 3,600	26.60%	$ 2,831,432	-	
Tredyffrin Twp. Mun. Auth.	39.03%	4,346,322	31.34%	787,888	220,600	19.90%	2,118,251	-	
East Whiteland Mun. Auth.	28.65%	3,190,421	35.48%	891,967	249,800	21.20%	2,256,630	68.89%	$658,448
Malvern Mun. Auth.	7.47%	831,848	9.34%	234,808	65,700	7.05%	750,436	31.11%	297,348
Willistown Twp. Mun. Auth.	11.83%	1,317,371	14.00%	351,960	98,600	13.30%	1,415,716	-	
Easttown Mun. Auth.	12.85%	1,430,957	9.33%	234,556	65,700	11.95%	1,272,015	-	
Total	100.00%	$11,135,850(2)	100.00%	$2,514,000	$704,000	100.00%	$10,644,480(3)	100.00%	$955,796

(1) Overall percentages are the same as those shown on original Exhibits and are solely for purposes of Section 2.03. Percentages of construction cost for individual sections of line (such as the Park Construction) vary, as shown in said Exhibits, based on relative anticipated use of each section by the various parties.
(2) Estimated construction cost $7,954,180.
(3) Estimated construction cost $7,884,800.

From: Christopher Bashore <cbashore@malvern.org>
Sent: Tuesday, July 6, 2021 4:33 PM
To: Posternock, Susan <susan.posternock@obermayer.com>
Subject: RE: Open Records request from Obermayer 6.21.21

Good afternoon Susan,

Please see the attached copy of the December 1, 1974 agreement. Unfortunately, I was unable to locate a fully signed copy, so this is the best I can do.

Please let me know if you have any questions. Thank you.

CHRISTOPHER BASHORE, ICMA-CM
BOROUGH MANAGER
cbashore@malvern.org
(610) 644-2602
1 East First Ave. | Suite 3
Malvern, PA 19355

From: Posternock, Susan <susan.posternock@obermayer.com>
Sent: Tuesday, July 6, 2021 4:09 PM
To: Christopher Bashore <cbashore@malvern.org>
Subject: FW: Open Records request from Obermayer 6.21.21

Christopher,

I hate to revisit this but it's been brought to my attention that we do still need a copy of the December 1, 1974 agreement. I think you mentioned oddly shaped attachments that would be impossible to scan and, of course, we do not need those. Just whatever pages that you can provide easily. Do you have that available? Would you be able to send a copy? And if so, would you like me to send a new Open Records request with today's date? Please advise.

Thank you,
Susan Posternock

From: Posternock, Susan
Sent: Monday, June 21, 2021 3:14 PM
To: 'cbashore@malvern.org' <cbashore@malvern.org>
Subject: Open Records request from Obermayer 6.21.21

Borough Manager Bashore,

Please see the attached Open Records request. Please let me know if there are costs associated with fulfilling this request and, if so, how I can go about remitting payment. Electronic delivery of the requested documents is preferred, if possible. Feel free to contact me via phone at (215) 665-3007 or email at susan.posternock@obermayer.com with questions or concerns related to this request.

Regards,
Susan Posternock



Susan Posternock
Research Librarian

Obermayer Rebmann Maxwell & Hippel LLP
Centre Square West
1500 Market Street | Suite 3400
Philadelphia, PA 19102-2101
215.665.3007 tel | 215.665.3165 fax
susan.posternock@obermayer.com | www.obermayer.com

12-18-74

VALLEY CREEK TRUNK SEWER AGREEMENT
EAST WHITELAND TRUNK LINE AGREEMENT
VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

COMPOSITE AMENDMENT NO. 1

This Composite Amendment No. 1 dated as of December 1, 1974, to the Valley Creek Trunk Sewer Agreement dated November 1, 1970 (the "Valley Creek Agreement"), is entered between the parties to said Agreement, namely TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY (the "Tredyffrin Authority") a Pennsylvania municipality authority and the TOWNSHIP OF TREDYFFRIN ("Tredyffrin Township") parties of the first part, and the TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, WILLISTOWN and EASTTOWN (all of said Townships being second class townships in Chester County, Pennsylvania), the BOROUGH OF MALVERN, the VALLEY FORGE SEWER AUTHORITY, MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY and EASTTOWN MUNICIPAL AUTHORITY all being Pennsylvania municipality authorities, parties of the second part. Certain of the aforementioned parties are also parties to the East Whiteland Trunk Line Agreement dated as of February 1, 1971 (the "East Whiteland Agreement") and the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970 (the "Treatment Plant Agreement"), which are also being amended in certain respects hereby. All of the abovementioned Townships and the Borough of Malvern are sometimes herein referred to as the "Municipalities" and the above-named municipality authorities are sometimes referred to as the "Authorities".

BACKGROUND

The background of this Agreement is as follows:

A. The parties hereto entered into the Valley Creek Agreement to provide for sharing the cost of construction of the "Valley

Creek Trunk Sewer" as therein defined, and also in contemplation of the construction of (i) the "Valley Forge Treatment Plant" pursuant to the Treatment Plant Agreement; (ii) the East Whiteland Trunk Line, pursuant to the East Whiteland Agreement; and (iii) the sewage collection systems within each of the Municipalities designed to be served by the aforementioned facilities. All of the aforesaid construction was to have been commenced at substantially the same time because it is all interrelated, and it is herein referred to collectively as the "Project". Construction of the Project has been delayed for various reasons during which time construction costs have risen substantially.

B. It is now expected that the U. S. Government acting through the Environmental Protection Agency ("EPA") will shortly award grants to each of the Authorities in the amount of 75% of the actual eligible costs of the abovementioned collection systems, pursuant to the Federal Water Pollution Control Act Amendments of 1972. In addition, informal assurances have been received from EPA as to the likely increase of the grants for the Valley Creek Trunk Sewer and the Valley Forge Treatment Plant and other interceptors, as previously awarded conditionally, to 75% of the actual eligible costs, even though said grants were originally awarded under prior Federal law.

C. Award of the abovementioned new grants and authorization to proceed with construction under the old grants will be conditioned upon execution of a Supplement to Sewage Facility Grant Agreements, dated as of July 1, 1974 (the "EPA Agreement") between the parties hereto and EPA, which Agreement will also require the enactment of certain Ordinances by the Municipalities on or before December 31, 1974, as more fully provided in Section 2 of the EPA Agreement, substantially in the form of Exhibits A and B thereto.

D. The Valley Creek Trunk Sewer is indispensible to the transportation of sanitary sewage emanating from all the Munici-

palities to the Valley Forge Treatment Plant. The Pennsylvania Historical and Museum Commission (the "Park Commission") has informally indicated however, that it will not permit construction of the portions of the Valley Creek Trunk Sewer located within Valley Forge State Park, consisting of Contract "D" of the Tredyffrin Authority (the "Park Construction") during the years 1976 through 1978 because of the necessity to close completely an arterial road to carry out such construction. The construction will require approximately 12 months to complete.

E. In reviewing the plans for the Valley Forge Sewage Treatment Plant EPA has recently required certain changes which necessitate redesign of said Plant, and it is therefore unlikely that final approval of plans for said Plant will take place before March of 1975, which will prevent award of construction contracts for such construction until early summer of that year.

F. The Consulting Engineers for the parties have advised them that construction costs will continue to increase, and that it will be in their best interests to commence construction of all of the facilities mentioned in paragraph A as soon as possible after award of the abovementioned new grants.

G. Because work on the Park Construction must be commenced before other parts of the Project, the Tredyffrin Authority is willing to commence such construction separately, upon approval thereof by EPA, and subject to the further provisions of this Agreement.

H. The estimated project cost for the Park Construction has been estimated by the Consulting Engineers of Tredyffrin Authority at $2,500,000, approximately 75% of which will be reimbursed by Federal grants. The Tredyffrin Authority has available funds for the non-Federal portion of such costs, but because the Park Construction is intended for the joint use of all the other

parties hereto it is deemed advisable that said Authority be protected against having to bear the full loss in the unlikely event that there should be an indefinite delay in construction of the balance of the Project.

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby agree as follows:

1. All terms defined in the abovementioned Agreements will have the same meaning when used herein.

2. Immediately upon execution hereof by all parties, the Tredyffrin Authority will advertise for construction bids for the Park Construction or at its option such portion thereof as the Park Commission determines must be completed before January of 1976. It will not award such contracts however, until receiving written approval from EPA for such action, including reasonable assurance that Tredyffrin Authority will receive prompt payment on account of the Federal grants for such construction as construction proceeds, at the rate of 75% of actual eligible costs incurred. In order that such approval of EPA may be received, the Municipalities agree to proceed as rapidly as possible with authorization and execution of the EPA Agreement and enactment of the related Ordinances. Tredyffrin Authority will use its best efforts to complete such construction as rapidly as possible, but if construction bids have not been received for the balance of the Project by August 30, 1975, Tredyffrin Authority may at its option suspend work on the Park Construction in order to minimize the damages which might otherwise result.

3. Tredyffrin Authority will pay the non-Federal portion of the costs of such construction from moneys it now has available, subject to reimbursement of their respective shares of the non-Federal portion thereof by the capital contributions of the other Authorities pursuant to Article II of the Valley Creek Agreement.

4. Exhibit "B" to the Valley Creek Agreement, Exhibit "D" of the Treatment Plant Agreement and Exhibit "B" of the East Whiteland Agreement are hereby amended to revise the estimated project cost to the new amounts set forth in Exhibit "A" attached hereto (which amounts have been derived from the original estimated project costs by a comparison of cost index figures in 1970 and 1974 as published in the Engineering News Record in the same manner as is described in the revised Section 2.03 below, and also adjusting for design changes in the Valley Creek Pump Station caused by the change in its location). Section 2.03 of the Valley Creek Agreement and the same numbered sections of the East Whiteland Agreement and the Treatment Plant Agreement are hereby further amended to read as follows:

> "2.03 Change in Project Cost. In the event, after receipt of Construction bids, the total project cost (before deducting any federal or state grants) of constructing the [insert applicable construction] exceeds by more than 15% the estimate as set forth in Amendment No. 1 hereto and as adjusted pursuant to the next paragraph hereof, and such revision in excess of 15% is not disapproved by the majority of said municipalities listed in Exhibit [insert appropriate Exhibit or insert 'Joint Board' in Treatment Plant Agreement] each municipality listed in such Exhibit shall pay its respective share of said increase over 15% to Authority by the time set forth in Section 2.02 hereof. However, in computing the amount to be so paid, each municipality may take credit for its appropriate share of 90% of the anticipated Federal Grants for the construction as calculated by the Consulting Engineers. In the event, after receipt of the last construction bids for the [insert applicable construction] the total project cost of such construction is less than the estimate, as set forth in said Amendment No. 1, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.
>
> The total estimated project cost of constructing the [insert applicable construction], for purposes of the preceding paragraph of this Section 2.03, shall be further adjusted from that set forth in Exhibit 'A' to Amendment No. 1, by multiplying the total project cost appearing in Amendment No. 1 by a factor obtained by dividing the most recent available Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the Engineering News Record, projected on a straight line basis to the date of receipt of the last construction bids for such construction in a manner satisfactory to the Consulting Engineers

for the Tredyffrin Authority and the Valley Forge Authority by the October 1974 Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the December 19, 1974 edution of Engineering News Record, at page 74 ."

5. To the extent that the Tredyffrin Authority pays any of the costs (as defined in the Original Agreement) for the Park Construction from its own funds, or funds it may borrow, prior to receipt of the Capital Contributions from the other Authorities under the Valley Creek Agreement, such contributions when made will include, not only reimbursement for their respective shares of such cost pursuant to Section 2 above, but also interest on such shares of the amounts advanced by the Tredyffrin Authority, from the dates the respective advances are made to the date of reimbursement, at a rate equal to the highest rate paid by any one of the three following Philadelphia Banks from time to time on 30 day certificates of deposit as determined on the 15th day of each month: Central Penn National Bank; Continental Bank; and The Philadelphia National Bank.

6. In the event that for any reason the openings of construction bids for the balance of the Valley Creek Trunk Sewer and other portions of the Project are delayed for any reason, so that no capital contributions are paid under the Valley Creek Agreement, the other Authorities and Municipalities will reimburse Tredyffrin Authority for their respective percentages of the costs incurred by Tredyffrin Authority (less Federal grant moneys received) for the Park Construction plus interest as aforesaid, said obligations to be several and not joint however, and further provided that said reimbursements will be payable only from the proceeds of the next sewer bond issue, whenever that may occur, by each Authority, by its incorporating Municipality, or by any other municipality authority created by such Municipality, concurrently with the closing in such bond issues or from any other available funds. For this purpose a bond issue by the Valley Forge Authority will be treated as a bond issue for all of its three member Municipalities. Also, independently of the preceding two sentences, the Authorities

(but not the Municipalities) separately agree to make such repayment, without any limitation upon source, not later than two years after the date of the first advance by the Tredyffrin Authority.

7. All the Authorities will proceed to advertise for construction bids for their respective portions of the Project as soon as possible after receipt of Federal grants for the collection systems, but only upon approval of EPA for such advertising, and upon advice by the Valley Forge Authority that EPA has approved or is expected to approve advertising for construction bids for the Valley Forge Treatment Plant in sufficient time that construction bids will be received on the Treatment Plant by a date not more than 60 days after the receipt of bids for all other parts of the Project.

8. Except as modified herein the Valley Creek Agreement, the Treatment Plant Agreement and the East Whiteland Agreement are hereby ratified and confirmed.

9. This Agreement may be executed in any number of counterparts each of which may be deemed an original.

10. This Agreement shall not become effective until the formal Federal grant offers (which under applicable law are required to be in amounts equal to 75% of eligible costs) for the collection system portion of the Project have been received by all the Authorities, which grants however may be conditioned upon the execution of the EPA Agreement by all parties hereto.

11. Execution of this Composite Amendment to the above-mentioned three Agreements shall not be construed as making any Municipality or Authority a party to any Agreement to which it has not previously been a party, nor as merging any of said Agreements, which shall remain separate Agreements for all purposes.

IN WITNESS WHEREOF, each of the parties hereto has caused this Composite Amendment No. 1 Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

TOWNSHIP OF TREDYFFRIN

By: _____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By: Emily J. Pence
Secretary

(SEAL)

TREDYFFRIN MUNICIPAL AUTHORITY

By: _____
Chairman

ATTEST:

By: _____
Secretary

(SEAL)

TOWNSHIP OF SCHUYLKILL

ATTEST:

By_____
Chairman, Board of Supervisors

By_____
Secretary

(SEAL)

TOWNSHIP OF EAST PIKELAND

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF CHARLESTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF EAST WHITELAND

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF WILLISTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

TOWNSHIP OF EASTTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

BOROUGH OF MALVERN

By_____
President, Borough Council

ATTEST:

By_____
Secretary

(SEAL)

VALLEY FORGE SEWER AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

MALVERN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

EAST WHITELAND MUNICIPAL AUTHORITY

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Chairman

ATTEST:

By_____
Secretary

(SEAL)

EASTTOWN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

COMPOSITE AMENDMENT NO. 1

EXHIBIT A
Revised Project Costs

Authority	Valley Creek Trunk Sewer Agreement					Valley Forge Treatment Plant Agreement		East Whiteland Trunk Line Agreement	
	Overall Project		Park Construction						
	% of Total Cost(1)	Estimated Cost (Before Grants)	% of Total Cost (1)	Estimated Cost Before Grants	Estimated Cost After Grants	% of Total Cost	Estimated Cost (Before Grants)	% of Total Cost(1)	Estimated Cost (Before Grants)
Valley Forge Sewer Auth.	0.17%	$ 18,931	0.51%	$ 12,821	$ 3,600	26.60%	$ 2,831,432	-	
Tredyffrin Twp. Mun. Auth.	39.03%	4,346,322	31.34%	787,888	220,600	19.90%	2,118,251	-	
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Total	100.00%	$11,135,850(2)	100.00%	$2,514,000	$704,000	100.00%	$10,644,480(3)	100.00%	$955,796

(1) Overall percentages are the same as those shown on original Exhibits and are solely for purposes of Section 2.03. Percentages of construction cost for individual sections of line (such as the Park Construction) vary, as shown in said Exhibits, based on relative anticipated use of each section by the various parties.
(2) Estimated construction cost $7,954,180.
(3) Estimated construction cost $7,884,800.

CHESTER COUNTY

Schuylkill Township

BOARD OF SUPERVISORS

June 25, 2021

VIA EMAIL: susan.posternock@obermayer.com

Susan Posternock
Obermayer Rebmann Maxwell & Hippel
1500 Market Street West, Suite 3400
Philadelphia, PA 19102-2101

RE: Right-to-Know Request Received June 21, 2021

Schuylkill Township (the "Agency") is in receipt of your request for information pursuant to the Pennsylvania Right-to-Know Law ("RTKL), 65 P.S. 67.101, *et. seq.* On January 7, 2021, you requested copies of certain amendments to the Valley Creek Trunk Sewer Agreement, the East Whiteland Trunk Line Agreement and the Valley Forge Sewer Plant Agreement. Pursuant to Section 902(a) of the Right to Know Law, the Agency's OOR requires an additional 30 days to respond because (check all that apply):

- ☐ The request for access requires redaction of a record in accordance with Section 706 of the RTKL;
- ☒ The request for access requires the retrieval of a record stored in a remote location;
- ☒ A timely response to the request for records cannot be accomplished due to bona fide and specific staffing limitations.
- ☒ A legal review is necessary to determine whether the record is a record subject to access under the RTKL;
- ☐ The requester has not complied with the Agency's policies regarding access to records;
- ☐ The requester refuses to pay applicable fees authorized by the RTKL;
- ☐ The extent or nature of the request precludes a response within the required time period.

The Agency expects to respond to your request on or before July 26, 2021. Any applicable fees related to your request will be communicated at that time.

Sincerely,

Edward M. Mentry Jr.

Edward M. Mentry, Jr.
Open Records Officer
RTK@schuylkilltwp.org

c: Board of Supervisors
Township Solicitor

pennsylvania
OFFICE OF OPEN RECORDS

CHESTER COUNTY

Schuylkill Township
BOARD OF SUPERVISORS

STANDARD RIGHT-TO-KNOW REQUEST FORM

NAME OF REQUESTOR: Susan Posternock **DATE REQUESTED:** 6/18/21

ADDRESS: Obermayer Rebmann Maxwell & Hippel

1500 Market Street West, Suite 3400

CONTACT NUMBER: 215-665-3007 **CONTACT VIA EMAIL:** susan.posternock@obermayer.com

DESCRIPTION OF RECORDS BEING REQUESTED:

Please see attached letter. Email delivery preferred. Thank you.

COPIES REQUESTED?: YES x NO ____ **NUMBER OF COPIES:** 1

CERTIFIED COPIES?: YES ____ NO x **NUMBER OF CERTIFIED COPIES:** ____

INSPECT RECORDS?: YES ____ NO x

RECEIVED BY SIGNATURE: ____ **DATE:** ____

OFFICE USE ONLY

AGENCY FIVE (5) DAY RESPONSE DUE: ____ **DATE REQUEST FULFILLED:** ____

INITIALS OF STAFF MEMBER: ____

DATE INFORMATION PICKED UP: ____ **DATE MAILED:** ____

COSTS

____ IN-HOUSE COPIES @ $ .25 PER PAGE ____

____ OUTSIDE COPIES @ $ PER PAGE ____

POSTAGE ____

OTHER ____ **"OTHER" EXPLANATION:** ____

TOTAL COST $ ____

LESS DEPOSIT [1] ____

TOTAL AMOUNT OWED $ ____

[1]If copies of plans or other items which cannot be copied in-house are needed, cost of outside photocopying will be charged at cost. A deposit may be required if costs to fulfill the request are expected to exceed $100.00.

Public bodies may fill anonymous verbal or written requests. If the requestor wishes to pursue the relief and remedies provided for in the Right-to-Know Act, the request must be in writing (§702). Written requests need not include an explanation of why information is sought or the intended use of the information unless otherwise required by law (§702).

REQUESTED RECORDS WILL BE HELD FOR REVIEW OR PICK-UP FOR FIVE (5) BUSINESS DAYS AFTER REQUESTOR IS NOTIFIED. AFTER 10 BUSINESS DAYS, A NEW RIGHT-TO-KNOW REQUEST MUST BE FILED FOR THE RECORDS.

Susan Posternock
Research Librarian
Direct Dial: 215.665.3007
Susan.Posternock@obermayer.com
www.obermayer.com

Obermayer Rebmann Maxwell & Hippel LLP
Centre Square West
1500 Market Street | Suite 340
Philadelphia, PA 19102-2101
P: 215.665.3000
F: 215.665.3165

June 18, 2021

E.J. Mentry
Township Manager/Open Records Officer
Schuylkill Township
111 Valley Park Road
Phoenixville, PA 19460-5766

RE: Right-to-Know Request

Township Manager Mentry,

On behalf of Thomas Wyatt, Esquire, I am submitting this Right to Know request seeking copies of the following documents:

1. **Composite Amendment No. 1 to the Valley Creek Trunk Sewer Agreement, the East Whiteland Trunk Line Agreement and the Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974** between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority, including all signature pages.

2. **October 4, 1994 – Addendum to Valley Forge Sewage Treatment Plant Agreement for the Purpose of Permitting and Administering the Sale of Reserved Capacity Among the Parties** between Valley Forge Sewer Authority, the Townships of Schuylkill, East Pikeland,

Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; East Whiteland Township Municipal Authority; Easttown Municipal Authority; and Tredyffrin Township Municipal Authority (Addendum to Nov. 1, 1970 Agreement), including all signature pages.

Electronic delivery is preferred, if possible. Please let me know if there are costs associated with fulfilling this request and, if so, how I can go about remitting payment. Feel free to contact me via phone at (215) 665-3007 or email at susan.posternock@obermayer.com with questions or concerns related to this request.

Regards,

Susan Posternock

From: RTK for Admin <RTK@tredyffrin.org>
Sent: Tuesday, June 22, 2021 2:54 PM
To: Posternock, Susan <susan.posternock@obermayer.com>
Subject: RE: Tredyffrin Township: Tredyffrin Township Right-to-Know Request Form

Good Afternoon Susan,

Please see attached for the requested documents. For the second document you mentioned a May date, but I was only able to find an addendum from October. If this isn't what you are looking for, let me know and I will take a second look.

Best,
Amanda

Amanda Lafty
Tredyffrin Township
1100 DuPortail Road
Berwyn, PA 19312
Phone: 610-408-3602
Email: alafty@tredyffrin.org

We're back! Please visit us at our newly renovated Township Building – 1100 Duportail Rd.

From: tredyffrin@tredyffrin.org <tredyffrin@tredyffrin.org>
Sent: Friday, June 18, 2021 12:24 PM
To: RTK for Admin <RTK@tredyffrin.org>
Subject: Tredyffrin Township: Tredyffrin Township Right-to-Know Request Form

A new entry to a form/survey has been submitted.

Form Name:	Right-To-Know Request Form
Date & Time:	06/18/2021 12:24 PM
Response #:	1128
Submitter ID:	9682
IP address:	38.123.131.2
Time to complete:	4 min. , 18 sec.

Survey Details

Date/Time Requested:

6/18/21 12:30 pm

Name of Requestor:

Susan Posternock

Street Address:

1500 Market Street West, Suite 3400

City/State/Zip:

Philadelphia, PA 19102

Phone Number (Required):

265-665-3007

E-mail Address:

susan.posternock@obermayer.com

Copies of the records:

Copies will be provided on site only. See current fee schedule as established by the Township in compliance with the Right-To-Know Law for copy fees.

Due to restrictions imposed by the Federal Protection Copyright Act, the Township cannot make copies of building, site, or subdivision & land development plans, including sealed architectural and engineered plans. The plans may be inspected by the requester at the Township offices, but may not photocopied or photographed. This restriction also applies to Zoning Hearing Board transcripts and other documents prepared by a professional stenographer.

Records Requested:

Please specify address(es) requested for review.

-

Please provide subdivision name, if applicable.

Not answered

Please provide as much detail as possible so that Township staff may identify the specific information being requested (document type, format, time frame, etc). RTKL requests should seek records, not ask questions. Requesters are not required to explain why the records are sought or the intended use of the records unless otherwise required by law. Be clear and concise.

Good afternoon. On behalf of Thomas Wyatt, Esquire, I am submitting this Right-to-Know request seeking copies of the following documents:

1. Composite Amendment No. 1 to the Valley Creek Trunk Sewer Agreement, the East Whiteland Trunk Line Agreement and the Valley Forge Sewage Treatment Plant Agreement dated December 1, 1974 between Tredyffrin Township Municipal Authority, Township of Tredyffrin, Township of Schuylkill, Township of East Pikeland, Township of Charlestown, Township of East Whiteland, Township of Willistown, Township of Easttown, Borough of Malvern, Valley Forge Sewer Authority, Malvern Municipal Authority, East Whiteland Municipal Authority, and Easttown Municipal Authority, including all signature pages.

2. October 4, 1994 – Addendum to Valley Forge Sewage Treatment Plant Agreement for the Purpose of Permitting and Administering the Sale of Reserved Capacity Among the Parties between Valley Forge Sewer Authority, the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown, and Easttown; the Borough of Malvern; East Whiteland Township Municipal Authority; Easttown Municipal Authority; and Tredyffrin Township Municipal Authority (Addendum to Nov. 1, 1970 Agreement), including all signature pages.

Electronic delivery is preferred, if possible. Please let me know if there are costs associated with fulfilling this request and, if so, how I can go about remitting payment. Feel free to contact me via phone at (215) 665-3007 or email at susan.posternock@obermayer.com with questions or concerns related to this request.

Regards,
Susan Posternock

Please allow up to 5 business days for a response with information regarding your Right to Know Request.

Portion below to be completed by Township Staff or Right-To-Know Officer:

Logged in (date):

Emailed/Left Message for Requestor:

Confirmation Sent (Date):

Appointment Date/Time:

Date files reviewed by requestor:

Right-To-Know Coordinator:

Request logged out (date):

EGov Y/N:

SharePoint Y/N:

EGov Only (No paper file):

Thank you,
Tredyffrin Township

This is an automated message generated by Granicus. Please do not reply directly to this email.

T.T CONFIDENTIALITY NOTICE: The information contained in this electronic communication and any attachment thereto, is privileged, confidential, and proprietary and may be legally protected from disclosure. As such, this email is sent in trust and it is intended only for the use of the individual(s) and/or entities named above. If you are not the intended recipient or the recipient's authorized agent, you are hereby notified that any unauthorized disclosure, copying or dissemination of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately, then delete and destroy the original and any copies of this communication and attachments thereto.

12-18-74

executed original

VALLEY CREEK TRUNK SEWER AGREEMENT
EAST WHITELAND TRUNK LINE AGREEMENT
VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT

subject Valley Creek Construction thru UFNHP

COMPOSITE AMENDMENT NO. 1

This Composite Amendment No. 1 dated as of December 1, 1974, to the Valley Creek Trunk Sewer Agreement dated November 1, 1970 (the "Valley Creek Agreement"), is entered between the parties to said Agreement, namely TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY (the "Tredyffrin Authority") a Pennsylvania municipality authority and the TOWNSHIP OF TREDYFFRIN ("Tredyffrin Township") parties of the first part, and the TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, WILLISTOWN and EASTTOWN (all of said Townships being second class townships in Chester County, Pennsylvania), the BOROUGH OF MALVERN, the VALLEY FORGE SEWER AUTHORITY, MALVERN MUNICIPAL AUTHORITY, EAST WHITELAND MUNICIPAL AUTHORITY and EASTTOWN MUNICIPAL AUTHORITY all being Pennsylvania municipality authorities, parties of the second part. Certain of the aforementioned parties are also parties to the East Whiteland Trunk Line Agreement dated as of February 1, 1971 (the "East Whiteland Agreement") and the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970 (the "Treatment Plant Agreement"), which are also being amended in certain respects hereby. All of the abovementioned Townships and the Borough of Malvern are sometimes herein referred to as the "Municipalities" and the above-named municipality authorities are sometimes referred to as the "Authorities".

BACKGROUND

The background of this Agreement is as follows:

A. The parties hereto entered into the Valley Creek Agreement to provide for sharing the cost of construction of the "Valley

Creek Trunk Sewer" as therein defined, and also in contemplation of the construction of (i) the "Valley Forge Treatment Plant" pursuant to the Treatment Plant Agreement; (ii) the East Whiteland Trunk Line, pursuant to the East Whiteland Agreement; and (iii) the sewage collection systems within each of the Municipalities designed to be served by the aforementioned facilities. All of the aforesaid construction was to have been commenced at substantially the same time because it is all interrelated, and it is herein referred to collectively as the "Project". Construction of the Project has been delayed for various reasons during which time construction costs have risen substantially.

B. It is now expected that the U. S. Government acting through the Environmental Protection Agency ("EPA") will shortly award grants to each of the Authorities in the amount of 75% of the actual eligible costs of the abovementioned collection systems, pursuant to the Federal Water Pollution Control Act Amendments of 1972. In addition, informal assurances have been received from EPA as to the likely increase of the grants for the Valley Creek Trunk Sewer and the Valley Forge Treatment Plant and other interceptors, as previously awarded conditionally, to 75% of the actual eligible costs, even though said grants were originally awarded under prior Federal law.

C. Award of the abovementioned new grants and authorization to proceed with construction under the old grants will be conditioned upon execution of a Supplement to Sewage Facility Grant Agreements, dated as of July 1, 1974 (the "EPA Agreement") between the parties hereto and EPA, which Agreement will also require the enactment of certain Ordinances by the Municipalities on or before December 31, 1974, as more fully provided in Section 2 of the EPA Agreement, substantially in the form of Exhibits A and B thereto.

D. The Valley Creek Trunk Sewer is indispensible to the transportation of sanitary sewage emanating from all the Munici-

palities to the Valley Forge Treatment Plant. The Pennsylvania Historical and Museum Commission (the "Park Commission") has informally indicated however, that it will not permit construction of the portions of the Valley Creek Trunk Sewer located within Valley Forge State Park, consisting of Contract "D" of the Tredyffrin Authority (the "Park Construction") during the years 1976 through 1978 because of the necessity to close completely an arterial road to carry out such construction. The construction will require approximately 12 months to complete.

E. In reviewing the plans for the Valley Forge Sewage Treatment Plant EPA has recently required certain changes which necessitate redesign of said Plant, and it is therefore unlikely that final approval of plans for said Plant will take place before March of 1975, which will prevent award of construction contracts for such construction until early summer of that year.

F. The Consulting Engineers for the parties have advised them that construction costs will continue to increase, and that it will be in their best interests to commence construction of all of the facilities mentioned in paragraph A as soon as possible after award of the abovementioned new grants.

G. Because work on the Park Construction must be commenced before other parts of the Project, the Tredyffrin Authority is willing to commence such construction separately, upon approval thereof by EPA, and subject to the further provisions of this Agreement.

H. The estimated project cost for the Park Construction has been estimated by the Consulting Engineers of Tredyffrin Authority at $2,500,000, approximately 75% of which will be reimbursed by Federal grants. The Tredyffrin Authority has available funds for the non-Federal portion of such costs, but because the Park Construction is intended for the joint use of all the other

parties hereto it is deemed advisable that said Authority be protected against having to bear the full loss in the unlikely event that there should be an indefinite delay in construction of the balance of the Project.

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby agree as follows:

1. All terms defined in the abovementioned Agreements will have the same meaning when used herein.

2. Immediately upon execution hereof by all parties, the Tredyffrin Authority will advertise for construction bids for the Park Construction or at its option such portion thereof as the Park Commission determines must be completed before January of 1976. It will not award such contracts however, until receiving written approval from EPA for such action, including reasonable assurance that Tredyffrin Authority will receive prompt payment on account of the Federal grants for such construction as construction proceeds, at the rate of 75% of actual eligible costs incurred. In order that such approval of EPA may be received, the Municipalities agree to proceed as rapidly as possible with authorization and execution of the EPA Agreement and enactment of the related Ordinances. Tredyffrin Authority will use its best efforts to complete such construction as rapidly as possible, but if construction bids have not been received for the balance of the Project by August 30, 1975, Tredyffrin Authority may at its option suspend work on the Park Construction in order to minimize the damages which might otherwise result.

3. Tredyffrin Authority will pay the non-Federal portion of the costs of such construction from moneys it now has available, subject to reimbursement of their respective shares of the non-Federal portion thereof by the capital contributions of the other Authorities pursuant to Article II of the Valley Creek Agreement.

4. Exhibit "B" to the Valley Creek Agreement, Exhibit "D" of the Treatment Plant Agreement and Exhibit "B" of the East Whiteland Agreement are hereby amended to revise the estimated project cost to the new amounts set forth in Exhibit "A" attached hereto (which amounts have been derived from the original estimated project costs by a comparison of cost index figures in 1970 and 1974 as published in the Engineering News Record in the same manner as is described in the revised Section 2.03 below, and also adjusting for design changes in the Valley Creek Pump Station caused by the change in its location). Section 2.03 of the Valley Creek Agreement and the same numbered sections of the East Whiteland Agreement and the Treatment Plant Agreement are hereby further amended to read as follows:

> "2.03 Change in Project Cost. In the event, after receipt of Construction bids, the total project cost (before deducting any federal or state grants) of constructing the [insert applicable construction] exceeds by more than 15% the estimate as set forth in Amendment No. 1 hereto and as adjusted pursuant to the next paragraph hereof, and such revision in excess of 15% is not disapproved by the majority of said municipalities listed in Exhibit [insert appropriate Exhibit or insert 'Joint Board' in Treatment Plant Agreement] each municipality listed in such Exhibit shall pay its respective share of said increase over 15% to Authority by the time set forth in Section 2.02 hereof. However, in computing the amount to be so paid, each municipality may take credit for its appropriate share of 90% of the anticipated Federal Grants for the construction as calculated by the Consulting Engineers. In the event, after receipt of the last construction bids for the [insert applicable construction] the total project cost of such construction is less than the estimate, as set forth in said Amendment No. 1, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.
>
> The total estimated project cost of constructing the [insert applicable construction], for purposes of the preceding paragraph of this Section 2.03, shall be further adjusted from that set forth in Exhibit 'A' to Amendment No. 1, by multiplying the total project cost appearing in Amendment No. 1 by a factor obtained by dividing the most recent available Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the Engineering News Record, projected on a straight line basis to the date of receipt of the last construction bids for such construction in a manner satisfactory to the Consulting Engineers

for the Tredyffrin Authority and the Valley Forge Authority by the October 1974 Construction Cost Index factor for Philadelphia appearing in the 'Sewage Construction Cost Index in 20 Cities' table relating to sewer construction published in the December 19, 1974 edution of Engineering News Record, at page 74 ."

5. To the extent that the Tredyffrin Authority pays any of the costs (as defined in the Original Agreement) for the Park Construction from its own funds, or funds it may borrow, prior to receipt of the Capital Contributions from the other Authorities under the Valley Creek Agreement, such contributions when made will include, not only reimbursement for their respective shares of such cost pursuant to Section 2 above, but also interest on such shares of the amounts advanced by the Tredyffrin Authority, from the dates the respective advances are made to the date of reimbursement, at a rate equal to the highest rate paid by any one of the three following Philadelphia Banks from time to time on 30 day certificates of deposit as determined on the 15th day of each month: Central Penn National Bank; Continental Bank; and The Philadelphia National Bank.

6. In the event that for any reason the openings of construction bids for the balance of the Valley Creek Trunk Sewer and other portions of the Project are delayed for any reason, so that no capital contributions are paid under the Valley Creek Agreement, the other Authorities and Municipalities will reimburse Tredyffrin Authority for their respective percentages of the costs incurred by Tredyffrin Authority (less Federal grant moneys received) for the Park Construction plus interest as aforesaid, said obligations to be several and not joint however, and further provided that said reimbursements will be payable only from the proceeds of the next sewer bond issue, whenever that may occur, by each Authority, by its incorporating Municipality, or by any other municipality authority created by such Municipality, concurrently with the closing in such bond issues or from any other available funds. For this purpose a bond issue by the Valley Forge Authority will be treated as a bond issue for all of its three member Municipalities. Also, independently of the preceding two sentences, the Authorities

(but not the Municipalities) separately agree to make such repayment, without any limitation upon source, not later than two years after the date of the first advance by the Tredyffrin Authority.

7. All the Authorities will proceed to advertise for construction bids for their respective portions of the Project as soon as possible after receipt of Federal grants for the collection systems, but only upon approval of EPA for such advertising, and upon advice by the Valley Forge Authority that EPA has approved or is expected to approve advertising for construction bids for the Valley Forge Treatment Plant in sufficient time that construction bids will be received on the Treatment Plant by a date not more than 60 days after the receipt of bids for all other parts of the Project.

8. Except as modified herein the Valley Creek Agreement, the Treatment Plant Agreement and the East Whiteland Agreement are hereby ratified and confirmed.

9. This Agreement may be executed in any number of counterparts each of which may be deemed an original.

10. This Agreement shall not become effective until the formal Federal grant offers (which under applicable law are required to be in amounts equal to 75% of eligible costs) for the collection system portion of the Project have been received by all the Authorities, which grants however may be conditioned upon the execution of the EPA Agreement by all parties hereto.

11. Execution of this Composite Amendment to the above-mentioned three Agreements shall not be construed as making any Municipality or Authority a party to any Agreement to which it has not previously been a party, nor as merging any of said Agreements, which shall remain separate Agreements for all purposes.

IN WITNESS WHEREOF, each of the parties hereto has caused this Composite Amendment No. 1 Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

TOWNSHIP OF TREDYFFRIN

By: Charles P. Brown, Jr.
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By: Emily J. Peirce
Secretary

(SEAL)

TREDYFFRIN MUNICIPAL AUTHORITY

By: John Woodcock
Chairman

ATTEST:

By: [illegible]
Secretary

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF SCHUYLKILL

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By Margaret A. Chicino
Secretary

TOWNSHIP OF EAST PIKELAND

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF CHARLESTOWN

By Harold F. Pyle
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF EAST WHITELAND

By_____
Chairman, Board of Supervisors

(SEAL)

ATTEST:

By_____
Secretary

TOWNSHIP OF WILLISTOWN

By_____
Chairman, Board of Supervisors

(SEAL)

TOWNSHIP OF EASTTOWN

By_____
Chairman, Board of Supervisors

ATTEST:

By_____
Secretary

(SEAL)

BOROUGH OF MALVERN

By_____
President, Borough Council

ATTEST:

By_____
Secretary

(SEAL)

VALLEY FORGE SEWER AUTHORITY

By Joseph W. Weinstock
Chairman

ATTEST:

By_____
Secretary

(SEAL)

MALVERN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

EAST WHITELAND MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

(SEAL)

EASTTOWN MUNICIPAL AUTHORITY

By_____
Chairman

ATTEST:

By_____
Secretary

COMPOSITE AMENDMENT NO. 1

EXHIBIT A
Revised Project Costs

	Valley Creek Trunk Sewer Agreement					Valley Forge Treatmen	
	Overall Project		Park Construction			Plant Agreement	
y	% of Total Cost(1)	Estimated Cost (Before Grants)	% of Total Cost (1)	Estimated Cost Before Grants	After Grants	% of Total Cost	Estimate Cost (Before Gr
Sewer Auth.	0.17%	$ 18,931	0.51%	$ 12,821	$ 3,600	26.60%	$ 2,831,4
p. Mun. Auth.	39.03%	4,346,322	31.34%	787,888	220,600	19.90%	2,118,2
d Mun. Auth.	28.65%	3,190,421	35.48%	891,967	249,800	21.20%	2,256,6
Auth.	7.47%	831,848	9.34%	234,808	65,700	7.05%	750,4
p. Mun. Auth.	11.83%	1,317,371	14.00%	351,960	98,600	13.30%	1,415,7
Auth.	12.85%	1,430,957	9.33%	234,556	65,700	11.95%	1,272,0
otal	100.00%	$11,135,850(2)	100.00%	$2,514,000	$704,000	100.00%	$10,644,4

Overall percentages are the same as those shown on original Exhibits and are solely for purposes of Section
Percentages of construction cost for individual sections of line (such as the Park Construction) vary, as
in said Exhibits, based on relative anticipated use of each section by the various parties.
Estimated construction cost $7,954,180.
Estimated construction cost $7,884,800.

EXHIBIT F3

AMENDMENT TO VALLEY FORGE SEWER TREATMENT PLANT AGREEMENT, DATED JANUARY 1, 1983, BY AND BETWEEN VALLEY FORGE SEWER AUTHORITY; THE TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, TREDYFFRIN, WILLISTOWN, AND EASTTOWN; THE BOROUGH OF MALVERN; MALVERN MUNICIPAL AUTHORITY; EAST WHITELAND MUNICIPAL AUTHORITY; EASTTOWN MUNICIPAL AUTHORITY; TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY; AND WILLISTOWN TOWNSHIP MUNICIPAL AUTHORITY

Amend. #

AMENDMENT TO VALLEY FORGE
SEWER TREATMENT PLANT AGREEMENT

THIS AMENDMENT, dated as of January 1, 1983, to the Valley Forge Sewer Treatment Plant Agreement dated as of November 1, 1970, is entered into between the parties to said Agreement, namely, Valley Forge Sewer Authority, the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown and Easttown, the Borough of Malvern, Malvern Municipal Authority, East Whiteland Municipal Authority, Easttown Municipal Authority, Tredyffrin Township Municipal Authority and Willistown Township Municipal Authority.

Said Agreement, as it has previously been amended, is hereby further amended to provide that commencing January 1, 1983, all amounts not paid by any municipality or municipal authority when due shall be subject to interest at a rate equal to the prime rate charged for the loan of money by Continental Bank, or its successors, as the same may be adjusted by said Bank, or its successors, from time to time. If Continental Bank and its successors cease to exist, the Joint Board shall select another bank and its successors, which upon selection by the Joint Board shall be automatically substituted for Continental Bank and its successors.

The intent of this Amendment, commencing January 1, 1983, is merely to substitute a flexible rate as above provided wherever

said Agreement provides for a fixed rate of six percent per annum. This Amendment shall be so construed.

This Amendment may be executed in any number of counterparts, each of which may be deemed an original.

IN WITNESS WHEREOF, each of the parties hereto has caused this Amendment to be executed and attested by its proper officers, pursuant to the proper action or its governing body, as of the day and year first above written.

BOROUGH OF MALVERN

Attest:

Richard Di Simmio
Secretary

By: Gregory M Schmitt
President
Borough Council

(Borough Seal)

CHARLESTOWN TOWNSHIP

Attest:

Margaret A Gallagher
Secretary

By: John B Garvin
Chairman
Board of Supervisors

(Township Seal)

EAST PIKELAND TOWNSHIP

Attest:

Jack D Doyle
Secretary

By: John H Yeager
Chairman
Board of Supervisors

(Township Seal)

EASTTOWN TOWNSHIP

Attest:

Secretary

By: Chairman
Board of Supervisors

(Township Seal)

EASTTOWN MUNICIPAL AUTHORITY

Attest:

Secretary

By: Chairman

EAST WHITELAND TOWNSHIP

Attest:

Secretary

By: Chairman
Board of Supervisors

(Township Seal)

EAST WHITELAND MUNICIPAL AUTHORITY

Attest:

Secretary

By: Chairman

MALVERN MUNICIPAL AUTHORITY

Attest:

Secretary

By: Chairman

SCHUYLKILL TOWNSHIP

Attest: _____
Secretary

By: _____
Chairman
Board of Supervisors

(Township Seal)

TREDYFFRIN TOWNSHIP

Attest: _____
Secretary

By: _____
Chairman
Board of Supervisors

(Township Seal)

TREDYFFRIN MUNICIPAL AUTHORITY

Attest: _____
Secretary

By: _____
Chairman

VALLEY FORGE SEWER AUTHORITY

Attest: _____

By: _____

WILLISTOWN TOWNSHIP

Attest: _____
Acting Secretary

By: _____
Chairman
Board of Supervisors

(Township Seal)

WILLISTOWN MUNICIPAL AUTHORITY

Attest:

Lester Moore
Secretary

By: Edward G Morris
Chairman
Board of ~~Supervisors~~
the Authority

(Township Seal)

EXHIBIT F4

SUPPLEMENT TO VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT FOR THE PURPOSE OF COMPLYING WITH UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGULATIONS, DATED DECEMBER 2, 1985, BY AND BETWEEN VALLEY FORGE SEWER AUTHORITY; THE TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, TREDYFFRIN, WILLISTOWN, AND EASTOWN; THE BOROUGH OF MALVERN; MALVERN MUNICIPAL AUTHORITY; EAST WHITELAND MUNICIPAL AUTHORITY; TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY; EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY, AND WILLISTOWN TOWNSHIP MUNICIPAL AUTHORITY

RECEIVED

SUPPLEMENT TO VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT FOR THE PURPOSE OF COMPLYING WITH UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGULATIONS

THIS SUPPLEMENT dated as of December 2, 1985 to the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970, as previously amended, (hereinafter called Agreement) is entered into between the parties to said Agreement, namely, Valley Forge Sewer Authority (hereinafter called Authority), the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown and Easttown, the Borough of Malvern, Malvern Municipal Authority, East Whiteland Municipal Authority, Easttown Municipal Authority, Tredyffrin Township Municipal Authority and Willistown Township Municipal Authority.

WHEREAS, compliance with regulations promulgated by the United States Environmental Protection Agency in 40 CFR 403 is mandatory; and

WHEREAS, reference is made to Articles 5.01, 5.02, 5.03 and 10.02 of said Agreement; and

WHEREAS, capital letters and initial capital letters indicate reference to the "Definitions" provision in 40 CFR 403.3, and such definitions are incorporated herein by reference; and

WHEREAS, all references to any municipality or municipalities shall be deemed to include references to the municipal authority of each municipality where appropriate.

NOW THEREFORE, in consideration of the mutual promises herein contained the parties hereto intending to be legally bound hereby, agree as follows:

1. Legal Authority. As required by EPA each municipality agrees to adopt and diligently enforce an ordinance conforming to the minimum legal requirements contained in the General Pretreatment Regulations at 40 CFR 403.8(f)(1). Therefore, each municipality agrees to administer pretreatment programs pursuant to legal authority enforceable in federal, state or local courts which shall enable the municipality to do the following, and each municipality agrees to do the following:

(i) Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the Authority's Publicly Owned Treatment Works (hereinafter called POTW) by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit;

(ii) Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users;

(iii) Control, through permit, contract, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements;

(iv) Require (a) the development of a compliance schedule by each Industrial User for the installation of technology

required to meet applicable Pretreatment Standards and Requirements and (b) the submission of all notices and self-monitoring reports from Industrial Users as are necessary to assess and assure compliance by Industrial Users with Pretreatment Standards and Requirements, including but not limited to the reports required in 40 CFR 403.12;

(v) Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users. Representatives of each municipality and representatives of Authority shall be authorized to enter any premises of any Industrial User in which a Discharge source or treatment system is located or in which records are required to be kept under 40 CFR 403.12(m) to assure compliance with Pretreatment Standards. Such authority shall be at least as extensive as the authority provided under section 308 of the Act;

(vi) (a) Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. Each municipality certifies that it is able to, and agrees to, seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. Each municipality agrees to pass legislation to, and agrees to, seek and assess civil or criminal penalties for noncompliance by Industrial Users with Pretreatment Standards and Requirements. Each municipality agrees to require

Industrial Users to submit to the remedy of specific performance for breach of contract.

(b) Each municipality agrees to enact and enforce Pretreatment Requirements through the remedies set forth in paragraph (f)(1)(vi)(A) of 40 CFR 403.8, [the immediately preceding (vi)(a) herein] which will include, but not be limited to, the duty to carry out inspections, entry, or monitoring activities; any rules, regulations, or orders issued by the municipality or Authority; and any reporting requirements imposed by the municipality, Authority or said EPA regulations. Each municipality shall have authority and procedures (after informal notice to the discharger) immediately and effectively to halt or prevent any discharge of pollutants to the POTW which reasonably appears to present an imminent danger to the health or welfare of persons. Each municipality shall also have authority and procedures (which shall include notice to the affected Industrial Users and an opportunity to respond) to halt or prevent any discharge to the POTW which presents or may present an endangerment to the environment or which threatens to interfere with the operation of the POTW.

2. Prohibited Discharges. Each municipality agrees to develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5(b), to prohibit introduction into the POTW of any pollutant which might pass through the POTW or interfere with the operation or performance of the works as mentioned in 40 CFR 403.5(a), and to require compliance with national standards. In addition to the

foregoing, each municipality agrees to adopt as part of its ordinance and enforce specific discharge limits at least as stringent as the specific discharge limits established in Rules and Regulations Governing the Acceptance of Industrial Wastes adopted by Authority, as the same may be amended from time to time.

3. Procedures. A. Each municipality shall develop and implement procedures to ensure compliance with the requirements of a Pretreatment Program. At a minimum these procedures shall enable each municipality to, and each municipality agrees to:

(i) Identify and locate all possible industrial users which might be subject to the Pretreatment Program as often as may be required by an appropriate entity. Any compilation, index or inventory of industrial users made under this paragraph shall be made available to the Regional Administrator or Director upon request, and shall be delivered to Authority;

(ii) Identify the character and volume of pollutants contributed to the POTW by the industrial users identified under 40 CFR 403.8(f)(2)(i). This information shall be made available to the Regional Administrator or Director upon request, and shall be delivered to Authority;

(iii) Notify industrial users identified under 40 CFR 403.8(f)(2)(i) of applicable Pretreatment Standards and any applicable requirements under section 294(b) and 405 of the Act and Subtitles C and D of the Resource Conservation and Recovery Act;

(iv) Receive and analyze self-monitoring reports and other notices submitted by industrial users in accordance with the self-monitoring requirements in 40 CFR 403.12, and deliver copies to Authority;

(v) Randomly sample and analyze the effluent from Industrial Users and conduct surveillance and inspection activities in order to identify, independent of information supplied by Industrial Users, occasional and continuing noncompliance with Pretreatment Standards. The results of these activities shall be made available to the Regional Administrator or Director upon request, and shall be delivered to Authority;

(vi) Comply with the public participation requirements of 40 CFR Part 25 in the enforcement of National Pretreatment Standards. These procedures shall include provision for at least annually providing public notification, in the largest daily newspaper published in the municipality in which the municipality is located, of Industrial Users which, during the previous 12 months, were significantly violating applicable Pretreatment Standards or other Pretreatment Requirements. For the purposes of this provision, a significant violation is a violation which remains uncorrected 45 days after notification of noncompliance; which is part of a pattern of noncompliance over a twelve-month period; which involves a failure to accurately report noncompliance; or which resulted in the POTW and the municipality exercising its emergency authority under 40 CFR 403.8(f)(1)(iv)(B).

B. Each municipality has the duties and responsibilities set forth in the Agreement and this Supplement. Nevertheless, at the insistence of EPA, the parties agree that Authority shall have, and is hereby given, the authority to do any act, and/or require any act, which any municipality has the authority to do or require pursuant to Sections 1 through 3A of this Supplement; provided, however, that Authority shall not acquire any duty, responsibility or liability by virtue of this paragraph. No action by Authority pursuant to this paragraph shall be deemed to be a pre-emption of, or an assumption of, any duty or responsibility of any municipality. In addition, or in the alternative, Authority may seek a decree requiring specific performance of any provision of this Supplement.

4. A. Ordinances. Each municipality agrees to adopt and diligently enforce an ordinance exercising all legal authority mandated by this Supplement or otherwise necessary to implement provisions of said Agreement, this Supplement and federal, state and local regulations. Each municipality shall adopt and diligently enforce an ordinance containing provisions necessary or appropriate to require compliance within such municipality with Authority's Rules and Regulations Governing the Acceptance of Industrial Wastes, as they may be amended from time to time.

B. Any authorized officer or employee of Authority may enter and inspect any part of any municipality's sewer system at any time, and may take samples. Any authorized officer or employee of

Authority may enter and inspect industrial premises that discharge to any municipality's sewer system and may take samples. Each municipality shall make all necessary arrangements for such inspections. The right of inspection shall include, without being limited to, on-site inspection of anything on or under industrial premises, observation, measurement, sampling, testing and access to (with the right to copy) all pertinent compliance records located on industrial premises. Each municipality shall enforce the reporting and sampling provisions of Authority's Rules and Regulations Governing the Acceptance of Industrial Wastes as they may be amended from time to time.

C. Each municipality's ordinance shall contain suitable provisions so that Authority shall have the authority (but not the duty) to do such monitoring, sampling, inspecting, information gathering, report-requiring and enforcement as Authority deems appropriate in furtherance of the provisions of this Supplement. Each such ordinance shall require submission to such monitoring, sampling, inspecting, information gathering and report-requiring as Authority may deem appropriate in furtherance of the objectives set forth in 40 CFR 403. Each such ordinance shall require industrial users to pay to Authority service charges to cover the cost of sampling and analysis deemed necessary by Authority. Each such ordinance shall require the installation and operation of monitoring facilities and pretreatment facilities pursuant to Authority's Rules and Regulations Governing the Acceptance of Industrial Wastes, as they may be amended from time to time.

D. Each municipality's ordinance shall contain suitable provisions so that Authority shall have authority to impose upon industrial users a surcharge (hereinafter called Surcharge) to cover such additional costs for treatment as may be incurred by Authority. Such Surcharge shall be in addition to regular sewer service charges and shall be payable to Authority as herein provided:

(i) Determination of Surcharge: The strength of any industrial waste discharge which is to be subject to Surcharge shall be determined as provided in Authority Rules and Regulations covering the acceptance of industrial waste as they may be amended from time to time.

(ii) Calculation of Surcharge: The charges determined as provided in Authority Rules and Regulations shall be a quarterly Surcharge applied in addition to the basic user charge collected through provisions of each municipality's ordinance. Such Surcharge amounts shall be due and collectible by Authority directly from industrial users on a quarterly basis. Each municipality agrees to provide Authority with quarterly industrial waste flow data expressed in million gallons for industrial users identified by Authority as subject to Surcharge provisions herein contained. Each municipality agrees to enforce such available remedies as may be necessary to collect such Surcharge amounts imposed by Authority.

(iii) The dollar amount of any Surcharge collected by Authority from an industrial user shall be deducted from the dollar amount of any penalty charge owed pursuant to Section 5.06 of the

Agreement by the municipality within which such industrial user is located. Surcharges and penalty charges shall not excuse any municipality from complying with the provisions of the Agreement and in particular the provision of Section 5.05 of the Agreement, i.e., Surcharges and penalty charges are not intended to waive the requirement that each municipality keep the characteristics of its discharge within all required limits.

(iv) Collection of Surcharges: Each municipality agrees to make good faith efforts to help Authority collect, or to collect for Authority Surcharges which are not paid to Authority when due. Because of the provisions of the first sentence of the immediately preceding iii hereof, municipalities may want to include in their ordinances such provisions as they deem appropriate to aid their collection efforts, such as requiring that delinquent Surcharges be paid to the municipalities for delivery to the Authority.

E. Each municipality's ordinance shall require that categorical pretreatment standards promulgated by the U. S. Environmental Protection Agency (EPA) [promulgated by authority of the Clean Water Act, Sections 307(b) and (c)] from time to time be automatically incorporated by reference into such municipality's ordinance. Such standards shall supersede any specific discharge limits in such ordinance which are less stringent than the categorical standards as they apply to the particular industrial subcategory. Each municipality shall notify all affected industrial users of pertinent

categorical standards and monitoring and reporting requirements contained in 40 CFR 403.12 or included as part of the categorical standard.

F. Each municipality shall incorporate into its ordinance, inter alia:

(i) A provision requiring any industrial user responsible for a significant accidental discharge to notify immediately both the Authority and such municipality (with such provision being essentially similar to a provision to be set forth in Authority's Rules and Regulations after consulting each municipality);

(ii) A prohibition on the use of dilution as a control technique for compliance with discharge limits except as allowed by Federal Pretreatment Standards (with such provision being essentially similar to a provision to be set forth in Authority's Rules and Regulations after consulting each municipality);

(iii) A grant of authority for Authority to impose mass discharge limits upon industrial users in lieu of, or in conjunction with, concentration discharge limits (with such provision being essentially similar to a provision to be set forth in Authority's Rules and Regulations after consulting each municipality);

(iv) A prohibition against and penalty for the knowing transmittal of false information by an industrial user to either the Authority or such municipality; and

(v) A provision requiring each industrial user prior to

discharging any waste to any sanitary sewer, or prior to continuing discharging any waste to any sanitary sewer ninety (90) days after the actual execution of this Supplement by all parties (unless such time is extended by Authority), to obtain from Authority an industrial discharge permit and enter into an agreement with Authority containing such provisions as Authority may require.

G. Each municipality shall adopt in its ordinance definitions for significant industrial user and industrial user which are identical to the definition of significant industrial user and industrial user adopted by the Authority. The Authority may make the final determination as to whether a particular industrial user is a significant industrial user or industrial user based on information the Authority may request from such municipality and such industrial user. The Authority may control, through industrial discharge permits, industrial waste discharges from each significant industrial user or industrial user discharging into any sewer ultimately discharging into Authority's plant. As a condition precedent to the issuance of an industrial discharge permit, the Authority may require industrial users to enter into agreements with the Authority containing such provisions as the Authority deems appropriate in furtherance of its effort to comply with regulations promulgated by the United States Environmental Protection Agency in 40 CFR 403. Each municipality's ordinance shall require each industrial user to reimburse Authority for Authority's costs (as determined by Authority) in connection with the issuance of an

industrial discharge permit (and any accompanying agreement) for such industrial user. The appropriate municipality shall be given an opportunity to join in each such agreement and add whatever additional provisions it deems necessary for its protection, provided that such additional provisions shall not be less stringent than those included by the Authority. Without the Authority's written consent no municipality shall issue an industrial discharge permit to any significant industrial user or industrial user discharging into any sewer ultimately discharging into Authority's plant. The appropriate municipality shall be given an opportunity to join in each industrial discharge permit issued by Authority and shall be given an opportunity to add whatever additional provisions it deems necessary for its protection, provided that such additional provisions shall not be less stringent than those included by the Authority. Authority agrees not to issue a permit without the consent of the appropriate municipality, but the Authority shall have the right to include any provisions it deems appropriate.

In addition to the foregoing, no municipality shall permit any significant industrial user or industrial user to discharge into any sewer directly or indirectly discharging into any portion of the Valley Creek Trunk Sewer without first obtaining written consent from Tredyffrin Township or Tredyffrin Township Municipal Authority. No municipality shall permit any significant industrial user or industrial user to discharge into any sewer directly or indirectly discharging into any portion of the East Whiteland Trunk Line without first obtaining

written consent from East Whiteland Township or East Whiteland Municipal Authority and from Tredyffrin Township or Tredyffrin Township Municipal Authority.

H. Each municipality shall promptly provide Authority with a certified copy of its ordinance and any amendments thereto, other interjurisdictional agreements, if permitted (unless they pertain to wastewater that cannot reach Authority's sewage treatment plant), and any contract entered into for the purposes of industrial waste control. Each municipality shall provide the Authority access to and copies of all industrial monitoring reports including 40 CFR 403.12 compliance reports, self-monitoring reports, baseline reports, records of violations and actions taken, any other monitoring or reporting imposed by federal, state or local regulations, and any other relevant information. Such records and other relevant information shall be maintained for at least three years.

5. Miscellaneous. A. The provisions of this Supplement are in addition to, and not in derogation of, provisions for the benefit of Authority in said Agreement.

B. Each municipality shall indemnify Authority for all damages, fines and costs incurred as a result of any one or more discharges originating in such municipality. Without limiting the generality of the foregoing, each municipality shall indemnify Authority and shall reimburse Authority for fines and costs directly or indirectly arising from, or related to injury to Authority personnel, damages to

Authority facilities, degradation of sludge quality, NPDES permit violation, and all other air, water and sludge quality violations resulting from such discharges. In addition, each municipality agrees to pay to Authority for application toward actual annual operating expenses of the Treatment Plant a sum calculated by a consulting engineer selected by Authority to be the total of (a)increased treatment costs, (b) increased costs for proper sludge use or disposal, (c) increased engineering and legal fees, and (d) sampling, testing and investigative expenses incurred as a result of any one or more industrial waste discharges originating in such municipality. The final determination as to how payments stipulated in the preceding two sentences shall be allocated shall be made by the certified public accountant who prepares the annual statement mentioned in Section 4.05 of said Agreement. Each municipality agrees to totally and absolutely protect, exonerate, defend, indemnify and save Authority harmless from and against any and all liabilities and costs which may arise out of any one or more industrial waste discharges originating in such municipality and from any and all claims by or on behalf of any person or persons, firm or firms, corporation or corporations arising directly or indirectly from such municipality's violation of any provision of said Agreement or this Supplement and from and against all costs, counsel fees, expenses and liabilities incurred in or about the defense of any claim or action resulting directly or indirectly therefrom. Each municipality agrees that it will not resist a claim by Authority for

indemnification on the grounds that the right to indemnification is not set forth herein with sufficient clarity or particularity. The provisions of this paragraph apply not only to Authority directly, but also to all members, officers, agents and employees, past, present and future of Authority. The parties recognize that whatever is not collected from a municipality pursuant to this paragraph (or from an industry), shall be an operating expense of the Treatment Plant pursuant to Section 4.06 of the Agreement.

The parties agree that the following provision in the Valley Creek Trunk Sewer Agreement: "In order to control the sewage entering Valley Creek Trunk Sewer, Valley Forge Sewer Authority will sample the discharge from each municipality or municipality authority periodically to insure that no characteristic is evident which would be deleterious to the Valley Creek Trunk Sewer or the Valley Forge Treatment Plant or the treatment process" and a similar provision in Section 5.05 of the East Whiteland Trunk Line Agreement merely mean that Authority will do sampling infrequently and does not mean that Authority has undertaken to do sampling as often as might be necessary to insure that no characteristic is evident which would be deleterious to the East Whiteland Trunk Line, or the Valley Creek Trunk Sewer or the Valley Forge Treatment Plant or the treatment process. The parties understand and agree that the Authority has not undertaken to control the sewage entering either the Valley Creek Trunk Sewer, the East Whiteland Trunk Line or the Valley Forge Treatment Plant. The parties agree not to

attempt to use the above-mentioned sentences against the Authority in any way whatsoever, including without being limited to litigation involving the Authority and/or any request by the Authority for indemnification.

The phrase "each municipality" as used in this subsection B of Section 5 shall mean each of the parties to this Supplement except Valley Forge Sewer Authority (which need not agree to indemnify itself) and the townships that have Valley Forge Sewer Authority as their operating authority, namely Charlestown, East Pikeland and Schuylkill Townships; the obligations of each of said three townships with respect to indemnification shall not be increased by this subsection B of Section 5, but shall be whatever they may be pursuant to the Valley Forge Sewer Treatment Plant Agreement dated November 1, 1970, the Valley Creek Trunk Sewer Agreement, as amended, the East Whiteland Trunk Line Agreement, as amended, and the law of Pennsylvania. With respect to discharges originating within any one of said three townships, if no industry nor township is liable, Authority, as an operator of a sewage collection system, agrees to pay to the treatment plant operating fund the amount the township in which such discharge originates would be obligated to pay pursuant to this subsection B of Section 5 if such township were included in the phrase "each municipality."

C. Authority may seek injunctive relief against any industrial user of any municipality's sewer system if such user's discharge reasonably appears to present an imminent danger to the health

or welfare of persons, or the environment, or if a discharge threatens to interfere with the operation of the waste water treatment system; provided, however, that Authority shall not be required to seek injunctive relief, because in any of such events, each municipality, upon request of Authority, agrees promptly to seek injunctive relief against any such industrial user of such municipality's sewer system. In any of such events Authority may immediately take steps to identify the source of the discharge and to halt or prevent such discharge, including, but without being limited to the right to pursue self-help remedies.

D. If there presently exists any industrial user discharging to any municipality's sewer system but located outside the jurisdictional limits of such municipality, then each such municipality shall negotiate and enter into an agreement with such outside jurisdiction. Such agreement shall be substantially equivalent to this Supplement as amended, and shall be jointly executed by such municipality, the Authority, and the outside jurisdiction. If the outside jurisdiction refuses to negotiate and execute an agreement, then such municipality shall enter into a contract with the industrial user which contains terms and conditions substantially equivalent to the Authority's industrial waste discharge agreements.

E. The Authority may review each municipality's ordinance and amendments thereto, and any interjurisdictional agreements if permitted, for conformance with 40 CFR 403 and this Supplement. The

Authority may periodically review the enforcement efforts of each municipality to ascertain whether pretreatment requirements are being diligently enforced. To the extent any municipality administers its own pretreatment program, the Authority may periodically review the pretreatment program activities and funding to ensure that such municipality is adequately administering its pretreatment program in conformance with the Federal Pretreatment Regulations (40 CFR 403) and all Authority requirements.

F. If the Authority determines that any municipality has failed or has refused to fulfill any pretreatment obligations, the Authority may develop and issue a remedial plan containing a description of the nature of the pretreatment deficiencies, an enumeration of steps to be taken by each municipality, and a time schedule for attaining compliance with all pretreatment requirements. Such plans shall be specifically enforceable in a court of competent jurisdiction. Where such municipality fails to satisfy the terms of the remedial plan, the Authority may, upon thirty days written notice, refuse to accept any industrial waste discharges from such municipality.

G. The final paragraph of subsection B of Section 5 of this Supplement shall have priority over this subsection G of Section 5. The townships that have Valley Forge Sewer Authority as their operating authority, namely, Charlestown, East Pikeland and Schuylkill Townships, desire that their obligations not be increased by this Supplement, but that their obligations shall be as they would be if said

townships had not executed this Supplement; provided, however, that with respect to each provision of this Supplement, each of said three townships agrees to do everything required by such provision whenever no Pennsylvania statute gives Valley Forge Sewer Authority the necessary legal authority to adopt, enforce (i.e., be entitled to an order of Court requiring compliance) and fine for violation of a regulation which would ensure compliance with such provision. To the extent that it is possible to segregate the issue of spending money from the issue of indemnification, which is addressed in subsection B of Section 5, said three townships and Valley Forge Sewer Authority have agreed in principle that the Authority will spend Authority funds to administer an industrial pretreatment program.

This Supplement may be executed in any number of counterparts, each of which may be deemed an original.

IN WITNESS WHEREOF, each of the parties hereto has caused this Supplement to be executed and attested by its proper officers, pursuant to the proper action of its governing body as of the day and year first above written.

BOROUGH OF MALVERN

Attest:

Richard A. Di Spirito
Secretary

By: Taylor M. Stauffer
President
Borough Council

(Borough Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

CHARLESTOWN TOWNSHIP

Attest:

Margaret A. Gallagher
Secretary

By: John B. Garrison
Chairman
Board of Supervisors

(Township Seal)



Supplement to Valley Forge Sewage Treatment Plant Agreement

EAST PIKELAND TOWNSHIP

Attest:

Ina D Doyle
Secretary

By: John F Yeager
Chairman
Board of Supervisors

(Township Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

EASTTOWN TOWNSHIP

Attest:

Secretary

By: Chairman
Board of Supervisors

(Township Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

EASTTOWN MUNICIPAL AUTHORITY

Attest:

Joseph L. Bachman
Secretary

By: Douglas H. Bernett
Chairman

(Authority Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

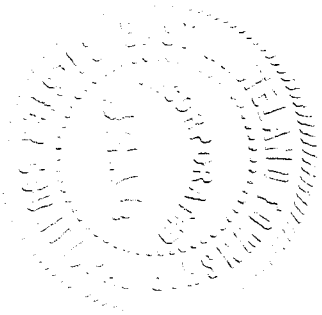
EAST WHITELAND TOWNSHIP

Attest:

By: _____
Chairman
Board of Supervisors

_____
Secretary

(Township Seal)



Supplement to Valley Forge Sewage Treatment Plant Agreement

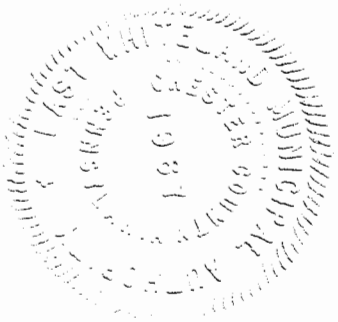
EAST WHITELAND MUNICIPAL AUTHORITY

Attest:

Harold A. Bentley
Secretary
HAROLD A. BENTLEY

By: James S. Cater
Chairman

(Authority Seal)



Supplement to Valley Forge Sewage Treatment Plant Agreement

MALVERN MUNICIPAL AUTHORITY

Attest: _____
Secretary

By: _____
Chairman

(Authority Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

SCHUYLKILL TOWNSHIP

Attest:

By: _____
Vice Chairman
Board of Supervisors

_____
Secretary

(Township Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

TREDYFFRIN TOWNSHIP

Attest:

Secretary

By: Chairman
Board of Supervisors

(Township Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

Attest:

Sandra Kelley
Secretary

By: E. F. Schmitz
Chairman

(Authority Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

VALLEY FORGE SEWER AUTHORITY

Attest: Charles E. Ott
Secretary

By: Joseph Weinstock
Chairman

(Authority Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

WILLISTOWN TOWNSHIP

Attest:

Marcella S Boosel
Secretary

By: Gardner Wise
Chairman
Board of Supervisors

(Township Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

WILLISTOWN MUNICIPAL AUTHORITY

Attest:

Lester Moore
Secretary

By: Edward G Mennig
Chairman

(Authority Seal)

Supplement to Valley Forge Sewage Treatment Plant Agreement

EXHIBIT F5

ADDENDUM TO VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT FOR THE PURPOSE OF PERMITTING AND ADMINISTERING THE SALE OF RESERVED CAPACITY AMONG THE PARTIES, DATED MAY 26, 1994, BY AND BETWEEN VALLEY FORGE SEWER AUTHORITY, THE TOWNSHIPS OF SCHUYLKILL, EAST PIKELAND, CHARLESTOWN, EAST WHITELAND, TREDYFFRIN, WILLISTOWN, AND EASTTOWN; THE BOROUGH OF MALVERN; EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY; EASTTOWN MUNICIPAL AUTHORITY; AND TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

ADDENDUM TO VALLEY FORGE SEWAGE TREATMENT PLANT AGREEMENT FOR THE PURPOSE OF PERMITTING AND ADMINISTERING THE SALE OF RESERVED CAPACITY AMONG THE PARTIES

THIS ADDENDUM dated as of this 4th day of May, 1994 to the Valley Forge Sewage Treatment Plant Agreement dated as of November 1, 1970, as previously amended and supplemented (hereinafter "Agreement") is entered into between the parties to said Agreement, namely, Valley Forge Sewer Authority (hereinafter "Authority"), the Townships of Schuylkill, East Pikeland, Charlestown, East Whiteland, Tredyffrin, Willistown and Easttown, the Borough of Malvern, East Whiteland Township Municipal Authority, Easttown Municipal Authority, and Tredyffrin Township Municipal Authority (hereinafter "Municipalities").

WHEREAS, the Agreement does not expressly permit the sale or purchase of Reserved Capacity as that term is used in the Agreement between or among the Municipalities; and

WHEREAS, in the time that has passed from the date of the Agreement to the present, it has become apparent that the pattern of development and of sewage treatment needs has not occurred entirely in keeping with the projections that formed the basis of the allocation of Reserved Capacity (namely, the allocation set forth in Exhibit "C" to the Agreement), at the time the Agreement was made, with the result that certain of the Municipalities are presently the owners of more Reserved Capacity than they can use while other Municipalities own substantially less Reserved Capacity than is necessary to accommodate their sewage treatment needs; and

WHEREAS, the present Rental Pool system described in the

Agreement as a means for temporarily reallocating Reserved Capacity among the Municipalities does not adequately address the problem of substantial, permanent disparities in the ratios of owned to needed capacities; and

WHEREAS, the parties desire to supplement the Agreement to permit the permanent sale of owned but unused Reserved Capacity among the Municipalities;

NOW THEREFORE, in consideration of the mutual promises herein contained, the parties hereto, intending to be legally bound hereby, agree as follows:

1. For purposes of this Addendum, the term "Reserve Capacity" shall mean the amount of capacity listed for each Municipality in Exhibit "C" as amended of the Agreement, as follows:

Valley Forge Sewer Authority	2.128 MGD
Tredyffrin Township	1.592 MGD
East Whiteland Township	1.696 MGD
Malvern Borough	0.564 MGD
Willistown Township	1.064 MGD
Easttown Township	0.956 MGD
Total Reserve Capacity	8.00 MGD

2. For purposes of this Addendum, the term "Excess Capacity" shall mean the amount of Reserve Capacity allocated to and now owned by a particular Municipality, minus 110% of the maximum amount of capacity projected to be used by the same Municipality as specified in the most recent Annual Report filed by the Authority

pursuant to the Municipal Wasteload Management Regulations, Title 29 Pa. Code Ch. 94, Section 94.12. (the "Chapter 94 Report").

3. No Municipality will be permitted to sell Excess Capacity unless and until it has submitted a proposal to the Authority detailing the proposed sale and said proposal has been reviewed by and approved by both the Authority and DER as being accurate and consistent with a.) the Chapter 94 Reports for the current year and for the 5 years preceeding the submission of the proposal; b.) the current approved Act 537 Plan for the Municipality; c.) the current approved Act 537 Plan for the Valley Forge Sewage Treatment Plant; d.) the current approved Act 537 Plan, if any Act 537 Plan exists, for any conveyance system, including but not limited to interceptors and pump stations that convey sewage from the Municipality to the Valley Forge Sewage Treatment Plant; and e.)it has complied with any requirement, directive or recommendation of the Pennsylvania Department of Environmental Resources ("DER") to update, amend or supplement its Act 537 Plan and said Plan has been reviewed and approved by DER.

4. Forms for the submission of a sale proposal to be used by a Municipality that wishes to sell Excess Capacity shall be developed by the administrative staff of the Authority. In addition to the information necessary to verify the amount of Excess Capacity available for sale, the format developed by the Authority will provide for the seller to state the price per unit (in either millions of gallons per day (MGD) or equivalent dwelling units (EDU)) that the seller requires as payment for Excess

Capacity.

5. Once the Authority has reviewed the proposal, and the availability of Excess Capacity has been confirmed by the Authority and by DER, the Authority shall notify the Municipalities of the offer to sell, including the price and the number of units available. Notice will be given by certified first class mail, express courier, or by receipted hand delivery to each Municipality's authorized officer or employee. Notice will be deemed to have been given on the date mailed.

6. A Municipality will be permitted to offer to purchase the available Excess Capacity in an amount that is in the same proportion of its Reserved Capacity to the total Reserved Capacity, of the other Municipalities eligible to purchase, adjusted to remove from the calculation the Reserved Capacity share of the seller.

7. Within 10 working days of the giving of notice, each Municipality must either a.) indicate by written notice to the Authority that it does not wish to purchase any amount of capacity at the stated price or, b.) that it wishes to purchase a specific amount of capacity at the stated price. The amount specified may be equal to, greater than, or less than the amount that the Municipality would be permitted to purchase if all of the eligible municipalities desire to purchase capacity. If a Municipality fails to reply to the notice within the time provided, it will be deemed to have waived its right to purchase the capacity offered. Each Municipality will provide to each other Municipality a copy of

its reply to the notice of capacity available for sale.

8. Municipalities that have indicated that they do not wish to purchase capacity at the stated price or are deemed to have waived their right to purchase will be eliminated from the pool of eligible purchasers and the remaining eligible purchasers will be entitled to purchase a greater amount of capacity by virtue of the non-purchasers potential shares being redistributed to the remaining purchasers.

9. In no event shall the amount of Excess Capacity offered for sale exceed the amount of Reserve Capacity currently being rented by the potential purchasers from the Rental Pool, unless there is no capacity being rented by any of the Municipalities that are parties to the Agreement.

10. After receipt of all of the responses from the Municipalities, the Authority shall determine the amount of capacity to be purchased by each eligible participant. Each Municipality will be permitted to purchase the amount of capacity that is equal to its share of the total capacity available, or the amount that the Municipality wishes to purchase, whichever is less.

11. Any capacity not allocated after the initial allocation will be allocated by the Authority to the Municipalities that indicated that they wished to buy more capacity at the stated price than they were initially permitted to purchase pursuant to paragraph 6 above. This step may be repeated as many times as necessary until all of the Municipalities that indicated a desire to purchase capacity have been allocated as much as they sought, or

until 100% of the capacity has been allocated, whichever first occurs.

12. The remaining excess capacity will be allocated to any of the eligible purchasers who have not yet been permitted to purchase the full amount that they originally specified in response to the offer to sell. This allocation will be made based on the relative shares of the remaining eligible purchasers. [1]

13. Any Excess Capacity that remains unsold may be retained by the seller. The seller has the option of offering the remaining capacity for sale at a different price. Any such offer will be

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[1] By way of illustration only, the following example illustrates such a transaction:

Five municipalities are parties to the agreement. Municipality X has 1000 units of excess capacity to sell. The other four municipalities own capacity as follows:

A 4000 units
B 3000 units
C 2000 units
D 1000 units
X 2000 units

The shares owned by X are irrelevant to the calculation so the shares of the remaining municipalities are based on total capacity of 10000 units as follows: A - 40%, B - 30%, C - 20%, D - 10%. Assuming they have all submitted all necessary reports and documentation, they are each entitled to buy up to their percentage share of the units being sold by X.

Now assume that they indicate to the Authority that they wish to purchase the following amounts: A - 1000 units, B - no units, C - 100 units, D - 200 units.

A will be allocated 400 units, C will be allocated 100 units and D will be allocated 100 units, for a total of 600 units, leaving 400 un-allocated.

B and C have now received the maximum number of units that they are willing to purchase at the stated price, so their shares are removed prior to allocating the remainder. A and D originally owned a total of 5000 units, with A owning 80% and D owning 20%. A will now be permitted to purchase an additional 320 units and D may purchase the remaining 80.

treated as a new sale and all parties to the Agreement will have the opportunity to participate, regardless of whether they purchased capacity at the original sale.

14. It is the intention of the parties that, while the Rental Pool as described in the Agreement will continue to operate as a means of temporarily reallocating capacity, the contribution of capacity to the Rental Pool and the Renting of Capacity from the Pool shall henceforth be considered to be at the option of the individual Municipalities rather than as mandatory.

15. It is the intention of the parties that a Municipality that sells Excess Capacity will not be automatically entitled to or required to own Excess Capacity in the event that the Valley Forge Sewage Treatment Plant is expanded pursuant to the Agreement. Rather, the capacity following expansion will be determined based on the Municipality's actual projected need.

16. This Addendum shall become effective upon its adoption by motion and majority vote of the parties.

IN WITNESS WHEREOF, each of the parties hereto, have caused this Addendum to be duly executed as of the day and year first above written.

VALLEY FORGE SEWER AUTHORITY

Attest: _____ By: _____

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

[CONTINUATION OF SIGNATURES]

TOWNSHIP OF SCHUYLKILL

Attest: _____ By: _____

TOWNSHIP OF EAST PIKELAND

Attest: _____ By: _____

TOWNSHIP OF CHARLESTOWN

Attest: _____ By: _____

TOWNSHIP OF EAST WHITELAND

Attest: _____ By: _____

TOWNSHIP OF TREDYFFRIN

Attest: _____ By: _____

TOWNSHIP OF WILLISTOWN

Attest: _____ By: _____

TOWNSHIP OF EASTTOWN

Attest: _____ By: _____

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

[CONTINUATION OF SIGNATURES]

BOROUGH OF MALVERN

Attest: _____ By: _____

EAST WHITELAND TOWNSHIP
MUNICIPAL AUTHORITY

Attest: _____ By: _____

EASTTOWN MUNICIPAL AUTHORITY

Attest: _____ By: _____

TREDYFFRIN TOWNSHIP
MUNICIPAL AUTHORITY

Attest: _____ By: _____

EXHIBIT F6

EAST WHITELAND TRUNK LINE AGREEMENT, DATED FEBRUARY 1, 1971, BY AND BETWEEN EAST WHITELAND MUNICIPAL AUTHORITY, THE TOWNSHIP OF EAST WHITELAND, MALVERN MUNICIPAL AUTHORITY, THE BOROUGH OF MALVERN, AND VALLEY FORGE SEWER AUTHORITY

Rev.
2/10/71

copy for Dr Weinstock to keep

EAST WHITELAND TRUNK LINE AGREEMENT

THIS AGREEMENT, dated as of the first day of February, 1971, by and between EAST WHITELAND MUNICIPAL AUTHORITY (East Whiteland Authority), a municipal authority organized by the Township of East Whiteland and operating under the provisions of the Municipality Authorities Act of 1945, the Act of May 2, 1945, P.L. 382, its supplements and amendments, and the TOWNSHIP OF EAST WHITELAND (East Whiteland Township), a second class township, parties of the first part, and MALVERN MUNICIPAL AUTHORITY (Malvern Authority) and the BOROUGH OF MALVERN (Malvern), parties of the second part, and VALLEY FORGE SEWER AUTHORITY, party of the third part, all of said parties being municipal authorities or political subdivisions within the County of Chester, Commonwealth of Pennsylvania.

W I T N E S S E T H :

WHEREAS, the parties hereto have constructed or provided for or are about to construct or provide for sanitary sewer collection systems; and

WHEREAS, the parties desire to dispose of sewage described hereinafter by a treatment plant (hereinafter called the "Valley Forge Treatment Plant") to be located on the Schuylkill River in Schuylkill Township, Chester County, Pennsylvania, which treatment plant is to be constructed and operated by Valley Forge Sewer Authority (a municipality authority formed by Schuylkill, East Pikeland and Charlestown Townships); and

WHEREAS, a substantial portion of the sewage emanating from within the municipalities which is to be disposed of by the aforesaid treatment plant is to be discharged into and conveyed to the aforesaid treatment plant by interceptors or trunk sewers to be constructed by Tredyffrin Township Municipal Authority (Tredyffrin Authority), which interceptors or trunk sewers, including pumping stations and appurtenances are hereinafter called, collectively, the "Valley Creek Trunk Sewer", are to be leased by Tredyffrin Authority to the Township of Tredyffrin, which will operate said Valley Creek Trunk Sewer; and

WHEREAS, all of the sewage emanating from Malvern, which is to be disposed of by the Valley Forge Treatment Plant must pass through East Whiteland to reach the Valley Creek Trunk Sewer; and

WHEREAS, East Whiteland Authority has agreed to construct an interceptor or trunk sewer which will be called the East Whiteland Trunk Line, and Malvern Authority and Malvern have indicated they will utilize said Trunk Line and share in the cost of its construction and operation for the mutual benefit of the parties.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS HEREIN CONTAINED, the parties hereto, intending to be legally bound hereby, covenant and agree as follows:

ARTICLE I

CONSTRUCTION OF EAST WHITELAND TRUNK LINE

1.01 Engineering Services.

Each party hereby approves the contract dated June 20, 1966, between East Whiteland Authority and Roy F. Weston, Inc. (hereinafter called the "Consulting Engineers"), for engineering

services in respect of the construction of sewerage facilities to serve the East Whiteland Township and interceptors or trunk sewers, and appurtenances, to be located as set forth on the attached Exhibit "A" - the East Whiteland Trunk Line. A copy of said contract having been delivered to each party, the municipalities and municipality authority set forth in Exhibit "B" (hereinafter referred in this Article I as the "municipalities") agree to share the cost of such engineering design in accordance with the percentages applicable to each section or reach of said trunk line set forth in Exhibit "B" attached hereto. The parties hereto likewise agree to share the cost of surveys and test borings incident to the aforesaid design in accordance with said percentages. When payments for such engineering design, surveys and test borings fall due from time to time, each such municipality upon receipt of a copy of an invoice from the Consulting Engineers, shall promptly pay or cause to be paid to East Whiteland Authority for delivery to the Consulting Engineers (or, upon request of East Whiteland Authority, directly to the Consulting Engineers) that percentage of such invoice as is set forth in said Exhibit. Nothing herein contained shall be construed so as to make any party hereto (other than East Whiteland Authority) a party to said contract between East Whiteland Authority and the Consulting Engineers. If any payment required of a party hereto under this Section 1.01 is not made within thirty (30) days of the receipt of the aforesaid copy of invoice, interest shall accrue at the rate of six per cent (6%) per annum from such date.

1.02 Design Capacity; Construction of East Whiteland Trunk Line.

For each such municipality listed in Exhibit B, said East Whiteland Trunk Line shall provide the design capacity (reserved capacity) for each secion or reach of the respective interceptor or trunk sewers as set forth after the name of each such municipality in said Exhibit. East Whiteland Authority, in accordance with said contract with the Consulting Engineers shall cause plans and specifications for the East Whiteland Trunk Line to be completed with all reasonable dispatch. East Whiteland Authority, upon receipt of capital contributions as provided in Article II hereof shall award construction contracts and cause the East Whiteland Trunk Line to be constructed with reasonable dispatch, all in accordance with said plans and specifications and sound engineering principles.

1.03 Review and Inspection.

Throughout the term of this Agreement, East Whiteland Authority shall cause the Consulting Engineers to make available at reasonable times and places any information concerning the design, construction and operation of the East Whiteland Trunk Line reasonably requested by Malvern Authority or Malvern. Members of the governing body of Malvern and the consulting engineers, employees and representatives of Malvern shall have the right at all reasonable times during construction and thereafter to inspect the construction and operation of the East Whiteland Trunk Line and all records of East Whiteland Authority and East Whiteland Township in respect thereof. East Whiteland Authority and East Whiteland Township, at reasonable times, shall receive and consider the opinions, comments and suggestions of Malvern or Malvern Authority and of the

consulting engineer of Malvern and Malvern Authority.

1.04 Date of completion of East Whiteland Trunk Line.

East Whiteland Authority shall make every reasonable effort to cause the East Whiteland Trunk Line to be completed with reasonable dispatch.

ARTICLE II

CAPITAL CONTRIBUTIONS

2.01 Percentages.

Subject to limitations hereinafter provided, each of the municipalities and municipality authorities listed in Exhibit B attached hereto (hereinafter referred to in this Article II as the "municipalities") shall bear the percentage of the total project cost of constructing the several sections or reaches of the respective interceptor or trunk sewers of the East Whiteland Trunk Line as set forth after its name in said Exhibit B, which lists the reserved capacity requirements of each party in each such section or reach of sewer, and are referred to hereinafter as "said percentages". The total estimated project cost of constructing the East Whiteland Trunk Line and of each section or reach thereof to be constructed as part of said Trunk Line is set forth in Exhibit B. The total project cost of constructing the East Whiteland Trunk Line shall include construction contract payments, land costs, engineering, surveying, boring and construction representation fees and expenses (other than those paid for under Section 1.01 hereof), legal fees incident to the construction (including preparation and review of

documents needed before construction can commence), a reasonable contingency fund and all other charges, costs and expenses incident to such construction and which are properly chargeable thereto under sound accounting practice but excluding (i) financing costs and (ii) all costs and expenses properly chargeable to East Whiteland Authority for construction of the balance of its own sewage collection system under sound accounting practice. Allocation of costs and expenses between the cost of constructing the East Whiteland Trunk Line and the cost of constructing of the balance of said collection system of East Whiteland Authority shall be subject to adjustment upon audit as provided for hereinafter.

2.02 Payment of Capital Contributions.

No capital contribution in respect of construction shall be due hereunder unless prior to the date of payment plans and specifications for the East Whiteland Trunk Line and revisions thereof, if any, have been approved by the municipalities. Disapprovals may be based only on sound engineering reasons. Within sixty (60) days of the date on which construction bids are received by East Whiteland Authority (or, in the event of increased costs requiring approval pursuant to Section 2.03 hereof, within sixty (60) days of approval pursuant thereto) time being of the essence of this Agreement, each of said municipalities listed in Exhibit B shall pay to East Whiteland Authority the total of (1) the share of the estimated total project cost of constructing the East Whiteland Trunk Line set forth in dollars after its name in Exhibit B, (2) said percentage of the amount by which the total project cost as stated by the Consulting Engineers after

the receipt of construction bids exceeds the estimates set forth in Exhibit B, up to an increase of 15% of said estimates, and (3) such amount as may be due pursuant to the next succeeding Section hereof.

2.03 Change in Project Cost.

In the event, after the receipt of construction bids, the total project cost (before deducting any federal or state grants) of constructing the East Whiteland Trunk Line is increased by more than 15% of the estimate set forth in Exhibit B, and such a revision is approved by Malvern Authority, each municipality listed in Exhibit B shall pay said percentage of said increase to East Whiteland Authority by the time set forth in the preceding section. In the event, after receipt of construction bids, the total project cost of constructing the East Whiteland Trunk Line is less than the estimate set forth in Exhibit B, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.

2.04 Grants.

Each party authorizes and directs East Whiteland Authority on behalf of each such muncipality or municipality authority from time to time to apply for and accept all available grants in aid towards any East Whiteland Trunk Line construction costs and any East Whiteland Trunk Line operating costs of any nature to be used in accordance with this Agreement. All Federal and State grants received by any such municipality properly

allocable to and to be applied to the project cost of constructing the East Whiteland Trunk Line shall be paid to East Whiteland Authority and the total payment to be made by each municipality under Sections 2.01 and 2.02 hereof shall be reduced proportionately by such grant or grants.

All Federal and State grants received by East Whiteland Authority which are properly allocable to the project cost of constructing the East Whiteland Trunk Line shall be applied by East Whiteland Authority to the payment of such project cost or in reimbursement of expenditures so made and the total payment to be made by each municipality under Sections 1.01, 2.01 and 2.02 hereof shall be reduced accordingly. If any such Federal or State grants shall have been awarded to East Whiteland Authority and an agreement with the appropriate Federal or State agency executed on or before the date capital contributions are to be made under Section 2.02, then such total payment to be made by each municipality shall be reduced appropriately. If any such Federal or State grant is awarded or the agreement with the appropriate Federal or State agency executed by East Whiteland Authority after the aforesaid payments have been made by the municipalities under Section 2.02, such grants shall be applied in the computation of any surplus or deficiency of capital contribution pursuant to Section 2.08 hereof.

Federal and State grants which are allocable to the project cost of constructing the East Whiteland Trunk Line and other portions of the sewer system constructed by East Whiteland Authority and used as collector sewers to serve East Whiteland Township shall be apportioned by the Consulting Engineers between the project cost of constructing the East Whiteland Trunk Line and such other portions of said sewer system and the portion of such grants thus determined to be allocable to the project cost

of constructing the East Whiteland Trunk Line shall be applied to the payment of the project cost of the East Whiteland Trunk Line or in reimbursement of expenditures so made.

All Federal and State contributions or grants in aid received by any of said municipalities properly allocable to and to be applied towards any cost of operation, maintenance, repair, replacement, or other expenses relating to the East Whiteland Trunk Line shall be paid over to East Whiteland Township and shall be deducted in determining actual annual operating expenses of the East Whiteland Trunk Line in accordance with Section 4.07 hereof.

2.05 Construction Fund.

East Whiteland Authority shall deposit all amounts delivered by all parties to it pursuant to this Article, together with East Whiteland Authority's share and all amounts received in payment of Federal and State grants allocable to the project cost of constructing the East Whiteland Trunk Line, in a special East Whiteland Trunk Line Construction Fund (hereinafter called "Construction Fund"). Such Construction Fund moneys shall be held and invested by a Trustee selected by East Whiteland Authority and to the extent not insured by the Federal Deposit Insurance Corporation or other Federal agency, or invested as hereinafter provided shall be continuously secured by the pledge of direct obligations of the United States of America or the Commonwealth of Pennsylvania having an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys. Such moneys may be wholly or partially invested by said Trustee only in direct obligations of the United States of America and certificates of deposit which

shall mature or shall be subject to redemption at the option of the holder not later than one year from the date of such investment. Any securities so purchased shall be a part of the Construction Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added or charged to the Construction Fund and such interest, income, profit or loss shall be considered in the computation of any surplus or deficiency as provided in Section 2.08. Moneys paid to the East Whiteland Authority pursuant to this Agreement shall at all times be segregated in books of account from moneys received by East Whiteland Authority for any other purpose.

2.06 Construction Fund Requisitions.

East Whiteland Authority agrees that payments from the East Whiteland Trunk Line Construction Fund shall be made only upon requisitions, copies of which shall be available to any of said municipalities, duly executed by authorized representatives of East Whiteland Authority stating: (a) the amount requested; (b) the obligation for or the account for which the requisition is made, showing separately the total obligation, the amount already paid, if any, and the balance remaining to be paid; (c) the person to whom the payment shall be made and his address; (d) that the item for which requisition has been made has not been paid and (e) with respect to such item there are no vendors', mechanics' or other liens or secured transactions which will not be discharged by such payment.

In case of payments under construction contracts, such requisitions shall also contain a certificate of the Consulting

Engineers certifying approval of the requisition and further certifying that such obligation has been properly incurred and is then due and unpaid and that insofar as such obligation was incurred for work, materials, supplies or equipment, such work was actually performed or such materials, supplies or equipment were actually installed in or about the construction of the East Whiteland Trunk Line, or delivered at the site of the work for that purpose, or delivered for fabrication at the place approved by the Consulting Engineers; and that all work done and materials, supplies or equipment for which such obligation was incurred are, in the Consulting Engineers' opinion, in accordance with the plans and specifications.

2.07 Change Orders.

East Whiteland Authority agrees to notify each of said municipalities of all changes or alterations in the East Whiteland Trunk Line plans and specifications. No change order concerning said plans and specifications in excess of $25,000. shall be approved by East Whiteland Authority unless it has previously been approved by Malvern Authority; provided, however, that if written notification of disapproval is not received by the East Whiteland Authority within ten (10) days of the date requested for approval of any change order is delivered to an officer of Malvern Authority, such change order shall be deemed to have been approved by such municipality. East Whiteland Authority further agrees that, without the prior approval of Malvern Authority, no change or alteration will be made in any of the plans and specifications of the Consulting Engineers, in respect to the

East Whiteland Trunk Line, which will cause the cost of construction to exceed the amount available in the East Whiteland Trunk Line Construction Fund.

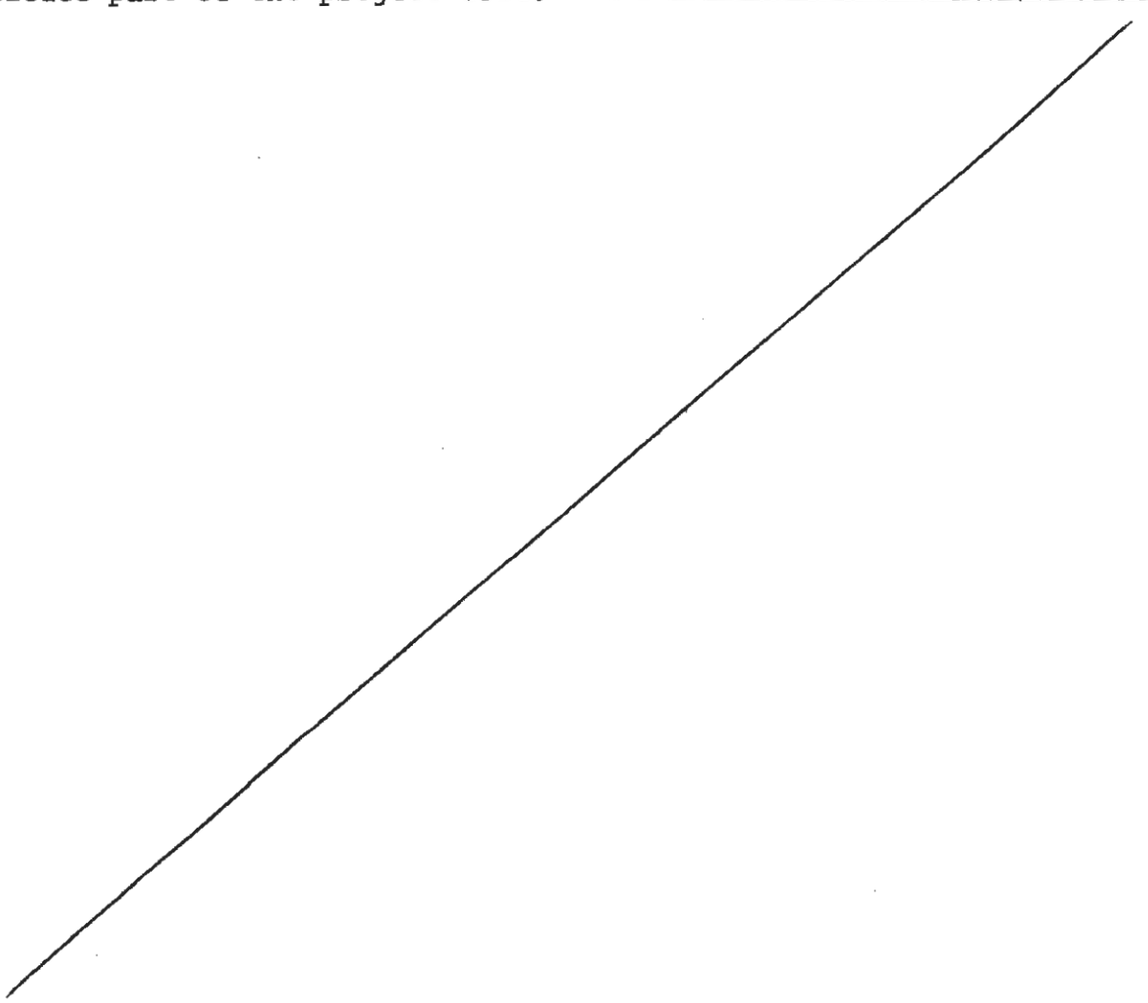
2.08 Distribution of Construction Fund.

Upon completion of the construction of the East Whiteland Trunk Line, East Whiteland Authority shall deliver to each party a certificate of the Consulting Engineers stating (a) the fact of such completion and (b) in reasonably itemized form, the actual project cost of constructing the East Whiteland Trunk Line (i) after deducting therefrom the unexpended contingency fund, if any, and the amount of any applicable Federal or State grants paid into Construction Fund and not previously used to reduce payments in accordance with Section 2.04 and (ii) after making appropriate adjustments in respect of net income, gain or loss from investments. If any municipality's share of the actual cost of constructing the East Whiteland Trunk Line after adjustments (i) and (ii) is less than the total amount deposited by it as required by this Agreement, the excess of such deposits shall forthwith be refunded to such municipality if no municipality, within sixty (60) days of receipt of said certificate, has requested a readjustment or audit and, in the event of such a request, shall be refunded promptly after the matter is resolved. A deficiency, if any, incurred in accordance with this Agreement shall be charged to and paid by each such municipality in said percentages and shall be due within thirty (30) days of notice to pay, and if not then paid, shall be subject to interest at the rate of six per cent (6%) per annum until paid. Prior to

completion of the East Whiteland Trunk Line, East Whiteland Authority may make one or more interim distributions on the basis of information then available, which distributions shall be subject to adjustment at the time of final distribution.

2.09 Audit of Project Cost.

The said certificate of the Consulting Engineers as to the actual project cost of constructing the East Whiteland Trunk Line and the records from which it is compiled shall be audited by a certified public accountant selected by East Whiteland Authority and the expense of such audit shall constitute part of the project cost.



ARTICLE III

DELIVERY AND ACCEPTANCE OF SEWAGE

3.01 Delivery.

Malvern Authority, at its own expense, shall during the term of this Agreement cause all sewage emanating from The Borough of Malvern to be discharged into East Whiteland Trunk Line. Except as permitted pursuant to Article VII hereof, Malvern Authority shall not exceed the capacity reserved by it.

3.02 Acceptance.

Malvern shall commence delivering its sewage to the East Whiteland Trunk Line as soon as practicable after (a) the East Whiteland Trunk Line is sufficiently complete to provide service (as certified by the Consulting Engineers engaged by East Whiteland Authority) and (b) the Valley Creek Trunk Sewer is sufficiently complete to provide service (as certified by the Consulting Engineers engaged by Treddyffrin Authority) and (c) the treatment plant to be constructed by Valley Forge Sewer Authority to receive and treat the aforesaid sewage is sufficiently complete to provide service (as certified by the consulting engineers engaged by Valley Forge Sewer Authority in respect of the design and construction of said treatment plant). East Whiteland Authority, as soon as practicable after the East Whiteland Trunk Line and the Valley Creek Trunk Sewer and the aforesaid treatment plant are sufficiently complete to provide service as so certified, shall permit connections at the locations that East Whiteland Authority may agree to, which agreement may not be unreasonably withheld and shall accept sewage for conveyance to the aforesaid treatment plant subject to the terms and conditions herein set forth.

ARTICLE IV

OPERATING EXPENSES OF THE EAST WHITELAND TRUNK LINE

4.01 Proportion.

The Borough of Malvern and the Township of East Whiteland (which Borough and Township in this Article IV are referred to as "said municipalities") shall share the operating expenses of the East Whiteland Trunk Line (as defined in Section 4.06) as follows: The proportion that the volume of sewage (determined as hereinafter provided and by other agreement of the parties) emanating from each such municipality and discharged into the several sections or reaches of the interceptor or trunk sewer, constituting the East Whiteland Trunk Line bears to the total volume of sewage discharged by both of said municipalities into such sections or reaches shall be used in calculating the amount that each such municipality shall pay for sewage conveyance services. Operating expenses of the East Whiteland Trunk Line for the first two years of operation shall be paid as set forth in Section 4.13 hereof.

4.02 Estimates of Volume of Sewage.

In order to provide East Whiteland Township with working capital for payment of operating expenses of the East Whiteland Trunk Line, at least one hundred twenty (120) days prior to the end of the first two years of operation of the East Whiteland Trunk Line each said municipality shall supply or cause to be supplied to East Whiteland Authority an estimate of the volume of sewage to be discharged from its sewage collection system into the East Whiteland Trunk Line during the next succeeding calendar Year (or portion of a calendar year remaining after the end of the first two years of operation).

4.03 Estimated East Whiteland Trunk Line Operating Expenses.

Within sixty (60) days after receipt of the estimates provided under the preceding section, East Whiteland Township shall prepare, subject to the

approval of its consulting engineers, and furnish to Malvern, a budget setting forth (a) the estimated annual operating expenses of the several sections or reaches (including at least ten percent (10%) for contingencies) and (b) the share of each said municipality of such operating expenses (the share of each said municipality being an amount which is in the same ratio to the total of such expenses as the estimated volume of sewage from such municipality discharged in the several sections or reaches of the East Whiteland Trunk Line is to the total estimated volume of sewage from both of the said municipalities so discharged or served). If at any time it appears on the basis of past or current meter readings that the estimate of Malvern is substantially inaccurate, East Whiteland Township may revise said estimate based on such past or current meter readings and Malvern shall promptly make payments in accordance with the revised estimate.

In the event of an unusual contingency, an upward revision of the budget may be made by East Whiteland Township with the approval of Malvern, which approval shall not be unreasonably withheld; provided, however, that the budget may be exceeded without such prior approval in an emergency directly affecting the operation of the East Whiteland Trunk Line and certified by the consulting engineers engaged by East Whiteland Authority or East Whiteland Township to require immediate action. Each such municipality shall make payments in accordance with the revised budget within sixty (60) days of receipt of notice thereof. In the event a municipality is not able legally to obtain funds with which to pay all of its share of the budget increase, any unpaid amount shall be paid by it in the following year together with interest at the rate of six percent (6%) per annum until paid.

4.04 Payments on account of Estimated Operating Expenses.

On or before each January 1, April 1, July 1 and October 1 during the term of this Agreement, Malvern shall pay to East Whiteland Township (out of legally available current revenues and from sewer rentals) one quarter (1/4) of its share of the estimated annual operating expenses of the East Whiteland Trunk Line as determined in accordance with the preceding section (prorated if the two-year period referred to in Section 4.01 ends during rather than at the start of a quarter). Amounts not paid when due shall be subject to interest in the amount of six percent (6%) per annum of the amount due. Said interest shall be due from time to time upon the receipt of invoices from East Whiteland Township. In the event of a default in payment under this Section, East Whiteland Township may borrow all or part of the amount of such payment due hereunder and may use such interest to pay, or reimburse itself for paying, interest on such borrowed funds. Interest not so used shall be treated as a deduction under Section 4.07 hereo in determining actual annual operating expenses of the East Whiteland Trunk Line.

East Whiteland Township shall deposit all moneys delivered by all parties to it pursuant to this Article, together with the East Whiteland Township's share and all amounts received in payment of Federal and State contributions or grants in aid to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the East Whiteland Trunk Line, in a special East Whiteland Trunk Line Operating Fund (hereinafter called "Operating Fund"). Such Operating Fund moneys shall be invested by East Whiteland Township and to the extent not insured by the Federal Deposit Insurance Corporation or other Federal Agencies, or invested as hereinafter provided shall be continuously secured by the pledge of direct obligations of the United States of America or the Commonwealth of Pennsylvania having an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys.

Such moneys may be wholly or partially invested by said Township subject to the same limitations set forth in Section 2.05. Any securities so purchased shall be a part of the Operating Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added to or charged to the Operating Fund and such interest, income, profit or loss shall be considered in determining the actual annual operating expenses of the East Whiteland Trunk Line pursuant to Section 4.06 hereof.

4.05 Annual Statement.

Within one-hundred twenty (120) days of the close of each calendar year, East Whiteland Township shall cause to be prepared and submitted to each of said municipalities a detailed statement, certified by a certified public accountant engaged by East Whiteland Township, showing the actual annual operating expenses of the East Whiteland Trunk Line (as defined in the next succeeding Section) and the apportionment of the cost among the said municipalities on the basis of Section 4.01.

4.06 Actual Annual Operating Expenses of the East Whiteland Trunk Line.

"Actual annual operating expenses of the East Whiteland Trunk Line" shall mean the sum of the costs referred to in subsections (a) through (f) hereof minus the deductions referred to in Section 4.07 hereof:

(a) All the actual reasonable expenses and costs of the adequate proper operation, maintenance and repair of the East Whiteland Trunk Line as the same may be constituted from time to time, determined in accordance with sound accounting practices and shall include, without limiting the generality of the foregoing, salaries and wages of operating, supervisory and administrative personnel directly charged to the operation, maintenance and repair of the East Whiteland Trunk Line (but in the event such personnel are also engaged in other activities of a municipality, shall include only that proportion of such salaries

and wages as is properly allocable to such operation, maintenance and repair on the basis of time spent or services performed); pensions, social security or unemployment taxes; chemicals; power; taxes (if any); insurance; administrative expenses; materials and supplies; maintenance; and repairs, improvements and betterments (including ordinary or routine repairs and replacements but not extraordinary replacements or additions of a capital nature which latter shall be treated in the manner provided for expansion in Section 7.02, except to the extent that Article VIII shall apply);

(b) The fees and expenses of the Consulting Engineers employed by East Whiteland Township concerning the operation, maintenance and repair of the East Whiteland Trunk Line and in preparing reports and determinations required by this Agreement;

(c) The fees and expenses of the certified public accountant engaged by East Whiteland Township to prepare the annual statement;

(d) Interest paid by East Whiteland Township pursuant to Section 4.04 hereof;

(e) The cost of that portion of the bond of the Treasurer and other officers or employees of East Whiteland Township attributable to his or their duties in connection with East Whiteland Trunk Line, under sound accounting practices; and

(f) Reasonable expenses of East Whiteland Township in providing service pursuant to this Agreement and attributable to the East Whiteland Trunk Line under sound accounting practices.

4.07 Deductions.

Any Federal or State contributions or grants in aid received by any party which is to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the East Whiteland Trunk Line shall be

paid to East Whiteland Township and shall be deducted in determining actual annual operating expenses of the East Whiteland Trunk Line. Interest properly allocable thereto pursuant to Section 4.04 and interest earned by East Whiteland Township on funds deposited in the Operating Expense Fund pursuant to Section 4.03 or Section 4.13 shall be deducted in determining such actual operating expenses.

4.08 Refunds of Additional Payments.

If any such municipality's share of the actual annual operating expenses of the East Whiteland Trunk Line is less than (or more than) the total amount paid by it under this Article in such calendar year, the excess shall forwith be refunded to such municipality (or the deficiency shall forthwith be paid by it) if no municipality within sixty (60) days of receipt of an annual statement has requested arbitration in accordance with Article IX and in the event of such a request, any excess (or deficiency) shall be refunded (or paid) within thirty (30) days after the matter is resolved. Amounts not paid when due shall be subject to interest at the rate of six percent (6%) per annum of the amount due and shall be subject to the provisions concerning interest of Section 4.04 hereof.

4.09 Use of Funds.

East Whiteland Township agrees that payments made by the said municipalities to East Whiteland Township on account of its share of operating expenses of the East Whiteland Trunk Line shall be applied only for the payment of actual operating expenses as defined in Section 4.06, subject to Section 4.07, and that such payments shall not be applied toward the payment of any other obligations or East Whiteland Township.

4.10 Books of Account.

In order that expenses of East Whiteland Township which are not properly allocable to the construction or operation of the East Whiteland Trunk Line shall

not be charged thereto, East Whiteland Township shall keep separate books of account for the operation of its collection system and for the East Whiteland Trunk Line or such books of account and other records which would readily permit such allocation. Said books and records shall be available for inspection by the municipalities at all times.

4.11 Sewer Rentals.

To insure the availability of current revenues adequate to meet its obligations under this Agreement, each said municipality shall impose and collect annual sewer rentals in an aggregate amount sufficient, together with other legally available funds, to equal (a) all sums payable by it to East Whiteland Township during the then current calendar year under this Agreement and (b) all sums payable by it to any other person, firm, corporation, municipality or municipality authority during the then current calendar year for or in respect to sewer purposes.

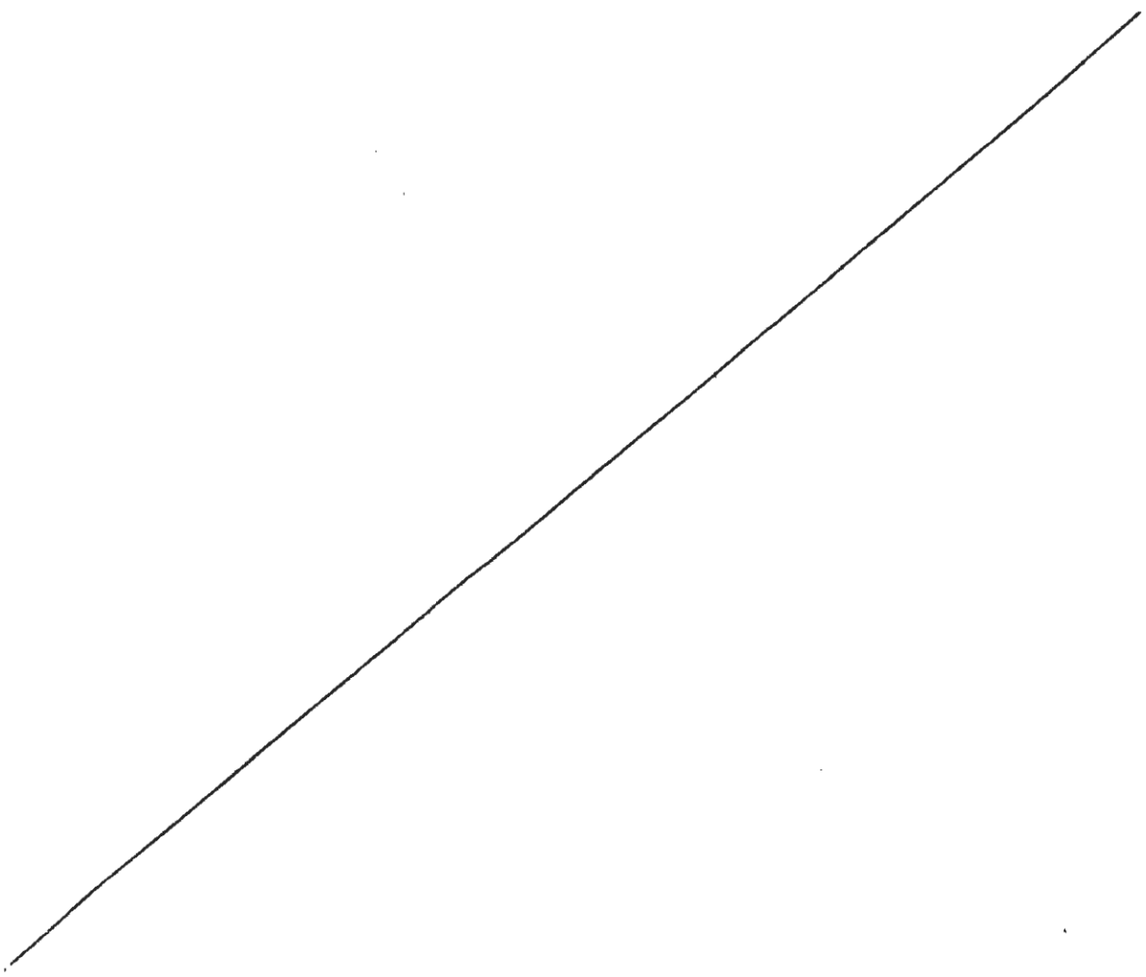
4.12 Commencement of Discharge into East Whiteland Trunk Line.

Each party shall make every reasonable effort to be ready to begin to discharge sewage into the East Whiteland Trunk Line by the time it and the Valley Creek Trunk Sewer are ready to receive sewage, and the aforesaid Valley Forge Treatment Plant is ready to treat and dispose of sewage.

4.13. Operating Expenses for the First Two Years.

Each such municipality set forth in Exhibit B shall pay to East Whiteland Township its share of the estimated operating expenses of the East Whiteland Trunk Line for the first two years of operation set forth after its name in Exhibit B (on the basis of reserved capacity) within thirty (30) days of receipt of the Certificates of the Consulting Engineers engaged by East Whiteland Authority, Tredyffrin Authority and Valley Forge Sewer Authority provided in Section 3.02. Said operating expense moneys for the first two years of operation shall be deposited in an Operating Expense Fund in the name of East Whiteland

Township separate and apart from any other fund of such Township. Investment of such moneys by East Whiteland Township shall be made subject to the same limitations set forth in Section 2.05 hereof. Within one hundred twenty (120) days of the close of said first two years of operation, East Whiteland Township shall cause a certified public accountant to prepare and submit to each participating municipality a detailed statement showing the actual annual operating expenses of the East Whiteland Trunk Line (as defined in Sections 4.06 and 4.07 hereof) and the apportionment of the cost among the said municipalities on the basis of reserved capacities as set forth in Exhibit B hereof. If at the end of the second year of operation the amount deposited hereunder by any municipality differs from the amount due, refunds or additional payments shall be made pursuant to Section 4.08 hereof.



ARTICLE V

QUALITY OF SEWAGE

5.01 General.

The sewage discharged directly or indirectly into the East Whiteland Trunk Line by any municipality or municipality authority shall be within the maximum limits presented below or pretreated to within the limits of Section 5.04.

5.02 Acceptability Standards.

After consultation with Valley Forge Sewer Authority, East Whiteland Township shall from time to time establish acceptability standards for sewage and industrial waste entering the collection system of any municipality or municipality authority and discharging directly or indirectly into the East Whiteland Trunk Line for the purpose of prohibiting materials or characteristics which would be deleterious to the East Whiteland Trunk Line, Valley Creek Trunk Sewer or to the Valley Forge Treatment Plant or the treatment process, which standards shall be reasonable and similar to standards imposed with regard to similar facilities and shall not be higher or more restrictive than those imposed by Valley Forge Sewer Authority. No municipality or municipality authority shall permit discharge directly or indirectly into the East Whiteland Trunk Line of any sewage or waste so certified to be deleterious, but such certification shall not preclude the municipality or municipality authority from contesting the reasonableness of such determination.

Subject to the foregoing, all municipalities and municipality authorities agree to enact or adopt or cause to be enacted or adopted uniform ordinances, resolutions, rules or regulations to prohibit users of the respective collection systems serving such municipalities and municipality authorities from discharging substances failing to meet such acceptability standards and to require all pre-treatment of sewage or other waste necessary to require the same to conform to the

acceptability standards and agree to take all necessary steps in the design and construction of the collection systems and in the subsequent maintenance and operation thereof (including the exercise of appropriate inspection of and control over building connections) to prevent infiltration of storm water and other improper substances into the collection systems.

5.03 Sampling Manholes.

For the purpose of determining the characteristics of sewage or wastes, each municipality or municipality authority shall install or cause to be installed a sampling manhole at the point of discharge at the property of any user which the consulting engineer of such municipality or municipality authority considers capable of discharging sewage or wastes not meeting any of such acceptability standards.

5.04 Industrial Wastes.

In order to control admission of industrial wastes, no party to this Agreement shall permit any industrial user to connect to or discharge into its collection system any waters or wastes other than sanitary waste without the prior review and approval of the consulting engineers and the consulting engineers of Valley Forge Sewer Authority. The consulting engineers' review (until such time as the following acceptability standards are amended in accordance with Section 5.02 hereof) shall be based on, but not limited to, the following standards:

Waste Characteristics to be Considered

Characteristics of the industrial waste shall not be in general in excess of those listed below:

(1) The 5-day 20 deg. centigrade B.O.D. (bio-chemical oxygen demand) shall not exceed 250 ppm.

(2) The suspended solids content shall not exceed 300 ppm.

(3) The total solids content shall not exceed 1,100 ppm.

(4) The PH shall not be less than 6.0 nor shall it exceed 9.0.

(5) The temperature shall not exceed 150° F.

(6) The color shall not be such as to require special treatment to render the effluent acceptable for discharge into the Schuylkill River.

(7) The waste shall not contain greases and oils, inflammable material, non-biodegradable materials or any oxygen scavengers, sufficient in quantity to be injurious to the treatment plant or interfere with any treatment process or to constitute a hazard to human or animal life.

(8) The waste shall not contain any solid or viscous material capable of causing obstruction to the flow in the sewers, or at the Valley Forge Treatment Plant or any material capable of causing interference with the proper operation of the East Whiteland Trunk Line, The Valley Creek Trunk Sewer or the Valley Forge Treatment Plant.

Where required, in the opinion of the consulting engineers, the user shall provide at his expense such preliminary treatment or handling as may be necessary to modify the objectionable characteristics or control the quantities and rates of discharge of such water or wastes as necessary.

Plans, specifications, and any other pertinent information relating to proposed preliminary treatment or handling facilities shall be submitted for review to Valley Forge Sewer Authority and no construction of such facilities shall be commenced until a permit for the connection is obtained in writing from Valley Forge Sewer Authority. A copy of each such permit shall be furnished to East Whiteland Township.

In order to insure quality compliance and to reduce the possibility of accidental discharges of wastes not conforming, each municipality and municipality authority shall sample, test or otherwise examine industrial wastes as often as reasonably necessary to insure quality compliance.

5.05 Combined Sewage and Industrial Wastes.

In order to control the sewage entering, Valley Forge Sewer Authority will sample the discharge from each municipality or municipality authority period-

ically to insure that no characteristic is evident which would be deleterious to the East Whiteland Trunk Line, the Valley Creek Trunk Sewer or the Valley Forge Treatment Plant or the treatment process.

The characteristic of each combined sewage and industrial waste discharge shall not be in excess of those listed under Section 5.04 except that the temperature of the combined discharge shall not exceed 100° F. Each municipality or municipality authority shall provide facilities to prevent the occurrence of septic conditions in the East Whiteland Trunk Line.

Should Valley Forge Sewer Authority find either the BOD or suspended solids characteristics exceeded as determined in the tests on the periodically obtained samples, the potentially offending municipality or municipality authority shall be notified of the findings and requested to examine the conditions. If at the end of a quarter Valley Forge Sewer Authority determines that the discharge from the municipality or municipality authority is in excess of the characteristics as determined by average test results by periodic sampling, the suspected offender shall be given written notice that its discharge is in excess and that a comprehensive sampling and testing program will be undertaken by Valley Forge Sewer Authority to verify the non-compliance and to notify that steps should be taken to rectify the problem.

If, at the end of the quarterly comprehensive test program the problem has not been rectified, a penalty charge as provided in Section 5.06 will be added to that quarter's billing and until the situation is shown to be corrected.

Should Valley Forge Sewer Authority find any of the additional characteristics to be in excess or to find the presence of any other untested deleterious material in the course of periodic sampling and testing the potential offending municipality or municipality authority shall be given notice to take immediate steps to rectify the problem.

ARTICLE VI

DETERMINATION OF QUANTITY OF SEWAGE DISCHARGED INTO THE EAST WHITELAND TRUNK LINE

6.01 Meters or Measuring Devices.

In order to measure in gallons the quantity of sewage emanating from the Borough of Malvern and the Township of East Whiteland, which is discharged into the various sections or reaches of the interceptor or trunk sewers of the East Whiteland Trank Line, each of said municipalities shall each, at its expense, construct or cause to be constructed, where feasible, a sewage meter or sewage flow measuring device at each point necessary to determine the volume of sewage emanating from the Borough of Malvern and the Township of East Whiteland, discharged into the East Whiteland Trunk Line. The above sewage meters and related equipment such as recorders and charts shall be as mutually agreed upon by the Consulting Engineers and the consulting engineers of Valley Forg Sewer Authority and of said municipalities. All metering stations shal provide facilities for sampling the sewage.

6.02 Calibration and Readings.

All meters or measuring devices constructed or installed by Valley Forge Sewer Authority, the Borough of Malvern and the Township of East Whiteland, shall be calibrated by Valley Forge Sewer Authority at least once each year and, if requested by East Whiteland Township, shall be checked at other times as a cost of operating the Valley Forge Treatment Plant. All readings of each such municipality or municipality authority's meter or measuring device shall be performed by a representative of said municipality, of Valley Froge Sewer Authority and of East Whiteland Township. Meters or measuring devices shall be read or examined on the date each municipality or municipality authority first connects and on the first day of each quarter of each year during the term of this Agreement

to determine the quantity of sewage emanating from each municipality or area served by a municipality authority for the previous quarterly period or portion thereof. Copies of meter readings or measuring device examinations shall forthwith be delivered to each municipality and to Valley Forge Sewer Authority and to East Whiteland Township.

6.03 Maintenance and Operation.

All meters and measuring devices used for the purpose of determining flows into the Valley Creek Trunk Sewer and used for billing purposes will be routinely serviced and inspected by Valley Forge Sewer Authority as a part of the treatment plant operating expense. Valley Forge Sewer Authority shall undertake to have an inoperative or inaccurate meter or measuring device repaired as soon as practicable with the cost of such repair being charged back to the owner. Valley Forge Sewer Authority shall not be obligated to provide service to any devices other than the primary metering element, recorders, transmitters and other instruments. Each municipality or municipality authority shall, at its own expense, be responsible for all other maintenance and operation of its sewage metering facilities.

6.04 Missing or Inaccurate Flow Records; Use of Equivalent Dwelling Units as Measurement of Flow.

In the case of missing flow records due to faulty meter registration or otherwise, an estimate of flows shall be made by the Consulting Engineers for the purpose of determining volume of sewage discharges. This estimate will be based on a valuation of past flow records as applied to the then existing conditions and as reviewed and approved by the Consulting Engineer of the respective municipality or municipality authority.

In the absence of meter readings during the early period of low flows, when the sewage recording meters may not register the flow, or where meters

cannot practically be installed, flow quantities shall be determined on the basis of the average number of Equivalent Dwelling Units (upon the basis of a discharge rate of 275 gallons per Equivalent Dwelling Unit per day). The number of Equivalent Dwelling Units shall be determined at the beginning and end of each calendar quarter during the term of this Agreement based upon a certification by a responsible officer of the municipality or municipality authority as to the number of such Equivalent Dwelling Units so connected by the municipality or municipality authority at the beginning and end of each quarter and shall be averaged on the basis of the number of units so connected at the beginning and end of each such quarter. Where the initial connection of the collection system of any municipality or municipality authority is made to the East Whiteland Trunk Line after the first day of a calendar quarter, the quantity of sewage so discharged shall be based on the number of Equivalent Dwelling Units so connected at the end of such quarter prorated on the basis of the number of days in such calendar quarter that any sewage is so discharged from such municipality or municipality authority. For the purpose of determining the number of Equivalent Dwelling Units represented by schools, churches or municipal buildings, commercial or industrial establishments, etc., the factors set forth in Exhibit C shall be applied. The officials and representatives of East Whiteland Township may inspect the records of any connecting municipality or municipality authority for the purpose of determining the accuracy of the number of Equivalent Dwelling Units certified by such municipality or municipality authority.

6.05 Proportion of Flows.

The quantity of sewage discharged into the several sections or reaches of the East Whiteland Trunk Line shall be determined, with respect to each such municipality or municipality authority in the ratio that the quantity of sewage emanating from each such municipality or municipality authority (determined as

above) shall bear to the total quantity of sewage discharged into such sections or reaches of the East Whiteland Trunk Line from all municipalities and any municipality authority.

Valley Forge Sewer Authority shall undertake to prepare a complete distribution of the total volume of sewage received and metered at the sewage treatment plant during each calendar quarter and during each calendar year, with respect to each such municipality or municipality authority which discharges sewage that is treated in the Valley Forge Sewer Authority sewage treatment plant, such distribution to include all metered and unmetered sewage flows of each municipality or municipality authority.

ARTICLE VII

RENTING UNUSED CAPACITY; EXTRAORDINARY REPAIRS, RENEWALS OR REPLACEMENTS OF INTERCEPTOR OR TRUNK SEWERS; ENLARGEMENTS OR ADDITIONAL INTERCEPTOR OR TRUNK SEWERS.

7.01 Renting Unused Capacity.

Each municipality discharging from its sewage collection system into the East Whiteland Trunk Line during a calendar year a volume of sewage less than its reserved capacity, as set forth in Exhibit B shall be deemed to have been placed its unused capacity in a rental pool. Any municipality (each of which is herein called "lessee municipality") discharging sewage into the East Whiteland Trunk Line in any calendar year in excess of its reserved capacity, as set forth in Exhibit B, shall rent from the pool for the entire calendar year capacity equal to the volume by which it exceeds its reserved capacity (with the total volume discharged by it being reduced to gallons per day by dividing the total gallons discharged by it in such calendar year by 365). The annual rental fee to be paid by the lessee municipality shall be the representative annual "debt service" (calculated at equal annual payments to amortize the debt, including seven per cent (7%) interest per annum for a 25-year term) for the amount obtained by multiplying the fraction of the rated capacity of the East Whiteland Trunk Line or of any section or reach thereof rented for the current calendar year by the total of capital contributions made by all parties hereto toward the cost of providing the East Whiteland Trunk Line or such section or reach thereof as then being used. The capacity thus rented by the lessee municipality shall be rented annually by it until the next expansion of the East Whiteland Trunk Line, at which time the lessee municipality

shall surrender the capacity rented by it and shall, at its expense, replace the capacity rented by it (in each such section or reach or pumping station) so that each lessor municipality will receive back its reserved capacity placed in the pool. In no event, shall any contribution of capacity to the rental pool be construed to decrease the reserved capacity in the East Whiteland Trunk Line or any section or reach thereof of any lessor municipality.

The rental fees shall be distributed to the contributors to the rental pool in proportion to their contributions (the contribution as to each being the difference between its actual flow during the current calendar year [reduced to gallons per day] and its reserved capacity) the rental fee owed by each lessee municipality, together with the proposed distribution thereof to the lessor municipalities, shall be shown as separate items in the annual statement furnished pursuant to Section 4.05 hereof. Rental fees owed shall be paid by each municipality to East Whiteland Township within sixty (60) days of receipt of said annual statement unless arbitration has then been requested, and in such event shall be paid within thirty (30) days of the date the matter is resolved pursuant to the procedure set forth in Section 9.01. Distribution of the rental fees shall be made by East Whiteland Township promptly thereafter as provided herein.

Although rental payments shall be paid and distributed hereunder on the basis of actual flows, the total estimates of sewage to be discharged into the East Whiteland Trunk Line in a calendar year pursuant to Section 4.02 hereof, shall be used to avoid exceeding the rated capacity of the East Whiteland Trunk Line or any section or reach thereof. In the event that the total of said estimates, pursuant to Section 4.02, exceeds 90% of the rated capacity of any

section or reach of the East Whiteland Trunk Line (with the remaining 10% being used as a safeguard against underestimation), the Consulting Engineers of East Whiteland Township shall allocate the capacity in the pool (as estimated) among the municipalities estimating discharge in excess of their reserved capacities in proportion to their flows during the preceding calendar year; provided, however, that any municipality may continue to rent the number of gallons of capacity previously rented by it. No municipality shall permit any new connection to be made to its collection system or permit increased flow from any existing connection (due to construction and connection to the system of additional facilities) if so permitting might cause its volume of sewage discharged into the East Whiteland Trunk Line at peak flows during such calendar year to exceed the total of its reserved capacity and the capacity in the pool allocated to it by the Consulting Engineers of East Whiteland Township for such year.

7.02 Extraordinary Repairs, Renewals or Replacements of Interceptor or Trunk Sewers and Pumping Stations; Enlargements or Additional Interceptor or Trunk Sewers.

If, during the term of this Agreement, any interceptor or trunk sewer (or any section or reach thereof) of the East Whiteland Trunk Line used in whole or in part for the conveyance of sewage emanating from any of the municipalities (in addition to sewage emanating from East Whiteland Township) to the Valley Forge Treatment Plant shall require extraordinary repairs, renewals or replacements, each municipality and municipality authority named in Exhibit B agrees to pay or to cause to pay to the East Whiteland Authority (but only from legally available current revenues, sewer rentals available and funds which can be legally borrowed) its proportionate share of the project cost of such repairs, renewals or replacements.

The necessity for and the extent of such extraordinary repairs, renewals or replacements of any such section or reach of an interceptor or trunk sewer (with a breakdown by municipality or municipality authority) shall be determined by the Consulting Engineers engaged by East Whiteland Authority subject to the approval of the municipalities affected (which approval may be withheld only for sound engineering reasons), after consultation with the consulting engineers of each of the said municipalities and municipality authorities affected and written notice of such determination together with the Consulting Engineers' estimate of the cost thereof (with a breakdown by municipality or municipality authority) shall be given to each such municipality and municipality authority affected.

Each such municipality and municipality authority affected shall pay or cause to be paid to East Whiteland Authority the proportion of the project cost of such repairs, renewals or replacements in the proportion that the reserved capacity of such municipality or municipality authority in such section or reach of interceptor or trunk sewer shall bear to the total of the reserved capacities of all such municipality or municipality authority in such sections or reaches.

At such times as (a) eighty per cent (80%) of the rated capacity of the East Whiteland Trunk Line or any section or reach thereof is used or (b) estimates of volume under Section 4.02 exceed ninety per cent (90%) of said rated capacity or (c) in the event (i) enlargement of any interceptor or trunk sewer (or any section or reach thereof) or the construction of an additional interceptor or trunk sewer within East Whiteland Township or partly within and partly without East Whiteland Township or (iii) the enlargement of

any pumping station or the construction of an additional pumping station within East Whiteland Township is required to meet the requirements or standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction. East Whiteland Authority shall construct such enlargement or additional sewer or pumping station; and each municipality and municipality authority named in Exhibit B agrees to pay East Whiteland Authority (but only from legally available current revenues, sewer rentals available and funds which can be legally borrowed) its proper proportionate share of the project cost of enlargement or additional sewer or pumping station. The necessity for the extent of such enlargement or additional sewer or pumping station (with a breakdown by municipality or municipality authority) shall be determined by the Consulting Engineers engaged by East Whiteland Authority subject to the approval of such municipalities or municipality authorities (which approval may be withheld only for sound engineering reasons), after consultation with the Consulting Engineers of each municipality or municipality authority and written notice of such determination together with the Consulting Engineers' estimate of the cost thereof (with a breakdown by municipality and municipality authority) shall be given to each municipality and municipality authority affected.

Each such municipality or municipality authority affected shall pay or cause to be paid to East Whiteland Authority the proportion of the project cost of such enlargement of or additional interceptor or trunk sewer or enlargement of or additional pumping station on the basis of the proposed increases in design capacities to be reserved for each municipality or municipality authority in such

enlarged or additional reach or section of interceptor or trunk sewer or in such enlargement of or additional pumping station. The reserved capacities shall be as set forth in Exhibit B subject to any changes in such reserved capacities as may be requested by any municipality or municipality authority. Adjustment shall be made so that each lessee municipality or municipality authority pursuant to Section 7.01 hereof bears the expense of replacing the capacity rented by it and each lessor municipality receives back its reserved capacity placed in the pool.

The project cost of the aforesaid extraordinary repairs, renewals or replacements, enlargements or additions shall be determined as hereinabove provided with respect to the construction of the several sections or reaches of the respective interceptor or trunk sewers and the pumping stations of the East Whiteland Trunk Line set forth in Article II hereof and shall be paid and accounted for in the same manner as that provided in Article II hereof. Each party authorizes and directs East Whiteland Authority on behalf of each municipality and municipality authority from time to time to apply for and accept any one or more grants in aid towards the aforesaid extraordinary repairs, renewals or replacements, enlargements or additions.

7.03 Construction Fund.

Moneys paid pursuant to Section 7.02 of this Article shall be deposited, held and disbursed pursuant to the Construction Fund provisions set forth in Article II hereof.

ARTICLE VIII

INSURANCE AND DAMAGE OR DESTRUCTION

8.01 Insurance on East Whiteland Trunk Line.

East Whiteland Authority agrees that during the construction of East Whiteland Trunk Line it will at all times cause to be kept in force builder's risk insurance (or equivalent coverage) upon any work done or materials furnished under construction contracts (except foundations and any other structures not customarily covered by such insurance) said policies to be written in completed value form for 100% of the insurable value of the contracts. East Whiteland Township agrees that upon completion of such construction it will at all times as an East Whiteland Trunk Line operating expense cause the East Whiteland Trunk Line to be insured against loss or damage by fire or other casualty in such amount and against such risks as are usually carried with respect to like properties, provided that the amount of such insurance shall be sufficient to prevent the insured from becoming a co-insurer thereunder by reason of any co-insurance clause in the policies. All such insurance policies shall (a) be written by responsible insurance companies authorized and qualified to do business in Pennsylvania, (b) be non-assessable and (c) name as the insureds East Whiteland Authority, East Whiteland Township and the Trustee of the Trust Indenture executed by East Whiteland Authority to secure its bonds issued to provide for the construction in whole or in part of the East Whiteland Trunk Line and, in addition, during any period of repair or construction the contractors engaged in such repair or construction, and to the extent procurable shall not be cancellable for at least fifteen (15) days prior written notice to such named insureds. All payments made under such policies on account of loss shall be paid to the aforesaid Trustee. East Whiteland Township agrees to furnish to each municipality before commencing operation of the East Whiteland Trunk Line

and before the start of each year during the term of this Agreement a certificate of the Consulting Engineers stating the amount and kind of such insurance in effect for the ensuing year and that the same is, in the opinion of the Consulting Engineers, in compliance with the requirements of this section.

8.02 Repair or Reconstruction with Insurance Proceeds.

In the event any damage to the facilities covered by such insurance, East White Authority, upon receipt of the necessary funds as provided for herein, shall promptly repair or replace the damaged property unless the Consulting Engineers certify that it would not be practical and advantageous to do so. It is agreed that in the absence of such a certification the proceeds of all insurance coverage to the extent necessary shall be applied to such repair or reconstruction.

8.03 Repair or Replacement not covered by Insurance Proceeds.

In the event that it shall become necessary, in order to convey sewage to the Valley Forge Treatment Plant in accordance with the purport and intent of this Agreement, to make an extraordinary repair or replacement of any section or reach of any interceptor or trunk sewer or of any pumping station constituting a part of the East Whiteland Trunk Line because of damage or destruction by casualty or otherwise, and there are insufficient funds available from insurance proceeds to pay the costs and expenses thereof, East Whiteland Authority and Malvern Authority shall forthwith pay over to East Whiteland Authority (but only from legally available current revenues, sewer rentals and borrowed funds) for deposit in a special construction fund such amount as is required for the purpose, in the same proportions and in the

the same manner as that hereinabove provided under Section 7.02.

8.04 Providing Conveyance Capacity by a means other than Repair or Reconstruction of the East Whiteland Trunk Line.

In the event that proceeds of insurance resulting from damage to the East Whiteland Trunk Line are not applied to the repair or the replacement of the damaged property because the same is determined to be impractical and not advantageous (pursuant to Section 8.02 hereof) such proceeds shall be applied towards the provision of conveyance capacity pursuant to Section 7.02 hereof. In such event credit for funds so applied shall be given to the municipalities in the same proportions as capital contributions towards the project cost of the East Whiteland Trunk Line were made by each.

ARTICLE IX

ARBITRATION

9.01 Arbitration as the Charges provided in Articles II and IV.

In the event any disagreement shall arise concerning the charges provided in Articles II and IV and the parties cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party requests arbitration to a certified public accountant appointed by method agreed upon by the parties. In the event of failure to agree upon such an arbitrator within ten (10) days, an arbitrator shall be appointed by the Senior Judge of the Court of Common Pleas of Chester County available at the time when the Authority or any of the parties request appointment of an arbitrator. The decision of the accountant or arbitrator so chosen shall be binding and rendered within twenty (20) days. Any request for arbitration shall be made within sixty (60) days after receiving a certificate under Section 2.08 or a statement under Section 2.10,

Section 4.05 or Section 4.13, and if no such request is made the certificate or statement shall be considered correct and not subject to future questions. The fee of such certified public accountant or arbitrator shall be an operating expense of the East Whiteland Trunk Line.

9.02 Arbitration by Board of Arbitrators.

In the event any disagreement shall arise as to the interpretation of any provisions hereof or the rights and obligations of the parties hereunder (other than disagreements provided for in Section 9.01) and the parties cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party request arbitration to a Board of Arbitrators whose decision shall be binding and shall be rendered within twenty (20) days. Such Board shall consist of the Consulting Engineers appointed by East Whiteland Authority, a firm of consulting engineers selected by the other parties to this Agreement and a third professional engineer licensed in Pennsylvania selected by the Consulting Engineers appointed by East Whiteland Authority and by said other parties; provided, however, that East Whiteland Authority and the other parties to this Agreement may agree to select arbitrators other than engineers or may agree to submit the matter to a single arbitrator. In the event of failure of said engineers to agree upon a third engineer or arbitrator, the same shall be appointed in the manner set forth in Section 9.01 hereof. The fees of all arbitrators shall be an operating expense of the East Whiteland Trunk Line.

ARTICLE X

MISCELLANEOUS PROVISIONS

10.01 Operation of East Whiteland Trunk Line.

East Whiteland Township agrees that it will, for and during the term of this Agreement by use of funds provided hereunder, operate and maintain the East Whiteland Trunk Line and that it will keep the same in good order and repair, save where prevented from doing so by act of God or riot, rebellion, sabotage, act of the public enemy or public calamity in which event East Whiteland Township may suspend operation of the East Whiteland Trunk Line until the cause of such suspension shall no longer exist and for such reasonable time thereafter as may be required to effect a resumption of operations. Neither East Whiteland Authority nor East Whiteland Township shall at any time or under any circumstances be liable to any party for damages in case of failure or inadequacies of the East Whiteland Trunk Line or the Valley Creek Trunk Sewer, or the Valley Forge Treatment Plant to receive, convey, treat or dispose of sewage.

10.02 Operation of Collection Systems.

Each party agrees that during such time as it operates a sewage collection system it will continuously operate and keep and maintain its collection system at all time in first-class repair, order and efficient operating condition and will meet the standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction. Each party agrees to pay the cost of any damage to the East Whiteland Trunk Line or fine imposed upon East Whiteland Authority or East Whiteland Township resulting from discharge of improper sewage from such party's collection system in violation of this Agreement or

from improper operation or maintenance of such party's collection system. Each party agrees to indemnify and save harmless all of the other parties against all costs, losses or damage on account of any injury to persons or property occurring in the performance of this Agreement due to the negligence of such party or its servants, agents or employees.

10.03 Leases.

In the event that any municipality authority shall at any time lease its collection system to a municipality, any right or obligation of such authority under this Agreement may be exercised and shall be performed, as the case may be, by the municipality instead of the municipality authority to the extent that it may legally do so. When, by reason of the termination of any collection system lease, or for any other reason, any municipality authority shall be in possession of its collection system, then without any further act or agreement such municipality authority shall succeed to and become vested with all of the rights, powers, duties and obligations under this Agreement granted to or imposed upon the municipalities which created such authority.

10.04 Public Utility Law.

In the event that the Commonwealth of Pennsylvania should subsequently lawfully confer jurisdiction of the subject matter of this Agreement upon the Pennsylvania Public Utility Commission in whole or in part, the parties shall, if requested so to do, proceed forthwith to obtain all necessary power, right and authority from the said Public Utility Commission or such other proper agency of such Commonwealth in order to carry out the terms, provisions and intendment hereof.

10.05 Permits.

In the event that it may be necessary for the proper performance of this Agreement on the part of the East Whiteland Authority or East Whiteland Township to apply to any governmental or other agency for any permit or license to do or perform any act or thing contemplated hereby, and if such application must be made by a municipality rather than by the East Whiteland Authority or East Whiteland Township, the municipality affected agrees that it will execute the required application upon request by the East Whiteland Authority or East Whiteland Township, it being understood that in executing such application the municipality shall not assume any obligations both those for which it would have been responsible had East Whiteland Authority or East Whiteland Township made the said application.

10.06 No Joint Liability.

With the exception of a municipality and a municipality authority organized by such municipality, no party shall be held to be jointly liable in the event of failure of any party to perform and discharge its obligations under this Agreement, it being the intent hereof that this shall constitute the separate agreement of each of the parties named herein and default by any party in the discharge of any obligation resting upon it hereunder, shall not relieve any party from full performance of and compliance with the terms hereof.

10.07 Connections.

Prior to the completion of construction of the Valley Forge Treatment Plant, the Valley Creek Trunk Sewer and the East Whiteland Trunk Line, the Borough and each Township which is a party

hereunder will (to the extent it has not done so prior thereto) take all action which may be legal and necessary to compel all properties located within its territorial limits and then capable or thereafter becoming capable of being served by the municipality's collection system to be connected therewith.

10.08 Records.

Each party agrees to make available at all reasonable times to the parties to this Agreement and their employees, agents and representatives, access to all records relating to matters covered in this Agreement and access to the physical facilities of each party in order to assure compliance with the terms and conditions of this Agreement. A copy of all ordinances, resolutions, rules and regulations adopted by each party from time to time, pursuant to this Agreement, shall be furnished to East Whiteland Authority within thirty (30) days after enactment.

10.09 Severability.

Should any one or more of the provisions of this Agreement for any reason be held illegal or invalid, such illegality or invalidity shall not affect any other provision of this Agreement; and this Agreement shall, in such circumstances, be construed and enforced as if such illegal or invalid provision had not been contained herein.

10.10 Term.

This Agreement shall become effective upon its execution and delivery by all the parties hereto and shall remain in effect for forty years and thereafter shall be terminated only by mutual agreement of all parties.

10.11 Definitions.

The following terms and phrases shall have the meanings hereinafter set forth whenever such terms and phrases are used herein:

(a) "Consulting Engineers" means Roy F. Weston, Inc., and in the event said firm ceases to serve as the Consulting Engineers for East Whiteland Authority, an engineering firm or professional engineer having a favorable repute for skill and experience in the construction and operation of sewage treatment plants, registered in Pennsylvania and chosen by East Whiteland Authority.

(b) "Equivalent Dwelling Unit" shall mean any room, group of rooms, house trailer or other enclosure occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by persons living alone.

(c) "Industrial Uses" means any improved property used, in whole or in part, for manufacturing, processing, cleaning, laundering or assembling any product, commodity or article or from which any process waste, as distinct from sanitary sewage, is discharged.

(d) "Industrial Wastes" means any and all wastes discharged from an industrial establishment or by an industrial user, other than sanitary sewage.

(e) "Sewage", "Wastewater", "Sanitary Sewage" and "Sanitary Waste" means normal water-carried household and toilet wastes from any improved property and is limited to sewage permitted by Article V hereof and industrial wastes to the

extent permitted by Article V.

(f) "Improved Property" means any property upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human being or animals and from which structure sanitary sewage and/or industrial wastes shall be or may be discharged.

(g) "pH" means the logarithm of the reciprocal of the concentration of hydrogen ions, expressed in grams per liter of solution, indicating the degree of acidity or alkalinity of a substance.

(h) "B.O.D." means biochemical oxygen demand.

10.13 Valley Forge Sewage Treatment Plant Agreement.

Should any of the provisions of this Agreement conflict or be inconsistent with provisions contained in the Valley Forge Sewage Treatment Plant Agreement, to which the parties hereto are signatories, the provisions of the latter shall supersede the provisions of this Agreement.

10.14 Execution.

This Agreement may be executed in any number of counterparts each of which may be deemed an original.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

EAST WHITELAND MUNICIPAL AUTHORITY

(AUTHORITY SEAL)

By _____
Chairman

Attest:

By _____
Secretary

TOWNSHIP OF EAST WHITELAND

(Township Seal)

Attest:

BY: _____
Chairman, Board of Supervisors

By: _____
Secretary

MALVERN MUNICIPAL AUTHORITY

(Authority Seal)

Attest:

By: _____
Secretary

BY: _____
Chairman

BOROUGH OF MALVERN

(Borough Seal)

Attest:

By: _____
Secretary

BY: _____
President of Borough Council

VALLEY FORGE SEWER AUTHORITY

(Authority Seal)

Attest:

By: _____
Secretary

BY: _____
Chairman

EXHIBIT B - EAST WHITELAND TRUNK LINE

SECTION OF SEWER FROM MH TO MH	TOTAL ESTIMATED COST	EAST WHITELAND TOWNSHIP DESIGN CAPACITY - MGD	EAST WHITELAND TOWNSHIP ESTIMATED SHARE %	EAST WHITELAND TOWNSHIP ESTIMATED COST	D CAPAC
WARREN AVENUE					
Twp. line to MH 17-11	$ 21,905	0	0	0	$
MH 17-11 to MH 17-4	4,490	0.46	61.5	$ 2,761	
LINCOLN HIGHWAY					
Twp. Line to MH 18A-1	5,021	0	0	0	
ROW AND LANCASTER PIKE					
Twp. line to MH 18A-1	26,589	0	0	0	
MH 18A-1 to MH 17-1	14,598	0	0	0	
MH 17-1 to MH 17-4	20,930	1.0	100.0	20,930	
MH 17-4 to MH 12-4	45,304	1.0	47.6	21,564	
MH 12-4 to MH 12-5	15,450	1.0	47.6	7,354	
MOREHALL ROAD					
MH 12-5 to MH 19-4	44,340	1.0	47.6	21,105	
MH 19-4 to MH 20-2	28,222	10.5	100.0	28,222	
MATTHEWS ROAD AND ROW					
MH 20-2 to MH 20-8	86,976	10.5	100.0	69,976	
MH 20-8 to MH 21-3	107,239	10.5	88.3	94,692	
MH 21-3 to MH 21-6	32,908	10.5	88.3	29,057	
TOTAL CONSTRUCTION COST	453,972			312,661	
ENGINEERING, SURVEYING AND INSPECTION	61,000			42,090	
LEGAL, LAND AND ROW	18,900			13,041	
CONTINGENCY	45,398			31,266	
TOTAL PROJECT COST ALLOCATED TO TRUNK LINE	$579,270			$399,059	

EXHIBIT B

EAST WHITELAND TRUNK LINE

ENGINEERING COST DISTRIBUTION
FOR DESIGN SERVICES

Engineering Design Fees $24,790

	Total Estimated Construction Cost	% Share of Construction Cost	Engineers Cost
East Whiteland Municipal Authority	$312,661	68.89	$17,078
Malvern Municipal Authority	$141,311	31.11	$ 7,712
TOTALS	$453,972	100.00	$24,790

EXHIBIT B

EAST WHITELAND TRUNK LINE

FIRST TWO YEAR OPERATING AND ADMINISTRATIVE EXPENSES

I. Estimated First Two Year Operating Expenses

Salaries and Wages	$ 3,000	
Maintenance and Repairs	1,000	
Miscellaneous	400	
Total I		$ 4,400

II. Estimated First Two Year Administrative Expenses

Salaries and Wages	$ 3,000	
Office Supplies	200	
Insurance and Bonds	1,000	
Engineering	1,000	
Legal	1,000	
Auditing	2,000	
Miscellaneous	1,000	
Total II		$ 9,200
Total I and II		$13,600

EXHIBIT B

EAST WHITELAND TRUNK LINE

DISTRIBUTION OF FIRST TWO YEAR OPERATING AND ADMINISTRATIVE EXPENSES

	ALTERNATIVES			
	1	2	3	4
Total Expenses from Sheet 3	$13,600	$13,600	$13,600	$13,600
Construction Cost Eligible for State Subsidy (1)	$24,727	$24,727	$24,727	$24,727
Project Cost Eligible for Subsidy	$32,200	$32,200	$32,200	$32,200
State - Federal Grant on Eligible Project Cost	$20,626	$16,100	$20,286	$23,828
Net Eligible Cost for State Subsidy	$21,574	$16,100	$11,914	$ 8,372
State Subsidy (2)	$ 431	$ 322	$ 238	$ 167
Net First Two Year Operating and Administrative Expenses	$21,143	$15,778	$11,676	$ 8,205

		ALTERNATIVES			
Distribution	% of Total Project Cost	1	2	3	4
East Whiteland Municipal Authority	68.89	$14,565	$10,869	$ 8,044	$ 5,652
Malvern Municipal Authority	31.11	$ 6,576	$ 4,909	$ 3,632	$ 2,553
TOTAL	100.00	$21,143	$15,778	$11,676	$ 8,205

(1) From MH 21-6 to MH 21-4

(2) State subsidy assumed to be received during second year of operation

SUPPLEMENT TO EXHIBIT B

EAST WHITELAND TRUNK LINE

ALTERNATIVES TO EXHIBIT B FOR VARYING P.L. 660 GRANTS

	ALTERNATIVES			
	1	2	3	4
Federal Grant	30%	30%	30%	40%
State Grant	0	17	30	30
Federal Grant for Regional	3	3	3	4
TOTAL	33%	50%	63%	74%
Estimated Project Cost (1)	$579,270	$579,270	$579,270	$579,270
Eligible Cost	565,270	565,270	565,270	565,270
Grants	186,539	282,635	356,120	418,300
Estimated Project Cost to be Distributed	392,731	296,635	223,150	160,970

		ALTERNATIVES			
Distribution	% of Total Project Cost	1	2	3	4
East Whiteland Municipal Authority	68.89	$270,552	$204,352	$153,728	$110,892
Malvern Municipal Authority	31.11	122,179	92,283	69,422	50,078
TOTALS	100.00	$392,731	$296,635	$223,150	$160,970

(1) See Sheet 1 of Exhibit B for Breakdown

FACTORS FOR DETERMINATION OF EQUIVALENT DWELLING UNITS

Classification	Number of E.D.U.
A. Each private dwelling or living unit	1
B. Each fire house or municipal building	1
C. Each church	1
D. Each public or private day school . . . . . Elementary, junior or senior high school Based on the daily average number of pupils enrolled on days when the school was in session during the quarter immediately preceding the date for determination of the number of connections, divided by the factor of 20. Teachers and employees shall be classified as pupils. Average enrollment shall be redetermined annually.	
E. Each retail gas station without car washing facilities	2
F. Each retail gas station with car washing facilities	3
G. Each commercial establishment, hospital, convalescent home, or institution . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment. Where no meter has been installed by the supplier or no other meter or measuring device has been installed, the number of Equivalent Dwelling Units shall be estimated.	
H. Each motel, hotel, or rooming house . . . . . Each unit or room shall be evaluated as one-half an Equivalent Dwelling Unit. Where a restaurant or bar room is conducted in conjunction with any motel or hotel, a separate determination for such restaurant or bar room shall be made in accordance with paragraph "G" above.	
I. Industrial Establishments . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring	

water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment.

Where no meter has been installed by the supplier or no other meter or measuring device has been installed, the number of Equivalent Dwelling Units shall be estimated.

J. Multiple Use. In case of a combination of one or more dwelling or living units with a similar unit or units or with one or more commercial establishments in the same or connected building with each thereof having the use of the Valley Creek Trunk Sewer (directly or indirectly) through one sewer connection, then each such private dwelling or living unit and each such commercial establishment shall be evaluated on the basis of the applicable factors for each use thereof as if such use were conducted in a separate structure and as if each such use had a direct and separate connection to the Valley Creek Trunk Sewer . . . . . .

EXHIBIT F7

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT, DATED DECEMBER 12, 1979, BY AND BETWEEN EAST WHITELAND MUNICIPAL AUTHORITY, THE TOWNSHIP OF EAST WHITELAND, THE BOROUGH OF MALVERN, MALVERN MUNICIPAL AUTHORITY, AND VALLEY FORGE SEWER AUTHORITY

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment, dated as of the 12th day of December, 1979, to the East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974 (hereinafter referred to as "the Agreement"), is entered into between EAST WHITELAND MUNICIPAL AUTHORITY (East Whiteland Authority), the TOWNSHIP OF EAST WHITELAND (East Whiteland Township), parties of the first part, and the BOROUGH OF MALVERN (Malvern), and MALVERN MUNICIPAL AUTHORITY (Malvern Authority), parties of the second part, and VALLEY FORGE SEWER AUTHORITY, party of the third part.

WHEREAS, subsequent to the execution of the Agreement, Valley Forge Sewer Authority decided to seek the opportunity to transmit sewage from an area of Charlestown Township adjacent to East Whiteland Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Treatment Plant; and

WHEREAS, East Whiteland Authority and East Whiteland Township, at the request of Valley Forge Sewer Authority are willing to reserve for the Valley Forge Sewer Authority, the reserved capacity provided herein of the East Whiteland Trunk Line and the Mill Lane pumping station; and

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby, agree as follows:

1. Valley Forge Sewer Authority shall have no rights or liabilities with respect to Section 1.01 of the Agreement.

2. Within thirty (30) days of the date of this Amendment, Valley Forge Sewer Authority shall pay to East Whiteland Authority the sum of one hundred fifteen thousand nine hundred seventy-five

dollars ($115,975). Of that sum, $114,189 shall be allocated to Valley Forge Sewer Authority's capital contribution pursuant to Sections 2.01 and 2.02 of the Agreement and $1,786 to operating expenses for the first two (2) years pursuant to Section 4.13 of the Agreement. The calculation of the above figure takes into consideration all currently applicable grants. Exhibit B of the Agreement is hereby amended in part as set forth in Exhibit A attached hereto. All references in the Agreement to Exhibit B thereof shall be deemed to refer to Exhibit B as amended by Exhibit A attached hereto.

3. Valley Forge Sewer Authority hereby is granted rights, and assumes liabilities as if it were one of the parties referred to in the Agreement as a "Municipality" which rights and liabilities are defined in the Agreement.

4. Valley Forge Sewer Authority, at its own expense or at the expense of its users, may, during the term of the Agreement, cause sewage emanating from Charlestown Township to be discharged into sewer lines of East Whiteland Township which have been acquired from Great Valley Wastewater Company ("the Great Valley Line"). The East Whiteland Trunk Line shall thus be extended to the boundary of Charlestown Township.

5. Valley Forge Sewer Authority shall commence delivering sewage to the Great Valley Line as soon as practicable after the execution of this Agreement. East Whiteland Authority, as soon as practicable thereafter, shall permit connection at the locations that East Whiteland Authority may agree to, which agreement may not be unreasonably withheld, and shall accept sewage for conveyance to the treatment plant subject to the terms and conditions herein set forth. Valley Forge Sewer Authority may make subsequent connections at locations agreed to by East

Whiteland Authority, which shall not unreasonably withhold its agreement. Except as permitted pursuant to Article VII of the Agreement, Valley Forge Sewer Authority shall not exceed its reserved capacity as set forth in Exhibit B, as amended by this Agreement.

6. Section 4.01 of the Agreement is hereby amended to read as follows:

"The Borough of Malvern, the township of East Whiteland and Valley Forge Sewer Authority (all of which are referred to in this article IV and elsewhere in this agreement as 'said municipalities') shall share the operating expenses of the East Whiteland Trunk Line and its extension to Charlestown Township, as defined in Section 4.06, as follows: the proportion that the volume of sewage (determined as hereinafter provided and by other agreement of the parties) emanating from each such municipality and discharged into the several sections or reaches of the interceptor or trunk sewer, constituting the East Whiteland Trunk Line and its extention to Charlestown Township bears to the total volume of sewage discharged by said municipalities into such sections or reaches shall be used in calculating the amount that each such municipality shall pay for sewage conveyance services. Operating expenses of the East Whiteland Trunk Line for the first two years of operation shall be paid as set forth in Section 4.13 hereof."

All references in Article 4 of the Agreement to East Whiteland Trunk Line shall be deemed also to refer to the Great Valley Line.

7. Any sewage discharged by Valley Forge Sewer Authority into the East Whiteland Trunk Line or Great Valley Line shall conform to the standards for quality of sewage set forth in Article V of the Agreement.

3. Pursuant to an Agreement entitled "Valley Creek Trunk Sewer Agreement" dated November 1, 1970, as amended, East Whiteland Authority has made payments to Tredyffrin Township for operating expenses of the Valley Creek Trunk Line during its first two years of operation, and will, during subsequent years, continue to be obligated to make payments on account of operating expenses. Valley Forge Sewer Authority agrees hereby to, within thirty days from the execution of this Agreement, reimburse East Whiteland Authority for 7.89% of the amount paid on account of operating expenses during the first two years by East Whiteland Authority to Tredyffrin Township. Valley Forge Sewer Authority further agrees to reimburse East Whiteland Authority for Valley Forge Sewer Authority's share of any payments East Whiteland must make to Tredyffrin Township pursuant to Article 4 of the Valley Creek Trunk Sewer Agreement for operating costs during years subsequent to the first two years of operation and for payments for capital contributions paid subsequent to the date hereof. Valley Forge Sewer Authority's share of the said operating costs and additional capital contributions will be its pro-rata share, based on the proportion that the volume of sewage emanating from Charlestown Township into the East Whiteland Trunk Line and Great Valley Line bears to the total sewage emanating from East Whiteland Township into the Valley Creek Trunk Sewer Line. The payments by Valley Forge Sewer Authority shall not exceed those that would be made if said Authority had made its payments directly to the Tredyffrin Township Municipal Authority.

9. At such time as East Whiteland Authority must pay funds to the Tredyffrin Township Municipal Authority resulting from an enlargement of an intercepter or trunk sewer (or any section or reach thereof) or the construction of an additional interceptor

or trunk sewer or the enlargement of a pumping station or the construction of an additional pumping station pursuant to the Valley Creek Trunk Sewer Agreement, then Valley Forge Sewer Authority shall reimburse East Whiteland Township for its pro-rata share of said funds calculated on the basis of its pro-rata share of reserved capacity, as such reserved capacity shall be determined by Valley Forge Sewer Authority, in such section or reach of interceptor or trunk sewer. In the alternative, Valley Forge Sewer Authority may reserve capacity pursuant to Section 7.02 of the Valley Creek Trunk Sewer Agreement.

10. Valley Forge Sewer Authority hereby agrees that all sewage from Charlestown Township shall be deemed to be sewage of Valley Forge Sewer Authorty for purpose of an Agreement dated as of November 1, 1970, as amended, known as "the Valley Forge Sewage Treatment Plan Agreement".

11. Valley Forge Sewer Authority shall, at its expense, construct or cause to be constructed a sewage meter or sewage flow measuring device to determine the volume of sewage emanating from Charlestown Township to East Whiteland Township.

12. All references in Sections 4.03, 7.03 and 8.03 of the Agreement to "Malvern" shall be deemed to refer to Malvern and Valley Forge Sewer Authority. Valley Forge Sewer Authority shall make payments pursuant to Section 4.04 of the Agreement at the same time as Malvern is required to make payments. All other sections of the Agreement refer to parties or municipalities defined in Section 4.01, as amended by Paragraph 6 of this Agreement, unless otherwise stated herein.

13. Pursuant to Paragraph 7.01 of the Valley Creek Trunk Sewer Agreement, Valley Forge Sewer Authority hereby is granted the right to rent a capacity of up to 300,000 gallons per day average flow (750,000 gallons per day peak flow) in the Valley

Creek Trunk Sewer from East Whiteland Authority, with all rental fees therefore being paid to East Whiteland Authority, as provided therein.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed and attested by its proper officers pursuant to the proper action of its governing body as of the day and year first above written.

BY: _____
Valley Forge Sewer Authority

ATTEST: _____
TOWNSHIP SECRETARY

EAST WHITELAND TOWNSHIP
BOARD OF SUPERVISORS
209 CONESTOGA ROAD
FRAZER PA. 19355

BY: _____
East Whiteland Municipal Authority

ATTEST: _____

BY: _____
Township of East Whiteland

ATTEST: _____

BY: _____
Borough of Malvern

ATTEST: _____

BY: _____
Malvern Municipal Authority

ATTEST: _____

EXHIBIT "A"

Exhibit "B" of the East Whiteland Trunk Line Agreement is amended in part to provide that if any expansion, repair, enlargement or construction to the Great Valley Line shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement or construction on the basis of its reserved capacity in the expanded or repaired Great Valley Line to the total reserved capacity therein. Notwithstanding the foregoing, 300,000 gallons per day of capacity shall be reserved in the Great Valley Line for Valley Forge Sewer Authority.

EXHIBIT "B"

THIS AGREEMENT made this 27th day of December 1978, by and between EAST WHITELAND MUNICIPAL AUTHORITY and VALLEY FORGE SEWER AUTHORITY

W I T N E S S E T H:

Valley Forge Sewer Authority and East Whiteland Municipal Authority have agreed to share cost for the Sidley Road Trunk Line repairs as indicated in Schedule A presented by East Whiteland Municipal Authority (Schedule A attached hereto). Items Nos. 1, 3, 4, and 6 of the Schedule A, which are line replacements, will be deferred until additional flows coming from Charlestown Township make ~~repairs~~ Replacements & All necessary as determined by East Whiteland Municipal Authority's consulting engineers. Item No. 14 of Schedule A will be adjusted on the basis of proposed additional repairs to be required in lieu of replacement of earlier mentioned lines.

NOW THEREFORE, the parties hereto, agree that the mutual promises herein contained and previous arrangements will allow the parties to finalize the agreement to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line.

VALLEY FORGE SEWER AUTHORITY

EAST WHITELAND MUNICIPAL AUTHORITY

SCHEDULE A

EAST WHITELAND/CHARLESTON SHARED COSTS

	Manhole Runs	Total Est Repair Cost	East Whitoland Twp. Capacity MGD	% Share	Share of Cost Est.	Charlestown Twp. Capacity MGD	% Share	Share of Cost Est.	Total Capaci
(1)*	67-25 to 23	$12,000	.038	29	0	0.75	71	$ 12,000	0.8
(2)	24 to 23		.038	29	0	0.75	71		
(3)*	23 to 19	7,000	0.25	25	1500	0.75 (1)	75	7,000	1.0
		3,000(2)			250			1500 2,250	
(4)*	19 to 15	30,000	0.6	44	0	0.75	56	30,000	1.3
		3,000(2)			1,500			1,500	
(5)	15 to 13	1,300	0.635	46	650	0.75	54	650	1.3
(6)*	13 to 12	4,000	0.75	50		0.75	50/100	4,000	1.5
(7)	12 to 6	600	0.75	50	300	0.75	50	300	1.5
(8)	6 to 2	300	0.80	52	150	0.75	48	150	1.5
(9)	2 to 59-4		0.85	53		0.75	47		1.6
(10)	59-4 to Pump Sta.		0.95	56		0.75	44		1.7
		$61,200			400 $5,900			$57,100	
(11)	Surveying	1,804		50	902			902	
(12)	TV & Cleaning	4,344		50	2,172			2,172	
(13)	TV Engr/Insp.	3,060		50	1,533			1,533	
(14)**	Line Replacement	12,000 (3)		0	0			12,000	
	Engr./Insp./Legal								
	TOTAL	$82,210			$10,507			$73,707	
					197			77,907	

* TO BE POSTPONED UNTIL ADDITIONAL FLOW DATA FROM CHARLESTOWN

** TO BE ADJUSTED ON BASIS OF POSTPONED WORK

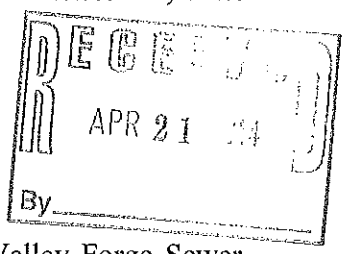
(1) Assumes 750,000 MGD including Forsythia & Strathmore

EXHIBIT F8

AMENDMENT TO EAST WHITELAND TRUNKLINE AGREEMENT, DATED APRIL 18, 2014, BY AND BETWEEN EAST WHITELAND TOWNSHIP, EAST WHITELAND MUNICIPAL AUTHORITY, AND VALLEY FORGE SEWER AUTHORITY

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment to East Whiteland Trunk Line Agreement is made this 18 day of April, 2014, between EAST WHITELAND TOWNSHIP ("East Whiteland"), a township of the second class, EAST WHITELAND MUNICIPAL AUTHORITY ("East Whiteland Authority"), a municipal authority organized by East Whiteland and VALLEY FORGE SEWER AUTHORITY, a municipal authority organized by Charlestown, East Pikeland and Schuylkill Townships.



BACKGROUND

A. On December 27, 1978, East Whiteland Authority and Valley Forge Sewer Authority entered into a cost sharing agreement for the Sidley Road Trunk Line repairs as indicated on Schedule A attached thereto to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

B. On December 12, 1979, the parties hereto among others entered in an Amendment to the East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974, to reserve for the Valley Forge Sewer Authority 300,000 gallons per day of reserved capacity in the East Whiteland Trunk Line (as extended to the boundary to Charlestown Township via the "Great Valley Line") and the Mill Lane Pumping Station, to transmit sewage from Charlestown Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

C. The purpose of this Agreement Amendment is to establish a new and increased reserve capacity for the Valley Forge Sewer Authority within and through the East Whiteland sewer system. This Agreement Amendment shall also serve to establish the cost sharing between East Whiteland and the Valley Forge Sewer Authority.

D. This Agreement Amendment hereby declares that Valley Forge Sewer Authority shall have a reserved capacity within and through the East Whiteland system as apportioned below.

E. This Agreement Amendment also amends Article VI Section 6.01 of the East Whiteland Trunk Line Agreement to include the use of Tele-metering devices for transmitting flow signals from certain VFSA Sewage Discharge points into the East Whiteland system.

F. For purposes of this Agreement, the various portions of the East Whiteland Township sewer system are defined as follows:

1. East Whiteland Trunk Line (A) - The Trunk Line (A) shall include the gravity line through the Mill Lane Pump Station, the Mill Lane Pump Station force main, and gravity lines from the force main through the point at which the force main turns to gravity and then south and east to the point at which the East Whiteland gravity sewer leaves East Whiteland and then enters the Tredyffrin System.

2. East Whiteland Trunk Line (B) - The Trunk Line (B) shall include the gravity line from Charlestown Township along Conestoga Road through the Hillbrook Pump Station, the Hillbrook Pump Station force main, and gravity lines from the force main to the discharge point at the Mill Lane Pump Station.

3. Great Valley Line – The Great Valley Line shall include the existing gravity line to the Mill Lane Pump Station from the East Whiteland/Charlestown Township line to the terminal manhole at the east end of the James Thomas Road cul-de-sac thence along and/or through James Thomas Road, Aston Road, Phoenixville Pike, Hayes Road, Sidley Road, Moores Road, across the Aegon property, under Rt 202 to the Mill Lane Pump Station. The portion of sewer line along Sidley Road is also known as the Sidley Road Trunk Line. The portion of Great Valley Line in Sidley Road from manhole 67-24 at Lee Boulevard to manhole 67-13 in Moores Road will be abandoned and replaced with the New Sidley Road Trunk Line described in Section F.6.

4. Lee Boulevard Force Main – The Lee Boulevard Force Main shall include the force main from the Lee Boulevard Pump Station to the force main discharge point in Sidley Road.

5. Mill Lane Trunk Line – The Mill Lane Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Mill Lane Sewer Main Replacement, Phase 1. The Mill Lane Trunk Line shall extend from Manhole ML8 in Sidley Road approximately two-hundred (200) feet north of the intersection of Sidley Road and Lapp Road, thence south in and/or along Sidley Road, Mill Lane, under Rt 202 to an existing portion of the Great Valley Line which drains to the Mill Lane Pump Station.

6. New Sidley Road Trunk Line – The New Sidley Road Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Sidley Road Sewer Main Replacement, Phase 2. The New Sidley Road Trunk Line shall extend south in Sidley Road from the intersection of Sidley Road and Lee Boulevard to Manhole ML8 in Sidley Road which is the terminal end of the Mill Lane Sewer Main Replacement, Phase 1.

7. Mill Lane Pump Station – The pump station shall include the existing/new facility located north west of the intersection of Route 401 and Mill Lane.

8. Lee Boulevard Pump Station – The pump station shall include the existing facility located adjacent to Lee Boulevard.

9. Hillbrook Pump Station – The pump station shall include the existing facility located on Conestoga Road adjacent to Hillbrook Circle.

10. In summary, the various systems described in Sections F1 through F9 include all the pipelines through which Valley Forge Sewer Authority wastewaters drain in East Whiteland Township.

G. The various portions of the sanitary sewer system noted in Section F of this Agreement are outlined in Schedule C.

H. East Whiteland and East Whiteland Authority, at the request of Valley Forge Sewer Authority, are willing to reserve additional capacity for Valley Forge Sewer Authority, for a total reserved capacity of 432,302 gallons per day Annual Average Daily Flow as provided herein.

NOW, THEREFORE, the parties hereto intending to be legally bound hereby agree as follows:

1. Sidley Road Trunk Line Cost Sharing Agreement. The December 27, 1978 Agreement between East Whiteland Authority and Valley Forge Sewer Authority establishing the cost sharing agreement for the Sidley Road Trunk Line is amended by eliminating Schedule A attached thereto and substituting therefore Schedule B attached hereto and incorporated herein. It is noted that some of the construction costs noted in Schedule B are estimates. The final cost sharing shall be based upon actual construction contract prices, subject to the prior review and approval of the Valley Forge Sewer Authority.

2. Reserved Capacity. Following the 2013 replacement and enlargement of the Mill Lane Pump Station and the construction of the Mill Lane and New Sidley Road Trunk Lines (as described in Section C of this Agreement and in the East Whiteland Special Study of 2013 prepared by ARRO Consulting, Inc.), reserved capacity for Valley Forge Sewer Authority and East Whiteland Township based on capacity needs analysis to the year 2035 in the East Whiteland Trunk Line the Annual Average Daily Flow shall be as follows:

a. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (A) shall be 432,302 gallons per day. The reserve capacity for East Whiteland Township and Malvern Borough in the East Whiteland Trunk Line (A) shall be 3,882,698 gallons per day. The amount of reserve capacity for each of these municipalities is defined by separate agreement between East Whiteland Township and Malvern Borough. Since the East Whiteland Township and Malvern Borough flow enters at several locations along this trunk line the weighted average of each party's flow shall be used to calculate cost sharing for any project that may occur in the future on this trunk line. Weighted average is defined as the average of each party's percent of flow in each pipe section weighted by the length of each pipe section compared to the total length of pipe sections included in a future project.

b. The reserved capacity for the Valley Forge Sewer Authority in the New Sidley Road Trunk Line and Mill Lane Trunk Line shall be 412,302 gallons per day. The reserve capacity for East Whiteland Township in the New Sidley Road

Trunk Line and Mill Lane Trunk Line shall be 552,803 gallons per day. Since the East Whiteland Township flow enters at several locations along these two sewer line segments the weighted average for cost sharing of each shall be 57.37 % VFSA and 42.63 % EWT in New Sidley Road Trunk Line and 44.63 % VFSA and 55.37 % EWT in Mill Lane Trunk Line up to manhole MH 59.4. The cost sharing for any improvements from manhole MH 59.4 to the Mill Lane Pump Station shall be based upon the weighted average concept outlined in Section 2.a.

c. The reserved capacity for the Valley Forge Sewer Authority in the Lee Boulevard Pump Station and Lee Boulevard Force Main shall be 373,673 gallons per day. The reserve capacity for East Whiteland Township in the Lee Boulevard Pump Station and Lee Boulevard Force Main shall be 22,265 gallons per day.

d. The reserved capacity for the Valley Forge Sewer Authority in the Mill Lane Pump Station and the Mill Lane Pump Station Forcemain shall be 432,302 gallons per day. The reserve capacity for East Whiteland Township in the Mill Lane Pump Station and the Mill Lane Pump Station Forcemain shall be 1,872,503 gallons per day.

e. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (B) shall be 20,000 gallons per day. The reserve capacity for East Whiteland Township in the East Whiteland Trunk Line (B) is undefined at this time due to various development possibilities and connections points to the Mill Lane Pump Station, Great Valley Line, and Trunk Line B. Since the East Whiteland Township flow enters at several locations along this trunk line the weighted average of each party's flow shall be used to calculate cost sharing for any project that may occur in the future on this trunk line.

3. Flow Meters or Measuring Devices. The Valley Forge Sewer Authority shall be responsible for all costs of the installation and maintenance of the equipment and the monthly costs for transmission of flow data to East Whiteland Township via cell phone technology from the Lee Boulevard Pump Station, the Charlestown Meadows Pump Station, and the

Charlestown Oaks metering station to the Remote Terminal Unit (RTU) located in the new Mill Lane Pump Station.

If there are future locations requiring flow monitoring of Valley Forge Sewer Authority flows into the East Whiteland System, the Valley Forge Sewer Authority will be responsible for all costs of installation and maintenance of equipment and the monthly charges for transmission of required flow data to East Whiteland system. The cell phone technology shall be updated by the Valley Forge Sewer Authority as required.

4. Rehabilitation of Manholes 67-13 (at intersection of Moores Road and Ashlawn Road) to ML-1 of the Great Valley Trunk Line. Within six (6) months following substantial completion of replacement of the New Sidley Road Trunk Line replacement, East Whiteland Township shall engage an engineer to conduct an evaluation of those portions of the Great Valley Trunk Sewer Line that will no longer carry flows from the Valley Forge Sewer Authority, (identified as Manholes 67-13 on design drawings prepared by Roy F. Weston, Inc. to Manhole ML-1 on drawings prepared by ARRO Consulting, Inc. entitled Mill Lane Sewer Main Replacement Phase 1) but will remain in service for East Whiteland Township. Cost of the evaluation shall be shared in accordance with Schedule B, attached to this Agreement Amendment. Included in the evaluation shall be a television inspection of all sections of the sewer line. Based on the results of the inspection(s) of the sewer line, a conceptual report shall be prepared by the engineer that includes concept level descriptions of all practical alternatives to repair (line, slipline, grout or spot repairs) the sections of the gravity sewer line that require repair according to the opinion of the engineer. In addition, the report shall include conceptual level total project cost estimates (plus or minus 25%) for the alternatives presented in the report. The study shall include the engineers' recommended alternative(s) for each section of sewer line that requires repair. The conclusions of the study shall be subject to the approval of the Valley Forge Sewer Authority (which approval may be withheld only for sound engineering reasons), after consultation with the consulting engineers of the Valley Forge Sewer Authority. If there shall be disagreement regarding selected alternatives, and the parties cannot otherwise promptly resolve said disagreement, the disagreement shall be submitted for arbitration in accordance with ARTICLE IX of the East Whiteland Trunk Line Agreement of 1971.

The implementation of the selected Alternative(s) shall be completed by East Whiteland Township within six (6) years of the engagement of the engineer to perform the study. Costs to implement the selected alternative(s) shall be shared in accordance with Schedule B, attached to this Agreement Amendment.

Following six years after completion of the study, the Valley Forge Sewer Authority's obligation to share in any cost associated with repair, upgrade, enlargement or replacement of any portion of the Great Valley Sewer Trunk Line shall cease to exist.

5. Future Capital Projects. Following completion of the Mill Lane Pump Station, the Mill Lane Trunk Line, and the New Sidley Road Trunk Line replacement and enlargement projects, if any additional expansion, enlargement, repair or construction of any portions of any of the sewer system entities defined in Section F of this Agreement – with the exception of the rehabilitation of the Great Valley Line from manhole 67-13 to manhole ML-1 shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement, repair or construction on the basis of its reserved capacity as detailed in Section H.2 Reserved Capacity of this Agreement Amendment, and subject to all provisions of the East Whiteland Trunk Line Agreement.

6. Effective Date. This Amendment shall be effective upon the approval by the governing body of the last party to approve.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed as of the day and year first above written.

EAST WHITELAND TOWNSHIP

ATTEST: _____ By: _____

,Secretary ,Chairman

EAST WHITELAND MUNICIPAL AUTHORITY

ATTEST: _____ By: _____

,Secretary ,Chairman

VALLEY FORGE SEWER AUTHORITY

ATTEST: _____ BY: _____

,Secretary ,Chairman

Schedule A

Schedule A intentionally left blank in keeping with paragraph 1.

on page 4 of this Agreement.

Schedule B

10/8/2013

rev 12-31-13

SCHEDULE B

SHARED PROJECT COSTS

Project Number	Project Name	Total Cost	East Whiteland Township % Share	East Whiteland Township Cost Portion	Valley Forge Sewer Authority % Share	Valley Forge Sewer Authority Cost Portion	Source of Estimate
1	Mill Lane Pump Station	$3,479,343	81.24	$2,826,618	18.76	$652,725	*
2	Mill Lane Sewer Main Replacement- Phase 1	$668,830	55.37	$371,803	44.63	$297,027	construction base bid received 7-1-13
3	Phase 1 Construction Administration	$49,422	55.37	$27,474	44.63	$21,948	actual ARRO services through 11-1-13
4	Sidley Road Sewer Main Replacement - Phase 2	$857,230	42.63	$366,123	57.37	$491,107	construction base bid received 11-4-13
5	Phase 2 Construction Administration	$85,723	42.63	$36,612	57.37	$49,111	10% of base bid received 11-4-13
6	Lee Boulevard Pump Station - Phase 3	$111,000	5.61	$6,371	94.39	$104,629	EE dated 12-14-12, rev. 1-10-13
7	Phase 3 Construction Administration	$11,100	5.61	$637	94.39	$10,463	10% of engineer's estimate
8	Corrective Action/Connection Management Plan	$9,207	n.a.	$408	n.a.	$8,799	actual ARRO services through 11-1-13
9	Mill Lane/Sidley Road design costs	$190,380	n.a.	$87,550	n.a.	$102,830	actual ARRO services through 11-1-13
10	Act 537 Special Study	$90,251	0.00	$0	100.00	$90,251	actual ARRO services through 11-1-13
11	Rehabilitation of the Great Valley Line**	t.b.d.***	72.24	t.b.d.***	27.76	t.b.d.***	EE^ dated xx-yy-zz
12	Upgrade of 14" force main from Mill Lane PS	t.b.d.***	81.24	t.b.d.***	18.76	t.b.d.***	EE^ dated aa-bb-cc
13	Upgrade of gravity line downstream from Mill Lane PS	t.b.d.***	w.a.^^	t.b.d.***	w.a.^^	t.b.d.***	EE^ dated cc-dd-ee
14	Fourth Pump at Mill Lane Pump Station	t.b.d.***	81.24	t.b.d.***	18.76	t.b.d.***	EE^ dated ff-gg-hh
	Totals	$5,552,486		$3,723,596		$1,828,890	

Note: The Lee Boulevard force main is adequately sized to handle the 374,599 gpd allocation for Charlestown. Charlestown flows exceeding 374,599 gpd through the Lee Blvd pump station may require an upgrade to the Lee Boulevard force main.

*actual construction base bid, changes orders through 11-20-13, & engineering services through start-up

**from MH ML 67-13 to MH ML 1 - 1960 l.f. +/-

***to be determined

^EE = Engineer's Estimate

^^w.a. = weighted average

EAST WHITELAND TOWNSHIP

By: _____, Chairman

ATTEST: _____, Secretary

EAST WHITELAND MUNICIPAL AUTHORITY

By: _____, Chairman

ATTEST: _____, Secretary

VALLEY FORGE SEWER AUTHORITY

By: _____, Chairman

ATTEST: _____, Secretary

Schedule C

CHARLESTOWN TOWNSHIP

WEST WHITELAND TOWNSHIP

TREDYFFRIN TOWNSHIP

EAST GOSHEN TOWNSHIP

WILLISTOWN TOWNSHIP

MALVERN

TOWNSHIP LINE

EAST WHITELAND TRUNK LINE (B)

GREAT VALLEY LINE

GREAT VALLEY LINE (TO BE ABANDONED)

NEW SIDLEY ROAD TRUNK LINE

LEE BOULEVARD FORCE MAIN

MILL LANE TRUNK LINE

HILLBROOK PUMP STATION

LEE BOULEVARD PUMP STATION

MILL LANE PUMP STATION

EAST WHITELAND TRUNK LINE (A)

TO VALLEY FORGE SEWER AUTH.

MATTHEWS ROAD METER

Philadelphia Memorial Park

Hagy Solomon Park

Ecology Park

Great Valley Middle School

Spring Valley Road

Buckwalter Road

Hillbrook Court

Clover Lane

Brian Lane

Hillbrook Lane

Moores Road

Phoenixville Pike

Conestoga Road

Church Road

Sheeleysford Road

Sidley Road

Lee Boulevard

Flat Road

Great Valley Boulevard

Wilburdale Road

Pale Lane

Forge Drive

Thayer Drive

Oak Glen Drive

Mill Lane

Fellowship Road

Brett Lane

Hunters Road

Ashbourne Road

Hunters Run Drive

Hillbrook Lane

Autumn Lane

Thomas Jones Road

Schultz Road

Spring Valley Road

King Herr Mill Road

Strode Road

Autumn Lane

Conestoga Road

Phoenixville Pike

Flat Road

Great Valley Boulevard

Wilburdale Road

Pale Lane

Forge Drive

Thayer Drive

Oak Glen Drive

Mill Lane

Fellowship Road

Brett Lane

Hunters Road

Ashbourne Road

Hunters Run Drive

Hillbrook Lane

Autumn Lane

Thomas Jones Road

Schultz Road

Sidley Road

Lee Boulevard

Moores Road

Church Road

Sheeleysford Road

Buckwalter Road

Hillbrook Court

Clover Lane

Brian Lane

EXHIBIT F9

SIDLEY ROAD TRUNK LINE REPAIRS AGREEMENT, DATED DECEMBER 27, 1978, BY AND BETWEEN EAST WHITELAND MUNICIPAL AUTHORITY AND VALLEY FORGE SEWER AUTHORITY

"Exhibit B"

THIS AGREEMENT made this 27th day of December 1978, by and between EAST WHITELAND MUNICIPAL AUTHORITY and VALLEY FORGE SEWER AUTHORITY

W I T N E S S E T H:

Valley Forge Sewer Authority and East Whiteland Municipal Authority have agreed to share cost for the Sidley Road Trunk Line repairs as indicated in Schedule A presented by East Whiteland Municipal Authority (Schedule A attached hereto). Items Nos. 1, 3, 4, and 6 of the Schedule A, which are line replacements, will be deferred until additional flows coming from Charlestown Township make ~~repairs~~ replacements ~~necessary~~ as determined by East Whiteland Municipal Authority's consulting engineers. Item No. 14 of Schedule A will be adjusted on the basis of proposed additional repairs to be required in lieu of replacement of earlier mentioned lines.

NOW THEREFORE, the parties hereto, agree that the mutual promises herein contained and previous arrangements will allow the parties to finalize the agreement to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line.

VALLEY FORGE SEWER AUTHORITY

EAST WHITELAND MUNICIPAL AUTHORITY

SCHEDULE A

EAST WHITELAND/CHARLESTON SHARED COSTS

	Manhole Runs	Total Est. Repair Cost	East Whiteland Twp. Capacity MGD	East Whiteland Twp. % Share	East Whiteland Twp. Share of Cost Est.	Charlestown Twp. Capacity MGD	Charlestown Twp. % Share	Charlestown Twp. Share of Cost Est.	Total Capaci
1*	67-25 to 23	$12,000	.038	29	0	0.75	71	$ 12,000	0.8
2	24 to 23		.038	29	0	0.75	71		
3*	23 to 19	7,000	0.25	25	1500	0.75 (1)	75	7,000	1.0
		3,000(2)			~~250~~			1500 ~~2,250~~	
4*	19 to 15	30,000	0.6	44	0	0.75	56	30,000	1.3
		3,000(2)			1,500			1,500	
5	15 to 13	1,300	0.635	46	650	0.75	54	650	1.3
6*	13 to 12	4,000	0.75	50		0.75	~~50~~ 100	4,000	1.5
7	12 to 6	600	0.75	50	300	0.75	50	300	1.5
8	6 to 2	300	0.80	52	150	0.75	48	150	1.5
9	2 to 59-4		0.85	53		0.75	47		1.6
10	59-4 to Pump Sta.		0.95	56		0.75	44		1.7
		$61,200			400 ~~$5,900~~			$57,100	
11	Surveying	1,804		50	902			902	
12	TV & Cleaning	4,344		50	2,172			2,172	
13	TV Engr/Insp.	3,060		50	1,533			1,533	
14**	Line Replacement	12,000 (3)		0	0			12,000	
	Engr./Insp./Legal								
	TOTAL	$82,210			$10,507			$73,707	
					$9,707			$77,907	

* TO BE POSTPONED UNTIL ADDITIONAL FLOW COMES FROM CHARLESTOWN

** TO BE ADJUSTED ON BASIS OF POSTPONED WORK

(1) Assume 750,000 MGD includes Ferguson & Warehouse

EXHIBIT F10

SEWAGE TREATMENT AGREEMENT, DATED NOVEMBER 17, 1987, BY AND BETWEEN EAST GOSHEN TOWNSHIP, EAST GOSHEN MUNICIPAL AUTHORITY, EAST WHITELAND TOWNSHIP, AND EAST WHITELAND MUNICIPAL AUTHORITY

SEWAGE TREATMENT AGREEMENT

THIS AGREEMENT, made the 17th day of November, 1987 by and among EAST GOSHEN TOWNSHIP ("East Goshen"), EAST GOSHEN MUNICIPAL AUTHORITY ("East Goshen Authority"), EAST WHITELAND TOWNSHIP ("East Whiteland") and EAST WHITELAND MUNICIPAL AUTHORITY ("East Whiteland Authority"),

WITNESSETH:

WHEREAS, the Malvern Golf Club Subdivision, also known as and hereinafter referred to as "Lockwood Chase," has been developed in both East Goshen and East Whiteland, lots 1 to 23 being located in East Whiteland, and lots 24 to 103 being located in East Goshen; and

WHEREAS, all of the lots of Lockwood Chase are served by and connected to a sewage collection system and a community spray irrigation sewage treatment facility (the "Lockwood Chase Plant") located in East Goshen on land owned by Lockwood Community Association, which land is subject to an easement and right of way agreement with East Goshen Authority; and

WHEREAS, the collection system and the Lockwood Chase Plant in East Goshen are part of the East Goshen sewage system, which is owned by East Goshen Authority and leased to and operated by East Goshen; and

WHEREAS, the collection system for Lockwood Chase which is located in East Whiteland is owned by East Whiteland Authority

and is part of the Township sewage system operated by East Whiteland; and

WHEREAS, all of the Lockwood Chase lots in East Whiteland are connected to and served by the Lockwood Chase Plant in East Goshen; and

WHEREAS, the purpose of this Agreement is to set forth the terms and conditions by which the sewage generated by the Lockwood Chase lots located in East Whiteland shall be received by the East Goshen sewage system and treated in the Lockwood Chase Plant;

NOW, THEREFORE, the parties hereto, each binding itself, its successors and assigns, and each representing that it has proper legal authority to enter into this Agreement, do mutually represent, covenant, and agree as follows:

1. Subject to payment of charges and subject also to the limitations of this Agreement, East Goshen and East Goshen Authority grant East Whiteland and East Whiteland Authority the right to discharge sewage wastes from those residences on lots 1 through 23 in Lockwood Chase into the East Goshen sewage system for treatment in the Lockwood Chase Plant. Such discharge shall be made into the Lockwood Chase sewage collection system located in East Whiteland. No other sewage waste from East Whiteland shall be discharged into the East Goshen System. East Goshen and East Goshen Authority agree to reserve sufficient treatment capacity in the Lockwood Chase Plant to serve the needs of the said lots 1 through 23.

2. East Goshen and East Goshen Authority reserve the right at any time to divert the East Whiteland sewage to any other treatment facility of the East Goshen sewage system. East Whiteland and East Whiteland Authority reserve the right at any time to divert the East Whiteland sewage to another treatment facility of its system, in which event East Goshen's and East Goshen Authority's obligation to receive East Whiteland sewage wastes pursuant to this Agreement shall terminate.

3. East Whiteland and East Whiteland Authority shall be responsible for the maintenance and repair of that portion of the Lockwood Chase collection system located in East Whiteland. East Goshen and East Goshen Authority shall maintain in good repair and operating condition the Lockwood Chase Plant and collection system located in East Goshen.

4. East Whiteland and East Whiteland Authority agree to permit no discharges into the Lockwood Chase collection system other than domestic waste and agrees to abide by all East Goshen regulations governing the discharge of waste into the East Goshen sewage system.

5. East Whiteland shall be responsible for the billing of the East Whiteland residents who own lots 1 through 23 in Lockwood Chase for sewage service. East Goshen shall bill East Whiteland on a calendar quarter basis and at the regular residential sewer rental charge, according to the East Goshen sewer rate ordinance, for treatment of the waste generated by the

owners of lots 1 through 23 in Lockwood Chase. Payment shall be made by East Whiteland within thirty (30) days of delivery of the bill.

6. Any party hereto, or its duly authorized representative, shall at all reasonable times be permitted to enter upon the properties of the other for the purpose of inspection, observation, measurement, sampling, and testing in order to carry out the purposes and intent of this Agreement.

IN WITNESS WHEREOF, the parties have caused these presents to be executed and their respective corporate seals affixed the day and year first above written.

ATTEST:

EAST GOSHEN TOWNSHIP

Judith P. McCarthy

BY: _____

EAST GOSHEN MUNICIPAL AUTHORITY

_____

BY: _____

EAST WHITELAND TOWNSHIP

J. Donald Remensnyder

BY: _____

EAST WHITELAND MUNICIPAL AUTHORITY

Harold A. Berkley

BY: _____

EXHIBIT F11

AGREEMENT, DATED SEPTEMBER 14, 1993, BY AND BETWEEN WILLISTOWN TOWNSHIP, EAST WHITELAND TOWNSHIP AND EAST WHITELAND MUNICIPAL AUTHORITY

AGREEMENT

This Agreement entered into this 14TH day of SEPTEMBER, 1993, by and among Willistown Township, East Whiteland Township and East Whiteland Municipal Authority.

WHEREAS, Willistown Township owns and operates a sewage collection system within their incorporated municipal limits.

WHEREAS, East Whiteland Municipal Authority owns a sewage collection system (within the incorporated East Whiteland Township municipal limits) which is leased to and operated by the East Whiteland Township.

WHEREAS, an apartment development known as Woodview is proposed by American Communities of which 114 apartment units are to be constructed in East Whiteland Township and 150 apartment units are to be constructed in Willistown Township.

WHEREAS, the Developer will construct and maintain a gravity sanitary sewer collection system to service the apartment buildings, located in East Whiteland Township near the boundaries of the two Townships, ("Boundary Users") where the apartment buildings do not have access to the sewage collection system owned by East Whiteland Municipal Authority, and discharge the sewage flow into the development sewage pump station located in Willistown Township.

WHEREAS, in order to comply with applicable law, Boundary Users located within East Whiteland Township are to be treated as

customers solely of that township and service is to be provided hereunder solely by Willistown Township to East Whiteland Township rather than to any individual Boundary User within East Whiteland Township; and

WHEREAS, Willistown Township as owner and operator of a system is willing to provide sewer collection and conveyance services to East Whiteland Township for the sewage generated by the Boundary Users in accordance with this Agreement.

NOW THEREFORE, the parties hereto, intending to be legally bound, hereby agree as follows:

1. Willistown Township agrees to permit connection to its sewage system by Boundary Users upon compliance with the following conditions:

a. Prior to permitting any Boundary User to connect to Willistown's system, East Whiteland Municipal Authority shall notify Willistown Township of the impending connection and Willistown Township shall determine that the connection is in accordance with the Final Woodview Development Plan approved by both East Whiteland Township and Willistown Township and complies with all applicable rules and technical specifications of Willistown Township.

b. The metering chamber and telemetering equipment has been installed by the developer in compliance with the rules and specifications set forth in the Woodview Final Land Development approved by both East Whiteland Township and Willistown Township.

2. For all reporting purposes as to daily gallonage flow, the gallonage from the Boundary Users as measured by the metering equipment shall be deemed the gallonage of East Whiteland Municipal Authority and shall be subtracted from the gallonage flows of Willistown Township. This concept shall be applicable to reporting from the respective parties to both the Valley Creek Trunk Line and the Valley Forge Sewer Authority.

3. This Agreement is entered into solely by and for the benefit of the parties hereto and shall not grant any rights on behalf of any Boundary Users or other entities or persons.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective duly authorized officers as of the date above mentioned.

TOWNSHIP OF WILLISTOWN

By: _____
Donald A. Mancini, Chairman

Attest:
Dorothy E. McClintock
Dorothy E. McClintock, Sec./Treas.

TOWNSHIP OF EAST WHITELAND

By: _____
Charles C. DiSipio, Chairman

Attest:
David O. Meachen
David O. Meachen
Township Secretary

EAST WHITELAND MUNICIPAL AUTHORITY

By: _____
James S. Cahill, Chairman

Attest: _____

EXHIBIT F12

AGREEMENT, DATED JULY 10, 1995, BY AND BETWEEN MALVERN BOROUGH, EAST WHITELAND TOWNSHIP, AND EAST WHITELAND MUNICIPAL AUTHORITY

AGREEMENT

2/21/95
Rev. 3/23/95

This Agreement entered into this tenth day of July 1995, by and among Malvern Borough, East Whiteland Township and East Whiteland Municipal Authority.

WHEREAS, Malvern Borough owns and operates a sewage collection system within their incorporated municipal limits.

WHEREAS, East Whiteland Municipal Authority owns a sewage collection system (within the incorporated East Whiteland Township municipal limits) which is leased to and operated by the East Whiteland Township.

WHEREAS, a single family attached development known as Erin Glen is proposed by John K. and Margaret A. Mullen, of which 19 single family attached units are to be constructed in East Whiteland Township and 6 single family attached units are to be constructed in Malvern Borough.

WHEREAS, the Developer will construct and Homeowner Association will maintain a gravity sanitary sewer collection system to service the buildings, located in East Whiteland Township near the boundaries of the two Townships, ("Boundary Users") where the buildings do not have access to the sewage collection system owned by East Whiteland Municipal Authority, and discharge the sewage flow into the development sewage gravity mains located in Malvern Borough.

WHEREAS, the developer shall pay all applicable tapping and connection fees to the respective municipality for dwellings located within their municipal limits.

WHEREAS, East Whiteland Township and Malvern Borough shall bill and collect sewer rental in accordance with applicable procedures from individual dwelling owners located within their jurisdictional municipal limits.

WHEREAS, in order to comply with applicable law, Boundary Users located within East Whiteland Township are to be treated as customers solely of that township and service is to be provided whereunder solely by Malvern Borough to East Whiteland Township rather than to any individual Boundary User within East Whiteland Township; and

WHEREAS, Malvern Borough as owner and operator of a system is willing to provide sewer collection and conveyance services to East Whiteland Township for the sewage generated by the Boundary Users in accordance with this Agreement.

NOW THEREFORE, the parties hereto, intending to be legally bound, hereby agree as follows:

1. Malvern Borough agrees to permit connection to its sewage system by Boundary Users upon compliance with the following conditions:

a. Prior to permitting any Boundary User to connect to Malvern's system, East Whiteland Municipal Authority shall notify Malvern Borough of the impending connection and Malvern Borough shall determine that the connection is in accordance with the final Erin Glen Development Plan approved by both East Whiteland Township and Malvern Borough and complies with all applicable rules and technical specifications of both municipalities.

b. The metering chamber and telemetering equipment has been installed by the developer in compliance with the rules and specifications set forth in the Erin Glen Final Land Development approved by both East Whiteland Township and Malvern Borough.

2. For all reporting purposes as to daily gallonage flow, the gallonage from the Boundary Users as measured by the metering equipment shall be deemed the gallonage of East Whiteland Municipal Authority and shall be subtracted from the gallonage flows of Malvern Borough. This concept shall be applicable to reporting from the respective parties to both the Valley Creek Trunk Line and the Valley Forge Sewer Authority.

3. In consideration for Malvern Borough's agreement to allow connections to its sewage collection system as aforesaid, East Whiteland Township shall pay to Malvern Borough on each anniversary date of this agreement, an annual fee of seventeen dollars and fifty cents ($17.50) per average daily equivalent dwelling unit (E.D.U.) during each year for those boundary users utilizing Malvern Borough's facilities in the manner provided herein. The number of E.D.U.'s per day shall be calculated by dividing the total gallonage of the flow per day by 275 gallons.

4. Prior to making connections for properties located in the Township, the collection lines to which those properties will be connected, which are located within the Township, will be conveyed to the Authority by the developer, unless prior to such date the Township and the Authority have agreed to waive this requirement.

5. This Agreement is entered into solely by and for the benefit of the parties hereto and shall not grant any rights on behalf of any Boundary Users or other entities or persons.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective duly authorized officers as of the date above mentioned.

TOWNSHIP OF EAST WHITELAND

By: Glenn H. Cocherham

Attest:

By: David O Meacher (Seal)

Secretary

MALVERN BOROUGH

By: Margaret M Sidlick

Attest:

By: Patrick J. McGuigan (Seal)

Secretary

EAST WHITELAND MUNICIPAL AUTHORITY

By: Edward T. Alexander, CHAIRMAN

Attest:

By: William A. B (Seal)

Ass't. Secretary

EXHIBIT F13

SEWAGE TREATMENT AGREEMENT, DATED OCTOBER 17, 2000, BY AND BETWEEN EAST GOSHEN TOWNSHIP, EAST GOSHEN MUNICIPAL AUTHORITY, EAST WHITELAND TOWNSHIP, AND EAST WHITELAND MUNICIPAL AUTHORITY

SEWAGE TREATMENT AGREEMENT

THIS AGREEMENT, made the 17th day of October, 2000, by and among **EAST GOSHEN TOWNSHIP** ("East Goshen"), **EAST GOSHEN MUNICIPAL AUTHORITY** ("East Goshen Authority"), **EAST WHITELAND TOWNSHIP** ("East Whiteland") and **EAST WHITELAND MUNICIPAL AUTHORITY** ("East Whiteland Authority"),

WITNESSETH:

WHEREAS, the Mill Valley subdivision has been developed in East Goshen, East Whiteland and West Whiteland Townships; and

WHEREAS, the sewage from the Mill Valley development will be collected and transported to the West Goshen Township Wastewater Treatment Plant through lines located in East Goshen, which are part of the East Goshen sewage system ("East Goshen System") owned by East Goshen Authority and leased to and operated by East Goshen; and

WHEREAS, West Whiteland Township and East Goshen currently have intermunicipal agreements with West Goshen Township and West Goshen Sewer Authority for the treatment of sewage in the West Goshen Township Wastewater Treatment Plant; and

WHEREAS, East Whiteland and East Whiteland Authority have no such agreement with West Goshen Township and West Goshen Sewer Authority; and

WHEREAS, lots 32, 33, 34 and 35 of the Mill Valley development ("East Whiteland Lots") are located in East Whiteland and discharge domestic waste into the East Whiteland sewage system ("East Whiteland System"); and

WHEREAS, East Goshen and East Goshen Authority currently receive sewage from 23 homes located in East Whiteland which is transported to and treated at the Lochwood Chase Wastewater Treatment Plant located in East Goshen; and

WHEREAS, all of the terms and conditions of the agreement relating to the treatment of East Whiteland's sewage by the East Goshen Lochwood Chase Wastewater Treatment Plant are set forth in an agreement entitled "Sewage Treatment Agreement", dated November 17, 1987 by and among the parties hereto; and

WHEREAS, the parties hereto intend hereby to set forth the terms and conditions upon which sewage from the East Whiteland Lots will be accepted from the East Whiteland System into the East Goshen System and transported to the West Goshen Wastewater Treatment Plant for treatment.

NOW, THEREFORE, the parties hereto, each binding itself, its successors and assigns, and each representing that it has proper legal authority to enter into this agreement, do mutually represent, covenant and agree as follows:

1. East Whiteland and East Whiteland Authority are hereby granted the right to discharge sewage from the East Whiteland System generated by the East Whiteland Lots into the East Goshen System and transported for treatment to the West Goshen Wastewater Treatment Plant. No other sewage waste from the East Whiteland System shall be discharged into the East Goshen System at that location.

2. East Goshen and East Goshen Authority agree to allocate sufficient amount of the sewage treatment capacity that is reserved for East Goshen in the West Goshen Wastewater Treatment Plant to serve the needs of the East Whiteland Lots.

3. East Whiteland and East Whiteland Authority shall be responsible for the maintenance and repair of that portion of the East Whiteland System located in Mill Valley. East Goshen and East Goshen Authority shall maintain in good repair and operating condition that portion of the East Goshen System located in Mill Valley, as well as the other portions of the East Goshen System necessary to transport sewage to the West Goshen Wastewater Treatment Plant from the East Whiteland Lots.

4. East Whiteland and East Whiteland Authority agree to permit no discharges into the East Goshen System, other than domestic waste and agrees to abide by all East Goshen and West Goshen regulations governing the discharge of waste into the East Goshen System and into the West Goshen Wastewater Treatment Plant.

5. East Whiteland shall be responsible for the billing of the East Whiteland residents who own the East Whiteland Lots for sewage service. East Goshen shall bill East Whiteland on a calendar quarter basis for transportation and treatment of the waste generated by the East Whiteland Lots at the regular residential sewer rental charge, according to the East Goshen Sewer Rate Ordinance, in the same manner that the flows from East Whiteland are billed for treatment by the Lochwood Chase Wastewater Treatment Plant. Payment shall be made by East Whiteland within 30 days of delivery of the bill.

6. Any party hereto, or its duly authorized representative, shall at all reasonable times be permitted to enter upon the properties of the other for purposes of inspection, observation, measurement, sampling and testing in order to carry out the purposes and intent of this agreement.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed the day and year first above written.

ATTEST:

EAST GOSHEN TOWNSHIP

BY:

ATTEST:

EAST GOSHEN MUNICIPAL AUTHORITY

Marie D. Clevenger

BY:

ATTEST:

EAST WHITELAND TOWNSHIP

Virginia Fennimore

BY:

ATTEST:

EAST WHITELAND MUNICIPAL AUTHORITY

BY:

EXHIBIT F14

SEWAGE CAPACITY / SERVICE AGREEMENT, DATED NOVEMBER 1, 2000, BY AND BETWEEN EAST WHITELAND TOWNSHIP, EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY, TREDYFFRIN TOWNSHIP, TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY, AND TRAMMELL CROW NORTHEAST METRO DEVELOPMENT, INC.

RILEY
RIPER
HOLLIN &
COLAGRECO
ATTORNEYS AT LAW

DENISE R. YARNOFF
Extension 209
denise@rrhc.com

NOV - 3 2000

November 1, 2000

Mr. J. Donald Reimenschneider
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

RE: Trammell Crow - Sewage Capacity/Service Agreement
Our File No. 325-18

Dear Don:

Enclosed please find a fully executed Sewage Capacity/Service Agreement dated November 1, 2000 between East Whiteland Township, East Whiteland Township Municipal Authority, Tredyffrin Township, Tredyffrin Township Municipal Authority and Trammell Crow Northeast Metro Development, Inc.

Thank you for all of your assistance in getting this Agreement finalized and executed. If you have any questions, please give me a call.

Very truly yours,

Denise R. Yarnoff

DRY/may

Enclosures

cc: Jeffrey Holcomb (w/encl.)
Louis J. Colagreco, Jr., Esquire (w/o encl.)
Susan E. Line Boswell, Esquire (w/o encl.)

U:\MAGGY\LTRSDRY\REIMSCH.DOC

SEWAGE CAPACITY/SERVICE AGREEMENT

This Sewer Capacity/Service Agreement is entered into as of the 1st day of November, 2000 between and among East Whiteland Township ("East Whiteland"), East Whiteland Township Municipal Authority, Tredyffrin Township ("Tredyffrin"), Tredyffrin Township Municipal Authority and Trammell Crow Northeast Metro Development, Inc. ("Trammell Crow").

Trammell Crow has proposed construction of an office park at the former Warner Quarry property situated at Route 29 and Yellow Springs Road and located partly in East Whiteland Township and partly in Tredyffrin Township, Chester County, Pennsylvania ("Office Park").

East Whiteland's Act 537 Plan states that the portion of the Office Park situate in East Whiteland ("East Whiteland Portion") should be serviced by the Valley Forge Sewer Authority ("VFSA").

Trammell Crow has requested that East Whiteland approve connection of the East Whiteland Portion to the East Whiteland public sewer system with effluent to be treated by VFSA. East Whiteland has advised that it currently does not have adequate reserve treatment capacity at VFSA for treatment of effluent from the East Whiteland Portion.

The East Whiteland Portion of the Office Park requires a maximum of 629 EDUs, or 125,700 gallons of daily capacity (based upon Tredyffrin's calculation of the number of EDU's necessary for approximately 2.2 million square feet of office space based on 3500 square feet per EDU) ("Sewage Capacity").

Tredyffrin (and its Municipal Authority) has reserve capacity at the VFSA treatment plant and has agreed to sell a portion of that capacity (along with the requisite capacity in the Valley Creek Trunk Line Interceptor) to Trammell Crow in accordance with this Agreement.

East Whiteland* and Tredyffrin (and their Municipal Authorities) are willing to permit connection of the East Whiteland Portion to the VFSA treatment plant through Tredyffrin since the East Whiteland Portion is adjacent to Tredyffrin Township and since that portion of the Office Park in Tredyffrin will be treated at the VFSA treatment plant. Moreover, the only connection for the entire Office Park to the existing public system off-site will be in Tredyffrin.

It is the further intention of this Agreement to set forth the terms and conditions pursuant to which: (1) Tredyffrin Township Municipal Authority shall sell the Sewage Capacity to Trammell Crow; (2) Trammell Crow will purchase the Sewage Capacity from Tredyffrin Township Municipal Authority; and (3) Trammell Crow shall pay any annual sewer rentals to East Whiteland which shall in turn pay sewer rentals to Tredyffrin.

NOW, THEREFORE, intending to be legally bound hereby, and for good and valuable consideration, receipt of which is hereby acknowledged, the parties agree as follows:

1. Tredyffrin Township Municipal Authority shall, upon request by Trammell Crow, sell the Sewage Capacity to Trammell Crow at Tredyffrin's current charge per EDU at the time of payment for capacity in the Valley Forge Sewage Treatment Plant, which shall include conveyance capacity in the Valley Creek Trunk Line Interceptor.

2. All parties acknowledge that the Sewage Capacity shall be used by Trammell Crow to service the East Whiteland Portion and for no other property.

* "East Whiteland" shall include its Sewer Authority where applicable.

3. Trammell Crow will offer for dedication and East Whiteland will accept for dedication the sewer facilities (including any pipes and pump stations) located on the East Whiteland Portion.

4. All municipal parties agree to execute and process their respective Planning Modules for the Office Park in accordance with this Agreement.

5. Trammell Crow will pay East Whiteland any sewer rental charge imposed by East Whiteland for the East Whiteland Portion in an amount equal to the sewer rental charge imposed upon other users connected to the Valley Forge Sewage Treatment Plant in East Whiteland based upon the same number of EDU's used by Tredyffrin to calculate the sewer rental charge billed to East Whiteland. East Whiteland shall pay Tredyffrin for any sewer rental charge billed to East Whiteland by Tredyffrin for the East Whiteland Portion at the same sewer rental charge rate imposed by Tredyffrin upon other users connected to the Valley Forge Sewage Treatment Plant in Tredyffrin within sixty (60) days.

6. This agreement shall not be construed as suggesting or implying that either East Whiteland or Tredyffrin Townships agree to development of the Office Park. East Whiteland and Tredyffrin shall have the right to apply their applicable zoning, subdivision and land development ordinances and the Pennsylvania Municipalities Planning Code, and to render a decision(s) in accordance therewith.

7. The Agreement has been drafted in part by all parties hereto and any ambiguity herein shall not be presumptively construed against or in favor of any party.

8. This Agreement is entered into solely by and for the benefit of the parties hereto and shall not create any rights on behalf of any other entities or persons.

9. This Agreement represents the entire agreement among the parties. Any changes or modifications hereto must be in writing and signed by the parties.

10. This Agreement shall be binding upon the successors and assigns of the parties hereto.

11. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective duly authorized officers as of the above date.

ATTEST/WITNESS:

EAST WHITELAND TOWNSHIP

By: _____

EAST WHITELAND TOWNSHIP
MUNICIPAL AUTHORITY

By: _____

TREDYFFRIN TOWNSHIP

By: _____

TREDYFFRIN TOWNSHIP MUNICIPAL
AUTHORITY

By: _____

TRAMMELL CROW NORTHEAST
METRO DEVELOPMENT, INC.

By: _____

EXHIBIT F15

ADDENDUM TO SEWAGE CAPACITY / SERVICE AGREEMENT, DATED NOVEMBER 19, 2015, BY AND BETWEEN EAST WHITELAND TOWNSHIP AND TREDYFFRIN TOWNSHIP WITH THE JOINDERS OF RLD ATWATER JV, LLC AND THE HAVEN AT ATWATER VILLAGE, LLC

JOSEPH G. RIPER
EMAIL: joe@rrhc.com

RILEY RIPER HOLLIN & COLAGRECO
ATTORNEYS AT LAW

April 4, 2016

Sent via electronic mail and UPS, Overnight Mail
Kristin S. Camp, Esquire
118 W. Market Street
Suite 300
West Chester, PA 19382-2928

Sent via electronic mail and UPS, Overnight Mail
John Nagel, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Sent via electronic mail and UPS, Overnight Mail
William Reiser
RLD Atwater JV, LLC
124 Cedar Avenue
West Conshohocken, PA 19428

Re: Addendum between East Whiteland Township, Tredyffrin Township, RLD Atwater JV, LLC and The Haven at Atwater Village, LLC dated November 19, 2015

Dear Kristin, John and Bill:

Enclosed for your files please find an original, fully executed counterpart of the Addendum to Sewage Capacity/Service Agreement dated November 1, 2000.

If you have any questions, please do not hesitate to give me a call.

Very truly yours,

Joseph G. Riper

JGR/lal
Enclosure
cc: William P. Lincke, Esquire (via email)
William Steele (via email)
Louis J. Colagreco, Jr., Esquire (via email)

rrhc.com
PO Box 1265 717 Constitution Drive, Suite 201 Exton, PA 19341 Phone 610.458.4400 Fax 610.458.4441

ADDENDUM TO SEWAGE CAPACITY/SERVICE AGREEMENT DATED NOVEMBER 1, 2000

THIS ADDENDUM ("Addendum") made this 19th day of November, 2015 between EAST WHITELAND TOWNSHIP ("East Whiteland Township") and TREDYFFRIN TOWNSHIP ("Tredyffrin Township") with the joinders of RLD ATWATER JV, LLC ("Atwater") and THE HAVEN AT ATWATER VILLAGE, LLC ("Haven").

BACKGROUND

East Whiteland Township and Tredyffrin Township executed an intermunicipal agreement entitled Sewage Capacity/Service Agreement dated November 1, 2000 ("Service Agreement"), pursuant to which Tredyffrin Township agreed to allocate and provide sewage treatment and conveyance capacity to East Whiteland Township to facilitate in the development of certain lands owned by Trammell Crow in East Whiteland Township formerly known as the Warner Quarry ("Trammell Crow Property"). The Service Agreement was also executed by the East Whiteland Township Municipal Authority, Tredyffrin Township Municipal Authority and Trammell Crow Northeast Metro Development, Inc. ("Trammell Crow"). Following the execution of the Service Agreement, East Whiteland Township succeeded to the interests of East Whiteland Township Municipal Authority and Tredyffrin Township succeeded to the interests of Tredyffrin Township Municipal Authority.

Following the execution of the Service Agreement, Trammell Crow purchased 125,800 gallons per day ("GPD") [629 EDUs] of sewage treatment and conveyance capacity from Tredyffrin Township ("Trammell Crow Capacity") in accordance with the terms of a certain Sewage Capacity Purchase Agreement dated June 30, 2005 ("Capacity Purchase Agreement") in connection with the proposed development of the Trammell Crow Property. Tredyffrin Township fees and charges for the Trammel Crow Capacity are governed by the Service Agreement.

Pursuant to the terms of an Assignment and Assumption of Sewage Capacity dated September 18, 2014 ("Assignment"), Trammell Crow, through its controlled affiliate, Atwater Land LP, a Delaware limited partnership, transferred 46,393 GPD of the Trammell Crow Capacity to Atwater in connection with the proposed development of the Atwater Project (defined below), which development will be constructed on part of the Trammell Crow Property. The Trammell Crow Capacity transferred to Atwater is referred to herein as the "Atwater Capacity". The Trammell Crow Capacity which Trammel Crow retained [79,407 GPD] will continue to be referred to herein as the "Trammell Crow Capacity".

The Atwater Capacity which Trammell Crow transferred to Atwater will not fully satisfy the sewage treatment requirements of the Atwater Project. The remaining sewage treatment capacity necessary for the full build-out of the Atwater Project, consisting of 187,907 GPD, will be provided by East Whiteland Township ("East Whiteland Capacity").

The East Whiteland Capacity (necessary to complete the development of the Atwater Project) will flow through part of the Tredyffrin Township collection system referred to as the Church Road Pump Station and Church Road Interceptor (referred to together as the "Church Road Interceptor").

The Atwater Project is a 149.40 acre parcel of land which will be developed in three separate sections consisting of a 549 unit "Residential Section", a 326 unit "Apartment Section" and an 85,111 square foot "Commercial Section". Atwater is the current record owner of the Residential Section and the Commercial Section. Haven is the current record owner of the apartment units comprising the Apartment Section.

As provided in the Service Agreement, Tredyffrin Township bills East Whiteland Township directly for the number of connected EDUs of the Trammell Crow Capacity. The number of connected EDUs is based on the number of EDUs required to be assigned to the user of sewage capacity which is calculated using Tredyffrin Township's standard of 200 GPD per EDU (each a "Connected EDU"). Tredyffrin Township's sewer rental charge to East Whiteland Township for each Connected EDU of the Trammell Crow Capacity is a flat fee which is the same sewer rental fee charged by Tredyffrin Township per EDU to other users in Tredyffrin Township that are connected to the Valley Forge Sewage Treatment Plant.

In accordance with the terms of the Service Agreement, East Whiteland Township bills Trammell Crow a sewer rental charge based upon the number of Connected EDUs of the Trammell Crow Capacity. The sewer rental fee that East Whiteland Township charges Trammel Crow for each Connected EDU is the same sewer rental fee charged by East Whiteland Township per EDU to other East Whiteland Township's users connected to the Valley Forge Sewer Treatment Plant.

The sewer rental charge paid to Tredyffrin Township pursuant to the Service Agreement with respect to the Trammell Crow Capacity (which will continue to apply to the Atwater Capacity) covers both treatment and conveyance. By contrast, at such time that the East Whiteland Capacity is used in connection with the build-out of the Atwater Project, Tredyffrin Township's charges for the East Whiteland Capacity will be limited to only a conveyance charge. Tredyffrin Township's charges to East Whiteland Township for conveyance are governed by the Valley Creek Trunk Sewer Agreement dated November 1, 1970 ("Valley Creek Agreement").

As a result of the foregoing circumstances, East Whiteland Township and Tredyffrin Township have agreed to modify the Service Agreement in order to address the conveyance charges applicable to the East Whiteland Capacity flows through the Church Road Interceptor.

Atwater and Haven have joined in this Addendum for the purpose of confirming their respective approvals of the billing arrangements set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, for other good and valuable consideration, the receipt of which is hereby acknowledged and with the intent to be legally bound, the parties hereto covenant and agree as follows:

1. ALLOCATION OF TRAMMELL CROW CAPACITY AND ATWATER CAPACITY. Tredyffrin Township and East Whiteland Township hereby acknowledge the transfer of the Atwater Capacity from Trammell Crow to Atwater pursuant to the Assignment. For billing purposes, Tredyffrin Township and East Whiteland Township agree that the first 46,393 GPD of flows [or 231.965 Connected EDUs] in the Atwater Project (based on Tredyffrin Township's method for calculating EDUs) will be considered the Atwater Capacity. Tredyffrin Township will continue to bill Easement Whiteland Township for the Connected EDUs of the Atwater Capacity based upon the Service Agreement. All sewage flows generated by the Atwater Project in excess of 46,393 GPD will be considered to be East Whiteland Capacity. Tredyffrin Township will continue to charge East Whiteland Township a sewer rental charge for the Trammell Crow Capacity in accordance with the Service Agreement. At such time that the average daily flows (on an annualized basis) generated by the Atwater Project exceed 46,393 GPD, which excess shall be deemed East Whiteland Capacity, Tredyffrin Township will be entitled to collect a conveyance fee in accordance with Paragraph 3 below.

2. AUTHORIZATION TO CONNECT. Pursuant to Section 3.02 of the Valley Creek Agreement, Tredyffrin Township hereby authorizes East Whiteland Township to use the Church Road Interceptor to connect into the Valley Creek Trunk Sewer for the purpose of conveying the East Whiteland Capacity sewage flows from the Atwater Project to the Valley Forge Sewage Treatment Plant to the extent necessary to complete the full build-out of the Atwater Project.

3. CONVEYANCE FEE FOR EAST WHITELAND CAPACITY. Atwater is required in connection with the development of the Atwater Project to install a flow meter in Manhole No. _____ ("Atwater Flow Meter"), which is located in a section of the gravity line which conveys sewage flows from the Atwater Project to the Church Road Pump Station at a point on or near the East Whiteland/Tredyffrin Township line. The Atwater Flow meter is positioned so that it will measure all sewage flows generated by the Atwater Project. The average daily sewage flows (on an annualized basis) generated by the Atwater Project in excess of 46,393 GPD based will be treated as East Whiteland Capacity sewage flows, which flow will be added to the average daily sewage flows measured at the Mathews Road Meter Pit and the total will be billed to East Whiteland Township in accordance with the Valley Creek Agreement.

4. EAST WHITELAND TOWNSHIP SEWER RENTAL CHARGES. East Whiteland Township will charge connected users within Atwater a quarterly sewer rental charge based upon the sewer rental rate applicable to the Atwater Sewer District.

5. RATIFICATION. Except as modified above, the Service Agreement is ratified and affirmed in all other respects. The parties to this Addendum acknowledge and agree that nothing contained in this Addendum is intended to modify or affect the current billing arrangements with Trammell Crow set forth in the Service Agreement and for this reason Trammell Crow's joinder or approval of this Addendum is not required.

IN WITNESS WHEREOF, the parties have executed this Addendum the day and year first above written.

ATTEST:

Maureen G. Perri
Township Secretary

EAST WHITELAND TOWNSHIP

BY: _____
William Holmes
Chairman, Board of Supervisors

ATTEST:

_____
Secretary

TREDYFFRIN TOWNSHIP

BY: _____

ATTEST/WITNESS:

_____

RLD ATWATER JV, LLC, a Delaware limited liability company

BY: Reiser Atwater, LP, a Pennsylvania limited partnership, sole Member

BY: Reiser Investments III, Inc., a Pennsylvania corporation, General Partner

BY: _____
William Reiser, President

WITNESS:

_____

THE HAVEN AT ATWATER VILLAGE, LLC

BY: _____
Print Name: _____
Title: _____

IN WITNESS WHEREOF, the parties have executed this Addendum the day and year first above written.

ATTEST:

Maureen G. Perri Turley

Maureen G. Perri
Township Secretary

EAST WHITELAND TOWNSHIP

BY: William Holmes

William Holmes
Chairman, Board of Supervisors

ATTEST:

Patricia Hoffman

Secretary

TREDYFFRIN TOWNSHIP

BY: William J Matt

ATTEST/WITNESS:

RLD ATWATER JV, LLC, a Delaware limited liability company

BY: Reiser Atwater, LP, a Pennsylvania limited partnership, sole Member

BY: Reiser Investments III, Inc., a Pennsylvania corporation, General Partner

BY:

William Reiser, President

WITNESS:

THE HAVEN AT ATWATER VILLAGE, LLC

BY:

Print Name: Jason C. Lynch

Title: Vice President of Johnson Development Associates, Inc., Manager of The Haven at Atwater Village, LLC

EXHIBIT F16

SEWAGE TREATMENT AGREEMENT, DATED MARCH 2, 2004, BY AND BETWEEN EAST WHITELAND TOWNSHIP, EAST GOSHEN TOWNSHIP, AND MALVERN INSTITUTE FOR PSYCHIATRIC & ALCOHOLIC STUDIES

BUCKLEY
NAGLE
ATTORNEYS AT LAW

BUCKLEY, NAGLE, BRION, McGUIRE,
MORRIS & SOMMER LLP

KRISTIN S. CAMP
484.879.2000 EXT 203
484.879.2009 FAX
kcamp@buckleynagle.com

April 13, 2004

Terry Woodman, Manager
EAST WHITELAND TOWNSHIP
209 Conestoga Road
Frazer, PA 19355

Louis F. Smith, Manager
EAST GOSHEN TOWNSHIP
1580 Paoli Pike
West Chester, PA 19380

Re: Sewage Treatment Agreement for Malvern Institute

Dear Terry and Rick:

Enclosed please find the original of the above-referenced Agreement which was recorded with the Recorder of Deeds. I wanted you to have a copy of the same.

Very truly yours,

Kristin S. Camp

Kristin S. Camp

KSC/nms
Enclosure

\\Buckley-fs1\docs\KRISTIN\Malvern Institute\Smith and Woodman ltr - 04.12.04.wpd

RETURN TO Buckley Nagle...

RECORDER OF DEEDS

SEWAGE TREATMENT AGREEMENT

THIS SEWAGE TREATMENT AGREEMENT (the "Sewage Agreement"), is made this 2nd day of March, 2004, by and between EAST WHITELAND TOWNSHIP (hereinafter "East Whiteland"), a township of the Second Class located in Chester County, Pennsylvania, EAST GOSHEN TOWNSHIP (hereinafter "East Goshen"), a township of the Second Class located in Chester County, Pennsylvania and MALVERN INSTITUTE FOR PSYCHIATRIC & ALCOHOLIC STUDIES, with an address of 940 West King Road, Malvern, Pennsylvania 19355 ("Malvern Institute").

BACKGROUND:

WHEREAS, East Whiteland owns and operates a sanitary sewage system (the "System") which collects, treats and disposes of domestic waste from various properties in East Whiteland; and

WHEREAS, East Whiteland has undertaken a project to expand the existing System to locate a sanitary sewer line and sewer pumping station (the "Pumping Station") together with accessories and appurtenances, on land owned by Malvern Institute, which property is located at 940 West King Road in East Goshen Township, Chester County, Pennsylvania and is more particularly referred to as UPI Numbers 53-2-18 and 54-2-127 (the "Property"); and

WHEREAS, East Whiteland and Malvern Institute have entered into an Easement Agreement (the "Easement Agreement") dated September 16, 2003, which Easement Agreement was recorded in the Chester County Recorder of Deeds on January 8, 2004 in Book 6033, Page 577; and

This Document Recorded
03/18/2004
03:30PM
Doc Code: MSC Chester County, Recorder of Deeds Office

Doc Id: 10390861
Receipt #: 160588
Rec Fee: 38.50

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03/18/2004 03:30P

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Page 1 of 9
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WHEREAS, in the Easement Agreement, Malvern Institute granted and conveyed to East Whiteland a 50 foot by 50 foot permanent sewer easement across the Property to allow East Whiteland to construct the sanitary sewer line, Pumping Station and accessories and appurtenances on the Property; and

WHEREAS, East Whiteland, in consideration of the Easement Agreement, has agreed to pay all costs associated with connecting the existing main house (the "Building") on the Property to the Pumping Station and to pay any and all fees due East Goshen as a result of such connection; and

WHEREAS, Malvern Institute shall be responsible for the maintenance of the sewer lateral which leads from the Building on the Property to the Pumping Station; and

WHEREAS, the parties hereto intend to set forth the terms and conditions upon which sewage from the Property will be collected and conveyed through the East Whiteland System and transported to the Valley Forge Wastewater Treatment Plant for ultimate disposal and treatment;

NOW THEREFORE, the parties hereto, intending to be legally bound and each representing that it has proper legal authority to enter into this Sewage Agreement, do mutually represent, covenant and agree as follows:

1. Malvern Institute has granted East Whiteland a sewer easement over a portion of the Property in order to install the Pumping Station. The location of the Pumping Station is more particularly described by metes and bounds in the Easement Agreement which is incorporated herein by reference.

2. In consideration of the grant of the sewer easement across the Property, East Whiteland shall permit Malvern Institute to connect the Building on the Property to the

BUCKLEY NAGLE BRION ..
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Pumping Station to be built by East Whiteland on the Property. The sewage waste emanating from the Building on the Property which shall connect to the Pumping Station shall be collected and transported through the East Whiteland System for ultimate treatment at the Valley Forge Wastewater Treatment Plant (the "Plant"). East Whiteland represents that it has sufficient capacity at the Plant in order to treat the sewage emanating from the Building.

3. East Whiteland shall pay for all costs incurred in designing, constructing, installing and testing the sanitary sewer lines, Pumping Station and accessories and appurtenances to be built on the Property. East Whiteland shall obtain all necessary permits for the construction of the sanitary sewer lines, Pumping Station, and accessories and appurtenances and extension of the System. East Goshen shall cooperate with East Whiteland in obtaining such permits as expeditiously as possible.

4. East Whiteland shall be responsible for the construction, installation, maintenance, repair and replacement of all portions of the East Whiteland System, including the sanitary sewer lines, Pumping Station and accessories and appurtenances that are installed on the Property to provide sewer service to the existing buildings on the Property, except as provided in paragraph 5 below.

5. Malvern Institute shall be responsible for the maintenance, repair and replacement of the sewer lateral that extends from the Building on the Property to the Pumping Station.

6. East Goshen Township shall have no responsibility or obligation to maintain any part of the East Whiteland System, the Pumping Station or the sewer laterals that connect the Building on the Property to the Pumping Station.

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Page: 3 of 9
BUCKLEY NAGLE BRION 03/18/2004 03:30P B-6094 P-1899

7. East Goshen represents that it currently has in full force and effect sewer regulations which are codified in Chapter 188 of the East Goshen Township Code, which regulations establish quarterly sewer rates for properties in East Goshen that are connected to the East Goshen sewer system and which regulate the materials which may be discharged into the East Goshen Township sewer system. East Goshen represents that it will enforce such regulations against the owner of the Malvern Institute Property and that such regulations shall prohibit any discharge into the Pumping Station other than domestic waste. East Goshen shall enforce its regulations in accordance with the existing sewer ordinance, and any amendments that are enacted thereto. East Goshen shall at all times keep on file with East Whiteland its current and up to date resolutions, rules, regulations and ordinances relating to the content or components of domestic waste.

8. Every quarter, East Whiteland shall bill East Goshen for costs incurred by East Whiteland in providing sewer service to the Property based on the sanitary sewer rate schedule as adopted by the East Whiteland Township Board of Supervisors, as the same may be amended from time to time. East Goshen shall pay the East Whiteland bill within thirty (30) days of delivery of the bill.

9. East Goshen shall bill the owner of the Malvern Institute Property in accordance with the sanitary sewer rate schedule as adopted by the East Goshen Township Board of Supervisors, as the same may be amended from time to time.

10. Malvern Institute agrees to be bound by Chapter 188 of the East Goshen Code as the same may be amended from time to time. Malvern Institute further agrees to pay the quarterly sewer rate for industrial users (which is based on water usage as

BUCKLEY NAGLE BRION 03/18/2004 03:30P 10390861 Page: 4 of 9 B-6094 P-1899

determined by meter readings) as adopted by the East Goshen Township Board of Supervisors, as the same may be amended from time to time.

11. It is agreed that all covenants, duties, rights, obligations, benefits and advantages of the parties hereto shall be binding upon and inure to the benefit of the parties' successors and assigns.

12. Should East Whiteland at any future time transfer the East Whiteland System to a municipal authority or other governmental entity, whether by lease, deed or otherwise, or merge or join with another authority, municipal or quasi-municipal body of the Commonwealth of Pennsylvania, then this Agreement should be considered without any further act or deed by either of the parties hereto, assigned to the responsive municipal body and the respective assignee shall be subject to all of the obligations and shall be entitled to receive all of the rights and benefits of this Agreement.

13. This writing constitutes the entire agreement between the parties and there are no other representations or agreements, oral or written, other than those contained herein. All prior negotiations and agreements between the parties are merged into this Agreement and there are no promises, agreements, conditions, undertakings, warranties or representations oral or written, express or implied between them other than as set forth herein.

14. This Agreement may be modified, amended or supplemented only by the written agreement of all the parties hereto.

15. In the event that the Department of Environmental Protection or any other regulatory body or governmental agency shall fail or refuse to issue any permits which may be necessary to accomplish the intent and purpose of this Agreement, then the parties

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BUCKLEY NAGLE BRION 03/18/2004 03:30P

hereto shall be relieved from further compliance with the terms of this Agreement, until such time when such permit or permits shall be issued; and then this Agreement shall become fully operative and the parties hereunder shall be bound by all the terms hereof.

16. Should any one or more of the provisions of this Agreement for any reason be held illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect any other provision of this Agreement and the remainder of this Agreement shall, in such circumstances, be construed and enforced as if such illegal, invalid or unenforceable provision had not been contained herein.

17. This Agreement may be executed in any number of counterparts, each of which shall be properly executed by the parties hereto and all of which shall be regarded for all purposes as one original and all of which shall constitute and be but one and the same.

18. Whenever a notice is required to be given in writing by mail, the following addresses shall be used unless a different address is specifically called for:

If to East Whiteland:
Attention: Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

If to East Goshen:
Attention: Manager
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

If to the Malvern Institute:
Attention: Administrator/CEO
940 West King Road
Malvern, PA 19355

19. This Agreement shall be recorded in the Office of the Recorder of Deeds for

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20. In the event East Goshen extends the East Goshen Sewer System such that public sewer provided by East Goshen is within 150 feet of the Property, Malvern Institute shall connect to the East Goshen Sewer System and from thereafter the sewage waste emanating from the Building on the Property shall be collected, treated and disposed of by East Goshen, not East Whiteland.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed and their respective corporate seals affixed the day and year first above written.

ATTEST:

EAST WHITELAND TOWNSHIP

BY: _____
P. Joseph Corrigan
Chairman, Board of Supervisors

ATTEST:

EAST GOSHEN TOWNSHIP

BY: _____
E. Martin Shane
Chairman, Board of Supervisors

ATTEST:

MALVERN INSTITUTE FOR PSYCHIATRIC & ALCOHOLIC STUDIES

BY: _____
Richard Mangano
Administrator/CEO

BUCKLEY NAGLE BRION 03/18/2004 03:30P 10390861 Page: 7 of 9 B-6094 P-1899

COMMONWEALTH OF PENNSYLVANIA :
SS
COUNTY OF CHESTER :

On this 12th day of March, 2004, before me, the undersigned officer, personally appeared P. Joseph Corrigan and Maureen Perri, who acknowledged themselves to be the Chairman and Secretary, respectively, of the Board of Supervisors of East Whiteland Township, and that they, as such Chairman and Secretary, being authorized to do so, executed the foregoing instrument, for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My Commission Expires:

NOTARIAL SEAL
George Z. Loldan, Notary Public
Whitemarsh Twp., Montgomery County
My Commission Expires Nov. 15, 2004

COMMONWEALTH OF PENNSYLVANIA :
SS
COUNTY OF CHESTER :

On this 2nd day of March, 2004, before me, the undersigned officer, personally appeared E. Martin Shane and Louis F. Smith, Jr., who acknowledged themselves to be the Chairman and Secretary, respectively, of the Board of Supervisors of East Goshen Township, and that they, as such Chairman and Secretary, being authorized to do so, executed the foregoing instrument, for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My Commission Expires:

Notarial Seal
Diane L. Degnan, Notary Public
East Goshen Twp., Chester County
My Commission Expires Oct. 10, 2005

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03/18/2004 03:30P
10390861
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COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF Chester

On this, the 12 day of March, 2004, before me, the undersigned officer, personally appeared Richard Mangano, who acknowledged himself to be the CEO of Malvern Institute for Psychiatric & Alcoholic Studies, and that he being authorized to do so, executed the within instrument for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notarial Seal
Tina M. Rollman, Notary Public
Lititz Boro, Lancaster County
My Commission Expires June 6, 2005
Member, Pennsylvania Association of Notaries

Tina M. Rollman

NOTARY PUBLIC

MY COMMISSION EXPIRES:

EXHIBIT F17

WASTEWATER CONVEYANCE AGREEMENT, DATED NOVEMBER 20, 2018, BY AND BETWEEN AQUA RESOURCES, INC., TREDYFFRIN TOWNSHIP, EAST WHITELAND TOWNSHIP, WILLISTOWN TOWNSHIP, CHARLESTOWN TOWNSHIP, SCHUYLKILL TOWNSHIP, EAST PIKELAND TOWNSHIP, EASTTOWN TOWNSHIP, EASTOWN TOWNSHIP MUNICIPAL AUTHORITY, THE BOROUGH OF MALVERN, TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY, AND VALLEY FORGE SEWER AUTHORITY

Bid Execution Version

WASTEWATER CONVEYANCE AGREEMENT

AMONG

AQUA RESOURCES, INC.

AND

THE TOWNSHIPS OF TREDYFFRIN, EAST WHITELAND, WILLISTOWN, CHARLESTOWN, SCHUYLKILL, EAST PIKELAND AND EASTTOWN, EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY, THE BOROUGH OF MALVERN, TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY AND VALLEY FORGE SEWER AUTHORITY.

DATED NOVEMBER 20, 2018

WASTEWATER CONVEYANCE AGREEMENT

THIS WASTEWATER CONVEYANCE AGREEMENT (the "Agreement"), dated as of November _____, 2018 by and between AQUA RESOURCES, INC., (the "Company"), and THE TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY (the "Tredyffrin Authority"), THE TOWNSHIPS OF TREDYFFRIN, EAST WHITELAND, WILLISTOWN, CHARLESTOWN, SCHUYLKILL, EAST PIKELAND AND EASTTOWN (hereinafter referred to as "Township" or collectively "Townships"); THE BOROUGH OF MALVERN (hereinafter referred to as "Borough"); EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY ("ETMA"); and VALLEY FORGE SEWER AUTHORITY ("VFSA"). Townships, Borough, ETMA and VFSA are referred to as a "Municipality" or collectively referred to as "Municipalities". Company and each of the Municipalities are referred to as a "Party" or collectively as "Parties".

RECITALS:

WHEREAS, the Tredyffrin Authority owns the Valley Creek Trunk Sewer system ("VCTS");

WHEREAS, the VCTS accepts Wastewater (defined below) emanating from the Municipalities through its interceptors or trunk sewers, including pumping stations and appurtenances, and conveys such Wastewater to the VFSA treatment plant (the "Treatment Plant");

WHEREAS, the Municipalities entered into that certain Valley Forge Sewage Treatment Plant Agreement dated November 1, 1970 (together with the 1994 Addendum thereto, the "VFSA Agreement") for the construction, operation and maintenance of the Treatment Plant and is attached hereto as Exhibit A;

WHEREAS, the Municipalities entered into that certain Valley Creek Trunk Sewer System Agreement dated November 1, 1970 (the "1970 Agreement") for the collection and conveyance of Wastewater from the Municipalities through the VCTS to the Treatment Plant;

WHEREAS, the Municipalities entered into a Settlement Agreement dated July 18, 2017 (the "Settlement Agreement") in which the Municipalities agreed to sell the VCTS subject to the terms of the Settlement Agreement and the Asset Purchase Agreement (defined below);

WHEREAS, Company, the Tredyffrin Authority and the Township of Tredyffrin have entered into an Asset Purchase Agreement on the date of this Agreement, which provides, among other things, (i) at closing, the Tredyffrin Authority agreed to sell the VCTS to Company (the "Asset Purchase Agreement") and (ii) the Parties agreed to enter this Agreement;

WHEREAS, pursuant to the Settlement Agreement, upon closing of the Asset Purchase Agreement the 1970 Agreement automatically terminates and becomes null and void (except for Article IV as set forth in the Settlement Agreement);

WHEREAS, pursuant to the Settlement Agreement and Section 2.1 hereof, upon closing of the Asset Purchase Agreement, this Agreement becomes effective;

WHEREAS, the Municipalities desire to send all of their Wastewater through the VCTS to be treated at the Treatment Plant by the VFSA in accordance with the VFSA Agreement;

WHEREAS, Company agrees to collect Wastewater from the Municipalities and convey that Wastewater to the VFSA pursuant to the terms and conditions of this Agreement and the Asset Purchase Agreement; and

WHEREAS, VFSA agrees to accept, treat, and dispose of all Wastewater delivered to it by the Company pursuant to this Agreement and the VFSA Agreement.

NOW, THEREFORE, in consideration of the mutual promises contained herein and intending to be legally bound hereby, the Parties covenant and agree to the following terms and conditions of service:

ARTICLE I. DEFINITIONS

1.1. In addition to terms defined in the Agreement, these words and phrases shall have the following meaning when used in this Agreement:

a. **Applicable Law.** All laws, statutes, regulations, directives, orders, ordinances and approvals relating to Wastewater quality and governance of sewerage collection and conveyance systems adopted or administered by the United States Environmental Protection Agency ("USEPA") or Pennsylvania Department of Environmental Protection ("DEP"), and including the rules and regulations established by the VFSA in the VFSA General Code and any standards established by permit, court order, the VFSA Agreement or this Agreement.

b. **Arbitration Act.** Shall mean the Pennsylvania Judicial Code, 42 Pa. C.S. §§ 7301-7320.

c. **Connection Point.** The location at which each of the Municipalities' Wastewater connects to the VCTS metering equipment. The facilities comprising the Connection Point are at or near where a Municipality owned Wastewater pipe and the VCTS connect. Each Connection Point will be determined by Company as soon as reasonably practicable after the Effective Date.

d. **Effective Date.** As defined in Article II of the Agreement.

e. **Industrial Users.** Shall mean the permitted industrial users with pre-treatment responsibilities imposed by the USEPA or PADEP, as supplemented from time to time by VFSA, in accordance with and as set forth in the VFSA Agreement. Schedule 1.1 sets forth the names and addresses of current, permitted Industrial

Users with pre-treatment responsibilities, their permitted flow limit, if any, and their IPP (defined below) requirements.

f. **Industrial Waste Survey**. As defined in Article VIII of the Agreement.

g. **IPP**. Shall mean the Approved Publicly Owned Treatment Works ("POTW") Pretreatment Program administered by a POTW that meets the criteria established in Sections 403.8 and 403.9 of the applicable federal regulations and which has been approved by a Regional Administrator or State Director in accordance with Section 403.11 of the applicable federal regulations. Notwithstanding anything to the contrary in this definition, nothing shall prohibit a Municipality from adopting a stricter set of standards to apply within its jurisdiction.

h. **Prohibited Discharge**. A waste, pollutant, or other substance which is prohibited to be discharged into the Treatment Plant as set forth in the VFSA General Code (as defined below), as amended and supplemented from time to time.

i. **Prudent Industry Practices**. Those methods, techniques, standards, and practices which, at the time they are employed and in light of the circumstances known or believed to exist at the time, are generally accepted as showing skill and good judgment in the wastewater treatment and collection industry as practiced in the Eastern United States for facilities of a similar nature and in a similar location as the VCTS. Prudent Industry Practices is not necessarily defined as optimal methods, techniques, standards and practices to the exclusion of others, but rather to refer to a range of methods, techniques, standards and practices that are reasonable under the circumstances. At a minimum, Prudent Industry Practices shall include those requirements set forth in the VFSA Agreement and Applicable Law.

j. **VFSA General Code**. Shall mean the VFSA General Code of Rules and Regulations including Chapter 110 thereof, found at https://www.ecode360.com/12738210 as promulgated by VFSA from time to time.

k. **Wastewater**. The water-carried wastes from residences, businesses, buildings, institutions, and industrial establishments, singularly or in combination currently conveyed by each Municipality through the VCTS.

ARTICLE II. TERM AND TERMINATION

2.1. **Effective Date**. It is agreed between the Parties that this Agreement shall become effective (hereinafter referred to as the "Effective Date") on the date of the Closing as defined in the Asset Purchase Agreement. If the Asset Purchase Agreement does not close and is terminated, the Agreement shall be null and void.

2.2. **Term.**

2.2.1. **Original Term.** The Agreement shall commence on the Effective Date. The original term of the Agreement shall continue in full force and effect for and through fifty (50) years following the Effective Date (the "Original Term").

2.2.2. **Renewal.** Following the Original Term, unless otherwise terminated by written agreement of all Parties at least three hundred and sixty five (365) days prior to the expiration of the Original Term, the Agreement shall automatically renew for an additional fifty (50) years (the "Extended Term"). Following the Extended Term, the Parties to this Agreement may renew this Agreement. Such renewal must be agreed to in writing by all Parties.

ARTICLE III. CONVEYANCE AND ACCEPTANCE OF WASTEWATER

3.1. **Conveyance of Wastewater.** Each Municipality shall convey all of its Wastewater to its Connection Point in an amount not to exceed their Flow Limit, as that term is defined in Section 3.4 of this Agreement.

3.2. **Municipalities Wastewater Systems.** The Municipalities shall be responsible for the construction, operation and maintenance of their respective sanitary sewer systems necessary to convey Wastewater to its Connection Point, including but not limited to all costs, expenses, capital, design, permitting, acquisition or any required easements or rights of way, and the installation, construction, operation, and maintenance of any necessary pumping station(s), tank(s), and pipe. The Municipalities shall own, maintain, and be responsible for all components of their respective sanitary sewer systems up to the Connection Points with the VCTS. Any enlargement, expansion, or change in collection system operations of the Municipalities' respective sanitary sewer systems that would require an increase in their Flow Limit (as defined below) must be approved by Company and VFSA and must conform with the Act 537 plan and the permit for the Treatment Plant. Nothing in this Agreement shall be construed to alter the Municipalities' jurisdiction or responsibility over sewage facilities planning and sewer service through the Act 537 planning program, or their respective zoning, subdivision and land development ordinances and comprehensive land use planning policies.

3.3. **Connection Points.** The Municipalities, at their cost and expense, shall provide Company with an appropriate easement or other mutually agreeable property rights necessary to accept the Municipalities' Wastewater flow at the Connection Points. The cost and expense for obtaining such easements or mutually agreeable property rights shall be paid proportionally by each Municipality in each Municipality's respective percentage amount set forth on Schedule 9.1. No new Connection Points may be made without first obtaining the written approval of Company. All new connections to the VCTS shall be accomplished in accordance with Company's and VFSA's requirements at the sole cost of the connecting Municipality. Meters required by Section 4.1 shall be installed at any new connection by Company at the connecting Municipality's cost. Company may charge a fee for each new connection in accordance with Applicable Law.

3.4. **Flow Limit.** The Municipalities shall convey and Company shall accept Wastewater delivered by the Municipalities to their respective Connection Points in an amount not to exceed the "Peak Flow" amounts for each Municipality set forth in Schedule 3.4 of this Agreement and as amended from time to time by agreement among the Parties (the "Flow Limit"); provided, however, Company agrees that each of the Municipalities shall be permitted to buy and sell its existing capacity (as set forth on Schedule 3.4) pursuant to Section 3C(1)(e) of the Settlement Agreement. In the event that any of the "Peak Flow" Flow Limits contained in Schedule 3.4, during any calendar year has been exceeded for any consecutive thirty (30) day period (an "Exceedance Event"), Company, in its commercially reasonable discretion may determine that it does not have adequate capacity in the VCTS to permit additional Connection Points to the Municipalities' Wastewater systems that are subject to this Agreement. If Company makes such a determination, it shall provide notice thereof pursuant to Section 12.5 of this Agreement and the Municipalities shall not add any additional flow to the VCTS nor shall they construct or cause to be constructed any expansion or enlargement of their respective systems from and after the date of such notice until approval therefor is issued by VFSA.

3.5. **Exceedance Charge.** If there is an Exceedance Event, then the Municipality(s) which are responsible for the Connection Point where the Exceedance Event was measured shall pay to Company a charge in the amount of One Thousand Dollars ($1,000) per day in the aggregate beginning on the thirty-first (31st) day and each successive day for which there is an exceedance (an "Exceedance Charge"); *provided, however*, that the charge for any responsible Municipality which has a "Peak Flow" Flow Limit less than 150,000 GPD (a "Low Flow Municipality") shall instead be $100 per day (the "Low Flow Exceedance Charge"). The Exceedance Charge shall be allocated among each responsible Municipality based upon the following formula: the Municipality's total gallons per day in excess of its "Peak Flow" Flow Limit divided by the total gallons per day of each exceedance; *provided, however*, that the allocable portion of the Exceedance Charge payable by a Low Flow Municipality as a result of such allocation process shall not exceed the daily Low Flow Exceedance Charge and any balance allocated to the Low Flow Municipality(s) over that amount shall be waived by Company. Company may increase the amount of the Exceedance Charge on the fifth (5th) anniversary of the Effective Date by the amount representing the increase in the Consumer Price Index ("CPI") since the Effective Date, and may increase the Exceedance Charge amount annually thereafter by annual CPI increases. If it cannot be determined from which Municipality the Exceedance Event originated, Company shall bill any charge, fine, or other penalty resulting from such Exceedance Event to all Municipalities based on their flow proportion which shall be calculated by comparing each Municipality's total flow for the previous calendar year to the total aggregate flow for the previous calendar year. The remedies stated herein are exclusive in relation to Exceedance Charge.

3.6. **Acceptance of Wastewater.** In accordance with the VFSA Agreement and this Agreement, Company shall accept all Wastewater from each Municipality and convey all of the Wastewater from the Municipalities to the Treatment Plant. In accordance with the VFSA Agreement and this Agreement, VFSA shall accept all Wastewater conveyed through the VCTS from Company.

ARTICLE IV. METERING

4.1. **Meters.** All Wastewater flows from the Municipalities conveyed to the Connection Points shall be metered by metering equipment. Company shall assume ownership of and inspect all meters existing at the beginning of this Agreement, if any, at each Connection Point and determine, in Company's sole discretion, whether the existing meter shall be replaced. In accordance with the Asset Purchase Agreement and Section 3.3 hereof, the Municipalities shall convey to Company all property rights that are necessary for Company to access, operate, and maintain the meters existing at the beginning of this Agreement and at all Connection Points. If new or replacement meters are necessary at any Connection Point, in Company's sole judgment, such meters shall be procured and installed by Company at its sole cost and expense. All flow that is pumped or flow that is under pressure in a pipeline shall utilize a magnetic flow meter. All flow that is conveyed by gravity shall utilize an area-velocity flow meter with a standard flume (Palmer Bowlus, Parshall or other non-clog design).

4.2. **Operation and Maintenance of Meters.** Company shall own and operate the metering equipment for the purposes of measuring the volume of Wastewater delivered to the Connection Points for conveyance through the VCTS to the Treatment Plant, and shall be responsible for the designing, installing, daily operation, calibration, updating, and replacement, as necessary and in accordance with Article X hereof, of metering devices. The Company shall provide VFSA and the Municipalities with readings of meters on the first day of each quarter for the prior quarterly period.

4.3. **Calibration and Testing.**

4.3.1 Meter equipment and remote readouts shall be tested, calibrated, maintained, and repaired at least annually by Company at Company's cost. The results of all testing and calibration undertaken by the Company shall be provided to each Municipality no later than seven (7) business days from completion of such bi-annual testing and calibration. If any Municipality requests additional testing, calibration, maintenance and repair, such expenses associated shall be at the cost of the Municipality.

4.3.2 If a Municipality and Company cannot agree as to the inaccuracy of any meter, such Municipality may request that the meter be tested by an independent testing facility mutually agreed to by the Municipality and Company and such independent testing facility's determination of accuracy shall be conclusive. The cost of the testing shall be borne fifty percent (50%) by the Municipality and fifty percent (50%) by Company.

4.3.3 If upon any test, the percentage of inaccuracy of any metering equipment is found to be in excess of three percent (3%), the calibration thereof shall be corrected, and any billing shall be adjusted, for a period extending back to the time when such inaccuracy began, if such time is ascertainable, and if such time is not ascertainable, then for a period extending back one-half (1/2) of the time elapsed since the most recent date of calibration, but in no event further back than a period of six (6) months. If for any reason any meters appear to be malfunctioning such that the amount of Wastewater conveyed cannot be ascertained or computed from the reading thereof, the Wastewater conveyed through the period such meters are out of service or

out of service shall be estimated and agreed upon by the Parties hereto upon the basis of the best data available. The amount of Wastewater conveyed during such period may be estimated (i) by correcting the error if the percentage of the error is ascertainable by calibration tests or mathematical calculation, or (ii) estimating the quantity of delivery by deliveries during the preceding periods under similar conditions when the meter or meters were registering accurately.

4.3.4 Company shall provide notice pursuant to Section 12.5 of this Agreement to each Municipality that has exceeded its Flow Limit for seven (7) consecutive days. Such notice shall be provided to each Municipality promptly after such determination.

ARTICLE V. QUALITY OF WASTEWATER

5.1. **Sewer Use Ordinances.** The Municipalities shall maintain and administer uniform ordinances, resolutions, rules or regulations to: (1) prohibit users of their respective collection systems from making Prohibited Discharges and to prevent the infiltration of stormwater into the collection systems, and (2) maintain and/or otherwise comply with the IPP. The IPP shall include measures to cause the Municipalities to periodically survey their respective sanitary sewer systems to ensure, among other things, that all dischargers of high strength waste or other Prohibited Discharges are included in the IPP, and measures to periodically check any self-reporting done by the Industrial Users of the Municipality to confirm that accurate information is reported.

5.2. During the term of this Agreement, the Municipalities shall provide Company, on a semi-annual basis, a list of all Industrial Users discharging to the Municipalities' wastewater systems and whose Wastewater is conveyed at the Connection Point. The Company shall provide VFSA with a copy of such list within seven (7) days of receipt.

5.3 At least once every six (6) months, the Municipalities shall provide, or cause to be provided, to the Company copies of all reports and Wastewater analysis results of Industrial Users discharging to the Municipalities' wastewater systems and whose Wastewater is conveyed at the Connection Point to Company. These reports and analysis results will be provided to Company within thirty (30) days of receipt by the Municipalities, but in no case be longer than six months from the last report. The Company shall provide VFSA with a copy of such list upon the request of VFSA. The Municipalities shall take prompt enforcement action against any Industrial User which does not comply with the requirements of this Article V.

ARTICLE VI. PROHIBITED DISCHARGES

6.1 **Prohibited Discharges.** Company shall not be responsible for any fines, charges or fees arising from or related to Prohibited Discharges by any Municipality. If a Municipality chooses to take pretreatment enforcement action independent of VFSA, such Municipality shall comply in all material respects with the VFSA's approved Enforcement Response Program (the "ERP") which includes a matrix of escalating enforcement responses, up to and including termination of service. Upon discovery that a Prohibited Discharge is being conveyed by a Municipality's Wastewater system to Company:

6.1.1. The Municipality shall provide verbal notification to the Company and verbal communication to VFSA in accordance with the VFSA Agreement, the VFSA General Code and the ERP, and provide confirmation thereof in writing to Company, within twenty-four (24) hours.

6.2 If the Municipality fails to cease a Prohibited Discharge in accordance with the ERP, in addition to penalties available to VFSA under the VFSA Agreement, VFSA General Code and the ERP, the Company may, at its option, without liability and at the Municipality's cost, charge the Municipality a penalty of One Thousand Dollars ($1,000) per day (the "Prohibited Discharge Charge") until such time as that Municipality returns to compliance with the ERP. The Prohibited Discharge Charge may be increased in the same manner set forth in Section 3.6 above for the Exceedance Charge.

6.1.1. The remedies stated herein are the Company's exclusive remedies in relation to Prohibited Discharges.

ARTICLE VII. SAMPLING AND MONITORING OF QUALITY

7.1. **Sampling and Monitoring Equipment.** Company shall install the sampling and monitoring equipment at every Connection Point. Company shall own and operate the sampling and monitoring equipment for the purpose of sampling and analyzing the Wastewater delivered at the Connection Points consistent with Section 7.4 below, and shall be responsible for designing, installing, operating, updating and replacing, in accordanee with Prudent Industry Practices, of such sampling and monitoring equipment. The costs of the sampling and monitoring equipment, installation of the sampling and monitoring equipment and installed components at all Connections Points shall be paid by Company. Sampling and monitoring equipment shall include but not be limited to electric and mechanical provisions for twenty-four (24) hour composite sampling. Nothing in this Section 7.1 shall be construed to modify VFSA's rights or remedies under Article V of the VFSA Agreement.

7.2. **Access to Sampling and Monitoring Facilities.** Company shall own and operate the sampling and monitoring facilities and equipment. The Municipalities shall have full and complete access to the sampling and monitoring facilities and equipment upon twenty-four (24) hours' notice to Company for the purpose of observing the proper operations of the facilities.

7.3. **Testing and Calibration.** Company shall test, calibrate, maintain, and repair the sampling and monitoring equipment annually, the costs of which shall be paid by Company. The results of such testing and calibration shall be provided to each Municipality no later than seven (7) business days from completion.

7.4. **Collection of Samples.** Company shall collect all samples, and:

7.4.1. Company shall collect and arrange for testing of all samples at intervals determined at Company's discretion, and in compliance with NPDES permit requirements.

7.4.2. Company shall determine the parameters for all such sampling and testing.

7.4.3. Company will provide the results of any sampling to the Municipalities at such Municipality's request. All analytical results will be obtained utilizing approved sample collection procedures and analytical procedures listed in the most current version of 40 CFR Part 136. All sample analysis will be performed by a laboratory accredited by PADEP for the approved method. Sample collection and preservation will be documented on all chain of custody forms, a copy of which will become part of the data package included with the analytical report. Company shall provide VFSA with copies of all analytical data within seven (7) days of receipt.

7.4.4. A Municipality may request a portion of samples taken by Company if a Municipality wants to conduct its own analyses. Samples may be split between Company and a Municipality for laboratory analysis if requested by the Municipality a minimum of forty-eight (48) hours in advance. If such a request is made, the Municipality shall be responsible for sample pick-up and delivery to the selected laboratory and shall be responsible for all costs.

7.4.5. A Municipality may request additional sampling and analysis at the Municipality's cost.

7.4.6. If a Municipality and Company cannot agree as to the results of any sampling or testing by the other, samples shall be sent to and tested by an independent laboratory mutually agreed to by the Municipality and Company and such independent laboratory's determination of sampling or testing shall be conclusive. The cost of these samples shall be borne fifty percent (50%) by the Municipality and fifty percent (50%) by Company.

ARTICLE VIII. INSPECTION AND ENFORCEMENT

8.1. **Industrial Waste Survey.** The Municipalities shall maintain a current Industrial Waste Survey list in accordance with the following:

8.1.1. The Industrial Waste Survey list shall include the facility name and address of all commercial and Industrial Users whose Wastewater passes through each of the Connection Points to the VCTS, the nature of each Industrial User's business and the name and contact information of a responsible person to be contacted at each Industrial User.

8.1.2. An updated list shall be provided to Company and VFSA within thirty (30) days of the Effective Date of this Agreement. The list shall include Industrial User that have been added as well as those that have been removed or where site operations have changed.

8.1.3. The Municipalities shall provide to Company results of its updated Industrial Waste Survey lists annually.

ARTICLE IX. BILLING, PAYMENT, AND RATES

9.1. **Billing and Rates.**

9.1.1. Subject to Sections 9.1.2-.4, Company shall bill each Municipality the effective rate applicable to each Municipality as set forth on Schedule 9.1. Billing shall occur on a monthly basis. After the third (3rd) anniversary of the Effective Date, billings from Company shall be based on metered flows measured at the Connection Points.

9.1.2. Opener Process. No sooner than two hundred ten (210) days and no later than one hundred eighty (180) days prior to the (i) eighth (8th) anniversary of the Effective Date or (ii) any subsequent five (5) year anniversary of the Effective Date (e.g., no sooner than two hundred ten (210) days and no later than one hundred eighty (180) days prior to year thirteen (13), eighteen (18), twenty-three (23), etc.) (each, an "Opener Period"), any Party may send written notice to the other Parties that it desires to open negotiations (each such notice, an "Opener Notice") among the Parties in order to set a percentage escalator solely with respect to a capital expenditure escalator (a "Capex Escalator") to be used to increase the annual revenue requirement/rate as set forth on Schedule 9.1 and such Capex Escalator shall go into effect, if agreed upon by the Parties pursuant to this Section 9.1.2 or as determined by Section 9.1.3, beginning on the one hundred eightieth (180th) day after the delivery of any Opener Notice and such Capex Escalator shall continue in effect until a new Capex Escalator is agreed upon, if any, by the Parties pursuant to this Section 9.1.2 or as determined by Section 9.1.3. The Parties shall negotiate the Capex Escalator in good faith. If the Parties are unable to agree in writing to a Capex Escalator within twenty (20) business days of an Opener Notice, the Parties agree to the procedures set forth in Section 9.1.3 below. If no Opener Notice is delivered during any Opener Period, the revenue requirement/rate shall only be increased annually by the CPI until a Capex Escalator is determined in accordance with Section 9.1.

9.1.3. Arbitration Process. If the procedures described in Section 9.1.2 do not result in resolution of a Capex Escalator within twenty (20) business days following receipt of the Parties of a Opener Notice (unless otherwise extended by written agreement of all Parties) the dispute shall be resolved by arbitration in accordance with the AAA Rules then in effect. Any Party may initiate the arbitration, as provided in the AAA Rules. Any arbitration conducted pursuant to this Section 9.1.3 shall be governed by the statutory arbitration provisions of the Arbitration Act. The place of arbitration shall be Tredyffrin Township, Pennsylvania unless the Parties agree otherwise. The arbitral panel shall determine the rights and obligations of the Parties in accordance with the substantive laws of the Commonwealth of Pennsylvania and without regard to conflicts of laws principles thereof. Except as agreed by the Parties, the arbitral panel shall have no power to alter or modify any terms or provisions of this Agreement, or to render any award that, by its terms or effects, would alter or modify any term or provision of this Agreement other than to set a Capex Escalator. The Parties shall be entitled to reasonable production of relevant, non-privileged documents, carried out expeditiously in order to disclose capital expenditures and capital plans. If the Parties are unable to agree upon such document production, the arbitral panel shall have the power, upon application of any Party, to make all appropriate orders for production of documents by any Party. At the request of any Party, the arbitral panel shall have the discretion to order the examination by deposition of any witness to the extent the arbitral tribunal deems such examination appropriate or necessary. The arbitral panel shall be composed of three (3) arbitrators, one (1) to be selected by the Municipalities (by majority vote), one (1) to be selected by the Company and the third (3rd), who shall act as chairman of the panel, to be selected by the two (2) previously-selected arbitrators. If, within ten (10) business days, the two (2) previously-selected

arbitrators cannot agree on the selection of the third (3rd) arbitrator, then the third (3rd) arbitrator shall be selected by the AAA pursuant to the AAA Rules. Once the arbitral panel has been composed, the arbitrators shall act as neutrals and not as party arbitrators, and no Party shall engage in any ex parte communication with any member of the arbitral panel. Each Party shall bear its own attorney fees, expenses, and costs for the arbitration. Some or all of the Municipalities may agree to engage one (1) attorney to represent them as a group and share attorney fees, expenses, and costs. Company shall pay one-half (1/2) of the expenses and costs associated with engaging the arbitral panel. Each Municipality shall pay its proportional share (based upon each Municipality's percentage share of Wastewater flow in the twelve (12) month period immediately preceding an Opener Notice) of the remaining one-half (1/2) of the expenses and costs associated with engaging the arbitral panel. Any future increase in the Capex Escalator determined by the arbitral panel shall be in effect for a five (5) year period and shall be in writing, stating the reasons upon which it is based. The determination of the Capex Escalator must be determined by arbitral panel prior to the one hundred eightieth (180th) day after the delivery of any Opener Notice and such determination shall be final and binding on the Parties, subject only to such review and other proceedings as provided by the Arbitration Act. Judgment on the award may be entered by any court with competent jurisdiction in accordance with the Arbitration Act.

9.1.4. The Parties acknowledge that the VCTS, including all VCTS operations and utility services to be provided by Company under this Agreement and the imposition of the rates set forth on Schedule 9.1 may become subject to the jurisdiction of the Pennsylvania Public Utility Commission (the "PaPUC") and the applicable provisions of the Public Utility Code of Pennsylvania, Title 66 of the Pennsylvania Consolidated Statutes. If the PaPUC exercises jurisdiction over any matter that is the subject of this Agreement, then the Parties acknowledge and agree to the jurisdiction of the PaPUC and to be bound by its oversight, regulations, and rate-making procedures; *provided, however*, if the PaPUC exercises jurisdiction over the imposition of the rates or rate-making procedures, Company shall not seek to implement rates other than those set forth on Schedule 9.1 until after the third anniversary of the Effective Date.

9.2. **Estimated Billing**. If a dispute over the inaccuracy of a meter at a Connection Point or a meter at a Connection Point is agreed to have been reading inaccurately, an estimated billing shall be issued based on the procedure set forth in Article IV hereof.

9.3. **Payment.** The Municipalities shall pay each monthly bill in full within thirty (30) days after the bill date. Amounts not paid when due shall be subject to interest in the amount of six percent (6%) per annum of the amount due.

ARTICLE X. COMPLIANCE WITH RULES, REGULATIONS, STANDARDS, AND LAWS

10.1. **Compliance.**

10.1.1. Company will be solely responsible for the proper conveyance of Wastewater received from the Municipalities in accordance with Applicable Law. Company and the Municipalities shall be responsible for the proper conveyance of Wastewater received from the Municipalities to the Treatment Plant in accordance with the VFSA Agreement. The

Municipalities acknowledge that Company has no ability or obligation to affect the quality or flow of Wastewater prior to the Connection Points.

10.1.2. The Municipalities shall be solely responsible for the delivery of the Wastewater to the Connection Point in a manner compliant with all the laws, regulations, requirements, and standards of the DEP, the USEPA, and the VFSA Agreement.

10.1.3. The Parties to this Agreement shall comply with all local, state, and federal regulations, standards, and laws currently in effect and as amended, adopted, or enacted regarding their respective obligations hereunder for the collection and treatment of Wastewater, the operation of their respective systems and any additional services provided according to the terms and provisions of this Agreement.

10.1.4. On the Effective Date, Company will obtain sole ownership and control of Wastewater conveyance facilities comprising the VCTS. During the Original Term and the Extended Term (if applicable) of the Agreement, Company shall operate, maintain, repair, and improve the VCTS using Prudent Industry Practices for facilities comparable to the VCTS and, at a minimum: (1) in a manner that would be required by the PaPUC if the Agreement and the VCTS were subject to its jurisdiction and (2) in a manner necessary for the Municipalities to comply with the VFSA Agreement. Company retains the sole exclusive right to make all managerial and other decisions regarding the VCTS, including, but not limited to, those decisions regarding operation, maintenance, upkeep, expansion, abandonment, or replacement of all or a portion of the VCTS in accordance with Prudent Industry Practices and while abiding by the effective rate then applicable to each Municipality.

ARTICLE XI. INDEMNIFICATION AND ENFORCEMENT

11.1 **Indemnification by Municipalities.** To the extent permitted by law, the Municipalities agree to defend, indemnify, and hold harmless Company from and against all claims, actions, suits, demands, losses, interest, penalties, and liabilities ("Losses") arising from performance of the terms and conditions of this Agreement (*except* for any Losses that are caused by Company) by reason of:

11.1.1. Injury (including death) to persons and damages to property resulting from operation under this Agreement to convey the Municipalities' Wastewater through the VCTS, where such injury (including death) is due to the negligence of a Municipality or the Municipalities or their employees, agents or the inherent nature of their operation;

11.1.2. An action of any kind whatsoever by USEPA, DEP, or VFSA, as a result of any action or inaction by a Municipality with respect to its wastewater system and for any work undertaken by the Municipalities, their contractors or consultants, to the Municipalities' respective wastewater systems necessary and required by the USEPA or DEP;

11.1.3. Any breach by any Municipality of their obligations under this Agreement.

11.2. **Indemnification by Company.** Company shall defend, indemnify, and hold harmless the Municipalities from and against all Losses (i) arising from Company's failure in the operation of the VCTS in accordance with Prudent Industry Practices and (ii) any breach by Company of its obligations under this Agreement and the VFSA Agreement.

ARTICLE XII. MISCELLANEOUS

12.1. **Inspection and Audit.** Company and the Municipalities agree to maintain complete and accurate records and accounts concerning their responsibilities under this Agreement. All Parties shall, at all times, have the right to examine and inspect said records and accounts upon thirty (30) days' written notice, unless such examination is deemed an emergency in which case the right shall be provided as soon as practicable. If required by law or regulation, Company and the Municipalities shall make said records and accounts immediately available to federal and state authorities.

12.2. **Successors and Assignment.** This Agreement is binding on any successors of each Party. Company may assign this Agreement to a parent, subsidiary or affiliate of Company, or an entity that acquires all, or substantially all of the assets or shares of Company or any of Company's parents. In the event that an entity seeks to acquire Company's rights pursuant to this Agreement, the acquiring entity shall obtain the prior written consent of the Municipalities, which consent shall not be unreasonably withheld or delayed. The Municipalities shall not confer, transfer, convey, assign, or license to any third party any rights obtained under this Agreement including, but not limited to, assignment of Wastewater conveyance capacity without the prior express written consent of Company, which consent shall not be unreasonably withheld, conditioned or delayed.

12.3. **Severability.** Each provision of this Agreement is severable from the whole, and if one provision is declared invalid, the other provisions shall remain in effect.

12.4. **No Waiver.** Failure by a Party to enforce any provision of this Agreement, or the waiver thereof in any instance shall not be construed as a general waiver of rights.

12.5. **Notices.** Any notice given or made pursuant to this Agreement will be effective only if in writing and delivered in person, by messenger, by overnight delivery, or by certified mail, return receipt to a Party at the address below:

If to Company:

Aqua Resources, Inc.
762 W. Lancaster Ave.
Bryn Mawr, PA 19010
Attention: President

With a required Copy to:

Aqua Resources, Inc.

762 W. Lancaster Ave.
Bryn Mawr, PA 19010
Attention: General Counsel

If to Tredyffrin Township Municipal Authority:

110 DuPortail Road
Berwyn, PA 19312
Attention: Executive Director

With a required Copy to:

110 DuPortail Road
Berwyn, PA 19312
Attention: Solicitor

If to The Township of Tredyffrin:

110 DuPortail Road
Berwyn, PA 19312
Attention: Township Manager

With a required Copy to:

110 DuPortail Road
Berwyn, PA 19312
Attention: Solicitor

If to The Township of East Whiteland:

Municipal Building
209 Conestoga Road
Frazer, PA 19355
Attention: Township Manager

With a required Copy to:

Municipal Building
209 Conestoga Road
Frazer, PA 19355
Attention: Solicitor

If to the Township of Willistown:

688 Sugartown Road
Malvern, PA 19355

Attention: Township Manager, Secretary

With a required Copy to:

688 Sugartown Road
Malvern, PA 19355
Attention: Solicitor

If to the Township of Easttown: ,

566 Beaumont Road
Devon, PA 19333
Attention: Township Manager

With a required Copy to:

566 Beaumont Road
Devon, PA 19333
Attention: Solicitor

If to The Township of Charlestown:

4030 Whitehorse Road
Malvern, PA 19355
Attention: Township Manager

With a required Copy to:

4030 Whitehorse Road
Malvern, PA 19355
Attention: Solicitor

If to The Township of Schuylkill:

111Valley Park Road
Phoenixville, PA 19460
Attention: Township Manager

With a required Copy to:

111Valley Park Road
Phoenixville, PA 19460
Attention: Solicitor

If to The Township of East Pikeland:

1158 Rapps Dam Road
Phoenixville, PA 19460
Attention: Township Manager

With a required Copy to:

1158 Rapps Dam Road
Phoenixville, PA 19460
Attention: Solicitor

If to Easttown Township Municipal Authority:

566 Beaumont Road
Devon, PA 19333
Attention: Chairman

With a required Copy to:

566 Beaumont Road
Devon, PA 19333
Attention: Solicitor

If to The Borough of Malvern:

Borough Hall
1 E. First Avenue
Malvern, PA 19355
Attention: Borough Manager

With a required Copy to:

Borough Hall
1 E. First Avenue
Malvern, PA 19355
Attention: Solicitor

If to Valley Forge Sewer Authority:

333 Pawling Road
Phoenixville, PA 19460

Attention: Business Manager

With a required Copy to:

333 Pawling Road

Phoenixville, PA 19460
Attention: Solicitor

12.6. **Complete Agreement.** The terms of this Agreement constitute the entire agreement among the Parties concerning the subject matter hereof, and this Agreement may be modified only in a writing signed by all Parties. This Agreement and the schedules incorporated herein shall be modified and/or amended only by writing signed by all Parties.

12.7. **Titles and Headings.** Titles and headings to sections or paragraphs herein are inserted merely for convenience of reference and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

12.8. **Counterparts.** This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

12.9. **Applicable Law**. This Agreement shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania (without giving effect to the principles of conflicts of laws thereof). The Parties hereto irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each Party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court.

[*The remainder of this page was intentionally left blank. Signatures on next page.*]

IN WITNESS WHEREOF, the Parties hereto have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the date first written above.

AQUA RESOURCES, INC.

Attest: _____
Printed: Christopher P Quay
Its: SVP, G C, and Secretary

By: Matthew Rhodes
Printed: Matthew Rhodes
Its: EVP, Strategy and Corporate Development

TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____
Printed: _____
Its: _____

By: _____
Printed: _____
Its: _____

THE TOWNSHIP OF TREDYFFRIN

Attest: _____
Printed: _____
Its: _____

By: _____
Printed: _____
Its: _____

THE TOWNSHIP OF EAST WHITELAND

Attest: _____
Printed: _____
Its: _____

By: _____
Printed: _____
Its: _____

IN WITNESS WHEREOF, the Parties hereto have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the date first written above.

[COMPANY]

Attest: _____

Printed:
Its:

By: _____

Printed:
Its:

TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

Attest: William F Martin

Printed: WILLIAM F MARTIN

Its: SECRETARY

By: Stanford M Nishikawa

Printed: STANFORD NISHIKAWA

Its: SN

THE TOWNSHIP OF TREDYFFRIN

Attest: William F Martin

Printed: WILLIAM F MARTIN

Its: SECRETARY

By: Heather B Greenberg

Printed: Heather B Greenberg

Its: HBG

THE TOWNSHIP OF EAST WHITELAND

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

IN WITNESS WHEREOF, the Parties hereto have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the date first written above.

[COMPANY]

Attest: _____

Printed:
Its:

By: _____

Printed:
Its:

TREDYFFRIN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE TOWNSHIP OF TREDYFFRIN

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE TOWNSHIP OF EAST WHITELAND

Attest: Donna W Kurt

Printed: Donna Wikert

Its: 12/10/18 Secretary

By: Susan Drummond

Printed: Susan Drummond

Its: 12/10/18 President

THE TOWNSHIP OF WILLISTOWN

Attest: David R. Burman

Printed: DAVID R. BURMAN

Its: SECRETARY

By: Robert T. Lange

Printed: ROBERT T. LANGE

Its: CHAIRMAN

THE TOWNSHIP OF EASTTOWN

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE BOROUGH OF MALVERN

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

VALLEY FORGE SEWER AUTHORITY

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE TOWNSHIP OF WILLISTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF EASTTOWN

Attest: _____ By: _____

Printed: Daniel C. Fox Printed: Marc J. Heppe

Its: Township Secretary/Mgr. Its: M H

EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE BOROUGH OF MALVERN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

VALLEY FORGE SEWER AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF WILLISTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF EASTTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: DOUGLAS H. BURNETT

Its: _____ Its: CHAIR

THE BOROUGH OF MALVERN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

VALLEY FORGE SEWER AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF WILLISTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF EASTTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE BOROUGH OF MALVERN

Attest: Mary Lou Whitcomb By: Christopher Bashore

Printed: Mary Lou Whitcomb Printed: Christopher Bashore

Its: Borough Treasurer Its: Borough Manager

VALLEY FORGE SEWER AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF WILLISTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF EASTTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

EASTTOWN TOWNSHIP MUNICIPAL AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE BOROUGH OF MALVERN

Attest: _____ By: _____

Printed: DAVID C DEMEY Printed: _____

Its: _____ Its: _____

VALLEY FORGE SEWER AUTHORITY

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF CHARLESTOWN

THE TOWNSHIP OF CHARLESTOWN

Attest: _____

Printed: LINDA M. CSETE

Its: Secretary

By: _____

Printed: FRANK A. PILIERO

Its: Chairman

THE TOWNSHIP OF SCHUYLKILL

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE TOWNSHIP OF EAST PIKELAND

Attest: _____

Printed: _____

Its: _____

By: _____

Printed: _____

Its: _____

THE TOWNSHIP OF CHARLESTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF SCHUYLKILL

Attest: Madeline Harbison By: _____

Printed: Madeline Harbison Printed: Fred R. Parry

Its: Township Secretary Its: Vice-Chairman

THE TOWNSHIP OF EAST PIKELAND

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF CHARLESTOWN

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF SCHUYLKILL

Attest: _____ By: _____

Printed: _____ Printed: _____

Its: _____ Its: _____

THE TOWNSHIP OF EAST PIKELAND

Attest: Kimberly Moretti By: _____

Printed: Kimberly Moretti Printed: Ronald M. Graham

Its: Township Manager Its: Chairman, Board of Supervisors

Schedule 1.1

Industrial Users

	Company	Municipality	Industry Type	City	Goes Through
1	Devault Foods	Charlestown	Large Flow Non-categorical	Devault	East Whiteland Township
2	Fujirebio Diagnostics	East Whiteland	Medium-Flow Non-categorical	Malvern	East Whiteland Township
3	Infiana USA,Inc.	Tredyffrin	Medium Flow Non-categorical	Malvern	Willistown Township
4	Janssen Biotech Inc.	East Whiteland	Pharmaceutical part 439 subpart A	Malvern	East Whiteland Township
5	Micron Technologies, Inc. (Catalent	East Whiteland	Pharmaceutical Prep 439.47 Subpart D	Malvern	East Whiteland Township
6	Orthovita DBA Stryker	East Whiteland	Small-Flow Non-categorical	Malvern	East Whiteland Township
7	Paoli Memorial Hospital	Willistown	Large-Flow Non-categorical	Paoli	Willistown Township
8	PECO Energy	Tredyffrin	Small-Flow Non-categorical	Berwyn	Tredyffrin
9	TEVA/Cephalon Inc.	Charlestown	Small-Flow Non-categorical	Malvern	East Whiteland Township

Schedule 3.4

Flow Limit

Municipality	Exhibit B Cost %	Existing Reserved Capacity - Peak Flow (GPD)	Transfers (GPD)	Total Existing Reserve Capacity - Peak Flow (GPD)	Total Existing Reserve Capacity - Average Flow (GPD)
VFSA Pumping Station	0.14%	28,224	11,000	39,224	17,054
East Whiteland**	30.09%	6,066,144		6,066,144	2,637,454
Easttown	14.22%	2,866,752		2,866,752	1,246,414
Malvern	7.93%	1,598,688		1,598,688	695,082
Tredyffrin	33.25%	6,703,200	(11,000)	6,692,200	2,909,652
Willistown	14.37%	2,896,992		2,896,992	1,259,562
	100.00%	20,160,000	-	20,160,000	8,765,217

** Also includes Charlestown Township

Schedule 9.1

Revenue Requirement/Rate	Years 1-3 Allocation	Year 1	Year 2	Year 3	Year 4 [1]	Year 5 [2]	Year 6[2]	Year 7 [3]	Years 8-50 [4]
Valley Forge Sewer Authority	0.29%	5,800	5,800	5,800					
Tredyffrin Township	16.32%	326,400	326,400	326,400					
Easttown Township	20.48%	409,600	409,600	409,600					
Borough of Malvern	6.63%	132,600	132,600	132,600					
Willistown Township	21.37%	427,400	427,400	427,400					
East Whiteland Township	34.91%	698,200	698,200	698,200					
Revenue Requirement/Rate		2,000,000	2,000,000	2,000,000	3,100,000	3,193,000	3,288,790	4,013,000	

[1] After the third anniversary of the Effective Date, billings from the Company will be based on metered flows measured at the Connecton Points.

[2] The rates that will be effective on the fifth and sixth anniversaries, respectively, of the Effective Date, will be the rate in the prior year plus 3.00%.

[3] The rates that will be effective on the seventh anniversary of the Effective Date will be set at $4,013,000.

[4] Beginning 180 days prior to the eighth anniversary of the Effective Date, rates shall be set in accordance with Section 9.1 of the Agreement.

EXHIBIT F18

AGREEMENT WITH PUBLIC UTILITY OR MUNICIPALITY FOR CROSSING UNDER RAILROAD PRIVATE PROPERTY, DATED MARCH 21, 1972, BY AND BETWEEN READING COMPANY AND EAST WHITELAND MUNICIPAL AUTHORITY

Form 298—4-R 5-68—1M 8½x14

AGREEMENT WITH PUBLIC UTILITY OR MUNICIPALITY FOR CROSSING UNDER RAILROAD PRIVATE PROPERTY

This Agreement, made this 21st day of March A. D. 19 72, between READING COMPANY (Debtor in possession under Sec. 77 of the Bankruptcy Act)

, party of the first part, hereinafter called "Licensor," and EAST WHITELAND MUNICIPAL AUTHORITY, a body corporate and politic, organized and existing under the laws of the Commonwealth of Pennsylvania and established by the Board of Supervisors of East Whiteland Township, Chester County, Pennsylvania, pursuant to resolution or ordinance duly adopted by aforesaid Board of Supervisors,

~~a corporation of the State of~~ , party of the second part, hereinafter called the "Licensee":

WHEREAS, Licensee has applied to Licensor for license and permission to lay, maintain and use for sewage disposal purposes (a) one (1) pipe not exceeding eight (8) inches in diameter, encased in a steel casing pipe not exceeding thirty-six (36) inches in diameter, and (b) one steel pipe not exceeding twenty-four (24) inches in diameter encased in a steel casing pipe not exceeding forty-two (42) inches in diameter, and

all hereinafter called "facilities," across and underneath the tracks, right of way and property owned or operated by Licensor at a point approximately (a) 1,660 feet west of Valley Store Station and (b) 511 feet west of Valley Store Station, both crossings hereinafter referred to in the singular and situate in the Township of East Whiteland,

County of Chester and State of Pennsylvania, in substantially the location and position shown on the hereto attached plan numbered R-1 and R-2, and dated 11-2-71; and

WHEREAS, Licensor is willing to accord to Licensee the license and permission so applied for, but only upon and subject to the terms, conditions and limitations regulative and restrictive thereof, as hereinafter set forth:

NOW, THEREFORE, THIS AGREEMENT WITNESSETH:

That Licensor, in so far as its present title may enable it so to do and upon and subject to the terms and conditions hereinafter contained, hereby licenses and permits Licensee to lay, maintain and use said above mentioned and described facilities, across and underneath said tracks, right of way and property at the location aforesaid, and as shown in detail on said plan, which said plan is hereby made a part hereof.

FIRST: Said facilities shall be of the material, size and shall be used solely for the purposes above recited, and shall be so laid and maintained that the top thereof shall not at any time be less than 5 feet, 6 inches below the base of the rails of said tracks. There shall be no joints in that portion of any service pipe underneath said tracks when not enclosed within a casing pipe and no joints in that portion of any casing pipe underneath said tracks.

SECOND: The time and manner of placing the said facilities and appurtenances at the point of crossing and of the maintenance thereof, as well as any addition thereto, change in location, alteration, renewal, or subsequent removal thereof, shall be subject to the direction, supervision, and approval of the duly authorized representative of Licensor.

Licensee shall furnish, or shall have its Contractor constructing said facilities furnish to the Chief Engineer of Licensor at Room 505, Reading Terminal, Philadelphia, Pa., 19107, certificates declaring that Licensee or Contractor is protected by Contractual Liability Insurance, with an Insurer and in amounts and form satisfactory to Licensor. All such certificates furnished shall be endorsed to provide ten (10) days' advance written notice to Licensor by the Insurer before effecting any material change in or cancellation of the policies covered by the certificates furnished to Licensor.

If, during the progress of any work of construction, maintenance, repair, renewal, alteration, adjustment or removal of said facilities and appurtenances of Licensee, Licensor deems it advisable or is requested by Licensee, or any of its agents, licensees or contractors, including any sub-contractors, to provide watchmen, flagmen, inspectors or supervisors for the protection of persons or property, Licensor shall have the right to do so, and if any such watchmen, flagmen, inspectors or supervisors are provided, Licensee shall, upon bills being rendered, promptly pay or cause to be paid the cost and expense thereof incurred by Licensor and shown on said bills.

THIRD: Said facilities and appurtenances shall be laid in a prudent and workmanlike manner and in conformity with all orders, rules, regulations and specifications of any public body having jurisdiction thereof, and thereafter maintained during the continuance of this agreement and until removed, in good and safe order, condition, and repair all by and at the sole cost and expense of the Licensee and to the satisfaction of said duly authorized representative of Licensor. If Licensee fails to make repairs after written notice has been given by Licensor so to do, Licensor may do such work and the cost thereof shall be promptly paid by Licensee upon bills being rendered.

In the event of an emergency in which said facilities of Licensee shall endanger the safety of the property, traffic, patrons or employes of Licensor, and Licensee fails promptly to remedy the dangerous condition, Licensor shall have the right to take such action as may be reasonably necessary to insure safe railroad operation, but shall immediately give notice thereof to Licensee, and the cost of all such work performed by Licensor, upon bills being rendered, shall be promptly paid by Licensee.

FOURTH: Licensor may at its option do all the work, within its right of way, necessary to support and sustain its tracks and roadbed, during the laying, repairing and removing of said facilities and in case Licensee should fail or refuse to make necessary repairs or to restore the tracks and roadbed as hereinbefore provided, Licensor may do such work. The cost of all work done by Licensor as herein provided shall be paid by Licensee promptly upon the rendering of bills therefor.

Licensee agrees that it will at its own sole cost and expense at all times during the work of laying, repairing or removing said facilities, support and sustain the tracks and roadbed of Licensor to the end that traffic thereon shall not be hindered or delayed, and upon the completion of said work will restore said tracks and roadbed to the same or as good condition as before said work was commenced.

FIFTH: No facilities additional to those now to be constructed hereunder shall be constructed or maintained by Licensee across and underneath said tracks, right of way and property in the above named location, except only upon the written consent of Licensor first having been obtained therefor, and any additional facilities which may be constructed shall be governed by the provisions hereof relative to those now constructed or to be constructed hereunder provided, however, that if such additional facilities are constructed, the annual payment to be made by Licensee under the provisions of Article Eighth hereof shall be increased by an amount equal to Licensor's charge for such additional facilities.

SIXTH: If Licensor should at any time or times in the future deem it desirable or necessary in its judgment, which shall be conclusive, that the said facilities and appurtenances, or the location thereof, should be changed or altered, Licensee shall make the required changes or alterations and restore the premises affected to their present good condition within thirty (30) days after, and in accordance with the requirements of written notice from Licensor so to do, all of said changes or alterations and restoration of premises to be so made by, and at the sole cost and expense of, Licensee and to the satisfaction of Licensor. If Licensee shall fail to make such changes, or alterations and restoration of the premises as above provided, Licensor may do such work and the cost thereof, upon bills being rendered, shall be promptly paid by Licensee.

SEVENTH: Licensee further covenants and agrees that upon the cessation of use or abandonment of said facilities or appurtenances, it will remove the same and restore the premises affected to their present good condition within thirty (30) days after receipt of written notice from Licensor so to do. If Licensee fails to remove the facilities or appurtenances as herein provided, Licensor may do such work and the cost thereof, upon bills being rendered, shall be promptly paid by Licensee.

EIGHTH: For and in consideration of the license and permission herein and hereby accorded to Licensee to locate and maintain said facilities within the limits of said right of way and property, Licensee hereby covenants and agrees to pay or cause to be paid to Licensor, the sum of One Hundred and Thirty-Five Dollars ($135.00) to be due as of the 1st day of January, A.D. 1972, and on the same day of each and every year thereafter until cancellation hereof, an annual charge in the sum of Forty Dollars ($40.00), said annual charge to be subject to adjustment in accord with the provisions of Article THIRTEENTH hereof.

NINTH: In addition to the aforesaid annual payment, Licensee shall pay all taxes assessed upon said facilities, or on account of the existence of said facilities and shall indemnify Licensor from the payment of such taxes.

TENTH: In the event Licensee shall fail to make the payments provided for in Article Eighth, or shall fail to perform any of the other terms or conditions of this agreement, and shall fail to remedy such breach in accordance with the requirements of written notice from Licensor so to do, then and in that event Licensor may at its option forthwith terminate the license and permission herein and hereby accorded. Licensee agrees,

upon any such termination, promptly to remove said facilities and restore the premises affected to their present good condition, all at its own sole cost and expense. If Licensee shall fail to remove said facilities as herein provided, Licensor may remove the same at the sole cost and expense of Licensee, which cost and expense Licensee agrees to pay to Licensor promptly upon the rendering of bills therefor.

ELEVENTH: (a) It is understood between the parties hereto that the operations of Licensor at or near said crossing involve some risk, and Licensee as part of the consideration for the aforesaid privilege, hereby releases and waives any right to ask for or demand damages for or on account of any loss of or damage to the said facilities and appurtenances of Licensee that are in, upon, over, or under the property and facilities of Licensor, including the loss of, or interference with service thereof, and whether attributable to the fault, failure, or negligence of Licensor, or otherwise.

(b) And Licensee also agrees to indemnify, protect and save harmless Licensor and its successors and assigns, from and against all costs or expenses resulting from any and all loss of life, or property, or injury or damage to the person or property of any person, firm, or corporation other than Licensee (but including the officers, agents and employes of either party hereto,) and from and against any and all claims, demands, liabilities or actions for such loss, injury or damage, caused by or growing out of the presence or use, or the construction, maintenance, renewal, change or relocation and subsequent removal of said facilities and appurtenances of Licensee, when not attributable solely to the fault, failure or negligence of Licensor, except that if such loss, injury or damage shall be caused by the joint or concurring negligence of both parties hereto, the same shall be borne by them equally. It is understood and agreed that the failure of Licensor to exercise its right under Article Second to furnish watchmen, flagmen, inspectors or supervisors, or the fault, failure or negligence of any such watchmen, flagmen, inspectors or supervisors as are furnished by Licensor, shall not be deemed to be the fault, failure or negligence of Licensor.

(c) The provisions of this article shall inure to the benefit of the Philadelphia, Reading and Pottsville Telegraph Company, a subsidiary of Licensor, which has been granted certain rights by Licensor to place, maintain and use its facilities upon and along the right of way and property of Licensor, and in the event Licensor is in possession of the tracks, right of way and property, crossed by the facilities hereinbefore described, pursuant to any operating or lease agreement, then this Article shall also inure to the benefit of the company whose property is so operated or leased by Licensor.

TWELFTH: This agreement shall take effect at the expiration of thirty (30) days from the date when a copy thereof shall be filed in the Office of the Secretary of the Pennsylvania Public Utility Commission, Harrisburg, Pennsylvania; provided that if the said Commission shall, prior to the expiration of such period, institute a proceeding affecting its validity under the provisions of Section 911, Article IX of the Public Utility Law, this agreement shall become effective only upon the approval thereof by the said Commission.

THIRTEENTH: It is further agreed that the Licensee shall pay to the Licensor each year an amount in dollars equivalent to the purchasing power of $40.00 on January 1, 1972 and that the rental sum of $40.00 will be adjusted every fifth year commencing January 1, 1977, and every fifth year thereafter, for changes in the purchasing power as measured by changes in the "Consumer's Price Index--U.S.--All Items" compiled by the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D. C., or its successor index. Adjustment will be made by the dividing of the sum of $40.00 by the index figure for January 1, 1972, and multiplying the result by the corresponding index figure for January 1st of the year in which adjustment is made. Provided, however, in no event shall the annual amount payable to Licensor be less than the annual charge as of the effective date of this Agreement.

FOURTEENTH: It is understood and agreed that the facilities herein described will be permitted to remain in place after the dissolution or other termination of the Authority herein named only upon the transfer to and the acceptance by the Board of Supervisors of East Whiteland Township of this agreement prior to such dissolution or other termination of said Authority.

WITNESS: ~~ATTEST:~~ Marcella Durie

~~Secretary.~~

[signature]

Vice-President.

APPROVED AS TO FORM

PHYSICAL CONDITIONS

TERMS & CONDITIONS

EAST WHITELAND MUNICIPAL AUTHORITY

ATTEST:

Robert R. Hotsclaw *Secretary.*

by John D. Haines Chairman

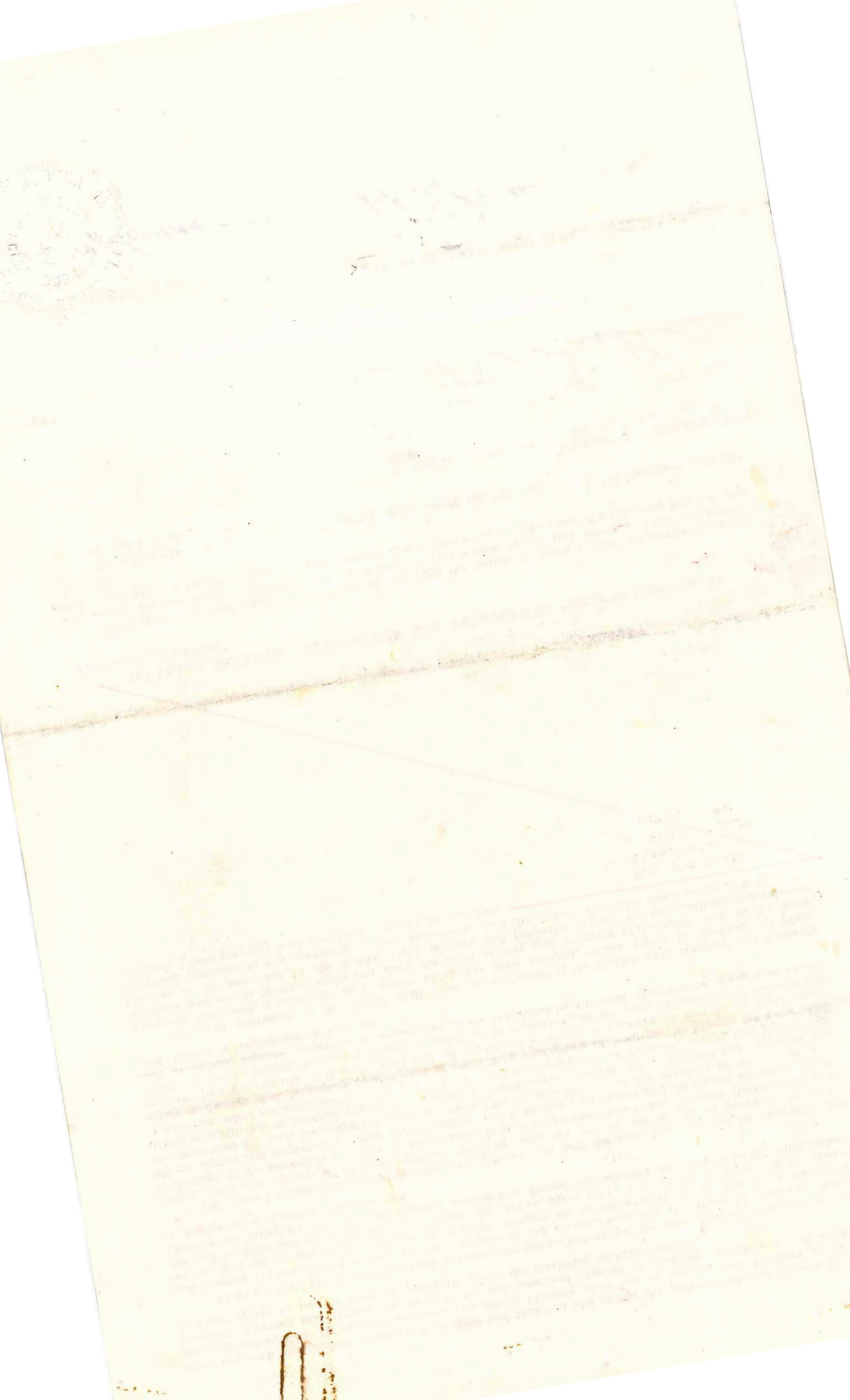


EXHIBIT F19

LICENSE AGREEMENT FOR WIRE, PIPE AND CABLE TRANSVERSE CROSSINGS AND LONGITUDINAL OCCUPATIONS, DATED JULY 11, 1975, BY AND BETWEEN PENN CENTRAL TRANSPORTATION COMPANY AND EAST WHITELAND MUNICIPAL AUTHORITY

PENN CENTRAL TRANSPORTATION COMPANY
ROBERT W. BLANCHETTE, RICHARD C. BOND, JOHN H. McARTHUR, TRUSTEES

CHIEF ENGINEER
ROOM 600
SIX PENN CENTER PLAZA
PHILADELPHIA, PA. 19104

Date: November 5, 1975

File: E-104-2 WPW/m

East Whiteland Municipal Authority
Planebrook Road
Frazer, Pennsylvania 19355

Attention: Chairman

Gentlemen:

Attached, for your records, is a fully executed copy of an agreement between your Authority and our Company dated July 11, 1975, covering one (1) 8-inch cast iron sanitary sewage main at Valuation Station 2284+49±, located at a point west of the Station of Knickerbocker, Pennsylvania.

Copy of Pennsylvania Public Utility Commission Certificate of Filing P.U.M.C. 8297 attached.

Very truly yours,

J. T. Sullivan, P. E.
Chief Engineer

Encl.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

CERTIFICATE OF FILING
P.U.M.C. 8297

Agreement dated July 11, 1975 between Penn Central Transportation Company, Debtor, and East Whiteland Municipal Authority whereby the former grants to the latter permission to construct and maintain one 8-inch sewer pipeline under and across the tracks, right-of-way and property of said company at Railroad Bridge No. 2.73, including the placement of 2 manholes, in East Whiteland Township, Chester County.

BY THE COMMISSION:

NOW, October 29, 1975, the Public Utility Commission certifies that the above contract or indenture dated July 11, 1975, has been on file with the Commission since September 29, 1975, and that no proceedings have been instituted by the Commission in connection with it under Section 911 of the Public Utility Law.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

C. J. McElwee

C. J. McElwee
Acting Secretary

CE-66
3/74

LICENSE AGREEMENT FOR WIRE, PIPE AND CABLE TRANSVERSE CROSSINGS AND LONGITUDINAL OCCUPATIONS

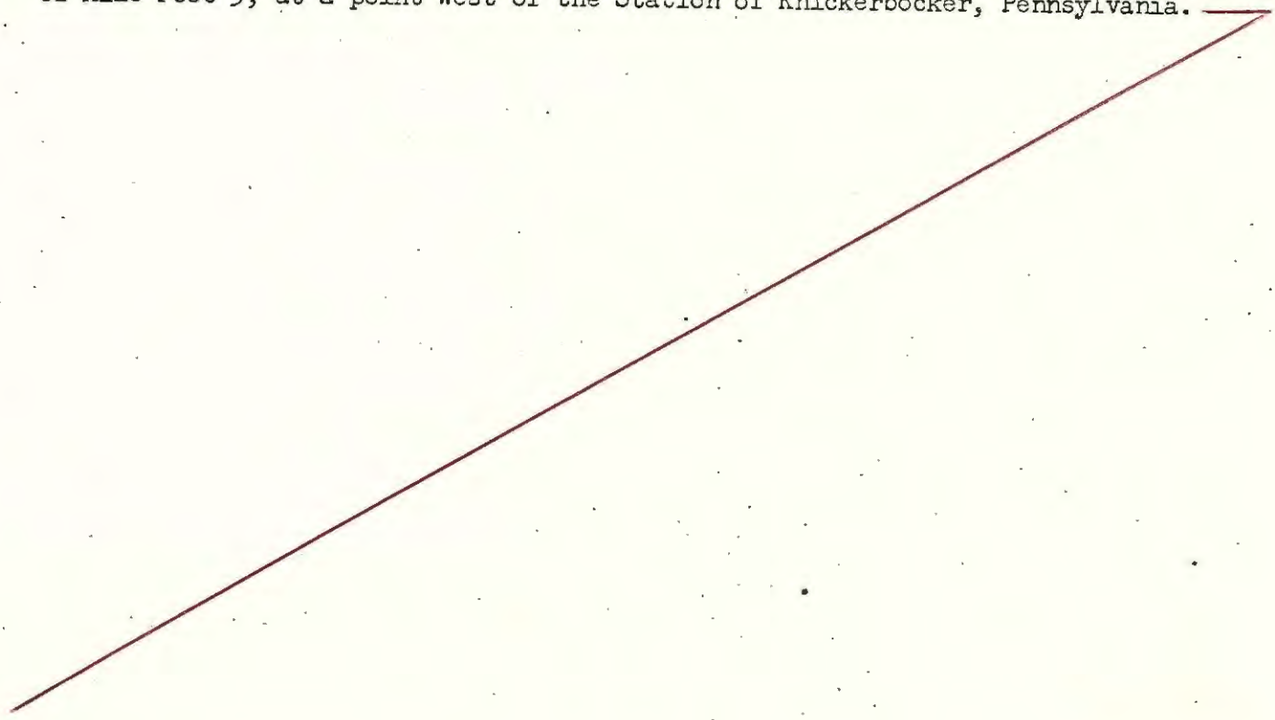
THIS AGREEMENT, made this 11th day of July , 19 75 ,

between Robert W. Blanchette, Richard C. Bond and John H. McArthur, Trustees of the Property of PENN CENTRAL TRANSPORTATION COMPANY, DEBTOR, in Reorganization under Section 77 of the Bankruptcy Act,

parties of the first part (hereinafter called "Railroad") and EAST WHITELAND MUNICIPAL AUTHORITY, a Political Sub-Division of the Commonwealth of Pennsylvania

, as party of the second part (hereinafter called "Licensee").

WITNESSETH, that the said Railroad (which when used herein shall include any lessor, successor or assignee of or operator over its railroad) insofar as it has the legal right and its present title permits, and in consideration of the covenants and conditions hereinafter stated on the part of the Licensee to be kept and performed, hereby permits, as a temporary license, the Licensee to construct, maintain, repair, alter, renew, relocate and ultimately remove one (1) 8-inch cast iron sanitary sewage main, encased in concrete under Railroad Bridge No. 2.73 and also two (2) manholes at Valuation Station 2284+49±, located 1399 feet west of Mile Post 3, at a point west of the Station of Knickerbocker, Pennsylvania.



in accordance with construction plans PC-2
submitted by Licensee to and approved by the Chief Engineer of Railroad, incorporated herein by reference; also in accordance with current issues of Railroad Specifications Nos. CE 4 and/or CE 8; and shown on Plan No.File: E-104-2 , dated November 17, 1972 , marked Exhibit "A", attached hereto and made a part of this Agreement, all and any part thereof being hereafter referred to as the "FACILITIES"; said license, however, shall be under and subject to the following terms, covenants, and conditions as hereinafter recited, which are hereby accepted and agreed to, by the Licensee, to wit:

1. The Licensee shall pay to the Railroad upon the execution hereof, the sum of One Hundred Twenty Dollars ($ 120.00) as reimbursement for the costs and expenses incident to the preparation of this Agreement, together with the further sum of Eleven Hundred Dollars ($ 1100.00) as reimbursement for the rights granted in this Agreement.

2. (a) The FACILITIES shall be located, constructed and maintained in exact accordance with said construction plans and for the purpose as outlined on Page 1. No departure shall be made at any time therefrom except upon permission in writing granted by the Chief Engineer of Railroad, or his designee, provided, however, that if any commission or other regulatory body duly constituted and appointed in compliance with the laws of the State in which the crossing or occupancy herein provided is situate, and having jurisdiction in the premises, has by ruling or other general order determined and fixed the manner and means of construction, maintenance, repair, alteration, renewal, relocation or removal thereof, then said ruling or general order shall prevail for the crossing or occupancy herein mentioned.

(b) The work of constructing, maintaining, repairing, altering, renewing, relocating or removing the said FACILITIES shall be done under such general conditions as will be satisfactory to and approved by the Chief Engineer of Railroad, or his designee, and as will not interfere with the proper and safe use, operation and enjoyment of the property of the Railroad. Licensee, at its own cost and expense, shall, when performing any work in connection with the FACILITIES, furnish any necessary watchmen to see that men, equipment and materials are kept a safe distance away from the tracks of the Railroad.

(c) In addition to, but not in limitation of any of the foregoing provisions, if at any time the Railroad should deem flagmen or watchmen desirable or necessary to protect its operations or property, or its employees, patrons or Licensees during the work of construction, maintenance, repair, alteration, renewal, relocation or removal of said FACILITIES of Licensee, the Railroad shall have the right to place such flagmen or watchmen at the sole risk, cost and expense of Licensee, which covenants and agrees to bear the full cost and expense therof and to promptly reimburse the Railroad upon demand. The furnishing or failure to furnish flagmen or watchmen by the Railroad, however, shall not release the Licensee from any and all other liabilities assumed by the Licensee under the terms of this Agreement.

3. If the Licensee desires or is required, as herein provided, to revise, renew, add to or alter in any manner whatsoever the aforementioned FACILITIES, it shall submit plans to Railroad and obtain the written approval of the Chief Engineer of Railroad thereto before any work or alteration of the structure is performed and the terms and conditions of this Agreement with respect to the original construction shall apply thereto. In that event, Railroad reserves the right to assess additional charges.

4. (a) The Licensee shall at all times be obligated to promptly maintain, repair and renew said FACILITIES; and shall, upon notice in writing from Railroad and requiring it so to do, promptly make such repairs and renewals thereto as may be required by Railroad; or the Railroad, for the purpose of protecting and safeguarding its property, traffic, patrons or employees from damage or injury, may with or without notice to the Licensee at any time make such repairs and renewals thereto and furnish such material therefor as it deems adequate and necessary, all at the sole cost and expense of Licensee.

(b) In the event of an emergency, Licensee will take immediate steps to perform any necessary repairs, and in the event Licensee fails so to do, Railroad will perform said necessary repairs at the sole cost and expense of Licensee.

5. (a) The supervision over the location of the construction work and inspection of the FACILITIES and the approval of the material used in construction, maintenance, repair, alteration, renewal, relocation and removal of the aforesaid FACILITIES covered by this Agreement shall be within the jurisdictional rights of the Railroad.

(b) The right of supervision over the location of the construction work and inspection of the FACILITIES from time to time thereafter by the Railroad, shall extend for an appropriate distance on each side of the property of the Railroad as the method of construction and materials used may have an important bearing upon the strength and stability of the FACILITIES over, under, upon, or in the property of the Railroad.

6. Licensee shall comply with all Federal, State and local laws, and assume all cost and expense and responsibility in connection therewith, without any liability whatsoever on the part of the Railroad.

7. (a) It is understood between the parties hereto that the operations of the Railroad at or near said FACILITIES involve some risk, and the Licensee as part of the consideration for this license hereby releases and waives any right to ask for or demand damages for or account of loss of or injury to the FACILITIES (and contents thereof) of the Licensee that are over, under, upon, or in the property and facilities of the Railroad including the loss of or interference with service or use thereof and whether attributable to the fault, failure or negligence of the Railroad or otherwise.

(b) And the Licensee also covenants and agrees to and shall at all times indemnify, protect and save harmless the Railroad from and against all cost or expense resulting from any and all losses, damages, detriments, suits, claims, demands, costs and charges which the said Railroad may directly or indirectly suffer, sustain or be subjected to by reason or on account of the construction, placement, attachment, presence, use, maintenance, repair, alteration, renewal, relocation or removal of said FACILITIES in, on, about or from the premises of Railroad whether such losses and damages be suffered or sustained by the Railroad directly or by its employees, patrons, or licensees, or be suffered or sustained by other persons or corporations, including the Licensee, its employees and agents who may seek to hold the Railroad liable therefor, and whether attributable to the fault, failure or negligence of the Railroad or otherwise, except when proved by Licensee to be due directly to the sole negligence of the Railroad.

(c) If a claim or action is made or brought against either party and for which the other party may be responsible hereunder in whole or in part, such other party shall be notified and permitted to participate in the handling or defense of such matter.

8. All cost and expenses in connection with the construction, maintenance, repair, alteration, renewal, relocation and removal of said FACILITIES shall be borne by the Licensee, and in the event of work being performed or material furnished by Railroad under the stipulated right to perform such work of construction, maintenance, repair, alteration, renewal, relocation or removal under any section hereof, Licensee agrees to pay to the Railroad the actual cost of material plus the current applicable overhead percentages for storage, handling, transportation, purchasing and other related material management expenses and the actual cost of labor plus the current applicable overhead percentages as developed and published by the accounting department of Railroad for fringe benefits, payroll taxes, administration, supervision, use of tools, machinery and other equipment, supplies, employers liability insurance, public liability insurance, and other insurance, taxes and all other indirect expenses. It is to be understood that the aforementioned material and labor overhead charges are to be applied at the rates which are effective at the time of the performance of any work by employees of the Railroad on the said FACILITIES. Licensee agrees to pay such bills within thirty (30) days of the presentation thereof by Railroad.

9. The Licensee shall, at its sole cost and expense, upon request in writing of the Railroad, promptly change the location of said FACILITIES covered by this Agreement, where located over, upon or in the property and facilities of the Railroad, to another location, to permit and accommodate changes of grade or alignment and improvement in or additions to the facilities of the Railroad upon land now or hereafter owned or used by the Railroad to the intent that said construction shall at all times comply with the terms and conditions of this Agreement with respect to the

original construction; or in the event of the lease, sale or disposal of the premises or any part thereof encumbered by this license, then the said Licensee shall make such adjustments or relocations in its facilities as are over, upon or in the property and facilities of the Railroad as may be required by the said Railroad or its grantee; and if the Licensee shall fail or refuse to comply therewith, then the duly authorized agents of the Railroad may make such repairs or adjustments or changes in location and provide necessary material therefor.

10. Upon termination of this Agreement or upon the removal or abandonment of the FACILITIES covered hereby, all the rights, title and interest of the Licensee hereunder shall cease and determine, and this instrument shall thereupon become and be null and void, without any liability on the part of either party to the other party except only as to any liability accrued prior thereto, and the Licensee shall remove its said FACILITIES and appurtenances from Railroad property and right-of-way, and all property of the Railroad shall be restored in good condition and to the satisfaction of the Railroad. If the Licensee fails or refuses to remove its FACILITIES and appurtenances under the foregoing conditions, the Railroad shall be privileged to do so at the cost and expense of the Licensee, and the Railroad shall not be liable in any manner to the Licensee for said removal.

11. In the event the FACILITIES consist of an underground occupation, Licensee will be responsible for any settlement caused to the roadbed, right of way and/or tracks, facilities, and appurtenances of the Railroad arising from or as a result of the installation of the said FACILITIES for a period of one (1) year subsequent to the date of completion of the installation, and Licensee agrees to pay to Railroad on demand the full cost and expense therefor.

12. In the event the said FACILITIES consist of electrical power or communication wires and/or appurtenances, the Licensee shall at all times be obligated promptly to remedy any inductive interference growing out of or resulting from the presence of its FACILITIES; and if the Licensee should fail so to do, then Railroad may do so, and the Licensee agrees to pay to Railroad on demand the full cost and expense therefor.

13. As part of the consideration of the within Agreement, Licensee covenants and agrees that no assessments, taxes or charges of any kind shall be made against Railroad or its property by reason of the construction of said FACILITIES of Licensee, and Licensee further covenants and agrees to pay to Railroad promptly upon bills rendered therefor the full amount of any assessments, taxes or charges of any kind which may be levied, charged, assessed or imposed against the Railroad or its property by reason of the construction and maintenance of said FACILITIES of Licensee.

14. The rights conferred hereby shall be the privilege of the Licensee only, and no assignment or transfer hereof shall be made, or other use be permitted than for the purpose stated on page one without the consent and agreement in writing of the Railroad being first had and obtained.

15. This Agreement shall be terminable upon mutual consent of the parties hereto, provided that this Agreement may be terminated by the Railroad upon the violation of any of the terms, covenants and conditions of this Agreement on the part of the Licensee.

16. This Agreement shall take effect as of the First day of July A.D. 19 75.

17. Anything herein contained to the contrary notwithstanding, there shall be no obligation on the part of the Railroad to continue operation of the line of railroad in the vicinity of the FACILITIES to prevent the termination of the Licensee's occupation rights at any crossing or occupation covered hereunder on account of an abandonment of line or service by the Railroad; nor shall there be any obligation upon the Railroad to perfect its title in order to continue in existence the said occupation rights after such abandonment of line or service; nor shall the Railroad be responsible for preserving the Licensee's occupation rights at any crossing or occupation covered hereunder after any transfer, conveyance or abandonment of the rail properties in the vicinity of the FACILITIES pursuant to any provision of the Regional Rail Reorganization Act of 1973.

18. This Agreement is authorized to be entered into by Resolution, or Ordinance No. Adopted May 21, 19 75, By The Authority, a Certified copy of which is attached hereto. / to be

19. This Agreement shall take effect at the expiration of thirty (30) days from the date when a copy thereof shall be filed in the Office of the Secretary of the Pennsylvania Public Utility Commission, Harrisburg, Pa., provided that, if the said Commission shall, prior to the expiration of such period, institute a proceeding affecting its validity under the provisions of Section 911 of the Public Utility Law this Agreement shall only become effective upon its approval by the said Commission.

It is agreed and understood that the provisions of Paragraph 16 are not applicable.

The terms of this Agreement shall be binding and effective upon all the parties hereto, and unless and until terminated, as hereinbefore provided, this Agreement shall inure to the benefit of and be binding upon the parties hereto, their successors and assigns, subject, however, to the provisions of Article 14 of this Agreement.

IN WITNESS WHEREOF, the said parties hereto have caused this Agreement to be duly executed and delivered as of the day and year first above written.

WITNESS:

Robert W. Blanchette, Richard C. Bond and John H. McArthur, Trustees of the Property of PENN CENTRAL TRANSPORTATION COMPANY, DEBTOR

J. T. Sullivan, Chief Engineer

ATTEST:

EAST WHITELAND MUNICIPAL AUTHORITY

BY John J. Finn

Its Vice Chairman

EAST WHITELAND MUNICIPAL AUTHORITY

RESOLUTION AUTHORIZING ENTRY INTO AGREEMENT

WITH PENN CENTRAL TRANSPORTATION COMPANY

WHEREAS, the Authority has received a proposed Agreement between the Penn Central Transportation Company and the Authority permitting the Authority to place an eight-inch sewage pipe under the railroad tracks near the station of Knickerbocker, Pennsylvania, and

WHEREAS, the Township engineers have reviewed the proposed contract and indicated that it is necessary to enter into such an Agreement in order to complete the on-going sewer project, and

WHEREAS, the Solicitor has approved the Agreement in form.

NOW, THEREFORE, BE IT RESOLVED that the Authority enter into a contract with the Penn Central Transportation Company permitting the installation of an eight-inch sewage pipe under the Pennsylvania Railroad tracks and to pay, pursuant to the Agreement, $1,220.00, copy of said agreement having been submitted at the time of the adoption of this Resolution, and

IT IS FURTHER RESOLVED that the proper officers of The East Whiteland Municipal Authority are authorized and empowered to take such action and execute such documents in order to carry out the intention of this Resolution.

ADOPTED by the Board of the East Whiteland Municipal Authority this 21st day of May, 1975.

(SEAL)

Vice Chairman

Attest:

Secretary

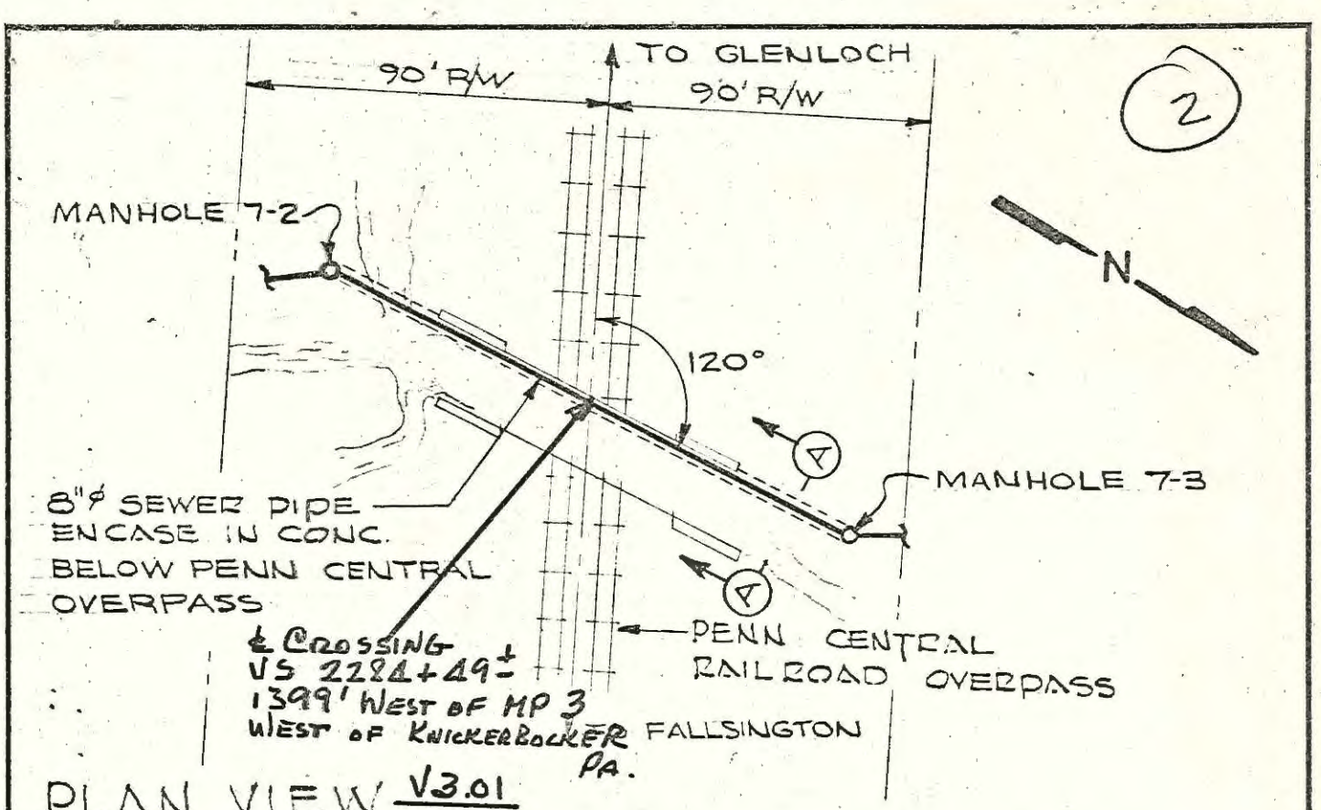
I, GEORGE T. McGREW, Secretary of the East Whiteland Municipal Authority hereby certify that the foregoing is a correct and complete copy of a Resolution duly adopted at a public meeting of the Board of said East Whiteland Municipal Authority, duly called and held upon proper notice and in accordance with applicable laws, on May 21, 1975, which Resolution remains in full force of the date hereof, without change or supplement.

George T. McGrew

Secretary

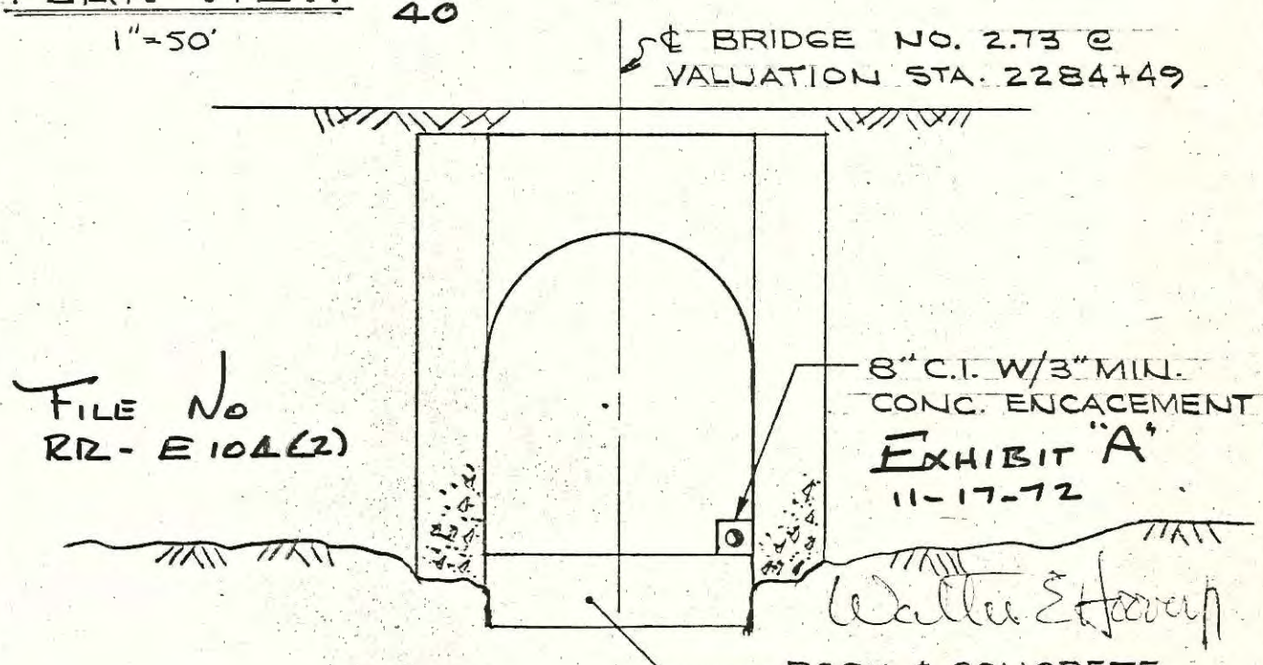
(SEAL)

Dated: May 21, 1975



PLAN VIEW V3.01/40

1"=50'



FILE No RR-E 104(2)

EXHIBIT "A" 11-17-72

Walter E Hoover

SECTION A-A

1"=10'-0"

EAST WHITELAND MUNICIPAL AUTHORITY

REF. R.F.W. DWG. No 7

PENN-CENTRAL RAILROAD TRENTON BRANCH VALUATION MAP. NO. 301/40

ROY F. WESTON WEST CHESTER PENNSYLVANIA	DRAWN C.F. Stanke	SCALE AS SHOWN	DWG. NO. [redacted]
	DATE [redacted]	W.O. NO. 199-02	

2DF4 85367

EXHIBIT F20

LICENSE AGREEMENT, DATED NOVEMBER 18, 1993, BY AND BETWEEN NATIONAL RAILROAD PASSENGER CORPORATION AND EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY

Southridge 37-05-558

NATIONAL RAILROAD PASSENGER CORPORATION
LICENSE AGREEMENT

THIS AGREEMENT, made this 18th day of November 1993 between NATIONAL RAILROAD PASSENGER CORPORATION, a corporation of the District of Columbia, with offices at 60 Massachusetts Avenue, N.E., Washington, D.C. 20002, party of the first part (hereinafter called "Railroad") and East Whiteland Township Municipal Authority a public authority with principal offices at 209 Conestoga Road, Frazer, PA. as party of the second part (hereinafter called "Licensee").

WITNESSETH, that the said Railroad (which when used herein shall include any lessor, successor or assignee of or operator over its railroad) insofar as it has the legal right and its present title permits, and in consideration of the covenants and conditions hereinafter stated on the part of the Licensee to be kept and performed, hereby permits, as a temporary exclusive License, the Licensee and Licensee only to construct, maintain, repair, alter, renew, relocate and ultimately remove:

A. Description of Facility: Installation of a 8" diameter ductile iron sewer pipe within 24" steel casing pipe for a distance of approximately 250 feet under Railroad's right-of-way.

B. Purpose: To convey sanitary sewage from Southridge Subdivision to East Whiteland Township system.

C. Location:

(1) Milepost: 23.6

(2) Nearest Station: Malvern

(3) Town: East Whiteland Township

(4) County: Chester

(5) State: Pennsylvania

all as delineated and in strict accordance with Drawing No. S-14 dated April 30, 1990 revised May 6, 1993 submitted by Licensee to and approved as to concept by the Chief Engineer of the Railroad, marked "Exhibit A", attached hereto and made a part hereof, also in strict compliance with current issues of Railroad Specifications No. USA, ENG 1604 and Requirements and Specifications for Wire, Conduit and Cable occupations all as applicable to the herein described work and incorporated herein by reference, all and any part thereof being hereafter referred to as the "FACILITIES"; said License, however, shall be under and subject to the following

terms, covenants, and conditions as hereinafter recited, which are hereby accepted and agreed to, by the Licensee, to wit: (0.1)

1. This License shall commence on the November 1, 1993 and terminate on the 31st day of October 2018, or before as hereinafter provided according to the terms, conditions and covenants herein contained. (1)

2. The Licensee shall pay to the Railroad upon the execution hereof, the sum of Five Hundred ($500.00) as reimbursement for the costs and expenses incident to the preparation of this License, together with the further sum of Thirteen Thousand One Hundred Twenty Dollars ($13,120.00) as lump sum compensation, for the rights granted in this License for the Twenty-Five (25) year term, which sum shall be payable in advance, upon execution of this agreement. Notwithstanding the foregoing, payment of any additional charges and sums other than as compensation for Licensee's occupancy as hereinafter set forth shall be mailed to P.O. Box 18266F, Group No. 5, St. Louis, Missouri 63150, or at such other place as Railroad may from time to time designate. (2.1)

3. Licensee shall and will pay all License Fees and any additional payments when due, without any setoff or deduction whatsoever, and any payment or receipt thereof by Railroad or its agent of any amount less than the full amount to which Railroad deems it is entitled shall not operate or be deemed to operate, constitute or be construed, as a settlement or satisfaction of said License Fees or other amounts due, notwithstanding any statement or endorsement on the check or other paper accompanying the payment, but Railroad shall be deemed to have accepted said payment without prejudice and subject to its right to collect the balance actually due, as well as subject to any and all other rights available to Railroad by law and under this License Agreement.

If, (i) default shall be made in Licensee's covenants herein to pay License Fees or additional payments on each due date as described herein; or (ii) if default shall be made in any other covenants and agreements herein contained on the part of Licensee to be kept or performed, and if any such default shall not be cured within thirty (30) days after Licensee has been given written notice by Railroad to do so, or (iii) if Licensee shall file or suffer to be filed against it a petition in bankruptcy, or (iv) if Licensee shall be declared insolvent according to law, or if a receiver or trustee be appointed for the property of Licensee, or (v) if Licensee shall make any general assignment for the benefit of creditors, or any bulk sale however denominated, (vi) if Licensee shall assign, sublet or sub-license its rights, duties or obligations hereunder without first obtaining the prior written consent of Railroad, then, in any of such cases, Railroad may by written notice to Licensee immediately declare this License terminated, and in such event, in addition to any other action or

remedy which Railroad may have at law or in equity to recover damages or otherwise by reason of a breach by Licensee of provisions of this License, Railroad, acting as attorney in fact for Licensee, shall have the right to remove Licensee's FACILITY by summary proceedings, without being liable to any prosecution, action or damages therefor, and have and enjoy the Railroad's property as of its former estate free, clear and discharged of this License and of all rights of Licensee hereunder; and all FACILITIES owned or placed upon the Railroad's property by or for Licensee, shall be filled and abandoned in place or removed by Railroad at the sole cost and expense of Licensee, which cost and expense Licensee shall pay to Railroad upon demand; and Licensee also shall pay to Railroad upon demand all fees and expenses, including reasonable attorney and/or collection agency fees, incurred in connection with the aforesaid actions.

The receipt by or on behalf of Railroad of any License Fee or additional payments with or without knowledge of any breach of any of the terms, covenants or conditions of this License, shall not be deemed a waiver of such breach, nor shall such receipt be deemed a withdrawal of any notice given to Licensee under the terms of this License, nor shall such receipt be deemed a reinstatement or reestablishment of this License or any portion thereof after termination or cancellation, nor shall the termination or other cancellation of this License or any portion thereof waive the obligation of Licensee to pay or discharge any License Fee, additional payments or other obligations accruing under this License.

Licensee hereby waives and relinquishes unto and in favor of Railroad the operation of all laws which do now or hereafter may exempt any FACILITY on Railroad's property from levy and sale upon distress for rent or upon execution of any judgment obtained in an action brought for nonpayment of any License Fees or additional payments hereunder or for breach of any other provisions hereof. The parties hereto shall and do hereby waive trial by jury in any action, proceeding or counterclaim brought by either party against the other on any matter whatsoever arising out of or in any way connected with this License or Licensee's use of the FACILITY and occupancy of Railroad's property or arising out of or in any way connected with any claim of injury or damage arising out of or in connection with this License or such use or occupancy. Licensee hereby expressly waives any and all rights of redemption granted by or under any present or future laws in the event of Licensee's being dispossessed for any cause or in the event of Railroad's obtaining possession or for removal of the FACILITY by reason of the violation by Licensee of any of the covenants and conditions of this Lease or otherwise.

Licensor shall have the right to require rent payments to be made in cash, money order or certified check. A service charge of Ten Dollars ($10.00) will be charged for each instance in which

a check is returned unpaid by the Licensee's bank for any reason.

If Licensee does not pay License Fees or any additional payments hereunder on the day when the same shall become due and payable and such failure to pay License Fees or any additional payments shall continue for a period of ten (10) days, Licensee shall pay to Railroad a service charge at the rate of twelve percent (12%) per annum, or the highest rate allowed by law, which ever is the greater of the amount of such License Fee or any additional payment or all of them for each year or portion of a year that the same shall remain unpaid; provided, however, that such service charge shall in no event, be less than Fifty Dollars ($50.00) for any year or portion of a year that the License Fee and any additional payment shall remain unpaid. Railroad reserves the right to institute legal proceedings and/or collection agency action for the payment of License Fees due and payable, and any legal and collection fees incurred shall be the responsibility of the Licensee; and immediate payment to be made to Railroad by Licensee upon written notice. The provision of this paragraph shall not preclude Railroad from exercising its options as set forth in any other Article of this License.

The actions and remedies provided in this License in event of default shall not be deemed exclusive but shall be in addition to all other actions and remedies at law or in equity in event of any such default; and no action or remedy taken or omitted by Railroad in event of default shall be deemed a waiver of such default and waiver of a particular default shall not be deemed a waiver of any other default or a waiver of the same default again occurring, nor shall any failure on the part of Railroad to compel a fulfillment of any one or more of the covenants, terms and conditions herein contained be held to be a waiver of its right to enforce the same at any time thereafter during the term of this License. (3)

4. The FACILITIES shall be located, constructed and maintained in exact accordance with said construction plans and for the sole purpose as outlined on Page 1 hereof. No departure that would result in a modification, change, amendment or sub-licensing to this License shall be made at any time therefrom except upon permission in writing granted by the Vice President of Real Estate and Operations Development of Railroad, or his designee, provided, however, that if any commission or other regulatory body duly constituted and appointed in compliance with the laws of the State in which the crossing or occupancy herein provided is situate, and having jurisdiction over the property, has by final ruling or order determined and fixed the manner and means of construction, maintenance, repair, alteration, renewal, relocation or removal thereof, then said final ruling or order shall prevail for the crossing or occupancy herein mentioned. The work of constructing, maintaining, repairing, altering, renewing, relocating or removing the said FACILITIES shall be done under such general conditions as

will be satisfactory to and approved by the Chief Engineer of Railroad, or his designee, and as will not interfere with the proper and safe use, operation and enjoyment of the property of the Railroad. Licensee, at its own cost and expense, shall, when performing any work in connection with the FACILITIES, furnish any necessary watchmen to see that men, equipment and materials are kept a safe distance away from the tracks of the Railroad. Any notification required or desired to be given to Railroad's Chief Engineer shall be sent to the address on first page here to the attention of the Chief Engineer. (4)

5. FACILITIES conveying gas (natural or artificial), oil, gasoline or other flammable matter shall not be installed or relocated under bridges or culverts, except in cases especially provided for. No FACILITIES shall be installed or relocated under bridges or culverts where there is likelihood of restricting the area required for the purposes for which the bridges or culverts were built, or endangering foundations of structures. (5)

6. No attachment of wires, cables, pipe lines, and appurtenances shall be made to any bridge (or its supports) of the Railroad unless specifically provided for in this License, and then only in accordance with the Railroad's plans and specifications. No poles, towers, anchors or supports of any kind for the wires, cables, and appurtenances or sub-licensed facilities shall be located on the right-of-way or property of the Railroad unless specifically provided for in this License. A penalty charge will be assessed against Licensee for knowingly permitting such other uses without Railroad's written permission. (6)

7. In addition to, but not in limitation of any of the foregoing provisions, if at any time the Railroad should deem flagmen or watchmen desirable or necessary to protect its operations or property, or its employees, patrons or licensees during the work of construction, maintenance, repair, alteration, renewal, relocation or removal of said FACILITIES of Licensee, the Railroad shall have the right to place such flagmen or watchmen at the sole risk, cost and expense of Licensee, who covenants and agrees to bear the full risk, cost and expense thereof and to reimburse promptly the Railroad upon demand. The furnishing or failure to furnish flagmen or watchmen by the Railroad, however shall not release the Licensee from any and all other liabilities assumed by the Licensee under the terms of this License. (7)

8. The Licensee shall at all times be obligated promptly to maintain, repair and renew said FACILITIES; and shall, upon notice in writing from Railroad requiring it so to do, promptly make such repairs and renewals thereto as may be required by Railroad. For the purpose of protecting and safeguarding its property, traffic, patrons or employees from damage or injury, Railroad may with or without notice to the Licensee at any time make such repairs and renewals thereto and furnish such material therefor as it deems

adequate and necessary, all at the sole cost and expense of Licensee. (8)

9. In the event of an emergency, Licensee will take immediate steps to perform any necessary repairs, and in the event Licensee fails so to do, Railroad will perform said necessary repairs at the sole cost and expense of Licensee. (9)

10. That in consideration of the exclusive rights granted hereunder to Licensee by Railroad, Licensee hereby agrees that as to any structure placed upon Railroad's property or any structure presently existing which structure is subject to renovation, repairs and subsequent use by Licensee, such structure shall be continuously maintained by Licensee from and after the effective date of this License. All costs of maintenance, repair and upkeep shall be borne by Licensee. Licensee shall be liable for and does indemnify and agree to hold Railroad harmless from any and all risks of liability for injuries to or death of persons or damage to or destruction of property resulting from said use, maintenance, repair and/or upkeep or lack thereof of said structure without regard to negligence. (10)

11. If the Licensee desires or is required, as herein provided, to revise, renew, add to or alter in any manner whatsoever the aforementioned FACILITIES, it shall submit plans and specifications to Railroad and obtain the written approval thereof by the Chief Engineer of Railroad before any work or alteration of the structure is performed and the terms and conditions of this License with respect to the original construction shall apply thereto. Railroad reserves the right to make adjustments in the annual compensation or assess additional charges. A penalty charge will be assessed against Licensee for unauthorized uses under this License Agreement. (11)

12. The Railroad shall have the right to verify by inspection that the location of the work and the materials used in construction, maintenance, repair, alteration, renewal and removal of the aforesaid FACILITIES covered by this License are in compliance with the plans and specifications. The right to verify the location of the construction work and inspect the FACILITIES from time to time thereafter by the Railroad, shall extend for an appropriate distance on each side of the property of the Railroad as the method of construction and materials used may have an important bearing upon the strength and stability of the FACILITIES over, under, upon, or in the property of the Railroad. (12)

13. Licensee shall comply with all Federal, State, and municipal laws, orders, rules, regulations now or hereafter enacted and assume all cost and expense and responsibility in connection therewith, without any liability whatsoever on the part of the Railroad. (13)

14. It is understood between the parties hereto that the operations of the Railroad at or near said FACILITIES involve some risk, and the Licensee as part of the consideration for this License hereby releases and waives any right to ask for or demand damages for or on account of loss of or injury to the FACILITIES (and contents thereof) of the Licensee and/or employees, agents, servants, contractors and invitees of the Licensee that are over, under, upon or in the property and facilities (of the Railroad) including the loss of or interference with service or use thereof and without respect to the fault, failure or negligence of the Railroad, its employees, agents, servants, contractors, invitees or otherwise. (14)

15. Licensee covenants and agrees to and shall at all times indemnify, protect, defend and save harmless Railroad from and against any and all losses, damages, liabilities, suits, claims, demands, judgments, costs, interest and expenses (collectively "losses and damages") which Railroad may directly or indirectly suffer, sustain or be subjected to by reason of, on account of, or arising out of a) the construction, placement, attachment, presence, use, misuse, maintenance, repair, alteration, renewal, relocation, failure, or removal of the FACILITIES, or b) the violation of, or compliance or noncompliance with, any Environmental Law relating in any way to the FACILITIES, including any disposal, discharge, or release of any wastes, pollutants, or hazardous substances from or in connection with the FACILITIES; whether such losses and damages be suffered or sustained by Railroad directly or by its employees, agents, servants, contractors, officers, or licensees, or by any other person or entity, including Licensee, who may seek to hold Railroad liable therefor, and whether attributable to the fault, failure, or negligence of Railroad, its employees, agents, servants, contractors, officers, licensees, or any other person acting for or on Railroad's behalf.

It is further agreed that in the event Railroad shall, at its option, make any expenditures or incur any obligations for the payment of money in connection with this Article including, but not limited to, attorneys' fees in instituting, prosecuting or defending any action or proceeding, such sums paid, obligations incurred and costs, all with interest at the rate of twelve percent (12%) per annum or the highest rate allowable by law, whichever is the lesser, shall be deemed to be additional compensation due hereunder and shall be paid by Licensee to Railroad within five (5) days of the rendering of a bill or statement to Licensee therefor.

For the purpose of this Article, "Environmental Law" shall mean all laws, statutes, codes, acts, ordinances, orders, judgments, decrees, injunctions, rules, regulations, permits, licenses, authorizations, directions and requirements of all governments, departments, commissions, boards, bureaus, courts, authorities, agencies, officials and officers, relating in any

manner or way to the control and/or abatement of environmental pollution and environmental hazards, which now or at any time hereafter may be applicable, or claimed to be applicable, whether or not the claim is or is determined to be well founded.

The provisions of this Article shall survive the expiration or other termination of this License. (15)

16. If a claim or action is made or brought against either party, such party shall notify and permit the other party to participate in the handling or defense of such matter, if such other party may be responsible hereunder, in whole or in part. (16)

17. Prior to any entry for any purpose provided for in this License, Licensee shall provide to Railroad the name or names of the agents or employees to be present physically at the FACILITIES and responsible for any work in process or liability therefor. Said notice shall be in writing, to the Chief Engineer of Railroad, delivered at least twenty-one (21) days prior to entry. (17)

18. All costs and expenses in connection with the construction, maintenance, repair, alteration, renewal, relocation, and removal of said FACILITIES shall be borne by the Licensee, and in the event of work being performed or materials furnished by Railroad under the stipulated right to perform such work of construction, maintenance, repair, alteration, renewal, relocation, or removal under any section hereof, Licensee agrees to pay to the Railroad the actual cost of materials plus the current applicable overhead percentages for storage, handling, transportation, purchasing and other related material, management expenses and the actual cost of labor plus the current applicable overhead percentages as developed and published by the accounting department of Railroad for fringe benefits, payroll taxes, administration, supervision, use of tools, machinery and other equipment, supplies, employers' liability insurance, public liability insurance, and other insurance, taxes and all other direct expenses. It is to be understood that the aforementioned material and labor overhead charges are to be applied at the rates which are effective at the time of the performance of any work by employees of the Railroad on the said FACILITIES. Licensee agrees to pay such bills within thirty (30) days of the rendition thereof by Railroad. (18)

19. The Licensee shall, at its sole cost and expense, upon request in writing from the Railroad, promptly change the location of said FACILITIES covered by this License, where located over, upon or in the property and facilities of the Railroad, to another location, to permit and accommodate changes of grade or alignment and improvement in or additions to the facilities of the Railroad upon land now or hereafter owned or used by the Railroad with the intent that said construction shall at all times comply with the terms and conditions of this License with respect to the original

construction; or in the event of the lease, sale or disposal of the property or any part thereof encumbered by this License, then the said Licensee shall make such adjustments or relocations in its FACILITIES as are over, upon or in the property and facilities of the Railroad as may be required by the said Railroad or its grantee; and if the Licensee shall fail or refuse to comply therewith, then the duly authorized agents of the Railroad may make such repairs or adjustments or changes in location and provide necessary materials therefor, at the sole cost and expense of the Licensee. (19)

20. In the event that FACILITIES consist of an underground occupation, Licensee will be responsible for any settlement caused to the roadbed, right-of-way and/or tracks, facilities, and appurtenances of the Railroad arising from or as a result of the installation of the said FACILITIES and Railroad shall have the right to repair, replace, restore or correct any such damage caused by said occupation at the sole cost and expense of the Licensee. The provisions of this clause shall survive the expiration or other termination of this License. (20)

21. In the event the said FACILITIES consist of electrical power or communication wires and/or appurtenances, the Licensee shall at all times be obligated promptly to remedy any inductive interferences growing out of or resulting from the presence of its FACILITIES; and if the Licensee should fail so to do, then Railroad has the right to do so, and the Licensee agrees to pay to Railroad on demand the full cost and expense therefor. (21)

22. As part of the consideration for granting this License, Licensee covenants and agrees that no assessments, taxes or charges of any kind, general, special or otherwise shall be made against Railroad or its property by reason of the construction and use of said FACILITIES by Licensee, and Licensee further covenants and agrees to pay to Railroad promptly upon bills rendered therefor the full amount of any assessments, taxes and/or charges of any kind or nature which may be levied, charged, assessed or imposed against the Railroad or its property by reason of the construction, existence, use, and maintenance of said FACILITIES of Licensee. (22)

23. Licensee hereby designates the Chairman, East Whiteland Township its agent(s) for the service of any notice desired or required by this License, and/or of process in any action growing out of, connected with, or based upon this License, or the activities undertaken hereunder, and agrees that service upon one of the above named person(s) shall constitute due and proper service of any such notice or any such process. Any notification or service required or desired to be given to the Railroad under this Article shall be sent, postage prepaid, by certified or

registered mail to the address on page first hereof to the attention of the Vice President of Real Estate and Operations Development. (23)

24. The rights conferred hereby shall be the sole privilege of the Licensee only, and no assignment, sub-licensing or transfer hereof shall be made, or other use be permitted than for the specific purpose stated on page first hereof without the consent and agreement in writing of the Railroad being first had and obtained. (24)

25. This License with the rights granted may be terminated at any time by either party upon giving not less than thirty (30) days' prior written notice to the other; and upon the expiration of the said thirty (30) days from date of mailing by certified or registered U.S. Mail, this License and the permission and privilege hereby granted shall absolutely cease and terminate. This License is subject to termination by Licensor upon giving thirty (30) days notice to Licensee for unauthorized uses or sub-licensing Licensees sole right to occupy Railroad's right-of-way. (25)

Railroad shall not terminate this agreement unless required to do so for its corporate purposes, in which instance it shall use reasonable efforts to provide a mutually acceptable alternative location for Licensee's facilities. (25.1)

26. Upon termination of this License or upon the removal or abandonment of the FACILITIES covered hereby, all the rights, title and interest of the Licensee hereunder shall cease, and this instrument shall thereupon become and be null and void, without any liability on the part of either party to the other party except where expressly provided to the contrary and any liability accrued prior thereto, and the Licensee shall, with the prior written approval of the Railroad, remove or cause to be removed its said FACILITIES and appurtenances from Railroad property and right-of-way, and all property of the Railroad shall be restored in good condition and to the satisfaction of the Railroad. If the Licensee fails or refuses to remove its FACILITIES and appurtenances under the foregoing conditions, the Railroad shall have the right to do so at the sole cost and expense of the Licensee, and the Railroad shall not be liable in any manner to the Licensee for said removal. The provisions for this paragraph shall survive the expiration or other termination of this License. (26)

27. Before this License shall be effective, the Licensee shall at its sole cost and expense procure, provide, and deliver to the Railroad and thereafter maintain in effect during the term of this License, general liability insurance covering all liabilities assumed by the Licensee under Article "15" of this License, without exception or restriction of any kind. Products-completed operations, independent contractors and contractual liability coverages are to be included, with all Railroad exclusions deleted.

Railroad is to be named as an additional insured and said insurance shall be in limits of not less than Two Million ($2,000,000) combined single limit, bodily injury, death and/or property damage whether of the Licensee, the Railroad, or others, and shall contain a waiver of subrogation against Railroad, and said insurance shall be with such companies and in such form as shall be acceptable to the Railroad. Said insurance shall be endorsed to provide that the Railroad will be notified in writing by the insurance carrier at least thirty (30) days in advance of any cancellation or changes which modify the coverage provided thereunder. The providing of such insurance shall not be deemed a limitation on the liability of Licensee as provided in this License, but shall be additional security therefor. In the event the term of this License exceeds ten (10) years, The Railroad reserves the right to modify the conditions/limits of said insurance listed in this Article. (27)

Licensee may be permitted to self insure its obligation under this Article, in lieu of procuring and maintaining the above mentioned insurance policies, provided the Licensee notifies the Railroad of their intention to do so and receives written approval from the Railroad. (27.1)

28. The covenants, conditions and agreements contained in this License shall bind and inure to the benefit of Licensee and Railroad and their respective heirs, distributors, executors, administrators, successors, and, except as otherwise provided in this License, their assigns. (28)

29. The obligations of the Railroad hereunder shall be subject to Force Majeure which shall include, but not be limited to labor disputes. (29)

30. No change or modification of any of the covenants, terms or provisions hereof shall be valid unless in writing and signed by the parties hereto.

There are no understandings or agreements of any kind between the parties hereto, verbal or otherwise, other than as set forth in this License.

All additions, changes or deletions herein were made prior to execution by either party, except that additions, changes or deletions made after execution by one party and before execution by the other shall be marginally initialed by both parties. (30)

31. This License shall be construed according to the laws of the District of Columbia. (31)

32. The provisions of this License are severable and it is the intention of the parties hereto that if this License cannot take effect in its entirety because of the final judgment of any court of competent jurisdiction holding invalid any part or parts

thereof, the remaining provisions of the License shall be given full force and effect as completely as if the part of parts held invalid had not been included therein. (32)

33. It is understood and agreed between the parties hereto that execution of this agreement by Licensee, and negotiation of any check or other negotiable instrument by Railroad, prior to the date of execution of this agreement by Railroad, shall in no way be deemed or construed by Licensee to be acceptance of this agreement by Railroad. In the event that this agreement is not executed by Railroad for any reason whatsoever, then and in that event the amount set forth in any such check or other negotiable instrument shall be refunded to Licensee within a reasonable period of time after written notification that this agreement will not be executed by Railroad; provided, however, that the payment by Licensee of a preparation fee, if any, to Railroad shall be nonrefundable and made as full payment for the Railroad's preparation of this document without regard to whether or not same is ever executed. (33)

34. In connection with the construction of the FACILITIES, the Licensee, its contractors and subcontractors shall carry insurance as follows:

The contractor shall procure and maintain, at its own cost and expense, during the entire period of performance of the Project, the types of insurance specified below. The contractor shall submit a certificate of insurance giving evidence of the required coverages, prior to commencing work. All insurance shall be procured from insurers authorized to do business in the jurisdiction where operations are to be performed. The contractor shall require all subcontractors to carry the insurance required herein, and contractor may, at his option, provide the coverage for any or all subcontractors, and if so, the evidence of insurance submitted shall so stipulate. In no event shall work be performed until the required certificate(s) of insurance have been furnished. If the insurance provided is not in compliance with the requirements listed below, Railroad maintains the right to stop work until proper evidence is provided. The insurance shall provide the 30 days prior written notice to be given to Railroad in the event coverage is substantially changed, cancelled or non-renewed.

A. WORKERS' COMPENSATION INSURANCE: A policy complying with the requirements of the statutes of the jurisdiction(s) in which work will be performed, covering all employees of the contractor. Employer's Liability coverage with limits of liability of not less than $500,000 each accident or illness shall be included.

B. GENERAL LIABILITY INSURANCE: A policy issued to

and covering liability imposed upon the contractor with respect to all work to be performed and all obligations assumed by the contractor, under the terms of this permit. Products-completed operations, independent contractors, and contractual liability coverages are to be included, and all Railroad exclusions are to be deleted. Railroad is to be named as an additional insured with respect to operations to be performed and the policy shall contain a waiver of subrogation against Railroad, its employees or agents. Coverage under this policy, or policies, shall have limits of liability of not less than $2 million per occurrence, combined single limit for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability.

C. AUTOMOBILE LIABILITY INSURANCE: A policy issued to and covering the liability of the contractor arising out of the use of all owned, non-owned, hired, rented or leased vehicles which bear, or are required to bear, license plates according to the laws of the jurisdiction in which they are to be operated, and which are not covered under the contractor's General Liability Insurance. The policy shall name Railroad as an additional insured with respect to operations to be performed in connection with this permit, and shall contain a waiver of subrogation against Railroad, its employees or agents. Coverage under this policy shall have limits of liability of not less than $1 million per occurrence, combined single limit, for bodily injury, and property damage liability.

D. RAILROAD PROTECTIVE LIABILITY INSURANCE: The Contractor shall provide, with respect to the operations he or any of his subcontractors perform within 50 feet vertically or horizontally of Railroad's tracks, Railroad Protective Liability Insurance, AAR-AASHTO (ISO/RIMA) Form, in the name of National Railroad Passenger Corporation. The policy shall have limits of liability of not less than $2 million per occurrence, combined single limit, for Coverages A and B, for losses arising out of injury to or death of all persons, and for physical loss or damage to or destruction of property, including the loss of use thereof. A $6 million annual aggregate may apply.

If coverage is provided on the London claims-made form, the following provisions shall apply:

1. The limits of liability shall be not less than $3 million per occurrence, combined single limit. A $9 million annual aggregate may apply.

2. Declarations Item 6, Extended Claims Made Date, shall allow an Extended Claims Made Period no shorter than the length of the original policy period plus one year.

3. If equivalent, or better, wording is not contained in the policy form, the following endorsement must be included:

   It is agreed that "Physical Damage to Property" means direct and accidental loss of or damage to rolling stock and their contents, mechanical construction equipment or motive power equipment, railroad tracks, roadbed, catenaries, signals, bridges or buildings.

E. CLAIMS-MADE INSURANCE: If any insurance specified above shall be provided on a claims-made basis, then in addition to coverage requirements above, such policy shall provide that:

1. Policy retroactive date coincides with or precedes the contractor's start of work (including subsequent policies purchased as renewals or replacements).

2. Contractor will make every effort to maintain similar insurance for at least two years following project completion, including the requirement of adding Railroad as an additional insured.

3. If insurance is terminated for any reason, contractor agrees to purchase an extended reporting provision of at least two years to report claims arising from work performed in connection with this permit/license.

4. Policy allows for reporting of circumstances or incidents that might give rise to future claims.

All insurance specified above shall remain in force until all work to be performed is satisfactorily completed, all contractor personnel and equipment have been removed from railroad property,

and the work has been formally accepted. Failure to carry or keep such insurance in force as stipulated shall constitute a violation of the Agreement.

The Contractor shall furnish to Railroad's Engineering Department the original of the policy for Railroad Protective Liability Insurance and Certificate of Insurance for all other coverages, fifteen days prior to commencing work. The fifteen day advance notice of coverage may be waived in situations where such waiver will benefit Railroad, but under no circumstances will the contractor be permitted to work on Railroad property until evidence of all insurance requirements has been provided to Railroad. Evidence of insurance coverage shall be provided to:

National Railroad Passenger Corporation
Assistant Chief Engineer
M of W and Structures
3rd Floor, South Tower
30th Street Station
Philadelphia, Pennsylvania 19104

Work may not proceed on Railroad property until all insurance requirements have been met to the satisfaction of Railroad's Assistant Chief Engineer, M of W and Structures, or his duly authorized representative.

Except for Railroad Protective Liability Insurance which is mandatory, the Licensee may be permitted to self insure its obligation under this Article, in lieu of procuring and maintaining the other above mentioned insurance policies, provided the Licensee notifies the Railroad of their intention to do so and receives written approval from the Railroad. Permission to self insure under this Article shall not extend to any contractor and subcontractor of the Licensee. (34)

35. Licensee agrees that the terms, conditions and provisions of this agreement constitute confidential and proprietary information regarding Railroad and agrees not to disclose any term, condition or provision of this agreement without the prior written consent of Railroad or by order of a court of competent jurisdiction. (36)

IN WITNESS WHEREOF, the said parties hereto have caused this License to be duly executed and delivered as of the day and year first above written.

WITNESS:

Beverly Vinatieri

NATIONAL RAILROAD PASSENGER CORPORATION

By: Tony DeAngelo
Title: Vice President - Real Estate and Operations Development

Date: 11-18-93

WITNESS:

Edward W. Hall

EAST WHITELAND ~~TOWNSHIP~~ MUNICIPAL AUTHORITY

By: James S. Carr
Title: Chairman

Date: 10/19/93

EXHIBIT F21

AMENDMENT TO LICENSE AGREEMENT, DATED MAY 6, 2002, BY AND BETWEEN NATIONAL RAILROAD PASSENGER CORPORATION AND EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY

NATIONAL RAILROAD PASSENGER CORPORATION
AMENDMENT TO LICENSE AGREEMENT
RENT ACCOUNT NUMBER 37-05-558

THIS AMENDMENT made this 6th day of May, 2002 by and between **NATIONAL RAILROAD PASSENGER CORPORATION**, a District of Columbia corporation with principal offices at 60 Massachusetts Avenue, N. E., Washington, D. C. 20002, and **EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY**, a public authority with principal offices at 209 Conestoga Road, Frazer, PA 19355;

WHEREAS, the National Railroad Passenger Corporation (Licensor) and the East Whiteland Township Municipal Authority (Licensee), entered into a License Agreement dated the 18TH day of November 1993 (the "License Agreement"), to construct, operate and maintain the installation of an 8" diameter ductile iron sewer pipe within a 24" steel casing pipe for a distance of approximately 250 feet under and across Licensee's railroad right-of-way (hereinafter referred to as the "Facility"); and

WHEREAS, in accordance with the terms and conditions of the License Agreement, the Licensee has notified Licensor of its desire to revise the above mentioned Facility and License Agreement; and

WHEREAS, Licensor agrees and grants permission to the Licensee to revise the above-mentioned Facility and License Agreement.

NOW, THEREFORE, WITNESSETH, that the License Agreement shall hereby be amended as follows:

1. Under Section A of the License Agreement, Description of Facility: Amend the existing description to include the additional installation of an 18" diameter steel casing pipe with an 8" diameter iron ductile carrier pipe beginning at its connection to the existing Facility at V.S. 1251+40 and continuing East within Licensor's right-of-way approximately 550 linear feet to a point exiting Licensor's right-of-way; and installation of an 18" diameter steel casing pipe with an 8" diameter iron ductile carrier pipe under and across the Licensor's right-of-way at approximately V.S. 1231+81 (hereinafter the "Additional Facilities").

2. Under Section C of the License Agreement, Location:

   (1) Milepost: 23.61±, 23.61± to 23.51±, and 23.24±

   All as delineated on and in strict accordance with drawing No. S-14 dated April 30, 1990, revised May 6, 1993, and marked Exhibit "A" to the License Agreement, and as delineated and in strict accordance with plans prepared by Kohli and Associates titled "EAST WHITELAND TOWNSHIP - CHESTER COUNTY - PA, PROPOSED SANITARY SEWER SYSTEM", dated 11-15-01, Job No. 2000-0233, consisting of 5 sheets, and marked "Exhibit B", attached hereto.

3. Installation of the Additional Facilities shall be under and subject to all of the terms of the License Agreement.

4. Under Section 2 of the License Agreement, the additional lump sum rent, with respect to the Additional Facilities, over the remainder of the current 25-year term, which expires October 31, 2018, shall be Sixteen Thousand Three Hundred and Fifteen Dollars ($16,315.00). The fee for preparation of this amendment and other incidental expenses shall be $250.00.

5. Except as expressly amended hereby, all other terms and conditions of the License Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their proper officers, hereunder duly authorized, day and year first above written.

WITNESS:

NATIONAL RAILROAD PASSENGER CORPORATION

By: Sally J. Bellet
Title: Senior Vice President
Real Estate Development

WITNESS:

EAST WHITELAND TOWNSHIP MUNICIPAL AUTHORITY

Township Secretary

By: Terry H. Woodman
Title: Manager

EXHIBIT F22

LICENSE AGREEMENT, DATED SEPTEMBER 10, 1999, BY AND BETWEEN NATIONAL RAILROAD PASSENGER CORPORATION AND EAST WHITELAND TOWNSHIP

Sugartown Ridge

NATIONAL RAILROAD PASSENGER CORPORATION
LICENSE AGREEMENT

THIS AGREEMENT, made this 10th day of September 1999, between the NATIONAL RAILROAD PASSENGER CORPORATION, a corporation of the District of Columbia, with offices at 30th and Market Streets Philadelphia, PA. 19104 party of the first part (hereinafter called "Railroad") and **EAST WHITELAND TOWNSHIP**, a municipality operating under the laws of the State of Pennsylvania with principal offices at 209 Conestoga Road, Frazer, Pennsylvania 19355, as party of the second part (hereinafter called "Licensee").

WITNESSETH, that the said Railroad (which when used herein shall include any lessor, successor or assignee of or operator over its railroad) insofar as it has the legal right and its present title permits, and in consideration of the covenants and conditions hereinafter stated on the part of the Licensee to be kept and performed, hereby permits, as a temporary exclusive License, the Licensee and Licensee only (except as otherwise herein provided to construct, maintain, repair, alter, renew, relocate and ultimately remove:

A. **DESCRIPTION OF FACILITY:** Underground installation of one (1) 30" diameter steel casing and 8" diameter ductile iron carrier pipe inside casing for a distance of approximately 267 linear feet near Sugartown Road.

B. **PURPOSE:** To convey sanitary sewage from proposed "Sugartown Ridge" Subdivision to East Whiteland Township System.

C. **LOCATION:**

(1)	Milepost:	23 +/-
(2)	Nearest Station:	Malvern
(3)	Town:	Malvern
(4)	County:	Chester
(5)	State:	Pennsylvania

all as delineated and in strict accordance with plans titled " "Land Development Plan "Sugartown Ridge" for Sugartown Ridge Associates Project No. 14704, Sheet 5 titled,"Grading and Utilities Plan", dated August 31, 1998, last revised July 12, 1999, Sheet 14, titled, "Off Site Sanitary Sewer Plan", dated August 31, 1998, last revised July 12, 1999, Sheet 15, titled, "Off Site Sanitary Sewer

Profile", dated October 30, 1998, last revised February 16, 1999, and Sheet 23, titled, "Final Erosion Control and Construction Notes and Details", dated August 31, 1998, last revised July 12, 1999, (all aforesaid drawings prepared by Chester Valley Engineers, Inc.) and submitted by Licensee to and approved as to concept by the Chief Engineer of the Railroad, marked "Exhibit A", attached hereto and made a part hereof, also in strict compliance with current issues of Railroad Specifications No. USA, ENG 1604 and Requirements and Specifications for Wire, Conduit and Cable occupations all as applicable to the herein described work and incorporated herein by reference, all and any part thereof being hereafter referred to as the "FACILITIES"; said License, however, shall be under and subject to the following terms, covenants, and conditions as hereinafter recited, which are hereby accepted and agreed to, by the Licensee, to wit: (0.1)

1. This License shall commence on the 15th day of July 1999, and terminate on the 14th day of July 2024, or before as hereinafter provided according to the terms, conditions and covenants herein contained. (1)

Provided, however that if Licensee has performed all its obligations and is not then in default hereunder, then Licensee shall have the right to renew this agreement for an additional term of TWENTY-FIVE (25) years upon service of written notice of intent to renew not less than 90 days prior to the expiration of the current term and subject to payment of a mutually acceptable fee then agree to. (1.2)

2. The Licensee shall pay to the Railroad upon the execution hereof, the sum of Five Hundred Dollars ($500.00) as reimbursement for the costs and expenses incident to the preparation of this License, together with the further sum of Nineteen Thousand and Six Hundred Dollars ($19,600.00) as lump sum compensation, for the rights granted in this License for the TWENTY-FIVE (25) year term, which sum shall be payable in advance, upon execution of this agreement. Notwithstanding the foregoing, payments of any additional charges and sums other than as compensation for Licensee's occupancy as hereinafter set forth shall be mailed to P.O. Box 18266F, Group No. 5, St. Louis, Missouri 63150, or at such other place as the Railroad may from time to time designate. (2)

3. Licensee shall and will pay all License Fees and any additional payments when due, without any setoff of deduction whatsoever, and any payment or receipt thereof by Railroad or its agent of any amount less than the full amount to which Railroad deems it is entitled shall not operate or be deemed to operate, constitute or be construed, as a settlement or satisfaction of said License Fees or other amounts due, notwithstanding any statement or endorsement on the check or other paper accompanying the payment, but Railroad shall be deemed to have accepted said payment without prejudice and subject to its right to collect the balance actually

due, as well as subject to any and all other rights available to Railroad by law and under this License Agreement.

If, (i) default shall be made in Licensee's covenants herein to pay License Fees or additional payments on each due date as described herein; or (ii) if default shall be made in any other covenants and agreements herein contained on the part of Licensee to be kept or performed, and if any such default shall not be cured within thirty (30) days after Licensee has been given written notice by Railroad to do so, or (iii) if Licensee shall file or suffer to be filed against it a petition in bankruptcy, or (iv) if Licensee shall be declared insolvent according to law, or if a receiver or trustee be appointed for the property of Licensee, or (v) if Licensee shall make any general assignment for the benefit of creditors, or any bulk sale however denominated, (vi) if Licensee shall assign, sublet, or sub-license its rights, duties or obligations hereunder without first obtaining the prior written consent of Railroad, then, in any of such cases, Railroad may by written notice to Licensee immediately declare this License terminated, and in such event, in addition to any other action or remedy which Railroad may have at law or in equity to recover damages or otherwise by reason of a breach by Licensee of provisions of this License, Railroad, acting as attorney in fact for Licensee, shall have the right to remove Licensee's FACILITY by summary proceedings, without being liable to any prosecution, action or damages therefor, and have and enjoy the Railroad's property as of its former estate free, clear and discharged of this License and of all rights of Licensee hereunder; and all FACILITIES owned or placed upon the Railroad's property by or for Licensee, shall be filled and abandoned in place or removed by Railroad at the sole cost and expense of Licensee, which cost and expense Licensee shall pay to Railroad upon demand; and Licensee also shall pay to Railroad upon demand all fees and expenses, including reasonable attorney and/or collection agency fees, incurred in connection with the aforesaid actions.

The receipt by or on behalf of Railroad of any License Fee or additional payments with or without knowledge of any breach of any of the terms, covenants or conditions of this License, shall not be deemed a waiver of such breach, nor shall such receipt be deemed a withdrawal of any notice given to Licensee under the terms of this License, nor shall such receipt be deemed a reinstatement or reestablishment of this License or any portion thereof after termination or cancellation, nor shall the termination or other cancellation of this License or any portion thereof waive the obligation of Licensee to pay or discharge any License Fee, additional payments or other obligations accruing under this License.

Licensee hereby waives and relinquishes unto and in favor of Railroad the operation of all laws which do now or hereafter may exempt any FACILITY on Railroad's property from levy and sale upon

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distress for rent or upon execution of any judgment obtained in an action brought for nonpayment of any License Fees or additional payments hereunder or for breach of any other provisions hereof. The parties hereto shall and do hereby waive trial by jury in any action, proceeding or counterclaim brought by either party against the other on any matter whatsoever arising out of or in any way connected with this License or Licensee's use of the FACILITY and occupancy of Railroad's property or arising out of or in any way connected with any claim of injury or damage arising out of or in connection with this License or such use or occupancy. Licensee hereby expressly waives any and all rights of redemption granted by or under any present or future laws in the event of Licensee's being dispossessed for any cause or in the event of Railroad's obtaining possession or for removal of the FACILITY by reason of the violation by Licensee of any of the covenants and conditions of this Lease or otherwise.

Licensor shall have the right to require rent payments to be made in cash, money order or certified check. A service charge of Ten Dollars ($10.00) will be charged for each instance in which a check is returned unpaid by the Licensee's bank for any reason.

If Licensee does not pay License Fees or any additional payments hereunder on the day when the same shall become due and payable and such failure to pay License Fees or any additional payments shall continue for a period of ten (10) days, Licensee shall pay to Railroad a service charge at the rate of twelve percent (12%) per annum, or the highest rate allowed by law, which ever is the greater of the amount of such License Fee or any additional payment or all of them for each year or portion of a year that the same shall remain unpaid; provided, however, that such service charge shall in no event, be less than Fifty Dollars ($50.00) for any year or portion of a year that the License Fee and any additional payment shall remain unpaid. Railroad reserves the right to institute legal proceedings and/or collection agency action for the payment of License Fees due and payable, and any legal and collection fees incurred shall be the responsibility of the Licensee; and immediate payment to be made to Railroad by Licensee upon written notice. The provision of this paragraph shall not preclude Railroad from exercising its options as set forth in any other Article of this License.

The actions and remedies provided in this License in event of default shall not be deemed exclusive but shall be in addition to all other actions and remedies at law or in equity in event of any such default; and no action or remedy taken or omitted by Railroad in event of default shall be deemed a waiver of such default and waiver of a particular default shall not be deemed a waiver of any other default or a waiver of the same default again occurring, nor shall any failure on the part of Railroad to compel a fulfillment of any one or more of the covenants, terms and conditions herein contained be held to be a waiver of its right to

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enforce the same at any time thereafter during the term of this License. (3)

4. The FACILITIES shall be located, constructed and maintained in exact accordance with said construction plans and for the sole purpose as outlined on Page 1 hereof. No departure that would result in a modification, change, amendment or sub-licensing to this License shall be made at any time therefrom except upon permission in writing granted by the Counsel to the President-NEC, Vice President Commercial Development of Railroad, or designee, provided, however, that if any commission or other regulatory body duly constituted and appointed in compliance with the laws of the State in which the crossing or occupancy herein provided is situate, and having jurisdiction over the property, has by final ruling or order determined and fixed the manner and means of construction, maintenance, repair, alteration, renewal, relocation or removal thereof, then said final ruling or order shall prevail for the crossing or occupancy herein mentioned. The work of constructing, maintaining, repairing, altering, renewing, relocating or removing the said FACILITIES shall be done under such general conditions as will be satisfactory to and approved by the Chief Engineer of Railroad, or his designee, and as will not interfere with the proper and safe use, operation and enjoyment of the property of the Railroad. Licensee, at its own cost and expense, shall, when performing any work in connection with the FACILITIES, furnish any necessary watchmen to see that men, equipment and materials are kept a safe distance away from the tracks of the Railroad. Any notification required or desired to be given to Railroad's Chief Engineer shall be sent to the address on first page here to the attention of the Chief Engineer. (4)

5. FACILITIES conveying gas (natural or artificial), oil, gasoline or other flammable matter shall not be installed or relocated under bridges or culverts, except in cases especially provided for. No FACILITIES shall be installed or relocated under bridges or culverts where there is likelihood of restricting the area required for the purposes for which the bridges or culverts were built, or endangering foundations of structures. (5)

6. No attachment of wires, cables, pipe lines, and appurtenances shall be made to any bridge (or its supports) of the Railroad unless specifically provided for in this License, and then only in accordance with the Railroad's plans and specifications. No poles, towers, anchors or supports of any kind for the wires, cables, and appurtenances or sub-licensed facilities shall be located on the right-of-way or property of the Railroad unless specifically provided for in this License. A penalty charge will be assessed against Licensee for knowingly permitting such other uses without Railroad's written permission. (6)

7. In addition to, but not in limitation of any of the foregoing provisions, if at any time the Railroad should deem

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flagmen or watchmen desirable or necessary to protect its operations or property, or its employees, patrons or licensees during the work of construction, maintenance, repair, alteration, renewal, relocation or removal of said FACILITIES of Licensee, the Railroad shall have the right to place such flagmen or watchmen at the sole risk, cost and expense of Licensee, who covenants and agrees to bear the full risk, cost and expense thereof and to reimburse promptly the Railroad upon demand. The furnishing or failure to furnish flagmen or watchmen by the Railroad, however shall not release the Licensee from any and all other liabilities assumed by the Licensee under the terms of this License. (7)

8. The Licensee shall at all times be obligated promptly to maintain, repair and renew said FACILITIES; and shall, upon notice in writing from Railroad requiring it so to do, promptly make such repairs and renewals thereto as may be required by Railroad. For the purpose of protecting and safeguarding its property, traffic, patrons or employees from damage or injury, Railroad may with or without notice to the Licensee at any time make such repairs and renewals thereto and furnish such material therefor as it deems adequate and necessary, all at the sole cost and expense of Licensee. Railroad will make reasonable efforts to give notice to Licensee at the same time any such repairs or renewals are made (8)

9. In the event of an emergency, Licensee will take immediate steps to perform any necessary repairs, and in the event Licensee fails so to do, Railroad will perform said necessary repairs at the sole cost and expense of Licensee. (9)

10. That in consideration of the exclusive rights granted hereunder to Licensee by Railroad, Licensee hereby agrees that as to any structure placed upon Railroad's property or any structure presently existing which structure is subject to renovation, repairs and subsequent use by Licensee, such structure shall be continuously maintained by Licensee from and after the effective date of this License. All costs of maintenance, repair and upkeep shall be borne by Licensee. Licensee shall be liable for and does indemnify and agree to hold Railroad harmless from any and all risks of liability for injuries to or death of persons or damage to or destruction of property resulting from said use, maintenance, repair and/or upkeep or lack thereof of said structure without regard to negligence. (10)

11. If the Licensee desires or is required, as herein provided, to revise, renew, add to or alter in any manner whatsoever the aforementioned FACILITIES, it shall submit plans and specifications to Railroad and obtain the written approval thereof by the Chief Engineer of Railroad before any work or alteration of the structure is performed and the terms and conditions of this License with respect to the original construction shall apply thereto. Railroad reserves the right to make adjustments in the

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annual or total compensation or assess additional charges. A penalty charge will be assessed against Licensee for unauthorized uses under this License Agreement. (11)

12. The Railroad shall have the right to verify by inspection that the location of the work and the materials used in construction, maintenance, repair, alteration, renewal and removal of the aforesaid FACILITIES covered by this License are in compliance with the plans and specifications. The right to verify the location of the construction work and inspect the FACILITIES from time to time thereafter by the Railroad, shall extend for an appropriate distance on each side of the property of the Railroad as the method of construction and materials used may have an important bearing upon the strength and stability of the FACILITIES over, under, upon, or in the property of the Railroad. (12)

13. Licensee shall comply with all Federal, State, local and municipal statutes, laws, orders, ordinances, rules and regulations now or hereafter enacted and assume all costs, expenses and responsibility in connection therewith, without any liability whatsoever on the part of the Railroad. Licensee shall also be responsible for notification to the Public Utility Commission or other similar public utility agency or commission in those states or jurisdictions requiring notice regarding installation of fiber optic cables at or near public crossings. Licensee's failure to so notify the appropriate commission or agency shall constitute grounds for termination of this License Agreement. Licensee shall assume all liability and costs arising out of such failure to notify the proper agency/commission. (13)

14. It is understood between the parties hereto that the operations of the Railroad at or near said FACILITIES involve some risk, and the Licensee as part of the consideration for this License hereby releases and waives any right to ask for or demand damages for or on account of loss of or injury to the FACILITIES (and contents thereof) of the Licensee and/or employees, agents, servants, contractors and invitees of the Licensee that are over, under, upon or in the property and facilities (of the Railroad) including the loss of or interference with service or use thereof and without respect to the fault, failure or negligence of the Railroad, its employees, agents, servants, contractors, invitees or otherwise. (14)

15. Licensee covenants and agrees to and shall at all times indemnify, protect, defend and save harmless Railroad from and against any and all losses, damages, liabilities, suits, claims, demands, judgments, costs, interest and expenses (collectively "losses and damages") which Railroad may directly or indirectly suffer, sustain or be subjected to by reason of, on account of, or arising out of a) the construction, placement, attachment, presence, use, misuse, maintenance, repair, alteration, renewal, relocation, failure, or removal of the FACILITIES, or b) the

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violation of, or compliance or noncompliance with, any Environmental Law relating in any way to the FACILITIES, including any disposal, discharge, or release of any wastes, pollutants, or hazardous substances from or in connection with the FACILITIES; whether such losses and damages be suffered or sustained by Railroad directly or by its employees, agents, servants, contractors, officers, or licensees, or by any other person or entity, including Licensee, who may seek to hold Railroad liable therefor, and whether attributable to the fault, failure, or negligence of Railroad, its employees, agents, servants, contractors, officers, licensees, or any other person acting for or on Railroad's behalf.

It is further agreed that in the event Railroad shall, at its option, make any expenditures or incur any obligations for the payment of money in connection with this Article including, but not limited to, attorneys' fees in instituting, prosecuting or defending any action or proceeding, such sums paid, obligations incurred and costs, all with interest at the rate of twelve percent (12%) per annum or the highest rate allowable by law, whichever is the lesser, shall be deemed to be additional compensation due hereunder and shall be paid by Licensee to Railroad within five (5) days of the rendering of a bill or statement to Licensee therefor.

For the purpose of this Article, "Environmental Law" shall mean all laws, statutes, codes, acts, ordinances, orders, judgments, decrees, injunctions, rules, regulations, permits, licenses, authorizations, directions and requirements of all governments, departments, commissions, boards, bureaus, courts, authorities, agencies, officials and officers, relating in any manner or way to the control and/or abatement of environmental pollution and environmental hazards, which now or at any time hereafter may be applicable, or claimed to be applicable, whether or not the claim is or is determined to be well founded.

The provisions of this Article shall survive the expiration or other termination of this License. (15)

16. If a claim or action is made or brought against either party, such party shall notify and permit the other party to participate in the handling or defense of such matter, if such other party may be responsible hereunder, in whole or in part. (16)

17. Prior to any entry for any purpose provided for in this License, Licensee shall provide to Railroad the name or names of the agents or employees to be present physically at the FACILITIES and responsible for any work in process or liability therefor. Said notice shall be in writing, to the Chief Engineer of Railroad, delivered at least twenty-one (21) days prior to entry. (17)

18. All costs and expenses in connection with the

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construction, maintenance, repair, alteration, renewal, relocation, and removal of said FACILITIES shall be borne by the Licensee, and in the event of work being performed or materials furnished by Railroad under the stipulated right to perform such work of construction, maintenance, repair, alteration, renewal, relocation, or removal under any section hereof, Licensee agrees to pay to the Railroad the actual cost of materials plus the current applicable overhead percentages for storage, handling, transportation, purchasing and other related material, management expenses and the actual cost of labor plus the current applicable overhead percentages as developed and published by the accounting department of Railroad for fringe benefits, payroll taxes, administration, supervision, use of tools, machinery and other equipment, supplies, employers' liability insurance, public liability insurance, and other insurance, taxes and all other direct expenses. It is to be understood that the aforementioned material and labor overhead charges are to be applied at the rates which are effective at the time of the performance of any work by employees of the Railroad on the said FACILITIES. Licensee agrees to pay such bills within thirty (30) days of the rendition thereof by Railroad. (18)

19. The Licensee shall, at its sole cost and expense, upon request in writing from the Railroad, promptly change the location of said FACILITIES covered by this License, where located over, upon or in the property and facilities of the Railroad, to another location, to permit and accommodate changes of grade or alignment and improvement in or additions to the facilities of the Railroad upon land now or hereafter owned or used by the Railroad with the intent that said construction shall at all times comply with the terms and conditions of this License with respect to the original construction; or in the event of the lease, sale or disposal of the property or any part thereof encumbered by this License, then the said Licensee shall make such adjustments or relocations in its FACILITIES as are over, upon or in the property and facilities of the Railroad as may be required by the said Railroad or its grantee; and if the Licensee shall fail or refuse to comply therewith, then the duly authorized agents of the Railroad may make such repairs or adjustments or changes in location and provide necessary materials therefor, at the sole cost and expense of the Licensee. (19)

20. In the event that FACILITIES consist of an underground occupation, Licensee will be responsible for any settlement caused to the roadbed, right-of-way and/or tracks, facilities, and appurtenances of the Railroad arising from or as a result of the installation of the said FACILITIES and Railroad shall have the right to repair, replace, restore or correct any such damage caused by said occupation at the sole cost and expense of the Licensee. The provisions of this clause shall survive the expiration or other termination of this License. (20)

21. In the event the said FACILITIES consist of electrical

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power or communication wires and/or appurtenances, the Licensee shall at all times be obligated promptly to remedy any inductive interferences growing out of or resulting from the presence of its FACILITIES; and if the Licensee should fail so to do, then Railroad has the right to do so, and the Licensee agrees to pay to Railroad on demand the full cost and expense therefor. (21)

22. As part of the consideration for granting this License, Licensee covenants and agrees that no assessments, taxes or charges of any kind, general, special or otherwise shall be made against Railroad or its property by reason of the construction and use of said FACILITIES by Licensee, and Licensee further covenants and agrees to pay to Railroad promptly upon bills rendered therefor the full amount of any assessments, taxes and/or charges of any kind or nature which may be levied, charged, assessed or imposed against the Railroad or its property by reason of the construction, existence, use, and maintenance of said FACILITIES of Licensee. (22)

23. Licensee hereby designates the Manager of the Township, as its agent(s) for the service of any notice desired or required by this License, and/or of process in any action growing out of, connected with, or based upon this License, or the activities undertaken hereunder, and agrees that service upon one of the above named person(s) shall constitute due and proper service of any such notice or any such process. Any notification or service required or desired to be given to the Railroad under this License shall be sent, postage prepaid, by certified or registered mail to the address on page first hereof to the attention of the Counsel to the President-NEC, Vice President Commercial Development. (23)

24. The rights conferred hereby shall be the sole privilege of the Licensee only, and no assignment, sub-licensing or transfer hereof shall be made, or other use be permitted than for the specific purpose stated on page first hereof without the consent and agreement in writing of the Railroad being first had and obtained. Railroad hereby acknowledges and agrees that Licensee is not currently the record titleholder of either the Facilities or the land to be benefitted by the construction of the Facilities, and that the Facilities and the land to be benefitted by the construction of the Facilities will be owned by the record titleholder(s) of the property within Sugartown Ridge until such time, if ever, as the Facilities and the land to be benefitted by the construction of the Facilities or any portion thereof, if any, are dedicated to and accepted by Licensee. Additionally, Railroad hereby acknowledges and agrees that the Facilities will be used by the record titleholders and residents of the property in Sugartown Ridge and adjacent owners. Furthermore, Railroad hereby acknowledges and agrees that the Facilities will not be constructed by Licensee. Railroad hereby agrees that the foregoing construction, ownership and use of the Facilities is permitted under the terms of this License Agreement and does not constitute

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a prohibited assignment, sub-license or transfer or any other breach hereof, anything in this License Agreement to the contrary notwithstanding. (24)

25. This License with the rights granted may be terminated at any time by either party upon giving not less than thirty (30) days' prior written notice to the other; and upon the expiration of the said thirty (30) days from date of mailing by certified or registered U.S. Mail, this License and the permission and privilege hereby granted shall absolutely cease and terminate. This License is subject to termination by Licensor upon giving thirty (30) days notice to Licensee for unauthorized uses or sub-licensing Licensee's sole right to occupy Railroad's right-of-way. (25)

Railroad shall not terminate this agreement unless required to do so for its corporate purposes, in which instance it shall use reasonable efforts to provide a mutually acceptable alternative location for Licensee's facilities. (25.1)

If Railroad should terminate this License prior to the expiration of the term specified in Article "1", it shall use reasonable efforts to provide a mutually acceptable alternative location for Licensee's facilities. If no such alternative location can be provided, then Railroad shall refund a prorated portion of the lump-sum payment as would be applicable to the unexpired period. Licensee shall not be entitled to any refund if Licensee should terminate this License. (25.2)

26. Upon termination of this License or upon the removal or abandonment of the FACILITIES covered hereby, all the rights, title and interest of the Licensee hereunder shall cease, and this instrument shall thereupon become and be null and void, without any liability on the part of either party to the other party except where expressly provided to the contrary and any liability accrued prior thereto, and the Licensee shall, with the prior written approval of the Railroad, remove or cause to be removed its said FACILITIES and appurtenances from Railroad property and right-of-way, and all property of the Railroad shall be restored in good condition and to the satisfaction of the Railroad. If the Licensee fails or refuses to remove its FACILITIES and appurtenances under the foregoing conditions, the Railroad shall have the right to do so at the sole cost and expense of the Licensee, and the Railroad shall not be liable in any manner to the Licensee for said removal. The provisions for this paragraph shall survive the expiration or other termination of this License. (26)

27. Before this License shall be effective, the Licensee shall at its sole cost and expense procure, provide, and deliver to the Railroad and thereafter maintain in effect during the term of this License, general liability insurance covering all liabilities assumed by the Licensee under Article "15" of this License, without exception or restriction of any kind. Products-completed

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operations, independent contractors and contractual liability coverages are to be included, with all Railroad exclusions deleted. Railroad is to be named as an additional insured and said insurance shall be in limits of not less than Two Million Dollars ($2,000,000.00) combined single limit, bodily injury, death and/or property damage whether of the Licensee, the Railroad, or others, and shall contain a waiver of subrogation against Railroad, and said insurance shall be with such companies and in such form as shall be acceptable to the Railroad. Said insurance shall be endorsed to provide that the Railroad will be notified in writing by the insurance carrier at least thirty (30) days in advance of any cancellation or changes which modify the coverage provided thereunder. The providing of such insurance shall not be deemed a limitation on the liability of Licensee as provided in this License, but shall be additional security therefor. In the event the term of this License exceeds ten (10) years, The Railroad reserves the right to modify the conditions/limits of said insurance listed in this Article. (27)

Licensee may be permitted to self insure its obligation under this Article, in lieu of procuring and maintaining the above mentioned insurance policies, provided the Licensee notifies the Railroad of their intention to do so and receives written approval from the Railroad. (27.1)

28. The covenants, conditions and agreements contained in this License shall bind and inure to the benefit of Licensee and Railroad and their respective heirs, distributors, executors, administrators, successors, and, except as otherwise provided in this License, their assigns. (28)

29. The obligations of the Railroad hereunder shall be subject to Force Majeure which shall include, but not be limited to labor disputes. (29)

30. No change or modification of any of the covenants, terms or provisions hereof shall be valid unless in writing and signed by the parties hereto.

There are no understandings or agreements of any kind between the parties hereto, verbal or otherwise, other than as set forth in this License.

All additions, changes or deletions herein were made prior to execution by either party, except that additions, changes or deletions made after execution by one party and before execution by the other shall be marginally initialed by both parties. (30)

31. This License shall be construed according to the laws of the District of Columbia. (31)

32. The provisions of this License are severable and it is

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the intention of the parties hereto that if this License cannot take effect in its entirety because of the final judgment of any court of competent jurisdiction holding invalid any part or parts thereof, the remaining provisions of the License shall be given full force and effect as completely as if the part of parts held invalid had not been included therein. (32)

33. It is understood and agreed between the parties hereto that execution of this agreement by Licensee, and negotiation of any check or other negotiable instrument by Railroad, prior to the date of execution of this agreement by Railroad, shall in no way be deemed or construed by Licensee to be acceptance of this agreement by Railroad. In the event that this agreement is not executed by Railroad for any reason whatsoever, then and in that event the amount set forth in any such check or other negotiable instrument shall be refunded to Licensee within a reasonable period of time after written notification that this agreement will not be executed by Railroad; provided, however, that the payment by Licensee of a preparation fee, if any, to Railroad shall be nonrefundable and made as full payment for the Railroad's preparation of this document without regard to whether or not same is ever executed. (33)

34. In connection with the construction of the FACILITIES, the Licensee, its contractors and subcontractors shall carry insurance as follows:

The contractor shall procure and maintain, at its own cost and expense, during the entire period of performance of the Project, the types of insurance specified below. The contractor shall submit a certificate of insurance giving evidence of the required coverages, prior to commencing work. All insurance shall be procured from insurers authorized to do business in the jurisdiction where operations are to be performed. The contractor shall require all subcontractors to carry the insurance required herein, and contractor may, at his option, provide the coverage for any or all subcontractors, and if so, the evidence of insurance submitted shall so stipulate. In no event shall work be performed until the required certificate(s) of insurance have been furnished. If the insurance provided is not in compliance with the requirements listed below, Railroad maintains the right to stop work until proper evidence is provided. The insurance shall provide the 30 days prior written notice to be given to Railroad in the event coverage is substantially changed, canceled or non-renewed.

A. WORKERS' COMPENSATION INSURANCE: A policy complying with the requirements of the statutes of the jurisdiction(s) in which work will be performed, covering all employees of the contractor. Employer's Liability coverage with limits of liability of not less than $1,000,000

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each accident or illness shall be included.

B. GENERAL LIABILITY INSURANCE: A policy issued to and covering liability imposed upon the contractor with respect to all work to be performed and all obligations assumed by the contractor, under the terms of this permit. Products-completed operations, independent contractors, and contractual liability coverages are to be included, and all Railroad exclusions are to be deleted. Railroad is to be named as an additional insured with respect to operations to be performed and the policy shall contain a waiver of subrogation against Railroad, its employees or agents. Coverage under this policy, or policies, shall have limits of liability of not less than $2 million per occurrence, combined single limit for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability.

C. AUTOMOBILE LIABILITY INSURANCE: A policy issued to and covering the liability of the contractor arising out of the use of all owned, non-owned, hired, rented or leased vehicles which bear, or are required to bear, license plates according to the laws of the jurisdiction in which they are to be operated, and which are not covered under the contractor's General Liability Insurance. The policy shall name Railroad as an additional insured with respect to operations to be performed in connection with this permit, and shall contain a waiver of subrogation against Railroad, its employees or agents. Coverage under this policy shall have limits of liability of not less than $1 million per occurrence, combined single limit, for bodily injury, and property damage liability.

D. RAILROAD PROTECTIVE LIABILITY INSURANCE: The Contractor shall provide, with respect to the operations it or any of its subcontractors perform within 50 feet vertically or horizontally of Railroad's tracks, Railroad Protective Liability Insurance, AAR-AASHTO (ISO/RIMA) Form, in the name of National Railroad Passenger Corporation. The policy shall have limits of liability of not less than $2 million per occurrence, combined single limit, for Coverages A and B, for losses arising out of injury to or death of all persons, and for physical loss or damage to or destruction of property, including the loss of use thereof. A $6 million annual aggregate may apply.

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If coverage is provided on the London claims-made form, the following provisions shall apply:

1. The limits of liability shall be not less than $3 million per occurrence, combined single limit. A $9 million annual aggregate may apply.

2. Declarations Item 6, Extended Claims Made Date, shall allow an Extended Claims Made Period no shorter than the length of the original policy period plus one year.

3. If equivalent, or better, wording is not contained in the policy form, the following endorsement must be included:

   It is agreed that "Physical Damage to Property" means direct and accidental loss of or damage to rolling stock and their contents, mechanical construction equipment or motive power equipment, railroad tracks, roadbed, catenaries, signals, bridges or buildings.

E. CLAIMS-MADE INSURANCE: If any insurance specified above shall be provided on a claims-made basis, then in addition to coverage requirements above, such policy shall provide that:

1. Policy retroactive date coincides with or precedes the contractor's start of work (including subsequent policies purchased as renewals or replacements).

2. Contractor will maintain similar insurance for at least two years following project completion, including the requirement of adding Railroad as an additional insured.

4. If insurance is terminated for any reason, contractor agrees to purchase an extended reporting provision of at least two years to to report claims arising from work performed in connection with this permit/license.

5. Policy allows for reporting of circumstances or incidents that might give rise to future claims.

All insurance specified above shall remain in force until all work to be performed is satisfactorily completed, all contractor personnel and equipment have been removed from railroad property,

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and the work has been formally accepted. Failure to carry or keep such insurance in force as stipulated shall constitute a violation of the Agreement.

The Contractor shall furnish to Railroad's Engineering Department the original of the policy for Railroad Protective Liability Insurance and Certificate of Insurance for all other coverages, fifteen days prior to commencing work. The fifteen day advance notice of coverage may be waived in situations where such waiver will benefit Railroad, but under no circumstances will the contractor be permitted to work on Railroad property until evidence of all insurance requirements has been provided to Railroad. Evidence of insurance coverage shall be provided to:

National Railroad Passenger Corporation
Assistant Chief Engineer
M of W and Structures
3rd Floor, South Tower
30th Street Station
Philadelphia, Pennsylvania 19104

Work may not proceed on Railroad property until all insurance requirements have been met to the satisfaction of Railroad's Assistant Chief Engineer, M of W and Structures, or his duly authorized representative.

Except for Railroad Protective Liability Insurance which is mandatory, the Licensee may be permitted to self insure its obligation under this Article, in lieu of procuring and maintaining the other above mentioned insurance policies, provided the Licensee notifies the Railroad of their intention to do so and receives written approval from the Railroad. Permission to self insure under this Article shall not extend to any contractor and subcontractor of the Licensee. (34)

35. Licensee agrees that the terms, conditions and provisions of this agreement constitute confidential and proprietary information regarding Railroad and agrees not to disclose any term, condition or provision of this agreement without the prior written consent of Railroad or by order of a court of competent jurisdiction. (35)

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IN WITNESS WHEREOF, the said parties hereto have caused this License to be duly executed and delivered as of the day and year first above written.

WITNESS:

Nancy A. Edwards

NATIONAL RAILROAD PASSENGER CORPORATION

Sally J. Bellet

By: Sally J. Bellet
Title: Counsel to the President-NEC and Vice President Commercial Development

Date: October 14, 1999

WITNESS:

Virginia Fessimore

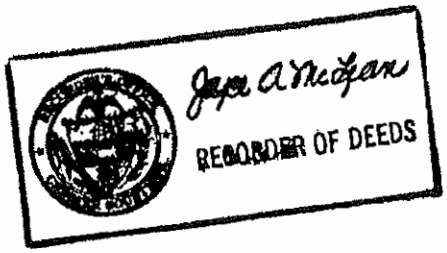
EAST WHITELAND TOWNSHIP

By: Stuart Levin
Title: Chairperson, East Whiteland Township Board of Supervisors

Date: September 20, 1999

National Railroad Passenger Corporation
License Agreement
September 10, 1999

Exhibit A



11/10/1999 11:37:31 A.M. INST NO: 0090910
CHESTER COUNTY, PA
OFFICE OF THE RECORDER OF DEEDS
RECEIPT NO: 0041009

MISCELLANEOUS	$59.00
CO REC FUND	$1.00
RE REC FUND	$1.00
WRIT - MISCELLANEOUS	$.50
OTHER FUND	$5.00
	$66.50

Ron Nagle
304 N. Hugh St
West Chester Pa.

EXHIBIT G

SCHEDULE OF RATES TARIFF PAGES

AQUA PENNSYLVANIA WASTEWATER, INC.
(hereinafter referred to as the "Company")

RATES, RULES, AND REGULATIONS

GOVERNING THE COLLECTIONS OF

WASTEWATER

IN PORTIONS OF

ADAMS, BUCKS, CARBON, CHESTER, CLARION, CLEARFIELD, DELAWARE, LACKAWANNA, LUZERNE, MONROE, MONTGOMERY, PIKE, SCHUYLKILL, VENANGO, AND WYOMING COUNTIES

IN THE COMMONWEALTH OF PENNSYLVANIA

ISSUED: XXXX XX, 202X

EFFECTIVE: XXXX XX, 202X

By:
Marc Lucca, President
Aqua Pennsylvania, Inc.
762 Lancaster Avenue
Bryn Mawr, Pennsylvania 19010

NOTICE

THIS TARIFF ESTABLISHES THE WASTEWATER RATES FOR THE CUSTOMERS OF EAST WHITELAND TOWNSHIP SITUATED WITHIN CHESTER COUNTY, PENNSYLVANIA.

LIST OF CHANGES MADE BY THIS TARIFF

Changes: This tariff makes changes to reflect the acquisition of the wastewater assets of East Whiteland, located within East Whiteland Township, Chester County, Pennsylvania. Closing on the acquisition took place on XX/XX/202X, with the effective date of ownership occurring at 12:01AM on XX/XX/202X. (See pages 7 and 8.13.1, 8.13.2, and 8.13.3)

This tariff is made pursuant to the Commission's Order adopted and entered XX/XX/202X at Docket No. A-2021-3026132, which authorizes the issuance of the Certificate of Public Convenience.

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DESCRIPTION OF TERRITORIES SERVED

	Township	County
RATE ZONE 12		
Lower Makefield Township Division	Lower Makefield	Bucks

(C) RATE ZONE 13

East Whiteland Township Division — East Whiteland — Chester

Sewer District A: that part of East Whiteland Township not included within Districts B, C, D, and E

Sewer District B: properties served by the western extension of the Route 30 sewer main

Sewer District C: residential dwellings located in the Lockwood Chase subdivision

Sewer District D: all properties that flow into and whose effluent is treated at the sanitary sewage facility that serves the dwellings in the Malvern Hunt development

Sewer District E: all commercial and residential properties located in the Atwater development south of the quarry

SCHEDULE OF RATES

RATE ZONE 13 – METERED AND UNMETERED

The rates under this schedule apply to all customer classes in the territories served subject to Rate Zone 13 rates as noted in the Description of Territories Served section under this tariff unless otherwise specifically identified below.

QUARTERLY SERVICE CHARGE ($)

Customer Charge ($)		Rate Zone 13	
Fixed (per EDU)			
District A	$	100.00	per EDU per quarter
District B	$	100.00	per EDU per quarter
District C	$	135.50	per EDU per quarter
District D	$	150.00	per EDU per quarter
District E	$	120.00	per EDU per quarter

Commercial and industrial Users: Each commercial and industrial user, whose total quarterly sewage discharge or water consumption is greater than 100,000 gallons, “High Volume Users”, shall pay a sewer rate per thousand gallons as opposed to the Fixed Per EDU Service Charge.

QUARTERLY CONSUMPTION CHARGE ($)
(Based on Water Usage or Sewage Flows, determined at the Company’s discretion)

High Volume Users Commercial and Industrial Consumption Charge:			
Districts A through E	$	6.20	per 1,000 gallons

1. Wastewater customers in East Whiteland Township are required to comply with the wastewater control regulations adopted by East Whiteland Township and included in Exhibit H to the Application filed at Docket No. A-2021-3026132.

RATE ZONE 13 – CONTINUED

2. Unit Schedule

For customers in the East Whiteland Township service area, the number of equivalent dwelling units is determined as follows. The minimum EDU allocation is one EDU. Fractional EDU values shall be rounded to the next highest whole value.

Category			**Number of EDU**
(1)		Each private dwelling unit or living unit	1
(2)		Each individual commercial establishment or business, having 10 or less of its own employees, attached to or forming a part of owner's residence, unless otherwise specified herein	1
(3)		Each additional 5 of its own employees or fraction thereof	1/2
(4)		Each individual commercial establishment or business, having 10 or less of its own employees, not attached to or forming a part of owner's residence, unless otherwise specified herein	1
(5)		Each additional 5 of its own employees or fraction thereof	1/2
(6)		(i) Hotel guest room/suite, motel guest room/ suite and conference center guest room/suite with kitchenette - 2.5 bedrooms	1
		(ii) Hotel guest room/suite, motel guest room/ suite and conference center guest room/suite without kitchenette - 3.0 bedrooms	1
		(iii) Kitchenette shall include any one or more of the following facilities or combination thereof: (i) sink and refrigerator; (ii) sink and stove; (iii) sink and dishwasher; (iv) sink and disposal	
(7)		Each restaurant (without liquor license) per 25 seats	1
(8)		Each restaurant (with liquor license) per 10 seats	1
(9)		Each service station garage and automobile repair shop, without carwash facilities:	
		2 bays or less	2
		Each additional bay over 2	1
(10)		Each barber or beauty shop, not attached to owner's residence:	
		2 chairs or less	1 1/2
		Each additional two chairs or fraction thereof	1/2
(11)		Each firehouse	1 1/2
(12)		Each church or chapel	1
(13)		Each public swimming pool or private swimming club	3
(14)		Each school, public or private, having:	
		Toilet facilities only, per 25 pupils and staff or fraction thereof	1
		Toilet facilities and kitchen, per 20 pupils and staff or fraction thereof	1

		Toilet facilities and gymnasium, per 15 pupils and staff or fraction thereof	1
		Toilet facilities, kitchen and gymnasium, per 12 pupils and staff or fraction thereof	1
(15)		Each property having a commercial garbage grinder of 3/4 horsepower or greater per grinder	1
(16)		Each business providing showers for employees:	
		7 or less employees	1
		Each additional 7 employees or fraction thereof	
(17)		Each funeral home	2
(18)		Each nursing home, per bed	3/4

The DSIC surcharge shall not be applied to bills of wastewater customers in East Whiteland Township; this will remain effective until an amended Long-Term Infrastructure Improvement Plan (LTIIP) is filed and approved which includes East Whiteland. Following the approval of an amended LTIIP, the DSIC surcharge shall be applicable to wastewater customers in East Whiteland Township.

EXHIBIT H

EAST WHITELAN TOWNSHIP
CURRENTLY EFFECTIVE RATES AND RULES

EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PA
RESOLUTION NO. 2019- 23

A RESOLUTION OF THE BOARD OF SUPERVISORS OF EAST WHITELAND TOWNSHIP REESTABLISHING THE 2019 SEWER RATES FOR EAST WHITELAND TOWNSHIP

RECITALS:

A. East Whiteland Township ("Township") owns certain public sewer facilities (the "System") which provide public sewer service to the residents of East Whiteland Township.

B. The Township Code Book of Ordinances specifies that the rates and charges for the Township customers utilizing the System, which rates and charges must be set at an amount sufficient to cover the costs of operating, maintaining and expanding the System, as well as for treatment costs associated with the Valley Forge Sewer Authority treatment plant, must be established by resolution.

C. In the past, the Township, through consultants, conducted a rate review process on the sewer rates being charged by the Township and the review indicated that the Township should raise the rates to cover the operation and maintenance costs of the System.

D. Accordingly, the sewer rates for Sewer Districts A through E were raised pursuant to Resolution 40-2016, which rates remain unchanged below. Additionally, the sewer rates for high volume commercial and industrial users were raised on December 12, 2018, which rates remain unchanged below.

E. This Resolution is intended to clarify and reestablish the existing sewer rates, payment discounts, and volume measurement methods within the Township and does not establish any new rates or other similar terms.

NOW, THEREFORE, BE IT RESOLVED, and it is hereby resolved by the Board of Supervisors of East Whiteland Township as follows:

1. The 2019 sewer rates for East Whiteland Township are established as follows:

   Sewer District A: $400 per EDU per year.

   Sewer District B: $400 per EDU per year.

   Sewer District C: $542 per EDU per year.

   Sewer District D: $600 per EDU per year.

   Sewer District E: $480 per EDU per year.

2. Commercial and Industrial users whose quarterly sewer discharge or water consumption is in excess of 100,000 gallons shall pay a quarterly charge of $6.20 per 1,000 gallons.

3. Single-family residential users in Sewer Districts A, B, C, D, and E shall be entitled to a discount of 2% the annual rates set forth herein upon payment of the full amount of the annual sewer bill not later than 30 days after the date of the first bill issued by the Township for that calendar year.

4. The Board of Supervisors reserves the right to amend the sewer rates in any and all districts at any time the Board of Supervisors deems appropriate.

5. The rates established herein shall remain in full force and effect until such time as the Board of Supervisors amends the rates.

6. All resolutions inconsistent herewith are hereby repealed.

RESOLVED AND ADOPTED, this 13th day of March, 2019.

ATTEST:

By: _____
John Nagel, Township Secretary

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

By: _____
Susan Drummond

By: _____
Scott Lambert

By: _____
Richard Orlow

Chapter 154

SEWERS AND SEWAGE DISPOSAL

GENERAL REFERENCES

East Whiteland Municipal Authority — See Ch. 6, Art. I.

Sanitation — See Ch. 150.

Subdivision and land development — See Ch. 175.

Water — See Ch. 198.

Part 1
Holding Tanks

[Adopted 5-11-1987 By Ord. No. 85-87]

ARTICLE I
Use Regulations

§ 154-1. Purposes.

The purpose of this Part 1 is to establish procedures for the installation, use and maintenance of holding tanks designed to receive and retain sewage whether from residential or commercial uses when an alternate method to on-site disposal is deemed necessary and it is hereby declared that the enactment of this part is necessary for the protection, benefit and preservation of the health, safety and welfare of the inhabitants of this municipality.

§ 154-2. Definitions.

As used herein, the following terms shall have the meanings herein described unless otherwise provided:

BOARD — The Board of Supervisors of East Whiteland Township.

CCHD — The office of the Chester County Health Department administering the issuance of permits and promulgating the regulations governing holding tanks in the various municipalities of Chester County.

DEP — The bureau or office of the Department of Environmental Protection of the Commonwealth of Pennsylvania which is responsible for administering the issuance of permits and promulgating the regulations governing the issuance of permits for holding tanks.**[Amended 11-21-2000 by Ord. No. 132-2000]**

DESIGN STANDARDS — Design standards for holding tanks as established by DEP (25 Pa. Code § 73.61 et seq.) as well as all relevant installation standards and relevant locational standards established by such regulations are incorporated herein by reference as fully as though set forth at length. As used herein, the term "design standards" shall be deemed to include "installation standards" and "locational standards."

HOLDING TANK — A watertight receptacle which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another site. Holding tanks include, but are not limited to, the following:

A. CHEMICAL TOILET — A toilet using chemicals that discharge to a holding tank.

B. RETENTION TANK — A holding tank to which sewage is conveyed by a water carrying system.

C. PRIVY — A holding tank designed to receive sewage where water under pressure is not available.

HOLDING TANK CLEANER — The entity, agency or person, including a holding tank owner, who being duly licensed by the Chester County Health Department, removes the contents of a holding tank for purposes of transporting and/or disposing of the sewage at another site.

IMPROVED PROPERTY — Any property within the Township upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sewage shall or may be discharged.

MUNICIPALITY — East Whiteland Township, Chester County, Pennsylvania.

OWNER — Any person vested with legal ownership, sole or partial, of any property located in the Township.

PERSON — Any individual, partnership, company, association, corporation or other group or entity.

SEWAGE — Any substance that contains any of the waste products or excrement or other discharge from the bodies of human beings or animals and any noxious or deleterious substance being harmful or inimical to the public health, or to animal or aquatic life or to the use of water for domestic water supply or for recreation.

§ 154-3. Rights and privileges granted.

The Board is hereby authorized and empowered to undertake within the Township the control and methods of holding tank sewage disposal and the collection and transportation thereof. Any permit or permission for the use of holding tanks pursuant to this Part 1 is intended to provide for an interim or temporary method of disposal under circumstances where a sanitary sewer extension has been approved for connection to the public sewer system operated by the municipality and the Board has authorized the design and/or construction contracts and awaiting the completion of design and construction of the sewer system. Any such permit or permission shall be limited to a maximum of three years or such other time as the Board may deem proper under the circumstances.

§ 154-4. Permit required.

No landowner shall erect, own, operate or maintain, or suffer to be erected, owned, operated or maintained, any holding tank on his lands, nor shall any person own, operate, erect or maintain any holding tank on lands of another unless a permit therefor has been issued by CCHD and DEP and security has been posted with the Board, which permit and security shall remain unexpired, unsuspended and unrevoked. In any other areas of the Township where the DEP and CCHD has allowed holding tank installation after the adoption of this Part 1, the applicant shall post all securities and assurances, as noted herein.

§ 154-5. Conditions for issuance of permit.

Before any permit to construct, own, operate or maintain a holding tank is issued to any owner or other person in East Whiteland Township, all of the following conditions precedent shall have occurred:

A. The Official Sewage Facilities Plan of East Whiteland Township or the revision thereto indicates the use of holding tanks for the lot and provides for replacement by adequate public sewerage service, as approved by DEP and CCHD. The plan for replacement by adequate sewerage service shall include appropriate assurance of the project's implementations, such as public financing, bonding or other security of sufficient present value to assure completion, or any other assurances, either singularly or in combination, or such other provisions for the discontinuance of holding tank authorization as the DEP, CCHD or the Board deems necessary.

B. The owner has filed with the Board copies of plans, contracts or other assurances enforceable according to their terms for the maintaining and removal of such holding tanks and connection to public facilities when available, adequate security to guarantee the performance of and payment for the same, and the assignment to the municipality of the right to enforce all such contracts, assurances and securities.

C. The holding tank meets the design standards.

§ 154-6. Installation.

Holding tanks may be installed if and only if:

A. They meet the design standards;

B. A permit has been issued therefor;

C. All fees in connection with the permit have been paid.

D. Adequate security, as mandated under § 154-8 hereof has been posted; and

E. Adequate land has been set aside for alternate on-site disposal systems and such land is shown on the site development plans submitted for the holding tank.

§ 154-7. Inspection; maintenance and operation.

Upon installation of the holding tank, but prior to its maintenance and operation, the same shall be inspected by the Chester County Health Department and the Township Engineer. The Township Engineer shall certify that the same is installed in and only in accordance with the design standards and that all conditions precedent have been complied with and adequate security, as required under § 154-8 hereof has been posted. Said holding tank may be maintained and operated only during the time such permit and security remains in force. The holding tank shall be installed,

operated and maintained in accordance with applicable DEP and CCHD regulations, including but not limited to 25 Pa. Code § 73.61 et seq.

§ 154-8. Posting of security.

The applicant shall post with the Board a letter of credit or other similar undertaking from a reputable financial institution or insurance carrier authorized to conduct such business in the Commonwealth of Pennsylvania or (at the applicant's election) an amount in cash guaranteeing:

A. That the applicant will install and maintain the holding tank in accordance with DEP, CCHD and Township regulations as the same exist at the time of application.

B. That the applicant will cause a holding tank cleaner, duly licensed by the CCHD, to pump out such holding tank at regular intervals and at times of malfunction or emergency and at such other times as may be necessary to avoid overflow or other hazard and will remove the said effluent and deposit the same at and only at an authorized disposal facility, as approved by CCHD and DEP.

C. That, within 30 days after public sewage facilities are available to the lot, the owner will dismantle such holding tank and connect to the public sewage facility and pay all costs and fees therefor. The method of the holding tank dismantling shall be approved by the Township Engineer and shall include, but not be limited to, complete removal or the destruction and backfilling in place of said tank.

D. That, in the event that public facilities are not available within the time period stated in § 154-3, the applicant will construct alternate facilities on the site and disconnect said holding tank and pay all costs therefor. Security shall be in an amount equal to 110% of the contract prices and (in absence of such contract prices) the estimated cost of all of the foregoing, plus an additional 10% of such costs and contracts for each year beyond the first year for the duration of the permit.

E. The security agreement shall provide that the applicant may draw from the security so posted pumpout costs to and only to the extent provided in accordance with the terms of the contracts and estimates for and only for completed work. The maximum of any draw shall be limited to the proportion of the contract completed, materials furnished or work done. The security agreement shall provide that, in default by the permittee and during the period such default continues, the Board or its authorized representative may draw upon said security for necessary payments for expenses incurred on the Board's sole demand without the necessity of approval or concurrence by the landowner. The amount and adequacy of the security shall be determined by the applicant, subject to the approval of the Township Engineer, which approval shall not be unreasonably withheld.

§ 154-9. Application procedures.

Any person desiring to own, construct, operate or maintain a holding tank on lands within East Whiteland Township shall file an application therefor on a form supplied by, or satisfactory to, the Board, together with all plans and other materials necessary to demonstrate compliance with all of the requirements of this part. The Board shall establish by resolution, and may from time to time by resolution amend, a schedule of fees for the application for such holding tanks and the administration of this part. Upon approval by the Board of Supervisors, the same shall be forwarded to the CCHD, which shall, if it finds the application, plans and approvals to be in accordance with this part, process the application in accordance with the regulations administered by CCHD and upon approval issue such permits.

§ 154-10. Appeals.

Any person aggrieved by the action of CCHD and DEP with respect to such permit application, whether the same be based upon alleged noncompliance with the regulations of CCHD and DEP or noncompliance with the provisions of this Part 1 shall appeal from the denial of such permit in accordance with the rules and regulations established by CCHD and DEP.

§ 154-11. Violations and penalties.[1]

Any person who violates or permits the violation of any provision of this Part 1 shall, upon conviction thereof in a summary proceeding brought before a District Justice under the Pennsylvania Rules of Criminal Procedure, be guilty of a summary offense, and shall be subject to the payment of a fine of not less than $100 and not more than $1,000, plus the costs of prosecution. In default of payment thereof, the defendant may be sentenced to imprisonment in the county prison for a term of not more than 30 days. Each provision of this Part 1 that is violated shall constitute a separate offense, each of which violations shall be punishable by a separate fine imposed by the District Justice of not less than $100 and not more than $1,000, plus the costs of prosecution, or upon default of payment thereof, the defendant may be sentenced to imprisonment in the county prison for a term of not more than 30 days. All fines and penalties collected for the violation of this Part 1 shall be paid to the Township Treasurer. The penalties hereby imposed are for violations of this Part 1. Violations of the Chester County Health Department regulations shall be punishable in accordance with the rules and regulations applicable thereto and shall be deemed in addition to any violation of the provisions hereof.

§ 154-12. Remedies.

In addition to the penalties provided in § 154-11 above, the Board is authorized to file appropriate actions at law or in equity in the Court of Common Pleas in and for Chester County or before any other body having

1. **Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).**

jurisdiction over the persons and activities herein regulated to abate any violations and remove any holding tank not owned, operated, maintained or constructed in accordance with the provisions of this part. Violations of this Part 1 are declared to be public nuisances, abatable as such.

Part 2
Sewer Use

[Adopted 11-19-1987 By Ord. No. 86-87]

ARTICLE II
General Provisions

§ 154-13. Title.

This Part 2 shall be known as the "Revised Sewer Code of East Whiteland Township, 1987."

§ 154-14. Definitions; word usage.

A. Unless the context specifically and clearly indicates otherwise, the meaning of terms used in this Part 2 shall be as follows:

AUTHORITY — East Whiteland Municipal Authority.

BOD (denoting "biochemical oxygen demand") — The quantity of oxygen expressed in milligrams per liter (mg/l), utilized in the biochemical oxidation of the organic matter in sanitary sewer or industrial waste under standard laboratory procedure in five days at 20º C. It shall be determined by one of the acceptable methods described in the latest edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by American Public Health Association, and the Water Pollution Control Federation, or the latest edition of "Methods for Chemical Analysis of Water and Wastes" published by the U.S. Environmental Protection Agency.

BUILDING SEWER — The extension from the sewage drainage system of any structure to the service lateral of a collection sewer.

CAPPED SEWER — A complete sanitary sewage system installed on any improved property for future connection to the collection sewer system.

CHLORINE REQUIREMENT — The amount of chlorine, in parts per million by weight, which must be added to sewage or other liquid to produce a residual of 0.1 parts per million after 15 minutes of content, or to meet the requirements of some other objective, in accordance with procedures set forth in "Standard Methods."

COLLECTION SEWER — The Township's sanitary sewers located under highways, roads, streets and right-of-way with branch service laterals that collects and conveys sanitary sewage or industrial wastes or a combination of both and into which storm, surface, and ground waters or unpolluted industrial wastes are not intentionally admitted.

COLOR OF AN INDUSTRIAL WASTE — The color of the light transmitted by the waste solution after removing the suspended material, including the pseudocolloidal particles.

COMMERCIAL USER — A property which is intended to be used for the purpose of carrying on a trade, business or profession, or for social, religious, educational, charitable or public uses.

COMPOSITE SAMPLE — A sample consisting of a combination of individual samples that are either time or flow proportioned or both, obtained at regular intervals over a period of time and shall reasonably reflect the actual wastewater discharge conditions for that period of time.

CONNECTION UNIT — Each individual building or house whether constructed as a detached unit or as one of a pair or row which is designed or adaptable to separate ownership for use as a family dwelling unit or for commercial or industrial purposes. A school, factory, apartment house, cooperative or condominium apartment house, office building or other multiple-unit structure whose individual apartments or units are connected to a common internal sewage system and which are not commonly subject to separate ownership shall be considered as one connection unit.

CONSULTING ENGINEER — A duly qualified engineer designated by the Township or the Authority as its consulting engineer.

COOLING WATER — The water discharged from any system of condensation, including but not limited to air conditioning, cooling, or refrigeration.

DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) — The Department of Environmental Protection of the Commonwealth of Pennsylvania, or any department or agency of the Commonwealth succeeding to the existing jurisdiction or responsibility of the Department of Environmental Protection.

DISSOLVED SOLIDS — That concentration of matter in the sewage consisting of colloidal particulate matter one micron in diameter or less, and both organic and inorganic molecules and ions present in solution.

DOMESTIC USER — A property which is intended to be used for continuous or periodic habitation by human beings.

ENVIRONMENTAL PROTECTION AGENCY (EPA) — The Environmental Protection Agency of the United States, or any agency or department of the United States succeeding to the existing jurisdiction or responsibility of the Environmental Protection Agency.

FLOATABLE OIL — Oil, fat or grease in a physical state such that it will separate by gravity from wastewater by treatment in a pretreatment facility approved by the Authority.

GARBAGE — Solid wastes from the domestic and commercial preparation, cooking and dispensing of food, and from the commercial handling, storage and sale of food products and produce.

GRAB SAMPLE — A sample taken from a waste stream on a one time basis with no regard to the flow in the waste stream and collected over a period of time not exceeding 15 minutes but shall reasonably reflect actual discharge conditions for that instant.

GROUND GARBAGE — Garbage that has been shredded to such a degree that all its particles will be carried freely under normal sewer flow conditions, with no particle greater than 1/2 inch in any dimension.

GROUND WATER — Water which is standing in or passing through the ground.

HOLDING TANK WASTE — Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.

IMPROVED PROPERTY — Any property within the sewered area upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sanitary sewage and/or industrial wastes shall be or may be discharged. The property may or may not have public water or private water.

INDUSTRIAL USER — Any property discharging wastewater to the sanitary sewer system, and which is intended to be used in whole or in part for manufacturing, processing, cleaning, laundering or assembling any product, commodity or article; or from which any process waste, as distinct from domestic waste, is discharged.

INDUSTRIAL WASTE — Any liquid or gaseous substance, whether or not solids are contained therein, discharged from any industrial establishment during the course of any industrial, manufacturing, trade, or business process or in the course of the development, recovery, or processing of natural resources, as distinct from sanitary sewage.

INDUSTRIAL WASTE PERMIT — A permit to deposit or discharge liquid industrial wastes into any sanitary sewer discharging to the wastewater treatment plant owned by the Valley Forge Sewer Authority.

INFILTRATION — The groundwater unintentionally entering the public sewer system, including building foundation drains and sewers, from the ground through such means as, but not limited to, defective pipes, pipe joints, connections or manhole walls. Infiltration does not include, and is distinguished from, inflow.

INFILTRATION/INFLOW — The total quantity of water from both infiltration and inflow without distinguishing the source.

INFLOW — The water discharge into a sanitary sewer system, including building drains and sewers, from such sources as, but not limited to: roof leaders, cellar, yard and area drains; foundation drains; unpolluted cooling water discharges; drains from springs and swampy areas; manhole covers; cross connections from storm sewer and/or combined sewers; catch basins; storm waters; surface runoff; street wash waters; or drainage. Inflow does not include, and is distinguishable from, infiltration.

MANHOLE — A shaft or chamber leading from the surface of the ground to a sewer, large enough to enable a man to gain access to the latter.

mg/l — Milligrams per liter and is equivalent to parts per million by weight.

NATIONAL CATEGORICAL PRETREATMENT STANDARD or PRETREATMENT STANDARD — Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. § 1347) which applies to a specific category of industrial users.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT — A permit issued under the National Pollutant Discharge Elimination System (NPDES) for discharge of wastewaters to the navigable waters of the United States pursuant to Section 402 of Public Law 92-500, as amended.

NATIONAL PROHIBITIVE DISCHARGE STANDARD or PROHIBITIVE DISCHARGE STANDARD — Any regulation developed under the authority of 307(b) of the Act and 40 CFR 403.5.

NITROGEN, TOTAL KJELDAHL (TKN) — The sum of the organic nitrogen and ammonia nitrogen, expressed in milligrams per liter.

NONFILTERABLE RESIDUE — Solids that either float to the surface or are in suspension in water, sewage, industrial waste or other liquids, and which are removable by laboratory filtration. The quantity of nonfilterable residue shall be determined by one of the acceptable methods described in the latest edition of "Standard Methods for the Examination of Water and Wastewater" or "Methods for Chemical Analysis of Water and Wastes," cited above.

NORMAL DOMESTIC STRENGTH SEWAGE — Wastewater or sewage having an average daily suspended solids (SS) concentration of not more than 250 milligrams per liter and an average daily BOD of not more than 250 milligrams per liter and excluding toxic and/or inflammable wastes.

OBJECTIONABLE WASTE — Any wastes that can in the Authority's judgment harm either the sewers or sewage treatment process or equipment; can have an adverse effect upon the receiving stream; can otherwise endanger life, health or property; or which constitutes a public nuisance.

OWNER — Any person vested with ownership, legal or equitable, sole or partial, of any property located in the sewered area.

PARTS PER MILLION (PPM) — A weight-to-weight ratio; the parts-per-million value multiplied by the factor 8.345 shall be equivalent to pounds per million gallons of water.

PERSON — An individual, a partnership, an association, a corporation, a joint-stock company, a trust, an unincorporated association, a

governmental body, a political subdivision, a municipality, a municipality authority or any other group or legally recognized entity. The masculine gender shall include the feminine, and the singular shall include the plural where indicated by the context.

pH — The logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution, indicating the degree of acidity or alkalinity of a substance. A "stabilized pH" will be considered as a "pH" which does not change beyond the specific limits when the waste is subject to aeration. It shall be determined by one of the accepted methods described in the latest edition of "Standard Methods for Examination of Water and Wastewater," published by the American Public Health Association.

PHOSPHORUS (P) — The sum of the orthophosphate, polyphosphate, and organic phosphate form of phosphorus expressed in milligrams per liter.

POLLUTANTS — Any material that, when added to water, shall render that water (either because of the nature of quantity of the material) unacceptable for its original intended use; including, but not limited to, dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, chemical wastes, biological materials, radioactive materials, heat, sand, cellar dirt, and industrial, municipal, and agricultural wastes.

POLLUTION — The man-made or man-induced alteration of the chemical, physical, biological, and/or radiological integrity of water.

PRETREATMENT or TREATMENT — The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the sanitary sewer system. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes by other means.

RESPONSIBLE INDIVIDUAL —

(1) The chief executive officer or the chief operating officer of the user facility if the industrial user is a corporation;

(2) A partner or the general manager of the user facility if the industrial user is a partnership;

(3) The owner or the general manager of the user facility if the industrial user is a proprietorship; or

(4) The person duly designated as the responsible individual by a corporation, partnership or proprietorship, provided that such person shall be actually responsible for overall operation of the user facilities.

SANITARY SEWAGE (also referred to herein as "sewage") — Wastewater originating from residential users containing human and customary household wastes, or such wastes from commercial or industrial establishments, but excluding industrial wastes.

SANITARY SEWER — A sewer that conveys sewage or industrial wastes or a combination of both, and into which storm-, surface, and ground waters or unpolluted industrial wastes are not intentionally admitted.

SERVICE LATERAL — Part of the sewer system from the collection sewer to the curb line or right-of-way line.

SEWAGE TREATMENT PLANT — The Valley Forge Treatment Plant and facilities operated for such purpose by the Valley Forge Authority to which the sewer system is to be connected.

SEWER — Any pipe or conduit constituting a part of the sanitary sewer system used or usable for sewage collection purposes and to which ground-, surface and storm water is not intentionally admitted.

SEWERED AREA — That portion of the Township of East Whiteland in which there shall be constructed a sewage collection system of the Authority in accordance with the plans of the Authority's designated consulting engineer, as from time to time constructed and extended.

SEWER SYSTEM — All facilities, as of any particular time for collecting, pumping, treating and disposing of sanitary sewage and industrial wastes, situated in the sewered area and owned and/or operated by the Authority.

SIGNIFICANT INDUSTRIAL USER — Any industrial user of the Valley Forge Wastewater Treatment Facility who has a discharge flow of 25,000 gallons or more per average work day or is found by the Authority, EPA or DER to have significant impact, either potential or realized, either singly or in combination with other contributing industries, on the sanitary sewer system and/or the wastewater treatment facility (either its operational efficiency, effluent quality or quality of the sludge produced by said facility).

SLUG — Any discharge of water, sewage or industrial waste which, in concentration of any given constituent or in quantity of flow, exceeds for any period of longer duration than 15 minutes, more than five times its average hourly concentration or flow during a normal working day.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) — A classification pursuant to the latest Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget.

STANDARD METHODS — The laboratory procedures set forth in the following sources: Standard Methods for the Examination of Water and Wastewater, Latest Edition, as amended, prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation; Methods for Chemical Analysis for Water and Wastes, prepared and published

by the Analytical Quality Control Laboratory, U.S. Environmental Protection Agency; "Guidelines Establishing Test Procedures for the Analysis of Pollutants," enumerated in 40 CFR 436.1 et seq. (1975), as amended; and/or any other procedures recognized by the U.S. Environmental Protection Agency and the Commonwealth of Pennsylvania.

STORM SEWER — A sewer that carries storm-, surface and ground water drainage but excludes sewage and industrial wastes.

STREET — Any street, highway, road, lane, court, alley and public square.

SUSPENDED SOLIDS (SS) or TOTAL SUSPENDED SOLIDS (TSS) — Solids that either float on the surface of or are in suspension in water, sewage or other liquids and which are removable by laboratory filtration. The standard laboratory procedure shall be that found in the latest edition of "Standard Methods."

TOTAL SOLIDS — The sum of suspended and dissolved solids.

TOWNSHIP — East Whiteland Township or its authorized representatives, including the East Whiteland Municipal Authority where appropriate.

TOXIC POLLUTANT — Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of CWA 307(a) or other Acts.

UNPOLLUTED WATER OR WASTE — Water that has not had its pollutant level raised by the user, or any water or waste containing none of the following: free or emulsified grease or oil; pH less than 6.0 or greater than 9.0; phenols or other substances imparting taste and odor to receiving waters; toxic or poisonous substances in suspension, colloidal state or solution; obnoxious or odorous gases. It shall contain not more than 1,000 milligrams per liter by weight of dissolved solids of which not more than 250 milligrams per liter shall be as chloride and not more than 10 milligrams per liter each of nonfilterable residue and BOD. The color shall not exceed 50 color units. Analysis of the above-mentioned substances shall be made in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" or "Methods of Chemical Analysis of Water and Wastes," cited above.

USER — Any person who contributes, causes or permits the contribution of wastewater into the sanitary sewer system.

WASTEWATER — The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any groundwater, surface water and stormwater that may be present, whether treated or untreated, which is contributed into or permitted to enter the treatment plant.

B. "May" is permissible; "shall" is mandatory.

§ 154-15. Unsanitary deposits.

It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner upon public or private property within the Township of East Whiteland, or in any area under the jurisdiction of said Township, any human or animal excrement, garbage, or other objectionable waste.

§ 154-16. Discharges to natural outlets.

It shall be unlawful to discharge to any creek, stream or other area which may continuously or from time to time carry a natural flow or surface or subsurface water within the Township of East Whiteland or in any area under the jurisdiction of said Township, any sanitary sewage, industrial wastes, or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this Part 2 and any applicable laws of the Commonwealth of Pennsylvania relating to sewage and industrial waste.

§ 154-17. Duty to connect to public sewer.

A. Notice.

(1) Whenever any sewer constituting a branch or extension of the Township sanitary sewer system has been completed and is ready for public use, it shall be the duty of the Authority to cause a printed or written notice of the completion of such sewer, together with a copy of this Part 2, to be served in the manner hereinafter provided on the owner as defined in Subsection B(3).

(2) If the Authority shall so elect, notice of such completion may also be advertised in one newspaper circulated in the Township.

(3) Such notice in each instance to state that it is the duty of such owners to cause buildings erected on their premises requiring sewage drainage to be connected therewith at their own expense and subject to the payment of the tapping fee required by § 154-66.

B. Duty to connect.

(1) It shall be the duty of every owner, as defined in Subsection B(3) hereof, of the existing premises to cause each old or new building erected thereon requiring sewage drainage to be separately connected to the Township sewer within 60 days from the time of the receipt of the aforesaid notice.

(2) If a new building is erected on any premises the duty to connect shall arise upon completion of said building and must be completed within 60 days of said completion.

(3) "Owner" for the purpose of this § 154-17 shall mean the owner or owners of any type of building or structure which contains sewage

facilities where some point of the structure is within 150 feet of a Township collection sewer.

(4) Special exceptions to this requirement may be granted by the Authority upon the showing of unusual hardship or circumstance.

(5) If at any time the Authority shall deem it necessary for the public health to require that any building erected on premises abutting on, adjoining, or adjacent to any Township sewer, wheresoever any such building may be located on such premises, shall be connected with such sewer, it shall cause to be served upon the owner or owners of any such building, in the manner hereafter provided, a copy of this Part 2 and a printed or written notice directing that the necessary connections be made within 60 days from the date of its service.

C. Failure to connect. If any owner of premises situated along the line of a Township sewer shall fail to heed the notice, the Authority shall cause the necessary connections to be made, and, upon completion of the work for the same shall render a bill covering the cost of said work to the owner of such premises. All such bills shall contain a notice that, if bills be not paid within 60 days after date thereof, the same shall be collected in the manner provided by law.

D. Obtaining permit to connect.

(1) No person shall uncover, connect with, make any opening into or use, alter or disturb, in any manner, any sewer or sewer system without first obtaining written permission from the Authority. Such permission will be issued to owners required to connect to a Township collection sewer by this Part 2. The improved property owner shall apply to the Authority for the required permit, stating his desire and intention to connect to the sewer system and noting the type of existing facilities to be abandoned. At least 48 hours' notice prior to the connection shall be given the Authority so arrangements can be made to inspect and test the connection works. (See also §§ 154-60, 154-62, 154-67, 154-68 and 154-77.)

(2) Before commencing any phase of the construction for building sewer connection, the plumbing contractor shall locate and expose the existing wye or stub provided to connect to the Township sewer. No cap, stopper or plug shall be removed or punctured until permission has been granted by an authorized Municipal Authority Engineer. If no connection is provided, the contractor shall locate and expose the Township sewer main at the point where the connection is to be made.

(3) A 1/4 inch per foot gradient is required from point of entry at the building to sewer main. A check shall be made to verify that there is a 1/4 inch per foot gradient by obtaining the differential elevation using approved methods. If the elevations are such that the connection cannot be made at 1/4 inch per foot gradient, he shall

contact the Municipal Authority Engineer for permission to install the line at a minimum grade of 1/8 inch per foot. Under no circumstances shall the trench between connections be excavated before it is ascertained that the minimum can be obtained.

§ 154-18. Liability for costs of violations.

Any person violating any of the provisions of this Part 2 shall become liable to the Authority for any expense, loss, or damage occasioned to the Authority by reason of such violation.

§ 154-19. Notice of change of ownership.

Each property owner shall give the Authority written notice of any change of ownership of any improved property.

§ 154-20. Notice of vacating possession.

When the premises are vacated, the owner of improved property shall give written notice to the Authority, and the owner will be responsible for all sewer charges and fees until such notice is given.

§ 154-21. Disposition of private sewage treatment plants.

A. In addition to the requirements of § 154-17, where there exists on the premises abutting, adjoining, or adjacent to a Township sanitary sewer a privately owned, operated, or maintained sewage treatment plant or other process designed and maintained for the purpose of processing or packaging sanitary sewage, the Authority shall submit to the Board of Township Supervisors proposals as to the disposition of such privately owned, operated, or maintained sanitary sewage packaging plant or processing plant.

B. The aforementioned proposals may include, but are not limited to, one or more of the following:

(1) That the sewage treatment plant or similar sewage processing system be condemned according to law and closed down.

(2) That the sewage treatment plant or similar processing system be converted into a sanitary sewage pretreatment plant, designed for the purpose of treating and processing sewage or industrial effluence so as to conform such sewage or effluence to the requirements of this Part 2 regarding the permissible content of matter permitted to enter the Township's sanitary sewage system.

(3) That the sewage treatment plant or similar processing system be condemned according to law and be purchased by the Authority for use by the Authority in any manner consistent with a design for promoting the public health and welfare, and consistent with the provisions of this Part 2.

§ 154-22. Responsibility for costs of system design beyond minimum required.

Where pursuant to the provisions of this Part 2, the owner of improved property is required by the Authority to install sewage facilities in quantities, sizes and/or capacities in excess of the minimum requirements as provided in this Part 2, the owner of said improved property shall be responsible for all costs incident to the construction, installation and connection of such facilities; provided that the Authority shall be responsible for, but only for, that portion of the costs of such construction, installation and connection which would not have been incurred by the owner had the owner not been required to install sewage facilities in quantities, sizes and/or capacities in excess of the minimum requirements as provided for in this Part 2; but provided further, that the Authority shall not be responsible for costs incident to any requirements for sewage facilities in excess of the minimum requirements, where such excess was necessary in order to accommodate the larger sewage disposal needs of a building or buildings erected on a particular property.

§ 154-23. Failure to comply with notice.

If any person shall fail or refuse, upon receipt of written notice of the Authority, to remedy any unsatisfactory conditions or violations of this Part 2 within 60 days of receipt of such notice, the Authority may refuse to permit such person to discharge sanitary sewage and industrial wastes into the sewer system until such unsatisfactory condition shall have been remedied to the satisfaction of the Authority or consulting engineer.

§ 154-24. Right to refuse service upon harmful discharges.

In order to prevent discharge into the sewer system of wastes, the discharge of which is in violation of the provisions of this Part 2 or which may be deemed by the Authority to be harmful to the sewer system or to have a deleterious effect on sewage treatment process, or to have a deleterious effect on the public health, welfare or safety, the Authority shall refuse to any person the privilege of connection of any improved property to a sewer, or to compel discontinuance of use of a sewer by any person, or to compel the pretreatment of industrial and harmful wastes.

§ 154-25. Disclaimer of liability of Authority.

A. The Authority shall not be liable for any damages, expenses, costs, or other injury resulting from leaks, stoppages or defective plumbing, or from any other cause occurring to any premises or within any house or building.

B. The Authority shall not be liable for damages, expenses, costs, or other injury caused by the breakage or stoppage of, or any damage or expense to, any lateral or house connection when the cause thereof is found to be in the lateral or house connection.

C. The Authority shall not be liable for any breaking, stoppage or any damage or expense to any service lateral or building sewer, where the cause thereof is found to be in the building sewer.

D. The Authority shall not be liable for any costs, damages, expenses or other injury caused or occasioned by or in connection with a deficiency or failure of service when occasioned by an emergency, required repairs, or failure from any cause beyond control.

§ 154-26. Conditions of service.

A. The Authority will furnish sewage service only in accordance with the prevailing, and as hereafter revised, rates, rules and regulations of the Authority, which rates, rules and regulations are made a part of every application, permit and contract entered into between the property owner or customer and the Authority.

B. The Authority hereby reserves the right, so often as it may deem necessary, to alter, amend and/or repeal the rates, rules and regulations in part or in whole, to substitute new rates, rules and regulations which altered and/or amended new rates, rules and regulations shall forthwith, after due notice, become and thereafter be a part of every application, permit and contract for sewage service in effect at the time of such alteration, amendment and/or adoption.

ARTICLE III
Building Sewers and Service Laterals

§ 154-27. Size of pipe.

Unless a larger size is required in pursuance of this Part 2, no building sewer shall be less than four inches in diameter.

§ 154-28. Type of pipes.

All building sewers and service laterals shall be constructed by use of one of the following types of pipe:

A. Service weight (SV) cast iron soil pipe at least four inches in internal diameter conforming to "Cast Iron Soil Pipe and Fitting," ASTM A-74-69, latest revision.

B. Polyvinylchloride (PVC) pipe at least four inches in internal diameter gasket type conforming to ASTM D-3034-74SDR35 or equal or Schedule 80 PVC, using solvent cement. The rubber rings to comply with ASTM D-3212.

C. Jointing materials for the various types of pipe shall be as follows:

(1) Cast iron pipe shall have push-on joints consisting of rubber gaskets conforming to the requirements of "Rubber Gaskets for Cast Iron Soil Pipe," ASTM 564-74.

(2) Polyvinylchloride (PVC), four-inch and six-inch pipe shall be joined with separate fluid-tite twin gasket couplings. Each coupling shall consist of a body of extruded stock, internally machined and furnished with two rubber gaskets. Eight-inch diameter and larger diameter pipe shall be joined with bell and spigot type of rubber gasketed joint. Each joint shall consist of a formed bell complete with a single rubber gasket. All fittings shall utilize rubber gasket joints. Rubber gaskets shall comply with the requirements specified in ASTM D-1869, C-361 or C-443.

§ 154-29. Beddings.

Uniform bedding shall be provided along the entire length of a building sewer, and all joints of a building sewer shall be watertight and rustproof. No cement mortar joints shall be used.

A. Trenches (both earth and rock trenches). "First Class Bedding" shall be provided as a foundation for all pipe. The bedding material shall consist of crushed stone conforming to the Commonwealth of Pennsylvania Department of Transportation grading and quality requirements for No. 2B coarse aggregate. The crushed stone shall be placed in the bottom of the trench within six inches of the bottom of pipe, minimum depth of six inches over the pipe.

B. Concrete joints shall be used when tieing new pipe to existing pipe. Proper adopting fittings (i.e., Johns-Manville Duplex couplings for AC to pipe of other material) along with concrete encasement.

§ 154-30. Method of transfer to Authority system.

Where a building or buildings on an improved property, at the time of securing a permit under § 154-17 to connect to a sewer, shall be served by its own sewage disposal system, device, or other form of private sewage disposal, and where such building or buildings are required, pursuant to this Part 2, to be connected to a collection sewer, the existing house sewer or building sewer shall be broken on the structure side of such existing sewage disposal system or device and an attachment shall be made, with proper fittings, to continue such house or building sewer line, as a building sewer undiminished in inside diameter, but not less than four inches, to the service lateral.

§ 154-31. Common trench permitted for building sewers to adjoining property.

A building sewer which serves one improved property may occupy the same trench as a building sewer to serve the next adjoining improved property; and provided that such joint occupancy is by mutual agreement of the owners concerned.

§ 154-32. Responsibility for proper material and connection.

It shall be the duty of every person constructing or owning any building sewer, house drain, soil pipe, waste pipe, vent pipe, plumbing fixtures, or any other passage or connection between a sewer and any grounds, buildings, erections, and in like manner it shall be the duty of the owners of all grounds, buildings, erections, and all parties interested therein or thereof, to cause and require that such building sewer, house drain, soil pipe, waste pipe, vent pipe, plumbing fixtures and every other passage or connection shall be adequate for its purpose, and at all times allow to pass freely all material that enters or should enter the same.

§ 154-33. Notice and approval for changes in connections.

In order to change, alter or modify any building sewer, house drain, service lateral, vent pipe, waste pipe, soil pipe, plumbing fixtures or any other sewer passage or connection, written notice of such must be served on the Authority which must give its written approval before any changes, alterations or modifications shall be made.

§ 154-34. Fittings.

Fittings in a building sewer shall conform to the type of pipe used in construction of such sewer.

§ 154-35. Directional changes in building sewers.

Change in direction in a building sewer must be made by use of "Y" branches or of 1/8, 1/16, 11 1/4 or 1/6 bends.

§ 154-36. Nonpermissible fittings.

Fittings or connections in a building sewer which have an enlargement, chamber or recess with a ledge, shoulder reduction of pipe area that shall offer any obstruction to flow, shall not be allowed.

§ 154-37. Preparation, packing and caulking of joints.

A. Lead joints in cast iron soil pipe in a building sewer shall be packed with oakum in the bell and spigot terminations and thereafter shall be filled with molten lead to a depth of at least one inch for pipes four-inch and six-inch diameter pipe and 1.25 inches for eight-inch and twelve-inch diameter pipe and not to be depressed more than 1/8 inch below the rim of the hub. The lead then must be caulked in place. No paint, varnish or other coating shall be permitted on the jointing material until after the building sewer has been tested and approved as provided in §§ 154-44 and 154-45.

B. Material for hot-poured joints shall not soften sufficiently to destroy the effectiveness of the joint when subjected to a temperature of 160º F., nor be soluble in any of the wastes carried by the drainage system. The joint shall first be caulked tight with jute, hemp, or similar approved material.

§ 154-38. Use of floor drains.

A. Floor drains shall be permitted to be connected to the Building Sewer only where it can be shown to the satisfaction of the Township that their connection is absolutely necessary. Where such drains are permitted, arrangements shall be made to maintain a permanent water-seal in the traps, and such drains shall be provided with check or backwater valves where warranted.

B. A permit shall be obtained from the Authority before any floor drain may be attached to the house drain.

C. No permit for a basement floor drain shall be granted until the owner of the building or his agent has executed, signed and filed a written agreement upon a form furnished by the Township releasing the Township from any damage that may result from the basement being flooded by the stoppage of sewers.

D. Sump pumps shall not be connected to, nor the discharge therefrom flow into, any drain pipe which is connected to a building sewer.

E. See § 154-80 for waters not permitted.

§ 154-39. Cleanouts required.

A. Cleanouts shall be provided in each building sewer at maximum intervals of 75 feet and each change of direction to permit rodding with an auger or tape. Cleanouts shall be constructed by using a "T" or "Y" fitting in the run of pipe with a forty-five-degree bend and riser to the ground surface. The cast iron riser pipes shall be provided with brass screw plug. PVC riser pipes may use brass or PVC screw plug. Risers shall be at a level equal to the finished grade level.

B. Refer to the Typical Building Sewer Sheet, Sketch Number 213A.[2]

§ 154-40. Interceptor traps required.

A. A building sewer shall be provided with horizontal single vented trap, known as an interceptor trap, of not less than four inches inside diameter. The trap shall be provided with a cast iron mushroom vent. The trap shall be cast iron or polyvinylchloride (PVC). Fabricated PVC traps shall be as shown on Sketch 213A or as may be approved by the Authorities Engineer. All materials shall comply with § 154-28.

B. The vented trap shall be constructed at the lower end of the building sewer. The 10 feet dimension shown on the sketch is approximate and may be revised according to conditions encountered in the field. Where the distance from the main sewer to the building is less than 75 feet, the vented trap may be used as the cleanout in lieu of the cleanout located approximately 10 feet from the building as shown on Sketch 213A.

§ 154-41. Location of interceptor traps.

The interceptor trap described under § 154-40 shall be located at a point to be determined and approved by the Authority and in accordance with rules and regulations applicable thereto as adopted by Authority. Such trap and its vent shall be on the property side of the curbline or right-of-way line.

§ 154-42. Special conditions.

Wherever in the opinion of the Authority the trenching conditions require either a specific type of pipe, jointing material or encasement in concrete, such materials as it may direct shall be installed to protect the property owner and/or the Township for special conditions as follows:

A. Where the trench is less than four feet deep in a traveled roadway, special bedding, consisting of crushed stone or concrete cradle, as directed by the Township shall be used.

B. Service laterals and building sewer for all service stations, garages, or other establishments storing, using, or dispensing gasoline, kerosene, benzine, naphtha, fuel oil or other flammable or explosive liquid, solid

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2. Editor's Note: Said sketch is included at the end of this chapter.

or gas, or similar solvents shall be constructed of cast iron pipe with leaded joints.

C. Where lines are laid in fill or within 18 inches of potable water lines, cast iron soil pipe with caulked and lead gasket joints shall be used.

D. Where water, excessive amounts of wet backfill or marshy ground exists the use of cast iron pipe will be required.

E. Where foundation conditions are poor due to ground water, or subsurface materials, the building sewer shall be laid on a base of Pennsylvania Department of Transportation No. 2B crushed stone at least six inches in depth.

F. Backfilling of pipe trenches on Township roads and right-of-ways shall be made with loose earth, free of rock and stones, and carefully tamped about and over the pipe in six-inch layer for a depth of two feet above the pipe, when coarser materials may be backfilled and the trench brought to its original condition. Backfilling of pipe trenches on state roads and right-of-way shall conform to the Pennsylvania Department of Transportation Specifications, Form 408-1970 and Form 945B REV.

§ 154-43. Slope and grading.

The slope or grade of a building sewer shall be no less than 1/4 inch per foot of length and shall be sloped downward in the direction of flow. If elevations are such that the connection cannot be made at 1/4 inch per foot the Municipal Authority may grant permission to install the line at some gradient less than 1/4 inch per foot but in no case less than 1/8 inch per foot.

§ 154-44. Testing, approval and observation.

A. The Authority or the consulting engineer shall observe all testing of a building sewer. All equipment and material required for testing shall be furnished by the owner of the improved property to be connected to a sewer.

B. In the event a building sewer is not approved by the Authority further test or tests shall be made following completion of necessary corrections. A fee as set from time to time by resolution of the Board of Supervisors or the Authority will be charged by the Authority for observation of each test subsequent to the initial test. **[Amended 11-21-2000 by Ord. No. 132-2000]**

§ 154-45. Approval required prior to covering building sewers.

No building sewer shall be covered until it has been inspected, tested, as provided in § 154-44, and approved. If any part of a building sewer is covered before being inspected, tested and accepted, it shall be uncovered for inspection and testing at the cost and expense of the owner of the improved property.

§ 154-46. Safe and sanitary operation.

Every building sewer of any improved property shall be maintained in a sanitary and safe operating condition by the owner.

§ 154-47. Excavations.

Every excavation for a building sewer or service lateral shall be guarded adequately with barricades and lights to protect all persons from damage and injury. Streets, sidewalks and other public property disturbed in the course of installation of a building sewer or service lateral shall be restored, at the cost and expense of the owner of the improved property being connected, in a manner satisfactory to the Township.

§ 154-48. Restoration of excavations; permits and standards.

Wherever the surface of any public street, sidewalk or cartway is disturbed by construction of the service laterals, the surfacing material must be restored in kind and maintained to the satisfaction of the Authority and Township. Any and all construction in a public street of the Township shall be in compliance with the ordinances of the Township and any and all construction in a state highway shall be in compliance with Pennsylvania Department of Transportation requirements and specifications. All permits shall be obtained before construction is commenced, including the permits required for opening, or disturbing the surface of streets controlled by the Township and state. All Pennsylvania Department of Transportation permits will be obtained by the Township. All permits issued for construction will require that streets or roads under construction remain passable for vehicular traffic during the period of construction.

§ 154-49. Supervision of construction by Authority.

The construction of service laterals and building sewers shall at all times, be subject to supervision and inspection by the Authority or its representative and shall conform to the Authority specifications. The service laterals and building sewer shall not be covered until permitted by the Authority and all backfilling or trenches shall be under its supervision and shall be compacted according to § 154-42.

§ 154-50. Sewers through private land.

Connections with sewers where same are run through private property shall in all respects be governed by this Part 2.

§ 154-51. Capped sewer and lateral; private disposal.

A. In all cases where collection sewers are not available either in the street or in easements accessible to any property for which subdivision is requested or intended, the developer shall be responsible to install collection sewers, sewer service laterals, and building sewers to connect with each dwelling unit, but such sewers shall be capped at the

appropriate points (which is designated and approved by Authority) until the Authority sewers become available. In such event the owner shall install on-site disposal units or an on-site temporary treatment facility, in each case, in accordance with the regulations of the Chester County Health Department.

B. All capped sewers shall be designed, installed, accepted and dedicated to the Authority in accordance with this Part 2.

§ 154-52. Use of old building sewers.

A. Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the Authority, to meet all requirements of this Part 2.

B. All asphalt-paper pipe, such as Orangeburg, shall be replaced with pipe material used for making the lateral connection except in unusual conditions permitted by the Authority's engineer.

§ 154-53. Depth and positioning.

No building sewer shall be laid parallel to or within three feet of any bearing wall, which might thereby be weakened. The depth shall be sufficient to afford protection from frost.

§ 154-54. Use of power other than gravity.

In all buildings in which any building drain is too low to permit gravity flow to the collection sewer, sanitary sewage carried by such drain shall be lifted by artificial means approved by the Authority and discharged to the building sewer.

§ 154-55. Open trench work required.

All excavations required for the installation of a building sewer shall be open trench work unless otherwise approved by the Authority in writing.

§ 154-56. Testing, approval and tapping.

A. Every building sewer shall be tested by filling the same with water, completely, so that every section shall be tested with not less than a ten-foot head of water. Water shall be kept in the building sewer for 15 minutes before inspection starts and no leakage shall be observable at the time of inspection.

B. Upon approval of the test of a building sewer by the Authority, a certificate of approval will be issued to the owner of the improved property.

C. The applicant for the building sewer connection permit shall notify the Authority when the building sewer is ready for inspection and connection to the public sewer. The removal of the stopper in or tapping

of the public sewer shall be made under the supervision of the Authority or its representatives.

D. Air testing.

(1) Low pressure air testing of building sewers may be used as an alternative for water exfiltration tests. All building sewer connection pipes shall be tested whether the line is under water or not.

(2) The test section of the building sewer shall be plugged at each end. One of the plugs used must be tapped and equipped for the air inlet connection for filling the line from the air compressor. All pipe outlets shall be properly capped or plugged, and carefully braced against the internal pressure to prevent air leakage by slippage and blowout.

(3) The air control equipment shall have a monitoring pressure gage having a pressure range from zero to 15 psi. The gage shall have minimum divisions of 0.10 psi and an accuracy of pms0.5 psi. The air control equipment shall be Cherne Air-Loc equipment as manufactured by Cherne Industrial of Hopkins, Minnesota, or approved equal.

(4) If the time, in minutes and seconds, for the air pressure to drop from 3.5 to 2.5 psig is less than that shown in the table below for the designated pipe size, the section of the pipe undergoing the test shall not have passed the test; therefore, adequate repairs must be made and the line restored.

(5) As a safety precaution, all pneumatic plugs shall be seal tested before being used in the actual test installations.

Time Requirements for Air Testing

Pipe Size (inches)	Time (minutes)
4	2.0
6	3.0
8	4.0
10	5.0

(6) Adjustment and procedures for making air pressure correction for groundwater. An air pressure correction is required when the prevailing ground water is above the sewer line being tested. Under this condition, the air pressure must be increased 0.433 psi for each foot the groundwater level is above the invert of the pipe.

§ 154-57. Building demolition; severance from sewer.

In the event of the demolition of any building, the owner of the building shall be responsible for plugging the existing building sanitary sewer connection at the property line. Any reuse of such connection shall require a building sewer connection permit and connection fee.

§ 154-58. Approval of service laterals; supervision of construction.

No service lateral shall be constructed, laid and connected except in a manner and type approved by the Authority which shall supervise and control the construction of the same.

ARTICLE IV
Connections of Building Sewers

§ 154-59. Separate connections required for each unit.

Each connection unit on each improved property shall be connected separately to a service lateral through a building sewer. Special written permission must be obtained from the Authority to group more than one connection unit on one building sewer.

§ 154-60. Costs to be borne by owner; indemnity of Township.

All costs and expenses of construction of a building sewer and all costs and expenses of connection of a building sewer to the collection sewer or service lateral shall be borne by the owner of the improved property to be connected; and such owner shall indemnify and save harmless this Township and Authority from all loss or damage that may be occasioned, directly or indirectly, as a result of construction of a building sewer or of connection of a building sewer to the sewer lateral and/or collection sewer.

§ 154-61. Materials to be used.

Materials for a building sewer, jointing materials and methods of installation shall be in accordance with requirements of this Part 2, and shall be subject to approval of this Authority.

§ 154-62. Display of permit.

The permit required by § 154-17 shall be displayed prominently upon the improved property to be connected to a sewer at all times during construction of the building sewer and connection of the building sewer to the service lateral and/or collection sewer.

§ 154-63. Permissible types and places of joints and connections.

A. A building sewer shall be connected to a collection sewer at the service lateral or at the place where the wye (Y) in the collection sewer is located. No person shall make a connection directly to or tamper with a collection sewer in any manner, except as herein provided.

B. All work of making connections to any of the Township sewers shall be done under the personal supervision of an authorized representative of the Authority or its consulting engineer and shall conform to the following requirements:

   (1) The location of existing service wye (Y) or house laterals will be secured by the property owner from the Authority records before construction is undertaken so that the house sewer may be properly located. If the existing service wye or service lateral location is not suitable for building sewer connecting alignment or a service wye or service lateral does not exist, the connection to the

collection system shall be made with an approved saddle fitting properly installed and encased in a minimum of six inches of concrete on all sides of fitting. All associated costs shall be paid by the property owner.

(2) Connections to the collection sewer where no branch or wye (Y) fitting has been previously provided shall be made with an approved saddle type fitting properly installed and encased in an envelope of concrete extending completely around the barrel of the collection sewer pipe, and a minimum of six inches either side of fitting; the cost thereof shall be paid by the property owner.

(3) All joints shall be sealed and made watertight, and shall be made smooth and clean inside, with all sewers in proper alignment and of proper grade, so as to provide free flow of sewage matter without any obstructions, and to be made in accordance with the Authority specifications for its sanitary sewers. All work pertaining to the connection with the Authority's sewers shall be, financially and otherwise, the responsibility of the owner of the property with which connection is made, subject to the right of supervision hereby reserved by the Authority.

§ 154-64. Size of connecting pipes.

Connections to the service laterals shall be made of the same pipe diameter (size), properly joined. When the building sewer is made with a pipe of larger diameter than the existing service lateral, the building sewer shall be extended to the collection sewer and connected with a saddle fitting.

§ 154-65. Connections required to comply.

All connections shall be made pursuant to §§ 154-36 and 154-51 and the other provisions of this Part 2.

§ 154-66. Connection fees.

There will be charged and imposed upon the owner of each connection unit a connection fee as set forth in the appropriate resolutions adopted by the Authority from time to time. Such connection fee shall be due and payable to the Authority at the time the connection is made by the owners required to connect to the sewer by Authority ordinance. If the owner fails to connect in the allotted time covered by the ordinance, then the connection fee shall be due and payable 60 days, including the allotted time under the ordinance, after written notice to connect is given to the owner by the Authority. Owners not required to connect but who desire to do so shall pay the connection fee at the time of permit application approval. Refer to Ordinance 5375, latest revision, for tabulation of user charges.

§ 154-67. Authorized plumbers; permit; insurance required.

A. Any individual desiring to do plumbing installation or other plumbing work upon the building sewer and its connection with the service lateral connected with any improved property which is connected to or which is to be connected to a sewer shall obtain from the Authority a permit authorizing such individual to engage in such plumbing work. Such permits shall be issued on a calendar year basis. A fee as set from time to time by resolution of the Board of Supervisors or the Authority shall be charged for issuance of each permit. Such permits shall be issued to such individuals who have demonstrated to the satisfaction of the Authority that they are qualified and capable of performing plumbing work in accordance with good plumbing practice and shall be revocable by this Authority for negligent or willful failure to comply with rules and regulations to be adopted by resolution by the Authority. Any individual who is performing plumbing work must file the following insurance certificates at the time he applies for his permit: **[Amended 11-21-2000 by Ord. No. 132-2000]**

   (1) Property damage.

      (a) Minimum: $50,000.

   (2) Personal injury.

      (a) Injury to any one person minimum: $300,000.

      (b) Injuries in any one incident minimum: $300,000.

B. Such permits shall be reissued from calendar year to calendar year by appropriate endorsement of this Authority or by issuance of a new permit, at the discretion of this Authority upon payment of the required fee. Owners, their agents, employees or independent contractors may do trench preparation work independently of the plumbing work involved upon receipt of a permit from the Authority and subject to compliance with its regulations and inspection requirements.

C. The Township shall be responsible for administering the permits for the licensing of plumbers and collection of all fees.

§ 154-68. Permit required.

Any improved property upon which plumbing work is performed by an individual not possessing a permit as required under § 154-67 will not be approved for connection to a sewer.

ARTICLE V
Private Sanitary Sewage Disposal

§ 154-69. Private disposal prohibited.

Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of sewage.

§ 154-70. Exceptions.

Where a public sanitary sewer is not available under the provisions of this Part 2, the building sewer shall be connected to a private sewage disposal system complying with the provisions of this article.

§ 154-71. Permit required.

Before commencement of construction of a private sewage disposal system, the owner or his agent shall first obtain a written permit from the County Health Department and file a copy of the permit with the Township.

§ 154-72. Effective date of permit.

The permit for a private sewage disposal system shall not become effective for operation until the installation is completed and inspected by the County Health Department and a copy of the inspection report is filed with the Township.

§ 154-73. Permissible types, locations and discharges.

A. The type, capacities, location, and layout of a private sewage disposal system shall comply with all regulations and ordinances of the County Health Department.

B. If a cesspool is hereinafter constructed on or near a property line, the same shall be backfilled and the system moved to a proper location to comply with the County Health Department regulations.

C. No septic tank or cesspool shall be permitted to discharge into any public sewer or natural outlet.

§ 154-74. Safe and sanitary maintenance.

The owner of premises utilizing private sewage disposal facilities shall operate and maintain the same in a safe and sanitary manner at all times, at no expense to the Authority.

§ 154-75. Declaration of private facilities required.

Pursuant to § 154-17, an application for a permit to connect to a public sanitary sewer must state the type and location of all existing private sewage disposal facilities.

§ 154-76. Effect of availability of public sewerage.

At such time as a public sanitary sewer becomes available for use, as set out in this Part 2, a direct connection shall be made to the public sanitary sewer in compliance with this Part 2, and any cesspools, septic tanks and similar private sewage disposal facilities shall be pumped out of all sewage. Metal tanks shall be collapsed and filled with earth. Concrete tanks are recommended to be filled but it is not mandatory.

§ 154-77. Abandonment and filling of private systems.

A. All abandoned cesspools, septic tanks, privy vaults, seepage pits or similar sanitary waste receptacles shall be pumped out and dirt filled within 60 days after abandonment, under the direction of the Authority. Metal tanks shall be collapsed and filled with earth. Concrete tanks are recommended to be filled but it is not mandatory.

B. An Authority permit shall be required prior to the abandonment of existing facilities.

C. Where a plumber, contractor, employee, or any other agent or independent contractor of the owner of the property is delegated and assumes the responsibility for all service lateral and building sewer work to be performed, the permit shall require the pumping and filling of the abandoned private sewage disposal facility shall be performed by the aforementioned person or persons.

D. Where the particular property owner assumes the responsibility of pumping and filling the facilities to be abandoned, he shall be required to secure a permit from the Authority for this work.

§ 154-78. Public health rules to apply.

No statement contained in this article shall be construed to interfere with any additional requirements that may be imposed by any state or county department, agency or similar entity.

§ 154-79. Unlawful maintenance of private facility; public nuisance; remedy.

The maintenance of a private sewage disposal facility in violation of the provisions of this Part 2 is deemed to be a public nuisance, and all rights and remedies are available to the Authority for the abatement of such a nuisance. Additionally, the person violating the provisions of this article shall be liable for all costs incident to the said abatement.

ARTICLE VI
Permissible Discharges

§ 154-80. Waters not permitted.

A. No roof drainage, cellar, surface water, waste from hydrants or ground water from underground drainage fields shall be admitted or be permitted to drain into the sewer system. The sewer system is intended to convey sanitary sewage and permitted wastes only.

B. No person shall discharge or cause to discharge any stormwater, surface water, foundation drain water, groundwater, roof runoff, subsurface drainage drainage cooling water or unpolluted industrial or unpolluted commercial process water into any sewer. All connections which would result in the discharge of infiltration or inflow are hereby specifically prohibited.

§ 154-81. Industrial discharge.

Except as otherwise provided in this Part 2, all industrial users shall comply with the requirements of Article VII.

§ 154-82. Other prohibited wastes and waters.

Except as otherwise provided in these rules and regulations, no person shall discharge or cause to be discharged any of the following described wastes or waters into the sewer system:

A. Any liquid or vapor having a temperature higher than 150º F.

B. Any water or waste containing more than 100 ppm by weight of fats, oils, or greases.

C. Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either along or by interaction with other substances to cause fire or explosion or be injurious in any other way to the sanitary sewer system or the treatment plant or to the operation of same. At no time shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system) be more than 5%, nor any single reading over 10%, of the lower explosive limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides and any other substances which the Township, the Authority, the Commonwealth of Pennsylvania or EPA has notified the User is a fire hazard or a hazard to the system.

D. Any noxious or malodorous gas or substance which, either singly or by interaction with other wastes, shall be capable of creating a public nuisance or hazard to life or of preventing entry into any sewer or the sewage treatment plant for maintenance and repair.

E. Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, bones, feathers, tar, plastic, wood, paunch manure, butcher's offal, whole blood, bentonite, lye, building materials, rubber, hair, leather, porcelain, china, ceramic wastes, asphalt, paint, waxes or any other solid or viscous substance which shall be capable of causing obstruction to the flow in any sewer or other interference with the proper operation of the sewer system or the sewage treatment plant.

F. Any water or waste having a pH lower than 6.0 or higher than 9.0 or having any corrosive property capable of causing damage or hazard to structures or equipment of the sewer system or the sewage treatment plant or to personnel engaged in operation and maintenance thereof.

G. Any water or waste containing any toxic substance in quantity sufficient to constitute a hazard to humans or animals or to interfere with the biochemical processes of the sewage treatment plant or that will pass through the sewage treatment plant in such condition so that it will exceed state, federal or other existing valid requirements for the receiving stream.

H. Any water or waste containing suspended solids of such character and quantity that unusual attention or expense shall be required to handle such water or waste at the sewage treatment plant.

I. Any toxic radioactive isotopes, except by special permission of this Township.

J. Any drainage from building construction.

K. Any garbage that has not been ground to such a degree that all particles will be carried freely in suspension under flow conditions normally prevailing in the sanitary sewers, with no particles under any circumstance, greater than 1/2 inch in any dimension.

L. Containing color from any source that when diluted with distilled water 1:10 will have a luminescence of 10% or better and a purity of 90% or less, at its dominant wave length by the tristimulus method.

M. Having a chlorine demand in excess of 12 mg/l.

N. Prohibited by any permit issued by the Commonwealth of Pennsylvania, or by the U.S. Environmental Protection Agency or any other federal agency.

O. Containing wastes which are not amenable to biological treatment or reduction in existing treatment facilities, specifically nonbiodegradable complex carbon compounds.

P. Quantities of flow or concentrations, or both, which constitute a "slug" as defined in this Part 2.

Q. Any waters which are used for the purpose of diluting wastes which would otherwise exceed applicable maximum concentration limitations.

R. Ammonia nitrogen in such an amount that would cause the Authority to be in noncompliance with regulations of the Commonwealth of Pennsylvania.

S. Wastes containing more than 10 milligrams per liter of hydrogen sulfide, sulfur dioxide, nitrous oxide, or any of the halogens.

§ 154-83. Traps and interceptors required for certain users.

A. Gas stations and garages are required to provide oil interceptor approved by the Authority, in the proper location, where the dangerous liquids are to be intercepted.

B. Restaurants are required by the Authority to provide grease interceptors of the type Series J of the Josam Manufacturing Company or equivalent.

C. Grease, oil, and sand interceptors, and oil reclaimers shall be provided when, in the opinion of the Authority, they are necessary for the proper handling of liquid wastes, sand, and other harmful ingredients; hair traps shall be provided for all barbershops and beauty parlors; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Authority, and shall be located as to be readily and easily accessible for cleaning and inspection. User shall submit certified quarterly report for grease and/or oil interceptors cleanup operation and shall include the location where the material is being disposed of.

§ 154-84. Stormwater drainage.

Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the Authority.

§ 154-85. Authority's right to waive requirements.

Nothing contained in this article shall be construed as prohibiting any special agreement or arrangement between this Authority and any person whereby wastes of unusual strength or character may be admitted into the sewer system by this Authority, either before or after preliminary treatment.

ARTICLE VII
Discharging into Public Sanitary Sewage System
[Amended 12-12-1994; 8-20-2002 by Ord. No. 138-2002]

§ 154-86. Purpose and policy; word usage and definitions.

A. Purpose and policy.

(1) This article sets forth uniform requirements for connected and nonconnected users discharging into the public sanitary sewage system and treatment plant of the Valley Forge Sewer Authority and enables the Authority to comply with all applicable state and federal laws required by the Clean Water Act of 1977 and the General Pretreatment Regulations (40 CFR Part 403).

(2) The objectives of this article are to:

(a) Prevent the introduction of pollutants into the public sanitary sewage system and treatment plant which will interfere with the operation of the sewer system or contaminate the resulting biosolids or otherwise be incompatible to the sewer system;

(b) Prevent the introduction of pollutants into the treatment plant which will pass through the treatment system, inadequately treated, into receiving waters or the atmosphere;

(c) Improve the opportunity to recycle and reclaim wastes and biosolids from the sewer system;

(d) Provide for equitable distribution of the cost of the treatment plant operation and maintenance.

(3) This article provides for the regulation of contributors to the public sanitary sewage system through the execution of agreements, the issuance of permits to certain nondomestic users, the issuance of licenses to waste haulers and through enforcement of general requirements for other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customers' approved and authorized capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

B. Word usage and definitions. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this article, shall have the meanings hereinafter designated. Words in the present tense include the future. The singular number includes the plural number. The plural number includes the singular number. "Shall" is mandatory; "may" is permissive.

AUTHORITY — The Valley Forge Sewer Authority or its authorized representatives.

BASELINE MONITORING REPORT — The report required in 40 CFR Part 403.12, to be submitted by all industrial users or waste generators subject to national categorical pretreatment standards.

BEST MANAGEMENT PRACTICES (BMPs) — Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in 40 CFR Part 403.5(a)(1) and (b). BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.**[Added 2-11-2009 by Ord. No. 216-2009]**

BIOSOLIDS — The primarily solid organic material recovered from a sewage treatment process and recycled especially as a fertilizer.

BOD (biochemical oxygen demand) — The quantity of dissolved oxygen consumed in the biochemical oxidation of the organic matter in waste under standard laboratory procedure in five days at 20º C., expressed in milligrams per liter (mg/L). It shall be determined by one of the acceptable methods described in 40 CFR Part 136 and amendments thereto, or by any other methods approved by the Environmental Protection Agency (EPA).

CATEGORICAL INDUSTRIAL USER — Any industrial user subject to a national categorical pretreatment standard.

CATEGORICAL WASTE GENERATOR — Any waste generator subject to a national categorical pretreatment standard.

CLEAN WATER ACT (CWA) — Public Law 92-500, October 18, 1972, 33 U.S.C. § 1251 et seq.; as amended by PL 95-2 17, December 28, 1977; PL 97-177, December 29, 1981; PL 97-440, January 8, 1983, and PL 100-04, February 4, 1987, and any subsequent amendments or reauthorizations thereto.

COLOR — The color of the light transmitted by the waste solution after removing the suspended material, including the pseudocolloidal particles.

COMMERCIAL DISCHARGE PERMIT — A permit issued to those industrial users that the Authority does not classify as significant industrial users, but are considered to have an impact, either potential or realized, either singly or in combination with other contributing commercial or industrial establishments, on the public sanitary sewage system and/or the treatment plant (either its operational efficiency, effluent quality or quality of the biosolids produced by such facility).

COMMERCIAL USER or COMMERCIAL ESTABLISHMENT — A property which is intended to be used for the purpose of carrying on a trade, business or profession, or for social, religious, educational, charitable or public uses, or a person discharging waste generated by the trade, business, profession, social, religious, educational, charitable or public use of the property.

COMPOSITE SAMPLE — A sample consisting of a combination of individual samples that are either time- or flow-proportioned or both, obtained at regular intervals over a period of time and shall reasonably reflect the actual wastewater or waste discharge conditions for that period of time.

CONNECTED USER — A user located in the Authority service area that discharges into the public sanitary sewage system through a direct connection point that has been approved by the Authority.

COOLING WATER — The water discharged from any system of condensation, including but not limited to air conditioning, cooling or refrigeration.

DAILY COMPOSITE SAMPLE — A sample consisting of a combination of individual samples, regardless of flow, collected at regular intervals over a period of time; the sampling duration shall be not less than 20 hours, but shall not exceed 28 hours, or as specified in an industrial waste discharge permit or commercial discharge permit.

DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) — The Department of Environmental Protection of the Commonwealth of Pennsylvania, or any department or agency of the commonwealth succeeding to the existing jurisdiction or responsibility of the Department of Environmental Protection.

DISSOLVED SOLIDS — That concentration of matter in a waste consisting of colloidal particulate matter, and both organic and inorganic molecules and ions present in solution that pass through a standard filter according to the approved procedures outlined in 40 CFR Part 136 or amendments thereto, or outlined in any other procedure approved by the EPA.

DOMESTIC USER — Any connected user discharging only sanitary sewage. This discharge shall not exceed an average daily total suspended solids concentration of 250 milligrams per liter (mg/L) and an avenge daily BOD concentration of 250 milligrams per liter (mg/L).

ENVIRONMENTAL PROTECTION AGENCY (EPA) — The Environmental Protection Agency of the United States, or any agency or department of the United States succeeding to the existing jurisdiction or responsibility of the Environmental Protection Agency.

GARBAGE — Solid wastes from the domestic and commercial preparation, cooking and dispensing of food, and from the commercial handling, storage and sale of produce.

GRAB SAMPLE or INSTANTANEOUS GRAB SAMPLE — A sample taken from a wastewater or waste with no regard to flow in the wastewater or waste and collected over a period of time not exceeding 15 minutes but shall reasonably reflect actual discharge conditions for that period.

GROUND GARBAGE — Garbage that has been shredded to such a degree that all its particles will be carried freely under normal sewer flow conditions, with no particle greater than 1/2 inch in any dimension.

GROUNDWATER — Water which is standing in or passing through the ground.

HOLDING TANK — A watertight receptacle designed to receive and retain wastes and is constructed to facilitate the ultimate disposal of the wastes at another site.

HOLDING TANK WASTE — The wastes originating from normal household activities containing human and customary household wastes, or such wastes from commercial or industrial establishments, but excluding industrial wastes. The waste must be certified by a waste hauler licensed by the Authority as sanitary sewage, and must be stored in such a way as not to concentrate said waste to a level of total suspended solids exceeding 1,000 milligrams per liter (mg/L).

HOUSEHOLD WASTE — The water-carried waste originating from normal household functions such as waste from kitchens, toilets, lavatories and laundries, or such waste from industrial or commercial establishments, but excluding industrial waste.

INDIRECT DISCHARGE or DISCHARGE — The introduction of pollutants into the Authority's public sanitary sewage system from any nondomestic source regulated under Section 307(b), (c) or (d) of the Clean Water Act.**[Added 2-11-2009 by Ord. No. 216-2009]**

INDUSTRIAL USER — Any connected user which is not a domestic user.

INDUSTRIAL WASTE — Any liquid, solid or gaseous substance, whether or not solids are contained therein, discharged from any user during the course of any industrial, manufacturing, trade, or business process or in the course of development, recovery or processing of natural resources, or any wastes having any of the characteristics described under § 154-87A of this article (General discharge prohibitions), as distinct from sanitary sewage.

INDUSTRIAL WASTE DISCHARGE PERMIT — A permit issued to a significant industrial user in accordance with § 154-89 of this article.

INFILTRATION — The groundwater unintentionally entering the public sanitary sewage system, including building foundation drains and sewers, from the ground through such means as, but not limited to, defective pipes, pipe joints, connection or manhole walls. Infiltration does not include, and is distinguishable from, inflow.

INFILTRATION/INFLOW — The total quantity of water from both infiltration and inflow without distinguishing the source.

INFLOW — The water discharged into a public sanitary sewage system, including building drains and sewers, from such sources as, but not limited to: roof leaders, cellar, yard and area drains; foundation drains; unpolluted cooling water discharges; drains from springs and swampy areas; manhole covers; cross connection from storm sewer and/or combined sewers; catch basins; stormwater; surface runoff; street wash water; or drainage. Inflow does not include, and is distinguishable from, infiltration.

INTERCEPTOR — A device designed and installed so as to separate and retain for removal by automatic or manual means, deleterious, hazardous or objectionable waste, including but not limited to grease, oil or sand, while permitting sanitary sewage or industrial waste to discharge by gravity into a public sanitary sewage or on-site drainage system.

INTERFERENCE — A discharge which, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the POTW, it's treatment processes or operations and results in a violation of any requirement of the treatment plant's NPDES permit or prevents biosolids use or disposal in compliance with applicable federal or state statutes or regulations. The term includes those discharges that cause a prevention of biosolids use or disposal by the treatment plant in accordance with 405 of the Act (33 U.S.C. § 1345) or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, 40 CFR Part 503, or more stringent state criteria, including those contained in any state biosolids management plan prepared pursuant to Title IV of SWDA or any more stringent DEP criteria, guidelines or regulations pursuant to the Solid Waste Management Act (SWMA),[3] the Clean Streams Law (CSL),[4] or the Air Pollution Control Act (APCA)[5] applicable to the method of disposal or use employed by the treatment plant, and those discharges that cause a pass through or disrupt operations at the treatment plant or in the public sanitary sewage system.

MANHOLE — A shaft or chamber leading from the surface of the ground to a sewer, large enough to enable a man to gain access to the latter.

Mg/L or mg/L — Milligrams per liter.

NATIONAL CATEGORICAL PRETREATMENT STANDARD — Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with 40 CFR Chapter I, Subchapter N, Parts 405-471 and Section 307 (b) and (c) of the Act (33 U.S.C. § 1317) which applies to a specific category of industrial user or waste generator.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES permit) — A permit issued under the National Pollutant Discharge Elimination System (NPDES) for discharge of wastewater to the navigable waters of the United States pursuant to Section 402 of the Clean Water Act, as amended.

NEW SOURCE — Any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307 (c) of the Clean Water Act which will be

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3. **Editor's Note: See 35 P.S. § 6018.101 et seq.**
4. **Editor's Note: See 35 P.S. § 691.1 et seq.**
5. **Editor's Note: See 35 P.S. § 4001 et seq.**

applicable to such source if such standards are thereafter promulgated in accordance with that section, provided that the building, structure, facility or installation is constructed at a site at which no other source is located; or the building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or the production or wastewater generating processes of the building structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered. Determination of "new source" status shall be consistent with the provisions of 40 CFR Part 403.3 (k)(1), (2) and (3).

NONCONNECTED USER — Any user who contributes waste (including trucked industrial waste, domestic holding tank waste or septage) to the treatment plant by transporting or allowing the transport of such waste by vehicle and allows or causes the discharge of said trucked waste into the treatment plant at such a discharge point and under such conditions as may be approved by the Authority.

NORMAL DOMESTIC STRENGTH SEWAGE — Wastewater or sewage having an average daily total suspended solids concentration of not more than 250 milligrams per liter (mg/l) and an avenge daily BOD of not more than 250 milligrams per liter (mg/L) and excluding toxic and/or flammable wastes.

OBJECTIONABLE WASTE — Any wastes that can, in the Authority's judgment, harm either the sewer system or treatment plant process or equipment, have an adverse effect on the receiving stream; endanger life, health or property; or which constitutes a public nuisance.

OWNER — Any person vested with ownership, legal or equitable, sole or partial, of any property, or his authorized representative.

PASS THROUGH — A discharge which exits the treatment plant into waters of the United States in quantities or concentrations which, alone or in conjunction with other discharges, is a cause of a violation of the treatment plant's NPDES permit or of any applicable local, state or federal water quality criteria (including an increase in the magnitude or duration of a violation).

PERSON — Includes an individual, a partnership, an association, a corporation, a joint-stock company, a trust, an unincorporated association, a governmental body, a political subdivision, a municipality, a municipality authority or any other group or legally recognized entity. The masculine gender shall include the feminine, and the singular shall include the plural where indicated by the context.

pH — The logarithm of the reciprocal of the concentration of hydrogen ions in grams per liter of solution indicating the degree of acidity or alkalinity of a substance. pH shall be determined by one of the accepted

methods described in 40 CFR Part 136 and amendments thereto, or by any other method approved by the EPA.

POLLUTANTS — Any material that, when added to water, shall render that water (either because of the nature or quantity of the material) unacceptable for its original intended use, including, but not limited to dredged spoil; solid waste; incinerator residue; sewage; garbage; biosolids; chemical wastes; biological materials; radioactive materials; heat; sand; cellar dirt; and/or industrial, municipal, and agricultural wastes.

POLLUTION — The man-made or man-induced alteration of the chemical, physical, biological, and/or radiological integrity of water.

PRETREATMENT — The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in a waste to a less harmful state prior to or in lieu of discharging (either by a connected user or nonconnected user through a licensed waste hauler) or otherwise introducing such pollutants into the public sanitary sewage system. The reduction or alteration can be obtained by physical, chemical or biological processes, or by process changes by other means.

PRETREATMENT REQUIREMENT — Any substantive or procedural requirement related to pretreatment, other than a pretreatment standard, imposed on an industrial user or waste generator.

PRETREATMENT STANDARD — Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307 (b) and (c) of the Act (33 U.S.C. § 1317), which applies to industrial users and including prohibitive discharge limits established pursuant to 40 CFR 403.5.

PROCESS STREAM OF THE TREATMENT PLANT — The forward flow of waste through various treatment units of the treatment plant, including primary clarifiers, aeration tanks, secondary (final) clarifiers and chlorine contact tanks, and including holding tank waste or trucked industrial waste discharged directly into one of those treatment units.

PROCESS WASTE — Any water which, during manufacturing or processing, comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, by-product or waste product, excluding noncontact cooling water and boiler blowdown.

PUBLIC SANITARY SEWAGE SYSTEM (sometimes called the sewer system) — All sanitary sewers, all pumping stations, all force mains, all sewage treatment works, and all other sewage facilities owned or leased and operated by the Authority for the collection, transportation and treatment of sanitary sewage and industrial wastes and septage, together with their appurtenances, and any additions, extensions or improvements thereto. It shall also include sewers within the Authority's service area which serve one or more persons and discharge into the public sanitary sewage system, even though those sewers

may not have been constructed by the Authority and are not owned or maintained by the Authority. It does not include separate storm sewers or culverts which have been constructed for the sole purpose of carrying stormwater or surface runoff, the discharge from which is not and does not become tributary to the treatment plant.

REPORT ON COMPLIANCE WITH NATIONAL CATEGORICAL PRETREATMENT STANDARDS or NINETY-DAY COMPLIANCE REPORT — The report required by 40 CFR Part 403.12 (d), to be submitted by all industrial users or waste generators subject to national categorical pretreatment standards.

RESPONSIBLE INDIVIDUALS —

(1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation.

(2) The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(3) A general partner or proprietor if the industrial user submitting the reports required by paragraphs (b), (d) and (e) of 40 CFR Part 403.12 is a partnership or sole proprietorship respectively.

(4) A duly authorized representative of the individual designated in Subsection (1) or (2) if:

(a) The authorization is made in writing by the individual described in Subsection (1) or (2);

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the industrial discharge originates, such as the position of plant manager, operator of a well, or well field superintendent, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and

(c) The written authorization is submitted to the control authority.

(5) If an authorization under Subsection (3) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of Subsection (3) must be submitted to the control authority prior to or together with any reports to be signed by an authorized representative.

SANITARY SEWAGE — Wastes originating from domestic users containing human and customary household wastes, or such wastes from commercial or industrial establishments, but excluding industrial wastes.

SANITARY SEWER — Any pipe or conduit constituting a part of the sewer system, or usable for sewage collection purposes, which carries wastewater and to which stormwater, surface and groundwater are not admitted and which discharges to the treatment plant owned by the Valley Forge Sewer Authority.

SEPTAGE — Household waste from normal household functions, or such waste from commercial or industrial establishments, concentrated or treated in such a manner so as to concentrate the total suspended solids in such waste to a level at which it is treatable through the septage discharge station at the treatment plant.

SEPTAGE DISCHARGE STATION — One of the locations at the treatment plant designated by the Authority to receive septage, holding tank waste or trucked industrial waste which is not discharged directly into the process stream of the treatment plant.

SEWAGE (also referred to as wastewater) — Any sanitary sewage or industrial waste, carried either separately or in combination, that are discharged into the public sanitary sewage system by a connected user, or any trucked industrial waste or holding tank waste generated by a waste generator and transported to the treatment plant by a licensed waste hauler and discharged into the process stream of the treatment plant as a Tier I Waste.

SIGNIFICANT INDUSTRIAL USER —

(1) Except as provided in Subsection (2) of this definition, shall mean:

   (a) All industrial users subject to categorical pretreatment standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and

   (b) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process waste to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Authority on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8 (f) (6)].

(2) Upon a finding that an industrial user meeting the criteria in Subsection (1)(b) of this definition has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Authority may at any

time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8 (f) (6), determine that such industrial user is not a significant industrial user.

SIGNIFICANT NONCOMPLIANCE (SNC) — A violation by an industrial user meeting one or more of the following criteria [40 CFR 403.8 (f) (2)(vii)]:**[Amended 2-11-2009 by Ord. No. 216-2009]**

(1) Chronic violations of waste discharge limits, defined here as those in which 66% or more of all of the measurements taken during a six-month period exceed, by any magnitude, the daily maximum, average or instantaneous limit for the same pollutant parameter;

(2) Technical review criteria (TRC) violations, defined here as those in which 33% or more of all of the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the daily maximum, average or instantaneous limit multiplied by the applicable TRC (TRC = 1.4 for BOD, TSS, fats, oil, and grease, and 1.2 for all other pollutants except pH).

(3) Any other violation of a pretreatment effluent limit (daily maximum, instantaneous limit or longer-term average) that the control authority determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public);

(4) Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of its emergency authority [40 CFR 403.8 (f) (1) (vi) (B)] to halt or prevent such a discharge;

(5) Failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction or attaining final compliance;

(6) Failure to provide, within 45 days after the due date, required reports such as baseline monitoring reports, ninety-day compliance reports, periodic self monitoring reports, and reports on compliance with compliance schedules;

(7) Failure to accurately report noncompliance;

(8) Any other violation or group of violations, including a violation of best management practices, which the control authority determines will adversely affect the operation or implementation of the local pretreatment program.

SIGNIFICANT WASTE GENERATOR —

(1) Any categorical waste generator;

(2) Any other waste generator which:

(a) Discharges a flow of 10,000 gallons or more process waste per day to the treatment plant;

(b) Contributes a process waste which makes up 5% or more of the average dry weather hydraulic flow or 5% or more of the organic (BOD) capacity of the treatment plant; or

(c) Is designated by the Authority, EPA or DEP to have a reasonable potential, either singly or in combination with other users, for adversely affecting the operation of the public sanitary sewer system and/or the treatment plant (either its operational efficiency, effluent quality or quality of the biosolids produced by said facility), or for violating any pretreatment standard or requirement.

SLUDGE — Any solid material containing large amounts of entrained water collected during water or wastewater treatment which may be recycled.

SLUG — Any discharge of a nonroutine, episodic nature, or at a flow rate or concentration which would cause a violation of the prohibited discharge standards in § 154-87 of the article.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) — A classification pursuant to the latest Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget.

STORMWATER — That portion of the precipitation that runs off over the surface during a storm and for a short period following a storm and enters the sewer system, and causes the flow at the treatment plant to exceed the normal or ordinary flow.

TIER I WASTE — A waste generated by any user that is required, by the Authority, to be discharged directly into the process stream of the treatment plant. The Authority's determination is based on waste characteristics including, but not limited to total suspended solids and BOD concentration. This category of waste may include, but is not limited to most holding tank wastes, industrial wastes and sanitary landfill leachates.

TIER II WASTE — A waste generated by any user that is transported to the treatment plant by a licensed waste hauler and is required, by the Authority, to be discharged into the septage discharge station at the treatment plant. The Authority's determination is based on waste characteristics including, but not limited to total suspended solids and BOD concentration. This category of waste may include, but is not limited to most septages, biosolids and sludges.

TOTAL SOLIDS — The sum of the total suspended solids in milligrams per liter (mg/l) and dissolved solids in milligrams per liter (mg/L), as determined by one of the acceptable methods described in 40 CFR Part

136 and amendments thereto, or by any other method approved by the EPA.

TOTAL SUSPENDED SOLIDS — Solids that either float to the surface or are in suspension in water, sewage, industrial waste or other liquids, and which are removable by laboratory filtration. The quantity of total suspended solids shall be determined by one of the acceptable methods described in 40 CFR Part 136 and amendments thereto, or by any other method approved by the EPA.

TOXIC POLLUTANT — Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the administrator of the EPA under the provision of CWA 307 (a) or other acts.

TREATMENT PLANT — The structures, equipment and processes owned by the Valley Forge Sewer Authority and required to collect, transport and treat domestic and industrial waste and to treat trucked industrial waste, holding tank waste and septage and to dispose of the effluent and accumulated residual solids.

TRUCKED INDUSTRIAL WASTE — Any liquid, solid or gaseous substance, whether or not solids are contained therein, produced by any user during the course of any industrial, manufacturing, trade, or business process or in the course of development, recovery or processing of natural resources, as distinct from sanitary sewage, that is permitted in accordance with § 154-89B of this article and. that is transported by vehicle and discharged to the treatment plant by a waste hauler licensed in accordance with § 154-89 of this article. Leachates from sanitary landfills shall be considered trucked industrial waste.

USER — Any person who contributes, causes or permits the contribution of wastewater or waste into the Authority's treatment plant.

WASTE — Any sewage (or wastewater), trucked industrial waste, holding tank waste or septage.

WASTE GENERATOR — Any nonconnected user of the treatment plant.

WASTE HAULER — A person licensed by the Authority under § 154-89B of this article to transport and discharge trucked industrial waste (generated by a permitted waste generator), or holding tank waste or septage at the treatment plant.

WASTE HAULER LICENSE — The license issued by the Authority pursuant to § 154-89B of this article which allows the discharge of domestic holding tank waste, septage or trucked industrial waste transported to the treatment plant in an over-the-road vehicle.

WASTE PERMIT — The permit issued by the Authority to a significant waste generator for a particular trucked industrial waste pursuant to § 154-89B of this article.

§ 154-87. Regulations.

A. General discharge prohibitions.

(1) No user shall contribute or cause to be contributed, directly or indirectly, any pollutant, or waste which will cause pass through or interference with the operation or performance of the treatment plant. These general prohibitions apply to all such users of the treatment plant whether or not the user is subject to national categorical pretreatment standards or any other national, state or local pretreatment standards or requirements.

(2) The following limitations and prohibitions shall apply to all users of the treatment plant:

(a) Unpolluted water or waste prohibition. No person shall discharge to the public sanitary sewage system unpolluted water or waste capable of being disposed of by any means other than discharge into the public sanitary sewage system, including but not limited to noncontact cooling water, except under such conditions as may be authorized in a permit issued by the Authority pursuant to this article.

(b) Stormwater prohibition. No person shall discharge to the public sanitary sewage system any amount of unpolluted stormwater, including but not limited to surface water, foundation drainwater, groundwater, roof runoff or surface drainage. All connections which would result in the discharge of inflow are hereby specifically prohibited.

(c) Dilution of wastes prohibited. No user shall ever increase the use of process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate pretreatment to achieve compliance with the limitations contained in the national categorical pretreatment standards, or in any other pollutant-specific limitation developed by the Authority or DEP.

(d) Grease and oil prohibitions. No person shall discharge to the public sanitary sewage system any grease, oils or grease-interceptor wastes capable of being disposed of by any means other than discharge into the public sanitary sewage system, except under such conditions as may be authorized in a permit issued by the Authority pursuant to this article. In addition, discharge of petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts causing interference or pass through at the treatment plant is prohibited.

(e) Other general prohibitions. Except as otherwise provided, no person shall discharge or cause to be discharged, any waste or other matter or substance:

[1] That could cause pass through or interference, alone or in conjunction with a waste or wastes from other sources.

[2] Containing any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the treatment plant or to the operation of the treatment plant.

[3] Containing any noxious or malodorous or toxic gases/vapors/fumes or substance, which alone or by interaction with other wastes, is capable of creating a public nuisance or hazard to life or preventing entry into sewers for their maintenance and repair. The discharge of wastes that result in gases, vapors or fumes in quantities that could cause worker health or safety problems at the treatment plant is specifically prohibited.

[4] Containing garbage that is not ground garbage.

[5] Containing any solid or viscous substances in quantities or of size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the treatment plant. Such substances include, but are not limited to ashes, cinders, sand, mud, straw, shavings, metal, glass, bones, rags, feathers, tar, plastic, wood, paunch manure, butchers offal, whole blood, bentonite, lye, building materials, rubber, hair, leather, porcelain, china, ceramic wastes, asphalt, paint and waxes.

[6] Containing a toxic pollutant or poisonous substance in sufficient quantity, either singly or by interaction with any sewage treatment process, to constitute a hazard to humans or animals or to create any hazard in the receiving stream of the treatment plant, or that exceeds any applicable limitation set forth in a national categorical pretreatment standard.

[7] Containing total solids, total suspended solids or BOD of such character or quantity that unusual attention or expense is required to handle such materials at the treatment plant, except as may be approved by the Authority, or as may be otherwise provided herein.

[8] Containing any radioactive wastes or isotopes except in compliance with applicable state or federal regulations.

[9] Prohibited by any permit issued by the Commonwealth of Pennsylvania, or by the EPA or any other federal agency.

[10] That constitute a slug, as defined in this article.

B. Specific discharge prohibitions. The discharge of the following wastes into the treatment plant is hereby specifically prohibited:

(1) Wastes containing more than 100 milligrams per liter (mg/L) of grease and oil, if the grease and oil is of unknown or petroleum origin in a Tier I or Tier II waste; or containing more than 200 milligrams per liter (mg/L) of grease and oil in a Tier I waste, or more than 10,000 milligrams per liter (mg/L) of grease and oil in a Tier II waste, if the grease and oil is determined to be of an animal or vegetable origin. The differentiation between grease and oil of animal/vegetable origin and those of petroleum origin shall be made by the Authority.

(2) Wastes having a temperature higher than 150º F. or less than 32º F., but in no case heat in such quantities that the temperature of the influent to the treatment plant exceeds 104º F. or inhibits the biological activity of the treatment plant.

(3) Wastes having a closed cup flash point of less than 140º F. as determined by a method listed under 40 CFR 261.21 and amendments thereto are specifically prohibited. At no time shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system) be more than 5%, nor any single reading over 10%, of the lower explosive limit (LEL) of the meter.

(4) Wastes having a pH lower than 6.0 or greater than 9.5 in a Tier I waste, or a pH lower than 5.0 or greater than 9.5 in a Tier II waste, or having any corrosive or scale-forming property capable of causing damage or hazards to structures, equipment, bacterial action, or health or safety hazards to operating personnel or the sewer system or the treatment plant.

(5) Wastes that exceed any of the following concentrations in a discharge to the process stream of the treatment plant from a connected user as sewage or Tier I waste or from a nonconnected discharge (through a licensed waste hauler) as a Tier I waste, as a daily composite sample or grab sample: **[Amended 12-8-2010 by Ord. No. 228-2010]**

	Tier I Limits	
Parameter	**Limitation**	**Units**
Arsenic (total)	0.04	mg/L
Cadmium (total)	0.09	mg/L
Chromium (total)	6.00	mg/L
Chromium (hexavalent)	0.12	mg/L
Copper (total)	1.00	mg/L
Cyanide (total)	0.26	mg/L
Lead (total)	0.10	mg/L
Mercury (total)	0.005	mg/L

Tier I Limits

Parameter	Limitation	Units
Molybdenum (total)	0.50	mg/L
Nickel (total)	0.90	mg/L
Selenium (total)	0.50	mg/L
Silver (total)	0.08	mg/L
Zinc (total)	1.00	mg/L

(6) Wastes that exceed any of the following concentrations in a discharge to the septage discharge station of the treatment plant from a nonconnected discharge (through a licensed waste hauler) as a Tier II Waste in a grab sample or daily composite sample: **[Amended 12-8-2010 by Ord. No. 228-2010]**

Tier II Limits

Parameter	Limitation	Units
Arsenic (total)	6.00	mg/L
Cadmium (total)	0.50	mg/L
Chromium (total)	21.00	mg/L
Chromium (hexavalent)	0.50	mg/L
Copper (total)	50.00	mg/L
Cyanide (total)	0.26	mg/L
Lead (total)	39.00	mg/L
Mercury (total)	0.04	mg/L
Molybdenum (total)	5.00	mg/L
Nickel (total)	5.00	mg/L
Selenium (total)	4.00	mg/L
Silver (total)	5.00	mg/L
Zinc (total)	95.00	mg/L

ND = Not detectable

(7) Individual control limits. If the Authority determines that a waste from any significant industrial user or significant waste generator poses a unique potential for pass through or interference due to the quality or quantity of the discharge, the Authority shall place special requirements or limits, in excess of those contained in this article, in any industrial waste discharge permit or waste permit to prevent such pass through or interference. Such individual control limits may include, but are not limited to solvent/toxic organic management plans (STOMPs), toxic reduction evaluation plans (TREs), hazardous waste disposal plans, slug discharge control plans or specific numerical limitations on substances.

(8) Any pollutant, including oxygen demanding pollutants (BOD etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with or pass through at the treatment plant.

(9) Wastes containing color from any source that when diluted with distilled water 1:10 will have a luminescence of 10% or greater and a purity of 90% or less, at its dominant wavelength by the tristimulus method, or containing any objectionable color not removed by the treatment process utilized by the Authority.

(10) Wastes containing more than 10 milligrams per liter (mg/L) of hydrogen sulfide, sulfur dioxide or nitrous oxide as determined by a method referenced in 40 CFR Part 136 and amendments thereto or any method approved by the EPA.

(11) Trucked industrial waste, holding tank waste or septage, except at discharge points designated by the Authority in accordance with § 154-89B of this article.

C. Federal and state requirements.

(1) Primary of state and federal requirements. Nothing in this section shall be construed to provide lesser discharge standards than are presently or may hereafter be imposed and required by the EPA or DEP.

(2) National categorical pretreatment standards. The National Categorical Pretreatment Standards, as defined in § 154-86B (relating to definitions) and promulgated by the EPA as of May 9, 1994, and the National Prohibitive Discharge Standards, as defined in § 154-86B and promulgated by the EPA as of May 9, 1994, are specifically incorporated herein by reference. A National Categorical Pretreatment Standard or a National Prohibitive Discharge Standard and Pretreatment Standard, as defined in § 154-86B, and promulgated by the EPA subsequent to May 9, 1994, is specifically incorporated by reference upon publication in the Federal Register as final rulemaking. Any EPA standard as defined above which is more stringent than that imposed under this article shall immediately supersede the less stringent requirement upon incorporation by reference as provided herein.

(3) Pennsylvania state standards. Upon the promulgation of any Pennsylvania state (DEP) standards or requirements, the DEP standards or requirements shall immediately supersede the limitations imposed under this article if the DEP standards are more stringent than federal limitations or requirements or the limitations and requirements imposed under this article.

D. Accidental and slug discharges.

(1) Accidental discharge and slug discharge prevention. All users shall provide and maintain at their own expense facilities adequate, in the judgment of the Authority, to prevent accidental discharge of prohibited and/or regulated substances and/or slug discharges and to protect the public sanitary sewage system from damages caused by such substances. No industrial user or significant waste generator which commences discharge to the treatment plant after the effective date of this article shall be permitted to introduce pollutants into the treatment plant until the Authority has reviewed and approved that user's accidental discharge prevention or slug prevention procedures (if those procedures are required by the Authority). Users designated as SIUs after October 14, 2005, must be evaluated for the need for a slug control discharge plan within one year of designation. If the Authority decides a slug control plan is needed, the plan shall contain, at a minimum, the following elements: **[Amended 2-11-2009 by Ord. No. 216-2009]**

(a) Description of discharge practices, including nonroutine batch discharges;

(b) Description of stored chemicals;

(c) Procedures for immediately notifying the POTW of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5 (b), with procedures for follow-up written notification within five days; and

(d) If necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment measures for containing toxic organic pollutants (including solvents), and/or measures and equipment necessary for emergency response.

(2) Accidental and/or slug discharge notification. In the ease of an accidental and/or slug discharge to the treatment plant the user shall immediately telephone and notify the Authority of the accident. The notification shall include information regarding the location of the discharge, the type of pollutants involved, the concentration and volume of the discharge and corrective actions taken and/or contemplated.

(3) Accidental and/or slug discharge report. Within five working days following an accidental and/or slug discharge, the user shall submit to the Authority a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liability which may be incurred as a result of damage to the treatment plant, fish kills, or

any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

(4) Employee notice concerning accidental and/or slug discharge. A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

E. Grease and sand interceptors.

(1) Interceptors required. Grease, oil and sand interceptors or retainers shall be installed by the user at his own expense when, in the opinion of the Authority, such are necessary for the proper handling of liquid wastes containing grease, oil or sand in excessive amounts, and of such other harmful ingredients. Such interceptors shall be of a type and capacity approved by the Authority and shall be located as to be readily and easily accessible for cleaning by the user and for inspection by the Authority.

(2) Interceptor maintenance. Where installed, all grease, oil and sand interceptors shall be maintained by the user, at his own expense, and shall be kept in continuous and efficient operation at all times.

F. Hazardous wastes; general notification requirements. All users shall notify in writing the EPA, DEP and the Authority of any discharge of a substance whereby if otherwise disposed of would be hazardous waste (listed or characteristic under Section 3001 of RCRA) into the public sanitary sewage system per the requirements of 40 CFR 403.12 (p) (1) through (4).

§ 154-88. Surcharges and fees for certain wastes.

Surcharges and fees for certain wastes.

A. Surcharges required. Although the sewage treatment works will be capable of treating certain industrial wastes, the actual treatment of such wastes may increase the cost of operating and maintaining the public sanitary sewage system. Therefore, there will be imposed upon each user discharging such waste into the public sanitary sewage system a surcharge or surcharges which are intended to cover such additional costs. Such surcharges shall be in addition to regular sewage service charges and shall be payable as herein provided.

B. Determination of surcharges.

(1) The strength of any industrial or commercial waste discharge which is to be subject to a surcharge as determined by Subsection C of this § 154-88 shall be determined quarterly, or more frequently, as the Authority shall determine. The surcharge shall be

determined from samples taken either at the manhole or metering chamber referred to in this article, or at any other sampling point mutually agreed upon by the Authority and the producer of such waste. The frequency and duration of the sampling period shall be such as, in the opinion of the Authority, will permit a reasonably reliable determination of the average composition of such waste, exclusive of stormwater runoff.

(2) Samples shall be collected or their collection supervised by a representative of the Authority and will be samples that reasonably reflect the characteristics of the waste. Except as hereinafter provided, the strength of waste so found by analysis shall be used for establishing the surcharge or surcharges. However, the Authority may, if it so elects, accept the results of routine sampling and analyses by the producer of such wastes in lieu of making its own sampling and analyses.

C. Calculation of surcharges. In the event that, after sampling and analysis as prescribed in Subsection B hereof, any industrial or commercial waste is found by the Authority to have pollutants of BOD concentration in excess of 250 milligrams per liter (mg/L) and/or total suspended solids concentration in excess of 250 milligrams per liter (mg/L), the producer of said waste shall pay a strength-of-waste surcharge in addition to the regular sewage service charge, which surcharge shall be computed by using the following formula:

S = 0.00834 QI [(BODI - 250) TA + (TSSI - 250) TB]

Where:

S is the surcharge to be added to the basic user charge.

QI is the industrial or commercial waste flow expressed in million gallons.

0.00834 is a constant to convert waste concentration.

BODI and TSSI are the respective concentrations of BOD and total suspended solids of the industrial or commercial waste expressed in milligrams per liter (mg/L).

250 is a constant which expresses the waste load concentrations of BOD and total suspended solids for normal domestic strength sewage in milligrams per liter (mg/L).

TA and TB are actual treatment costs incurred by the Authority per 1,000 pounds of BOD and total suspended solids, respectively. These costs are determined annually by the Authority base:d upon actual costs of operation and maintenance.

When a value of BOD and/or total suspended solids is less than 250 milligrams per liter (mg/L), than 250 milligrams per liter (mg/L) shall be used in the calculation of the surcharge.

D. Sampling fees and schedules. All industrial or commercial users and all significant waste generators shall be assessed a fee or service charge

for each sampling to be performed by the Authority. The fees to the user for each sampling shall include charges, as determined by the Authority, for sample collection, analysis and administrative services, and shall be in addition to any costs of sample collection and analysis which the user performs or has performed independently or privately.

§ 154-89. Administration.

A. General; permits required for certain wastes. Only sanitary sewage may be discharged into the public sanitary sewage system except as may be authorized by the Authority in accordance with the provisions of this article concerning industrial waste discharge permits, waste hauler licenses, waste generator permits and commercial discharge permits.

B. Permits and licenses.

(1) Permits and licenses required. No sanitary sewage, industrial waste, trucked industrial waste, holding tank waste or septage shall be discharged to the treatment plant from any significant industrial user, significant waste generator or waste hauler other than that for which the following permits or licenses have been issued:

(a) Significant industrial users require industrial waste discharge permits;

(b) Significant waste generators require waste permits; or,

(c) Waste haulers require waste hauler licenses.

(2) Commercial discharge permits. When determined by the Authority, a commercial establishment may be required to obtain a commercial discharge permit.

(3) Permit and license applications.

(a) All industrial users, waste generators and waste haulers proposing to contribute to the public sanitary sewage system shall make application for a permit or license according to Subsection B(1) and (2) of this section. All existing significant industrial users, significant waste generators and waste haulers contributing to the treatment plant at the time of the adoption of this article shall apply for a permit or license within 30 days after the adoption of this article, and shall obtain a permit or license within 90 days after the effective date of this article. Any user required to apply for a permit or license shall complete and file an application form approved by the Authority, accompanied by a nonreturnable processing fee to be set by the Authority. Proposed new industrial users shall apply at least 90 days prior to connecting to or contributing to the treatment plant. In support of the application for an industrial waste discharge permit, commercial discharge

permit, waste permit or waste hauler license the user may be required to submit, in units and terms appropriate for evaluation, any of the following information, including, but not limited to:

[1] Name, address, location, phone number;

[2] Standard industrial classification (SIC) number according to the Standard Industrial Classification Manual, Bureau of the Budget, 1987;

[3] Names of responsible individuals;

[4] Waste constituents and characteristics, before and after pretreatment, as determined by a reliable analytical laboratory;

[5] Time and duration of contribution;

[6] Average daily waste flow rates and/or estimated or required daily discharge volumes and frequency, including daily, monthly and seasonal variations, if any;

[7] Site plans, plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;

[8] Description of activities, and plant processes on the premises including all materials which are or could be discharged;

[9] Description of waste to be discharged;

[10] Where known, the nature and concentration of any pollutants in the discharge which are limited by the Authority, state or federal pretreatment standards, and a statement reviewed by an authorized representative of the user (as defined in § 154-86B of this article) and certified to by a qualified professional, indicating whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional pretreatment is required for the user to meet applicable pretreatment standards;

[11] If additional pretreatment and/or operation and maintenance (O&M) will be required to meet pretreatment standards, the shortest schedule by which the user will provide such additional pretreatment. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard;

[12] Make, model, year, capacity and vehicle registration number of all vehicles to be used for transportation and discharge at the treatment plant;

[13] Number and type of employees, and hours of operation of plant and proposed or actual hours of operation of pretreatment system; and,

[14] Any other information as may be deemed by the Authority to be necessary to evaluate the permit application.

(b) The Authority shall also have, at its discretion, the right to inspect the premises, equipment and material, and laboratory testing facilities of the applicant. The completed application shall be signed by the user's responsible individuals. The Authority will evaluate the data furnished by the user for completeness and may require additional information. After evaluation and acceptance of the data furnished as a complete application, the Authority may for cause shown either refuse to issue or may issue a permit or license subject to terms and conditions provided herein.

(c) If the application for a permit or license is denied by the Authority, or if the discharge indicated from the application is not in accordance with the requirements of this article, the user may have the Authority review the denial, provided the user shall give written notice of his request within 30 days after receiving the denial. The Authority shall review the permit application, the written denial, and such other evidence and matters as the applicant shall present at a public hearing following receipt of request for its review, and the decision of the Authority rendered publicly shall be final.

(4) Terms and conditions of permits and licenses. Permits and licenses may include any of the following terms and conditions, including, but not limited to: **[Amended 2-11-2009 by Ord. No. 216-2009]**

(a) Maximum discharge flow rate;

(b) Term of permit;

(c) Definitions;

(d) General limitations;

(e) Specific limitations;

(f) Special conditions;

(g) Self-monitoring requirements (including sampling, reporting, notification and recordkeeping);

(h) Reopener clause;

(i) Compliance schedules (if required);

(j) Statements of applicable civil and criminal penalties;

(k) Statement of nontransferability; or

(l) Best management practices.

(5) Industrial waste discharge permit and commercial discharge permit. Industrial waste discharge permits and commercial discharge permits shall be issued for a specified time period, not to exceed five years. The user shall apply for permit reissuance a minimum of 90 days prior to the expiration of the user's existing permit accompanied by a nonreturnable processing fee to be set from time to time by ordinance of the Authority. The terms and conditions of the permit may be subject to modification by the Authority during the term of the permit to accommodate changing conditions and as local, state and federal laws, rules and regulations are modified or amended, or other just cause exists. The user shall be informed of any proposed changes in his permit at least 60 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance, including a comment period which shall be the first 30 days of the sixty-day period prior to the effective date of change.

(6) Waste permit and waste hauler license duration. Waste permits and waste hauler licenses shall be issued for a specified time period, not to exceed one year. Each significant waste generator or waste hauler shall apply for a waste permit or waste hauler license reissuance a minimum of 30 days prior to the expiration of the existing permit or license accompanied by a nonreturnable processing fee to be set from time to time by ordinance of the Authority. The terms and conditions of the waste permit or waste hauler license shall be subject to modification by the Authority during the term of the permit or license to accommodate changing conditions and as local, state and federal laws, rules and regulations are modified or amended, or other just cause exists.

(7) Permit and license transfer. Permits and licenses are issued to a specific operation. No permit or license shall be assigned or transferred or sold to a new owner, new user, different premises, or a new or changed operation without the prior approval of the Authority upon written application therefor accompanied by a nonreturnable processing fee to be set from time to time by ordinance of the Authority. Any succeeding owner or user shall also comply with the terms and conditions of the existing permit or license.

(8) Revocation of permits and licenses.

(a) All permits and licenses are subject to revocation according to the provisions outlined in § 154-89C of this article.

(b) In the event that any discharge of material to a sewer shall materially and substantially differ in type or volume from that shown in the application or permit, the person and user shall immediately cease and desist from such discharge.

(c) The Authority may suspend any permit, license, and/or waste treatment service when such suspension is necessary, in the judgment of the Authority, in order to stop a discharge which presents a hazard to the public health, safety, or welfare, to the environment or operations at the Authority's treatment plant or upon a finding that the discharger has violated any provisions of this article. Any discharger notified of such a suspension shall immediately stop the discharge of all wastes into the system. The Authority may reinstate the permit or license upon proof of satisfactory compliance with all discharge requirements of this article and all other requirements of the Authority.

(d) In the event of a failure of a person to comply voluntarily with the suspension order, the Authority may take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the system or endangerment to any individuals. The Authority may reinstate the permit, license and/or the waste treatment service upon proof of the elimination of the noncomplying discharge. A detailed written statement submitted by the user describing the causes of the harmful contribution and the measures taken to prevent any future occurrence shall be submitted to the Authority within 15 days of the date of the occurrence.

C. Permit/license revocation causes for revocation. An industrial waste discharge permit or a hauler license or a waste permit or a commercial discharge permit may be revoked by the Authority for, including, but not limited to, the following causes.

(1) Failure of a permittee or licensee to accurately report his wastewater characteristics;

(2) Failure of a permittee to report significant changes in operations which affect wastewater characteristics;

(3) Refusal of access to the permittee's premises or licensee's vehicle for the purpose of inspection or monitoring;

(4) Any violation of any condition of any permit or license or this article;

(5) Falsification of self-monitoring reports;

(6) Application falsification;

(7) Tampering with monitoring equipment; or,

(8) Failure to meet compliance schedule.

D. Compliance schedules.

(1) Compliance schedules required. If additional pretreatment and/or operation and maintenance procedures are required for a permittee to meet all applicable regulations contained herein, the shortest schedule by which the permittee can provide such additional pretreatment and/or operation and maintenance procedures may be issued by the Authority or submitted by the permittee to the Authority for review and approval. The completion date for this schedule shall not be later than the compliance date established for applicable pretreatment standards. The Authority shall have the right to deny or to require the modification of proposed compliance schedules.

(2) Compliance schedule increments of progress. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the permittee to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

(3) Time limits for increments of progress. No increment of progress shall exceed nine months.

(4) Compliance schedule compliance reports. Not later than 14 days following each date in the schedule and the final date for compliance, the user shall submit a progress report to the Authority including, as a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which the user expects to comply with this increment of progress, the reason for delay, and the steps being taken by the permittee to return to the schedule established. In no event shall more than nine months elapse between such progress reports to the Authority. Failure to meet required milestone dates shall constitute a violation of this article.

E. Record maintenance.

(1) Record retention requirements. All users shall maintain and retain all records, including, but not limited to, documentation associated with best management practices, relating to wastewater discharged for a period of not less than three years and shall afford the Authority access thereto at all reasonable times. This period of retention shall be extended during the course of any unresolved

litigation. Such records shall include for all samples: **[Amended 2-11-2009 by Ord. No. 216-2009]**

(a) The date, exact place, method, and time of sampling and the names of the person or persons taking the samples;

(b) The date(s) and time(s) the analyses were performed;

(c) Who performed the analyses;

(d) The analytical techniques/methods used; and

(e) The results of such analyses.

(2) Availability of records. All records maintained by users relating to compliance with pretreatment standards shall be made available to officials of the EPA, DEP and the Authority for inspection and copying upon request.

F. Industrial agreements. Industrial agreements required. As a condition precedent to the issuance of an industrial waste discharge permit, the Authority shall require industrial users to enter into agreements with the Authority containing such provisions as the Authority deems appropriate in furtherance of its effort to comply with regulations promulgated by the EPA in 40 CFR Part 403. Industrial users shall comply with federal, state and local statutes, ordinance rules and regulations, and with the provisions of such agreements; and in the event of conflict between provisions, shall comply with whichever provision on a particular matter is most stringent or more strict.

G. Pretreatment and handling of industrial wastes.

(1) General. Users shall provide necessary pretreatment as required to comply with this article and shall achieve compliance with all national categorical pretreatment standards within time limitations as specified in 40 CFR Part 403 and amendments thereto. Any facilities required to pretreat wastewater to a level acceptable to the Authority shall be provided, operated and maintained at the user's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the Authority for review, and shall be acceptable to the Authority before construction of the facility. The review of such plans and operating procedures and approval of such plans as required by § 154-89G(3) of this article shall in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the Authority under the provisions of this article. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and be acceptable to the Authority prior to the user's initiation of the changes.

(2) Purposes and pretreatment. The Authority may require the owner of an improved property to construct, operate and maintain at his

expense a pretreatment facility when, in the opinion of the Authority, such facility is necessary to reduce quantities and/or concentrations of pollutants or flows to:

(a) Decrease the concentration levels of pollutants in the wastewater discharge to comply with the maximum limits specified in § 154-87 of this article;

(b) Prevent excessive quantities of flow; or

(c) Prevent discharges (flow or concentration) of pollutants from the user which may cause interference or pass through at the Authority's treatment plant.

(3) Review and approval of pretreatment facilities. If required by the Authority, no pretreatment plant and facilities shall be constructed or operated unless all plans, specifications, technical operating data, and other information pertinent to its proposed operation and maintenance are reviewed by the Authority and found by the Authority to conform to all Authority regulations; and unless written approval of the plans, specifications, technical operating data and biosolids disposal methods has been obtained by the Authority from the EPA, the Commonwealth of Pennsylvania, and any other local, state or federal agency having regulatory authority with respect thereto, providing such approval is required by those agencies.

(4) Pretreatment facility maintenance requirement. All such pretreatment facilities as required by this article shall be maintained continuously in satisfactory and effective operating conditions by the user or person operating and maintaining the facility served thereby, and at the user's expense. The Authority shall have access to such facilities at all reasonable times for purposes of inspection and testing.

(5) Rejection of waste if not adequately pretreated. The Authority reserves the right to reject admission to the system of any waste harmful to the public sanitary sewage system or to the receiving stream, to compel discontinuance of use of the public sanitary sewage system or to compel pretreatment of industrial wastes in order to prevent discharges deemed harmful to or having a deleterious effect upon any portion of the public sanitary sewage system or receiving stream.

H. Sampling procedures and reporting criteria for industrial users, waste haulers waste generators.

(1) Self-monitoring reports. **[Amended 2-11-2009 by Ord. No. 216-2009**

(a) All significant industrial users shall submit at least twice annually to the Authority a self-monitoring report on a form

approved by the Authority indicating the nature and concentration of pollutants in the waste discharged to the Authority treatment plant which are of particular concern to the Authority and which are limited by this article. The waste characteristics to be measured and reported shall be determined by the Authority and specified in the industrial waste discharge permit or waste permit. All wastewater samples must be representative of the user's discharge. In cases where the article requires compliance with a best management practice or pollution prevention alternative, the user shall submit documentation as required by the Authority to determine compliance of the user. If an industrial user monitors any pollutant more frequently than required by the Authority, using the procedures prescribed in 40 CFR Part 403.12 (g) (4), the results of this monitoring shall be included in the report. In addition, this report shall include flow information for the reporting period, and shall be signed by the user's responsible individuals. This report shall be received by the Authority no later than the 30th day of the month following the quarter for which the report is required.

(b) All categorical industrial users and categorical waste generators shall submit at least twice annually to the Authority a self-monitoring report on a form approved by the Authority indicating the nature and concentration of pollutants in the waste discharged to the Authority treatment plant which are of particular concern to the Authority and which are limited by this article. The waste characteristics to be measured and reported shall be determined by the Authority and specified in the industrial waste discharge permit or waste permit. All wastewater samples must be representative of the user’s discharge, and, for all parameters required to be analyzed utilizing a grab sample, a minimum of one grab sample must be collected and analyzed for each parameter. In cases where the article requires compliance with a best management practice or pollution prevention alternative, the user shall submit documentation as required by the Authority to determine compliance of the user. If a categorical industrial user or categorical waste generator monitors any pollutant more frequently than required by the Authority, using the procedures prescribed in 40 CFR Part 403.12 (g) (4), the results of this monitoring shall be included in the report. In addition, this report shall include flow information for the reporting period and shall be signed by the user’s responsible individuals. This report shall be received by the Authority no later than the 30th day of the month following the period for which the report is required.

(c) All significant waste generators shall submit at least annually to the Authority a self-monitoring report on a form approved by

the Authority indicating the nature and concentration of pollutants in the waste discharged to the Authority treatment plant which are of particular concern to the Authority and which are limited by this article. The waste characteristics to be measured and reported shall be determined by the Authority and specified in the industrial waste discharge permit or waste permit. All wastewater samples must be representative of the user's discharge, and, for all parameters required to be analyzed utilizing a grab sample, a minimum of one grab sample must be collected and analyzed for each parameter. In cases where the resolution requires compliance with a best management practice or pollution prevention alternative, the user shall submit documentation as required by the Authority to determine compliance of the user. If a significant waste generator monitors any pollutant more frequently than required by the Authority, using the procedures prescribed in 40 CFR Part 403.12 (g) (4), the results of this monitoring shall be included in the report. In addition, this report shall include flow information for the reporting period, and shall be signed by the user's responsible individuals. This report shall be received by the Authority no later than the 30th day of the month following the period for which the report is required.

(2) Responsible individuals. All significant industrial users, significant waste generators, licensed waste haulers and industrial users issued commercial discharge permits shall designate responsible individuals as described by this article.

(3) Signatory requirements. All reports submitted pursuant to requirements outlined in this article, including but not limited to the "Baseline Monitoring Report," the "Self Monitoring Report" and the "Report on Compliance with National Categorical Pretreatment Standards or Ninety-Day Compliance Report" shall be signed by the user's responsible individuals.

(4) Certification requirements. All reports referenced in § 154-89H of this article, as well as industrial waste discharge permit applications, waste permit applications and waste hauler license applications submitted pursuant to § 154-89A of this article, shall include the following statement:

I certify, under penalty of law, that this document and all attachments, were prepared under my direction or supervision in accordance with a system designed to assure that quality personnel properly gather, and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(5) Monitoring manholes. Whenever required by the Authority, the owner of any property served by a building sewer carrying wastewater and material shall install a large manhole or sampling chamber, flow-metering chamber, flow-monitoring equipment, pH-monitoring equipment and other appurtenances in the building sewer to facilitate the observation, sampling and measurement of the combined flow of wastes from the user's premises into the public sanitary sewage system. These monitoring facilities shall be constructed in accordance with plans and specifications approved by the Authority and installed and maintained at all times at the user's expense. There shall be ample room in each sampling chamber to accurately sample and composite samples for analysis. The chamber shall be safely and easily and independently (of other premises and buildings of users) accessible to authorized representatives of 1:he Authority at all times. When construction of a sampling chamber and monitoring facilities are not economically or otherwise feasible in the opinion of the Authority, alternative arrangements for sampling and monitoring may be made at the discretion of the Authority.

(6) Flow monitoring and recording. Each flow-measuring chamber shall contain a Parshall flume, weir or similar device with a recording and totalizing register for measuring liquid quantity, or the metered water supply to the industrial plant may be used as a measure of liquid quantity where it is substantiated by the Authority that the metered water supply and waste quantities are approximately equal or where a measurable adjustment agreed to by the Authority is made in the metered water supply to determine the liquid waste quantity.

(7) Sampling by Authority. Samples shall be taken as deemed appropriate by the Authority. All significant industrial users shall be sampled by the Authority at least once per year. Such sampling shall be done as prescribed by the Authority to insure that the compliance of the user is determined with a reasonable degree of certainty for the entire reporting period. Samples shall be taken at the manhole or metering chamber referred to in § 154-89H(5) of this article, or in the absence of such manhole or metering

chamber, at such place as the Authority shall determine will provide a representative sample of the discharge and shall represent the entire flows from the significant industrial user.

(8) Inspection and verification of sampling and testing. The sampling frequency, sampling device, sampling methods, and analyses of samples shall be subject, at any time, to inspection and verification by the Authority.

(9) Sampling and testing methods. All sampling measurements, tests and analyses of the characteristics of waters and wastes shall be determined in accordance with procedures contained in 40 CFR Part 136, and amendments hereto or any other method approved by the EPA.

(10) Confidentiality of information.

(a) The Authority shall consider all information regarding an industrial user's or waste generator's effluent characteristics as being nonconfidential and may make all such information available to the public without restriction, unless the user specifically requests and is able to demonstrate to the satisfaction of the Authority that the release of such information would divulge information of processes or methods of production entitled to protection as trade secrets of the user.

(b) Upon written request, at the time of submission of the data by the industrial user or waste generator furnishing a report, permit application or answering a questionnaire, those portions of any document which might disclose trade secrets or secret processes shall not be disclosed to any person other than to duly authorized representatives of the EPA or DEP. Any effluent data of a user's waste will not be recognized as confidential information or as a trade secret.

(11) Sampling and testing costs. When the Authority conducts its own sampling and/or analyses of wastes discharged by any user, the Authority may make or have made any such tests, and the user shall reimburse the Authority for the full cost thereof. Such costs shall be established by ordinance annually.

(12) Ninety-day compliance reports.

(a) Within 90 days following the date for final compliance with applicable national categorical pretreatment standards or, in the case of a new source, following commencement of the introduction of wastewater into the treatment plant, any industrial user or waste generator subject to national categorical pretreatment standards and requirements shall submit to the Authority a report containing the information listed in 40 CFR Part 403.12 (b) (4) through (6) indicating the nature and concentration for all pollutants in the discharge

from the regulated process which are limited by the national categorical pretreatment standards and the average and maximum daily flow for these process units in the user facility which are limited by such pretreatment standards. Industrial users or waste generators subject to equivalent mass or concentration limits established in accordance with 40 CFR Part 403.6 (c), must include in the report a reasonable measure of the user's long term production rate. For all other industrial users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period.

(b) The report shall indicate the compliance status of the user with the applicable pretreatment standards as listed in 40 CFR 403.12 (b) and (d), whether the applicable pretreatment standards are being met on a consistent basis and, if not, what additional operation and maintenance and/or pretreatment is necessary to bring the user into compliance with all applicable pretreatment standards. This statement shall be signed by the user's responsible individuals.

(13) Baseline monitoring reports. All industrial users and waste generators subject to national categorical pretreatment standards shall submit to the Authority, within 180 days after the effective date of a categorical standard or the final administrative decision on a category determination under 40 CFR 403.6 (a) (4), whichever is later, a report (baseline monitoring report) which indicates the compliance status of the user with the applicable national categorical pretreatment standards as listed in 40 CFR 403.12 (b).

(14) New or increased contributions. All industrial users, waste haulers or waste generators shall immediately notify the Authority prior to any changes in the volume or character of their waste discharge or in the operation of their pretreatment processes that may result in interference or pass through at the treatment plant, or affect the potential for a slug discharge to the treatment plant. The Authority reserves the right to deny the admission of or to require the pretreatment of all discharges to the public sanitary sewage system. **[Amended 2-11-2009 by Ord. No. 216-2009]**

(15) Mass limitations. The Authority may impose mass limitations on users which, in the opinion of the Authority are using dilution to meet applicable pretreatment standards or requirements, or in other cases where the imposition of mass limitations are appropriate. In such cases, the report required by Subsection H(12) of this subsection shall indicate the mass of pollutants regulated by pretreatment standards in the effluent of the user. These reports shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration,

or production and mass where required by the Authority, of pollutants contained herein which are limited by the applicable pretreatment standards. The frequency of monitoring shall be prescribed in accordance with procedures established by the EPA pursuant to Section 304 (g) of the CWA and contained in 40 CFR Part 136, and amendments thereto, or with any other test procedures approved by the EPA.

(16) Notice of violation/resampling requirement. If sampling performed by an industrial user or significant waste generator indicates a violation, the industrial user or significant waste generator shall notify the Authority within 24 hours of becoming aware of the violation. The industrial user or significant waste generator shall also repeat the sampling and analysis and submit the results of the repeat analysis to the Authority within 30 days after becoming aware of the violation pursuant to 40 CFR Part 403.12 (g). Where the Authority has performed the sampling and analysis in lieu of the industrial user or significant waste generator, the Authority must perform the repeat sampling and analysis within 30 days unless it notifies the industrial user or significant waste generator of the violation and requires the industrial user or significant waste generator to perform the repeat analysis. **[Amended 2-11-2009 by Ord. No. 216-2009]**

I. Annual fee. All permitted industrial users shall be subject to an annual fee to defray the cost of administration of this article. The annual fee shall be set from time to time by ordinance of the Authority.

J. Administrative fee. All connected and nonconnected users utilizing the services of the Authority under this article shall be subject to an administrative fee to defray the cost of processing invoices, bills and other charges and fees for such services. The administrative fee shall be set from time to time by ordinance of the Authority.

§ 154-90. Enforcement.

A. Enforcement response; enforcement response plan. Enforcement actions taken by the Authority shall be consistent with an enforcement response plan maintained at the wastewater treatment plant offices.

B. Inspection rights.

(1) General. Any duly authorized employee or agent of the Authority bearing credentials which so identify them shall be permitted at any reasonable time to enter upon all properties served by the treatment plant or all properties generating trucked waste for discharge to the treatment plant, or licensed vehicles transporting waste for the purpose of discharge at the treatment plant, for the purpose of inspecting, observing, measuring, sampling and testing, as may be required in pursuance of the implementation and enforcement of the terms and provisions of this article. Any records

of monitoring activities or results maintained by any user shall be made available for inspection and copying by the Authority and/or the DEP and/or the EPA. Users may be required by the Authority to install monitoring equipment, as per 40 CFR 403.8 (f) (1) (v). **[Amended 2-11-2009 by Ord. No. 216-2009]**

(2) All significant industrial users and all significant waste generators shall be inspected by the Authority at least once per year.

C. Injunctive relief.

(1) General. The Authority reserves the right to seek injunctive relief for noncompliance by any industrial user or waste generator with any pretreatment standard or pretreatment requirement, or for noncompliance by any person with any provision of this article.

(2) The Authority, through counsel, may petition the Court for the issuance of a preliminary or permanent injunction (or both, as may be appropriate), which restrains or compels the activities on the part of the industrial user, waste generator, or person, including a prayer for payment of costs and attorney's fees as may be authorized by law. In addition, the Authority shall have such remedies to collect all fees incurred by the Authority as a result of this petition as it has to collect other sewer service charges.

D. Show-cause hearing.

(1) General. The Authority may order any industrial user which causes or contributes to a violation of this article or industrial waste discharge permit or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the industrial user specifying the time and place for the meeting, the proposed enforcement action and the reasons for such action, and a request that the user show cause why this proposed enforcement action should not be taken.

(2) The notice of the meeting shall be served personally or by registered or certified mail to any principal executive, general partner, corporate officer or owner of the industrial user at least 10 days prior to the hearing. Whether or not a duly notified industrial user appears as noticed, immediate enforcement action may be pursued.

E. Emergency response.

(1) General.

(a) The Authority may suspend the waste treatment service and/or industrial waste discharge permit, waste permit, waste hauler license, or commercial discharge permit whenever such suspension is necessary in order to stop an actual or threatened discharge presenting or causing an imminent or

substantial endangerment to the health or welfare of persons, the public sanitary sewage system or the environment.

(b) Any user notified of a suspension of the waste treatment service and/or industrial waste discharge permit, waste permit, waste hauler license or commercial discharge permit shall immediately stop or eliminate its contribution. In the event of a user's failure to immediately comply voluntarily with the suspension order, the Authority shall take such steps as deemed necessary, including the immediate severance of the sewer connection, to prevent or minimize damage to the treatment plant, its receiving stream, or endangerment to any individuals. The Authority may allow the user to recommence its discharge when the endangerment has passed, unless the permit revocation proceedings set forth in § 154-89B(8) of this article are initiated against the user.

(2) Report requirements. Any industrial user which is responsible, in whole or in part, for imminent endangerment shall submit a detailed written statement describing the causes of the harmful contribution and the measures taken to prevent any future occurrence to the Authority prior to the date of a show cause hearing as described in § 154-90D of this article.

F. Administrative fine.

(1) General. Notwithstanding any other section of this article, any user, industrial user or waste generator or waste hauler who is found to have violated any provision of this article, or commercial discharge permit or industrial waste discharge permit, or waste permit or hauler license or order issued hereunder, shall be fined in an amount up to $1,000 per violation. Each day on which noncompliance shall occur or continue shall be deemed a separate and distinct violation. All fine money shall be made payable to the Authority. The Authority shall have such other collection remedies as it has to collect other service charges. Unpaid charges, fines and penalties shall constitute a lien against the individual user's property.

(2) Appeals. Users who desire to dispute such fines must file a request before the Authority to reconsider the fine within 10 working days of being notified of the fine.

G. Civil penalties.

(1) General. Any person who violates any substantive or procedural provision of § 154-87 hereof or any term or condition of any industrial waste discharge permit, commercial discharge permit or waste permit shall be subject to a civil penalty not to exceed $25,000 per day for each violation. Each violation for each separate day shall constitute a separate and distinct violation. Notwithstanding the foregoing, a single operational upset which

gives rise to simultaneous violations shall be treated as a single violation.

(2) Appeals. Users who desire to dispute such fines must file a request before the Authority to reconsider the fine within 10 working days of being notified of the fine.

H. Criminal penalties.

(1) General. Any person who willfully or negligently violates any provision of a municipal ordinance incorporating the provisions of this article, or who violates any condition of an industrial waste discharge permit, a waste permit, a hauler license, a commercial discharge permit or an order issued pursuant to this article and incorporating ordinance, is guilty of a summary offense, and, following institution of a summary proceeding by the municipality and, upon conviction, such person shall be subject to a fine of not less than $100 nor more than $1,000 for each separate offense, and, in default of the payment of such a fine, a person shall be imprisoned for a period of 30 days.

(2) Partnership, corporations and associations. If such person violating the provisions of this article shall be a partnership, then the members thereof, or if such person be a corporation or association, then the officers, members, agents, servants, or employees thereof shall, in default of payment of any fine levied under this section, be imprisoned in the county prison.

(3) Continuing violations. Each day of continued violation of any provision of this article and incorporating ordinance shall constitute a separate offense.

(4) Transfer of fine money. All fine money assessed through suit or summary proceedings before any District Justice, pursuant to this section, shall be transferred to the municipality instituting the summary proceeding for the use and benefit of the Valley Forge Sewer Authority.

I. Notice of violation; general. Whenever the Authority determines that any industrial user or waste generator or waste hauler has violated any provisions of any permit or license issued under any section of this article, or a compliance schedule issued under § 154-89D of this article, the Authority or its duly authorized representative shall serve upon said user a written notice of violation. Within 10 working days of the receipt of this notice, a written response to this notice, including an explanation of the cause of the violation and a plan for the correction and prevention thereof, shall be submitted to the Authority by the user. Submission of this plan in no way relieves the user of liability for any violations occurring before or after receipt of the notice of violation.

J. Public notification; public notice of significant noncompliance. The Authority shall at least annually publish in the largest daily newspaper

published in the area encompassed by the Authority, a list of the users which were significantly violating applicable pretreatment standards or requirements or other provisions of this article, or who were determined to be in significant noncompliance, during the 12 previous months. Significant noncompliance shall be determined according to the standards as defined in 40 CFR Part 403.8 (f) (2) (vii).

ARTICLE VIII
Sewer Extensions

§ 154-91. Permit required for subdivision or land development.

No person shall be permitted to develop a subdivision, tract or parcel of land without first obtaining a sewer permit from the Authority. Such permit shall be issued to the person required to comply to this Part 2 subject always to compliance with the Code.

§ 154-92. Escrow required.

No lot in a subdivision may be sold, no permit shall be issued to erect, alter or repair any building in a subdivision, tract or parcel of land until the sewer permit is approved, recorded and escrow moneys have been posted with the Authority sufficient to cover the construction cost of the sewer installation, engineering and/or review, inspection during construction and other direct costs incurred by the Authority resulting from this particular work.

§ 154-93. Prerequisites for use of system.

A. The following procedure outlines the prerequisites to be fulfilled by the owner and the special requirements of the Authority. Generally the following events must take place prior to the use of the collection system by the owner.

   (1) Preliminary approval by Authority.

   (2) Prepare detailed plans and specifications.

   (3) Approval of plans and specifications by Authority.

   (4) Enter into agreement with the Authority.

   (5) Construct system.

B. Preliminary approval. Preliminary or initial approval of the project at the expense of the owner is required by the Authority in order that the Authority may review what is proposed and provide whatever prior planning is necessary to include additional users in the system. In general, the Authority and consulting engineer review will determine:

   (1) If plan conforms to the Township Master Sewer Plan.

   (2) If existing sewer system and appurtenances are of sufficient size and capacity for inclusion of additional users.

   (3) A Planning Module as required by the Pennsylvania Department of Environmental Protection shall be submitted to the Township, at the owner's expense.

C. Prepare detailed plans and specifications.

(1) Detailed plans, profiles and construction specifications are to be prepared for the project. Minimum design standards as set forth in the "Sewerage Manual" of the Pennsylvania Department of Environmental Protection are to be maintained in all situations. Sewer plans shall conform to all the specifications established by the Authority. In no cases will lesser standards than exist in the present specifications or as outlined in this Part 2 be adopted by the Authority.

(2) Where pump station or ejector stations are used in the design, standby generation will be required as an auxiliary source of electrical power. The generator equipment will be of sufficient size to supply electrical power to the entire pump and/or ejector station. Emergency or bypass connection that would bypass the pumps and/or ejector station is prohibited. The specification for the pump and ejector station and emergency generation equipment shall be subject to the review and approval of the Authority and the consulting engineer.

(3) Standard specifications for the collection sewers shall be purchased from the Authority.

(4) Information relative to specifications for building sewers is available in Articles III and IV of this Part 2.

(5) The owner shall submit a specified number of the as-built plans to the Township prior to the Authority's final acceptance of the system.

D. Approval of plans and specifications.

(1) The Authority and consulting engineer, at the expense of the owner shall review plans and specifications submitted to the Authority.

(2) After the plans and specifications have been approved by the Township and the consulting engineer, the Authority will submit the plans and specifications to the Pennsylvania Department of Environmental Protection for approval of that portion of the sewer system governed by their regulations. The Township shall also apply for state, county and Township highway permit(s), stream encroachment permit(s), railroad crossing permit(s) and all other permits associated with the sewer extension.

(3) The owner shall prepare applications for all permits required, at his expense, and submit them to the Township.

E. Enter into agreement with Authority. The Authority Solicitor, at the expense of the owner, shall prepare an agreement between the Township and owner. The agreement shall, among other items, provide for the owner to escrow sufficient funds to defray the Authority costs for:

(1) Review and approval of plans.

(2) Preparation of agreements and permits.

(3) Inspection of construction by consulting engineer.

(4) Design fee for consulting engineer if applicable.

F. Construction and inspection.

(1) The owners shall construct, at their own expense, all lines, pumping facilities and appurtenances required for their development regardless of the proximity of the development to the Township collection system.

(2) All construction work associated with the sewer lines and appurtenances within the corporation limits of the Township shall be subject to inspection by the Authority and the consulting engineer. After a final inspection and acceptance of the collection system the Authority will issue a certificate of completion which will state that the collection has been constructed according to the Authority requirements. Requirements for maintenance bonds, dedication, conveyance of sewer right-of-ways are contained in Chapter 175, Subdivision and Land Development, of the Code of Township of East Whiteland.

ARTICLE IX
Miscellaneous Provisions

§ 154-94. Tampering with sewage system prohibited.

A. No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is part of the municipal sewage works.

B. Any person violating this provision shall be subject to immediate arrest under charge of disorderly conduct.

§ 154-95. Right to inspect; owner's liability for defects and inspection costs.

A. The Authority and other duly authorized employees of the Township bearing proper credentials and identification shall be permitted at any time to enter upon all properties for the purpose of inspection, observation, measurement, sampling, testing, supervising, and any other functions relating to service rendered by the Township through the sewer system in accordance with the provisions of this Part 2.

B. All found defects shall be corrected at the owner's expense.

C. If defects are found as a result of an inspection, test, sample, measurement, or observation, the owner will indemnify the Authority for the cost of said inspection, observation, measurement, sample, test or supervision.

§ 154-96. Notice of violations; time for cure; violations and penalties.

A. Any person found to be violating any provision of this Part 2, except § 154-94, shall be served by the Township with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

B. Violation and enforcement provision. Any person who violates or permits the violation of any provision of this Part 2 shall, upon conviction thereof in a summary proceeding brought before a District Justice under the Pennsylvania Rules of Criminal Procedure, be guilty of a summary offense, and shall be subject to the payment of a fine of not less than $100 and not more than $1,000, plus the costs of prosecution. In default of payment thereof, the defendant may be sentenced to imprisonment in the county prison for a term of not more than 30 days. Each provision of this Part 2 that is violated shall constitute a separate offense, and each day or portion thereof in which a violation of this Part 2 is found to exist shall constitute a separate offense, each of which violations shall be punishable by a separate fine imposed by the District

Justice of not less than $100 and not more than $1,000, plus the costs of prosecution, or upon default of payment thereof, the defendant may be sentenced to imprisonment in the county prison for a term of not more than 30 days. All fines and penalties collected for the violation of this Part 2 shall be paid to the Township Treasurer. **[Amended 7-2-1996 by Ord. No. 111-96; 4-1-1997 by Ord. No. 117-97]**

§ 154-97. Liability of violators for damages and expenses.

Any person violating any of the provisions of this Part 2 shall become liable to the Authority for any expense, loss, or damage occasioned the Authority by reason of such violation.

§ 154-98. Engineering requirements.

In order to maintain the same standards that exist in the sewage collection system and as set out in this Part 2, the Authority shall require any property owner applying for a sewer permit to have the collection system engineered in one of the following ways:

A. The property owner may request that the Authority through the consulting engineer, prepare plans and specifications, obtain approvals from the Department of Environmental Protection of the Commonwealth of Pennsylvania and from any other governmental regulatory body having jurisdiction, and inspect construction of the sewer system in accordance with approved plans and specifications; or

B. The property owner may retain a professional engineer with experience in the design of sewer systems, waste treatment plants and related appurtenances; said engineer to prepare plans and specifications in accordance with this Part 2, and obtain approval from the Authority and the Department of Environmental Protection of the Commonwealth of Pennsylvania and any other governmental regulatory body having jurisdiction.

§ 154-99. When effective.

This Part 2 shall be in full force and effect from and after the date of its passage, approval, recording and publication as provided by law.

§ 154-100. Method of service of notice.

Unless otherwise specifically provided, whenever notice is required by this Part 2 to be served on any person and/or property owners, such service shall be made personally upon the owner, if he can be found in the Township, or an adult person residing on the property affected, or in case personal service cannot be made upon the owner, or an adult person cannot be found residing on the property, said notice shall be tacked or posted conspicuously on the premises.

§ 154-101. Limitation on waiving provisions.

No officer or employee of the Authority is authorized to vary the provisions of this Part 2 without the express action of the Township Board of Supervisors.

§ 154-102. Power to contract.

The Township has the express right, power, and authority to enter into agreements, contracts, or arrangements with any persons for the purpose of effectuating the provisions of this Part 2.

§ 154-103. Substitution of Township for Authority.

The Authority may at any time elect to lease some or all of its facilities to the Township and may, by agreement with the Township, delegate back to the Township any rights, privileges, duties or obligations as may be set forth in this Part 2. In such event, or in the event that the Authority and the Township may agree, in all or any portion of this Part 2 where the word "Authority" may appear, the word "Township" may be substituted with the same force and effect as if it was therein written ab initio. If at any time the word "Township" may appear in this Part 2 and the Authority agrees, the word "Authority" may be substituted for the word "Township" in such section with the same force and effect as if it was therein written ab initio.

Part 3
[Adopted 12-27-1995 By Ord. No. 107-95]
Sewer Rents

ARTICLE X
Rates and Charges

§ 154-104. Sewer districts. [Amended 3-5-1996 by Ord. No. 109-96; 12-18-1996 by Ord. No. 115-96; 11-14-2007 by Ord. No. 200-2007; 4-10-2019 by Ord. No. 308-2019]

The Township shall be divided into five sanitary sewer districts: District A, comprising that part of East Whiteland Township not included within Districts B, C, D, and E; District B, comprised of those properties served by the western extension of the Route 30 sewer main; District C, comprised of the residential dwellings located in the Lockwood Chase subdivision; District D, comprised of all properties that flow into and whose effluent is treated at the sanitary sewage facility that serves the dwellings in the Malvern Hunt development; District E, compromised of all commercial and residential properties located in the Atwater development south of the quarry; and such additional districts as shall be established by ordinance from time to time by the Board. The geographic boundaries of each such district shall be shown on the Township's Sewer Districts Map, which is authorized hereby, incorporated herein by reference thereto, and made a part hereof. Such Map shall be amended from time to time as authorized by the Board by resolution or as necessitated by amendment of this chapter. Together, these districts shall constitute the East Whiteland Public Sanitary Sewer System. All sewer transmission, trunk, interceptor and outfall mains, manholes, pumping stations and other facilities owned by or dedicated to the Authority and now physically located or hereafter installed, constructed, replaced, repaired and maintained within each such district shall constitute a part of the sewer system of each such district.

§ 154-105. Definitions.

Unless the context specifically indicates otherwise, the meaning of terms used in this Part 3 shall be as follows:

AUTHORITY — East Whiteland Municipal Authority, as presently or hereafter constituted, which has been created by the Board of Supervisors and to which has been referred by the Board of Supervisors the specific project of sewers.

BOARD — The Board of Supervisors as the governing body of the Township.

COMMERCIAL ESTABLISHMENT — Any structure or any portion thereof intended to be used wholly or in part for the purposes of carrying on a trade, business or profession or for social, amusement, religious, education, charitable or public use, and which contains plumbing for kitchen, toilet or washing facilities. Hotels, motels, boarding or rooming houses and institutional dormitories shall be included in this definition, except as otherwise provided in the schedule set forth in § 154-106 hereof.

INDUSTRIAL ESTABLISHMENT — Any structure or any portion thereof, intended to be used wholly or in part for the manufacturing, fabricating, processing, cleaning, laundering or assembly of any product, commodity or article.

INDUSTRIAL USER — (as defined in the United States Environmental Protection Agency Rules and Regulations, 40 CFR 35.905-8)

A. Any nongovernmental user of publicly owned treatment works identified in the Standard Industrial Classification Manual, 1972, Office of Management and Budget, as amended and supplemented, under the following divisions:

B. Division A: Agriculture, Forestry, and Fishing.

C. Division B: Mining.

D. Division D: Manufacturing.

E. Division E: Transportation, Communications, Electric, Gas, and Sanitary Services.

F. Division I: Services.

G. A user in the divisions listed may be excluded if it is determined that it will introduce primarily segregated domestic wastes or wastes from sanitary conveniences.

INDUSTRIAL WASTE — Any solid, liquid, or gaseous substance or waterborne wastes or form of energy rejected or escaping from any industrial, manufacturing, trade or business process or from the development, recovery or processing of natural resources, as distinct from sanitary sewage.

OWNER — Any person vested with ownership, legal or equitable, sole or partial, of any property served, directly or indirectly by the sewer system.

PERSON — Any individual, firm, company, association, society, corporation or group.

PRIVATE DWELLING UNIT — Any room, group of rooms, house trailer, structure, dwelling or enclosure intended to be occupied as separate living quarters by a family or other group of persons living together or by persons living alone but excluding institutional dormitories. Each private dwelling unit in a double house, row or connection houses, in a trailer park or in an apartment or condominium or cooperative development will be billed as a separate entity.

PUBLIC WATER SYSTEM — A water supply system regulated by the Pennsylvania Public Utility Commission, and any other "community water system," as defined in the regulations of the Pennsylvania Department of Environmental Protection.

SANITARY SEWAGE — The normal water carrying household and toilet wastes from residences, business buildings, institutions, commercial and industrial establishments.

SEWER SYSTEM — All temporary and permanent facilities at any time, and from time to time, owned by the Authority and leased to and operated by the Township and used or usable for, or in connection with, the collection of waste waters.

TOWNSHIP — The Township of East Whiteland, Chester County, Pennsylvania.

§ 154-106. Imposition of sewer rent or charge. [Amended 3-5-1996 by Ord. No. 109-96; 12-18-1996 by Ord. No. 115-96; 5-5-1998; 11-18-1999 by Ord. No. 127-99]

There is hereby imposed upon each owner of each property served by the sewer system and having the use thereof, a sewer rent or charge, which shall be uniform throughout each sewer district, but which may vary from district to district, payable in equal quarterly payments as hereinafter provided, for the use, whether direct or indirect, of the sewer system, based on the schedules of classifications and rates or charges and calculated as hereinafter set forth for each such sewer district.

A. Compliance with EPA regulations. The sewer rent shall be determined in accordance with the United States Environmental Protection Agency (US EPA) Rules and Regulations CFR 35.928 and 40 CFR 35.935-13 and Appendix B to Part 35. The user charges for all classifications set forth below shall be subject to annual review and periodic revisions to reflect the actual operation and maintenance costs of the sewer system, and of the transmission and treatment facilities owned by others but used by the sewer system.

B. Unit Schedule for Availability Charge.

	Category	Number of EDU
(1)	Each private dwelling unit or living unit	1
(2)	Each individual commercial establishment or business, having 10 or less of its own employees, attached to or forming a part of owner's residence, unless otherwise specified herein	1
(3)	Each additional 5 of its own employees or fraction thereof	1/2
(4)	Each individual commercial establishment or business, having 10 or less of its own employees, not attached to or forming a part of owner's residence, unless otherwise specified herein	1

(5)	Each additional 5 of its own employees or fraction thereof	1/2
(6)	(i) Hotel guest room/suite, motel guest room/ suite and conference center guest room/suite with kitchenette - 2.5 bedrooms	1
	(ii) Hotel guest room/suite, motel guest room/ suite and conference center guest room/suite without kitchenette - 3.0 bedrooms	1
	(iii) Kitchenette shall include any one or more of the following facilities or combination thereof: (i) sink and refrigerator; (ii) sink and stove; (iii) sink and dishwasher; (iv) sink and disposal	
(7)	Each restaurant (without liquor license) per 25 seats	1
(8)	Each restaurant (with liquor license) per 10 seats	1
(9)	Each service station garage and automobile repair shop, without carwash facilities:	
	2 bays or less	2
	Each additional bay over 2	1
(10)	Each barber or beauty shop, not attached to owner's residence:	
	2 chairs or less	1 1/2
	Each additional two chairs or fraction thereof	1/2
(11)	Each firehouse	1 1/2
(12)	Each church or chapel	1
(13)	Each public swimming pool or private swimming club	3
(14)	Each school, public or private, having:	
	Toilet facilities only, per 25 pupils and staff or fraction thereof	1
	Toilet facilities and kitchen, per 20 pupils and staff or fraction thereof	1
	Toilet facilities and gymnasium, per 15 pupils and staff or fraction thereof	1
	Toilet facilities, kitchen and gymnasium, per 12 pupils and staff or fraction thereof	1
(15)	Each property having a commercial garbage grinder of 3/4 horsepower or greater per grinder	1
(16)	Each business providing showers for employees:	

	7 or less employees	1
	Each additional 7 employees or fraction thereof	
(17)	Each funeral home	2
(18)	Each nursing home, per bed	3/4

C. Computation of charges.

(1) If two or more private dwelling units or commercial establishments are connected through a single lateral, or if two or more families use separate cooking and/or toilet facilities in a single dwelling, or if two or more types of use are made of the same property, the availability component under the foregoing schedule shall be computed as through each such unit and establishment and each such family and each such types of use were a separate property or user with a separate connection to the sewer system.

(2) To compute the sewer rate for facilities in a single commercial establishment which consists of multiple uses, such as a shopping center or an office building, each unit, tenant, or use shall be calculated by using the above schedule as though each unit, tenant, or use were a separate property or user with a separate connection to the sewer system. In such cases, the owner shall be liable for the full sewer charges but the owner may request the Township to bill individual units as an accommodation. Such accommodation shall not relieve the owner of the underlying obligations. Charges shall be due and payable on all units whether vacant or occupied. If the unit is vacant, one-half of the EDUs assigned to the space shall be used for the calculation. **[Amended 8-9-2006 by Ord. No. 184-2006]**

(3) The sewer rate for each owner whose charge is based upon the number of employees shall be computed on the basis of the average number of employees for the calendar quarter preceding the date for the quarterly bill.

(4) The Township shall be entitled to request from each owner and to receive promptly periodic information as to the number of employees or pupils at the property. Information as to employees shall be furnished semiannually in the form of a certified list of the names of all employees and independent contractors based at the property. In the event that the Township is not provided with accurate information, including supporting documentation, to determine the number of employees or pupils and staff using any property or such data as may be necessary to determine a user classification or rate, the Township's estimate or determination thereof shall be conclusive.

(5) The Township reserves the right to change unit values from time to time, to add or delete property classifications, and in cases of

dispute, to determine the property classification of a given property.

D. Sewer rates. **[Amended 12-18-2001 by Ord. No. 135-2001; 8-9-2006 by Ord. No. 184-2006; 11-14-2007 by Ord. No. 200-2007; 11-12-2008 by Res. No. 15-2008; 2-12-2014 by Ord. No. 252-2014; 12-14-2016 by Ord. No. 287-2016]**

(1) Sewer District A: The sewer rate shall be established by resolution of the Board of Supervisors and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate.

(2) Sewer District B: The sewer rate shall be established by resolution of the Board of Supervisors and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate.

(3) Sewer District C: The sewer rate shall be established by resolution of the Board of Supervisors and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate.

(4) Sewer District D: The sewer rate shall be established by resolution of the Board of Supervisors and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate.

(5) Sewer District E: The sewer rate shall be established by resolution of the Board of Supervisors and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate.

(6) Commercial and industrial users: The owner of each commercial and industrial user, whose total quarterly sewage discharge or water consumption is greater than 100,000 gallons, shall pay a sewer rate to be established by resolution of the Board of Supervisors, and such rate resolution shall be amended from time to time as the Board of Supervisors deems appropriate. **[Added 4-10-2019 by Ord. No. 308-2019]**

(a) Where the use of water by a commercial or industrial establishment is such that substantial portions of the water so used is not discharged into the sewer system, the quantity of water used to determine the usage component shall be computed by one of the following methods:

[1] Method No. 1: By placing the meter or measuring device on the sewer connection. The reading from this meter or measuring device shall be used in computing the usage component; or

[2] Method No. 2: By placing the meter or measuring device on the effluent not discharging into the sewer system. The reading from this meter or measuring device will then be deducted from the total water meter reading and the remainder shall be used in computing the usage component.

(b) When an owner can demonstrate that it is not practical to install meters or measuring devices or where the Township determines that because of infiltration or after cause, the amount of waste water discharged to the system exceeds the readings of the water meter, in either case the Township may determine, in such manner and by such methods as it may prescribe, the amount of wastewater discharged into the sewer system, and the quantity so determined to be discharged shall be used to determine the usage component, which determination shall be final.

(c) Measuring devices. All meters or other measuring devices not provided by the public water system, but which may be used under the provisions of this chapter, shall be furnished and installed by the owner and shall be under the control of the Township and may be tested, inspected or repaired by Township employees or agents whenever necessary. The owner shall be responsible for its maintenance and safekeeping and all repairs which are made necessary to ordinary wear and tear or other causes. Bills for such repairs, if made by the Township or Township's agents, shall be due and payable at the same time and collected in the same manner as are the bills for sewer services, and such bills from and after their due date shall constitute a lien upon the property upon which such measuring device is installed. The Township shall have the right to read all meters or measuring devices, and they shall be available to Township employees or agents for meter reading at any reasonable time.

(7) Single-family residential users in Sewer Districts A, B, C, D, and E shall be entitled to a discount of the annual rates set forth herein upon payment of the full amount of the annual sewer bill not later than 30 days after the date of the first bill issued by the Township for that calendar year. The discounted amount shall be established by resolution of the Board of Supervisors, and such resolution shall be amended from time to time as the Board of Supervisors deems appropriate. **[Added 4-10-2019 by Ord. No. 308-2019]**

§ 154-107. Exclusion of industrial waste.

Industrial wastes may be discharged into the sewer system only pursuant to written agreement with the Township and the Valley Forge Sewer Authority and upon obtaining an industrial waste discharge permit from Valley Forge Sewer Authority; provided that rules, regulations and acceptability

standards which may from time to time be adopted by the Township and Valley Forge Sewer Authority prescribed for the pretreatment of Industrial Waste are fully complied with to the satisfaction of the Township and Valley Forge Sewer Authority. Industrial wastes to be acceptable for collection and/or treatment must not exceed the characteristics set forth in Part 2, Sewer Use, of this Chapter 154. Industrial waste surcharges will be imposed and collected by the Valley Forge Sewer Authority, and will be in addition to the rentals imposed herein.

§ 154-108. Changes in classifications; additional classifications and modifications.

If the use or classification of any property should change within any quarterly billing period, the difference in sewer rental, if any, prorated on a monthly basis to the end of the then current calendar quarter will be charged or credited, as the case may be, on the bill for the succeeding calendar quarter. Additional classifications and additional sewer rentals may be established by the Township from time to time.

§ 154-109. Payments; initial billing. [Amended 3-5-1996]

The payments for the sewer rents (including the availability component and the usage component) by each owner shall begin immediately upon completion of the sewer connection (i.e., sewage flow is accepted into the sewer system). The sewer rents imposed shall be payable quarterly, in advance, and rent for each calendar quarter shall be billed and payable within 15 days following the beginning of each quarterly billing period, i.e., on the 15th day of January, April, July and October in each year. Rent for any billing period in which a connection is made shall be prorated, and shall be billed in conjunction with the next regular billing or by special billing as the officials responsible for billing may elect.

§ 154-110. Penalties for delinquent payment; liens.

A. The charges for sewer service shall be subject to 10% penalty if not paid within 60 days after the date of the bill. If not paid within 120 days after the date of the bill, the bill plus the penalty shall bear interest from the due date at the rate of 1% per month or fraction thereof, or the maximum as permitted by law, until paid. Any unpaid sewer rent, together with penalties and interest thereon to the extent permitted by law, and all delinquent costs, shall be a lien on the property served, which may be collected by action in assumpsit, by distress and/or by a lien filed in the nature of a municipal claim and/or by termination of services as and to the extent provided by law. In addition, any costs and/or attorney's fees incurred by the Township shall be added to the unpaid sewer rent, to the extent permitted by law, along with penalties and interest as set forth above, and the aggregate of the same shall be entered as a lien on the property served.

B. All owners connected to the sewer system must give the Township their correct address and must inform the Township of any change of address. Failure to receive bills will not be considered an excuse for nonpayment nor permit an extension of the period during which bills are payable at face.

C. Payments made, as evidenced by the United States Post Office mark, on or previous to the end of the period during which the bills are payable at face, will be deemed to be a payment within such period.

D. All sewer rentals, together with all penalties, interest and costs, including attorney's fees, to the extent permitted by law, not paid on or before the end of 180 days from the date of each bill shall be deemed to be delinquent. All delinquent sewer rentals and all penalties, interest and costs, including attorney's fees, shall be a lien on the property served and shall be entered as a lien against such property in the office of the Prothonotary of Chester County and shall be collected in the manner provided by law for the filing and collection of such liens.

§ 154-111. Segregation of sewer revenues.

The funds received by the Township from the collection of the sewer rental and charges and all penalties and interest thereon, as herein provided for, shall be segregated and kept separate and apart, except for purposes of investment, from all other funds of the Township and shall be used only for the purpose of defraying the expenses of the Township in the operation, maintenance, repair, alteration, inspection, depreciation or other expenses in relation to such sewer system and for such payments as the Township may be required to make to the Valley Forge Sewer Authority or to the Tredyffrin Township Municipal Authority in connection with transportation and treatment service or under any lease or agreement it may enter into in connection with the financing of the sewer system pursuant to the provisions of the Act of May 2, 1945, P.L. 382, as amended.[6] Such funds, however, may be invested in common with other Township funds pending the use thereof for the purposes above specified, provided that the amounts of such funds and the income therefrom can at all times be traced and determined.

§ 154-112. Separate account for certain revenue. [Amended 3-5-1996]

Beginning with the year 1996, the budget and the annual financial statements for the Sewer Fund of the Township will separately set forth the estimated and actual revenues derived from tapping fees, and the income estimated and actually earned on the Construction Fund held by the Trustee under the Trust Indenture of the East Whiteland Township Municipal Authority (said tapping fee revenue and interest income being herein collectively called the "Capital Income").

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6. Editor's Note: See 53 P.S. § 301 et seq.

§ 154-113. Rules and regulations.

The Township reserves the right to, and may from time to time, adopt, revise, amend and readopt such rules and regulations as it deems necessary and proper for the use and operation of the sewer system, and all such rules and regulations shall be and become a part of this Part 3.

§ 154-114. Termination of service.

The Township reserves the right to restrict or discontinue the owner's use of the sewer service if the owner fails to comply with the established effluent standards, or comply with other provisions of this Part 3.

Part 4
On-Lot Sewage Disposal Systems

[Adopted 12-12-2007 By Ord. No. 202-2007]

ARTICLE XI
Sewage Management Program for On-Lot Systems

§ 154-115. Short title; legislative authority; purpose.

A. This article shall be known and may be cited as an "Ordinance Providing for a Sewage Management Program for East Whiteland Township."

B. Pursuant to Section 1522 of the Second Class Township Code (Act of May 1, 1933, P.L. 103, No. 69, as amended through Act 60-1995)[7]; the Clean Streams Law (Act of June 22, 1937, P.L. 1987, No. 394, as amended, 35 P.S. §§ 691.1 to 691.1001); and the Pennsylvania Sewage Facilities Act (Act of January 24, 1966, P.L. 1535, as amended, 35 P.S. § 750.1 et seq., known as "Act 537"), specifically Title 25, Chapter 71, Section 71.71, it is the power and the duty of East Whiteland Township to provide for adequate sewage treatment facilities and for the protection of the public health by prohibiting the discharge of untreated or inadequately treated sewage. The Official Sewage Facilities Plan for East Whiteland Township states that it is necessary to formulate and implement a sewage management program to effectively prevent and abate water pollution and hazards to the public health caused by improper treatment and disposal of sewage.

C. The purpose of this article is to provide for the regulation, inspection, maintenance and rehabilitation of on-lot sewage disposal systems; to permit intervention in situations which may constitute a public nuisance or hazard to the public health; and to establish penalties and appeal procedures necessary for the proper administration of a sewage management program.

§ 154-116. Definitions.

As used in this article, the following terms shall have the meanings indicated:

ABSORPTION AREA — A component of an individual or community sewage system where liquid from a septic tank seeps into the soil; it consists of an aggregate-filled area containing piping for the distribution of liquid in the soil or sand/soil combination located beneath the aggregate.

AUTHORIZED AGENT — The Township Codes Enforcement Officer, a sewage enforcement officer, employee of the Township, professional engineer, plumbing inspector or any other qualified or licensed person who is authorized to function within specified limits as an agent of East Whiteland Township to administer or enforce the provisions of this article.

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7. Editor's Note: See 53 P.S. § 66601.

BOARD — The Board of Supervisors of East Whiteland Township, Chester County, Pennsylvania.

COMMUNITY ON-LOT DISPOSAL SYSTEMS (COLDS) — Any system, whether publicly or privately owned, for the collection of sewage of a liquid nature from two or more lots, and the treatment and/or disposal of the sewage on one or more of the lots or at any other location for final disposal in whole or in part into the soil. This includes land application by spray irrigation.

LOT — A parcel of land, the land area of which is contiguous and undivided by a street and which conforms to the provisions of Chapter 200, Zoning, and Chapter 175, Subdivision and Land Development, of the Code of the Township of East Whiteland and any other Township ordinances, codes, regulations, plans and maps; or any other parcel or tract of land, whether or not improved.

MALFUNCTION — A condition which occurs when an on-lot sewage disposal system discharges sewage onto the surface of the ground, into groundwaters of this commonwealth or into surface waters of this commonwealth, backs up into a building connected to the system or in any manner causes a nuisance or hazard to the public health or pollution of ground- or surface water or contamination of public or private drinking water wells. Systems shall be considered to be malfunctioning if any condition noted above occurs for any length of time during any period of the year.

ON-LOT SEWAGE SYSTEM — A system of piping, treatment tanks or other facilities serving a single lot and collecting, treating and disposing of sewage into a subsurface absorption area or spray irrigation system.

OWNER — An individual, association, public or private corporation for profit or not for profit, partnership, firm, trust, estate, department, board, bureau or agency of the United States or commonwealth, political subdivision, municipality, district, authority or other legal entity which is recognized by the law as the subject of rights and duties, being the title owner of property in East Whiteland Township. The term includes members of an association, partnership or firm and the officers of a local agency or municipal, public or private corporation, for profit or not for profit.

PERSON — Any individual, partnership, corporation or other legal entity.

RETAINING TANK (also called a "holding tank") — A watertight receptacle which receives and retains sewage and is designed and constructed to hold sewage pending the ultimate disposal of the sewage at another site.

SEWAGE — Any substance that contains any of the waste products or excrement or other discharge from the bodies of human beings or animals and any noxious or deleterious substances being harmful or inimical to the public health or to animal or aquatic life or to the use of water for domestic water supply or for recreation or which constitutes pollution under the Act of June 22, 1937 (P.L. 1987, No. 394), known as the "Clean Streams Law," as amended.

SEWAGE ENFORCEMENT OFFICER — The Chester County Health Department.

TOWNSHIP — East Whiteland Township, Chester County, Pennsylvania.

TREATMENT TANK — A watertight receptacle which receives the discharge of sewage from a house or building sewer line and is designed and constructed so as to permit settling of settleable solids from the liquid digestion of the organic matter by detention and discharge of the liquid portion into a distribution system or pit for underground dispersion or elevated sand mound, individual spray irrigation. Treatment tanks include septic tanks, cesspools, aerobic units and the like.

§ 154-117. Scope; applicability.

A. The requirements of this article shall be effective throughout the municipal limits of East Whiteland Township, Chester County.

B. Applicability.

(1) The operation, maintenance and repair of an individual, commercial or community on-lot sewage system shall be the responsibility of the property owner; provided, however, that maintenance and repair shall be subject to the continuing surveillance and inspection by the Township, its authorized agent and/or the Sewage Enforcement Officer.

(2) It shall be the responsibility of the property owner who utilizes an on-lot sewage disposal system to have it pumped in accordance with the schedule set forth in § 154-119 of this article and to make such other repairs or replacements as are necessary to prevent the malfunctioning of the system.

(3) The construction, repair and/or replacement of an individual, commercial or community on-lot disposal system shall be subject to the issuance of appropriate permits by the Chester County Health Department and/or PADEP.

§ 154-118. Inspection.

A. All on-lot systems, COLDS and small flow treatment facilities shall be subject to periodic inspections and shall be subject to inspection at any time if one or more of the following events occurs:

(1) During the installation of any individual, commercial or community on-lot sewage system or small flow treatment facilities.

(2) If the licensed septic tank contractor performing his regular pumpout schedule contacts the Township or Chester County Health Department that a serious malfunction condition exits at an on-lot system or small flow treatment facility.

(3) If the owner or a neighboring property owner of a facility contacts the Township, PADEP or the Chester County Health Department.

(4) If the owner fails to submit the proof of pumping within 90 days after the date on which pumping is required as specified in § 154-119.

(5) For a small flow treatment facility, in addition to the above, if periodic reports submitted to the Township or PADEP indicate that the facility effluent is not achieving its minimum requirements.

B. Items to be inspected for on-lot systems:

(1) Baffle condition.

(2) Extensions (riser rings).

(3) Inspection ports.

(4) High water level in tank.

(5) Wet areas near system or site.

(6) Noticeable odors.

(7) Sewer backup into house.

(8) Abundant grass growth near system or site.

(9) Backflow of water from absorption area to tank.

C. For the small flow treatment facility, the following inspections should be made in addition to any of the applicable items under Subsection B:

(1) Evidence that the system is operating in accordance with the design.

(2) Test for alternating of blowers and other operating parts.

(3) Inspect outfall line, if any, for evidence of recent discharge and no clogs in the outfall line.

(4) Inspect discharge effluent for clarity and sampling if deemed appropriate.

§ 154-119. On-lot/COLDS maintenance.

A. Treatment tank systems. The owner of a lot who uses a treatment tank system must have the tank(s) pumped and the contents disposed of at a licensed sewage disposal facility at least once every three years by a Chester County Health Department licensed septic tank contractor. Every owner of a treatment tank system existing on any lot on the effective date of this article shall submit proof of the required pumping and disposal to the Township's Codes Enforcement Officer not later than May 31, 2008, in the form of a receipted bill issued by the

contractor or such other proof as shall be acceptable to said Officer. If a system has been pumped within 12 months of the May 31, 2008, deadline, proof of such pumping shall be submitted to the Township's Code Enforcement Officer. That system will then have to be pumped prior to the expiration of three years from the date that the system was last pumped. Thereafter, proof of pumping shall be submitted to the Codes Enforcement Officer demonstrating pumping and disposal of the system's contents within the preceding twelve-month period at least once every three years. The owner of a system installed after the effective date of this article shall henceforth pump his system in accordance with the schedule set forth herein.

B. Retaining tanks. The owner of a lot utilizing a retaining tank(s) or a sewage treatment system designed or operated as a retaining tank on the effective date of this article shall enter into a written contract with a Chester County Health Department licensed septic tank contractor requiring periodic pumping and disposal of the tank's contents in accordance with the schedule required by the permit which authorized the installation and use of the retaining tank system. A copy of the contract shall be filed by the owner with the Codes Enforcement Officer by May 31, 2008, and annually thereafter and shall be in effect and valid for a period of at least one year. The owner of a system installed after the effective date of this article shall submit the required contract to the Codes Enforcement Officer within one year of the installation and annually thereafter.

C. Stream discharge systems. The owner of a lot on which a stream discharge sewerage system approved and permitted by the PADEP has been installed shall register the system with the Township within 90 days following the effective date of this article by filing a copy of the current PADEP permit, together with any other information required by the Codes Enforcement Officer to verify the current validity of the permit and copies of any tests verifying the system's operational integrity performed during the 12 months immediately preceding the registration. The owner of a system installed after the effective date of this article shall register the system with the Township within 90 days of such installation. The Codes Enforcement Officer or other authorized agent shall arrange for periodic inspections as required.

D. Community on-lot disposal systems (COLDS). The operator(s) of any COLDS permitted for flows over 2,500 gallons per day shall submit regular reports to the Township. Reports shall be in the PADEP format for municipal waste load management and discharge monitoring reports. Reports are to be submitted to the Township at least as often and at the same time as they are to be submitted to PADEP.

E. Compliance. Failure to comply with the provisions of Subsections A through D of this § 154-119 or to correct any defect determined during an inspection conducted pursuant to § 154-118 hereof within the time specified for by the Codes Enforcement Officer shall constitute a violation of this article, subjecting the owner of the property on which

the system is installed to the enforcement and penalty provisions of §§ 154-121 and 154-122 of this article.

F. Change of ownership. Prior to the conveyance of any lot which is subject to the provisions of this article, the sewage system installed on such lot shall be pumped and its contents disposed of as required by this section, unless the owner has filed with the Township a receipt issued by a licensed septic tank contractor proving that the system was pumped out within the immediately preceding six-month period. Following any conveyance of the lot, the owner shall be subject to the provisions of this article.

G. Promulgation of regulations and required proof. In addition to the requirements specified in this section, the Board may, by resolution, promulgate such forms and regulations for the administration and enforcement of this article as it shall determine necessary. Failure of a lot owner to receive or secure any required form shall not constitute a defense to the enforcement or penalty provisions of this article.

§ 154-120. System rehabilitation.

When the Township becomes aware of a violation(s) of this article, regulations promulgated by the Township hereunder or County Health Department regulations, it shall report such violation(s) to the Chester County Health Department and/or PADEP. All facilities regulated in this article shall be subject to the applicable rules and regulations of the Chester County Health Department and/or PADEP.

§ 154-121. Enforcement; appeals.

A. The Township's Codes Enforcement Officer shall have the power and authority to determine all issues relating to compliance with the provisions of this article and to bring and prosecute in the name of the Township enforcement and penalty proceedings for violations of its provisions.

B. Notice. If it appears that a violation of this article has occurred, the Township's Codes Enforcement Officer shall issue an enforcement notice to the property owner. Such notice shall be personally delivered or sent via certified mail to the owner of record of the property where the violation has occurred. The enforcement notice shall state the following:

(1) The name of the owner of record and any other person against whom the Township intends to take action.

(2) The location of the property where the violation has occurred.

(3) The specific violation of this article.

(4) The date before which steps for compliance must be completed.

(5) That failure to comply with the notice within the time specified constitutes a violation with possible sanctions imposed.

C. Appeals from the Codes Enforcement Officer's determinations or interpretations of the provisions of this article shall be taken to the Board within 30 days from the date of such determination or interpretation. Appeals shall be heard and determined in accordance with the provisions of the Local Agency Law. The Board may request documentation and consult with the Township Engineer or Solicitor or other competent authorities as it determines necessary for a just resolution of the appeal and may impose the reasonable costs thereof upon the appellant; provided, however, that the Board shall have no jurisdiction to hear or determine any appeal from the action of the Codes Enforcement Officer in prosecuting a violation of this article in a summary proceeding before a District Justice.

§ 154-122. Violations and penalties.

Any person who violates any provision of this article or who fails to comply with any of its provisions or regulations promulgated hereunder or who fails or refuses to comply with any lawful notice, order or direction of the Codes Enforcement Officer shall be guilty of a summary offense and, upon conviction by a District Justice, shall pay a fine of not less than $100 nor more than $1,000, together with the costs of prosecution, and upon default in payment of the fine and costs, shall be subject to imprisonment in the county prison for a term not exceeding 30 days. Each day during which any violation of this article continues shall constitute a separate offense punishable by like fine or imprisonment.

§ 154-123. Fee schedule.

The Board of Supervisors shall, by resolution, adopt a fee schedule for the administration of this article. Said schedule shall be kept on file by the Township Secretary and shall be reviewed and revised as necessary.

EXHIBIT I1

NOTICE TO BE SENT TO AQUA CUSTOMERS

NOTICE OF PROPOSED ACQUISITION AND RATE BASE ADDITION
Docket No. A-2021-3026132

Dear Customer:

On [DATE], the Pennsylvania Public Utility Commission (PUC) conditionally accepted for filing the application of Aqua Pennsylvania Wastewater, Inc. (Aqua) for approval to acquire the East Whiteland Township (East Whiteland) wastewater system assets. East Whiteland serves approximately 3,900 customers in Chester County, Pennsylvania. Aqua's application also requests that the PUC authorize an addition of up to $54.93 million to Aqua's rate base pursuant to 66 Pa. C.S. § 1329. A utility's rate base is the value of property used by the utility to provide service to its customers and is one of several components used to establish a utility's customer rates.

Aqua periodically makes applications to the PUC for newly acquired systems which requires Aqua to send these types of notices. This notice is specific to the East Whiteland acquisition and you may receive additional notices regarding other acquisitions in the future.

This acquisition will not immediately, but may in the future, affect water and/or wastewater bills of Aqua customers, including the new East Whiteland Township wastewater customers. Aqua is not requesting a rate increase as part of the acquisition. Your rates will not change as a result of this transaction until the conclusion of an Aqua rate case where Aqua includes the East Whiteland system and requests and receives PUC approval to increase its rates. At that time, based on a preliminary analysis of the potential rate impacts, Aqua estimates that the rates of the average customer could increase. The amount of the increase will be determined in Aqua's next base rate case and will be dependent on how the PUC chooses to apportion the increase among Aqua's acquired and existing customers. The tables below present non-binding, estimated incremental rate effects of the proposed rate base addition on Aqua's existing water and wastewater customers:

Aqua Wastewater Customers

Rate Class	Average Usage	Estimated Monthly Increase	Estimated Percentage Increase
Residential	3,020 gal/month	$4.62	4.67%
Commercial	21,940 gal/month	$14.53	4.67%
Industrial	3,200 gal/month	$3.74	4.67%

Aqua Water Customers

Rate Class	Average Usage	Estimated Monthly Increase	Estimated Percentage Increase
Residential	4,080 gal/month	$0.33	0.41%
Commercial	37,050 gal/month	$2.06	0.41%
Industrial	211,510 gal/month	$9.72	0.41%

The amounts stated above could change and will depend on how the PUC chooses to apportion any increase among the types of service, rate zones, and classes of customers.

PUC ROLE

The state agency which approves acquisitions and rates for regulated public utilities is the PUC. The PUC will review and investigate the proposed acquisition and requested $54.93 million in additional rate base. After examining the evidence, the PUC may approve, modify or deny the acquisition and may approve or modify the $54.93 million addition to rate base. The PUC will issue a decision on the application on or around [DATE].

ACTIONS YOU CAN TAKE

You can support or challenge Aqua's request by:

1) Sending a letter to the PUC. You can tell the PUC why you support or object to Aqua's acquisition of East Whiteland's wastewater system in your letter. This information can be helpful when the PUC investigates the application. Send your letter to the Pennsylvania Public Utility Commission, Post Office Box 3265, Harrisburg, PA 17105-3265.

2) Attending or presenting testimony at a PUC Public Input Hearing. You can attend or be a witness at a PUC public input hearing. The PUC holds public input hearings if it opens an investigation into Aqua's transaction and there is enough interest in the case. At these hearings, you can present your views in person to the PUC judge and to company representatives. Testimony under oath becomes part of the application case record. The PUC holds these hearings in the service area of the company. For more information, call the PUC at 1.800.692.7380.

3) Filing a protest or a petition to intervene. If you want to be a party to the case, you must file a protest or a petition to intervene. You then have an opportunity to take part in all the hearings about the proposed acquisition. You can receive copies of all materials distributed by the other parties. Protests and petitions to intervene must be filed in accordance with 52 Pa. Code (relating to public utilities) on or before [DATE]. Filings must be made with the Secretary of the Pennsylvania Public Utility Commission at P.O. Box 3265, Harrisburg,

PA 17105-3265, with a copy served on Aqua's counsel at Thomas, Niesen & Thomas, LLC, Attn: Thomas T. Niesen, 212 Locust Street, Suite 302, Harrisburg, PA 17101.

The documents filed as part of this application are available for inspection and copying at the Office of the Secretary of the PUC between 8 a.m. and 4:30 p.m., Monday through Friday, on the PUC's website at www.puc.pa.gov and at Aqua's offices at 762 West Lancaster Avenue, Bryn Mawr, PA 19010. The PUC docket number is A-2021-3026132.

EXHIBIT I2

NOTICE TO BE SENT TO
EAST WHITELAND TOWNSHIP CUSTOMERS

NOTICE OF PROPOSED ACQUISITION AND RATE BASE ADDITION
Docket No. A-2021-3026132

Dear Customer:

On [DATE], the Pennsylvania Public Utility Commission (PUC) conditionally accepted for filing the application of Aqua Pennsylvania Wastewater, Inc. (Aqua) for approval to acquire the East Whiteland Township (East Whiteland) wastewater system assets. East Whiteland serves approximately 3,900 customers in Chester County, Pennsylvania. Aqua's application also requests that the PUC authorize an addition of up to $54.93 million to Aqua's rate base pursuant to 66 Pa. C.S. § 1329. A utility's rate base is the value of property used by the utility to provide service to its customers and is one of several components used to establish a utility's customer rates.

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East Whiteland Customers

Rate Class	Average Usage	Estimated Monthly Increase	Estimated Percentage Increase
Sewer District A & B	Fixed	$44.31	132.93%
Sewer District C	Fixed	$60.04	132.93%
Sewer District D	Fixed	$66.47	132.93%
Sewer District E	Fixed	$53.17	132.93%
High Volume Users	372,210 gal/month	$3,067.71	132.93%

The amounts stated above could change and will depend on how the PUC chooses to apportion any increase among the types of service, rate zones, and classes of customers.

PUC ROLE

The state agency which approves acquisitions and rates for regulated public utilities is the PUC. The PUC will review and investigate the proposed acquisition and requested $54.93 million in additional rate base. After examining the evidence, the PUC may approve, modify or deny the

acquisition and may approve or modify the $54.93 million addition to rate base. The PUC will issue a decision on the application on or around [DATE].

ACTIONS YOU CAN TAKE

You can support or challenge Aqua's request by:

1) Sending a letter to the PUC. You can tell the PUC why you support or object to Aqua's acquisition of East Whiteland's wastewater system in your letter. This information can be helpful when the PUC investigates the application. Send your letter to the Pennsylvania Public Utility Commission, Post Office Box 3265, Harrisburg, PA 17105-3265.

2) Attending or presenting testimony at a PUC Public Input Hearing. You can attend or be a witness at a PUC public input hearing. The PUC holds public input hearings if it opens an investigation into Aqua's transaction and there is enough interest in the case. At these hearings, you can present your views in person to the PUC judge and to company representatives. Testimony under oath becomes part of the application case record. The PUC holds these hearings in the service area of the company. For more information, call the PUC at 1.800.692.7380.

3) Filing a protest or a petition to intervene. If you want to be a party to the case, you must file a protest or a petition to intervene. You then have an opportunity to take part in all the hearings about the proposed acquisition. You can receive copies of all materials distributed by the other parties. Protests and petitions to intervene must be filed in accordance with 52 Pa. Code (relating to public utilities) on or before [DATE]. Filings must be made with the Secretary of the Pennsylvania Public Utility Commission at P.O. Box 3265, Harrisburg, PA 17105-3265, with a copy served on Aqua's counsel at Thomas, Niesen & Thomas, LLC, Attn: Thomas T. Niesen, 212 Locust Street, Suite 302, Harrisburg, PA 17101.

The documents filed as part of this application are available for inspection and copying at the Office of the Secretary of the PUC between 8 a.m. and 4:30 p.m., Monday through Friday, on the PUC's website at www.puc.pa.gov and at Aqua's offices at 762 West Lancaster Avenue, Bryn Mawr, PA 19010. The PUC docket number is A-2021-3026132.

EXHIBIT J1

EAST WHITELAND TOWNSHIP
ANNUAL FINANCIAL REPORT FOR 2019

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2019
East Whiteland Township Finance Department

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Certified Public Accountants and Business Consultants

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2019

East Whiteland Township Finance Department
John B. Nagel, Township Manager

INTRODUCTORY SECTION

EAST WHITELAND TOWNSHIP
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EAST WHITELAND TOWNSHIP
THE HEART OF GREAT VALLEY

209 Conestoga Road
Frazer, Pennsylvania 19355-1699
Telephone: 610-648-0600
www.eastwhiteland.org

Board of Supervisors: Susan Drummond • Scott Lambert • Richard Orlow **Township Manager:** John Nagel

June 3, 2020

To the Board of Supervisors and Citizens of East Whiteland Township:

We are pleased to present to you the Comprehensive Annual Financial Report of East Whiteland Township for the fiscal year ended December 31, 2019. A complete set of financial statements presented in conformity with generally accepted accounting principles (GAAP) and audited in accordance with generally accepted auditing standards by a firm of licensed certified public accountants is presented herewith.

This report consists of management's representations concerning the finances of East Whiteland Township. Consequently, responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, including all disclosures, rests with the Township's management. To the best of our knowledge, the information presented in this report is accurate in all material respects and is reported in a manner designed to fairly represent the financial position and results of operations of the funds and component units of East Whiteland Township. All disclosures necessary to enable the reader to gain an understanding of East Whiteland Township's financial activities have been included.

East Whiteland Township's financial statements have been audited by Maillie LLP, a firm of licensed certified public accountants. The goal of the independent audit was to provide reasonable assurance that the financial statements of East Whiteland Township for the fiscal year ending December 31, 2019, are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures of the financial statements; assessing the accounting principles used and significant estimates by management; and evaluating the overall financial statement presentation. The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that East Whiteland Township's financial statements for the fiscal year ended December 31, 2019, are fairly presented in conformity with GAAP. The independent auditors' report is presented at the beginning of the Financial Section of this report.

The purpose of this report is to provide readers with useful information concerning the Township's financial position and operations. Generally Accepted Accounting Principles (GAAP) require that management provide a narrative introduction, overview and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. East Whiteland Township's MD&A can be found immediately following the report of the independent auditors.

Profile of the Township

East Whiteland Township is located in the middle of the Chester Valley in east-central Chester County, about 25 miles west of central Philadelphia. With about 11 square miles of land area, the Township measures slightly more than four miles in an east-west direction and 2.8 miles from north to south.

East Whiteland Township is located in a diverse and dynamic suburban area traversed by several important highways, with an excellent mix of housing and expanding opportunities for employment, making it one of the most desirable communities in the region in which to live and work. As part of the Great Valley School District, East Whiteland houses the middle and senior schools as well as the K.D. Markley Elementary School. East Whiteland is also home for Immaculata University and has campuses for the Drexel University Lebow College of Business and Penn State University Great Valley.

Whiteland Township was part of the Welsh Tract purchased from William Penn in 1684 by a group of Quakers. In 1704, part of the tract became Whiteland Township. In 1765, by decree of the County Court the Township was divided into East and West Whiteland Townships. Historically, East Whiteland Township was predominantly agricultural, with several crossroad villages strung along Lancaster Pike and mills along Valley Creek. The arrival of railroads in the mid 1800's led to the development of several mineral extraction businesses followed by construction materials processing, steel fabricating, petroleum and natural gas storage and transmission, and disposal of waste materials. With the completion of route 202 through the Township in the 1960's, East Whiteland evolved into a major office employment center, and some of the previously dominant businesses ceased operation while others continue to function in a community that has changed a great deal over the years. In 1950 the Township population was 1,740. The current estimated resident population is 11,000, however, the number of people that work in the municipality on a daily basis is more than 30,000.

East Whiteland Township is governed by a three member elected Board of Supervisors that serves as the Township's legislative and policymaking body. The Board members are elected at large to staggered six-year terms. East Whiteland Township operates under the auspices of the Pennsylvania Second Class Township Code. The Board of Supervisors is empowered to appoint professionals to assist in the operation of the Township and to furnish advice and counsel on technical matters. Additionally, the Board appoints all the members of the various boards and commissions, including the Planning Commission and Zoning Hearing Board. The Tax Collector and three member Board of Auditors are elected positions. Levying taxes and authorizing appropriations are the responsibility of the Board of Supervisors.

The Board of Supervisors is assisted by a full-time appointed Township Manager who is responsible for the day-to-day operations of the Township. The Township provides a full range of municipal services. The public safety programs include police, fire protection, building inspection, planning, zoning, emergency management and code enforcement. East Whiteland Township partners with the East Whiteland Township Volunteer Fire Association to provide emergency services. The countless hours spent by the volunteers in protecting the community are greatly appreciated. Public works programs include street maintenance and repair, street lighting, snow removal, traffic signalization, street markings, sewer system maintenance, storm sewer and storm water basin maintenance and maintenance of Township buildings and park facilities. The Township owns and maintains numerous community and neighborhood parks and nature areas and supports the Friends of Summer Stage to provide free summer concerts in Valley Creek Park.

Major Initiatives

Following are some of the major initiatives undertaken by the Township in 2019:

- **Commercial and Residential Development** continue to be a major focus in East Whiteland Township. Our staff works with the developers to ensure the Township interests are protected and the Comprehensive Plan goals are met.

- **Traffic issues** - In 2014, the Township secured an ARLE grant of $445,000 to upgrade traffic signals in the Township to reduce traffic congestion. This project began in 2018 and was fully implemented in 2019. The Route 30 Corridor Master Plan for the widening of Rt. 30, land use, and pedestrian traffic was completed during 2018. In addition, the Act 209 Transportation Study was completed and a transportation impact fee to be imposed upon new subdivision and new development to fund transportation capital improvements in accordance with a transportation capital improvements plan and a roadway sufficiency analysis.

- **Multi-year Financial Management Plan** - In 2018, with a grant from the Commonwealth of Pennsylvania Department of Community and Economic Development and its Early Intervention Program, the Township worked with consultants to develop a multi-year financial management plan that included an assessment of operations and financial condition. The Township had recently relied on non-recurring revenues to cover recurring operating costs, pension costs are increasing and unfunded liabilities are growing. A baseline projection showed a deficit of $1.5 million in 2019 with deficits continuing through 2023 absent corrective action. Ultimately, to close the deficit, an increase to the local earned income tax rate was passed for 2019. For 2019 the earned income tax rate was increased to 0.75% from 0.50%. The five year forecast was rolled forward and updated in 2019 and utilized as a tool for planning and budgeting.

  Controlling health insurance costs continues to be a primary focus and the Township's AFSCME and Police employees moved to a plan with design changes that reduced current costs and cost growth while still providing quality coverage for its employees in May 2019 and in February 2020, respectively.

Fund Balance Policy

The Township has adopted GASB Statement No. 54, which redefined how fund balances of the Governmental Funds are presented in the financial statements. Fund balances are classified as follows: Non spendable, Restricted, Committed, Assigned and Unassigned.

Long-Term Debt Activity

For more detailed information on long-term debt activity, please see Notes to the Basic Financial Statements (Note F, Long-Term Debt).

Capital Asset Activity

For more detailed information on capital asset activity, please see the Notes to the Basic Financial Statements (Note C, Capital Assets).

Local Economy

Located in east-central Chester County with its highly trained and educated workforce, desirable quality of life, competitive tax structure and close proximity to Philadelphia, PA, East Whiteland Township has a diverse and dynamic economy, boasting over 1,000 businesses.

Due to the coronavirus (SARS-CoV-2) pandemic and associated societal and business closures ordered by the Commonwealth of Pennsylvania, the general outlook for the economy of East Whiteland Township is uncertain. Locally planned continues to move into production in 2020. However, the Township's economy and large tax base is expected to slow in the near term as a decrease in earned income tax revenue in the range of 6.3% - 12.6% is anticipated before continuing to grow, driven in large part by business and commercial development, and by new residential construction. East Whiteland Township is home to the Great Valley Corporate Center and serves as U.S headquarters and Regional Headquarters to several national and international firms including Saint-Gobain, Vishay and Cerner Corporation. Vanguard has plans to add 500,000 square feet of office space and new jobs are expected over the next several years. Although there are major employers in the Township, the employment base is not dominated by one business or industry. The Township's business base consists of software development and application firms, telecommunication firms, e-commerce companies, design and manufacturing businesses, and pharmaceutical research firms. As noted, the Township hosts corporate and regional headquarters operations as well as trade and professional associations, retail firms, wholesale distributors, and business and financial services. Noting the list of Principal Employers in the Statistical Section of this report, the top employers comprised approximately 32% of the workforce in 2019. This diversity would provide stability to weather downturns in the economy.

During 2019, land development and subdivision activity continued. A number of mixed use developments including over 1,000 units of housing are expected to be completed over the next five years. There is also approximately 800,000 square feet of commercial properties under construction or pending development. The Township has updated and will continue to update some aspects of the zoning for the Route 30 Corridor to encourage redevelopment.

A more detailed analysis of the Township's overall financial condition during the fiscal year ended 2019 is included as part of Management's Discussion and Analysis section of this report.

Long-Term Financial Planning

The Board of Supervisors and Township staff is committed to providing value to the taxpayers by maintaining quality service levels and offering new benefits whenever the opportunity presents itself and the Township's fiscal position permits. To accomplish this, the Township regularly evaluates its revenue generating strategy. The Township has also developed and maintains a multi-year financial management plan and multi-year financing plans for replacement of capital assets and infrastructure improvements.

Also, as a part of sound fiscal planning, the Township has adopted a fund balance policy that is compliant with GASB 54 for determining fund balance categories and based on recommendations from the Government Finance Officers Association for maintaining a fund balance in the General Fund of approximately two months of expenditures, or a range of fifteen to twenty percent of General Fund appropriations. Due to the uncertainty associated with the coronavirus pandemic, the Board of Supervisors assigned $4,050,000 of fund balance to tax rate stabilization.

Internal Controls

The management of the Township is responsible for establishing and maintaining an internal control structure designed to ensure that the assets of the Township are protected from loss, theft, or misuse and to ensure that adequate accounting data is compiled and maintained to allow for the preparation of financial statements in conformity with generally accepted accounting principles. The internal control structure is designed to provide reasonable, but not absolute, assurance that the Township's objectives are met. The concept of reasonable assurance recognizes that:

1. The cost of a control should not exceed its benefit, and

2. The evaluation of cost and benefits requires estimates and judgments by management.

All internal accounting control evaluations occur within the above framework. We believe that the Township's internal accounting controls adequately safeguard assets and provide reasonable assurance of proper recording of transactions and maintenance of asset accountability.

In addition to the above controls, the Township maintains budgetary accounting controls. The objective of these controls is to ensure compliance with legal provisions embodied in the annual budget approved by the Board of Supervisors. Activities of all Township funds, with the exception of developers' escrow funds and pension trust funds, are included in the annual appropriation budget. The annual budget process officially begins in July of each year with the request for budget proposals sent to the Township's department heads. Throughout the course of September and October, requests for funding are submitted and reviewed by the Township management. A proposed annual budget is submitted to the Board of Supervisors in October or November. The Board holds a public hearing on the proposed budget and the process culminates with a vote for adoption by the governing body in December. The Township's fiscal year begins on January 1st and ends on December 31st. All annual appropriations lapse at year-end.

Although the Township maintains the legal level of control established by law for its operating budget, the Board of Supervisors has also established an internal budgetary control system at the departmental level. Each department is required to operate within the annual departmental budget established by the Board of Supervisors.

As demonstrated by the statements and schedules included in the financial section of this report, the Township continues to meet its responsibility for sound financial management.

Awards and Acknowledgements

Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to East Whiteland Township for its comprehensive annual financial report for the fiscal year ended December 31, 2018. This was the fourth consecutive year that the government has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to GFOA to determine its eligibility for another certificate.

Preparation of this report would have been impossible without the hard work of the Finance Department staff, not just in the compilation of information at year-end, but in maintaining the Township's financial records and fiscal control system throughout the year. We also wish to thank our auditors, Maillie LLP, for their expertise and assistance throughout this process.

We greatly appreciate the ongoing support and guidance we receive from the Board of Supervisors.

Respectfully Submitted,



John B. Nagel
Township Manager



Catherine A. Kleponis
Director of Finance

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

East Whiteland Township

Pennsylvania

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2018

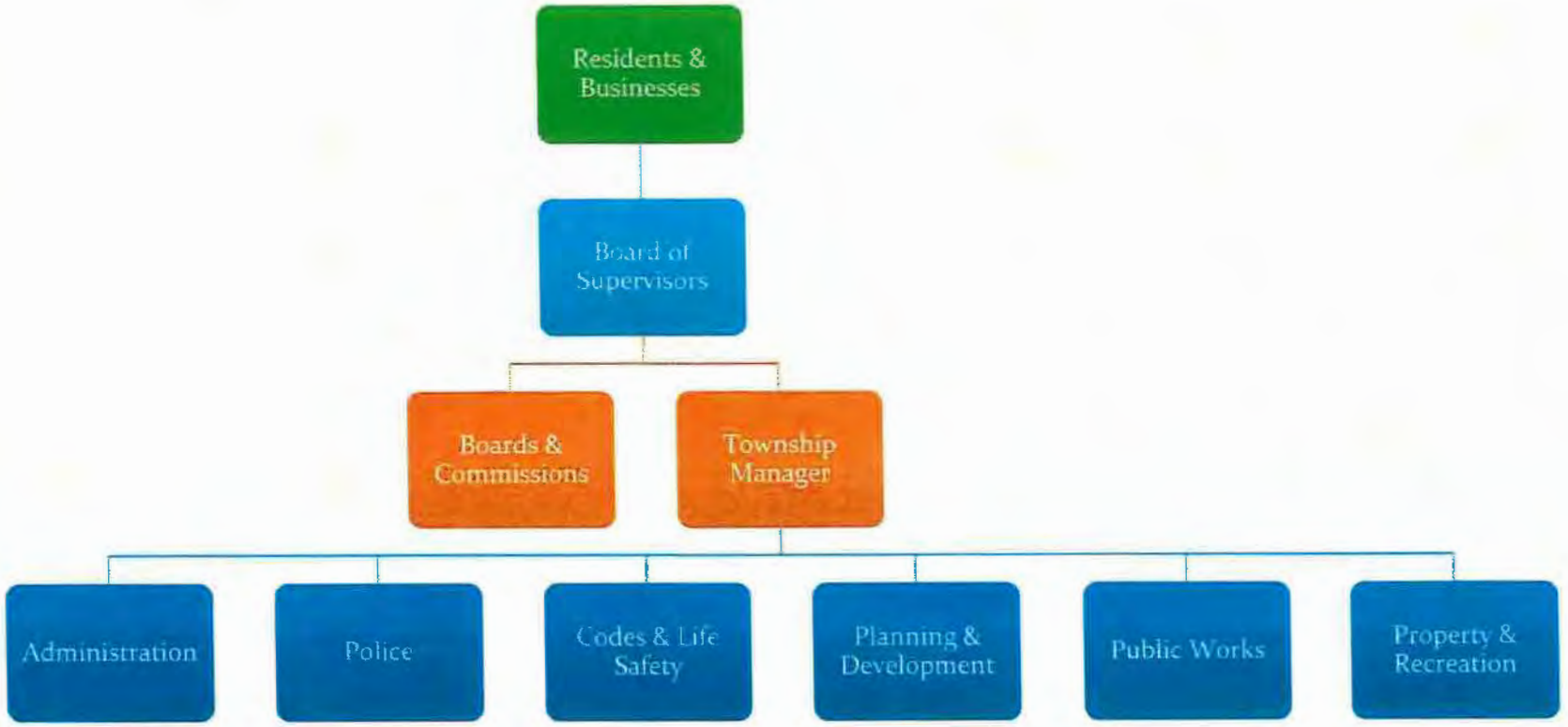
Christopher P. Morrill

Executive Director/CEO

East Whiteland Township

64 FT & 7.3 PT = 71.3 FTE

Revised January 2020



EAST WHITELAND TOWNSHIP
LIST OF OFFICIALS
AS OF DECEMBER 31, 2019

SUPERVISORS

Chairman: Susan Drummond
Vice Chairman: Scott Lambert
Member: Richard Orlow
Treasurer: John Nagel

APPOINTED OFFICIALS

John Nagel, Township Manager
Hamburg, Rubin, Mullin, Maxwell & Lupin, Solicitor
Unruh, Turner, Burke & Frees, Zoning Hearing Board Solicitor

OTHER MANAGEMENT OFFICIALS

Cathy Kleponis, Director of Finance
Darrell Becker, Arro Consulting, Township Engineer
Chris Yeager, Police Chief
Stephen Miller, Deputy Director of Codes & Life Safety, Codes Division, Chief Fire Marshall
Matthew Fink, Deputy Director of Codes & Life Safety, Fire & EMS Divison
Mark Koenig, Volunteer Fire Chief
Loren Nafziger, Emergency Management Coordinator
Steven Brown, Assistant Township Manager, Director of Property and Recreation, Director of Codes & Life Safety, Zoning Officer
William Steele, Assistant Township Manager, Director of Public Works
Zachary Barner, Director of Planning
Donna Wikert, Township Secretary
Roseann McGrath, Township Human Resources Consultant

OTHERS

Betsy Blackburn Goslin - Tax Collector (elected)
Keystone Collection Group, Local Income Tax Collector
ARRO, Civil Engineer
Pennoni Associates Inc, Sewer Engineer
McMahon Associates, Transportation Engineer
Campbell, Durrant, Beatty, Palombo & Miller PC, Labor Attorney
Girard, Municipal Pension Services
Conrad Siegel, Actuary
Thomas Comitta Associates, Comprehensive (Land Use) Plan Consultant
KeyBank, Primary Depository

FINANCIAL SECTION

Maillie
Expertise Beyond The Numbers®

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600 Willowbrook Lane, Suite 624, West Chester, PA 19382
PO Box 11847, Wilmington, DE 19850-1847

Independent Auditors' Report

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

We have audited the accompanying financial statements of the governmental activities, the business-type activities, each major fund and the aggregate remaining fund information of East Whiteland Township as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise East Whiteland Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

East Whiteland Township's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, each major fund and the aggregate remaining fund information of as of December 31, 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America (GAAP).

Emphasis of Matter

For the year ended December 31, 2019, East Whiteland Township adopted new accounting guidance, implementing Governmental Accounting Standards Board Statement No. 84, *Fiduciary Activities*. Our opinion is not modified with respect to this matter.

As discussed in Note Q to the financial statements, subsequent to year end, a global pandemic due to the spread of the COVID-19 coronavirus caused the United States government to declare a national emergency. The pandemic has resulted in economic uncertainties which have the potential to have a significant impact on all Township operations. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis on pages 17 through 27, budgetary comparison information on pages 87 and 88, pension plan information on pages 89 through 97 and post-employment benefits other than pension plan information on pages 98 through 100 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise East Whiteland Township's basic financial statements. The supplementary information listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

The supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Maillie LLP

Oaks, Pennsylvania
June 3, 2020

OVERVIEW OF THE FINANCIAL STATEMENTS

Management's Discussion and Analysis provides an introduction to the Township's basic financial statements. The basic financial statements include:

1. Township-Wide Financial Statements
2. Fund Financial Statements
3. Notes to the Financial Statements

Additional information is also provided to supplement the basic financial statements.

Township-Wide Financial Statements

The Township's annual report contains two Township-Wide Financial Statements. They are the *Statement of Net Position* and the *Statement of Activities.* These statements provide both long-term and short-term information about the Township's overall financial status. Financial reporting at this level is similar to that found in the private sector with its basis in full accrual accounting and the elimination or reclassification of internal activities.

The *Statement of Net Position* provides information on all of the Township's assets and liabilities, with the difference reported as *Net Position.* Over time, increases or decreases in net position serve as a useful indicator of whether the Township's financial position is improving or deteriorating. Evaluation of the overall economic health of the Township would include other non-financial factors such as changes in the taxpayer base or the condition of the Township's infrastructure, in addition to the financial information provided in this report.

The *Statement of Activities* reports how the Township's net position changed during the current fiscal year. All current year revenues and expenditures are included in this report regardless of when cash is received or paid. An important purpose of the Statement of Activities is to show the financial reliance of the Township's various activities or services on revenues provided by the Township's taxpayers.

Both Township-Wide Financial Statements are divided into two categories:

1. ***Governmental Activities***: Most of the Township's basic services are included here, such as general government, public safety, public works and recreation. These activities are principally supported by taxes and intergovernmental revenues.
2. ***Business-Type Activities***: Services which are intended to recover all or most of their costs through user fees and charges. The Township's sewer system is the only business-type activity.

Fund Financial Statements

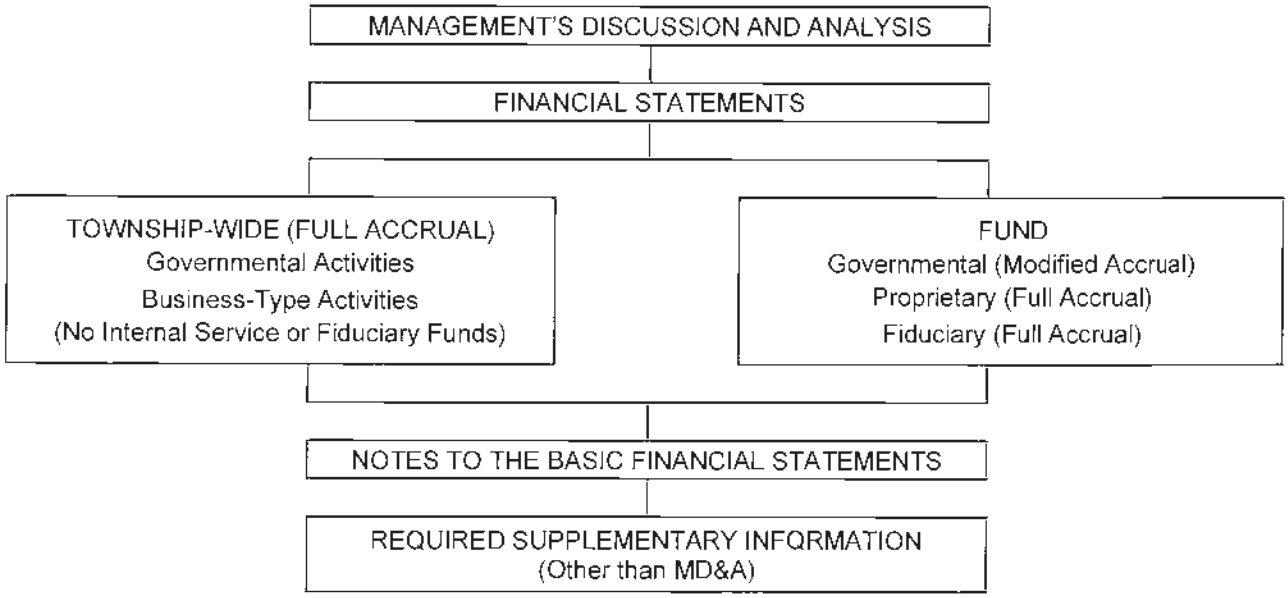
The Fund Financial Statements provide more detailed information about the Township's Funds, focusing on its most significant or "Major Funds" - not the Township as a whole. A fund is an accountability unit used to maintain control over resources segregated by specific sources of funding or spending on particular programs.

- Some funds are required by state law or bond covenants.
- The Township establishes other funds to control and manage money for particular purposes or to show that it is properly using certain revenues.

The Township has three kinds of Funds:

- ***Governmental Funds***: Most of the Township's basic services are included in Governmental Funds, which generally focus on (1) how cash and other financial assets that can readily be converted to cash flow in and out and (2) the balances left at year-end that are available for spending. Consequently, the Governmental Funds' statements provide a detailed *short-term view* that helps you determine whether there are more or fewer financial resources that can be spent in the near future to finance the Township's programs. Because this information does not encompass the additional long-term focus of the Township-Wide statements, additional information is presented that explains the relationship (or differences) between them.
- ***Proprietary Funds***: Services for which the Township charges a fee are generally reported in Proprietary Funds. Proprietary Funds are reported in the same way as the Township-Wide statements. The Township's Enterprise Funds (one type of Proprietary Fund) are the same as its business-type activities but provide more detail and additional information, such as cash flows.
- ***Fiduciary Funds***: The Township is the trustee, or fiduciary, for assets that belong to others, such as the pension plans. The Township is responsible for ensuring that the assets reported in these funds are used only for their intended purposes and by those to whom the assets belong. The Township excludes these activities from the Township-Wide financial statements because it cannot use these assets to finance its operations. The Township's Fiduciary Funds are the Police Pension Fund, the Non-Uniformed Pension Fund, the Firefighter Pension Fund, and the OPEB Trust Fund. The Township also has a Custodial Fund used for deposits the Township holds as prepayments for engineering reviews and other developer costs paid by the Township. When the projects are completed, any balances are returned to the developer

Organization of East Whiteland Township's Annual Financial Report
Figure I-1



Narrative Discussion and Analysis

Within this section of East Whiteland Township's annual financial report, the Township's management provides narrative discussion and analysis of the financial activities of the Township for the fiscal year ended December 31, 2019. The Township's financial performance is discussed and analyzed within the context of the accompanying financial statements following this section.

Condensed Statements of Net Position (In Thousands of Dollars)
Figure I-2

	Governmental Activities		Business-Type Activities		Totals	
	2018	2019	2018	2019	2018	2019
ASSETS						
Current and other assets	$ 14,599	$ 18,091	$ 10,563	$ 11,217	$ 25,162	$ 29,308
Capital assets, net	18,100	17,393	33,997	34,144	52,097	51,537
TOTAL ASSETS	32,699	35,484	44,560	45,361	77,259	80,845
DEFERRED OUTFLOWS OF RESOURCES	3,233	3,664	377	384	3,610	4,048
LIABILITIES						
Long-term debt	25,226	25,255	18,367	17,199	43,593	42,454
Other liabilities	710	599	1,228	1,589	1,938	2,188
TOTAL LIABILITIES	25,936	25,854	19,595	18,788	45,531	44,642
DEFERRED INFLOWS OF RESOURCES	733	1,556	66	509	799	2,065
NET POSITION						
Net investment in capital assets	10,385	9,959	17,401	18,218	27,786	28,177
Restricted	407	625	-	-	407	625
Unrestricted	(1,529)	1,154	7,875	8,230	6,346	9,384
TOTAL NET POSITION	$ 9,263	$ 11,738	$ 25,276	$ 26,448	$ 34,539	$ 38,186

Condensed Statements of Activities (In Thousands of Dollars)
Figure I-3

	Governmental Activities		Business-Type Activities		Totals	
	2018	2019	2018	2019	2018	2019
REVENUES						
Program revenues						
Charges for services	$ 3,685	$ 1,996	$ 5,116	$ 4,746	$ 8,801	$ 6,742
Operating grants and contributions	1,216	1,223	-	-	1,216	1,223
Capital grants and contributions	-	503	2,058	182	2,058	685
General revenues						
Real estate taxes	730	757	-	-	730	757
Other taxes	10,775	12,265	-	-	10,775	12,265
Investment earnings	55	118	28	137	83	255
Gain on sale of assets	24	43	-	-	24	43
Miscellaneous	250	258	1,563	682	1,813	940
TOTAL REVENUES	16,735	17,163	8,765	5,747	25,500	22,910
EXPENSES						
General government	1,992	1,799	-	-	1,992	1,799
Public safety	9,895	9,312	-	-	9,895	9,312
Public works						
Highways and streets	3,315	3,245	-	-	3,315	3,245
Sanitation	18	20	-	-	18	20
Culture and recreation	198	244	-	-	198	244
Community development	4	12	-	-	4	12
Other	7	-	-	-	7	-
Interest on long-term debt	214	222	-	-	214	222
Sewer	-	-	3,705	4,409	3,705	4,409
TOTAL EXPENSES	15,643	14,854	3,705	4,409	19,348	19,263
CHANGE IN NET POSITION BEFORE TRANSFERS	1,092	2,309	5,060	1,338	6,152	3,647
TRANSFERS	166	166	(166)	(166)	-	-
CHANGE IN NET POSITION	1,258	2,475	4,894	1,172	6,152	3,647
BEGINNING NET POSITION	8,005	9,263	20,382	25,276	28,387	34,539
ENDING NET POSITION	$ 9,263	$ 11,738	$ 25,276	$ 26,448	$ 34,539	$ 38,186

General Revenues and Other Changes in Net Position
Figure I-4

	2018	2019	Percent Change
REVENUES			
Real estate taxes	$ 729,661	$ 757,124	4%
Transfer taxes	2,991,303	1,199,970	-60%
Earned income taxes	6,520,525	9,741,890	49%
Local services taxes	1,262,897	1,322,836	5%
Investment income	55,487	118,032	113%
Gain on sale of assets	23,529	43,207	84%
Miscellaneous	250,281	258,162	3%
Charges for services	3,684,814	1,995,593	-46%
Operating grants and contributions	1,216,177	1,222,679	1%
Capital grants and contributions	-	503,494	0%
TOTAL REVENUES	16,734,674	17,162,987	3%
EXPENSES			
General government	1,992,639	1,799,326	-10%
Public safety	9,895,357	9,312,035	-6%
Public works-highways and streets	3,314,877	3,244,902	-2%
Public works-sanitation	17,702	20,190	14%
Culture and recreation	197,842	244,324	23%
Community development	3,578	12,197	241%
Other	6,947	-	133%
Debt service	213,653	221,448	4%
TOTAL EXPENSES	15,642,595	14,854,422	-5%
CHANGE IN NET POSITION BEFORE TRANSFERS	$ 1,092,079	$ 2,308,565	111%

FINANCIAL HIGHLIGHTS

- **Total Net Position** - Assets and Deferred Outflows of Resources exceeded liabilities by $38,186,021 for the fiscal year reported. This total includes both governmental and business-type (Sewer) activities. Capital Assets total $28,177,298, which includes property and equipment net of accumulated depreciation and reduced for outstanding debt related to the purchase or construction of capital assets. The balance is unrestricted assets of $9,384,062 and restricted assets of $624,661 for highway and street projects. Total liabilities include $7.7 million in outstanding debt for GOB governmental bonds and $16.1 million for GOB sewer bonds. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources since the capital assets themselves cannot be used to liquidate these liabilities.

- Cash and Investments - Total Township assets included $24,953,117 in cash and cash equivalents and $252,052 in financial investments, $15,121,394 in the Governmental Funds and $10,083,775 in the Sewer Fund.

- **Governmental Fund Balances** - At the end of 2019, the Township's governmental funds' combined ending fund balance was $17,489,068, an increase of $3,611,243 from the prior year primarily due to an increase in the earned income tax (EIT) rate from 0.5% to 0.75% resulting in revenues that were $3,221,000 higher than the prior year. Of the current balance, $624,661 is restricted for highway and street projects, and $16,864,407 is assigned for the various purposes on the face of the balance sheet.

- **Total General Obligation Bonds Outstanding** decreased by $1,010,000 from 2018 due to principal reductions in the four current general obligation bond issues.

Governmental Activities

Governmental Revenue - 2019

As indicated in the Condensed Statements of Activities (Figure I-3) and displayed in Figure I-4, the primary source of revenue for the township is local taxes which include Earned Income Taxes, Local Services Taxes, and Real Estate (Property and Transfer) Taxes.

- Earned Income Taxes (EIT) totaling $9,741,890 and Local Services Taxes (LST) totaling $1,322,836 were 57% and 8% of revenue respectively. EIT exceeded 2018 reported collections by $3,221,365 (49%) and LST increased by $59,939 (5%). The increase in EIT is attributed to an increase in the EIT rate to 0.75% from 0.50%.

- Real Estate Taxes totaled $757,124 (4% of revenue), an increase of $27,463 (4%) in 2019 related to new construction and reassessments.

- Transfer Taxes totaled $1,199,970 (7% of revenue), a decrease of $1,791,333 (-60%) from 2018 as there were several large commercial properties that transferred ownership in 2018 that were non-recurring in 2019

Service Revenue mostly related to permits, public safety fees, engineering reviews, grants and state aid totaled $1,995,593 (12% of revenue). This was $1,689,221 less than the prior year primarily related to decreased permit fees related to development in the Township (-$1,400,000), and less traffic impact fees collected from developers to fund transportation improvements in accordance with the Township's transportation capital improvements plan (-$200,000).

In 2019 the Township received capital grant funding of $503,494 (3% of revenue) through the State's Automated Red Light Enforcement Program Project Funds.

Governmental Expenses - 2019

As indicated in the Condensed Statements of Activities (Figure I-3) and displayed in Figure I-4, total expenses of the Township's governmental activities, public safety programs account for $9,312,035, or 63% of the total expenses for the Township's governmental activities. Public safety includes the police, codes, and planning & zoning departments plus a full-time staff of 10 firefighters/EMTs who complement the local volunteer fire company. General Administration, and Highway and Street Services account for 12% and 22% respectively of the total expenses.

Total expenses decreased $788,173 (-5%) as follows:

- Public Safety decreased by $583,322 (-6%) in 2019, primarily due to decreased medical costs in our police plan (-$272,000) and decreased premiums in our fire plan (-$75,000), a one-time contribution to the local volunteer fire company for two new fire trucks in 2018 (-$300,000), and decreased postretirement benefit expense (-$570,000). These decreases were offset by funding of post-retirement benefits that was deferred in the prior year ($202,000), increased police pension expense ($118,000), contract annual wage increases for all public safety departments and new police hires, offset by reduced part time hours and overtime ($240,000), and increased information technology costs due to system changes and upgrades ($75,000).

- General Government expenses decreased by $193,313 (-10%) in 2019, primarily due to a decrease in medical insurance premiums due to a less costly plan (-$62,000), a decrease in pension expense (-$61,000), a decrease in information technology related payroll and expense (-$42,000) and lower engineering and solicitor costs and other professional services costs related to special projects and studies (-$154,000), including DCED Early Implementation Program, the Route 30 Corridor Study and the Act 209 Traffic Impact Study. These decreases were offset by an increase in professional services related to labor contract negotiations for the East Whiteland Police Association and AFSCME contracts that expired December 31, 2018 ($55,000), an increase in EIT tax collection fees due to the increase in EIT tax collected ($20,000), and funding of post-retirement benefits that was deferred in the prior year ($51,000).

- Culture and recreation expenses increased $46,482 (23%) in 2019 due to a change in the summer camp program from half day to full day.

Governmental Net Position - 2019

As a result of the 2019 Governmental Activities noted above, East Whiteland recognized a $2,474,730 increase in Net Position. The ending Net Position remains healthy at $11.7 million including $14.9 million in cash to manage annual expenses if revenue timing is an issue.

Business-Type Activities

The Township's only business-type activity is its sewer operation. East Whiteland Township's sewer system includes 13 sewer pumping stations and approximately 77 miles of pipeline. The Township accepts flows and collects sewer rental fees from the adjoining municipalities of East Goshen Township, Charlestown Township and Malvern Borough. The Township, in turn, pays sewer rental fees to neighboring Tredyffrin Township and East Goshen Township, and a public utility company for conveyance and to the Valley Forge Sewer Authority for waste treatment.

- **Service Revenue** in fiscal year 2019 was $4,745,887 or $369,999 less than 2018 due to a decrease in sewer rental fees of $131,000 related to a reduction in water usage by high volume customers, a decrease in connection fees of $43,000, and a decrease in tapping fees of $279,000. Revenue from tapping fees in 2019 is still significant at $944,000. A 2019 insurance reimbursement of $85,000 covered emergency repairs and by-pass charges due to a sinkhole at one of the Township's pump stations.

- **Sewer Expenses** increased $704,000 primarily due to increases in conveyance costs ($513,000), treatment costs ($94,000), waste treatment plant construction charges ($105,000), pump station emergency repairs due to a sinkhole ($90,000), and offset by a decrease in medical insurance premiums due to a less costly plan (-$34,000) and decreased postretirement benefit expense (-$81,000).

- **The Sewer Fund Net Position** at the end of 2019 improved by $1,172,043 related to contributed capital of $182,000 from the dedication of the Townes of Malvern Phase 1 sanitary sewer system, insurance reimbursement of $395,000 for capital construction to rebuild the pump station that was lost due to a sinkhole, reimbursements of prior year waste treatment costs of $288,000, tapping fees of $944,000, and offset by increased sewer expenses of $704,000 described in the paragraph above. The unrestricted net position of the Proprietary Fund amounted to $8,229,857.

FINANCIAL ANALYSIS OF THE TOWNSHIP'S FUNDS

Governmental Funds

Governmental Funds are reported in the Fund Statements with a short-term focus on the inflow and outflow of financial resources. This information is valuable in assessing resources available for upcoming financial requirements. Governmental Funds reported ending fund balances of $17,489,068. Of this year-end total: $4,050,000 is assigned for tax rate stabilization, $500,000 is assigned for pension stabilization, $350,000 is assigned for other postemployment benefits, $650,000 is assigned for storm water management, $2,650,000 is assigned for volunteer committee resources for such purposes as the acquisition of open space, the protection of historic, natural and scenic resources, to establish trails, bike paths, sidewalks and pathways, and energy conservation, $3,250,000 is assigned for the renovation of municipal infrastructure, $2,093,868 is assigned as budget contingency, $726,023 is assigned for capital improvement projects, $500,000 is assigned for equipment, $1,038,779 is assigned for highway and street projects and $1,055,737 is assigned for park development projects. Restricted fund balances include $624,661 for highway and street projects.

Major Governmental Funds - The General Fund is the Township's primary operating fund. The General Fund balance at fiscal year-end was $7,043,868, an increase of $2,516,243 over 2018. The General Fund balance is 57% of our 2019 operating expense and 45% of revenue.

The **Capital Improvement Fund** is a reserve fund for various capital purchases and improvements. The fiscal year-end balance for the Capital Improvement Fund was $8,726,023. This is an increase of $725,728 over the ending fund balance for 2018, resulting from an excess of revenues over expenditures in 2019 from non-recurring revenue that was transferred from the General Fund and assigned for specific projects.

Proprietary Funds

The only Township Proprietary Fund is the Sewer Fund, which was discussed previously under business-type activities.

GENERAL FUND BUDGETARY HIGHLIGHTS

During 2019, there were budget amendments to the original approved General Fund budget to recognize additional revenue of $180,000 from real estate transfer taxes collected, $400,000 from earned income tax, $31,530 from summer camp program fees and $26,000 from interest income, as well as reductions in building permit revenue from development of $200,000, and to make supplemental appropriations netting to $113,000 for certain General Fund operating expenditures.

General Fund actual revenues were higher than the final amended budgeted revenues by $777,524 primarily due to earned income taxes which exceeded budget by $640,890, and unbudgeted insurance claims reimbursements of $120,000.

Overall, general fund actual expenditures were $1,128,024 better than the final budget. The services that had significant favorable variances were as follows:

General Government	$146,309
Police	$606,841
Code Enforcement	$135,739
Public works, highways and streets general services	$75,526
Public works, highways and streets winter maintenance	$57,893
Public works, road maintenance and repair	$32,441

On the schedules of revenues and other financing sources and the schedule of functional expenditures by activities and other financing uses for the General Fund, the net position is better than the budget by $1,405,548 due to the reasons listed above and offset by the excess of revenues over expenditures in 2019 that was transferred out to the Capital Improvement Fund.

CAPITAL ASSETS - NET OF DEPRECIATION

The Township's investment in capital assets, net of depreciation, decreased $560,000 to $51,536,513. Capital Assets for our Sewer system including 13 pump stations and 77 miles of pipeline, comprise $34,143,673 of the total. Infrastructure incorporating 45 miles of road and traffic signals at 39 intersections, is $6,546,003 of the total. Buildings and Improvements comprise $8,029,037. For the detailed information about Capital Assets please see Note C in the report. The schedule (Figure I-5) below details Capital Assets, net of depreciation.

Capital Assets - Net of Depreciation (In Thousands of Dollars)
Figure I-5

	Governmental Activities		Business-Type Activities		Totals	
	2018	2019	2018	2019	2018	2019
Land	$ 1,076	$ 1,076	$ -	$ -	$ 1,076	$ 1,076
Construction in progress	548	136	332	332	880	468
Capacity rights	-	-	11,085	10,953	11,085	10,953
Site improvements	668	638	-	-	668	638
Buildings and improvements	8,061	8,029	-	-	8,061	8,029
Infrastructure	6,996	6,546	22,531	22,793	29,527	29,339
Machinery and equipment	223	297	12	7	235	304
Vehicles	528	671	37	59	565	730
	$ 18,100	$ 17,393	$ 33,997	$ 34,144	$ 52,097	$ 51,537

LONG-TERM DEBT

Long-term debt consists of debt incurred for the purchase and development of capital assets; and for the recording of compensated absences payable to employees, net pension liability and other post-employment benefits (OPEB) liability. The total long-term debt decreased $1,139,000 mostly due to a net increase of $1,292,000 in the OPEB liability primarily resulting from changes of assumptions changing the mortality tables used, and offset by a decrease of $1,426,000 in the pension liability resulting from plan fiduciary net position at 12/31/2019, and a decrease in the bonds for $1,010,000 in principal payments. For more information on long-term debt please see Note F in the report.

Outstanding Long-Term Debt (In Thousands of Dollars)
Figure I-6

	Governmental Activities		Business-Type Activities		Totals	
	2018	2019	2018	2019	2018	2019
General obligation bonds	$ 8,000	$ 7,705	$ 17,040	$ 16,325	$ 25,040	$ 24,030
Bond premium (discount)	38	36	(279)	(260)	(241)	(224)
Capital leases	-	-	-	-	-	-
Net OPEB obligation	11,352	12,962	1,239	921	12,591	13,883
Net pension liability	5,803	4,519	334	192	6,137	4,711
Compensated absences	33	33	33	21	66	54
	$ 25,226	$ 25,255	$ 18,367	$ 17,199	$ 43,593	$ 42,454

NEXT YEAR'S BUDGETS AND RATES

The general outlook for the economy of East Whiteland Township is uncertain due to the coronavirus (SARS-CoV-2) pandemic and associated societal and business closures ordered by the Commonwealth of Pennsylvania. These closures began in early to mid-March 2020 and will continue in some form into the foreseeable future. However, the shutdowns exempted approximately 70% of the U.S. economy and Statewide construction was permitted to resume on May 1, 2020. Locally planned development activity continues to move into production in 2020. Building permit activity and fees based on permits issued to date and in the approval process are relatively unaffected. In the short run, this will continue to add to our building permit fees, transfer taxes and sewer tapping fees and ultimately to our real estate tax, earned income tax and local services tax revenue. For 2020, there will be no rate increase for real estate tax which has been the same low rate of .445 mills for over 25 years nor for the earned income tax rate which increased from 0.5% to 0.75% in 2019. For 2020, the earned income tax budget increased 4% or $350,000 to $9.05 million, and the real estate tax budget decreased 0.7% or $5,180 to $755,820. However it is expected that actual earned income tax received will be between $905,000 – $1,810,000 less, representing 6.3% -12.6% of the General Fund, than the budgeted figure due to the pandemic.

Operating expenses are expected to continue to increase over the next few years as municipal services are heavily labor intensive, and wage and benefit costs continue to increase. However, due to cost savings measures taken in 2019 and others that may be necessary in 2020 due to the pandemic, these increases can be moderated. In 2015 we took steps to reduce the healthcare costs by joining the Delaware Valley Health Insurance Trust for two of our three employee groups. In 2019 the healthcare plan for one employee group and non-represented employees was replaced with a less costly plan. In 2020 the Township's pension costs will increase by 4.2%. 2020 post-retirement benefit costs will be roughly the same as in 2019, being $503,000.

Seventy six (76%) percent of the Township's full time employees (45 of 59) are represented by unions including the East Whiteland Police Association, the International Association of Fire Fighters (IAFF), and the American Federation of State, County and Municipal Employees (AFSCME). None of the three agreements will expire in 2020. Wage increases under the three contracts in 2020 are 3.5%, 3.75%, and 3.75% in the order as listed above.

Increases in East Whiteland sewer infrastructure and department expenses and costs for the sewer treatment plants that service East Whiteland Township continue to impact sewer fund finances. During 2018 we completed commercial sewer rate and tapping fee studies. The rates for high volume commercial sewer services increased 10% for 2019 and additional revenue of $55,000 was budgeted for 2019 and 2020. The rates for all other sewer services and tapping fees will remain the same for 2020.

2020 projects include Conestoga Road and Planebrook Road sewer system expansion design, construction of Bacton Hill Park phase 1, planning for a new building to house the Police Department on the Township campus, additional road resurfacing and traffic improvement projects. The Act 209 Transportation Study that was completed in 2018 resulted in a new traffic impact fee to be used for traffic capital improvements. Recreation impact fees from development and grants will be used to fund the Bacton Hill Park phase 1 construction project.

CONTACTING THE TOWNSHIP'S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of the Township's finances, comply with finance-related laws and regulations and demonstrate the Township's commitment to accountability. If you have any questions about this report or need additional information, please contact the Finance Department at 209 Conestoga Road, Frazer, PA 19355.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
DECEMBER 31, 2019

	Governmental Activities	Business-Type Activities	Totals
ASSETS			
Cash and cash equivalents	$ 14,869,342	$ 10,083,775	$ 24,953,117
Investments	252,052	-	252,052
Receivables	2,925,835	1,151,871	4,077,706
Internal balances	18,493	(18,493)	-
Prepaid items	24,969	-	24,969
Capital assets			
Depreciable capital assets	16,180,123	22,858,658	39,038,781
Non depreciable capital assets	1,212,717	11,265,015	12,497,732
TOTAL ASSETS	35,483,531	45,360,826	80,844,357
DEFERRED OUTFLOWS OF RESOURCES			
Deferred amount related to pensions	1,997,722	113,838	2,111,560
Deferred amount related to OPEB	1,358,713	130,298	1,489,011
Deferred amount on refunding	307,582	139,715	447,297
TOTAL DEFERRED OUTFLOWS OF RESOURCES	3,664,017	383,851	4,047,868
LIABILITIES			
Accounts payable and other accrued liabilities	560,607	430,754	991,361
Interest payable	3,167	185,646	188,813
Other current liabilities	35,256	-	35,256
Unearned revenues	-	971,503	971,503
Long-term liabilities			
Portion due or payable within one year			
Bonds payable	310,000	735,000	1,045,000
Compensated absences	4,987	3,114	8,101
Portion due or payable after one year			
Bonds payable	7,431,044	15,330,468	22,761,512
Net pension liability	4,519,015	192,049	4,711,064
Net OPEB liability	12,961,571	921,823	13,883,394
Compensated absences	28,258	17,649	45,907
TOTAL LIABILITIES	25,853,905	18,788,006	44,641,911
DEFERRED INFLOWS OF RESOURCES			
Deferred amount related to pensions	985,259	82,821	1,068,080
Deferred amount related to OPEB	570,140	426,073	996,213
TOTAL DEFERRED INFLOWS OF RESOURCES	1,555,399	508,894	2,064,293
NET POSITION			
Net investment in capital assets	9,959,378	18,217,920	28,177,298
Restricted			
Highway and street projects	624,661	-	624,661
Unrestricted	1,154,205	8,229,857	9,384,062
TOTAL NET POSITION	$ 11,738,244	$ 26,447,777	$ 38,186,021

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2019

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions
GOVERNMENTAL ACTIVITIES				
General government	$ 1,799,326	$ 429,891	$ 428,743	$ -
Public safety	9,312,035	1,491,820	117,762	-
Public works - sanitation	20,190	-	72,899	-
Public works - highways and streets	3,244,902	-	372,775	503,494
Culture and recreation	244,324	73,882	230,500	-
Community development	12,197	-	-	-
Debt service	221,448	-	-	-
TOTAL GOVERNMENTAL ACTIVITIES	14,854,422	1,995,593	1,222,679	503,494
BUSINESS-TYPE ACTIVITIES				
Sewer	4,409,347	4,745,887	-	181,831
TOTAL TOWNSHIP ACTIVITIES	$ 19,263,769	$ 6,741,480	$ 1,222,679	$ 685,325
GENERAL REVENUES				
Taxes				
Real estate taxes				
Transfer taxes				
Earned income taxes				
Local services taxes				
Investment earnings				
Gain on sale of capital assets				
Miscellaneous				
TRANSFERS				
TOTAL GENERAL REVENUES AND TRANSFERS				
CHANGE IN NET POSITION				
NET POSITION AT BEGINNING OF YEAR				
NET POSITION AT END OF YEAR				

See accompanying notes to the basic financial statements.

Net (Expense) Revenue and Changes in Net Position		
Governmental Activities	Business-Type Activities	Totals
$ (940,692)	$ -	$ (940,692)
(7,702,453)	-	(7,702,453)
52,709	-	52,709
(2,368,633)	-	(2,368,633)
60,058	-	60,058
(12,197)	-	(12,197)
(221,448)	-	(221,448)
(11,132,656)	-	(11,132,656)
-	518,371	518,371
(11,132,656)	518,371	(10,614,285)
757,124	-	757,124
1,199,970	-	1,199,970
9,741,890	-	9,741,890
1,322,836	-	1,322,836
118,032	137,057	255,089
43,207	-	43,207
258,162	682,780	940,942
166,165	(166,165)	-
13,607,386	653,672	14,261,058
2,474,730	1,172,043	3,646,773
9,263,514	25,275,734	34,539,248
$ 11,738,244	$ 26,447,777	$ 38,186,021

EAST WHITELAND TOWNSHIP
BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2019

	General Fund	Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
ASSETS				
Cash and cash equivalents	$ 5,304,896	$ 7,826,695	$ 1,737,751	$ 14,869,342
Investments	252,052	-	-	252,052
Receivables	2,480,466	445,000	369	2,925,835
Prepaid items	24,969	-	-	24,969
Due from other funds	20,556	600,000	-	620,556
TOTAL ASSETS	$ 8,082,939	$ 8,871,695	$ 1,738,120	$ 18,692,754
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES				
LIABILITIES				
Accounts payable and other accrued liabilities	$ 398,055	$ 143,609	$ 18,943	$ 560,607
Due to other funds	600,000	2,063	-	602,063
Other current liabilities	35,256	-	-	35,256
TOTAL LIABILITIES	1,033,311	145,672	18,943	1,197,926
DEFERRED INFLOWS OF RESOURCES				
Unavailable revenue, property taxes	5,760	-	-	5,760
FUND BALANCES				
Restricted				
Highway and street projects	-	-	624,661	624,661
Assigned				
Highway and street projects	-	1,000,000	38,779	1,038,779
Park development	-	-	1,055,737	1,055,737
Tax rate stabilization	4,050,000	-	-	4,050,000
Pension stabilization	500,000	-	-	500,000
Other postemployment benefits	350,000	-	-	350,000
Stormwater management	50,000	600,000	-	650,000
Volunteer committee resources	-	2,650,000	-	2,650,000
Renovate municipal infrastructure	-	3,250,000	-	3,250,000
Equipment	-	500,000	-	500,000
Budgetary reserve	2,093,868	-	-	2,093,868
Capital improvement	-	726,023	-	726,023
TOTAL FUND BALANCES	7,043,868	8,726,023	1,719,177	17,489,068
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 8,082,939	$ 8,871,695	$ 1,738,120	$ 18,692,754

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

RECONCILIATION OF TOTAL GOVERNMENTAL FUNDS BALANCES
TO NET POSITION OF GOVERNMENTAL ACTIVITIES
DECEMBER 31, 2019

TOTAL GOVERNMENTAL FUNDS BALANCES	$ 17,489,068
Capital assets used in governmental activities are not current financial resources and therefore are not reported in the funds. These assets consist of:	
Cost of capital assets	59,527,914
Accumulated depreciation	(42,135,074)
Some liabilities are not due and payable in the current period and therefore are not reported in the funds. Those liabilities consist of:	
Interest payable	(3,167)
Bonds payable	(7,741,044)
Net OPEB liability	(12,961,571)
Net pension liability	(4,519,015)
Compensated absences	(33,245)
Deferred charges used in governmental activities are not financial resources and therefore are not reported in the funds. These assets consist of:	
Deferred amount on refunding, net of amortization	307,582
Deferred inflows and outflows of resources related to pension and OPEB activities are not financial resources and, therefore, are not reported in the governmental funds.	1,801,036
Some of the Township's revenues will be collected after year-end but are not available soon enough to pay for the current period's expenditures and therefore are deferred in the funds.	5,760
NET POSITION OF GOVERNMENTAL ACTIVITIES	$ 11,738,244

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES GOVERNMENTAL FUNDS YEAR ENDED DECEMBER 31, 2019

	General Fund	Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
REVENUES				
Taxes				
Real estate taxes	$ 767,194	$ -	$ -	$ 767,194
Transfer taxes	1,199,970	-	-	1,199,970
Earned income taxes	9,741,890	-	-	9,741,890
Local services taxes	1,322,836	-	-	1,322,836
Fees, licenses and permits	1,573,482	-	-	1,573,482
Investment income and rent	64,487	42,376	11,169	118,032
Intergovernmental revenues	619,404	503,494	372,775	1,495,673
Fines and forfeitures	51,600	-	-	51,600
Charges for services	165,511	-	205,000	370,511
Other	142,095	104,108	242,459	488,662
TOTAL REVENUES	15,648,469	649,978	831,403	17,129,850
EXPENDITURES				
General government	1,688,436	82,404	-	1,770,840
Public safety	8,478,631	370,366	-	8,848,997
Public works - sanitation	20,190	-	-	20,190
Public works - highways and streets	1,478,238	205,733	371,230	2,055,201
Culture and recreation	144,998	257,331	106,002	508,331
Community development	860	11,337	-	12,197
Other	7,992	-	-	7,992
Debt service				
Principal	295,000	-	-	295,000
Interest	209,231	-	-	209,231
TOTAL EXPENDITURES	12,323,576	927,171	477,232	13,727,979
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	3,324,893	(277,193)	354,171	3,401,871
OTHER FINANCING SOURCES (USES)				
Transfers in	166,165	975,600	15,101	1,156,866
Transfers out	(975,600)	(15,101)	-	(990,701)
Proceeds from sale of capital assets	785	42,422	-	43,207
TOTAL OTHER FINANCING SOURCES (USES)	(808,650)	1,002,921	15,101	209,372
NET CHANGE IN FUND BALANCES	2,516,243	725,728	369,272	3,611,243
FUND BALANCES AT BEGINNING OF YEAR	4,527,625	8,000,295	1,349,905	13,877,825
FUND BALANCES AT END OF YEAR	$ 7,043,868	$ 8,726,023	$ 1,719,177	$ 17,489,068

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES YEAR ENDED DECEMBER 31, 2019

NET CHANGE IN FUND BALANCES - TOTAL GOVERNMENTAL FUNDS	$	3,611,243
Capital outlays are reported in Governmental Funds as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which depreciation exceeds ($1,968,897) capital outlays ($1,261,778) in the current period		(707,119)
Because some property taxes will not be collected for several months after the Township's fiscal year ends, they are not considered as "available" revenues in the Governmental Funds. Deferred tax revenues increased by this amount this year.		(10,070)
The issuance of long-term debt (e.g., bonds, leases) provides current financial resources to Governmental Funds, while the repayment of the principal of long-term debt consumes the current financial resources of Governmental Funds Neither transaction, however, has any effect on net position. Also, Governmental Funds report the effect of issuance costs, premiums, discounts and similar items when debt is first issued, whereas these amounts are deferred and amortized in the statement of activities. This amount is the net effect of these differences in the treatment of long-term debt and related items.		
Repayment of bond principal		295,000
Amortization of bond discount and premium		1,801
Amortization of deferred amount on refunding		(15,444)
Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in the Governmental Funds.		(701,495)
In the statement of activities, compensated absences (vacations and sick leave) are measured by the amounts earned during the year. In the Governmental Funds, however, expenditures for these items are measured by the amount of financial resources used (essentially, the amounts paid).		(612)
Interest on long-term debt in the statement of activities differs from the amount reported in the Governmental Funds because interest is recognized as an expenditure in the funds when it is due and thus requires the use of current financial resources. In the statement of activities, however, interest expense is recognized as the interest accrues, regardless of when it is due.		1,426
CHANGE IN NET POSITION OF GOVERNMENTAL ACTIVITIES	$	2,474,730

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2019

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 10,083,775
Accounts receivable	1,151,871
TOTAL CURRENT ASSETS	11,235,646
NONCURRENT ASSETS	
Capital assets	37,387,925
Other capital assets	11,285,015
Accumulated depreciation	(14,529,267)
TOTAL NONCURRENT ASSETS	34,143,673
TOTAL ASSETS	45,379,319
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	113,838
Deferred amount related to OPEB	130,298
Deferred amount on refunding	139,715
TOTAL DEFERRED OUTFLOWS OF RESOURCES	383,851
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	417,065
Accrued liabilities	13,689
Due to other funds	18,493
Compensated absences	3,114
Unearned revenue	971,503
Accrued interest	185,646
Bonds payable	735,000
TOTAL CURRENT LIABILITIES	2,344,510
NONCURRENT LIABILITIES	
Compensated absences	17,649
Bonds payable	15,330,468
Net pension liability	192,049
Net OPEB liability	921,823
TOTAL NONCURRENT LIABILITIES	16,461,989
TOTAL LIABILITIES	18,806,499
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	82,821
Deferred amount related to OPEB	426,073
TOTAL DEFERRED INFLOWS OF RESOURCES	508,894
NET POSITION	
Net investment in capital assets	18,217,920
Unrestricted	8,229,857
TOTAL NET POSITION	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,761,787
Tapping fees	984,100
Miscellaneous	682,780
TOTAL OPERATING REVENUES	5,428,667
OPERATING EXPENSES	
Sewer and collection fees	1,779,913
Salaries, wages and benefits	687,311
Repairs and maintenance	236,403
Contracted services	41,140
Utilities	86,097
Insurance	40,288
Depreciation	774,783
Other	202,088
TOTAL OPERATING EXPENSES	3,848,023
OPERATING INCOME	1,580,644
NONOPERATING REVENUES (EXPENSES)	
Interest income	137,057
Interest expense	(561,324)
TOTAL NONOPERATING REVENUES (EXPENSES)	(424,267)
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	1,156,377
CAPITAL CONTRIBUTIONS	181,831
TRANSFERS OUT	(166,165)
CHANGE IN NET POSITION	1,172,043
NET POSITION AT BEGINNING OF YEAR	25,275,734
NET POSITION AT END OF YEAR	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,165,698
Cash payments to suppliers for goods and services	(1,885,294)
Cash payments to employees for services	(757,194)
NET CASH PROVIDED BY OPERATING ACTIVITIES	2,523,210
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(166,165)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(740,070)
Principal paid on capital debt	(715,000)
Interest paid on capital debt	(522,264)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,977,334)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	137,057
NET INCREASE IN CASH AND CASH EQUIVALENTS	516,768
CASH AND CASH EOUIVALENTS AT BEGINNING OF YEAR	9,567,007
CASH AND CASH EOUIVALENTS AT END OF YEAR	$ 10,083,775

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

		Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES		
Operating income	$	1,580,644
Adjustments to reconcile operating income to net cash provided by operating activities		
Depreciation		774,783
Pension and OPEB expense		(48,213)
(Increase) decrease in		
Receivables		(303,403)
Due from other funds		147,915
Increase (decrease) in		
Accounts payable		334,305
Accrued liabilities		2,981
Due to other funds		18,415
Due to fiduciary funds		(12,396)
Compensated absences		(12,255)
Unearned revenue		40,434
NET CASH PROVIDED BY OPERATING ACTIVITIES	$	2,523,210
SCHEDULE OF NON-CASH CAPITAL AND RELATED FINANCING ACTIVITIES		
Contributions of capital assets	$	181,831

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF FIDUCIARY NET POSITION
FIDUCIARY FUNDS
DECEMBER 31, 2019

	Pension and OPEB Trust Funds	Custodial Fund
ASSETS		
Cash and cash equivalents	$ 1,001,276	$ 1,169,972
Investments		
Domestic equity mutual funds	12,375,713	-
International equity mutual funds	2,878,203	-
Fixed income mutual funds	4,997,863	-
Real estate mutual funds	881,576	-
Due from Township	-	101,433
TOTAL ASSETS	22,134,631	1,271,405
NET POSITION		
Net position restricted for pensions	20,538,926	-
Net position restricted for other post-employment benefits	1,595,705	-
Net position restricted for custodial fund	-	1,271,405
TOTAL NET POSITION	$ 22,134,631	$ 1,271,405

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FIDUCIARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Pension and OPEB Trust Funds	Custodial Fund
ADDITIONS		
Contributions		
Member contributions	$ 258,121	$ -
Employer contributions	1,439,640	-
Developer contributions	-	1,330,863
TOTAL CONTRIBUTIONS	1,697,761	1,330,863
Investment earnings		
Dividends	832,529	-
Net decrease in the fair value of investments	3,182,546	-
TOTAL INVESTMENT EARNINGS	4,015,075	-
Investment expense	(44,370)	-
INVESTMENT EARNINGS, net	3,970,705	-
TOTAL ADDITIONS	5,668,466	1,330,863
DEDUCTIONS		
Benefits	1,265,759	-
Administrative expenses	34,293	-
Payments to developers	-	434,900
TOTAL DEDUCTIONS	1,300,052	434,900
CHANGE IN NET POSITION	4,368,414	895,963
NET POSITION AT BEGINNING OF YEAR, restated	17,766,217	375,442
NET POSITION AT END OF YEAR	$ 22,134,631	$ 1,271,405

See accompanying notes to the basic financial statements.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

East Whiteland Township ("the Township") was established in 1765 and is an organized township having the powers, duties, and privileges granted townships by the Commonwealth of Pennsylvania Second Class Township Code, Act of May 1, 1933 (P.L. 103, No. 69), reenacted and amended November 9, 1995 (P.L. 350, No. 60). The Township is governed by a three-member board of supervisors elected for a six-year term by the citizens of the Township. The Board is organized with a chairman and vice-chairman elected annually at the reorganization meeting held on the first Monday of the year.

The township complies with generally accepted accounting principles ("GAAP"). GAAP includes all relevant Governmental Accounting Standards Board ("GASB") pronouncements. The accounting and reporting framework and the more significant accounting policies are discussed in subsequent subsections of this Note.

Financial accountability is defined in GASB Statement No. 14, "The Financial Reporting Entity," as amended by GASB Statement No. 61. The Township is financially accountable for legally separate organizations if it appoints a voting majority of the organization's board and (1) it is able to impose its will on that organization; or (2) there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the Township. The Township also may be financially accountable if an organization is fiscally dependent on the Township regardless of whether the organization has a separately elected governing board, a governing board appointed by a higher level of government, or a jointly appointed board.

Blended Component Units:

The Police Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular, full-time sworn police officers. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and issues separate financial statements.

The Non-Uniformed Employees' Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular full-time, non-uniformed employees. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does issues separate financial statements.

The Firefighters Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular full-time, firefighters. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does issues separate financial statements.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The Postemployment Benefits Other Than Pensions Plan is a single-employer defined benefit healthcare plan that provides medical insurance and life insurance benefits to eligible retirees. Although the plan is a separate legal entity it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does not issue separate financial statements.

Government-Wide and Fund Financial Statements

The accompanying financial statements of the Township are in accordance with the provisions of the Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements--and Management's Discussion and Analysis--for State and Local Governments*, as amended by GASB Statement No. 37, *Basic Financial Statements--and Management's Discussion and Analysis--for State and Local Governments--Omnibus*, GASB Statement No. 38, *Certain Financial Statement Note Disclosures*, and GASB Statement No. 41, *Budgetary Comparison Schedules--Perspective Differences*. The requirements of this new reporting model are described below.

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on the activities of the primary government, except for Fiduciary Funds and Agency Funds. For the most part, the effect of interfund activity has been removed from these statements.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for Governmental Funds, Proprietary Funds and Fiduciary Funds, even though the latter are excluded from the government-wide financial statements. Major individual Governmental Funds are reported as separate columns (Other Governmental Funds) in the fund financial statements.

Measurement Focus, Basis of Accounting and Basis of Presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Governmental Funds financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the fiscal period. Under this basis, certain revenues (those susceptible to accrual, readily measurable and available as to amount and anticipated as being readily collectible) are recorded on the accrual basis. Property taxes, earned income taxes, local services taxes and licenses associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenues are recognized only when received in cash. Expenditures, with the exception of interest requirements on long-term debt, are accounted for on the accrual basis of accounting.

The Township reports the following major governmental funds:

- The *General Fund* is the government's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

- The *Capital Improvement Fund* accounts for the resources to be used for the acquisition, construction, or improvement of major capital assets for general government purposes.

The Township reports the following major Proprietary funds

- The *Sewer Fund* accounts for operations related to the collection of wastewater and the operation of sewage pumping stations. The sewage is transported to a sewer treatment plant not owned by the Township.

Additionally, the Township reports the following Fiduciary Fund Types:

- The *Pension Trust Funds* are used to account for the activities of the Police, Firefighter and Non-Uniformed Pension Plans, which accumulate resources for pension benefit payments to qualified employees.

- The *OPEB Trust Fund* is used to account for the assets held by the Township to pay for postemployment medical benefits.

- The *Custodial Fund* is used to account for monies held by the Township for developer escrow deposits.

Amounts reported as *program revenues* include: (1) charges to customers or applicants for goods, services, or privileges provided, (2) operating grants and contributions and (3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as *general revenues* rather than as program revenues. Likewise, general revenues include all taxes.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Proprietary Funds distinguish *operating* revenues and expenses from *nonoperating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a Proprietary Fund's principal ongoing operations. The principal operating revenues of the Sewer Fund are charges to customers for sales and services. Operating expenses for the Township's enterprise funds include sewer disposal, salaries, recycling, supplies, and administrative costs, and depreciation. All revenues or expenses not meeting this definition are reported as nonoperating revenues and expenses.

Stewardship, Compliance and Accountability

Budgets and Budgetary Accounting - The Township follows the procedures outlined below, which comply with legal requirements in establishing the budgetary data reflected in the financial statements:

1. Budgets are legally adopted on an annual basis for most Township funds, which is consistent with generally accepted accounting principles. The operating budget includes proposed expenditures and the means of financing them.

2. Prior to November 15 of the preceding fiscal year, the Township prepares a budget for the next succeeding calendar year beginning January 1. The operating budget includes proposed expenditures and the means of financing them.

3. A meeting of the Board of Supervisors is then called for the purpose of adopting the proposed budget.

4. Prior to December 31, the budget is legally enacted through passage of a resolution by the Board of Supervisors.

5. The budget must be filed with the Pennsylvania Department of Community and Economic Development by January 31.

6. Budgets for the funds are prepared on the modified accrual basis of accounting.

Once a budget is approved, it can be amended at the function and fund level only by approval of majority of the members of the Board of Supervisors. Amendments are presented to the Board at its regular meetings. Each amendment must have the Board's approval. Such amendments are made before the fact, are reflected in the official minutes of the Board, and are not made after fiscal year end as dictated by law.

The budget is controlled by the finance officer at the revenue and expenditures function/object level. Budgeted amounts are as amended by the Board of Supervisors. For 2019, individual amendments were not material in relation to the original appropriations. All budget appropriations lapse at year end.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The General Fund, Capital Improvements Fund, Transportation Improvement Fund, Street Light Fund, Park Development Fund, and State Fund all have legally adopted budgets for the year ended December 31, 2019.

Assets, Liabilities and Equity

Deposits and Investments - The Township's cash and cash equivalents including demand deposits and short-term investments with original maturities of three months or less from the date of acquisition are considered to be cash on hand.

Statutes authorize the Township to invest in: 1) obligations, participations and other instruments of any Federal agency, 2) repurchase agreements with respect to U.S. Treasury bills or obligations, 3) negotiable certificates of deposit, 4) bankers' acceptances, 5) commercial paper, 6) shares of an investment company registered under the Investment Company Act of 1940 whose shares are registered under the Securities Act of 1933, and 7) savings or demand deposits. The specific conditions under which the District may invest in these categories are detailed in Pennsylvania Act No. 53 of 1973, as amended by Pennsylvania Act No. 10 of 2016. Investments are stated at fair value except for certificates of deposit which are stated at amortized cost.

Under Act No. 72, enacted by the General Assembly of the Commonwealth of Pennsylvania, the funds deposited with the various banks are permitted to be secured on a pooled basis with all other public funds which the banking institution has on deposit. These may be bonds of the United States, any state of the United States, or bonds of any political subdivision of Pennsylvania or the general state authority or their authorities created by the General Assembly of the Commonwealth of Pennsylvania, or insured with the Federal Deposit Insurance Corporation. The market value of such bonds pledged must equal 102% of the funds deposited. The security pledged by the various depositories utilized during the year and at December 31, 2019, was in excess of the minimum requirements just described.

The Township has adopted GASB Statement No. 72, *Fair Value Measurement and application.* In accordance with this Statement, investments in marketable securities with readily determinable fair value and all investments in debt securities are reported at their fair values.

The law provides that the Township's Pension Trust Funds may invest in any form or type of investment, financial instrument, or financial transaction if determined by the Township to be prudent.

Receivables and Payables - Activity between funds that is representative of lending/borrowing arrangements outstanding at the end of the fiscal year is referred to as either "due to/from other funds" (i.e., the current portion of interfund loans) or "advances to/from other funds" (i.e., the noncurrent portion of interfund loans). All other outstanding balances between funds are reported as "due to/from other funds." Any residual balances outstanding between the governmental activities and business-type activities are reported in the government-wide financial statements as "internal balances."

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Real Estate Taxes - Real estate taxes are recorded as revenues when the taxes are levied. All property tax receivables are shown net of an allowance for uncollectibles. At December 31, 2019, all tax receivables were deemed to be fully collectible. There is no tax receivable allowance due to the materiality of the outstanding receivables.

Real estate taxes are levied on January 1 on property values assessed as of the same date. Taxes are billed March 1 and are due on June 30 of each year. A 2% discount is provided for taxes paid prior to May 1. A 10% penalty is applied to taxes paid after June 30. Any unpaid bills at December 31 are subject to lien, and penalties and interest are assessed.

Other taxes levied in 2019:

Real estate transfer tax ..... 0.5% of sales price
Earned income tax ..... 0.5% of gross income
Local service tax .....$52 per person

Provision for Estimated Uncollectible Receivables - No provision is considered necessary for other receivables.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The Township has three items that qualify for reporting in this category. The deferred charge on refunding results from the difference in carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred outflows of resources related to pensions is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between pension plan expected and actual experience and changes in pension plan assumptions. Deferred outflows of resources related to OPEB is reported in the government-wide statement of net position and the proprietary fund statement of net position and are the result of differences between expected and actual experience, and changes of assumptions.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Township has three items, which qualify for reporting in this category. Unavailable revenue, which arises only under a modified accrual basis of accounting, is reported only in the Governmental Funds balance sheet. The Governmental Funds report unavailable revenues from property taxes. These amounts are deferred and recognized as an inflow of resources in the period that the amounts become available. Deferred inflows of resources related to pensions is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between pension plan expected and actual experience and the difference between projected and actual investment earnings. Deferred inflows of resources related to OPEB is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between changes of assumptions, and the difference between projected and actual investment earnings.

Capital Assets - Capital assets, which include property, plant, equipment and infrastructure assets (e.g., roads, bridges, sidewalks and similar items) are reported in the applicable governmental or business – type activities columns in the entity-wide financial statements as well as in the proprietary fund financial statements. The township capitalizes assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of one year. The Township reports infrastructure assets on a network and subsystem basis. Accordingly, the amounts spent for the construction or acquisition of infrastructure assets are capitalized and reported in the entity-wide financial statements regardless of their amount. Such assets are recorded at historical cost if purchased or constructed. In accordance with GASB Statement No. 51, "Accounting and Financial Reporting for Intangible Assets," the Township capitalizes contributions to the Valley Forge Sewer Authority for the purchase of additional sewer treatment capacity.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed, inclusive of ancillary costs.

Depreciation has been provided over the estimated useful lives of property, plant and equipment using the straight-line method as follows:

	Years
Site improvements	20
Buildings and improvements	20-40
Infrastructure	15-50
Machinery and equipment	3-12
Vehicles	3-12

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Long-Term Obligations - In the government-wide financial statements and the Proprietary Fund Types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or Proprietary Fund Type statement of net position.

In the fund financial statements, Governmental Fund Types reports discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received and discounts paid on debt issuance are reported as other financing sources and uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures, except for refunding's paid from proceeds which are reported as other financing uses.

Net Position Flow Assumption

Sometimes the Township will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the government-wide and Proprietary Fund financial statements, a flow assumption should be made about the order in which the resources are considered to be applied. It is the Township's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

In the fund financial statements, Governmental Fund Types recognize bond premiums and discounts, as well as issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt are reported as other financing uses. Issuance costs, even if withheld from the actual net proceeds received, are reported as expenditures.

Net Position - The Township has implemented GASB Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions*. This statement provides more clearly defined fund balance categories to make the nature and extent of the constraints placed on the Township's fund balances more transparent. The following classifications describe the relative strength of the spending constraints:

- **Nonspendable Fund Balance** - Amounts that are not in spendable form (such as inventory) or are required to be maintained intact.

- **Restricted Fund Balance** - Amounts constrained to specific purposes by their providers (such as grantors, bondholders and higher levels of government) through constitutional provisions or by enabling legislation.

- **Committed Fund Balance** - Amounts constrained to specific purposes by the Township itself, using its highest level of decision-making authority (the Board of Supervisors). To be reported as committed, amounts cannot be used for any other purpose unless the Township takes the same highest level action to remove or change the constraint.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

- **Assigned Fund Balance** - Amounts the Township intends to use for a specific purpose. Intent can be expressed by the Board of Supervisors or by an official or body to which the Board of Supervisors delegates the authority. As of December 31, 2019, the Board has not delegated the authority to assign fund balance.

- **Unassigned Fund Balance** - Amounts available for any purpose. Positive amounts are reported only in the General Fund.

The Board of Supervisors establishes (and modifies or rescinds) fund balance commitments by passage of a motion, which is the most binding action management can take. Assigned fund balance is intended to be used by the Township for specific purposes but does not meet the criteria to be classified as restricted or committed.

The Township will typically use restricted fund balances first, followed by committed resources and then assigned resources, as appropriate opportunities arise, but reserves the right to selectively spend unassigned resources first to defer the use of these other classified funds.

Cash and Cash Equivalents - For purposes of reporting cash flows for the Proprietary Funds, all highly liquid investments with original maturities of three months or less are considered short-term investments.

Compensated Absences - Full-time employees are granted vacation benefits in varying amounts to specified maximums. Certain employees may carry over 40 hours of unused vacation time into the following year or receive compensation for those hours. Certain employees may accumulate up to 480 hours of unused sick time and, depending on years of services, may receive payment for some or all of that time at retirement or resignation. The liability for those compensated absences is recorded as long-term debt in the entity-wide and proprietary fund financial statements. In the fund financial statements, governmental funds report a liability for compensated absences only if they have matured. Historically the General Fund has been responsible for liquidation of compensated absences associated with governmental activities. Compensated absences associated with business-type activities are liquidated from the fund in which the liability was generated.

Prepaid Items - Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both government-wide and fund financial statements. Prepaid items are accounted for under the consumption method.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Accordingly, actual results could differ from those estimates.

Concentrations of Credit Risk - The Township's revenues and receivables for taxes and utility service are mostly derived from residents and businesses located in the Township and are, therefore, subject to the economic conditions of the area.

NOTE B - DEPOSITS AND INVESTMENTS

Deposits

Custodial Credit Risk - Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits may not be returned to it. As of December 31, 2019, $986,137 of the total bank balance of $27,164,958 was insured by the Federal Depository Insurance Corporation. The remaining bank balance of $26,178,821 was exposed to credit risk because it was uninsured and collateralized in accordance with Act 72 of the Commonwealth of Pennsylvania Legislature, which permits the institution to pool collateral for all governmental deposits and has the collateral held by a custodian in the institution's name.

Investments

As of December 31, 2019, the Township had the following investments:

Investment Type	Amortized Cost	Fair Value	Total	Investment Maturities Less Than One Year
GOVERNMENTAL ACTIVITIES				
Certificates of deposit	$ 252,052	$ -	$ 252,052	$ 252,052
FIDUCIARY FUNDS				
Domestic equity mutual funds	$ -	$ 12,375,713	$ 12,375,713	$ 12,375,713
International equity mutual funds	-	2,878,203	2,878,203	2,878,203
Fixed income mutual funds	-	4,997,863	4,997,863	4,997,863
Real estate mutual funds	-	881,576	881,576	881,576
TOTAL FIDUCIARY FUNDS	$ -	$ 21,133,355	$ 21,133,355	$ 21,133,355

Fair Value Measurement - The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted market prices in active markets for identical assets: Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Township has the following recurring fair value measurements as of December 31, 2019:

Investments in domestic equity mutual funds of $12,375,713, international equity mutual funds of $2,878,203, fixed income mutual funds of $4,997,863, and real estate mutual funds of $881,576 are valued using quoted market prices (Level 1 inputs).

Interest Rate Risk - This is the risk that changes in interest rates will adversely affect the fair market value of an investment. The Township's investment policy includes a balancing provision to address this type of risk.

NOTE B - DEPOSITS AND INVESTMENTS (Continued)

Credit Risk - This is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. State law limits the investment of government funds as described in Note A. The Township's investment policy does not further limit its investment choices.

Concentration of Credit Risk - This is the risk of loss attributed to the magnitude of a government's investment in a single issuer. There are no investments in any one issuer that is in excess of 5 percent of the government's total investments.

NOTE C - CAPITAL ASSETS

Changes in capital asset activity for the year ended December 31, 2019, were as follows:

	Balance January 1, 2019	Increases	Decreases	Balance December 31, 2019
GOVERNMENTAL ACTIVITIES				
Capital assets not being depreciated				
Land	$ 1,076,488	$ -	$ -	$ 1,076,488
Construction in progress	548,472	224,828	(637,071)	136,229
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	1,624,960	224,828	(637,071)	1,212,717
Capital assets being depreciated				
Site Improvements	1,257,394	25,347	-	1,282,741
Buildings and improvements	9,500,671	209,771	-	9,710,442
Infrastructure	42,794,301	966,286	-	43,760,587
Machinery and equipment	1,251,690	136,002	-	1,387,692
Vehicles	1,956,487	336,615	(119,367)	2,173,735
TOTAL CAPITAL ASSETS BEING DEPRECIATED	56,760,543	1,674,021	(119,367)	58,315,197
Accumulated depreciation				
Site Improvements	(589,072)	(55,764)	-	(644,836)
Buildings and improvements	(1,440,332)	(241,073)	-	(1,681,405)
Infrastructure	(35,798,577)	(1,416,007)	-	(37,214,584)
Machinery and equipment	(1,028,622)	(62,589)	-	(1,091,211)
Vehicles	(1,428,941)	(193,464)	119,367	(1,503,038)
TOTAL ACCUMULATED DEPRECIATION	(40,285,544)	(1,968,897)	119,367	(42,135,074)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	16,474,999	(294,876)	-	16,180,123
GOVERNMENTAL ACTIVITIES CAPITAL ASSETS, net	$ 18,099,959	$ (70,048)	$ (637,071)	$ 17,392,840

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General government	$ 55,557
Public safety	130,524
Public works, highways and streets	1,723,851
Parks and recreation	58,965
	$ 1,968,897

	Balance January 1, 2019	Increases	Decreases	Balance December 31, 2019
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ 331,920	$ -	$ -	$ 331,920
Capacity rights	11,085,242	306,995	(439,142)	10,953,095
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,417,162	306,995	(439,142)	11,285,015
Capital assets being depreciated				
Sewer Infrasture	36,054,547	1,021,158	-	37,075,705
Machinery and equipment	99,324	-	-	99,324
Vehicles	180,005	32,891	-	212,896
TOTAL CAPITAL ASSETS BEING DEPRECIATED	36,333,876	1,054,049	-	37,387,925
Accumulated depreciation				
Sewer Infrasture	(13,523,988)	(758,947)	-	(14,282,935)
Machinery and equipment	(87,718)	(4,493)	-	(92,211)
Vehicles	(142,778)	(11,343)	-	(154,121)
TOTAL ACCUMULATED DEPRECIATION	(13,754,484)	(774,783)	-	(14,529,267)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	22,579,392	279,266	-	22,858,658
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 33,996,554	$ 586,261	$ (439,142)	$ 34,143,673

NOTE D - INTERFUND RECEIVABLES, PAYABLES AND TRANSFERS

Interfund receivables and payables at December 31, 2019, are as follows:

	Due from Other Funds	Due to Other Funds
GOVERNMENTAL FUNDS		
General Fund	$ 20,556	$ 600,000
Capital Improvement Fund	600,000	2,063
BUSINESS-TYPE ACTIVITIES		
Sewer Fund	-	18,493
	$ 620,556	$ 620,556

These balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system and (3) payments between funds are made.

Interfund transfers at December 31, 2019, are as follows:

	Transfer Out	Transfer In
GOVERNMENTAL FUNDS		
General Fund	$ 975,600	$ 166,165
Capital Improvement Fund	15,101	975,600
Park Development Fund	-	15,101
BUSINESS-TYPE ACTIVITIES		
Sewer Fund	166,165	-
	$ 1,156,866	$ 1,156,866

Transfers are used to (1) move revenues from the fund that statute or budget requires to collect them to the fund that statute or budget requires to expend them and (2) use unrestricted revenues collected in the General Fund to account for saving for future capital projects.

NOTE E - RECEIVABLES

Receivables as of December 31, 2019, are as follows:

	General Fund	Capital Improvement Fund	Other Governmental Funds	Sewer Fund	Totals
RECEIVABLES					
Accounts	$ 78,055	$ 445,000	$ 369	$ 1,151,871	$ 1,675,295
Taxes	2,402,411	-	-	-	2,402,411
	$ 2,480,466	$ 445,000	$ 369	$ 1,151,871	$ 4,077,706

NOTE F - LONG-TERM DEBT

Long-term liability for the year ended December 31, 2019, is as follows:

	Balance January 1, 2019	Additions	Reductions	Balance December 31, 2019	Due Within One Year
GOVERNMENTAL ACTIVITIES					
General Obligation Bonds					
Series of 2014	$ 1,890,000	$ -	$ (250,000)	$ 1,640,000	$ 260,000
Series of 2016	6,110,000	-	(45,000)	6,065,000	50,000
TOTAL GENERAL OBLIGATION BONDS	8,000,000	-	(295,000)	7,705,000	310,000
Bond premium	41,344	-	(1,969)	39,375	-
Bond discount	(3,499)	-	168	(3,331)	-
Net pension liability	5,802,733	-	(1,283,718)	4,519,015	-
Net OPEB liability	11,352,100	1,609,471	-	12,961,571	-
Compensated absences	32,633	6,212	(5,600)	33,245	4,987
TOTAL GOVERNMENTAL ACTIVITIES LONG-TERM LIABILITIES	$ 25,225,311	$ 1,615,683	$ (1,586,119)	$ 25,254,875	$ 314,987
BUSINESS-TYPE ACTIVITIES					
General Obligation Bonds					
Series A of 2012	$ 1,015,000	$ -	$ (665,000)	$ 350,000	$ 350,000
Series B of 2012	4,030,000	-	-	4,030,000	335,000
Series of 2013	11,995,000	-	(50,000)	11,945,000	50,000
TOTAL GENERAL OBLIGATION BONDS	17,040,000	-	(715,000)	16,325,000	735,000
Bond discounts	(279,068)	-	19,536	(259,532)	-
Net pension liability	333,457	-	(141,408)	192,049	-
Net OPEB liability	1,239,417	-	(317,594)	921,823	-
Compensated absences	33,018	706	(12,961)	20,763	3,114
TOTAL BUSINESS-TYPE ACTIVITIES LONG-TERM LIABILITIES	$ 18,366,824	$ 706	$ (1,167,427)	$ 17,200,103	$ 738,114

NOTE F - LONG-TERM DEBT (Continued)

Payments on the bonds and loans payable pertaining to the Township's governmental activities are made by the General Fund. Payments of compensated absences, net pension obligations and net other postemployment benefit obligations pertaining to the Township's governmental activities are made by the General Fund.

Governmental Activities Debt

General Obligation Series of 2014 - General Obligation Bonds, Series of 2014 were issued in the original amount of $8,040,000. Interest rates range from 1.0% to 4.0% with interest payable semi-annually and principal payable annually from June 2015 through December 2039. These bonds were issued to finance the new Public Works building and additional park developments.

General Obligation Series of 2016 - General Obligation Bonds, Series of 2016 were issued in the original amount of $6,160,000. Interest rates range from 2.0% to 3.0% with interest payable semi-annually and principal payable annually from June 2017 through December 2039. These bonds were issued to advance refund a portion of the General Obligation Bonds, Series of 2014 and to pay the cost of the bond issuance. The refunding resulted in an economic gain of $297,663 and a decrease in future cash flows of $307,026.

Business-Type Activities Debt

General Obligation Bonds, Series of 2012A - General Obligation Bonds, Series of 2012A, were issued in the original amount of $4,685,000. Interest rates range from 0.9% to 3.0% with interest payable semi-annually and principal payable annually from September 2013 through September 2020. These bonds were issued to redeem and prepay 1999 Bonds to reduce costs.

General Obligation Bonds, Series of 2012B - General Obligation Bonds, Series of 2012B, were issued in the original amount of $4,130,000. Interest rates range from 1.0% to 3.0% with interest payable semi-annually and principal payable annually from September 2020 through September 2025. These bonds were issued to redeem and prepay 2005 bonds to reduce costs.

General Obligation Bonds, Series of 2013A - General Obligation Bonds, Series of 2013A, were issued in the original amount of $12,145,000. Interest rates range from 2.0% to 3.6% with interest payable semi-annually from September 2013 through September 2038. These bonds were issued to finance sewer expansions and upgrades.

NOTE F - LONG-TERM DEBT (Continued)

Total Scheduled Annual Debt Service

The Township's total scheduled annual debt service on all long-term debt is as follows:

Year Ending December 31,	Governmental Activities	
	Principal	Interest
2020	$ 310,000	$ 200,130
2021	315,000	193,930
2022	320,000	187,630
2023	325,000	180,690
2024	330,000	173,090
2025 to 2029	1,780,000	745,910
2030 to 2034	2,010,000	524,940
2035 to 2039	2,315,000	212,550
	$ 7,705,000	$ 2,418,870

Year Ending December 31,	Business-Type Activities	
	Principal	Interest
2020	$ 735,000	$ 516,407
2021	755,000	497,782
2022	765,000	480,920
2023	790,000	461,996
2024	805,000	441,420
2025 to 2029	3,905,000	1,858,172
2030 to 2034	4,435,000	1,213,024
2035 to 2038	4,135,000	380,123
	$ 16,325,000	$ 5,849,844

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN)

Police Pension Plan

Summary of Significant Accounting Policies - Police Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Police Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Police Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time police officers. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed the Pension Board as the official body to which all related investment matters of the plan are delegated. The Pension Board consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2019, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	13
Inactive plan members entitled to but not yet receiving benefits	-
Active plan members	22
	35

Benefits Provided - The Police Pension Plan provides retirement benefits as well as death and disability benefits under Pennsylvania Act 600.

Eligibility Requirements:

Normal Retirement - Age 50 and 25 years of service.

Early Retirement - 20 or more years of service.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Vesting - None for the first 12 years of service; thereafter, 100%. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

The monthly pension shall be 50% of the average monthly salary over the participant's last 36 months of employment, plus an incremental pension of $25 per month for each completed year of service in excess of twenty-five years up to a maximum of $100 per month. The early retirement pension shall be the actuarial equivalent of a partial superannuation retirement benefit.

Survivor Benefit:

A pension benefit shall be automatically provided to a retired officer's spouse or to the spouse of an officer eligible to retire, equal to no less than 50% of the eligible pension. If no spouse, or if spouse subsequently dies, the benefit shall apply to children under age 18, or if attending college, under or attaining age 23.

Disability Benefit:

Service-Related - The monthly disability pension benefit shall be calculated at no less than 50% of the member's salary at the time the disability was incurred. Said pension shall be reduced by any benefits received for the same injuries under the Social Security Act.

Nonservice-Related - None.

Post-Retirement Adjustments:

A cost of living adjustment may be provided to retired officers. Annual adjustment not to exceed the increase in the Consumer Price Index from year to year with a 3% maximum annual increase. Total adjustments not to exceed 30% of the retiree's original pension.

The benefit provisions of the Township's Police Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

As a condition of participation, participants are required to make contributions to the plan. Covered employees are required by statute to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan.

In 2019, the MMO obligation for the Police Pension Plan was $504,774. For the year 2019, contributions of $504,774 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries. The following was the Board's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
Domestic equity	50%
International equity	8%
Fixed income	35%
Real estate	5%
Cash	2%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2019, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 22.26%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2019, were as follows:

Total pension liability	$ 13,765,847
Plan fiduciary net position	(10,943,594)
NET PENSION LIABILITY	$ 2,822,253
Plan fiduciary net position as a percentage of the total pension liability	79.50%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of December 31, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2019 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that are expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2018	$ 12,142,675	$ 8,897,862	$ 3,244,813
Changes for the year			
Service cost	341,224	-	341,224
Interest cost	991,401	-	991,401
Changes for experience	(92,874)	-	(92,874)
Changes of assumptions	935,117	-	935,117
Contributions			
Employer	-	504,774	(504,774)
Member	-	140,354	(140,354)
Net investment income	-	1,962,030	(1,962,030)
Benefit payments	(551,696)	(551,696)	-
Administrative expenses	-	(9,730)	9,730
Net changes	1,623,172	2,045,732	(422,560)
Balances at December 31, 2019	$ 13,765,847	$ 10,943,594	$ 2,822,253

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 4,445,234	$ 2,822,253	$ 1,462,296

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2019, the Township recognized pension expense of $750,225 for this pension plan, and $1,375,143 for all pension plans.. At December 31, 2019, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 42,112	$ 170,108
Changes of assumptions	988,308	-
Net difference between projected and actual earnings on pension plan investments	-	315,825
Total	$ 1,030,420	$ 485,933

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	
2020	$ 80,460
2021	71,234
2022	229,985
2023	(153,030)
2024	105,281
Thereafter	210,557

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN)

Non-Uniformed Pension Plan

Summary of Significant Accounting Policies - Non-Uniformed Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Non-Uniformed Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Non-Uniformed Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time non-uniformed employees. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2019, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	21
Inactive plan members entitled to but not yet receiving benefits	3
Active plan members	16
	40

Benefits Provided - The Non-Uniformed Pension Plan provides retirement and other benefits.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Eligibility Requirements:

Normal Retirement - For participants represented by a collective bargaining unit and hired prior to January 1, 2006, the normal retirement date is age 64 and 10 years of service. For participants not represented by a collective bargaining agreement and hired prior to January 1, 2006, the normal retirement date is age 63 and 10 years of service. For participants hired on or after January 1, 2006, the normal retirement date is age 64 and 10 years of service.

Early Retirement - Age 55 and 10 years of service.

Vesting - For participants hired on or after January 1, 2006 - none for the first 10 years of service; thereafter, 100%. For participants hired prior to January 1, 2006 - 50% after 5 full years of service; thereafter, 10% per year until 100% vested after 10 years. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

For participants hired on or after January 1, 2006, the monthly pension shall be 2.00% for each year of service times the average monthly compensation over the participants last 60 months of employment. For participants hired prior to January 1, 2006, the monthly pension shall be 50% of the final average monthly compensation over the participant's last 36 months of employment. The early retirement pension shall be a partial superannuation retirement benefit determined by a table in the governing resolution.

Disability Benefit:

Service-Related - The accrued retirement benefit determined at the date of disability. The disability benefit shall commence at the normal retirement date.

The benefit provisions of the Township's Non-Uniformed Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Covered employees are required to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan. Contribution provisions are established by Pennsylvania law and may be amended only as allowed by Pennsylvania law.

In 2019, the MMO obligation for the Non-Uniformed Pension Plan was $394,490. For the year 2019, contributions of $394,490 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries.

The following was the Committee's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
Domestic equity	61%
International equity	9%
Fixed income	23%
Real estate	4%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2019, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 22.27%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2019, were as follows:

Total pension liability	$ 8,211,938
Plan fiduciary net position	(7,082,251)
NET PENSION LIABILITY	$ 1,129,687
Plan fiduciary net position as a percentage of the total pension liability	86.24%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of December 31, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2019 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2018	$ 6,428,838	$ 4,800,798	$ 1,628,040
Changes for the year			
Service cost	138,005	-	138,005
Interest cost	486,915	-	486,915
Changes for experience	(178,915)	-	(178,915)
Changes in assumptions	300,159	-	300,159
Contributions			
Employer	-	327,426	(327,426)
Member	-	58,594	(58,594)
Net investment income	-	1,059,612	(1,059,612)
Benefit payments	(359,100)	(359,100)	-
Administrative expenses	-	(9,067)	9,067
Net changes	387,063	1,077,465	(690,402)
Balances at December 31, 2019	$ 6,815,902	$ 5,878,263	$ 937,638

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

	Business-Type Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a -(b)
Balances at December 31, 2018	$ 1,316,758	$ 983,302	$ 333,456
Changes for the year			
Service cost	28,266	-	28,266
Interest cost	99,730	-	99,730
Changes for experience	(36,646)	-	(36,646)
Changes in assumptions	61,479	-	61,479
Contributions			
Employer	-	67,064	(67,064)
Member	-	12,001	(12,001)
Net investment income	-	217,030	(217,030)
Benefit payments	(73,551)	(73,551)	-
Administrative expenses	-	(1,858)	1,858
Net changes	79,279	220,686	(141,407)
Balances at December 31, 2019	$ 1,396,036	$ 1,203,988	$ 192,049

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 1,943,522	$ 1,129,687	$ 431,063

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2019, the Township recognized pension expense of $424,539 for this pension plan, and $1,375,143 for all pension plans.. At December 31, 2019, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 269,957	$ 166,824
Changes in assumptions	285,842	-
Net difference between projected and actual earnings on pension plan investments	-	237,535
Total	$ 555,799	$ 404,359

	Business-Type Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 55,292	$ 34,169
Changes in assumptions	58,546	-
Net difference between projected and actual earnings on pension plan investments	-	48,652
Total	$ 113,838	$ 82,821

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	Governmental Activities	Business-Type Activities
2020	$ 65,180	$ 13,349
2021	53,718	11,003
2022	131,902	27,016
2023	(119,568)	(24,490)
2024	20,208	4,139

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN)

Firefighter Pension Plan

Summary of Significant Accounting Policies - The Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Firefighter Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Firefighter Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time firefighter employees. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2019, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	1
Inactive plan members entitled to but not yet receiving benefits	1
Active plan members	9
	11

Benefits Provided - The Firefighter Pension Plan provides retirement and other benefits.

Eligibility Requirements:

Normal Retirement - Age 50 and 25 years of service.

Early Retirement - 20 or more years of service, actuarially reduced to reflect early commencement of benefits.

Vesting - None for the first 10 years of service; thereafter, 100%. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

Service-Related - The accrued retirement benefit determined at the date of disability. The disability benefit shall commence when the participant has been declared totally and permanently disabled.

Nonservice-Related - None

The benefit provisions of the Township's Firefighter Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Covered employees are required to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan. Contribution provisions are established by Pennsylvania law and may be amended only as allowed by Pennsylvania law.

In 2019, the MMO obligation for the Firefighter Pension Plan was $158,964. For the year 2019, contributions of $158,964 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries.

The following was the Committee's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
Domestic equity	59%
International equity	11%
Fixed income	23%
Real estate	4%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2019, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 21.94%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2019, were as follows:

Total pension liability	$ 3,272,205
Plan fiduciary net position	(2,513,081)
NET PENSION LIABILITY	$ 759,124
Plan fiduciary net position as a percentage of the total pension liability	76.80%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of December 31, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2019 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2018	$ 2,815,754	$ 1,885,873	$ 929,881
Changes for the year			
Service cost	108,980	-	108,980
Interest cost	227,986	-	227,986
Changes for experience	49,237	-	49,237
Changes in assumptions	70,248	-	70,248
Contributions			
Employer	-	158,964	(158,964)
Member	-	47,172	(47,172)
Net investment income	-	431,042	(431,042)
Administrative expenses	-	(9,970)	9,970
Net changes	456,451	627,208	(170,757)
Balances at December 31, 2019	$ 3,272,205	$ 2,513,081	$ 759,124

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 1,204,934	$ 759,124	$ 387,271

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2019, the Township recognized pension expense of $200,379 for this pension plan, and $1,375,143 for all pension plans. At December 31, 2019, the Township reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 236,066	$ -
Changes in assumptions	175,437	-
Net difference between projected and actual earnings on pension plan investments	-	94,967
Total	$ 411,503	$ 94,967

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	
2020	$ 28,510
2021	28,935
2022	55,267
2023	(6,039)
2024	50,410
Thereafter	159,453

NOTE J - NON-UNIFORM EMPLOYEE DEFINED CONTRIBUTION PENSION PLAN

Plan Description

The Township has established the East Whiteland Township Non-Uniform Employee Defined Contribution Pension Plan (the "Plan"), which provides pension benefits for its full-time, non-union, non-uniform employees as defined in the plan, and who were hired on or after January 1, 2017. There is a six month period of service required in order to participate. The Plan is a single-employer defined contribution money purchase pension plan under Section 401 (a) of the Internal Revenue Code. In a defined contribution plan, the benefits to be received by an employee depend solely on the amount contributed to the participant's account and related returns on investments of those contributions. ICMA Retirement Corporation serves as the third-party administrator for the Plan, maintaining records of individual account balances and administering receipt and payment of funds. All funds contributed by the employees and employer are invested with the funds offered through ICMA-RC. The Plan does not issue separate, stand-alone financial statements.

NOTE J - NON-UNIFORM EMPLOYEE DEFINED CONTRIBUTION PENSION PLAN (Continued)

Funding Policy

Each eligible employee covered under the Plan must make an irrevocable election to contribute 2%, 3% or 4% of gross wages. The Township contributes 4%, 6% or 8% of each participating employee's gross wages to the Plan, respectively, depending on the employee's contribution percentage. For example, if the employee elects a 2% contribution, the Township will contribute 4%; if the employee elects a 3% contribution, the Township will contribute 6%. The Township's contributions for employees and earnings allocated to their accounts vest based on period of service completed, as follows:

Period of Service Completed	% Vested
Zero	0%
One	20%
Two	40%
Three	60%
Four	80%
Five	100%

Retirement benefits may be obtained at age 65. The Township made contributions of $39,774, of which $0 was funded by state-shared revenues and $39,774 was funded by the Township. Employee contributions to the Plan were $19,887.

At December 31, 2019, there were no investments in any one organization that represented 5% or more of total plan assets available for benefits other than mutual funds, which do not require disclosure of concentration per GASB Statement No. 40.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB)

Summary of Significant Accounting Policies - The OPEB Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's OPEB Plan is presented on the accrual basis of accounting. Employer contributions to each plan are recognized when due.

Plan Description

Plan Administration - The Township's post-employment healthcare plan is a single-employer defined benefit healthcare plan. The plan provides medical insurance and life insurance benefits to eligible retirees. Spouses and other dependents are not covered under the plan. The Board of Supervisors assigns the authority to establish and amend benefit provisions. The plan does not issue separate, stand-alone financial statements. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Trust Fund. The plan does not issue separate, stand-alone financial statements.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2019, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	21
Inactive plan members entitled to but not yet receiving benefits	3
Active plan members	54
	78

Benefits Provided

Eligibility Requirements:

Police Officers - Medical and life insurance benefits are payable for members who retire after attaining age 50 with 20 years of service. However, receipt of benefits are deferred to the date on which the officer qualifies for normal retirement had the officer remained in service (25 years of service).

Firefighters - Firefighters hired prior to December 31, 2011 or Part-time Firefighters hired prior to December 31, 2011 and subsequently promoted to full-time status, medical benefits are payable for members who retire after attaining age 50 with 20 years of service.

Non-Uniformed Employees - Medical benefits are payable for members who retire after attaining age 55 with 20 years of service.

Medical Benefits Payable upon Retirement:

Police Officers - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, officers retiring after January 1, 1999 are required to enroll in Medicare Part B coverage and the Township reimburses the retiree for coverage. Officers retiring after December 31, 2013 are required to enroll in Medicare Part D coverage and the Township shall reimburse the retiree for coverage. In addition to the aforementioned benefits, officers hired prior to September 24, 2019 who retire after September 24, 2019 will receive a $700 annual HRA contribution. These officers receive the same health benefits as active officers and are subject to any changes to the active plan made by agreement or an arbitration award. For officers hired after September 24, 2019, post-retirement medical benefits and the $700 annual HRA contribution cease when the officer becomes eligible for Medicare.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Firefighters - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At age 65, the member is no longer eligible to receive coverage.

Non-Uniformed Employees - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, all retirees shall be required to enroll in Medicare Part B and Part D coverage and the Township reimburses the retiree for Medicare Part B and Part D coverage.

Union - Eligible employees that retire by December 31, 2022 may participate in the employer's group medical plan while under age 65, which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, all retirees shall be required to enroll in Medicare Part B and Medical Part D coverage and the Township reimburses the retiree for coverage. However, for eligible employees who have 10 years of service as of December 31, 2022, if the healthcare plan designs change for active employees, retiree coverage will change as well. In addition, any employee hired on or after January 1, 2019 or an employee who does not have 10 years of service as of December 31, 2022 and who has at least twenty (20) years of service with the Township shall be provided post-retirement medical benefits including prescription for the retiree only until the retiree reaches age 65, becomes eligible for Medicare, or the retiree dies, whichever occurs first. If the healthcare plan designs change for active employees, retiree coverage will change as well. These retirees shall be required to enroll in Medicare Part B and Medical Part D coverage and will not be reimbursed for the Part B and Part D monthly premiums.

Disability Benefits:

Disabled Officers are eligible to continue receiving coverage for life if their disability is service related.

Life Insurance Benefits Payable upon Retirement:

Eligible retired police officers who retire while in the employ of the Township after 20 years of service are provided a life insurance benefit equal to $20,000 until age 65. At ages 65 and older, the Township provides a life insurance benefit of $10,000.

Dependents:

Spouses and other dependents are not covered under the Plan.

The benefit provisions of the Township's OPEB Plan are established by Township ordinances.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Funding Policy

Member contributions are not required under the plan. The contribution requirements of plan members are established and may be amended by the Board of Supervisors. The Township is accounting for these expenditures on a "pay-as-you-go" basis. The costs of administering the plans are paid by the Township.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries. The following was the Committee's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
Domestic equity	34%
International equity	10%
Fixed income	50%
Real estate	3%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2019, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 23.39%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Net OPEB Liability of the Township - The components of the net OPEB liability of the Township at December 31, 2019, were as follows:

Total OPEB liability	$ 15,479,099
Plan fiduciary net position	(1,595,705)
NET OPEB LIABILITY	$ 13,883,394
Plan fiduciary net position as a percentage of the total pension liability	10.31%

Actuarial Assumptions - The total OPEB liability was determined by an actuarial valuation as of December 31, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5-5.0% annual increase
Investment rate of return	3.98%

The healthcare cost trend rate is 5.5% in 2019 through 2023. Rates gradually decrease from 5.4% in 2024 to 4.0% in 2075 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model.

Mortality rates were based on the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2019 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

Discount Rate - The discount rate used to measure the total OPEB liability was 3.98%. The plan's fiduciary net position is not projected to be sufficient to make projected benefit payments. As a result, the discount rate is based on the long-term expected rate of return on OPEB plan investments of 7.0% and the municipal bond rate of 3.26% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2019.

Changes in Assumptions - In the 2019 actuarial valuation, the discount rate changed from 3.81% to 3.98%. The trend assumption was updated. The mortality table was changed from the IRS 2017 Small Plan Combined Static Mortality table to the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Changes in the Net OPEB Liability

	Governmental Activities		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)
Balances at December 31, 2018	$ 12,432,522	$ 1,080,422	$ 11,352,100
Changes for the year			
Service cost	586,270	-	586,270
Interest cost	490,994	-	490,994
Changes for experience	468,494	-	468,494
Changes in assumptions	1,116,672	-	1,116,672
Changes of benefit terms	(400,300)	-	(400,300)
Employer contributions	-	333,484	(333,484)
Net investment income	-	322,482	(322,482)
Benefit payments	(243,327)	(243,327)	-
Administrative expenses	-	(3,307)	3,307
Net changes	2,018,803	409,332	1,609,471
Balances at December 31, 2019	$ 14,451,325	$ 1,489,754	$ 12,961,571

	Business-Type Activities		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)
Balances at December 31, 2018	$ 1,357,377	$ 117,960	$ 1,239,417
Changes for the year			
Service cost	50,172	-	50,172
Interest cost	52,842	-	52,842
Changes for experience	(437,219)	-	(437,219)
Changes in assumptions	107,074	-	107,074
Changes of benefit terms	(64,387)	-	(64,387)
Employer contributions	-	47,928	(47,928)
Net investment income	-	(21,491)	21,491
Benefit payments	(38,085)	(38,085)	-
Administrative expenses	-	(361)	361
Net changes	(329,603)	(12,009)	(317,594)
Balances at December 31, 2019	$ 1,027,774	$ 105,951	$ 921,823

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate - The following presents the net OPEB liability of the Township, calculated using the discount rate of 3.98%, as well as what the Township's net OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (2.98%) or one percentage point higher (4.98%) than the current rate:

	1% Decrease (2.98%)	Current Discount Rate (3.98%)	1% Increase (4.98%)
Net OPEB liability	$ 16,419,927	$ 13,883,394	$ 11,844,764

Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate - The following presents the net OPEB liability of the Township, as well as what the Township's net OPEB liability would be if it were calculated using healthcare cost trend rates that are one percentage point lower (5.0% decreasing to 2.8%) or one percentage point higher (7.0% decreasing to 4.8%) than the current healthcare cost trend rates:

	1% Decrease (4.5% Decreasing to 3.0%)	Healthcare Cost Trend Rates (5.5% Decreasing to 4.0%)	1% Increase (6.5% Decreasing to 5.0%)
Net OPEB liability	$ 11,589,651	$ 13,883,394	$ 16,769,995

OPEB Expense and Deferred Outflows of Resource and Deferred Inflows of Resources Related to OPEB – For the year ended December 31, 2019, the Township recognized OPEB expense of $717,779. At December 31, 2019, the Township reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 401,566	$ -
Changes in assumptions	957,147	489,015
Net difference between projected and actual earnings on pension plan investments	-	81,125
Total	$ 1,358,713	$ 570,140

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

	Business-Type Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ -	$ 374,759
Changes in assumptions	91,778	51,314
Net difference between projected and actual earnings on pension plan investments	38,520	-
Total	$ 130,298	$ 426,073

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending December 31,	Governmental Activities	Business-Type Activities
2020	$ 130,817	$ (45,039)
2021	130,816	(45,037)
2022	140,853	(44,568)
2023	96,189	(49,700)
2024	144,950	(55,716)
Thereafter	144,948	(55,715)

NOTE L - COMBINING SCHEDULES OF FIDUCIARY FUNDS

The following is a combining schedule of fiduciary net position for the Pension Trust Funds:

	Pension Trust Funds				Total
	Non-Uniformed Pension Fund	Firefighter Pension Fund	Police Pension Fund	OPEB Trust Fund	Pension and OPEB Trust Funds
ASSETS					
Cash and cash equivalents	$ 310,070	$ 111,897	$ 452,077	$ 127,232	$ 1,001,276
Investments					
Domestic equity mutual funds	3,966,446	1,409,127	6,149,766	850,374	12,375,713
International equity mutual funds	924,426	327,877	1,427,519	198,381	2,878,203
Fixed income mutual funds	1,597,321	567,318	2,474,329	358,895	4,997,863
Real estate mutual funds	283,988	96,862	439,903	60,823	881,576
Due from Township	-	-	-	-	-
TOTAL ASSETS	$ 7,082,251	$ 2,513,081	$ 10,943,594	$ 1,595,705	$ 22,134,631
NET POSITION					
Held in trust for Pension and OPEB benefits	$ 7,082,251	$ 2,513,081	$ 10,943,594	$ 1,595,705	$ 22,134,631

NOTE L - COMBINING SCHEDULES OF FIDUCIARY FUNDS (Continued)

The following is a combining schedule of changes in fiduciary net position for the Pension Trust Funds:

	Pension Trust Funds				Total
	Non-Uniformed Pension Fund	Firefighter Pension Fund	Police Pension Fund	OPEB Trust Fund	Pension and OPEB Trust Funds
ADDITIONS					
Contributions					
Member contributions	$ 70,595	$ 47,172	$ 140,354	$ -	$ 258,121
Employer contributions	394,490	158,964	504,774	381,412	1,439,640
TOTAL CONTRIBUTIONS	465,085	206,136	645,128	381,412	1,697,761
Investment earnings					
Dividends	270,344	92,500	415,396	54,289	832,529
Net decrease in the fair value of investments	1,021,727	343,777	1,570,340	246,702	3,182,546
TOTAL INVESTMENT EARNINGS	1,292,071	436,277	1,985,736	300,991	4,015,075
Less investment expense	(15,429)	(5,235)	(23,706)	-	(44,370)
INVESTMENT EARNINGS, net	1,276,642	431,042	1,962,030	300,991	3,970,705
TOTAL ADDITIONS	1,741,727	637,178	2,607,158	682,403	5,668,466
DEDUCTIONS					
Benefits	432,651	-	551,696	281,412	1,265,759
Administrative expense	10,925	9,970	9,730	3,668	34,293
TOTAL DEDUCTIONS	443,576	9,970	561,426	285,080	1,300,052
CHANGE IN NET POSITION	1,298,151	627,208	2,045,732	397,323	4,368,414
NET POSITION HELD IN TRUST AT BEGINNING OF YEAR	5,784,100	1,885,873	8,897,862	1,198,382	17,766,217
NET POSITION HELD IN TRUST AT END OF YEAR	$ 7,082,251	$ 2,513,081	$ 10,943,594	$ 1,595,705	$ 22,134,631

NOTE M - EXCESS OF EXPENDITURES OVER APPROPRIATIONS

The General Fund incurred expenditures in excess of appropriations in the following amounts for the year ended December 31, 2019:

General government - tax collection	$ 36,253
Public safety - fire protection	111
Debt service	201

The excess expenditures above were covered by budgeted expenses exceeding incurred expenditures in other expense categories.

NOTE N - RISK MANAGEMENT

The Township is exposed to various risks of loss related to tort; theft of, damage to, and destruction of assets; errors and omission injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs. There were no significant reductions in insurance coverages of the 2019 year. Settlement amounts have not exceeded insurance coverage for the current year or the three prior years.

NOTE O - GUARANTEE OF FIRE COMPANY DEBT

During 2014, the Township guaranteed a $4,000,000 loan made to the East Whiteland Township Volunteer Fire Association dated May 6, 2014 with a maturity date of May 6, 2042. As of December 31, 2019, the Township has determined that there is currently no evidence that the Association will default on its loan, and therefore, no liability is reflected in the financial statements.

NOTE P - PRIOR PERIOD RESTATEMENT

The Township implemented GASB Statement No. 84, Fiduciary Activities. The objective of GASB Statement No. 84 is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported.

For the fiduciary fund custodial activities, the Township has treated the beginning of year net position of $375,442 as having been recognized in the period incurred. The Township has adjusted beginning net position for their fiduciary activities from $0 to $375,442.

NOTE Q - SUBSEQUENT EVENT

Subsequent to year end, a global pandemic due to the spread of the COVID-19 coronavirus caused the United States government to declare a national emergency. The pandemic has led to widespread voluntary and government-mandated closings of local stores and businesses, which has resulted in significant job losses. These job losses have the potential to have a significant impact on all aspects of Township operations including tax collections and the collection of sewer charges. In addition, due to the temporary closure of all businesses that are not deemed life sustaining, State tax revenues are also significantly decreased. This decrease could result in less grant money that is relied upon by local municipalities to fund specific projects. Overall, decreased funding could result in the Township having to curtail or eliminate some non-essential services and furlough employees.

Due to the pandemic, the financial markets have experienced significant market decline since the beginning of the year. These losses, if not regained, will have a significant detrimental impact on the value of the investments held by the Township's pension and OPEB plans. Decreases in the value of investments held by the Plans may result in a significant impact on the pension and OPEB liabilities and related deferred inflows and outflows related to the pension and OPEB plans. At this point, the extent to which COVID-19 will impact our financial condition or results of operations is uncertain and cannot be reasonably estimated at this time.

REQUIRED SUPPLEMENTARY INFORMATION

EAST WHITELAND TOWNSHIP
SCHEDULE OF REVENUES AND OTHER FINANCING SOURCES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2019

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
REVENUES				
Taxes				
Real estate taxes	$ 761,000	$ 761,000	$ 767,194	$ 6,194
Transfer taxes	1,000,000	1,180,000	1,199,970	19,970
Earned income taxes	8,701,000	9,101,000	9,741,890	640,890
Local services taxes	1,350,000	1,350,000	1,322,836	(27,164)
TOTAL TAXES	11,812,000	12,392,000	13,031,890	639,890
Fees, licenses and permits				
Building	1,200,000	1,000,000	952,221	(47,779)
Zoning	23,500	23,500	28,950	5,450
Electrical	120,000	120,000	139,784	19,784
Plumbing	60,000	60,000	58,215	(1,785)
Street	7,500	7,500	14,935	7,435
Mechanical	100,000	100,000	106,805	6,805
Subdivision and land	16,000	16,000	14,301	(1,699)
Occupancy	20,000	20,000	12,080	(7,920)
Other	23,500	23,500	21,310	(2,190)
Cable television franchise fees	230,000	230,000	224,881	(5,119)
TOTAL FEES, LICENSES AND PERMITS	1,800,500	1,600,500	1,573,482	(27,018)
Intergovernmental revenues				
Public utility realty tax	9,500	9,500	10,583	1,083
State pension aid	373,000	373,000	414,760	41,760
Other grants	113,300	113,300	194,061	80,761
Local intergovernmental revenue	-	-	-	-
TOTAL INTERGOVERNMENTAL REVENUES	495,800	495,800	619,404	123,604
Fines and forfeitures				
Police	75,000	75,000	27,032	(47,968)
Code	25,000	25,000	24,568	(432)
TOTAL FINES AND FORFEITURES	100,000	100,000	51,600	(48,400)
Charges for services				
Police services	130,500	130,500	91,629	(38,871)
Culture and recreation	50,000	81,530	73,882	(7,648)
TOTAL CHARGES FOR SERVICES	180,500	212,030	165,511	(46,519)
Other				
Investment income and rent	37,400	63,400	64,487	1,087
Miscellaneous	8,000	8,000	142,095	134,095
TOTAL OTHER	45,400	71,400	206,582	135,182
TOTAL REVENUES	14,434,200	14,871,730	15,648,469	776,739
OTHER FINANCING SOURCES				
Transfers in	166,165	166,165	166,165	-
Sale of general capital assets	-	-	785	785
TOTAL OTHER FINANCING SOURCES	166,165	166,165	166,950	785
TOTAL REVENUES AND OTHER FINANCING SOURCES	$ 14,600,365	$ 15,037,895	$ 15,815,419	$ 777,524

EAST WHITELAND TOWNSHIP

SCHEDULE OF FUNCTIONAL EXPENDITURES BY
ACTIVITIES AND OTHER FINANCING USES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2019

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
EXPENDITURES				
General government				
Administration	$ 1,034,955	$ 987,955	$ 942,918	$ (45,037)
Finance	110,100	130,100	90,905	(39,195)
Tax collection	117,640	117,640	153,893	36,253
Solicitor	341,000	391,000	328,054	(62,946)
Engineering services	113,400	136,400	111,195	(25,205)
Municipal buildings	71,650	71,650	61,471	(10,179)
TOTAL GENERAL GOVERNMENT	1,788,745	1,834,745	1,688,436	(146,309)
Public safety				
Police	5,581,078	5,697,078	5,090,237	(606,841)
Fire protection	2,275,642	2,275,642	2,275,753	111
Code enforcement	1,028,265	953,265	817,526	(135,739)
Planning and zoning	312,122	312,122	294,919	(17,203)
Emergency management	6,750	6,750	196	(6,554)
TOTAL PUBLIC SAFETY	9,203,857	9,244,857	8,478,631	(766,226)
Public works - sanitation	27,500	27,500	20,190	(7,310)
Public works - highways and streets				
General services	1,195,167	1,195,167	1,119,641	(75,526)
Winter maintenance	146,604	146,604	88,711	(57,893)
Traffic signals	94,077	94,077	92,914	(1,163)
Street lighting	27,000	27,000	25,343	(1,657)
Road maintenance and repair	184,070	184,070	151,629	(32,441)
TOTAL PUBLIC WORKS - HIGHWAYS AND STREETS	1,646,918	1,646,918	1,478,238	(168,680)
Culture and recreation	150,000	176,000	144,998	(31,002)
Community development	3,600	3,600	860	(2,740)
Other	13,950	13,950	7,992	(5,958)
Debt service	504,030	504,030	504,231	201
TOTAL EXPENDITURES	13,338,600	13,451,600	12,323,576	(1,128,024)
OTHER FINANCING USES				
Transfers out	475,600	475,600	975,600	500,000
TOTAL EXPENDITURES AND OTHER FINANCING USES	$ 13,814,200	$ 13,927,200	$ 13,299,176	$ (628,024)

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET POLICE PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY						
Service cost	$ 341,224	$ 262,265	$ 249,776	$ 199,542	$ 190,040	$ 197,954
Interest	991,401	915,581	863,636	783,495	748,819	736,646
Changes of benefit terms	-	-	-	-	-	-
Differences between expected and actual experience	(92,874)	-	84,223	-	(303,433)	-
Changes of assumptions	935,117	-	340,163	-	-	-
Benefit payments	(551,696)	(438,563)	(673,099)	(372,805)	(361,184)	(580,995)
NET CHANGE IN TOTAL PENSION LIABILITY	1,623,172	739,283	864,699	610,232	274,242	353,605
TOTAL PENSION LIABILITY, BEGINNING	12,142,675	11,403,392	10,538,693	9,928,461	9,654,219	9,300,614
TOTAL PENSION LIABILITY, ENDING (a)	$ 13,765,847	$ 12,142,675	$ 11,403,392	$ 10,538,693	$ 9,928,461	$ 9,654,219
PLAN FIDUCIARY NET POSITION						
Contributions						
Employer	$ 504,774	$ 304,132	$ 298,180	$ 353,111	$ 341,597	$ 232,636
Member	140,354	114,562	113,766	116,771	111,068	98,961
Net investment income (loss)	1,962,030	(799,494)	1,280,701	599,374	(55,653)	501,064
Benefit payments, including refunds of member contributions	(551,696)	(438,563)	(673,099)	(372,805)	(361,184)	(580,995)
Administrative expense	(9,730)	(9,380)	(9,550)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	2,045,732	(828,743)	1,009,998	696,451	35,828	251,666
Plan fiduciary net position, beginning	8,897,862	9,726,605	8,716,607	8,020,156	7,984,328	7,732,662
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 10,943,594	$ 8,897,862	$ 9,726,605	$ 8,716,607	$ 8,020,156	$ 7,984,328
NET PENSION LIABILITY, ENDING (a)-(b)	$ 2,822,253	$ 3,244,813	$ 1,676,787	$ 1,822,086	$ 1,908,305	$ 1,669,891
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	79.50%	73.28%	85.30%	82.71%	80.78%	82.70%
COVERED PAYROLL	$ 2,617,694	$ 2,220,748	$ 2,376,418	$ 2,181,320	$ 1,932,369	$ 1,739,660
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	107.81%	146.11%	70.56%	83.53%	98.75%	95.99%

NOTES TO SCHEDULE

Changes in assumptions. In 2019 the mortality rates were updated to the PubS-2010 mortality tables, and the investment rate of return was revised to 7.5% from 8.0%. In 2017 the mortality rates were based on the IRS 2017 Static Combined Table for Small Plans. In prior years, the mortality rates were based on the RP-2000 Table for Males or Females

This schedule is intended to show information for ten years. all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF POLICE PENSION PLAN CONTRIBUTIONS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 504,774	$ 304,132	$ 298,180	$ 353,111	$ 341,597	$ 232,636
Contributions in relation to the actuarially determined contribution	504,774	304,132	298,180	353,111	341,597	232,636
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 2,617,694	$ 2,220,748	$ 2,376,418	$ 2,181,320	$ 1,932,369	$ 1,739,660
Contribution as a percentage of covered payroll	19.28%	13.70%	12.55%	16.19%	17.68%	13.37%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	9 years	10 years	12 years	13 years
Asset valuation method	Market	Market	Market	Smoothing
Salary increases	5%	5%	5%	5%
Investment rate of return	8%	8%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	None
Mortality	IRS 2017 Static Combined	RP2000	RP2000	RRB92
Retirement age	50	50	50	50
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF POLICE PENSION PLAN
INVESTMENT RETURNS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	22.26%	-8.30%	14.98%	7.76%	-0.27%	7.28%

NOTES TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET NON-UNIFORMED PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY						
Service cost	$ 166,271	$ 204,475	$ 195,670	$ 222,208	$ 212,639	$ 200,683
Interest	586,645	580,830	535,962	464,896	436,841	408,335
Changes of benefit terms	-	-	-	-	206,882	-
Differences between expected and actual experience	(215,561)	-	650,497	-	(97,094)	-
Changes of assumptions	361,638	-	-	-	195,578	-
Benefit payments	(432,651)	(495,760)	(527,814)	(235,630)	(222,241)	(189,726)
NET CHANGE IN TOTAL PENSION LIABILITY	466,342	289,545	854,315	451,474	732,605	419,292
TOTAL PENSION LIABILITY, BEGINNING	7,745,596	7,456,051	6,601,736	6,150,262	5,417,657	4,998,365
TOTAL PENSION LIABILITY, ENDING (a)	$ 8,211,938	$ 7,745,596	$ 7,456,051	$ 6,601,736	$ 6,150,262	$ 5,417,657
PLAN FIDUCIARY NET POSITION						
Contributions						
Employer	$ 394,490	$ 220,482	$ 231,309	$ 344,313	$ 343,163	$ 372,463
Member	70,595	74,810	77,137	94,056	84,401	78,161
Net investment income	1,276,642	(493,932)	928,341	374,989	(55,752)	276,723
Benefit payments, including refunds of member contributions	(432,651)	(495,760)	(527,814)	(235,630)	(222,241)	(189,726)
Administrative expense	(10,925)	(13,425)	(9,550)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	1,298,151	(707,825)	699,423	577,728	149,571	537,621
Plan fiduciary net position, beginning	5,784,100	6,491,925	5,792,502	5,214,774	5,065,203	4,527,582
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 7,082,251	$ 5,784,100	$ 6,491,925	$ 5,792,502	$ 5,214,774	$ 5,065,203
NET PENSION LIABILITY, ENDING (a)-(b)	$ 1,129,687	$ 1,961,496	$ 964,126	$ 809,234	$ 935,488	$ 352,454
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	86 24%	74 68%	87 07%	87 74%	84.79%	93 49%
COVERED PAYROLL	$ 1,229,587	$ 1,315,976	$ 1,402,439	$ 1,560,708	$ 1,681,050	$ 1,529,999
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	91.88%	149 05%	68 75%	51 85%	55 65%	23 04%

NOTES TO SCHEDULE

Changes of assumptions: In 2019 the mortality rates were updated to the PubS-2010 mortality tables from the IRS 2017 Static Combined Table for Small Plans In 2015, amounts reported as changes of assumptions resulted from a change in projected salary from 5% to 4.5%, and the investment rate of return used was changed from 8% to 7.5% to more closely estimate future experience

This schedule is intended to show information for ten years, all available information is displayed Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF NON-UNIFORMED PENSION PLAN CONTRIBUTIONS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 394,490	$ 220,482	$ 231,309	$ 344,313	$ 343,163	$ 372,463
Contributions in relation to the actuarially determined contribution	394,490	220,482	231,309	344,313	343,163	372,463
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 1,229,587	$ 1,315,976	$ 1,402,439	$ 1,560,708	$ 1,681,050	$ 1,529,999
Contribution as a percentage of covered payroll	32.08%	16.75%	16.49%	22.06%	20.41%	24.34%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	7 years	4 years	7 years	8 years
Asset valuation method	Market	Market	Market	Smoothing
Salary increases	4.5%	4.5%	5%	6%
Investment rate of return	7.5%	7.5%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	W65
Mortality	IRS 2017 Static Combined Table	RP2000	RP2000	GAM71
Retirement age	64	64	65	63
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF NON-UNIFORMED PENSION PLAN
INVESTMENT RETURNS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	22.27%	-7.82%	16.33%	7.85%	-0.71%	6.58%

NOTES TO SCHEDULES

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET FIREFIGHTER PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY						
Service cost	$ 108,980	$ 108,805	$ 104,120	$ 77,718	$ 74,371	$ 63,203
Interest	227,986	196,448	175,151	141,038	125,776	100,074
Differences between expected and actual experience	49,237	-	121,576	-	172,510	-
Changes of assumptions	70,248	-	88,108	-	79,132	-
NET CHANGE IN TOTAL PENSION LIABILITY	456,451	305,253	488,955	218,756	451,789	163,277
TOTAL PENSION LIABILITY, BEGINNING	2,815,754	2,510,501	2,021,546	1,802,790	1,351,001	1,187,724
TOTAL PENSION LIABILITY, ENDING (a)	$ 3,272,205	$ 2,815,754	$ 2,510,501	$ 2,021,546	$ 1,802,790	$ 1,351,001
PLAN FIDUCIARY NET POSITION						
Contributions						
Employer	$ 158,964	$ 105,280	$ 106,494	$ 85,040	$ 75,802	$ 85,251
Member	47,172	47,067	41,742	39,710	40,175	31,575
Net investment income (loss)	431,042	(158,677)	249,967	102,715	(13,348)	62,845
Administrative expense	(9,970)	(5,920)	(6,575)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	627,208	(12,250)	391,628	227,465	102,629	179,671
Plan fiduciary net position, beginning	1,885,873	1,898,123	1,506,495	1,279,030	1,176,401	996,730
PLAN FIDUCIARY NET, POSITION ENDING (b)	$ 2,513,081	$ 1,885,873	$ 1,898,123	$ 1,506,495	$ 1,279,030	$ 1,176,401
NET PENSION LIABILITY, ENDING (a)-(b)	$ 759,124	$ 929,881	$ 612,378	$ 515,051	$ 523,760	$ 174,600
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	76 80%	66.98%	75.61%	74.52%	70.95%	87 08%
COVERED PAYROLL	$ 865,531	$ 945,635	$ 835,655	$ 801,110	$ 619,306	$ 584,467
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	87.71%	98.33%	73 28%	64 29%	84 57%	29 87%

NOTES TO SCHEDULE

Changes of assumptions. In 2019 the mortality rates were updated to the PubS-2010 mortality tables from the IRS 2017 Static Combined Table for Small Plans In 2017 the mortality rates were based on the IRS 2017 Static Combined Table for Small Plans. In prior years, the mortality rates were based on the RP-2000 Table for Males or Females. In 2015, amounts reported as changes of assumptions resulted from a change in projected salary from 5% to 4 5%, and the investment rate of return used was changed from 8% to 7 5% to more closely estimate future experience

This schedule is intended to show information for ten years, all available information is displayed Additional information will be displayed as it becomes available

EAST WHITELAND TOWNSHIP
SCHEDULE OF FIREFIGHTER PENSION PLAN CONTRIBUTIONS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 158,964	$ 105,280	$ 106,494	$ 85,040	$ 75,802	$ 85,251
Contributions in relation to the actuarially determined contribution	158,964	105,280	106,494	85,040	75,802	85,251
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 865,531	$ 945,635	$ 835,655	$ 801,110	$ 619,306	$ 584,467
Contribution as a percentage of covered payroll	18.37%	11.13%	12.74%	10.62%	12.24%	14.59%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	11 years	12 years	12 years	14 years
Asset valuation method	Market	Market	Market	Smoothing
Salary increases	4.5%	4.5%	5%	6%
Investment rate of return	7.5%	7.5%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	W65
Mortality	IRS 2017 Static Combined Table	RP2000	RP2000	GAM71
Retirement age	65	65	65	63
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF FIREFIGHTER PENSION PLAN
INVESTMENT RETURNS
LAST SIX FISCAL YEARS

	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	21.94%	-8.10%	16.09%	7.83%	-0.71%	6.58%

NOTE TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET OPEB PLAN LIABILITY AND RELATED RATIOS
LAST THREE FISCAL YEARS

	2019	2018	2017
TOTAL OPEB LIABILITY			
Service cost	$ 636,442	$ 666,868	$ 635,160
Interest	543,836	502,729	472,435
Changes of benefit terms	(464,687)	-	-
Differences between expected and actual experience	31,275	-	-
Changes of assumptions	1,223,746	(720,439)	-
Benefit payments	(281,412)	(335,508)	(227,399)
NET CHANGE IN TOTAL OPEB LIABILITY	1,689,200	113,650	880,196
TOTAL OPEB LIABILITY, BEGINNING	13,789,899	13,676,249	12,796,053
TOTAL OPEB LIABILITY, ENDING (a)	$ 15,479,099	$ 13,789,899	$ 13,676,249
PLAN FIDUCIARY NET POSITION			
Contributions			
Employer	$ 381,412	$ 12,396	$ 227,399
Net investment income	300,991	(143,596)	158,441
Benefit payments, including refunds of member contributions	(281,412)	(335,508)	(227,399)
Administrative expense	(3,668)	(4,073)	(4,607)
NET CHANGE IN PLAN FIDUCIARY NET POSITION	397,323	(470,781)	153,834
Plan fiduciary net position, beginning	1,198,382	1,669,163	1,515,329
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 1,595,705	$ 1,198,382	$ 1,669,163
NET OPEB LIABILITY, ENDING (a)-(b)	$ 13,883,394	$ 12,591,517	$ 12,007,086
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL OPEB LIABILITY	10.31%	8.69%	12.20%
COVERED PAYROLL	$ 4,729,369	$ 4,679,117	$ 4,679,117
NET OPEB LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	293.56%	269.10%	256.61%

NOTES TO SCHEDULE

Changes in assumptions: In 2019 the discount rate changed from 3.81% to 3.98%. The trend assumption was updated. The mortality table was changed from the IRS 2017 Small Plan Combined Static Mortality table to the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees. In 2018 the discount rate was changed from 3.55% to 3.81%.

Changes in benefit terms: In 2019, police officers retiring after 9/24/2019 will enroll in the active health plan. Also, Non-Uniformed Union employees who do not have 10 years of service as of 12/31/2022 will not receive post 65 benefits.

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF OPEB PLAN
CONTRIBUTIONS
LAST THREE FISCAL YEARS

	2019	2018	2017
Actuarially determined contribution	$ 281,412	$ 1,068,349	$ 1,068,349
Contributions in relation to the actuarially determined contribution	381,412	12,396	227,399
Contribution (excess) deficiency	$ (100,000)	$ 1,055,953	$ 840,950
Covered payroll	$ 4,729,369	$ 4,679,117	$ 4,679,117
Contribution as a percentage of covered payroll	8.06%	0.26%	4.86%

NOTES TO SCHEDULE

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/19
Actuarial cost method	Entry age
Amortization method	Level dollar
Remaining amortization period	26 years
Asset valuation method	Market value
Salary increases	4.5% to 5.0%
Investment rate of return	3.98%
Mortality	PubS-2010 mortality table for Police and Fire PubG-2010 mortality table for Non-Uniformed
Healthcare cost trent rates	5.5% decreasing to 4.0%

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF OPEB PLAN
INVESTMENT RETURNS
LAST THREE FISCAL YEARS

	2019	2018	2017
Annual money-weighted rate of return, net of investment expense	23.39%	-8.98%	10.39%

NOTE TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

SUPPLEMENTARY INFORMATION SECTION

Special Revenue Funds are used to account for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes as follows:

- The *Street Light Fund* is used to account for street light rents in the three developments that provide street lights.
- The *Park Development Fund* is used to account for park development projects.
- The *State Fund* is used to account for state revenues required to be used primarily for building and improving local roads and highways, including snow removal costs.

Capital Projects Funds are used to account for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes as follows:

- The *Transportation Improvement Fund* is used to account for Act 209 Transportation Impact Fees that are collected by the Township and are used for transportation improvement projects.

EAST WHITELAND TOWNSHIP
COMBINING BALANCE SHEET
OTHER GOVERNMENTAL FUNDS
DECEMBER 31, 2019

	Special Revenue Funds			Capital Projects Fund	
	Street Light Fund	Park Development Fund	State Fund	Transportation Improvement Fund	Total Other Governmental Funds
ASSETS					
Cash and cash equivalents	$ 39,002	$ 1,074,088	$ 12,079	$ 612,582	$ 1,737,751
Receivables	369	-	-	-	369
TOTAL ASSETS	$ 39,371	$ 1,074,088	$ 12,079	$ 612,582	$ 1,738,120
LIABILITIES AND FUND BALANCES					
LIABILITIES					
Accounts payable	$ 592	$ 18,351	$ -	$ -	$ 18,943
FUND BALANCES					
Restricted					
Highway and street projects	-	-	12,079	612,582	624,661
Assigned					
Highway and street projects	38,779	-	-	-	38,779
Park development	-	1,055,737	-	-	1,055,737
TOTAL FUND BALANCES	38,779	1,055,737	12,079	612,582	1,719,177
TOTAL LIABILITIES AND FUND BALANCES	$ 39,371	$ 1,074,088	$ 12,079	$ 612,582	$ 1,738,120

EAST WHITELAND TOWNSHIP

COMBINING SCHEDULE OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
OTHER GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2019

	Special Revenue Funds			Capital Projects Fund	
	Street Light Fund	Park Development Fund	State Fund	Transportation Improvement Fund	Total Other Governmental Funds
REVENUES					
Investment income and rent	$ -	$ 7,612	$ 1,149	$ 2,408	$ 11,169
Intergovernmental revenues	-	-	372,775	-	372,775
Charges for services	-	-	-	205,000	205,000
Other	10,689	231,770	-	-	242,459
TOTAL REVENUES	10,689	239,382	373,924	207,408	831,403
EXPENDITURES					
Public works - highways and streets	7,484	-	363,746	-	371,230
Culture and recreation	-	106,002	-	-	106,002
TOTAL EXPENDITURES	7,484	106,002	363,746	-	477,232
EXCESS OF REVENUES OVER EXPENDITURES	3,205	133,380	10,178	207,408	354,171
OTHER FINANCING USES					
Transfers in	-	15,101	-	-	15,101
NET CHANGE IN FUND BALANCES	3,205	148,481	10,178	207,408	369,272
FUND BALANCES AT BEGINNING OF YEAR	35,574	907,256	1,901	405,174	1,349,905
FUND BALANCES BALANCES AT END OF YEAR	$ 38,779	$ 1,055,737	$ 12,079	$ 612,582	$ 1,719,177

EAST WHITELAND TOWNSHIP
BUDGETARY COMPARISON SCHEDULE
CAPITAL IMPROVEMENT FUND
YEAR ENDED DECEMBER 31, 2019

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
REVENUES				
Interest income	$ 15,000	$ 15,000	$ 42,376	$ 27,376
Other	50,000	50,000	104,108	54,108
TOTAL REVENUES	65,000	65,000	146,484	81,484
EXPENDITURES				
General government				
Building and improvements	222,500	222,500	22,942	(199,558)
Furniture and office equipment	72,000	87,000	59,462	(27,538)
TOTAL GENERAL GOVERNMENT	294,500	309,500	82,404	(227,096)
Public safety				
Fire	12,000	12,000	6,960	(5,040)
Other expenses	364,300	502,285	363,406	(138,879)
TOTAL PUBLIC SAFETY	376,300	514,285	370,366	(143,919)
Public works - highways and streets				
Repairs and maintenance	267,000	297,000	205,733	(91,267)
Culture and recreation				
Capital construction	896,000	896,000	257,331	(638,669)
Community development				
Repairs and maintenance	50,000	50,000	11,337	(38,663)
TOTAL EXPENDITURES	1,883,800	2,066,785	927,171	(1,139,614)
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	(1,818,800)	(2,001,785)	(780,687)	1,221,098
OTHER FINANCING SOURCES				
Proceeds from sale of capital assets	5,000	5,000	42,422	37,422
Interfund transfers in, General Fund	475,600	475,600	975,600	500,000
Interfund transfers out,				
Park Development Fund	-	-	(15,101)	(15,101)
TOTAL OTHER FINANCING SOURCES	480,600	480,600	1,002,921	522,321
NET CHANGE IN FUND BALANCE	(1,338,200)	(1,521,185)	222,234	1,743,419
FUND BALANCE AT BEGINNING OF YEAR	8,000,295	8,000,295	8,000,295	-
FUND BALANCE AT END OF YEAR	$ 6,662,095	$ 6,479,110	$ 8,222,529	$ 1,743,419

EAST WHITELAND TOWNSHIP

SCHEDULE OF REVENUES, EXPENDITURES AND CHANGES IN
FUND BALANCES -- BUDGET AND ACTUAL
NONMAJOR FUNDS
YEAR ENDED DECEMBER 31, 2019

	Street Light Fund	
	Budget	Actual
REVENUES		
Interest income	$ 5	$ -
Intergovernmental revenues	-	-
Charges for services	-	-
Other	10,713	10,689
TOTAL REVENUES	10,718	10,689
EXPENDITURES		
Public works		
Highways and streets	-	-
Street lighting	7,700	7,484
Culture and recreation		
Parks development	-	-
TOTAL EXPENDITURES	7,700	7,484
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	3,018	3,205
OTHER FINANCING USES		
Transfers in	-	-
NET CHANGE IN FUND BALANCES	3,018	3,205
FUND BALANCES AT BEGINNING OF YEAR	35,574	35,574
FUND BALANCES AT END OF YEAR	$ 38,592	$ 38,779

Park Development Fund		State Fund		Transportation Improvement Fund	
Budget	Actual	Budget	Actual	Budget	Actual
$ 2,000	$ 7,612	$ 100	$ 1,149	$ 2,000	$ 2,408
42,000	-	363,874	372,775	-	-
-	-	-	-	300,000	205,000
150,000	231,770	-	-	-	-
194,000	239,382	363,974	373,924	302,000	207,408
-	-	363,870	363,746	100,000	-
-	-	-	-	-	-
638,000	106,002	-	-	-	-
638,000	106,002	363,870	363,746	100,000	-
(444,000)	133,380	104	10,178	202,000	207,408
-	15,101	-	-	-	-
(444,000)	148,481	104	10,178	202,000	207,408
907,256	907,256	1,901	1,901	405,174	405,174
$ 463,256	$ 1,055,737	$ 2,005	$ 12,079	$ 607,174	$ 612,582

STATISTICAL SECTION

STATISTICAL SECTION
(Unaudited)

This part of East Whiteland Township's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, notes disclosures and required supplementary information says about the Township's overall financial health.

Contents

Financial Trends

These schedules contain trend information to help the reader understand how the Township's financial performance and well-being have changed over time.

Revenue Capacity

These schedules contain information to help the reader assess the Township's most significant local revenues sources, the earned income tax, and property tax.

Debt Capacity

These schedules present information to help the reader assess the affordability of the Township's current levels of outstanding debt and the Township's ability to issue additional debt in the future.

Demographic and Economic Information

These schedules offer demographic and economic indicators to help the reader understand the environment within which the Township's financial activities take place.

Operation Information

These schedules contain service and miscellaneous data to help the reader understand how the information in the Township's financial report relates to the service the Township provides and the activities it performs.

Sources: Unless otherwise noted, the information in these schedules is derived from the Annual Financial Reports for the relevant year. The Township implemented GASB Statement No. 34 for fiscal year ended December 31, 2003; schedules presenting government-wide information include information beginning in that year.

Table 1
EAST WHITELAND TOWNSHIP
Net Position by Components of Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Governmental Activities:										
Net Investment in Capital Assets	9,959,378	10,385,140	10,718,379	12,178,959	13,890,258	15,412,589	16,930,528	18,660,672	20,461,105	22,330,562
Restricted	624,661	407,075	1,164	137	126	-	-	-	-	-
Unrestricted	1,154,205	(1,528,701)	3,806,634	3,514,948	3,214,797	4,996,470	4,357,889	4,297,548	3,723,264	4,323,169
Total Governmental Activities Net Position	**11,738,244**	**9,263,514**	**14,526,177**	**15,694,044**	**17,105,181**	**20,409,059**	**21,288,417**	**22,958,220**	**24,184,369**	**26,653,731**
Business-type Activities:										
Net Investment in Capital Assets	18,217,920	17,400,739	14,968,372	13,970,651	12,780,609	10,549,269	8,310,714	10,084,680	8,724,618	7,653,383
Restricted	-	-	-	-	-	-	201,785	-	-	-
Unrestricted	8,229,857	7,874,995	6,311,041	6,235,006	6,437,604	9,025,213	9,854,928	7,533,910	8,466,442	9,495,212
Total Business-type Activities Net Position	**26,447,777**	**25,275,734**	**21,279,413**	**20,205,657**	**19,218,213**	**19,574,482**	**18,367,427**	**17,618,590**	**17,191,060**	**17,148,595**
Primary-type Activities:										
Net Investment in Capital Assets	28,177,298	27,785,879	25,686,751	26,149,610	26,670,867	25,961,858	25,241,242	28,745,352	29,185,723	29,983,945
Restricted	624,661	407,075	1,164	137	126	-	201,785	-	-	-
Unrestricted	9,384,062	6,346,294	10,117,675	9,749,954	9,652,401	14,021,683	14,212,817	11,831,458	12,189,706	13,818,381
Total Primary-type Activities Net Position	**38,186,021**	**34,539,248**	**35,805,590**	**35,899,701**	**36,323,394**	**39,983,541**	**39,655,844**	**40,576,810**	**41,375,429**	**43,802,326**

Source: East Whiteland Township Annual Financial Statements Statement of Net Positior

Table 2

EAST WHITELAND TOWNSHIP
Changes in Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Expenses										
Governmental Activities:										
General Government	1,799,326	1,992,639	1,876,463	1,327,924	1,607,114	1,118,418	1,354,756	1,033,369	968,162	1,068,703
Public Safety	9,312,035	9,895,357	8,573,408	8,364,407	7,602,485	6,839,023	7,689,219	6,445,697	6,283,118	6,252,932
Public Works - Highways and Streets	3,244,902	3,314,877	3,295,339	3,570,145	3,410,649	1,836,437	1,622,598	1,355,881	1,432,080	1,339,770
Public Works - Sanitation	20,190	17,702	20,286	21,192	22,025	17,142	11,811	11,300	12,309	18,437
Culture,Recreation, Community Development	256,521	201,420	183,755	198,139	347,856	183,829	181,618	170,831	156,036	186,221
Other	-	6,947	4,719	207,028	88,740	-	-	-	-	-
Transfer to OPEB Fund	-	-	-	50,000	200,000	-	-	-	-	-
Depreciation, unallocated (2)	-	-	-	-	-	1,867,549	1,867,549	1,865,883	1,865,883	1,865,883
Debt Service	221,448	213,653	224,773	331,545	293,650	115,617	6,721	5,276	2,988	6,205
Total Governmental Activities	14,854,422	15,642,595	14,178,743	14,070,380	13,572,519	11,978,015	12,734,272	10,888,237	10,720,576	10,738,151
Business-Type Activities:										
Sewer Operating Expenses	3,848,023	3,126,206	3,552,541	3,225,860	2,967,808	2,576,276	2,206,189	2,187,312	2,268,037	2,224,201
Debt Service	561,324	578,450	607,118	605,904	614,607	245,853	402,040	270,177	409,174	427,151
Total Business-Type Activities:	4,409,347	3,704,656	4,159,659	3,831,764	3,582,415	2,822,129	2,608,229	2,457,489	2,677,211	2,651,352
Total Township Activities Expenses	**19,263,769**	**19,347,251**	**18,338,402**	**17,902,144**	**17,154,934**	**14,800,144**	**15,342,501**	**13,345,726**	**13,397,787**	**13,389,503**
Program Revenue										
Governmental Activities:										
Charges for Services:										
General Government (Franchise & Traffic Impact Fees)	429,891	633,591	233,935	226,810	274,126	205,824	196,525	184,730	180,825	173,784
Public Safety (Permits, Fines)	1,491,820	3,009,520	1,694,658	1,581,528	2,063,763	2,096,000	2,696,996	1,811,094	1,407,853	851,706
Parks and Recreation	73,882	41,703	42,435	63,986	47,611	49,310	51,933	49,404	46,544	48,839
Grants & Contributions& Intergovernment Aid	1,726,173	1,216,177	1,176,055	921,830	708,926	1,005,362	1,171,596	901,839	916,526	725,721
Total Governmental Activities Program Revenue	3,721,766	4,900,991	3,147,083	2,794,154	3,094,426	3,356,496	4,117,050	2,947,067	2,551,748	1,800,050
Business-Type Activities										
Sewer including Tapping Fees	4,745,887	5,115,886	5,000,977	4,833,908	3,269,721	3,770,849	2,517,448	2,675,907	2,670,297	3,085,802
Grants & Contributions	181,831	2,057,746	-	-	-	240,000	963,000	116,000	11,250	16,000
Total Business-Type Activities Program Revenue	4,927,718	7,173,632	5,000,977	4,833,908	3,269,721	4,010,849	3,480,448	2,791,907	2,681,547	3,101,802
Total Primary Government Program Revenues	**8,649,484**	**12,074,623**	**8,148,060**	**7,628,062**	**6,364,147**	**7,367,345**	**7,597,498**	**5,738,974**	**5,233,295**	**4,901,852**
Net (Expense)/Revenue										
Governmental Activities	(11,132,656)	(10,741,604)	(11,031,660)	(11,276,226)	(10,478,093)	(8,621,519)	(8,617,222)	(7,941,170)	(8,168,828)	(8,938,101)
Business-Type Activities	518,371	3,468,976	841,318	1,002,144	(312,694)	1,188,720	872,219	334,418	4,336	450,450
Total Primary Government Net Expense	(10,614,285)	(7,272,628)	(10,190,342)	(10,274,082)	(10,790,787)	(7,432,799)	(7,745,003)	(7,606,752)	(8,164,492)	(8,487,651)

Table 2

EAST WHITELAND TOWNSHIP
Changes in Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
General Revenues and Other Changes in Net Position										
Governmental Activities:										
Real Estate Taxes	757,124	729,661	671,762	642,400	617,549	591,379	597,985	569,554	579,844	617,364
Real Estate Transfer Tax	1,199,970	2,991,303	1,501,457	2,182,702	1,104,855	927,764	574,812	760,791	269,581	307,194
Earned Income Tax	9,741,890	6,520,525	6,121,771	5,143,306	6,084,879	5,014,880	4,693,510	4,397,004	3,844,129	4,060,240
Local Services Tax	1,322,836	1,262,897	1,273,571	1,277,561	1,396,149	1,074,886	1,004,423	919,549	843,809	990,367
Investment Iinterest, Rent)	118,032	55,487	49,713	45,936	40,328	24,098	24,134	25,477	31,393	39,397
Gain on Sale of Capital Assets	43,207	23,529	6,313	517,720	44,998	33,279	39,525	18,960	22,636	9,452
Miscellaneous	258,162	250,281	239,206	55,464	22,485	75,865	13,040	23,686	108,074	34,210
Transfers In/Out	166,165	166,320	-	-	-	-	-	-	-	-
Total Government Activities General Revenue and Transfers	13,607,386	12,000,003	9,863,793	9,865,089	9,311,243	7,742,151	6,947,429	6,715,021	5,699,466	6,058,224
Business-Type Activities										
Investment Income / Interest	137,057	27,696	19,510	15,300	16,342	18,335	24,090	25,664	33,029	56,056
Gain on Sale of Capital Assets	-	-	-	-	-	-	-	-	5,100	-
Miscellaneous	682,780	1,563,159	212,928	(30,000)	-	-	-	40,782	-	-
Transfers In/Out	(166,165)	(166,320)	-	-	-	-	-	-	-	-
Total Business Activities General Revenue and Transfers	653,672	1,424,535	232,438	(14,700)	16,342	18,335	24,090	66,446	38,129	56,056
Total Primary Government General Revenue	14,261,058	13,424,538	10,096,231	9,850,389	9,327,585	7,760,486	6,971,519	6,781,467	5,737,595	6,114,280
Total Change in Net Position										
Government Activities	2,474,730	1,258,399	(1,167,867)	(1,411,137)	(1,166,850)	(879,368)	(1,669,793)	(1,226,149)	(2,469,362)	(2,879,877)
Business-Type Activities	1,172,043	4,893,511	1,073,756	987,444	(296,352)	1,207,055	896,309	400,864	42,465	506,506
Total Primary Government	**3,646,773**	**6,151,910**	**(94,111)**	**(423,693)**	**(1,463,202)**	**327,687**	**(773,484)**	**(825,285)**	**(2,426,897)**	**(2,373,371)**

Notes:

(1) Net (expense) revenue is the difference between expenses and program revenues of a function or program. It indicates the degree to which a function or program is supported with its own fees and program-specific grants versus its reliance upon funding from taxes and other general revenues. Numbers in parenthesis indicate that expenses were greater than program revenues and therefore general revenues were needed to finance that function or program. Numbers without parenthesis indicate that program revenues were more than sufficient to cover expenses.

(2)Prior to 2015, the depreciation was not allocated to the specific governmental activities in the statement of Activities source document.

Table 3

EAST WHITELAND TOWNSHIP
Fund Balances of Governmental Funds
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
General Fund:										
Restricted	-	-	-	-	-	-	-	-	-	-
Nonspendable, prepaid items	-	-	112,770	27,301	13,500	13,500	13,500	16,500	13,500	-
Committed	-	-	-	-	-	-	-	-	-	-
Assigned (1)	7,043,868	4,527,625	5,195,382	4,195,382	3,493,000	-	-	-	-	-
Unassigned	-	-	16,978	69,328	91,961	5,617,519	4,977,835	4,627,422	3,472,425	3,437,279
Total General Fund	**7,043,868**	**4,527,625**	**5,325,130**	**4,292,011**	**3,598,461**	**5,631,019**	**4,991,335**	**4,643,922**	**3,485,925**	**3,437,279**
All Other Governmental Funds:										
Restricted	624,661	407,075	1,164	2,405,350	4,053,513	9,280,202	2,424,480	2,207,508	2,229,752	2,353,264
Nonspendable	-	-	-	-	-	-	-	-	-	-
Committed	-	-	-	-	-	-	-	-	-	-
Assigned	9,820,539	8,943,125	5,314,079	2,833,450	2,097,467	336,332	343,008	340,457	352,829	352,170
Unassigned	-	-	-	-	-	-	-	-	-	-
Total All Other Governmental Funds	**10,445,200**	**9,350,200**	**5,315,243**	**5,238,800**	**6,150,980**	**9,616,534**	**2,767,488**	**2,547,965**	**2,582,581**	**2,705,434**
Total All Governmental Funds	**17,489,068**	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**	**6,142,713**

(1) 2019: Operating Contingency 17% expenditures, $2,093,868; Tax Stabilization 33% tax revenues, $4,050,000; Pension Stabilization $500,000; Other Post Employment Benefis $350,000; Stormwater Mgt. $50,000.

Compliance with GASB Statement No. 54

Table 4

EAST WHITELAND TOWNSHIP
Change in Fund Balances of Governmental Funds
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Revenues:										
Taxes	13,031,890	11,505,385	9,560,425	9,250,138	9,199,437	7,606,909	6,870,730	6,672,547	5,552,372	5,955,165
Fees, Licenses and Permits	1,573,482	3,023,954	1,645,013	1,534,651	1,879,454	205,824	196,525	185,230	181,025	173,984
Fines and Forfeitures	51,600	50,627	53,852	100,071	205,534	202,461	156,817	191,211	212,981	157,313
Interest Income & Rent	118,032	55,487	49,713	45,936	40,328	24,098	24,134	25,477	31,393	39,397
Intergovernmental Revenues	1,495,673	921,582	881,104	921,830	765,240	1,005,362	921,596	901,839	916,526	725,721
Charges for Services	370,511	585,716	250,161	221,102	244,198	1,942,849	2,592,112	1,668,787	1,241,216	743,032
Contributions	-	-	-	-	-	-	250,000	-	-	-
Other	488,662	569,393	552,616	31,556	22,485	75,865	13,039	23,686	108,074	34,210
Total Revenue	**17,129,850**	**16,712,144**	**12,992,884**	**12,105,284**	**12,356,676**	**11,063,368**	**11,024,953**	**9,668,777**	**8,243,587**	**7,828,822**
Expenditures:										
General Government	1,770,840	1,952,870	1,890,806	1,492,784	1,564,835	2,470,226	1,180,895	868,203	779,225	928,980
Public Safety	8,848,997	8,501,189	7,710,278	7,636,593	8,049,948	6,994,142	6,715,442	6,129,167	5,875,054	5,736,552
Public Works -Highways and Streets	2,055,201	2,395,320	1,790,706	2,658,923	7,223,148	1,852,181	1,473,067	1,494,120	1,418,626	1,326,427
Public Works - Sanitation	20,190	17,702	20,286	21,192	22,025	17,142	11,811	11,300	12,309	18,437
Parks and Recreation	520,528	284,986	256,683	387,821	310,976	148,832	134,265	137,551	198,296	152,941
Contributions to OPEB Trust Fund	-	-	-	50,000	200,000	150,000	1,000,000	-	-	-
Other	7,992	6,947	4,719	118,761	88,740	9,965	13,720	10,182	10,956	9,387
Capital Outlay	-	-	-	-	-	-	-	-	-	-
Debt Service:										
Principal	295,000	285,000	5,000	225,000	100,000	64,025	60,730	69,919	38,682	73,537
Interest and Other Charges	209,231	220,527	214,700	377,783	340,114	8,295	6,259	5,366	3,732	7,697
Total Expenditures	**13,727,979**	**13,664,541**	**11,893,178**	**12,968,857**	**17,899,786**	**11,714,808**	**10,596,189**	**8,725,808**	**8,336,880**	**8,253,958**
Excess (Deficiency) of Revenue over Expenditures:	**3,401,871**	**3,047,603**	**1,099,706**	**(863,573)**	**(5,543,110)**	**(651,440)**	**428,764**	**942,969**	**(93,293)**	**(425,136)**
Other Financing Sources (Uses):										
Proceeds from Long Term Financing	-	-	-	6,160,000	-	8,225,403	102,850	165,000	-	-
Payment to Refunded Bond Escrow Agent	-	-	-	(6,058,930)						
Proceeds from Sale of Capital Assets	43,207	23,529	6,313	517,720	44,998	33,279	39,525	18,960	22,636	9,452
Refund of Prior Year Revenue	-	-	-	-	-	(3,612)	(4,203)	(3,548)	(3,550)	(5,934)
Refund of Prior Year Expenditures										
Cost of Bond Issuance	-	-	-	(3,847)	-	(114,900)	-	-	-	-
Interfund Transfers In	1,156,866	4,712,740	247,245	1,221,730	3,287,948	412,730	394,948	248,487	325,935	282,027
Interfund Transfers Out	(990,701)	(4,546,420)	(243,702)	(1,191,730)	(3,287,948)	(412,730)	(394,948)	(248,487)	(325,935)	(282,027)
Total Other Financing Sources (Uses)	**209,372**	**189,849**	**9,856**	**644,943**	**44,998**	**8,140,170**	**138,172**	**180,412**	**19,086**	**3,518**
Net Change in Fund Balance:	**3,611,243**	**3,237,452**	**1,109,562**	**(218,630)**	**(5,498,112)**	**7,488,730**	**566,936**	**1,123,381**	**(74,207)**	**(421,618)**
Fund Balance Beginning of Year:	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**	**6,142,713**	**6,564,331**
Fund Balance End of Year:	**17,489,068**	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**	**6,142,713**
Capital Outlay (included in Functional Expenditures above)	1,261,778	1,444,679	712,232	1,449,897	6,127,087	1,624,489	423,365	374,909	196,976	165,094
Ratio of Debt Service to Noncapital Expenditures	**4.0%**	**4.1%**	**2.0%**	**5.2%**	**3.7%**	**0.7%**	**0.7%**	**0.9%**	**0.5%**	**1.0%**

Table 5

EAST WHITELAND TOWNSHIP
General Government Tax Revenues by Source
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

Year	Real Estate Tax (1)	Real Estate Transfer Tax	Earned Income Tax (2)	Local Services Tax	Total Tax Revenue	% of Total Governmental Revenue	Total Governmental Revenue
2010	597,364	307,194	4,060,240	990,367	5,955,165	76%	7,858,274
2011	594,853	269,581	3,844,129	843,809	5,552,372	67%	8,251,214
2012	595,203	760,791	4,397,004	919,549	6,672,547	69%	9,662,088
2013	597,985	574,812	4,693,510	1,004,423	6,870,730	62%	11,064,479
2014	591,379	927,764	5,014,880	1,074,886	7,608,909	69%	11,098,647
2015	617,549	1,104,855	6,084,879	1,396,149	9,203,432	74%	12,405,669
2016	642,400	2,182,702	5,143,306	1,277,561	9,245,969	76%	12,105,284
2017	671,762	1,501,457	6,121,771	1,273,571	9,568,561	74%	12,992,884
2018	730,660	2,991,303	6,520,525	1,262,897	11,505,385	69%	16,712,144
2019	767,194	1,199,970	9,741,890	1,322,836	13,031,890	76%	17,129,850
					$ 85,214,960	71%	$ 119,280,533

Notes: All balances as of Year End December 31

(1) The Real Estate Tax rate is .445 mills for all years charged on Assessed Value.
See Table 7 for the values

(2) The Earned Income Tax rate is 0.75 % (Effective January 1, 2019)

Source: Changes in Fund Balances Statement

Table 6

EAST WHITELAND TOWNSHIP
Major Revenue Source Earned Income Tax
Last Ten Fiscal Years (unaudited)

Year	Personal Income all Workers	Earned Income Tax Rate	Earned Income Tax	Percent of Total Revenue
2010	812,048,000	0.0050	4,060,240	52%
2011	768,825,800	0.0050	3,844,129	47%
2012	879,400,800	0.0050	4,397,004	46%
2013	938,702,000	0.0050	4,693,510	42%
2014	1,002,976,000	0.0050	5,014,880	45%
2015	1,216,975,800	0.0050	6,084,879	49%
2016	1,028,661,200	0.0050	5,143,306	42%
2017	1,224,354,200	0.0050	6,121,771	47%
2018	1,304,105,000	0.0050	6,520,525	39%
2019	1,298,918,667	0.0075	9,741,890	57%

Source: East Whiteland Township Annual Financial Statements

Note: In 2015, an accounting change was made to accrue payments received 60 days after December 31 in the current year so 2015 includes 14 months of collections

Table 7

EAST WHITELAND TOWNSHIP
Assessed Value and Estimated Actual Value of Taxable Property
Last Ten Fiscal Years (unaudited)

Year	Total Taxable Assessed Value (1)	Common Level Ratio Factor	Estimated Actual Value (2)	Ratio of Total Assessed Value to Estimated Actual Value	Total Township Millage Rate (3)
2010	1,365,829,977	1.81	2,472,152,258	55.2%	0.445
2011	1,361,606,017	1.79	2,437,274,770	55.9%	0.445
2012	1,343,229,791	1.70	2,283,490,645	58.8%	0.445
2013	1,339,489,503	1.66	2,223,552,575	60.2%	0.445
2014	1,352,321,293	1.73	2,339,515,837	57.8%	0.445
2015	1,384,150,303	1.81	2,505,312,048	55.2%	0.445
2016	1,438,029,865	1.86	2,674,735,549	53.8%	0.445
2017	1,465,755,384	1.89	2,770,277,676	52.9%	0.445
2018	1,606,487,994	1.95	3,132,651,588	51.3%	0.445
2019	1,672,141,764	2.03	3,394,447,781	49.3%	0.445

Notes:
(1) Chester County Board of Assessments Statement of Valuations
(2) Estimated Actual Value is calculated by multiplying the assessed value by the common level ratio provided by the PA State Tax Equalization Board
(3) Tax Rates are Mills per $1,000 assessed value

Table 8

EAST WHITELAND TOWNSHIP
Property Tax Rates, Direct and Overlapping Governments
Last Ten Fiscal Years (unaudited)

Year	East Whiteland Township Millage	Great Valley School District Millage	Chester County Millage	Total Millage
2010	0.445	18.500	3.965	22.910
2011	0.445	19.030	3.965	23.440
2012	0.445	19.590	3.965	24.000
2013	0.445	19.590	4.163	24.198
2014	0.445	20.000	4.163	24.608
2015	0.445	20.320	4.163	24.928
2016	0.445	20.800	4.163	25.408
2017	0.445	20.800	4.369	25.614
2018	0.445	21.295	4.369	26.109
2019	0.445	21.550	4.369	26.364

Source: PA Department of Community and Economic Development
Municipal Statistics.

Table 9

EAST WHITELAND TOWNSHIP
Principal Property Taxpayers
Current Year and Nine Years Ago

Rank	Taxpayer	Type of Business	December 31, 2019 Taxable Assessed Value	% of Total Assessment
1	WPT Land 2 LP	Industrial & Commercial Property	$ 98,126,860	5.87%
2	Haven at Atwater Village LLC	Developer	54,406,940	3.25%
3	Cerner Health Services	Computer Services	47,495,290	2.84%
4	Mountain Laurel Funding Co LLC	Commericial Property	45,382,910	2.71%
5	IPXI 1400 Atwater Investors LLC	Developer	35,788,400	2.14%
6	Horatio Realty Trust	Pharmaceutical Products	30,702,000	1.84%
7	Worthington Associates	Apartments & Commercial Property	28,348,830	1.70%
8	425 GVP Property Co LLC	Commericial Property	26,872,670	1.61%
9	Home Properties - William Henry Apts LLC	Apartments	24,200,480	1.45%
10	CLF Westbrook Malvern	Commericial Property	22,557,360	1.35%
	Total		$ 413,881,740	24.75%
	Total Assessed Valuation		**$ 1,672,141,764**	

Rank	Taxpayer	Type of Business	December 31, 2010	
1	Liberty Property	Industrial & Commercial Property	$ 179,226,150	13.12%
2	Shared Medical	Computer Services	66,923,320	4.90%
3	Wyeth Laboratories Inc	Pharmaceutical Products	44,458,550	3.26%
4	National Liberty Life Insurance Co	Insurance	22,311,230	1.63%
5	Riggs Bank Trust Multi Employer Corp	Banking	17,969,930	1.32%
6	Home Properties - William Henry Apts LLC	Apartments	14,891,210	1.09%
7	Valley Brook Land Holding Inc.	Industrial & Commercial Property	12,773,270	0.94%
8	Harte IHR Frazer LP	Hotels	12,636,380	0.93%
9	LP Malvern Limited Partnership	Industrial & Commercial Property	12,051,400	0.88%
10	Morelli Enterprises LP	Commercial Property	11,180,950	0.82%
	Total		$ 383,241,440	28.06%
	Total Assessed Valuation		$ 1,365,831,127	

Source: Tax Duplicate

Table 10

EAST WHITELAND TOWNSHIP
Property Tax Levies and Collections
Last Ten Fiscal Years (unaudited)

Calendar Year	Tax Rate (mills)	Total Tax Levy (1)	Current Tax Collections at Face (1)	Percent of Levy Collected	Delinquent Tax Collections in Current Year	Total Tax Collections (2)
2010	0.445	608,359	602,400	99.02%	7,538	609,938
2011	0.445	607,548	599,510	98.68%	4,061	603,571
2012	0.445	598,813	593,718	99.15%	8,493	602,211
2013	0.445	594,955	588,602	98.93%	8,324	596,926
2014	0.445	602,479	595,071	98.77%	7,475	602,546
2015	0.445	615,815	610,809	99.19%	9,030	619,839
2016	0.445	642,027	635,881	99.04%	10,328	646,209
2017	0.445	653,821	645,228	98.69%	9,261	654,489
2018	0.445	713,335	702,157	98.43%	14,332	716,489
2019	0.445	761,692	745,461	97.87%	17,206	762,667

(1) Source - Real Estate Audit Report
(2) Total includes current year, penalties, discounts, and all prior years delinquent collections

Table 11

EAST WHITELAND TOWNSHIP
Sewer Billing Rates, Revenue and Fees
Last Six Fiscal Years (unaudited)

Rates:	
Residential / Businesses	$100/quarter, $135.50/quarter, $150/quarter, $120/quarter
High Volume Commercial	$6.20 x meter reading
Other municipalities	based on flow and allocation of sewer department cost

Accounts (in units):	
Residential / Businesses	3,829
High Volume Commercial	15
Total	3,844

Billing (annual amount in $):	
Residential / Businesses	$ 3,176,828
High Volume Commercial	374,303
Other Municipalities	210,656
Total	$ 3,761,787

	Sewer Rents	Connecting & Tapping Fees	Total Operating Revenue
2019	$ 3,761,787	$ 984,100	$ 4,745,887
2018	3,809,229	1,306,657	5,115,886
2017	3,294,177	1,706,800	5,000,977
2016	3,312,268	844,300	4,156,568
2015	2,715,966	442,750	3,158,716
2014	2,613,696	242,200	2,855,896

Table 12

EAST WHITELAND TOWNSHIP
Computation of Legal Debt Margin
December 31, 2019 (unaudited)

Borrowing Base Revenues		
2017		18,244,291
2018		23,441,415
2019		22,225,217
Total Revenues	$	63,910,923
Debt Limit for General Obligation Debt:		
Average borrowing base revenues	$	21,303,641
Debt limit percent		250%
Debt limit	$	53,259,103
Total amount of debt applicable to debt limit		23,806,512
Legal debt margin	$	29,452,591
Debt Limit for General Obligation Bonds and Lease Rental Debt:		
Average borrowing base revenues	$	21,303,641
Debt limit percent		350%
Debt limit		74,562,744
Total amount of debt applicable to debt limit		23,806,512
Legal debt margin	$	50,756,232

Note: Borrowing base represents total revenues per the PA Local Government Unit Debt Act 177 of 1996
Source: East Whiteland Township Annual Financial Statements

Table 13

EAST WHITELAND TOWNSHIP
Legal Debt Margin Information
Last Ten Years (unaudited)

Year Ended 31-Dec	Three year Average Revenue Borrowing Base	Debt Limit 250%	General Obligation Debt (1)	Legal Debt Margin	Debt Capacity
2010	11,714,903	29,287,258	8,617,096	20,670,162	70.6%
2011	11,065,586	27,663,965	8,185,229	19,478,736	70.4%
2012 (2)	11,502,488	28,756,219	8,169,013	20,587,206	71.6%
2013 (3)	12,686,783	31,716,957	20,294,274	11,422,683	36.0%
2014 (4)	14,072,430	35,181,074	27,801,060	7,380,014	21.0%
2015	15,129,527	37,823,817	27,003,465	10,820,352	28.6%
2016 (5)	16,099,338	40,248,345	26,523,308	13,725,037	34.1%
2017	17,138,158	42,845,395	25,811,042	17,034,353	39.8%
2018	19,721,386	49,303,464	24,798,777	24,504,687	49.7%
2019	21,303,641	53,259,103	23,806,512	29,452,591	55.3%

(1) Includes Bond Discount Credit and Deferred amount on refunding credit
(2) General Obligation Bond 2012A issued for $4,685,000 to refund series 2005 in Proprietary Fund
General Obligation Bond 2012A issued for $4,130,000 to refund series 1999 in Proprietary Fund
(3) General Obligation Bond 2013A issued for $12,145,000 for Proprietary Fund Sewer Expansion
(4) General Obligation Bond 2014 issued for $8,040,000 for General Fund (new Public Works Building)
Partially refunded in 2016 to net balance of $2,130,000
(5) GOB 2016 issued for $6,160,000 for General Fund to partially refund GOB series 2014

Table 14

EAST WHITELAND TOWNSHIP
Ratios of Outstanding Debt by Type
Last Ten Fiscal Years (unaudited)

	Governmental Activities		Business Type Activities					
Year Ended 31-Dec	General Obligation Bonds (1)	Capital Leases (2)	Self Liquidating Sewer Bonds (3)	Total Primary Government Debt	Personal Income (4)	Debt % of Total Income	Population (5)	Debt Per Capita (population)
2010	-	-	8,617,096	8,617,096	419,774,531	2.1%	10,481	822
2011	-	34,738	8,185,229	8,219,967	463,630,323	1.8%	10,569	778
2012	-	129,819	8,169,013	8,298,832	460,982,307	1.8%	10,599	783
2013	-	171,939	20,294,274	20,466,213	427,793,294	4.8%	10,657	1,920
2014	8,218,272	107,914	19,582,788	27,908,974	435,880,929	6.4%	10,681	2,613
2015	8,111,141	45,749	18,892,324	27,049,214	435,880,929	6.2%	10,681	2,532
2016	8,331,448	10,494	18,191,860	26,533,802	434,037,032	6.1%	10,699	2,480
2017	8,324,646	2,913	17,486,396	25,813,955	491,769,678	5.2%	10,858	2,377
2018	8,037,845	-	16,760,932	24,798,777	513,419,712	4.8%	11,072	2,240
2019	7,741,044	-	16,065,468	23,806,512	587,621,370	4.1%	11,415	2,086

(1) Bond issued to construct a new Public Works Building on the Municipal Campus
(2) Capital Lease for equipment & software
(3) All Sewer Bonds are Self Liquidating.
(4) Yr 2019 Personal Income calculated using U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates
(5) Yr 2019 U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates

Table 15

EAST WHITELAND TOWNSHIP
Ratio of Net General Obligation Debt to Assessed Value of
Real Estate and Net General Obligation Debt Per Capita
Last Ten Years (unaudited)

Year Ended 31-Dec	Population	Assessed Value	Gross General Obligation Debt	Percentage of General Obligation Debt to Assessed Value	Net General Obligation Debt Per Capita (residents)
2010	10,481	2,472,152,258	8,617,096	0.35%	822
2011	10,569	2,437,274,770	8,185,229	0.34%	774
2012	10,599	2,283,490,645	8,169,013	0.36%	771
2013	10,657	2,223,552,575	20,294,274	0.91%	1,904
2014	10,681	2,339,515,837	27,801,060	1.19%	2,603
2015	10,681	2,505,312,048	27,003,465	1.08%	2,528
2016	10,699	2,674,735,549	26,523,308	0.99%	2,479
2017	10,858	2,770,277,676	25,811,042	0.93%	2,377
2018	11,072	3,132,651,588	24,798,777	0.79%	2,240
2019	11,415	3,394,447,781	23,806,512	0.70%	2,086

Sources for Population:

U.S. Census Bureau 2006-2010 American Community Survey
U.S. Census Bureau 2006-2018 American Community Survey 5 Year Estimates

Table 16

EAST WHITELAND TOWNSHIP
Computation of Direct and Overlapping Debt
as of December 31, 2019

Jurisdiction	Total Debt Outstanding	Assessed Value	Percentage Applicable to East Whiteland	Amount Applicable to East Whiteland
Direct:				
East Whiteland Township	$ 7,741,044	$ 3,394,447,781	100%	$ 7,741,044
Overlapping:				
Great Valley School District	22,018,449	3,818,966,671	88.9%	19,570,863
Chester County (2)	497,780,000	38,700,276,590	8.8%	43,660,882
Total Overlapping Debt	519,798,449	42,519,243,261		63,231,746
Total Debt	$ 527,539,493	$ 45,913,691,042		$ 70,972,790

(1) Overlapping governments are those that coincide, at least in part, with the geographic boundaries of the Township. This schedule estimates the portion of the outstanding debt of those overlapping governments that is borne by the residents and businesses of East Whiteland Township.

(2) Proportional share of existing debt as of December 31, 2019 is based on the ratio of East Whiteland's assessed value to Chester County's and Great Valley School District's assessed value respectively.

Table 17

EAST WHITELAND TOWNSHIP
Demographic and Economic Statistics
Last Ten Years (unaudited)

Year Ended 31-Dec	Per Capita Income (1)	Population (1)	Total Personal Income	Unemployment Rate (2)	Median Household Income (1)	Median Age (1)
2010	40,051	10,481	419,774,531	6.2	88,277	36.0
2011	43,867	10,569	463,630,323	5.8	89,673	37.3
2012	43,493	10,599	460,982,307	5.6	91,144	37.1
2013	40,142	10,657	427,793,294	5.3	91,261	36.6
2014	40,809	10,681	435,880,929	4.2	90,327	37.9
2015	40,809	10,681	435,880,929	3.5	90,327	37.9
2016	40,568	10,699	434,037,032	3.9	91,109	38.6
2017	45,291	10,858	491,769,678	3.1	100,000	39.7
2018	46,371	11,072	513,419,712	2.7	103,836	39.1
2019	51,478	11,415	587,621,370	3.1	111,870	37.5

(1) Yr 2019 U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates
Yr 2018 U.S. Census Bureau 2013-2017 American Community Survey 5-Year Estimates
Yr 2017 U.S. Census Bureau 2012-2016 American Community Survey 5-Year Estimates
Yr 2016 U.S. Census Bureau 2011-2015 American Community Survey 5-Year Estimates
Yr 2015 & 2014 U.S. Census Bureau 2010-2014 American Community Survey 5-Year Estimates
Yr 2013 U.S. Census Bureau 2009-2013 American Community Survey 5-Year Estimates
Yr 2012 U.S. Census Bureau 2008-2012 American Community Survey 5-Year Estimates
Yr 2011 U.S. Census Bureau 2007-2011 American Community Survey 5-Year Estimates
Yr 2010 U.S. Census Bureau 2006-2010 American Community Survey 5-Year Estimates

(2) U.S. Dept of Labor - Unemployment Rates By County for Pennsylvania

Table 18

EAST WHITELAND TOWNSHIP
Census Statistics
December 31, 2019

Age Group Comparisons:	Township		State		US	
	2010	2000	2010	2000	2010	2000
% Under 18	23.9%	24.0%	24.9%	23.8%	26.9%	25.7%
% 18-44	37.7%	38.1%	31.4%	37.5%	33.6%	39.9%
% 45-64	26.6%	23.6%	28.1%	23.1%	26.4%	22.0%
% 65 and over	11.8%	14.3%	15.6%	15.6%	13.1%	12.4%
Median (years)	36.0	38.2	40.1	38.0	37.2	35.3

Population Density	Township		State		US	
	2010	2000	2010	2000	2010	2000
(persons/sq. mile)	968.2	848.5	283.4	274.0	87.3	79.6

Average Household Size (persons):	2010	2000
East Whiteland Township	2.73	2.59
Chester County	2.65	2.65
Pennsylvania	2.45	2.48
U.S.	2.58	2.59

Percentage of Owner-Occupied Housing Units	2010	2000
East Whiteland Township	76.6%	77.8%
Chester County	79.5%	80.7%
Pennsylvania	69.6%	71.3%
U.S.	65.1%	66.2%

Median Household Income:	2010	2000
East Whiteland Township	$ 88,277	$ 69,500
Chester County	84,741	65,037
Pennsylvania	49,737	40,106
U.S.	51,425	41,994

Per Capita Income:	2010	2000
East Whiteland Township	$ 40,051	$ 30,258
Chester County	41,251	31,627
Pennsylvania	26,678	20,880
U.S.	27,041	21,587

Source: United States Bureau of the Census - 2000 and 2010 Census Data

Table 19

EAST WHITELAND TOWNSHIP
Principal Employers
Current Year and Nine Years Ago

Employer	Description	(1) 2019 Approximate Employment	Percent of Total Township Employment	2010 Approximate Employment	Percent of Total Township Employment
Vanguard Group, Inc.	Financial Services / Mutual Funds	3,971	13.03%	1,952	8.13%
Cerner Health Services, Inc.	Health Services	1,032	3.39%	-	-
Johnson & Johnson (Centocor Division)	Pharmaceuticals	899	2.95%	694	2.89%
Cerner Corporation	Software / Technology	756	2.48%	-	-
Siemens Medical Solutions USA, Inc.	Software / Technology	741	2.43%	3,163	13.18%
Immaculata University	Education	584	1.92%	1,322	5.51%
Certainteed Corporation	Manufacturer Building Materials	556	1.82%	-	-
Wegman's Food Market, Inc.	Grocery / Food	510	1.67%	736	3.07%
Great Valley School District	Education	366	1.20%	590	2.46%
Ricoh Americas Corp	Digital Business Services /Printing Solutions	363	1.19%	-	-
Verizon Service Corporation	Telecommunications	-	-	1,583	6.60%
Wyeth LLC	Pharmaceuticals	-	-	967	4.03%
Sanofi Aventis US Inc	Pharmaceuticals	-	-	729	3.04%
Cephalon Inc	Pharmaceuticals	-	-	678	2.83%
Total Principal Employers		**9,778**	32.1%	**12,414**	51.7%
Total Township Employment		30,478		24,000	
Top 10 Employers as % of Township Total		32.1%		51.7%	

(1) Source: Local Services Tax Report from Keystone Collections Group

Table 20

EAST WHITELAND TOWNSHIP
Full Time Equivalent Township Government Employees by Function
Last Ten Fiscal Years (unaudited)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
General Government										
Admin, Finance	4	4	3	4	4	3	3	3	3	3
Support Staff / FTE	1.5	1	1	1	1	1	1	1	1	1
Police										
Full Time Officers	22	21	19	20	20	20	21	20	20	20
Part Time Officers / FTE	1.5	2.9	2.1	2.6	2.6	3.2	2.8	3.8	3.6	2.8
Admin & IT	2	2	3	3	3	3	3	2	2	2
Fire										
Full Time Firefighters	10	10	10	10	10	9	9	9	9	9
Part Time Firefighters / FTE	3.72	3.79	2.72	2.85	2.85	4.0	2.45	2.35	2.6	2.1
Codes & Safety										
Inspectors/ Codes Enforcement	3	4	3	5	5	5	5	5	5	5
Support Staff	1	1	1	1	1	1	1	1	1	1
Planning & Zoning										
Director	1	1	1	1						
Support Staff	2									
Public Works										
Maintenance Workers	7	8	8	8	8	8	7	7	7	7
Director & Asst Director	2	2	2	2	1	1	1	1	1	1
Park and Recreation										
Camp Counselors	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.7	0.8	0.7
Sewer										
Maintenance Workers	3	2	3	3	3	3	3	3	3	3
Support Staff	1	1	1	1	1	1	1	1	1	1
Total										
Full Time	59	56	53	57	56	54	54	52	52	52
Part Time / FTE	6.7	8.7	6.8	7.4	7.4	9.0	7.0	7.9	8.1	6.6
Total FTE	**65.7**	**64.7**	**60.8**	**65.4**	**63.4**	**63.0**	**61.0**	**59.9**	**60.1**	**58.6**

Source: December 31 Payroll records for active employees - excludes Interns

Table 21

EAST WHITELAND TOWNSHIP
Operating Indicators by Function
Last Ten Years

General Government	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Police										
Part 1 Uniform Crime Reports	145	118	151	128	119	133	128	148	139	159
Part 2 Uniform Crime Reports	120	105	158	235	269	218	177	228	212	230
Fire										
Vehicle / EMS	2,104	2,140	1,618	1,018	1,047	1,008	926	975	901	943
Fire Alarm	326	337	254	252	229	216	211	200	207	191
Structure Fires	46	28	31	62	96	60	78	71	63	72
Other Fire related calls	842	887	433	159	171	175	124	148	190	159
Total Fire	1,214	1,252	718	473	496	451	413	419	460	422
Total Incidents	**3,318**	**3,392**	**2,336**	**1,491**	**1,543**	**1,459**	**1,339**	**1,394**	**1,361**	**1,365**
Codes & Safety										
Building Permits	445	538	439	432	300	264	251	238	257	219
Electrical Permits	325	400	368	340	203	155	159	164	158	123
Mechanical Permits	244	322	303	253	130	100	78	86	73	70
Plumbing Permits	248	318	295	249	115	90	69	98	81	60
Occupancy Permits	131	113	126	197	128	129	124	106	106	98
Total Permits	**1,393**	**1,691**	**1,531**	**1,471**	**876**	**738**	**681**	**692**	**675**	**570**
Building Inspections performed	5,572	6,087	5,175	2,982	1,030	1,103	961	724	575	530
Public Works - Highway and Streets										
Snow Salt Used Per Ton	275	1,157	1,345	800	1,000	1,500	1,500	1,000	1,000	1,000
Square Yards of Roads Repaved	44,010	36,800	39,850	38,485	19,020	17,663	16,745	19,924	13,988	12,772
Park and Recreation										
Camp Registration	104	74	81	110	121	130	117	81	124	127
Sewer										
# Pump Stations	13	13	13	13	13	13	13	13	13	13

Source: East Whiteland Township Performance Status reports

Table 22

EAST WHITELAND TOWNSHIP
Capital Asset Statistics by Function
Last Ten Years (unaudited)

General Government	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Municipal Building	1	1	1	1	1	1	1	1	1	1
Square Footage	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312
Vehicles	1	1	1	1	1	1	1	1	1	1
Public Safety										
Police										
Vehicles	23	25	22	21	21	20	19	20	20	20
Safety & Codes Enforcement										
Vehicles	6	6	6	6	6	6	6	6	6	6
Fire										
Stations (Volunteer Fire Co.)	1	1	1	1	1	1	1	1	1	1
Public Works - Highway and Streets										
Building	1	1	1	1	1	1	1	1	1	1
Streets / roads in miles	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	50.6	50.6
# traffic signals	39	39	39	39	39	39	39	39	39	39
# street lights	28	28	28	28	28	28	28	28	28	28
Vehicles	13	13	13	13	10	10	10	9	9	9
Leased Vehicles	-	-	-	-	2	2	2	2	2	2
Park and Recreation										
Parks	8	8	8	8	8	8	8	8	8	8
Acres	94	94	94	94	94	94	94	94	94	94
Waste Water/ Sewer										
# Pumping Stations	13	13	13	13	13	13	13	13	13	13
Miles of Pipe in Service	77	77	77	77	77	77	77	77	75	75
Vehicles	5	5	5	5	5	5	5	5	5	5
Vehicle count year end (Does not include leased vehicles)	49	51	48	47	44	43	42	42	42	42

Source: Township Capital Asset Schedules

Table 23

EAST WHITELAND TOWNSHIP
Fiduciary Funds Obligations
Last Six Fiscal Years

	2019	2018	2017	2016	2015	2014
% of Pension Liability Funded:						
Police Pension Fund	79.5%	73.3%	85.3%	82.7%	80.8%	82.7%
Firefighters Pension Fund	76.8%	67.0%	75.6%	74.5%	71.0%	87.1%
Non-Uniformed Pension Fund	86.2%	74.7%	87.1%	87.7%	84.8%	93.5%
Post Employment Benefits Fund	10.3%	8.7%	12.2%	15.9%	14.3%	12.4%
Fund Balance ($):						
Police Pension Fund	$ 10,943,594	$ 8,897,862	$ 9,726,605	$ 8,716,607	$ 8,020,156	$ 7,984,328
Firefighters Pension Fund	2,513,081	1,885,873	1,898,123	1,506,495	1,279,030	1,176,401
Non-Uniformed Pension Fund	7,082,251	5,784,100	6,491,925	5,792,502	5,214,774	5,065,203
Post Employment Benefits Fund	1,595,705	1,198,382	1,669,163	1,515,329	1,363,029	1,179,162
Total Fiduciary Fund Balances	**$ 22,134,631**	**$ 17,766,217**	**$ 19,785,816**	**$ 17,530,933**	**$ 15,876,989**	**$ 15,405,094**

Source: East Whiteland Township Annual Financial Statements

Table 24

EAST WHITELAND TOWNSHIP
Police Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits
2010	*	*	*	*	*	*	19	8
2011	7,204,796	6,395,715	809,081	88.8%	1,690,460	47.9%	17	11
2012	*	*	*	*	*	*	17	11
2013	8,657,790	6,875,791	1,781,999	79.4%	1,716,259	103.8%	16	12
2014	9,654,219	7,984,328	1,669,891	82.7%	1,739,660	96.0%	19	12
2015	9,928,461	8,020,156	1,908,305	80.8%	1,932,369	98.8%	19	13
2016	10,538,693	8,716,607	1,822,086	82.7%	2,181,320	83.5%	19	12
2017	11,403,392	9,726,605	1,676,787	85.3%	2,376,418	70.6%	19	12
2018	12,142,675	8,897,862	3,244,813	73.3%	2,220,748	146.1%	21	13
2019	13,765,847	10,943,594	2,822,253	79.5%	2,617,694	107.8%	22	13

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

Table 25

EAST WHITELAND TOWNSHIP
Non-Uniformed Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits (1)	Vested Terminated Employees
2010	*	*	*	*	*	*	24	6	1
2011	4,145,626	2,758,568	1,387,058	66.5%	1,385,203	100.1%	23	7	1
2012	*	*	*	*	*	*	23	7	1
2013	4,530,683	3,545,828	984,855	78.3%	1,395,699	70.6%	22	7	1
2014	5,417,657	5,065,203	352,454	93.5%	1,529,999	23.0%	25	8	1
2015	5,104,712	4,328,258	776,454	84.8%	1,681,050	46.2%	23	12	1
2016	6,601,736	5,792,502	809,234	87.7%	1,560,708	51.9%	25	15	1
2017	7,456,051	6,491,925	964,126	87.1%	1,402,439	68.7%	19	16	3
2018	7,745,596	5,784,100	1,961,496	74.7%	1,315,976	149.1%	18	17	3
2019	8,211,938	7,082,251	1,129,687	86.2%	1,229,587	91.9%	16	21	3

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

(1) Includes employees in the Drop Program

Table 26

EAST WHITELAND TOWNSHIP
Firefighters Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits (1)	Vested Terminated Employees
2010	*	*	*	*	*	*	9	0	0
2011	884,338	493,991	390,347	55.9%	530,853	73.5%	9	0	0
2012	*	*	*	*	*	*	9	0	0
2013	1,039,551	745,740	293,811	71.7%	533,925	55.0%	9	0	0
2014	1,351,001	1,176,401	174,600	87.1%	584,467	29.9%	9	0	1
2015	1,802,790	1,279,030	523,760	71.0%	619,306	84.6%	10	0	1
2016	2,021,546	1,506,495	515,051	74.5%	801,110	64.3%	10	0	1
2017	2,510,501	1,898,123	612,378	75.6%	835,655	73.3%	10	0	1
2018	2,815,754	1,885,873	929,881	67.0%	945,635	98.3%	10	0	1
2019	3,272,205	2,513,081	759,124	76.8%	865,531	87.7%	9	1	1

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

(1) Includes employees in the Drop Program

EXHIBIT J2

EAST WHITELAND TOWNSHIP
ANNUAL FINANCIAL REPORT FOR 2020

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2020

East Whiteland Township Finance Department

Maillie®

ACCOUNTANTS · ADVISORS

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2020

East Whiteland Township Finance Department
John B. Nagel, Township Manager

INTRODUCTORY SECTION

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EAST WHITELAND TOWNSHIP
THE HEART OF GREAT VALLEY

209 Conestoga Road
Frazer, Pennsylvania 19355-1699
Telephone: 610-648-0600
www.eastwhiteland.org

Board of Supervisors: Susan Drummond • Scott Lambert • Richard Orlow **Township Manager:** John Nagel

June 10, 2021

To the Board of Supervisors and Citizens of East Whiteland Township:

We are pleased to present to you the Comprehensive Annual Financial Report of East Whiteland Township for the fiscal year ended December 31, 2020. A complete set of financial statements presented in conformity with generally accepted accounting principles (GAAP) and audited in accordance with generally accepted auditing standards by a firm of licensed certified public accountants is presented herewith.

This report consists of management's representations concerning the finances of East Whiteland Township. Consequently, responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, including all disclosures, rests with the Township's management. To the best of our knowledge, the information presented in this report is accurate in all material respects and is reported in a manner designed to fairly represent the financial position and results of operations of the funds and component units of East Whiteland Township. All disclosures necessary to enable the reader to gain an understanding of East Whiteland Township's financial activities have been included.

East Whiteland Township's financial statements have been audited by Maillie LLP, a firm of licensed certified public accountants. The goal of the independent audit was to provide reasonable assurance that the financial statements of East Whiteland Township for the fiscal year ending December 31, 2020, are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures of the financial statements; assessing the accounting principles used and significant estimates by management; and evaluating the overall financial statement presentation. The independent auditor concluded, based upon the audit, that there was a reasonable basis for rendering an unmodified opinion that East Whiteland Township's financial statements for the fiscal year ended December 31, 2020, are fairly presented in conformity with GAAP. The independent auditors' report is presented at the beginning of the Financial Section of this report.

The purpose of this report is to provide readers with useful information concerning the Township's financial position and operations. Generally Accepted Accounting Principles (GAAP) require that management provide a narrative introduction, overview and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. East Whiteland Township's MD&A can be found immediately following the report of the independent auditors.

Profile of the Township

East Whiteland Township is located in the middle of the Chester Valley in east-central Chester County, about 25 miles west of central Philadelphia. With about 11 square miles of land area, the Township measures slightly more than four miles in an east-west direction and 2.8 miles from north to south.

East Whiteland Township is located in a diverse and dynamic suburban area traversed by several important highways, with an excellent mix of housing and expanding opportunities for employment, making it one of the most desirable communities in the region in which to live and work. As part of the Great Valley School District, East Whiteland houses the middle and senior schools as well as the K.D. Markley Elementary School. East Whiteland is also home for Immaculata University and has campuses for the Drexel University Lebow College of Business and Penn State University Great Valley.

Whiteland Township was part of the Welsh Tract purchased from William Penn in 1684 by a group of Quakers. In 1704, part of the tract became Whiteland Township. In 1765, by decree of the County Court the Township was divided into East and West Whiteland Townships. Historically, East Whiteland Township was predominantly agricultural, with several crossroad villages strung along Lancaster Pike and mills along Valley Creek. The arrival of railroads in the mid 1800's led to the development of several mineral extraction businesses followed by construction materials processing, steel fabricating, petroleum and natural gas storage and transmission, and disposal of waste materials. With the completion of route 202 through the Township in the 1960's, East Whiteland evolved into a major office employment center, and some of the previously dominant businesses ceased operation while others continue to function in a community that has changed a great deal over the years. In 1950 the Township population was 1,740. The current estimated resident population is 11,000, however, the number of people that work in the municipality on a daily basis is more than 30,000.

East Whiteland Township is governed by a three member elected Board of Supervisors that serves as the Township's legislative and policymaking body. The Board members are elected at large to staggered six-year terms. East Whiteland Township operates under the auspices of the Pennsylvania Second Class Township Code. The Board of Supervisors is empowered to appoint professionals to assist in the operation of the Township and to furnish advice and counsel on technical matters. Additionally, the Board appoints all the members of the various boards and commissions, including the Planning Commission and Zoning Hearing Board. The Tax Collector and three member Board of Auditors are elected positions. Levying taxes and authorizing appropriations are the responsibility of the Board of Supervisors.

The Board of Supervisors is assisted by a full-time appointed Township Manager who is responsible for the day-to-day operations of the Township. The Township provides a full range of municipal services. The public safety programs include police, fire protection, building inspection, planning, zoning, emergency management and code enforcement. East Whiteland Township partners with the East Whiteland Township Volunteer Fire Association to provide emergency services. The countless hours spent by the volunteers in protecting the community are greatly appreciated. Public works programs include street maintenance and repair, street lighting, snow removal, traffic signalization, street markings, sewer system maintenance, storm sewer and storm water basin maintenance and maintenance of Township buildings and park facilities. The Township owns and maintains numerous community and neighborhood parks and nature areas and supports the Friends of Summer Stage to provide free summer concerts in Valley Creek Park.

Major Initiatives

Following are some of the major initiatives undertaken by the Township in 2020:

- **Commercial and Residential Development** continue to be a major focus in East Whiteland Township. Our staff works with the developers to ensure the Township interests are protected and the Comprehensive Plan goals are met.

- **Traffic issues** - In 2014, the Township secured an ARLE grant of $445,000 to upgrade traffic signals in the Township to reduce traffic congestion. This project began in 2018 and was fully implemented in 2019. Due to COVID PennDot has not finalized any grant for 2020 or 2021. The Route 30 Corridor Master Plan for the widening of Rt. 30, land use, and pedestrian traffic was completed during 2018. Implementation of this Master Plan is ongoing. In addition, the Act 209 Transportation Study was completed and a transportation impact fee to be imposed upon new subdivision and new development to fund transportation capital improvements in accordance with a transportation capital improvements plan and a roadway sufficiency analysis. The Township continues to collect impact fees for all new developments.

- **Multi-year Financial Management Plan** - In 2018, with a grant from the Commonwealth of Pennsylvania Department of Community and Economic Development and its Early Intervention Program, the Township worked with consultants to develop a multi-year financial management plan that included an assessment of operations and financial condition. The Township had recently relied on non-recurring revenues to cover recurring operating costs, pension costs are increasing and unfunded liabilities are growing. A baseline projection showed a deficit of $1.5 million in 2020 with deficits continuing through 2023 absent corrective action. Ultimately, to close the deficit, an increase to the local earned income tax rate was passed for 2019. For 2019 the earned income tax rate was increased to 0.75% from 0.50%. The five year forecast was rolled forward and updated in 2019 and utilized as a tool for planning and budgeting for 2019 and 2020.

  Controlling health insurance costs continues to be a primary focus and the Township's AFSCME and Police employees moved to a plan with design changes that reduced current costs and cost growth while still providing quality coverage for its employees in May 2019 and in February 2020, respectively.

Fund Balance Policy

The Township has adopted GASB Statement No. 54, which redefined how fund balances of the Governmental Funds are presented in the financial statements. Fund balances are classified as follows: Non spendable, Restricted, Committed, Assigned and Unassigned.

Long-Term Debt Activity

For more detailed information on long-term debt activity, please see Notes to the Basic Financial Statements (Note F, Long-Term Debt).

Capital Asset Activity

For more detailed information on capital asset activity, please see the Notes to the Basic Financial Statements (Note C, Capital Assets).

Local Economy

Located in east-central Chester County with its highly trained and educated workforce, desirable quality of life, competitive tax structure and close proximity to Philadelphia, PA, East Whiteland Township has a diverse and dynamic economy, boasting over 1,000 businesses.

Due to the coronavirus (SARS-CoV-2) pandemic and associated societal and business closures ordered by the Commonwealth of Pennsylvania, the general outlook for the economy of East Whiteland Township is uncertain. Locally planned continues to move into production in 2021. However, the Township's economy and large tax base is expected to slow in the near term as a decrease in earned income tax revenue in the range of 6.3% - 12.6% is anticipated before continuing to grow, driven in large part by business and commercial development, and by new residential construction. East Whiteland Township is home to the Great Valley Corporate Center and serves as U.S headquarters and Regional Headquarters to several national and international firms including Saint-Gobain, Vishay and Cerner Corporation. Vanguard has plans to add 500,000 square feet of office space and new jobs are expected over the next several years. Although there are major employers in the Township, the employment base is not dominated by one business or industry. The Township's business base consists of software development and application firms, telecommunication firms, e-commerce companies, design and manufacturing businesses, and pharmaceutical research firms. As noted, the Township hosts corporate and regional headquarters operations as well as trade and professional associations, retail firms, wholesale distributors, and business and financial services. Noting the list of Principal Employers in the Statistical Section of this report, the top employers comprised approximately 31% of the workforce in 2020. This diversity would provide stability to weather downturns in the economy.

During 2020, land development and subdivision activity continued. A number of mixed-use developments including over 1,000 units of housing are expected to be completed over the next five years. There is also approximately 800,000 square feet of commercial properties under construction or pending development. The Township has updated and will continue to update some aspects of the zoning for the Route 30 Corridor to encourage redevelopment.

A more detailed analysis of the Township's overall financial condition during the fiscal year ended 2020 is included as part of Management's Discussion and Analysis section of this report.

Long-Term Financial Planning

The Board of Supervisors and Township staff is committed to providing value to the taxpayers by maintaining quality service levels and offering new benefits whenever the opportunity presents itself and the Township's fiscal position permits. To accomplish this, the Township regularly evaluates its revenue generating strategy. The Township has also developed and maintains a multi-year financial management plan and multi-year financing plans for replacement of capital assets and infrastructure improvements.

Also, as a part of sound fiscal planning, the Township has adopted a fund balance policy that is compliant with GASB 54 for determining fund balance categories and based on recommendations from the Government Finance Officers Association for maintaining a fund balance in the General Fund of approximately two months of expenditures, or a range of fifteen to twenty percent of General Fund appropriations. Due to the uncertainty associated with the coronavirus pandemic, the Board of Supervisors assigned $5,050,000 of fund balance to tax rate stabilization.

Internal Controls

The management of the Township is responsible for establishing and maintaining an internal control structure designed to ensure that the assets of the Township are protected from loss, theft, or misuse and to ensure that adequate accounting data is compiled and maintained to allow for the preparation of financial statements in conformity with generally accepted accounting principles. The internal control structure is designed to provide reasonable, but not absolute, assurance that the Township's objectives are met. The concept of reasonable assurance recognizes that:

1. The cost of a control should not exceed its benefit, and

2. The evaluation of cost and benefits requires estimates and judgments by management.

All internal accounting control evaluations occur within the above framework. We believe that the Township's internal accounting controls adequately safeguard assets and provide reasonable assurance of proper recording of transactions and maintenance of asset accountability.

In addition to the above controls, the Township maintains budgetary accounting controls. The objective of these controls is to ensure compliance with legal provisions embodied in the annual budget approved by the Board of Supervisors. Activities of all Township funds, with the exception of developers' escrow funds and pension trust funds, are included in the annual appropriation budget. The annual budget process officially begins in July of each year with the request for budget proposals sent to the Township's department heads. Throughout the course of September and October, requests for funding are submitted and reviewed by the Township management. A proposed annual budget is submitted to the Board of Supervisors in October or November. The Board holds a public hearing on the proposed budget and the process culminates with a vote for adoption by the governing body in December. The Township's fiscal year begins on January 1st and ends on December 31st. All annual appropriations lapse at year-end.

The Township maintains the legal level of control at the departmental level for its operating budget, and the Board of Supervisors has also established an internal budgetary control system at the departmental level. Each department is required to operate within the annual departmental budget established by the Board of Supervisors.

As demonstrated by the statements and schedules included in the financial section of this report, the Township continues to meet its responsibility for sound financial management.

Awards and Acknowledgements

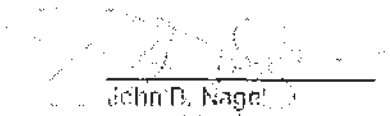
Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to East Whiteland Township for its comprehensive annual financial report for the fiscal year ended December 31, 2019. This was the fifth consecutive year that the government has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to GFOA to determine its eligibility for another certificate.

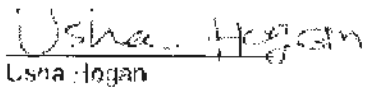
Preparation of this report would have been impossible without the hard work of the Finance Department staff, not just in the compilation of information at year-end, but in maintaining the Township's financial records and fiscal control system throughout the year. We also wish to thank our auditors, Maillie LLP, for their expertise and assistance throughout this process.

We greatly appreciate the ongoing support and guidance we receive from the Board of Supervisors.

Respectfully Submitted,



John D. Nagel
Township Manager



Usha Hogan
Director of Finance

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

East Whiteland Township
Pennsylvania

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

December 31, 2019

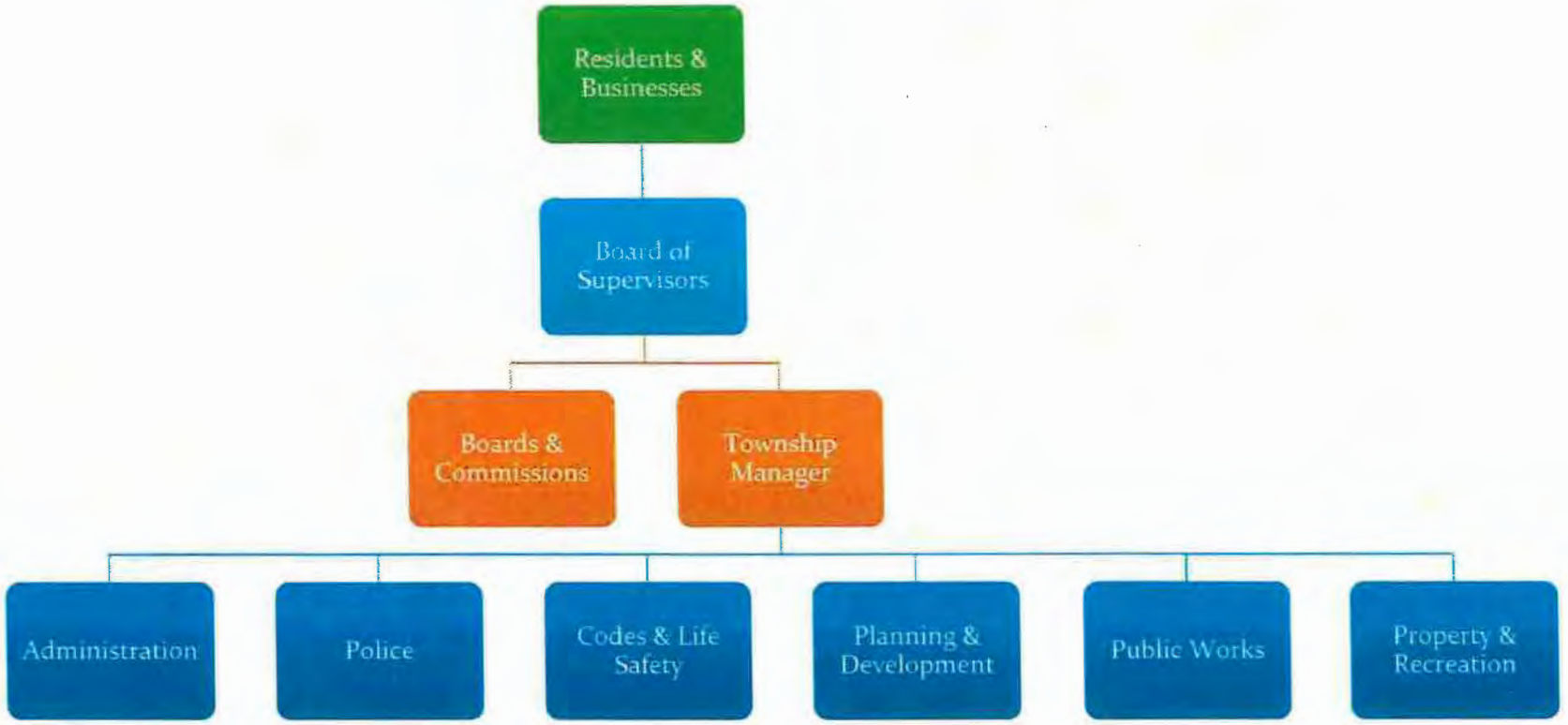
Christopher P. Morrill

Executive Director/CEO

East Whiteland Township

64 FT & 7.3 PT = 71.3 FTE

Revised January 2020



EAST WHITELAND TOWNSHIP
LIST OF OFFICIALS
AS OF DECEMBER 31, 2020

SUPERVISORS

Chairman: Scott Lambert
Vice Chairman: Richard Orlow
Member: Susan Drummond
Treasurer: John Nagel

APPOINTED OFFICIALS

John Nagel, Township Manager
Hamburg, Rubin, Mullin, Maxwell & Lupin, Solicitor
Unruh, Turner, Burke & Frees, Zoning Hearing Board Solicitor

OTHER MANAGEMENT OFFICIALS

Usha Hogan, Director of Finance
Darrell Becker, Arro Consulting, Township Engineer
Chris Yeager, Police Chief
Vacant, Deputy Director of Codes & Life Safety, Codes Division, Chief Fire Marshall
Loren Nafziger, Interim Deputy Director of Codes & Life Safety, Fire & EMS Divison
Mark Koenig, Volunteer Fire Chief
Loren Nafziger, Emergency Management Coordinator
Steven Brown, Assistant Township Manager, Director of Property and Recreation, Director of Codes & Life Safety, Zoning Officer
John Neild, Director of Public Works
Zachary Barner, Director of Planning
Donna Wikert, Township Secretary

OTHERS

Betsy Blackburn Goslin - Tax Collector (elected)
Keystone Collection Group, Local Income Tax Collector
ARRO, Civil Engineer
Pennoni Associates Inc, Sewer Engineer
McMahon Associates, Transportation Engineer
Campbell, Durrant, Beatty, Palombo & Miller PC, Labor Attorney
Girard, Municipal Pension Services
Conrad Siegel, Actuary
KeyBank, Primary Depository

FINANCIAL SECTION

Maillie LLP | maillie.com
500 North Lewis Road, Limerick, PA 19468
600 Willowbrook Lane, Suite 624, West Chester, PA 19382
PO Box 11847, Wilmington, DE 19850-1847

Independent Auditors' Report

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

We have audited the accompanying financial statements of the governmental activities, the business-type activities, each major fund and the aggregate remaining fund information of East Whiteland Township as of and for the year ended December 31, 2020, and the related notes to the financial statements, which collectively comprise East Whiteland Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

East Whiteland Township's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, each major fund and the aggregate remaining fund information of as of December 31, 2020, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America (GAAP).

Emphasis of Matter

As discussed in Note P to the financial statements, the spread of the COVID-19 coronavirus is affecting the United States and global economies and may have an impact on East Whiteland Township's operational and financial performance. At this point, East Whiteland Township cannot reasonably estimate the impact on its operations or financial results. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis on pages 17 through 27, budgetary comparison information on pages 87 and 88, pension plan information on pages 89 through 97 and post-employment benefits other than pension plan information on pages 98 through 100 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise East Whiteland Township's basic financial statements. The supplementary information listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

To the Township Supervisors
East Whiteland Township
Frazer, Pennsylvania

The supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Limerick, Pennsylvania
June 10, 2021

OVERVIEW OF THE FINANCIAL STATEMENTS

Management's Discussion and Analysis provides an introduction to the Township's basic financial statements. The basic financial statements include:

1. Township-Wide Financial Statements
2. Fund Financial Statements
3. Notes to the Financial Statements

Additional information is also provided to supplement the basic financial statements.

Township-Wide Financial Statements

The Township's annual report contains two Township-Wide Financial Statements. They are the *Statement of Net Position* and the *Statement of Activities.* These statements provide both long-term and short-term information about the Township's overall financial status. Financial reporting at this level is similar to that found in the private sector with its basis in full accrual accounting and the elimination or reclassification of internal activities.

The *Statement of Net Position* provides information on all of the Township's assets and liabilities, with the difference reported as *Net Position*. Over time, increases or decreases in net position serve as a useful indicator of whether the Township's financial position is improving or deteriorating. Evaluation of the overall economic health of the Township would include other non-financial factors such as changes in the taxpayer base or the condition of the Township's infrastructure, in addition to the financial information provided in this report.

The *Statement of Activities* reports how the Township's net position changed during the current fiscal year. All current year revenues and expenditures are included in this report regardless of when cash is received or paid. An important purpose of the Statement of Activities is to show the financial reliance of the Township's various activities or services on revenues provided by the Township's taxpayers.

Both Township-Wide Financial Statements are divided into two categories:

1. ***Governmental Activities***: Most of the Township's basic services are included here, such as general government, public safety, public works and recreation. These activities are principally supported by taxes and intergovernmental revenues.
2. ***Business-Type Activities***: Services which are intended to recover all or most of their costs through user fees and charges. The Township's sewer system is the only business-type activity.

Fund Financial Statements

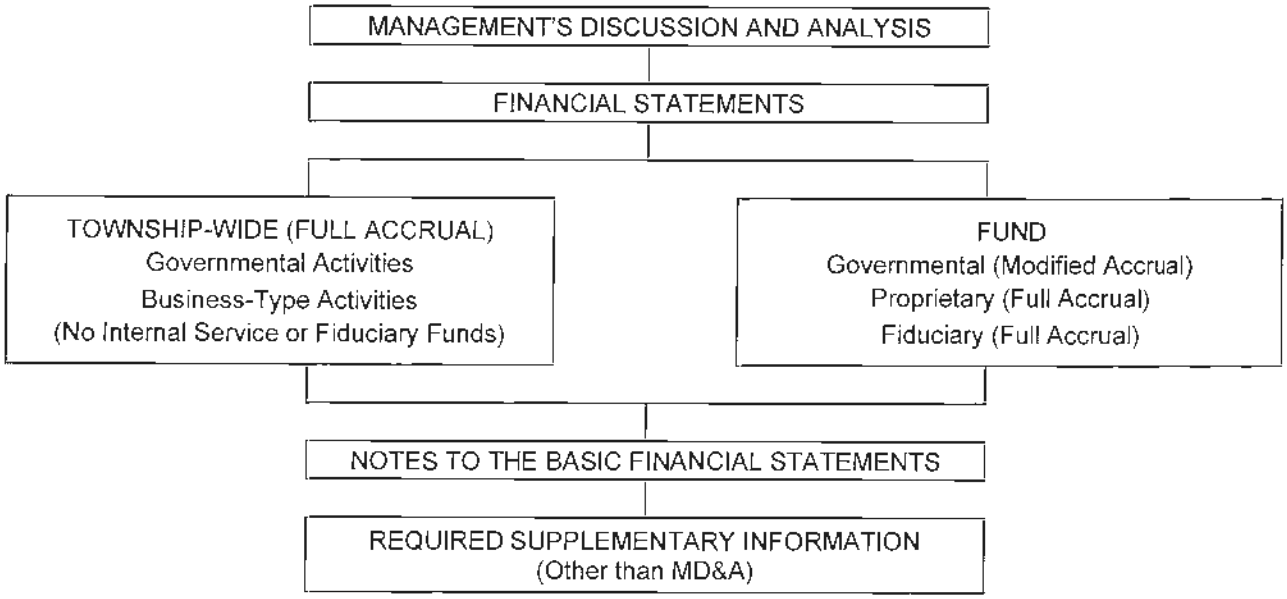
The Fund Financial Statements provide more detailed information about the Township's Funds, focusing on its most significant or "Major Funds" - not the Township as a whole. A fund is an accountability unit used to maintain control over resources segregated by specific sources of funding or spending on particular programs.

- Some funds are required by state law or bond covenants.
- The Township establishes other funds to control and manage money for particular purposes or to show that it is properly using certain revenues.

The Township has three kinds of Funds:

- ***Governmental Funds***: Most of the Township's basic services are included in Governmental Funds, which generally focus on (1) how cash and other financial assets that can readily be converted to cash flow in and out and (2) the balances left at year-end that are available for spending. Consequently, the Governmental Funds' statements provide a detailed *short-term view* that helps you determine whether there are more or fewer financial resources that can be spent in the near future to finance the Township's programs. Because this information does not encompass the additional long-term focus of the Township-Wide statements, additional information is presented that explains the relationship (or differences) between them.
- ***Proprietary Funds***: Services for which the Township charges a fee are generally reported in Proprietary Funds. Proprietary Funds are reported in the same way as the Township-Wide statements. The Township's Enterprise Funds (one type of Proprietary Fund) are the same as its business-type activities but provide more detail and additional information, such as cash flows.
- ***Fiduciary Funds***: The Township is the trustee, or fiduciary, for assets that belong to others, such as the pension plans. The Township is responsible for ensuring that the assets reported in these funds are used only for their intended purposes and by those to whom the assets belong. The Township excludes these activities from the Township-Wide financial statements because it cannot use these assets to finance its operations. The Township's Fiduciary Funds are the Police Pension Fund, the Non-Uniformed Pension Fund, the Firefighter Pension Fund, and the OPEB Trust Fund. The Township also has a Custodial Fund used for deposits the Township holds as prepayments for engineering reviews and other developer costs paid by the Township. When the projects are completed, any balances are returned to the developer

Organization of East Whiteland Township's Annual Financial Report
Figure I-1



Narrative Discussion and Analysis

Within this section of East Whiteland Township's annual financial report, the Township's management provides narrative discussion and analysis of the financial activities of the Township for the fiscal year ended December 31, 2020. The Township's financial performance is discussed and analyzed within the context of the accompanying financial statements following this section.

Condensed Statements of Net Position (In Thousands of Dollars)
Figure I-2

	Governmental Activities		Business-Type Activities		Totals	
	2019	2020	2019	2020	2019	2020
ASSETS						
Current and other assets	$ 18,091	$ 21,952	$ 11,217	$ 10,929	$ 29,308	$ 32,881
Capital assets, net	17,393	16,310	34,144	33,740	51,537	50,050
TOTAL ASSETS	35,484	38,262	45,361	44,669	80,845	82,931
DEFERRED OUTFLOWS OF RESOURCES	3,664	6,506	384	521	4,048	7,027
LIABILITIES						
Long-term debt	25,255	28,041	17,199	16,666	42,454	44,707
Other liabilities	599	587	1,589	1,263	2,188	1,850
TOTAL LIABILITIES	25,854	28,628	18,788	17,929	44,642	46,557
DEFERRED INFLOWS OF RESOURCES	1,556	2,351	509	478	2,065	2,829
NET POSITION						
Net investment in capital assets	9,959	9,173	18,218	18,505	28,177	27,678
Restricted	625	670	-	-	625	670
Unrestricted	1,154	3,946	8,230	8,278	9,384	12,224
TOTAL NET POSITION	$ 11,738	$ 13,789	$ 26,448	$ 26,783	$ 38,186	$ 40,572

Condensed Statements of Activities (In Thousands of Dollars)
Figure I-3

	Governmental Activities		Business-Type Activities		Totals	
	2019	2020	2019	2020	2019	2020
REVENUES						
Program revenues						
Charges for services	$ 1,996	$ 1,995	$ 4,746	$ 4,327	$ 6,742	$ 6,322
Operating grants and contributions	1,223	1,788	-	-	1,223	1,788
Capital grants and contributions	503	-	182	-	685	-
General revenues						
Real estate taxes	757	775	-	-	757	775
Other taxes	12,265	12,467	-	-	12,265	12,467
Investment earnings	118	45	137	42	255	87
Gain on sale of assets	43	33	-	-	43	33
Miscellaneous	258	110	682	461	940	571
TOTAL REVENUES	17,163	17,213	5,747	4,830	22,910	22,043
EXPENSES						
General government	1,799	1,725	-	-	1,799	1,725
Public safety	9,312	10,178	-	-	9,312	10,178
Public works						
Highways and streets	3,245	2,930	-	-	3,245	2,930
Sanitation	20	27	-	-	20	27
Culture and recreation	244	210	-	-	244	210
Community development	12	47	-	-	12	47
Other	-	-	-	-	-	-
Interest on long-term debt	222	213	-	-	222	213
Sewer	-	-	4,409	4,327	4,409	4,327
TOTAL EXPENSES	14,854	15,330	4,409	4,327	19,263	19,657
CHANGE IN NET POSITION BEFORE TRANSFERS	2,309	1,883	1,338	503	3,647	2,386
TRANSFERS	166	168	(166)	(168)	-	-
CHANGE IN NET POSITION	2,475	2,051	1,172	335	3,647	2,386
BEGINNING NET POSITION	9,263	11,738	25,276	26,448	34,539	38,186
ENDING NET POSITION	$ 11,738	$ 13,789	$ 26,448	$ 26,783	$ 38,186	$ 40,572

General Revenues and Other Changes in Net Position
Figure I-4

	2019	2020	Percent Change
REVENUES			
Real estate taxes	$ 757,124	$ 775,205	2%
Transfer taxes	1,199,970	1,098,937	-8%
Earned income taxes	9,741,890	10,056,315	3%
Local services taxes	1,322,836	1,312,250	-1%
Investment income	118,032	44,901	-62%
Gain on sale of assets	43,207	32,619	-25%
Miscellaneous	258,162	110,063	-57%
Charges for services	1,995,593	1,995,264	0%
Operating grants and contributions	1,222,679	1,788,271	46%
Capital grants and contributions	503,494	-	0%
TOTAL REVENUES	17,162,987	17,213,825	0%
EXPENSES			
General government	1,799,326	1,725,374	-4%
Public safety	9,312,035	10,178,070	9%
Public works-highways and streets	3,244,902	2,929,672	-10%
Public works-sanitation	20,190	26,754	33%
Culture and recreation	244,324	210,275	-14%
Community development	12,197	47,902	293%
Debt service	221,448	213,217	-4%
TOTAL EXPENSES	14,854,422	15,331,264	3%
CHANGE IN NET POSITION BEFORE TRANSFERS	$ 2,308,565	$ 1,882,561	-18%

FINANCIAL HIGHLIGHTS

- **Total Net Position** - Assets and Deferred Outflows of Resources exceeded liabilities by $40,572,323 for the fiscal year reported. This total includes both governmental and business-type (Sewer) activities. Capital Assets total $27,677,722, which includes property and equipment net of accumulated depreciation and reduced for outstanding debt related to the purchase or construction of capital assets. The balance is unrestricted assets of $12,224,509 and restricted assets of $670,092 for highway and street projects. Total liabilities include $7.4 million in outstanding debt for GOB governmental bonds and $15.6 million for GOB sewer bonds. Although the Township's investment in capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources since the capital assets themselves cannot be used to liquidate these liabilities.

- Cash and Investments - Total Township assets included $29,026,727 in cash and cash equivalents and $253,451 in financial investments, $18,647,739 in the Governmental Funds and $10,632,439 in the Sewer Fund.

- **Governmental Fund Balances** - At the end of 2020, the Township's governmental funds' combined ending fund balance was $21,353,645, an increase of $3,864,577 from the prior year primarily due to an increase in revenue tax collection ($314,000), permit, fees, and fines ($338,000), other miscellaneous revenue ($395,000). Of the current balance, $670,092 is restricted for highway and street projects, and $20,682,060 is assigned for the various purposes on the face of the balance sheet.

- **Total General Obligation Bonds Outstanding** decreased by $1,045,000 from 2019 due to principal reductions in the four current general obligation bond issues.

Governmental Activities

Governmental Revenue - 2020

As indicated in the Condensed Statements of Activities (Figure I-3) and displayed in Figure I-4, the primary source of revenue for the township is local taxes which include Earned Income Taxes, Local Services Taxes, and Real Estate (Property and Transfer) Taxes.

- Earned Income Taxes (EIT) totaling $10,056,315 and Local Services Taxes (LST) totaling $1,312,250 were 59% and 8% of revenue, respectively. EIT exceeded 2019 reported collections by $314,425 (3%) due to a net increase in the earned income tax of resident and nonresident taxpayers while LST remained flat $10,586 (-1%).

- Real Estate Taxes totaled $775,205 (5% of revenue), an increase of $8,011 (1%) in 2020 related to new construction and reassessments.

- Transfer Taxes totaled $1,098,937 (6% of revenue), a decrease of $101,033 (-8%) from 2019 as there were some commercial properties that transferred ownership in 2019 that were non-recurring in 2020.

Service Revenue mostly related to permits, public safety fees, engineering reviews, grants and state aid totaled $1,995,264 (12% of revenue) and, it was the same as prior year.

Governmental Expenses - 2020

As indicated in the Condensed Statements of Activities (Figure I-3) and displayed in Figure I-4, total expenses of the Township's governmental activities, public safety programs account for $10,178,070, or 66% of the total expenses for the Township's governmental activities. Public safety includes the police, codes, and planning & zoning departments plus a full-time staff of 10 firefighters/EMTs who complement the local volunteer fire company. General Administration, and Highway and Street Services account for 11% and 19% respectively of the total expenses.

Total expenses increased $476,842 (3%) as follows:

- Public Safety increased by $866,035 (9%) in 2020, the increase is primarily due to increase in police wages ($449,000), increase in police post-retirement benefit ($131,000), increase in fire department wages ($342,000), increase in planning salary ($92,000), these increases were in part due to annual contract and in part due to new hires. These costs were offset by decrease in medical cost (-$123,00), decrease in fire department's wages (-$219,000) because of no benefit cost associated with the new part time employees.

- General Government expenses decreased by $73,952 (-4%) in 2020, primarily due to a decrease in medical insurance premiums due to a less costly plan (-$34,000), a decrease in information technology related payroll and expense (-$21,000) and lower engineering and solicitor costs and other professional services costs related to special projects and studies (-$123,000), a decrease in computer services finance (-$21,000). an increase in EIT tax collection fees due to the increase in EIT tax collected ($33,000) and increase in computer services admin ($27,000).

- Public Works-highways and streets decreased by $315,230 (-10%) in 2020 mainly due to COVID 19 and its impact on the construction business

- Culture and recreation expenses decreased $34,049 (-14%) in 2020 due to a change in the summer camp program due to COVID19.

Governmental Net Position - 2020

As a result of the 2020 Governmental Activities noted above, East Whiteland recognized a $2,050,906 increase in Net Position. The ending Net Position remains healthy at $13.8 million including $18.4 million in cash to manage annual expenses if revenue timing is an issue.

Business-Type Activities

The Township's only business-type activity is its sewer operation. East Whiteland Township's sewer system includes 13 sewer pumping stations and approximately 77 miles of pipeline. The Township accepts flows and collects sewer rental fees from the adjoining municipalities of East Goshen Township, Charlestown Township and Malvern Borough. The Township, in turn, pays sewer rental fees to neighboring Tredyffrin Township and East Goshen Township, and a public utility company for conveyance and to the Valley Forge Sewer Authority for waste treatment.

- **Service Revenue** in fiscal year 2020 was $4,327,245 or $418,642 less than 2019 due to mainly a decrease in revenue from tapping fees which is $548,000 or $396,000 less than 2019. The decrease in tapping fee was due to COVID19 impact on the business.

- **Sewer Expenses** decreased $83,000 due to the greatest impact of pandemic on construction reduction throughout the year 2020.

- **The Sewer Fund Net Position** at the end of 2020 improved by $335,396 mainly related to increase in wastewater treatment of $169,954, increase in sewer rents of $56,374, increase in connection fee of $5,613 and reductions in expense of $83,000 in 2020.

FINANCIAL ANALYSIS OF THE TOWNSHIP'S FUNDS

Governmental Funds

Governmental Funds are reported in the Fund Statements with a short-term focus on the inflow and outflow of financial resources. This information is valuable in assessing resources available for upcoming financial requirements. Governmental Funds reported ending fund balances of $21,353,645. Of this year-end total: $5,050,000 is assigned for tax rate stabilization, $500,000 is assigned for pension stabilization, $500,000 is assigned for other postemployment benefits, $650,000 is assigned for storm water management, $3,000,000 is assigned for volunteer committee resources for such purposes as the acquisition of open space, the protection of historic, natural and scenic resources, to establish trails, bike paths, sidewalks and pathways, and energy conservation, $4,625,000 is assigned for the renovation of municipal infrastructure, $2,375,687 is assigned as budget contingency, $864,094 is assigned for capital improvement projects, $500,000 is assigned for equipment, $1,042,944 is assigned for highway and street projects and $1,574,335 is assigned for park development projects. Restricted fund balances include $670,092 for highway and street projects.

Major Governmental Funds - The General Fund is the Township's primary operating fund. The General Fund balance at fiscal year-end was $8,477,180, an increase of $1,433,312 over 2019. The General Fund balance is 68% of our 2020 operating expense and 54% of revenue.

The **Capital Improvement Fund** is a reserve fund for various capital purchases and improvements. The fiscal year-end balance for the Capital Improvement Fund was $10,589,094. This is an increase of $1,863,071 over the ending fund balance for 2019, resulting from an excess of revenues over expenditures in 2020 from non-recurring revenue that was transferred from the General Fund and assigned for specific projects.

Proprietary Funds

The only Township Proprietary Fund is the Sewer Fund, which was discussed previously under business-type activities.

GENERAL FUND BUDGETARY HIGHLIGHTS

Overall, general fund actual expenditures were $1,760,527 better than the final budget. The services that had significant favorable variances were as follows:

General Government	$244,842
Police	$717,578
Code Enforcement	$268,883
Public works, highways and streets general services	$135,698
Public works, highways and streets winter maintenance	$151,502
Public works, road maintenance and repair	$42,883
Public works, traffic signals	$35,782
Culture recreation, other	$110,451

On the schedule of sources and uses for the General Fund, including Other Financing Sources, the net position is better than the budget by $857,071 due to the reasons listed above and offset by the excess of revenues over expenditures in 2020 that was transferred out to the Capital Improvement Fund.

CAPITAL ASSETS - NET OF DEPRECIATION

The Township's investment in capital assets, net of depreciation, decreased $1,487,000 to $50,050,518. Capital Assets for our Sewer system including 13 pump stations and 77 miles of pipeline, comprise $33,740,402 of the total. Infrastructure incorporating 45 miles of road and traffic signals at 39 intersections, is $5,568,447 of the total. Buildings and Improvements comprise $7,796,540. For the detailed information about Capital Assets please see Note C in the report. The schedule (Figure I-5) below details Capital Assets, net of depreciation.

Capital Assets - Net of Depreciation (In Thousands of Dollars)
Figure I-5

	Governmental Activities		Business-Type Activities		Totals	
	2019	2020	2019	2020	2019	2020
Land	$ 1,076	$ 1,076	$ -	$ -	$ 1,076	$ 1,076
Construction in progress	136	486	200	200	336	686
Capacity rights	-	-	11,085	11,085	11,085	11,085
Site improvements	638	582	-	-	638	582
Buildings and improvements	8,029	7,796	-	-	8,029	7,796
Infrastructure	6,546	5,568	22,793	22,406	29,339	27,974
Machinery and equipment	297	262	7	2	304	264
Vehicles	671	540	59	47	730	587
	$ 17,393	$ 16,310	$ 34,144	$ 33,740	$ 51,537	$ 50,050

LONG-TERM DEBT

Long-term debt consists of debt incurred for the purchase and development of capital assets; and for the recording of compensated absences payable to employees, net pension liability and other post-employment benefits (OPEB) liability. The total long-term debt increased $2,253,000 mostly due to a net increase of $4,950,000 in the OPEB liability primarily resulting from changes of assumptions changing the mortality tables used and offset by a decrease of $1,659,000 in the pension liability resulting from plan fiduciary net position at 12/31/2020, and a decrease in the bonds for $1,045,000 in principal payments. For more information on long-term debt please see Note F in the report.

Outstanding Long-Term Debt (In Thousands of Dollars)
Figure I-6

	Governmental Activities		Business-Type Activities		Totals	
	2019	2020	2019	2020	2019	2020
General obligation bonds	$ 7,705	$ 7,395	$ 16,325	$ 15,590	$ 24,030	$ 22,985
Bond premium (discount)	36	34	(260)	(240)	(224)	(206)
Net OPEB obligation	12,962	17,616	921	1,217	13,883	18,833
Net pension liability	4,519	2,968	192	84	4,711	3,052
Compensated absences	33	28	21	15	54	43
	$ 25,255	$ 28,041	$ 17,199	$ 16,666	$ 42,454	$ 44,707

NEXT YEAR'S BUDGETS AND RATES

The general outlook for the economy of East Whiteland Township is uncertain due to the coronavirus (SARS-CoV-2) pandemic and associated societal and business closures ordered by the Commonwealth of Pennsylvania. These closures began in early to mid-March 2020 and will continue in some form into the foreseeable future. However, the shutdowns exempted approximately 70% of the U.S. economy and Statewide construction was permitted to resume on May 1, 2020. Locally planned development activity continues to move into production in 2020 and 2021. Building permit activity and fees based on permits issued to date and in the approval, process is relatively unaffected. In the short run, this will continue to add to our building permit fees, transfer taxes and sewer tapping fees and ultimately to our real estate tax, earned income tax and local services tax revenue. For 2021, there will be no rate increase for real estate tax which has been the same low rate of .445 mills for over 25 years nor for the earned income tax rate which increased from 0.5% to 0.75% in 2019. For 2021, the earned income tax budget decreased 11% or $900,000 to $8.2 million, the real estate tax budget is 755,820 the same as the 2020, and the local services taxes decreased by 10% or $135,000 to $1,215,000.

Operating expenses are expected to continue to increase over the next few years as municipal services are heavily labor intensive, and wage and benefit costs continue to increase. However, due to cost savings measures taken in 2020 and others that may be necessary in 2021 due to the pandemic, these increases can be moderated. In 2015 we took steps to reduce the healthcare costs by joining the Delaware Valley Health Insurance Trust for two of our three employee groups. In 2019 the healthcare plan for one employee group and non-represented employees was replaced with a less costly plan. In 2021 the Township's pension costs will increase by 22.5%. The post-retirement benefit costs will also increase.

Seventy six (76%) percent of the Township's full time employees (45 of 59) are represented by unions including the East Whiteland Police Association, the International Association of Fire Fighters (IAFF), and the American Federation of State, County and Municipal Employees (AFSCME). All the three agreements will expire in 2021. Wage increases under the three contracts in 2021 are 3.5%, 3.75%, and 3.75% in the order as listed above.

Increases in East Whiteland sewer infrastructure and department expenses and costs for the sewer treatment plants that service East Whiteland Township continue to impact sewer fund finances. During 2018 we completed commercial sewer rate and tapping fee studies. The rates for all other sewer services and tapping fees will remain the same for 2021.

2021 projects include Conestoga Road and Planebrook Road sewer system expansion design, construction of Bacton Hill Park phase 1, planning for a new building to house the Police Department on the Township campus, additional road resurfacing and traffic improvement projects. The Act 209 Transportation Study that was completed in 2018 resulted in a new traffic impact fee to be used for traffic capital improvements. Recreation impact fees from development and grants will be used to fund the Bacton Hill Park phase 1 construction project.

Malvern Hunt flow diversion project will be done in 2021 at an approximate cost of $135,000. The decommissioning of the plant will also start this year, but the costs have not been established yet.

The Township is also proposing a sale of the sewer system. The goal in the potential sale of our sewer system is to focus its resources on other core government functions while ensuring safe, reliable, and professional sewer service at affordable rates for its residents. The Township has systems with aging infrastructure which over time will require additional investment. Due to this needed investment, it is projected that rates will rise regardless if the system remains with the Township or is sold.

The sanitary sewer system and related equipment would be sold to the buyer. Service would continue as usual only under different ownership. No employees would lose their jobs, they will stay with the Township and be reassigned within the public works department. The Township will maintain control of its Act 537 Planning. Rates will be governed by the PUC after the mandatory 3-year rate freeze.

The possible uses of proceeds: Reduce Debt: Pay off outstanding debt related to both sewer and the public works facility; Fund Development of Township Campus: Includes construction of a new police station, renovation of current administration building, and other improvements; Preserve Open Space: Locate and preserve parcels which meet the community's needs through easements or acquisition; Improve/Add to Township Parks and Trails; Implement Roadway Projects to Improve Traffic Flow; Maintain Selected Historical Resources.

Aqua submitted a bid for $55 million with a proposed three year rate freeze. The Board of Supervisors awarded the bid to Aqua in November 2020. Due diligence on the proposed sale continues. If successful, it is expected that settlement will occur around January 2022.

CONTACTING THE TOWNSHIP'S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of the Township's finances, comply with finance-related laws and regulations and demonstrate the Township's commitment to accountability. If you have any questions about this report or need additional information, please contact the Finance Department at 209 Conestoga Road, Frazer, PA 19355.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
DECEMBER 31, 2020

	Governmental Activities	Business-Type Activities	Totals
ASSETS			
Cash and cash equivalents	$ 18,394,288	$ 10,632,439	$ 29,026,727
Investments	253,451	-	253,451
Receivables	2,870,415	728,725	3,599,140
Internal balances	432,653	(432,653)	-
Prepaid items	1,493	-	1,493
Capital assets			
Depreciable capital assets	14,748,102	22,455,387	37,203,489
Non depreciable capital assets	1,562,014	11,285,015	12,847,029
TOTAL ASSETS	38,262,416	44,668,913	82,931,329
DEFERRED OUTFLOWS OF RESOURCES			
Deferred amount related to pensions	1,594,355	79,974	1,674,329
Deferred amount related to OPEB	4,619,379	326,719	4,946,098
Deferred amount on refunding	292,138	114,313	406,451
TOTAL DEFERRED OUTFLOWS OF RESOURCES	6,505,872	521,006	7,026,878
LIABILITIES			
Accounts payable and other accrued liabilities	548,931	78,556	627,487
Interest payable	2,733	179,688	182,421
Other current liabilities	35,256	-	35,256
Unearned revenues	-	1,004,945	1,004,945
Long-term liabilities			
Portion due or payable within one year			
Bonds payable	315,000	755,000	1,070,000
Compensated absences	4,152	2,260	6,412
Portion due or payable after one year			
Bonds payable	7,114,243	14,595,004	21,709,247
Net pension liability	2,968,490	83,582	3,052,072
Net OPEB liability	17,615,643	1,216,799	18,832,442
Compensated absences	23,525	12,805	36,330
TOTAL LIABILITIES	28,627,973	17,928,639	46,556,612
DEFERRED INFLOWS OF RESOURCES			
Deferred amount related to pensions	1,769,680	123,046	1,892,726
Deferred amount related to OPEB	581,485	355,061	936,546
TOTAL DEFERRED INFLOWS OF RESOURCES	2,351,165	478,107	2,829,272
NET POSITION			
Net investment in capital assets	9,173,011	18,504,711	27,677,722
Restricted			
Highway and street projects	670,092	-	670,092
Unrestricted	3,946,047	8,278,462	12,224,509
TOTAL NET POSITION	$ 13,789,150	$ 26,783,173	$ 40,572,323

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2020

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions
GOVERNMENTAL ACTIVITIES				
General government	$ 1,725,374	$ 221,163	$ 450,963	$ -
Public safety	10,178,070	1,768,721	197,940	-
Public works - sanitation	26,754	-	1,981	-
Public works - highways and streets	2,929,672	-	363,764	-
Culture and recreation	210,275	5,380	773,623	-
Community development	47,902	-	-	-
Debt service	213,217	-	-	-
TOTAL GOVERNMENTAL ACTIVITIES	15,331,264	1,995,264	1,788,271	-
BUSINESS-TYPE ACTIVITIES				
Sewer	4,326,654	4,327,245	-	-
TOTAL TOWNSHIP ACTIVITIES	$ 19,657,918	$ 6,322,509	$ 1,788,271	$ -
GENERAL REVENUES				
Taxes				
Real estate taxes				
Transfer taxes				
Earned income taxes				
Local services taxes				
Investment earnings				
Gain on sale of capital assets				
Miscellaneous				
TRANSFERS				
TOTAL GENERAL REVENUES AND TRANSFERS				
CHANGE IN NET POSITION				
NET POSITION AT BEGINNING OF YEAR				
NET POSITION AT END OF YEAR				

See accompanying notes to the basic financial statements.

Net (Expense) Revenue and Changes in Net Position		
Governmental Activities	Business-Type Activities	Totals
$ (1,053,248)	$ -	$ (1,053,248)
(8,211,409)	-	(8,211,409)
(24,773)	-	(24,773)
(2,565,908)	-	(2,565,908)
568,728	-	568,728
(47,902)	-	(47,902)
(213,217)	-	(213,217)
(11,547,729)	-	(11,547,729)
-	591	591
(11,547,729)	591	(11,547,138)
775,205	-	775,205
1,098,937	-	1,098,937
10,056,315	-	10,056,315
1,312,250	-	1,312,250
44,901	42,081	86,982
32,619	-	32,619
110,063	461,069	571,132
168,345	(168,345)	-
13,598,635	334,805	13,933,440
2,050,906	335,396	2,386,302
11,738,244	26,447,777	38,186,021
$ 13,789,150	$ 26,783,173	$ 40,572,323

EAST WHITELAND TOWNSHIP
BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2020

	General Fund	Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
ASSETS				
Cash and cash equivalents	$ 7,031,938	$ 8,643,963	$ 2,718,387	$ 18,394,288
Investments	253,451	-	-	253,451
Receivables	2,869,796	-	619	2,870,415
Prepaid items	1,493	-	-	1,493
Due from other funds	1,156,991	2,106,134	150,047	3,413,172
TOTAL ASSETS	$ 11,313,669	$ 10,750,097	$ 2,869,053	$ 24,932,819
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES				
LIABILITIES				
Accounts payable and other accrued liabilities	$ 530,843	$ 13,367	$ 4,721	$ 548,931
Due to other funds	2,255,922	147,636	576,961	2,980,519
Other current liabilities	35,256	-	-	35,256
TOTAL LIABILITIES	2,822,021	161,003	581,682	3,564,706
DEFERRED INFLOWS OF RESOURCES				
Unavailable revenue, property taxes	14,468	-	-	14,468
FUND BALANCES				
Nonspendable, prepaid items	1,493	-	-	1,493
Restricted				
Highway and street projects	-	-	670,092	670,092
Assigned				
Highway and street projects	-	1,000,000	42,944	1,042,944
Park development	-	-	1,574,335	1,574,335
Tax rate stabilization	5,050,000	-	-	5,050,000
Pension stabilization	500,000	-	-	500,000
Other postemployment benefits	500,000	-	-	500,000
Stormwater management	50,000	600,000	-	650,000
Volunteer committee resources	-	3,000,000	-	3,000,000
Renovate municipal infrastructure	-	4,625,000	-	4,625,000
Equipment	-	500,000	-	500,000
Budgetary reserve	2,375,687	-	-	2,375,687
Capital improvement	-	864,094	-	864,094
TOTAL FUND BALANCES	8,477,180	10,589,094	2,287,371	21,353,645
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 11,313,669	$ 10,750,097	$ 2,869,053	$ 24,932,819

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

RECONCILIATION OF TOTAL GOVERNMENTAL FUNDS BALANCES
TO NET POSITION OF GOVERNMENTAL ACTIVITIES
DECEMBER 31, 2020

TOTAL GOVERNMENTAL FUNDS BALANCES	$	21,353,645
Capital assets used in governmental activities are not current financial resources and therefore are not reported in the funds. These assets consist of:		
Cost of capital assets		60,383,350
Accumulated depreciation		(44,073,234)
Some liabilities are not due and payable in the current period and therefore are not reported in the funds. Those liabilities consist of:		
Interest payable		(2,733)
Bonds payable		(7,429,243)
Net OPEB liability		(17,615,643)
Net pension liability		(2,968,490)
Compensated absences		(27,677)
Deferred charges used in governmental activities are not financial resources and therefore are not reported in the funds. These assets consist of:		
Deferred amount on refunding, net of amortization		292,138
Deferred inflows and outflows of resources related to pension and OPEB activities are not financial resources and, therefore, are not reported in the governmental funds.		3,862,569
Some of the Township's revenues will be collected after year-end but are not available soon enough to pay for the current period's expenditures and therefore are deferred in the funds.		14,468
NET POSITION OF GOVERNMENTAL ACTIVITIES	$	13,789,150

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2020

	General Fund	Capital Improvement Fund	Other Governmental Funds	Total Governmental Funds
REVENUES				
Taxes				
Real estate taxes	$ 766,497	$ -	$ -	$ 766,497
Transfer taxes	1,098,937	-	-	1,098,937
Earned income taxes	10,056,315	-	-	10,056,315
Local services taxes	1,312,250	-	-	1,312,250
Fees, licenses and permits	1,911,214	-	-	1,911,214
Investment income and rent	26,699	14,585	3,617	44,901
Intergovernmental revenues	545,004	-	463,764	1,008,768
Fines and forfeitures	43,635	-	-	43,635
Charges for services	32,415	-	8,000	40,415
Other	41,429	57,945	784,312	883,686
TOTAL REVENUES	15,834,395	72,530	1,259,693	17,166,618
EXPENDITURES				
General government	1,589,235	83,852	-	1,673,087
Public safety	8,837,453	86,595	-	8,924,048
Public works - sanitation	20,874	-	-	20,874
Public works - highways and streets	1,398,266	22,453	333,291	1,754,010
Culture and recreation	83,479	107,840	358,208	549,527
Community development	430	47,472	-	47,902
Other	23,549	-	-	23,549
Debt service				
Principal	310,000	-	-	310,000
Interest	200,008	-	-	200,008
TOTAL EXPENDITURES	12,463,294	348,212	691,499	13,503,005
EXCESS OF REVENUES OVER EXPENDITURES	3,371,101	(275,682)	568,194	3,663,613
OTHER FINANCING SOURCES (USES)				
Transfers in	168,345	2,106,134	-	2,274,479
Transfers out	(2,106,134)	-	-	(2,106,134)
Proceeds from sale of capital assets	-	32,619	-	32,619
TOTAL OTHER FINANCING SOURCES (USES)	(1,937,789)	2,138,753	-	200,964
NET CHANGE IN FUND BALANCES	1,433,312	1,863,071	568,194	3,864,577
FUND BALANCES AT BEGINNING OF YEAR	7,043,868	8,726,023	1,719,177	17,489,068
FUND BALANCES AT END OF YEAR	$ 8,477,180	$ 10,589,094	$ 2,287,371	$ 21,353,645

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES YEAR ENDED DECEMBER 31, 2020

NET CHANGE IN FUND BALANCES - TOTAL GOVERNMENTAL FUNDS	$	3,864,577
Capital outlays are reported in Governmental Funds as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which depreciation ($1,938,160) exceeds capital outlays ($855,436) in the current period.		(1,082,724)
Because some property taxes will not be collected for several months after the Township's fiscal year ends, they are not considered as "available" revenues in the Governmental Funds. Deferred tax revenues increased by this amount this year.		8,708
The issuance of long-term debt (e.g., bonds, leases) provides current financial resources to Governmental Funds, while the repayment of the principal of long-term debt consumes the current financial resources of Governmental Funds. Neither transaction, however, has any effect on net position. Also, Governmental Funds report the effect of issuance costs, premiums, discounts and similar items when debt is first issued, whereas these amounts are deferred and amortized in the statement of activities. This amount is the net effect of these differences in the treatment of long-term debt and related items.		
Repayment of bond principal		310,000
Amortization of bond discount and premium		1,801
Amortization of deferred amount on refunding		(15,444)
Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in the Governmental Funds.		(1,042,014)
In the statement of activities, compensated absences (vacations and sick leave) are measured by the amounts earned during the year. In the Governmental Funds, however, expenditures for these items are measured by the amount of financial resources used (essentially, the amounts paid).		5,568
Interest on long-term debt in the statement of activities differs from the amount reported in the Governmental Funds because interest is recognized as an expenditure in the funds when it is due and thus requires the use of current financial resources. In the statement of activities, however, interest expense is recognized as the interest accrues, regardless of when it is due.		434
CHANGE IN NET POSITION OF GOVERNMENTAL ACTIVITIES	$	2,050,906

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2020

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 10,632,439
Accounts receivable	728,725
Due from other funds	188
TOTAL CURRENT ASSETS	11,361,352
NONCURRENT ASSETS	
Capital assets	37,767,409
Other capital assets	11,285,015
Accumulated depreciation	(15,312,022)
TOTAL NONCURRENT ASSETS	33,740,402
TOTAL ASSETS	45,101,754
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	79,974
Deferred amount related to OPEB	326,719
Deferred amount on refunding	114,313
TOTAL DEFERRED OUTFLOWS OF RESOURCES	521,006
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	62,511
Accrued liabilities	16,045
Due to other funds	432,841
Compensated absences	2,260
Unearned revenue	1,004,945
Accrued interest	179,688
Bonds payable	755,000
TOTAL CURRENT LIABILITIES	2,453,290
NONCURRENT LIABILITIES	
Compensated absences	12,805
Bonds payable	14,595,004
Net pension liability	83,582
Net OPEB liability	1,216,799
TOTAL NONCURRENT LIABILITIES	15,908,190
TOTAL LIABILITIES	18,361,480
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	123,046
Deferred amount related to OPEB	355,061
TOTAL DEFERRED INFLOWS OF RESOURCES	478,107
NET POSITION	
Net investment in capital assets	18,504,711
Unrestricted	8,278,462
TOTAL NET POSITION	$ 26,783,173

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2020

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,733,532
Tapping fees	593,713
Miscellaneous	461,069
TOTAL OPERATING REVENUES	4,788,314
OPERATING EXPENSES	
Sewer and collection fees	1,647,144
Salaries, wages and benefits	700,649
Repairs and maintenance	238,799
Contracted services	238,002
Utilities	81,900
Insurance	40,981
Depreciation	782,755
Other	53,068
TOTAL OPERATING EXPENSES	3,783,298
OPERATING INCOME	1,005,016
NONOPERATING REVENUES (EXPENSES)	
Interest income	42,081
Interest expense	(543,356)
TOTAL NONOPERATING REVENUES (EXPENSES)	(501,275)
INCOME BEFORE TRANSFERS	503,741
TRANSFERS OUT	(168,345)
CHANGE IN NET POSITION	335,396
NET POSITION AT BEGINNING OF YEAR	26,447,777
NET POSITION AT END OF YEAR	$ 26,783,173

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2020

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,244,902
Cash payments to suppliers for goods and services	(2,240,288)
Cash payments to employees for services	(710,826)
NET CASH PROVIDED BY OPERATING ACTIVITIES	2,293,788
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(168,345)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(379,484)
Principal paid on capital debt	(735,000)
Interest paid on capital debt	(504,376)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,618,860)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	42,081
NET INCREASE IN CASH AND CASH EQUIVALENTS	548,664
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	10,083,775
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 10,632,439

`ee accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2020

	Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	$ 1,005,016
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	782,755
Pension and OPEB expense	(6,835)
(Increase) decrease in	
Receivables	423,146
Due from other funds	(188)
Increase (decrease) in	
Accounts payable	(354,554)
Accrued liabilities	2,356
Due to other funds	414,348
Compensated absences	(5,698)
Unearned revenue	33,442
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 2,293,788

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF FIDUCIARY NET POSITION
FIDUCIARY FUNDS
DECEMBER 31, 2020

	Pension and OPEB Trust Funds	Custodial Fund
ASSETS		
Cash and cash equivalents	$ 971,303	$ 848,584
Investments		
Domestic equity mutual funds	14,986,382	-
International equity mutual funds	3,570,923	-
Fixed income mutual funds	5,613,757	-
Real estate mutual funds	433,971	-
Due from Township	-	47,239
TOTAL ASSETS	25,576,336	895,823
NET POSITION		
Net position restricted for pensions	23,732,989	-
Net position restricted for other post-employment benefits	1,843,347	-
Net position restricted for custodial fund	-	895,823
TOTAL NET POSITION	$ 25,576,336	$ 895,823

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FIDUCIARY FUNDS
YEAR ENDED DECEMBER 31, 2020

	Pension and OPEB Trust Funds	Custodial Fund
ADDITIONS		
Contributions		
Member contributions	$ 236,830	$ -
Employer contributions	1,458,543	-
Developer contributions	-	239,653
TOTAL CONTRIBUTIONS	1,695,373	239,653
Investment earnings		
Dividends	949,926	-
Net increase in the fair value of investments	2,242,660	-
TOTAL INVESTMENT EARNINGS	3,192,586	-
Investment expense	(46,685)	-
INVESTMENT EARNINGS, net	3,145,901	-
TOTAL ADDITIONS	4,841,274	239,653
DEDUCTIONS		
Benefits	1,390,890	-
Administrative expenses	8,679	-
Payments to developers	-	615,235
TOTAL DEDUCTIONS	1,399,569	615,235
CHANGE IN NET POSITION	3,441,705	(375,582)
NET POSITION AT BEGINNING OF YEAR	22,134,631	1,271,405
NET POSITION AT END OF YEAR	$ 25,576,336	$ 895,823

See accompanying notes to the basic financial statements.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

East Whiteland Township ("the Township") was established in 1765 and is an organized township having the powers, duties, and privileges granted townships by the Commonwealth of Pennsylvania Second Class Township Code, Act of May 1, 1933 (P.L. 103, No. 69), reenacted and amended November 9, 1995 (P.L. 350, No. 60). The Township is governed by a three-member board of supervisors elected for a six-year term by the citizens of the Township. The Board is organized with a chairman and vice-chairman elected annually at the reorganization meeting held on the first Monday of the year.

The township complies with generally accepted accounting principles ("GAAP"). GAAP includes all relevant Governmental Accounting Standards Board ("GASB") pronouncements. The accounting and reporting framework and the more significant accounting policies are discussed in subsequent subsections of this Note.

Financial accountability is defined in GASB Statement No. 14, "The Financial Reporting Entity," as amended by GASB Statement No. 61. The Township is financially accountable for legally separate organizations if it appoints a voting majority of the organization's board and (1) it is able to impose its will on that organization; or (2) there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the Township. The Township also may be financially accountable if an organization is fiscally dependent on the Township regardless of whether the organization has a separately elected governing board, a governing board appointed by a higher level of government, or a jointly appointed board.

Fiduciary Component Units:

The Police Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular, full-time sworn police officers. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and issues separate financial statements.

The Non-Uniformed Employees' Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular full-time, non-uniformed employees. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does issues separate financial statements.

The Firefighters Pension Plan is a single employer defined benefit pension plan that provides pensions for all regular full-time, firefighters. Although the plan is a separate legal entity it is reported as if it is part of the government as it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does issues separate financial statements.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The Postemployment Benefits Other Than Pensions Plan is a single-employer defined benefit healthcare plan that provides medical insurance and life insurance benefits to eligible retirees. Although the plan is a separate legal entity it is governed by a committee comprised of members appointed by the Township Board of Supervisors and the Township is responsible for funding the plan. The plan is reported as a fiduciary fund and does not issue separate financial statements.

Government-Wide and Fund Financial Statements

The accompanying financial statements of the Township are in accordance with the provisions of the Governmental Accounting Standards Board (GASB) Statement No. 34, *Basic Financial Statements--and Management's Discussion and Analysis--for State and Local Governments*, as amended by GASB Statement No. 37, *Basic Financial Statements--and Management's Discussion and Analysis--for State and Local Governments--Omnibus*, GASB Statement No. 38, *Certain Financial Statement Note Disclosures*, and GASB Statement No. 41, *Budgetary Comparison Schedules--Perspective Differences.* The requirements of this new reporting model are described below.

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on the activities of the primary government, except for Fiduciary Funds and Agency Funds. For the most part, the effect of interfund activity has been removed from these statements.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. Direct expenses are those that are clearly identifiable with a specific function or segment. Program revenues include (1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as general revenues.

Separate financial statements are provided for Governmental Funds, Proprietary Funds and Fiduciary Funds, even though the latter are excluded from the government-wide financial statements. Major individual Governmental Funds are reported as separate columns (Other Governmental Funds) in the fund financial statements.

Measurement Focus, Basis of Accounting and Basis of Presentation

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Governmental Funds financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. For this purpose, the Township considers revenues to be available if they are collected within 60 days of the end of the fiscal period. Under this basis, certain revenues (those susceptible to accrual, readily measurable and available as to amount and anticipated as being readily collectible) are recorded on the accrual basis. Property taxes, earned income taxes, local services taxes and licenses associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. All other revenues are recognized only when received in cash. Expenditures, with the exception of interest requirements on long-term debt, are accounted for on the accrual basis of accounting.

The Township reports the following major governmental funds:

- The *General Fund* is the government's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

- The *Capital Improvement Fund* accounts for the resources to be used for the acquisition, construction, or improvement of major capital assets for general government purposes.

The Township reports the following major Proprietary funds

- The *Sewer Fund* accounts for operations related to the collection of wastewater and the operation of sewage pumping stations. The sewage is transported to a sewer treatment plant not owned by the Township.

Additionally, the Township reports the following Fiduciary Fund Types:

- The *Pension Trust Funds* are used to account for the activities of the Police, Firefighter and Non-Uniformed Pension Plans, which accumulate resources for pension benefit payments to qualified employees.

- The *OPEB Trust Fund* is used to account for the assets held by the Township to pay for postemployment medical benefits.

- The *Custodial Fund* is used to account for monies held by the Township for developer escrow deposits.

Amounts reported as *program revenues* include: (1) charges to customers or applicants for goods, services, or privileges provided, (2) operating grants and contributions and (3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as *general revenues* rather than as program revenues. Likewise, general revenues include all taxes.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Proprietary Funds distinguish *operating* revenues and expenses from *nonoperating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a Proprietary Fund's principal ongoing operations. The principal operating revenues of the Sewer Fund are charges to customers for sales and services. Operating expenses for the Township's enterprise funds include sewer disposal, salaries, recycling, supplies, and administrative costs, and depreciation. All revenues or expenses not meeting this definition are reported as nonoperating revenues and expenses.

Stewardship, Compliance and Accountability

Budgets and Budgetary Accounting - The Township follows the procedures outlined below, which comply with legal requirements in establishing the budgetary data reflected in the financial statements:

1. Budgets are legally adopted on an annual basis for most Township funds, which is consistent with generally accepted accounting principles. The operating budget includes proposed expenditures and the means of financing them.

2. Prior to November 15 of the preceding fiscal year, the Township prepares a budget for the next succeeding calendar year beginning January 1. The operating budget includes proposed expenditures and the means of financing them.

3. A meeting of the Board of Supervisors is then called for the purpose of adopting the proposed budget.

4. Prior to December 31, the budget is legally enacted through passage of a resolution by the Board of Supervisors.

5. The budget must be filed with the Pennsylvania Department of Community and Economic Development by January 31.

6. Budgets for the funds are prepared on the modified accrual basis of accounting.

Once a budget is approved, it can be amended at the function and fund level only by approval of majority of the members of the Board of Supervisors. Amendments are presented to the Board at its regular meetings. Each amendment must have the Board's approval. Such amendments are made before the fact, are reflected in the official minutes of the Board, and are not made after fiscal year end as dictated by law.

The budget is controlled by the finance officer at the revenue and expenditures function/object level. Budgeted amounts are as amended by the Board of Supervisors. For 2020, individual amendments were not material in relation to the original appropriations. All budget appropriations lapse at year end.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The General Fund, Capital Improvements Fund, Transportation Improvement Fund, Street Light Fund, Park Development Fund, and State Fund all have legally adopted budgets for the year ended December 31, 2020.

Assets, Liabilities and Equity

Deposits and Investments - The Township's cash and cash equivalents including demand deposits and short-term investments with original maturities of three months or less from the date of acquisition are considered to be cash on hand.

Statutes authorize the Township to invest in: 1) obligations, participations and other instruments of any Federal agency, 2) repurchase agreements with respect to U.S. Treasury bills or obligations, 3) negotiable certificates of deposit, 4) bankers' acceptances, 5) commercial paper, 6) shares of an investment company registered under the Investment Company Act of 1940 whose shares are registered under the Securities Act of 1933, and 7) savings or demand deposits. The specific conditions under which the District may invest in these categories are detailed in Pennsylvania Act No. 53 of 1973, as amended by Pennsylvania Act No. 10 of 2016. Investments are stated at fair value except for certificates of deposit which are stated at amortized cost.

Under Act No. 72, enacted by the General Assembly of the Commonwealth of Pennsylvania, the funds deposited with the various banks are permitted to be secured on a pooled basis with all other public funds which the banking institution has on deposit. These may be bonds of the United States, any state of the United States, or bonds of any political subdivision of Pennsylvania or the general state authority or their authorities created by the General Assembly of the Commonwealth of Pennsylvania, or insured with the Federal Deposit Insurance Corporation. The fair value of such bonds pledged must equal 102% of the funds deposited. The security pledged by the various depositories utilized during the year and at December 31, 2020, was in excess of the minimum requirements just described.

The Township has adopted GASB Statement No. 72, *Fair Value Measurement and application*. In accordance with this Statement, investments in marketable securities with readily determinable fair value and all investments in debt securities are reported at their fair values.

The law provides that the Township's Pension Trust Funds may invest in any form or type of investment, financial instrument, or financial transaction if determined by the Township to be prudent.

Receivables and Payables - Activity between funds that is representative of lending/borrowing arrangements outstanding at the end of the fiscal year is referred to as either "due to/from other funds" (i.e., the current portion of interfund loans) or "advances to/from other funds" (i.e., the noncurrent portion of interfund loans). All other outstanding balances between funds are reported as "due to/from other funds." Any residual balances outstanding between the governmental activities and business-type activities are reported in the government-wide financial statements as "internal balances."

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Real Estate Taxes - Real estate taxes are recorded as revenues when the taxes are levied. All property tax receivables are shown net of an allowance for uncollectibles. At December 31, 2020, all tax receivables were deemed to be fully collectible. There is no tax receivable allowance due to the materiality of the outstanding receivables.

Real estate taxes are levied on January 1 on property values assessed as of the same date. Taxes are billed March 1 and are due on June 30 of each year. A 2% discount is provided for taxes paid prior to May 1. A 10% penalty is applied to taxes paid after June 30. Any unpaid bills at December 31 are subject to lien, and penalties and interest are assessed.

Other taxes levied in 2020:

Real estate transfer tax ..... 0.5% of sales price
Earned income tax ..... 0.5% of gross income
Local service tax .....$52 per person

Provision for Estimated Uncollectible Receivables - No provision is considered necessary for other receivables.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The Township has three items that qualify for reporting in this category. The deferred charge on refunding results from the difference in carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. Deferred outflows of resources related to pensions is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between pension plan expected and actual experience and changes in pension plan assumptions. Deferred outflows of resources related to OPEB is reported in the government-wide statement of net position and the proprietary fund statement of net position and are the result of differences between expected and actual experience, and changes of assumptions.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

In addition to liabilities, the statement of net position will sometimes report a separate section for deferred inflows of resources. This separate financial element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Township has three items, which qualify for reporting in this category. Unavailable revenue, which arises only under a modified accrual basis of accounting, is reported only in the Governmental Funds balance sheet. The Governmental Funds report unavailable revenues from property taxes. These amounts are deferred and recognized as an inflow of resources in the period that the amounts become available. Deferred inflows of resources related to pensions is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between pension plan expected and actual experience and the difference between projected and actual investment earnings. Deferred inflows of resources related to OPEB is reported in the government-wide statement of net position and the proprietary fund statement of net position and is the result of differences between changes of assumptions, and the difference between projected and actual investment earnings.

Capital Assets - Capital assets, which include property, plant, equipment and infrastructure assets (e.g., roads, bridges, sidewalks and similar items) are reported in the applicable governmental or business – type activities columns in the entity-wide financial statements as well as in the proprietary fund financial statements. The township capitalizes assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of one year. The Township reports infrastructure assets on a network and subsystem basis. Accordingly, the amounts spent for the construction or acquisition of infrastructure assets are capitalized and reported in the entity-wide financial statements regardless of their amount. Such assets are recorded at historical cost if purchased or constructed. In accordance with GASB Statement No. 51, "Accounting and Financial Reporting for Intangible Assets," the Township capitalizes contributions to the Valley Forge Sewer Authority for the purchase of additional sewer treatment capacity.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Major outlays for capital assets and improvements are capitalized as projects are constructed, inclusive of ancillary costs.

Depreciation has been provided over the estimated useful lives of property, plant and equipment using the straight-line method as follows:

	Years
Site improvements	20
Buildings and improvements	20-40
Infrastructure	15-50
Machinery and equipment	3-12
Vehicles	3-12

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Long-Term Obligations - In the government-wide financial statements and the Proprietary Fund Types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or Proprietary Fund Type statement of net position.

In the fund financial statements, Governmental Fund Types reports discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received and discounts paid on debt issuance are reported as other financing sources and uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures, except for refunding's paid from proceeds which are reported as other financing uses.

Net Position Flow Assumption

Sometimes the Township will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the government-wide and Proprietary Fund financial statements, a flow assumption should be made about the order in which the resources are considered to be applied. It is the Township's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

In the fund financial statements, Governmental Fund Types recognize bond premiums and discounts, as well as issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt are reported as other financing uses. Issuance costs, even if withheld from the actual net proceeds received, are reported as expenditures.

Net Position - The Township has implemented GASB Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions*. This statement provides more clearly defined fund balance categories to make the nature and extent of the constraints placed on the Township's fund balances more transparent. The following classifications describe the relative strength of the spending constraints:

- **Nonspendable Fund Balance** - Amounts that are not in spendable form (such as inventory) or are required to be maintained intact.

- **Restricted Fund Balance** - Amounts constrained to specific purposes by their providers (such as grantors, bondholders and higher levels of government) through constitutional provisions or by enabling legislation.

- **Committed Fund Balance** - Amounts constrained to specific purposes by the Township itself, using its highest level of decision-making authority (the Board of Supervisors). To be reported as committed, amounts cannot be used for any other purpose unless the Township takes the same highest level action to remove or change the constraint.

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

- **Assigned Fund Balance** - Amounts the Township intends to use for a specific purpose. Intent can be expressed by the Board of Supervisors or by an official or body to which the Board of Supervisors delegates the authority. As of December 31, 2020, the Board has not delegated the authority to assign fund balance.

- **Unassigned Fund Balance** - Amounts available for any purpose. Positive amounts are reported only in the General Fund.

The Board of Supervisors establishes (and modifies or rescinds) fund balance commitments by passage of a motion, which is the most binding action management can take. Assigned fund balance is intended to be used by the Township for specific purposes but does not meet the criteria to be classified as restricted or committed.

The Township will typically use restricted fund balances first, followed by committed resources and then assigned resources, as appropriate opportunities arise, but reserves the right to selectively spend unassigned resources first to defer the use of these other classified funds.

Cash and Cash Equivalents - For purposes of reporting cash flows for the Proprietary Funds, all highly liquid investments with original maturities of three months or less are considered short-term investments.

Compensated Absences - Full-time employees are granted vacation benefits in varying amounts to specified maximums. Certain employees may carry over 40 hours of unused vacation time into the following year or receive compensation for those hours. Certain employees may accumulate up to 480 hours of unused sick time and, depending on years of services, may receive payment for some or all of that time at retirement or resignation. The liability for those compensated absences is recorded as long-term debt in the entity-wide and proprietary fund financial statements. In the fund financial statements, governmental funds report a liability for compensated absences only if they have matured. Historically the General Fund has been responsible for liquidation of compensated absences associated with governmental activities. Compensated absences associated with business-type activities are liquidated from the fund in which the liability was generated.

Prepaid Items - Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both government-wide and fund financial statements. Prepaid items are accounted for under the consumption method.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Accordingly, actual results could differ from those estimates.

Concentrations of Credit Risk - The Township's revenues and receivables for taxes and utility service are mostly derived from residents and businesses located in the Township and are, therefore, subject to the economic conditions of the area.

NOTE B - DEPOSITS AND INVESTMENTS

Deposits

Custodial Credit Risk - Custodial credit risk is the risk that, in the event of a bank failure, the Township's deposits may not be returned to it. As of December 31, 2020, $986,418 of the total bank balance of $30,826,736 was insured by the Federal Depository Insurance Corporation. The remaining bank balance of $29,840,318 was exposed to credit risk because it was uninsured and collateralized in accordance with Act 72 of the Commonwealth of Pennsylvania Legislature, which permits the institution to pool collateral for all governmental deposits and has the collateral held by a custodian in the institution's name.

Investments

As of December 31, 2020, the Township had the following investments:

Investment Type	Amortized Cost	Fair Value	Total	Investment Maturities Less Than One Year
GOVERNMENTAL ACTIVITIES				
Certificates of deposit	$ 253,451	$ -	$ 253,451	$ 252,052
FIDUCIARY FUNDS				
Domestic equity mutual funds	$ -	$ 14,986,382	$ 14,986,382	$ 14,986,382
International equity mutual funds	-	3,570,923	3,570,923	3,570,923
Fixed income mutual funds	-	5,613,757	5,613,757	5,613,757
Real estate mutual funds	-	433,971	433,971	433,971
TOTAL FIDUCIARY FUNDS	$ -	$ 24,605,033	$ 24,605,033	$ 24,605,033

Fair Value Measurement - The Township categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted market prices in active markets for identical assets: Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The Township has the following recurring fair value measurements as of December 31, 2020:

Investments in domestic equity mutual funds of $14,986,382, international equity mutual funds of $3,570,923, fixed income mutual funds of $5,613,757, and real estate mutual funds of $433,971 are valued using quoted market prices (Level 1 inputs).

Interest Rate Risk - This is the risk that changes in interest rates will adversely affect the fair value of an investment. The Township's investment policy includes a balancing provision to address this type of risk.

NOTE B - DEPOSITS AND INVESTMENTS (Continued)

Credit Risk - This is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. State law limits the investment of government funds as described in Note A. The Township's investment policy does not further limit its investment choices.

Concentration of Credit Risk - This is the risk of loss attributed to the magnitude of a government's investment in a single issuer. There are no investments in any one issuer that is in excess of 5 percent of the government's total investments.

NOTE C - CAPITAL ASSETS

Changes in capital asset activity for the year ended December 31, 2020, were as follows:

	Balance January 1, 2020	Increases	Decreases	Balance December 31, 2020
GOVERNMENTAL ACTIVITIES				
Capital assets not being depreciated				
Land	$ 1,076,488	$ -	$ -	$ 1,076,488
Construction in progress	136,229	349,297	-	485,526
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	1,212,717	349,297	-	1,562,014
Capital assets being depreciated				
Site Improvements	1,282,741	-	-	1,282,741
Buildings and improvements	9,710,442	64,056	-	9,774,498
Infrastructure	43,760,587	339,572	-	44,100,159
Machinery and equipment	1,387,692	34,930	-	1,422,622
Vehicles	2,173,735	67,581	-	2,241,316
TOTAL CAPITAL ASSETS BEING DEPRECIATED	58,315,197	506,139	-	58,821,336
Accumulated depreciation				
Site Improvements	(644,836)	(56,163)	-	(700,999)
Buildings and improvements	(1,681,405)	(296,553)	-	(1,977,958)
Infrastructure	(37,214,584)	(1,317,128)	-	(38,531,712)
Machinery and equipment	(1,091,211)	(70,362)	-	(1,161,573)
Vehicles	(1,503,038)	(197,954)	-	(1,700,992)
TOTAL ACCUMULATED DEPRECIATION	(42,135,074)	(1,938,160)	-	(44,073,234)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	16,180,123	(1,432,021)	-	14,748,102
GOVERNMENTAL ACTIVITIES CAPITAL ASSETS, net	$ 17,392,840	$ (1,082,724)	$ -	$ 16,310,116

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General government	$ 110,175
Public safety	160,910
Public works, highways and streets	1,607,710
Parks and recreation	59,365
	$ 1,938,160

	Balance January 1, 2020	Increases	Decreases	Balance December 31, 2020
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ 199,773	$ -	$ -	$ 199,773
Capacity rights	11,085,242	-	-	11,085,242
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,285,015	-	-	11,285,015
Capital assets being depreciated				
Sewer Infrasture	37,075,705	379,484	-	37,455,189
Machinery and equipment	99,324	-	-	99,324
Vehicles	212,896	-	-	212,896
TOTAL CAPITAL ASSETS BEING DEPRECIATED	37,387,925	379,484	-	37,767,409
Accumulated depreciation				
Sewer Infrasture	(14,282,935)	(766,006)	-	(15,048,941)
Machinery and equipment	(92,211)	(4,492)	-	(96,703)
Vehicles	(154,121)	(12,257)	-	(166,378)
TOTAL ACCUMULATED DEPRECIATION	(14,529,267)	(782,755)	-	(15,312,022)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	22,858,658	(403,271)	-	22,455,387
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 34,143,673	$ (403,271)	$ -	$ 33,740,402

NOTE D - INTERFUND RECEIVABLES, PAYABLES AND TRANSFERS

Interfund receivables and payables at December 31, 2020, are as follows:

	Due from Other Funds	Due to Other Funds
GOVERNMENTAL FUNDS		
General Fund	$ 1,156,991	$ 2,255,922
Capital Improvement Fund	2,106,134	147,636
Street Light Fund	447	2,377
Park Development Fund	149,600	247,817
State Fund	-	326,767
BUSINESS-TYPE ACTIVITIES		
Sewer Fund	188	432,841
	$ 3,413,360	$ 3,413,360

These balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system and (3) payments between funds are made.

Interfund transfers at December 31, 2020, are as follows:

	Transfer Out	Transfer In
GOVERNMENTAL FUNDS		
General Fund	$ 2,106,134	$ 168,345
Capital Improvement Fund	-	2,106,134
BUSINESS-TYPE ACTIVITIES		
Sewer Fund	168,345	-
	$ 2,274,479	$ 2,274,479

Transfers are used to (1) move revenues from the fund that statute or budget requires to collect them to the fund that statute or budget requires to expend them and (2) use unrestricted revenues collected in the General Fund to account for saving for future capital projects.

NOTE E - RECEIVABLES

Receivables as of December 31, 2020, are as follows:

	General Fund	Other Governmental Funds	Sewer Fund	Totals
RECEIVABLES				
Accounts	$ 357,694	$ 619	$ 728,725	$ 1,087,038
Taxes	2,512,102	-	-	2,512,102
	$ 2,869,796	$ 619	$ 728,725	$ 3,599,140

NOTE F - LONG-TERM DEBT

Long-term liability for the year ended December 31, 2020, is as follows:

	Balance January 1, 2020	Additions	Reductions	Balance December 31, 2020	Due Within One Year
GOVERNMENTAL ACTIVITIES					
General Obligation Bonds					
Series of 2014	$ 1,640,000	$ -	$ (260,000)	$ 1,380,000	$ 265,000
Series of 2016	6,065,000	-	(50,000)	6,015,000	50,000
TOTAL GENERAL OBLIGATION BONDS	7,705,000	-	(310,000)	7,395,000	315,000
Bond premium	39,375	-	(1,969)	37,406	-
Bond discount	(3,331)	-	168	(3,163)	-
Net pension liability	4,519,015	-	(1,550,525)	2,968,490	-
Net OPEB liability	12,961,571	4,654,072	-	17,615,643	-
Compensated absences	33,245	6,648	(12,216)	27,677	4,152
TOTAL GOVERNMENTAL ACTIVITIES LONG-TERM LIABILITIES	$ 25,254,875	$ 4,660,720	$ (1,874,542)	$ 28,041,053	$ 319,152
BUSINESS-TYPE ACTIVITIES					
General Obligation Bonds					
Series A of 2012	$ 350,000	$ -	$ (350,000)	$ -	$ -
Series B of 2012	4,030,000	-	(335,000)	3,695,000	705,000
Series of 2013	11,945,000	-	(50,000)	11,895,000	50,000
TOTAL GENERAL OBLIGATION BONDS	16,325,000	-	(735,000)	15,590,000	755,000
Bond discounts	(259,532)	-	19,536	(239,996)	-
Net pension liability	192,049	-	(108,467)	83,582	-
Net OPEB liability	921,823	294,976	-	1,216,799	-
Compensated absences	20,763	5,068	(10,766)	15,065	2,260
TOTAL BUSINESS-TYPE ACTIVITIES LONG-TERM LIABILITIES	$ 17,200,103	$ 300,044	$ (834,697)	$ 16,665,450	$ 757,260

NOTE F - LONG-TERM DEBT (Continued)

Payments on the bonds and loans payable pertaining to the Township's governmental activities are made by the General Fund. Payments of compensated absences pertaining to the Township's governmental activities are made by the General Fund.

Governmental Activities Debt

General Obligation Series of 2014 - General Obligation Bonds, Series of 2014 were issued in the original amount of $8,040,000. Interest rates range from 1.0% to 4.0% with interest payable semi-annually and principal payable annually from June 2015 through December 2039. These bonds were issued to finance the new Public Works building and additional park developments.

General Obligation Series of 2016 - General Obligation Bonds, Series of 2016 were issued in the original amount of $6,160,000. Interest rates range from 2.0% to 3.0% with interest payable semi-annually and principal payable annually from June 2017 through December 2039. These bonds were issued to advance refund a portion of the General Obligation Bonds, Series of 2014 and to pay the cost of the bond issuance. The refunding resulted in an economic gain of $297,663 and a decrease in future cash flows of $307,026.

Business-Type Activities Debt

General Obligation Bonds, Series of 2012A - General Obligation Bonds, Series of 2012A, were issued in the original amount of $4,685,000. Interest rates range from 0.9% to 3.0% with interest payable semi-annually and principal payable annually from September 2013 through September 2020. These bonds were issued to redeem and prepay 1999 Bonds to reduce costs.

General Obligation Bonds, Series of 2012B - General Obligation Bonds, Series of 2012B, were issued in the original amount of $4,130,000. Interest rates range from 1.0% to 3.0% with interest payable semi-annually and principal payable annually from September 2020 through September 2025. These bonds were issued to redeem and prepay 2005 bonds to reduce costs.

General Obligation Bonds, Series of 2013A - General Obligation Bonds, Series of 2013A, were issued in the original amount of $12,145,000. Interest rates range from 2.0% to 3.6% with interest payable semi-annually from September 2013 through September 2038. These bonds were issued to finance sewer expansions and upgrades.

NOTE F - LONG-TERM DEBT (Continued)

Total Scheduled Annual Debt Service

The Township's total scheduled annual debt service on all long-term debt is as follows:

Year Ending December 31,	Governmental Activities Principal	Governmental Activities Interest
2021	$ 315,000	$ 193,930
2022	320,000	187,630
2023	325,000	180,690
2024	330,000	173,090
2025	345,000	164,950
2026 to 2030	1,820,000	706,450
2031 to 2035	2,060,000	468,900
2036 to 2039	1,880,000	143,100
	$ 7,395,000	$ 2,218,740

Year Ending December 31,	Business-Type Activities Principal	Business-Type Activities Interest
2021	$ 755,000	$ 497,782
2022	765,000	480,920
2023	790,000	461,996
2024	805,000	441,420
2025	830,000	417,570
2026 to 2030	3,905,000	1,741,282
2031 to 2035	4,585,000	1,061,012
2036 to 2038	3,155,000	231,455
	$ 15,590,000	$ 5,333,437

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN)

Police Pension Plan

Summary of Significant Accounting Policies - Police Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Police Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Police Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time police officers. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed the Pension Board as the official body to which all related investment matters of the plan are delegated. The Pension Board consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2020, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	13
Inactive plan members entitled to but not yet receiving benefits	-
Active plan members	22
	35

Benefits Provided - The Police Pension Plan provides retirement benefits as well as death and disability benefits under Pennsylvania Act 600.

Eligibility Requirements:

Normal Retirement - Age 50 and 25 years of service.

Early Retirement - 20 or more years of service.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Vesting - None for the first 12 years of service; thereafter, 100%. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

The monthly pension shall be 50% of the average monthly salary over the participant's last 36 months of employment, plus an incremental pension of $25 per month for each completed year of service in excess of twenty-five years up to a maximum of $100 per month. The early retirement pension shall be the actuarial equivalent of a partial superannuation retirement benefit.

Survivor Benefit:

A pension benefit shall be automatically provided to a retired officer's spouse or to the spouse of an officer eligible to retire, equal to no less than 50% of the eligible pension. If no spouse, or if spouse subsequently dies, the benefit shall apply to children under age 18, or if attending college, under or attaining age 23.

Disability Benefit:

Service-Related - The monthly disability pension benefit shall be calculated at no less than 50% of the member's salary at the time the disability was incurred. Said pension shall be reduced by any benefits received for the same injuries under the Social Security Act.

Nonservice-Related - None.

Post-Retirement Adjustments:

A cost of living adjustment may be provided to retired officers. Annual adjustment not to exceed the increase in the Consumer Price Index from year to year with a 3% maximum annual increase. Total adjustments not to exceed 30% of the retiree's original pension.

The benefit provisions of the Township's Police Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

As a condition of participation, participants are required to make contributions to the plan. Covered employees are required by statute to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan.

In 2020, the MMO obligation for the Police Pension Plan was $535,400. For the year 2020, contributions of $535,400 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries. The following was the Board's adopted asset allocation policy as of December 31, 2020:

Asset Class	Target Allocation
Domestic equity	50%
International equity	8%
Fixed income	35%
Real estate	5%
Cash	2%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2020, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 14.09%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2020, were as follows:

Total pension liability	$ 14,703,891
Plan fiduciary net position	(12,682,236)
NET PENSION LIABILITY	$ 2,021,655
Plan fiduciary net position as a percentage of the total pension liability	86.25%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of January 1, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2020 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that are expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2019	$ 13,765,847	$ 10,943,594	$ 2,822,253
Changes for the year			
Service cost	358,285	-	358,285
Interest cost	1,053,344	-	1,053,344
Changes for experience	-	-	-
Changes of assumptions	-	-	-
Contributions			
Employer	-	535,400	(535,400)
Member	-	137,161	(137,161)
Net investment income	-	1,544,906	(1,544,906)
Benefit payments	(473,585)	(473,585)	-
Administrative expenses	-	(5,240)	5,240
Net changes	938,044	1,738,642	(800,598)
Balances at December 31, 2020	$ 14,703,891	$ 12,682,236	$ 2,021,655

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 3,709,651	$ 2,021,655	$ 607,374

NOTE G - DEFINED BENEFIT PENSION PLAN (POLICE PENSION PLAN) (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2020, the Township recognized pension expense of $388,759 for this pension plan, and $704,835 for all pension plans. At December 31, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to the Police Pension Plan from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 28,075	$ 115,581
Changes of assumptions	814,724	-
Net difference between projected and actual earnings on pension plan investments	-	836,688
Total	$ 842,799	$ 952,269

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	
2021	$ (72,140)
2022	86,611
2023	(296,404)
2024	(38,094)
2025	222,168
Thereafter	(11,611)

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN)

Non-Uniformed Pension Plan

Summary of Significant Accounting Policies - Non-Uniformed Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Non-Uniformed Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Non-Uniformed Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time non-uniformed employees. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2020, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	23
Inactive plan members entitled to but not yet receiving benefits	3
Active plan members	14
	40

Benefits Provided - The Non-Uniformed Pension Plan provides retirement and other benefits.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Eligibility Requirements:

Normal Retirement - For participants represented by a collective bargaining unit and hired prior to January 1, 2006, the normal retirement date is age 64 and 10 years of service. For participants not represented by a collective bargaining agreement and hired prior to January 1, 2006, the normal retirement date is age 63 and 10 years of service. For participants hired on or after January 1, 2006, the normal retirement date is age 64 and 10 years of service.

Early Retirement - Age 55 and 10 years of service.

Vesting - For participants hired on or after January 1, 2006 - none for the first 10 years of service; thereafter, 100%. For participants hired prior to January 1, 2006 - 50% after 5 full years of service; thereafter, 10% per year until 100% vested after 10 years. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

For participants hired on or after January 1, 2006, the monthly pension shall be 2.00% for each year of service times the average monthly compensation over the participants last 60 months of employment. For participants hired prior to January 1, 2006, the monthly pension shall be 50% of the final average monthly compensation over the participant's last 36 months of employment. The early retirement pension shall be a partial superannuation retirement benefit determined by a table in the governing resolution.

Disability Benefit:

Service-Related - The accrued retirement benefit determined at the date of disability. The disability benefit shall commence at the normal retirement date.

The benefit provisions of the Township's Non-Uniformed Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Covered employees are required to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan. Contribution provisions are established by Pennsylvania law and may be amended only as allowed by Pennsylvania law.

In 2020, the MMO obligation for the Non-Uniformed Pension Plan was $392,050. For the year 2020, contributions of $392,050 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries.

The following was the Committee's adopted asset allocation policy as of December 31, 2020:

Asset Class	Target Allocation
Domestic equity	61%
International equity	9%
Fixed income	23%
Real estate	4%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2020, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 13.92%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2020, were as follows:

Total pension liability	$ 8,485,689
Plan fiduciary net position	(7,994,036)
NET PENSION LIABILITY	$ 491,653
Plan fiduciary net position as a percentage of the total pension liability	94.21%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of January 1, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2020 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2019	$ 6,815,902	$ 5,878,263	$ 937,638
Changes for the year			
Service cost	144,215	-	144,215
Interest cost	502,813	-	502,813
Changes for experience	-	-	-
Changes in assumptions	-	-	-
Contributions			
Employer	-	325,400	(325,400)
Member	-	48,127	(48,127)
Net investment income	-	809,575	(809,575)
Benefit payments	(419,815)	(419,815)	-
Administrative expenses	-	(6,506)	6,506
Net changes	227,213	756,781	(529,568)
Balances at December 31, 2020	$ 7,043,115	$ 6,635,044	$ 408,071

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

	Business-Type Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a -(b)
Balances at December 31, 2019	$ 1,396,036	$ 1,203,988	$ 192,049
Changes for the year			
Service cost	29,538	-	29,538
Interest cost	102,987	-	102,987
Changes for experience	-	-	-
Changes in assumptions	-	-	-
Contributions			
Employer	-	66,650	(66,650)
Member	-	9,857	(9,857)
Net investment income	-	165,818	(165,818)
Benefit payments	(85,987)	(85,987)	-
Administrative expenses	-	(1,334)	1,334
Net changes	46,538	155,004	(108,466)
Balances at December 31, 2020	$ 1,442,574	$ 1,358,992	$ 83,582

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 1,320,478	$ 491,653	$ (215,171)

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2020, the Township recognized pension expense of $189,832 for this pension plan, and $704,835 for all pension plans. At December 31, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to the Non-Uniformed Pension Plan from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 179,972	$ 124,433
Changes in assumptions	210,491	-
Net difference between projected and actual earnings on pension plan investments	-	476,317
Total	$ 390,463	$ 600,750

	Business-Type Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 36,861	$ 25,486
Changes in assumptions	43,113	-
Net difference between projected and actual earnings on pension plan investments	-	97,560
Total	$ 79,974	$ 123,046

NOTE H - DEFINED BENEFIT PENSION PLAN (NON-UNIFORMED PENSION PLAN) (Continued)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	Governmental Activities	Business-Type Activities
2021	$ (20,419)	$ (4,182)
2022	57,765	11,831
2023	(193,705)	(39,675)
2024	(53,928)	(11,046)
2025	-	-

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN)

Firefighter Pension Plan

Summary of Significant Accounting Policies - The Pension Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's Firefighter Pension Plan is presented on the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to each plan are recognized when due as required by the Act. For the purpose of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position have been determined on the same basis as they are reported by the pension plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with benefit terms.

Plan Description

Plan Administration - The Township administers the Firefighter Pension Plan--a single-employer defined benefit pension plan that provides pensions for all regular, full-time firefighter employees. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Pension Trust Fund. The plan does not issue separate, stand-alone financial statements.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2020, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	2
Inactive plan members entitled to but not yet receiving benefits	1
Active plan members	8
	11

Benefits Provided - The Firefighter Pension Plan provides retirement and other benefits.

Eligibility Requirements:

Normal Retirement - Age 50 and 25 years of service.

Early Retirement - 20 or more years of service, actuarially reduced to reflect early commencement of benefits.

Vesting - None for the first 10 years of service; thereafter, 100%. If a member dies before the pension becomes vested, the surviving spouse or minor children shall receive repayment of the member's contributions, if any, plus interest.

Retirement Benefit:

Service-Related - The accrued retirement benefit determined at the date of disability. The disability benefit shall commence when the participant has been declared totally and permanently disabled.

Nonservice-Related - None

The benefit provisions of the Township's Firefighter Pension Plan are established by Township ordinances.

Contributions - Pennsylvania Act 205 of 1984 (as amended) requires that annual contributions be based upon the minimum municipal obligation (MMO), which is based on the plan's actuarial valuation. The MMO includes the normal cost, estimated administrative expenses and an amortization contribution of the unfunded actuarial accrued liability, less estimated member contributions, and a credit equal to 10% of the excess (if any) of the actuarial value of assets over the actuarial accrued liability. The Commonwealth provides an allocation of funds, which must be used for pension funding. A financial requirement established by the MMO, which exceeds state and member contributions, must be funded by the employer.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Covered employees are required to contribute 5% of their compensation to the plan. The Township is required by statute, principally Pennsylvania Act 205, to contribute the remaining amounts necessary to finance the plan. Contribution provisions are established by Pennsylvania law and may be amended only as allowed by Pennsylvania law.

In 2020, the MMO obligation for the Firefighter Pension Plan was $174,500. For the year 2020, contributions of $174,500 were made by the Township.

Administrative costs, which may include, but are not limited to, investment management fees and actuarial services, are charged to the appropriate plan and funded through the MMO and/or plan earnings. On-behalf payments of fringe benefits and salaries for the Township's employees were recognized as revenues and expenditures during the year.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries.

The following was the Committee's adopted asset allocation policy as of December 31, 2020:

Asset Class	Target Allocation
Domestic equity	59%
International equity	11%
Fixed income	23%
Real estate	4%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2020, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 14.53%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Net Pension Liability of the Township - The components of the net pension liability of the Township at December 31, 2020, were as follows:

Total pension liability	$ 3,595,481
Plan fiduciary net position	(3,056,717)
NET PENSION LIABILITY	$ 538,764
Plan fiduciary net position as a percentage of the total pension liability	85.02%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of January 1, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5% annual increase
Investment rate of return	7.5%

Mortality rates were based on the PubS-2010 mortality table, including rates for disabled retirees and contingent survivors. Incorporated into the table are rates projected generationally using Scale MP-2018 to reflect mortality improvement.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2020 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50% - 7.50%
International equity	4.50% - 6.50%
Fixed income	1.00% - 3.00%
Real estate	4.50% - 6.50%
Cash	0.00% - 1.00%

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Discount Rate - The discount rate is based on the long-term expected rate of return on plan investments that expected to be used to finance the payments of benefits. The plan's fiduciary net position is projected to be sufficient to make projected benefit payments and the plan assets are expected to be invested using a strategy to achieve that return. The employer has always met the funding requirements of Pennsylvania law Act 205 of 1984. Act 205 requires full funding of the entry age normal cost plus plan expenses, as well as amortization of the unfunded liability to ultimately achieve a 100% funded status.

Changes in the Net Pension Liability

	Governmental Activities		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a)-(b)
Balances at December 31, 2019	$ 3,272,205	$ 2,513,081	$ 759,124
Changes for the year			
Service cost	113,884	-	113,884
Interest cost	251,222	-	251,222
Changes for experience	-	-	-
Changes in assumptions	-	-	-
Contributions			
Employer	-	174,500	(174,500)
Member	-	41,683	(41,683)
Net investment income	-	374,323	(374,323)
Benefit payments	(41,830)	(41,830)	-
Administrative expenses	-	(5,040)	5,040
Net changes	323,276	543,636	(220,360)
Balances at December 31, 2020	$ 3,595,481	$ 3,056,717	$ 538,764

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following presents the net pension liability of the Township, calculated using the discount rate of 7.5%, as well as what the Township's net pension would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.5%)	Current Discount Rate (7.5%)	1% Increase (8.5%)
Net pension liability	$ 1,011,402	$ 538,764	$ 145,120

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - For the year ended December 31, 2020, the Township recognized pension expense of $126,244 for this pension plan, and $704,835 for all pension plans. At December 31, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to the Firefighter Pension Plan from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 206,623	$ -
Changes in assumptions	154,470	-
Net difference between projected and actual earnings on pension plan investments	-	216,661
Total	$ 361,093	$ 216,661

NOTE I - DEFINED BENEFIT PENSION PLAN (FIREFIGHTER PENSION PLAN) (Continued)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending December 31,	
2021	$ (6,964)
2022	19,368
2023	(41,938)
2024	14,513
2025	50,410
Thereafter	109,043

NOTE J - NON-UNIFORM EMPLOYEE DEFINED CONTRIBUTION PENSION PLAN

Plan Description

The Township has established the East Whiteland Township Non-Uniform Employee Defined Contribution Pension Plan (the "Plan"), which provides pension benefits for its full-time, non-union, non-uniform employees as defined in the plan, and who were hired on or after January 1, 2017. There is a six month period of service required in order to participate. The Plan is a single-employer defined contribution money purchase pension plan under Section 401 (a) of the Internal Revenue Code. In a defined contribution plan, the benefits to be received by an employee depend solely on the amount contributed to the participant's account and related returns on investments of those contributions. ICMA Retirement Corporation serves as the third-party administrator for the Plan, maintaining records of individual account balances and administering receipt and payment of funds. All funds contributed by the employees and employer are invested with the funds offered through ICMA-RC. The Plan does not issue separate, stand-alone financial statements.

NOTE J - NON-UNIFORM EMPLOYEE DEFINED CONTRIBUTION PENSION PLAN (Continued)

Funding Policy

Each eligible employee covered under the Plan must make an irrevocable election to contribute 2%, 3% or 4% of gross wages. The Township contributes 4%, 6% or 8% of each participating employee's gross wages to the Plan, respectively, depending on the employee's contribution percentage. For example, if the employee elects a 2% contribution, the Township will contribute 4%; if the employee elects a 3% contribution, the Township will contribute 6%. The Township's contributions for employees and earnings allocated to their accounts vest based on period of service completed, as follows:

Period of Service Completed	% Vested
Zero	0%
One	20%
Two	40%
Three	60%
Four	80%
Five	100%

Retirement benefits may be obtained at age 65. The Township made contributions of $45,805, of which $0 was funded by state-shared revenues and $45,805 was funded by the Township. Employee contributions to the Plan were $22,903.

At December 31, 2020, there were no investments in any one organization that represented 5% or more of total plan assets available for benefits other than mutual funds, which do not require disclosure of concentration per GASB Statement No. 40.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB)

Summary of Significant Accounting Policies - The OPEB Plan investments are carried at fair value as reported by the investment managers. Short-term investments are reported at cost, which approximates fair value. Financial information of the Township's OPEB Plan is presented on the accrual basis of accounting. Employer contributions to each plan are recognized when due.

Plan Description

Plan Administration - The Township's post-employment healthcare plan is a single-employer defined benefit healthcare plan. The plan provides medical insurance and life insurance benefits to eligible retirees. Spouses and other dependents are not covered under the plan. The Board of Supervisors assigns the authority to establish and amend benefit provisions. The plan does not issue separate, stand-alone financial statements. The plan is part of the Township's financial reporting entity and is included in the Township's financial statements as a Trust Fund. The plan does not issue separate, stand-alone financial statements.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

The plan is governed by the Township Board of Supervisors which is responsible for the management of plan assets. The Township Board of Supervisors has appointed a pension committee as the official body to which all related investment matters of the plan are delegated. The pension committee consists of five members, which may consist of elected officials, management, and/or members of the plan. The Township Board of Supervisors has delegated the authority to manage certain plan assets to TCG Investment Advisory, Inc., with Broadridge Matrix Trust Company as custodian.

Plan Membership - At December 31, 2020, plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	21
Inactive plan members entitled to but not yet receiving benefits	3
Active plan members	54
	78

Benefits Provided

Eligibility Requirements:

Police Officers - Medical and life insurance benefits are payable for members who retire after attaining age 50 with 20 years of service. However, receipt of benefits are deferred to the date on which the officer qualifies for normal retirement had the officer remained in service (25 years of service).

Firefighters - Firefighters hired prior to December 31, 2011 or Part-time Firefighters hired prior to December 31, 2011 and subsequently promoted to full-time status, medical benefits are payable for members who retire after attaining age 50 with 20 years of service.

Non-Uniformed Employees - Medical benefits are payable for members who retire after attaining age 55 with 20 years of service.

Medical Benefits Payable upon Retirement:

Police Officers - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, officers retiring after January 1, 1999 are required to enroll in Medicare Part B coverage and the Township reimburses the retiree for coverage. Officers retiring after December 31, 2013 are required to enroll in Medicare Part D coverage and the Township shall reimburse the retiree for coverage. In addition to the aforementioned benefits, officers hired prior to September 24, 2019 who retire after September 24, 2019 will receive a $700 annual HRA contribution. These officers receive the same health benefits as active officers and are subject to any changes to the active plan made by agreement or an arbitration award. For officers hired after September 24, 2019, post-retirement medical benefits and the $700 annual HRA contribution cease when the officer becomes eligible for Medicare.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Firefighters - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At age 65, the member is no longer eligible to receive coverage.

Non-Uniformed Employees - Eligible retirees may participate in the employer's group medical plan, while under age 65 which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, all retirees shall be required to enroll in Medicare Part B and Part D coverage and the Township reimburses the retiree for Medicare Part B and Part D coverage.

Union - Eligible employees that retire by December 31, 2022 may participate in the employer's group medical plan while under age 65, which includes basic medical, prescription drug, dental and vision coverage. At ages 65 and older, member remains in the same group medical. However, Medicare will pay primary. In addition, all retirees shall be required to enroll in Medicare Part B and Medical Part D coverage and the Township reimburses the retiree for coverage. However, for eligible employees who have 10 years of service as of December 31, 2022, if the healthcare plan designs change for active employees, retiree coverage will change as well. In addition, any employee hired on or after January 1, 2019 or an employee who does not have 10 years of service as of December 31, 2022 and who has at least twenty (20) years of service with the Township shall be provided post-retirement medical benefits including prescription for the retiree only until the retiree reaches age 65, becomes eligible for Medicare, or the retiree dies, whichever occurs first. If the healthcare plan designs change for active employees, retiree coverage will change as well. These retirees shall be required to enroll in Medicare Part B and Medical Part D coverage and will not be reimbursed for the Part B and Part D monthly premiums.

Disability Benefits:

Disabled Officers are eligible to continue receiving coverage for life if their disability is service related.

Life Insurance Benefits Payable upon Retirement:

Eligible retired police officers who retire while in the employ of the Township after 20 years of service are provided a life insurance benefit equal to $20,000 until age 65. At ages 65 and older, the Township provides a life insurance benefit of $10,000.

Dependents:

Spouses and other dependents are not covered under the Plan.

The benefit provisions of the Township's OPEB Plan are established by Township ordinances.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Funding Policy

Member contributions are not required under the plan. The contribution requirements of plan members are established and may be amended by the Board of Supervisors. The Township is accounting for these expenditures on a "pay-as-you-go" basis. The costs of administering the plans are paid by the Township.

Investments

Investment Policy - The Pension Board, with the assistance of TCG Investment Advisory, Inc., shall select the appropriate asset weighting percentage to be allocated to each specific asset class. Each asset class shall consist of a combination of investment options that have been made available to obtain the absolute investment objective of the fund. Investments shall be diversified with the intent to minimize the risk of large investment losses. Consequently, the total portfolio will be constructed and maintained to provide prudent diversification with regard to the concentration of holdings in investment funds specializing in individual issues, issuers, countries, governments or industries. The following was the Committee's adopted asset allocation policy as of December 31, 2020:

Asset Class	Target Allocation
Domestic equity	34%
International equity	10%
Fixed income	50%
Real estate	3%
Cash	3%
	100%

Concentrations - There are no investments in any one issuer that is in excess of 5 percent of the total investments.

Rate of Return - For the year ended December 31, 2020, the annual money-weighted rate of return on plan investments, net of plan investment expense, was 15.52%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Net OPEB Liability of the Township - The components of the net OPEB liability of the Township at December 31, 2020, were as follows:

Total OPEB liability	$ 20,675,789
Plan fiduciary net position	(1,843,347)
NET OPEB LIABILITY	$ 18,832,442
Plan fiduciary net position as a percentage of the total OPEB liability	8.92%

Actuarial Assumptions - The total OPEB liability was determined by an actuarial valuation as of January 1, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3%
Salary increases	4.5-5.0% annual increase
Investment rate of return	2.44%

The healthcare cost trend rate is 5.5% in 2020 through 2023. Rates gradually decrease from 5.4% in 2024 to 4.0% in 2075 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model.

Mortality rates were based on the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees.

Due to the size of the plan, there have been no experience studies used to determine plan assumptions.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

The long-term expected rate of return on plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the plan's target asset allocation as of December 31, 2020 (see the plan's investment policy) are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	5.50%-7.50%
International equity	4.50%-6.50%
Fixed income	1.00%-3.00%
Real estate	4.50%-6.50%
Cash	0.00%-1.00%

Discount Rate - The discount rate used to measure the total OPEB liability was 2.44%. The plan's fiduciary net position is not projected to be sufficient to make projected benefit payments. As a result, the discount rate is based on the long-term expected rate of return on OPEB plan investments of 7.0% and the municipal bond rate of 1.93% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2020.

Changes in Assumptions - In the 2020 actuarial valuation, the discount rate changed from 3.98% to 2.44%. The trend assumption was updated. The mortality table was changed from the IRS 2017 Small Plan Combined Static Mortality table to the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees.

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Changes in the Net OPEB Liability

	Governmental Activities		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)
Balances at December 31, 2019	$ 14,451,325	$ 1,489,754	$ 12,961,571
Changes for the year			
Service cost	557,410	-	557,410
Interest cost	590,288	-	590,288
Changes for experience	-	-	-
Changes of assumptions	4,068,305	-	4,068,305
Employer contributions	-	327,440	(327,440)
Net investment income	-	237,890	(237,890)
Benefit payments	(327,440)	(327,440)	-
Administrative expenses	-	(3,399)	3,399
Net changes	4,888,563	234,491	4,654,072
Balances at December 31, 2020	$ 19,339,888	$ 1,724,245	$ 17,615,643

	Business-Type Activities		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a)-(b)
Balances at December 31, 2019	$ 1,027,774	$ 105,951	$ 921,823
Changes for the year			
Service cost	30,734	-	30,734
Interest cost	41,500	-	41,500
Changes for experience	-	-	-
Changes of assumptions	265,046	-	265,046
Employer contributions	-	29,153	(29,153)
Net investment income	-	13,393	(13,393)
Benefit payments	(29,153)	(29,153)	-
Administrative expenses	-	(242)	242
Net changes	308,127	13,151	294,976
Balances at December 31, 2020	$ 1,335,901	$ 119,102	$ 1,216,799

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate - The following presents the net OPEB liability of the Township, calculated using the discount rate of 2.44%, as well as what the Township's net OPEB liability would be if it were calculated using a discount rate that is one percentage point lower (1.44%) or one percentage point higher (3.44%) than the current rate:

	1% Decrease (1.44%)	Current Discount Rate (2.44%)	1% Increase (3.44%)
Net OPEB liability	$ 22,611,523	$ 18,832,442	$ 15,850,111

Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate - The following presents the net OPEB liability of the Township, as well as what the Township's net OPEB liability would be if it were calculated using healthcare cost trend rates that are one percentage point lower (5.0% decreasing to 2.8%) or one percentage point higher (7.0% decreasing to 4.8%) than the current healthcare cost trend rates:

	1% Decrease (5.0% Decreasing to 2.8%)	Healthcare Cost Trent Rates (6.0% Decreasing to 3.8%)	1% Increase (7 0% Decreasing to 4.8%)
Net OPEB liability	$ 15,361,026	$ 18,832,442	$ 23,306,196

OPEB Expense and Deferred Outflows of Resource and Deferred Inflows of Resources Related to OPEB – For the year ended December 31, 2020, the Township recognized OPEB expense of $1,788,887. At December 31, 2020, the Township reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Governmental Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 334,638	$ -
Changes in assumptions	4,284,741	407,512
Net difference between projected and actual earnings on pension plan investments	-	173,973
Total	$ 4,619,379	$ 581,485

NOTE K - POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (Continued)

	Business-Type Activities	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ -	$ 312,299
Changes in assumptions	303,664	42,762
Net difference between projected and actual earnings on pension plan investments	23,055	-
Total	$ 326,719	$ 355,061

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending December 31,	Governmental Activities	Business-Type Activities
2021	$ 685,257	$ (8,370)
2022	695,294	(7,901)
2023	650,630	(13,033)
2024	699,390	(19,049)
2025	726,134	(17,851)
Thereafter	581,189	37,862

NOTE L - COMBINING SCHEDULES OF FIDUCIARY FUNDS

The following is a combining schedule of fiduciary net position for the Pension Trust Funds and OPEB Trust Fund:

	Pension Trust Funds				
	Non-Uniformed Pension Fund	Firefighter Pension Fund	Police Pension Fund	OPEB Trust Fund	Total Pension and OPEB Trust Funds
ASSETS					
Cash and cash equivalents	$ 311,767	$ 142,723	$ 465,027	$ 51,786	$ 971,303
Investments					
Domestic equity mutual funds	4,680,655	1,765,102	7,444,753	1,095,872	14,986,382
International equity mutual funds	1,114,870	427,659	1,770,079	258,315	3,570,923
Fixed income mutual funds	1,749,708	670,714	2,787,443	405,892	5,613,757
Real estate mutual funds	137,036	50,519	214,934	31,482	433,971
Due from Township	-	-	-	-	-
TOTAL ASSETS	$ 7,994,036	$ 3,056,717	$ 12,682,236	$ 1,843,347	$ 25,576,336
NET POSITION					
Restricted for pensions and other post-employment benefits	$ 7,994,036	$ 3,056,717	$ 12,682,236	$ 1,843,347	$ 25,576,336

NOTE L - COMBINING SCHEDULES OF FIDUCIARY FUNDS (Continued)

The following is a combining schedule of changes in fiduciary net position for the Pension Trust Funds:

	Pension Trust Funds				Total
	Non-Uniformed Pension Fund	Firefighter Pension Fund	Police Pension Fund	OPEB Trust Fund	Pension and OPEB Trust Funds
ADDITIONS					
Contributions					
Member contributions	$ 57,985	$ 41,683	$ 137,162	$ -	$ 236,830
Employer contributions	392,050	174,500	535,400	356,593	1,458,543
TOTAL CONTRIBUTIONS	450,035	216,183	672,562	356,593	1,695,373
Investment earnings					
Dividends	299,434	111,716	471,816	66,960	949,926
Net decrease in the fair value of investments	691,892	268,451	1,097,995	184,322	2,242,660
TOTAL INVESTMENT EARNINGS	991,326	380,167	1,569,811	251,282	3,192,586
Less investment expense	(15,934)	(5,845)	(24,906)	-	(46,685)
INVESTMENT EARNINGS, net	975,392	374,322	1,544,905	251,282	3,145,901
TOTAL ADDITIONS	1,425,427	590,505	2,217,467	607,875	4,841,274
DEDUCTIONS					
Benefits	513,642	41,830	478,825	356,593	1,390,890
Administrative expense	-	5,039	-	3,640	8,679
TOTAL DEDUCTIONS	513,642	46,869	478,825	360,233	1,399,569
CHANGE IN NET POSITION	911,785	543,636	1,738,642	247,642	3,441,705
NET POSITION HELD IN TRUST AT BEGINNING OF YEAR	7,082,251	2,513,081	10,943,594	1,595,705	22,134,631
NET POSITION HELD IN TRUST AT END OF YEAR	$ 7,994,036	$ 3,056,717	$ 12,682,236	$ 1,843,347	$ 25,576,336

NOTE M - EXCESS OF EXPENDITURES OVER APPROPRIATIONS

The General Fund incurred expenditures in excess of appropriations in the following amounts for the year ended December 31, 2020:

General government - tax collection	$ 57,029
General government -municipal buildings	12,731
Public safety - fire protection	6,951
Public safety - planning and zoning	58,625

The excess expenditures above were covered by budgeted expenses exceeding incurred expenditures in other expense categories.

NOTE N - RISK MANAGEMENT

The Township is exposed to various risks of loss related to tort; theft of, damage to, and destruction of assets; errors and omission injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs. There were no significant reductions in insurance coverages of the 2020 year. Settlement amounts have not exceeded insurance coverage for the current year or the three prior years.

NOTE O - GUARANTEE OF FIRE COMPANY DEBT

During 2014, the Township guaranteed a $4,000,000 loan made to the East Whiteland Township Volunteer Fire Association dated May 6, 2014 with a maturity date of May 6, 2042. As of December 31, 2020, the Township has determined that there is currently no evidence that the Association will default on its loan, and therefore, no liability is reflected in the financial statements.

NOTE P - RISKS AND UNCERTAINTIES

On March 11, 2020 the World Health Organization declared the novel coronavirus ("COVID-19") outbreak a pandemic which has impacted the global economy. Although no significant financial impact has occurred thus far, the COVID-19 pandemic is still on-going and the duration and extent of the related financial impact on the Borough's net position and statement of activities is uncertain and cannot be reasonably estimated at this time.

NOTE Q- SUBSEQUENT EVENT

In November 2020, the Board of Supervisors awarded a bid to Aqua for a proposed sale of the sewer system for $55 million. Due diligence on the proposed sale continues. If successful, it is expected that settlement will occur around January 2022.

REQUIRED SUPPLEMENTARY INFORMATION

EAST WHITELAND TOWNSHIP
SCHEDULE OF REVENUES AND OTHER FINANCING SOURCES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2020

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
REVENUES				
Taxes				
Real estate taxes	$ 755,820	$ 755,820	$ 766,497	$ 10,677
Transfer taxes	1,000,000	1,000,000	1,098,937	98,937
Earned income taxes	9,050,000	9,050,000	10,056,315	1,006,315
Local services taxes	1,350,000	1,350,000	1,312,250	(37,750)
TOTAL TAXES	12,155,820	12,155,820	13,233,999	1,078,179
Fees, licenses and permits				
Building	1,000,000	1,000,000	1,171,131	171,131
Zoning	24,600	24,600	29,750	5,150
Electrical	120,000	120,000	176,654	56,654
Plumbing	61,000	61,000	92,918	31,918
Street	10,000	10,000	7,185	(2,815)
Mechanical	100,000	100,000	160,829	60,829
Subdivision and land	16,000	16,000	13,981	(2,019)
Occupancy	20,000	20,000	17,460	(2,540)
Other	23,700	23,700	28,143	4,443
Cable television franchise fees	230,000	230,000	213,163	(16,837)
TOTAL FEES, LICENSES AND PERMITS	1,605,300	1,605,300	1,911,214	305,914
Intergovernmental revenues				
Public utility realty tax	9,500	9,500	12,765	3,265
State pension aid	410,000	410,000	433,298	23,298
Other grants	136,687	136,687	98,941	(37,746)
TOTAL INTERGOVERNMENTAL REVENUES	556,187	556,187	545,004	(11,183)
Fines and forfeitures				
Police	42,000	42,000	26,688	(15,312)
Code	25,000	25,000	16,947	(8,053)
TOTAL FINES AND FORFEITURES	67,000	67,000	43,635	(23,365)
Charges for services				
Police services	118,410	118,410	27,035	(91,375)
Culture and recreation	75,500	75,500	5,380	(70,120)
TOTAL CHARGES FOR SERVICES	193,910	193,910	32,415	(161,495)
Other				
Investment income and rent	35,500	35,500	26,699	(8,801)
Miscellaneous	18,000	18,000	41,429	23,429
TOTAL OTHER	53,500	53,500	68,128	14,628
TOTAL REVENUES	14,631,717	14,631,717	15,834,395	1,202,678
OTHER FINANCING SOURCES				
Transfers in	168,345	168,345	168,345	-
TOTAL REVENUES AND OTHER FINANCING SOURCES	$ 14,800,062	$ 14,800,062	$ 16,002,740	$ 1,202,678

EAST WHITELAND TOWNSHIP

SCHEDULE OF FUNCTIONAL EXPENDITURES BY
ACTIVITIES AND OTHER FINANCING USES
GENERAL FUND
YEAR ENDED DECEMBER 31, 2020

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
EXPENDITURES				
General government				
Administration	$ 903,617	$ 903,617	$ 756,238	$ (147,379)
Finance	325,170	325,170	231,415	(93,755)
Tax collection	151,240	151,240	208,269	57,029
Solicitor	242,000	242,000	211,471	(30,529)
Engineering services	134,400	134,400	91,461	(42,939)
Municipal buildings	77,650	77,650	90,381	12,731
TOTAL GENERAL GOVERNMENT	1,834,077	1,834,077	1,589,235	(244,842)
Public safety				
Police	5,932,342	5,932,342	5,214,764	(717,578)
Fire protection	2,397,728	2,397,728	2,404,679	6,951
Code enforcement	988,027	988,027	719,144	(268,883)
Planning and zoning	439,116	439,116	497,741	58,625
Emergency management	4,750	4,750	1,125	(3,625)
TOTAL PUBLIC SAFETY	9,761,963	9,761,963	8,837,453	(924,510)
Public works - sanitation	25,000	25,000	20,874	(4,126)
Public works - highways and streets				
General services	1,292,024	1,292,024	1,156,326	(135,698)
Winter maintenance	159,450	159,450	7,948	(151,502)
Traffic signals	99,077	99,077	63,295	(35,782)
Street lighting	27,000	27,000	22,080	(4,920)
Road maintenance and repair	191,500	191,500	148,617	(42,883)
TOTAL PUBLIC WORKS - HIGHWAYS AND STREETS	1,769,051	1,769,051	1,398,266	(370,785)
Culture and recreation	185,900	185,900	83,479	(102,421)
Community development	2,700	2,700	430	(2,270)
Other	134,000	134,000	23,549	(110,451)
Debt service	511,130	511,130	510,008	(1,122)
TOTAL EXPENDITURES	14,223,821	14,223,821	12,463,294	(1,760,527)
OTHER FINANCING USES				
Transfers out	-	-	2,106,134	2,106,134
TOTAL EXPENDITURES AND OTHER FINANCING USES	$ 14,223,821	$ 14,223,821	$ 14,569,428	$ 345,607

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET POLICE PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY							
Service cost	$ 358,285	$ 341,224	$ 262,265	$ 249,776	$ 199,542	$ 190,040	$ 197,954
Interest	1,053,344	991,401	915,581	863,636	783,495	748,819	736,646
Changes of benefit terms	-	-	-	-	-	-	-
Differences between expected and actual experience	-	(92,874)	-	84,223	-	(303,433)	-
Changes of assumptions	-	935,117	-	340,163	-	-	-
Benefit payments	(473,585)	(551,696)	(438,563)	(673,099)	(372,805)	(361,184)	(580,995)
NET CHANGE IN TOTAL PENSION LIABILITY	938,044	1,623,172	739,283	864,699	610,232	274,242	353,605
TOTAL PENSION LIABILITY, BEGINNING	13,765,847	12,142,675	11,403,392	10,538,693	9,928,461	9,654,219	9,300,614
TOTAL PENSION LIABILITY, ENDING (a)	$ 14,703,891	$ 13,765,847	$ 12,142,675	$ 11,403,392	$ 10,538,693	$ 9,928,461	$ 9,654,219
PLAN FIDUCIARY NET POSITION							
Contributions							
Employer	$ 535,400	$ 504,774	$ 304,132	$ 298,180	$ 353,111	$ 341,597	$ 232,636
Member	137,161	140,354	114,562	113,766	116,771	111,068	98,961
Net investment income (loss)	1,544,906	1,962,030	(799,494)	1,280,701	599,374	(55,653)	501,064
Benefit payments, including refunds of member contributions	(473,585)	(551,696)	(438,563)	(673,099)	(372,805)	(361,184)	(580,995)
Administrative expense	(5,240)	(9,730)	(9,380)	(9,550)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	1,738,642	2,045,732	(828,743)	1,009,998	696,451	35,828	251,666
Plan fiduciary net position, beginning	10,943,594	8,897,862	9,726,605	8,716,607	8,020,156	7,984,328	7,732,662
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 12,682,236	$ 10,943,594	$ 8,897,862	$ 9,726,605	$ 8,716,607	$ 8,020,156	$ 7,984,328
NET PENSION LIABILITY, ENDING (a)-(b)	$ 2,021,655	$ 2,822,253	$ 3,244,813	$ 1,676,787	$ 1,822,086	$ 1,908,305	$ 1,669,891
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	86.25%	79.50%	73.28%	85.30%	82.71%	80.78%	82.70%
COVERED PAYROLL	$ 2,770,092	$ 2,617,694	$ 2,220,748	$ 2,376,418	$ 2,181,320	$ 1,932,369	$ 1,739,660
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	72.98%	107.81%	146.11%	70.56%	83.53%	98.75%	95.99%

NOTES TO SCHEDULE

Changes in assumptions: In 2019 the mortality rates were updated to the PubS-2010 mortality tables, and the investment rate of return was revised to 7.5% from 8.0%. In 2017 the mortality rates were based on the IRS 2017 Static Combined Table for Small Plans. In prior years, the mortality rates were based on the RP-2000 Table for Males or Females.

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF POLICE PENSION PLAN CONTRIBUTIONS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 535,400	$ 504,774	$ 304,132	$ 298,180	$ 353,111	$ 341,597	$ 232,636
Contributions in relation to the actuarially determined contribution	535,400	504,774	304,132	298,180	353,111	341,597	232,636
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 2,770,092	$ 2,617,694	$ 2,220,748	$ 2,376,418	$ 2,181,320	$ 1,932,369	$ 1,739,660
Contribution as a percentage of covered payroll	19.33%	19.28%	13.70%	12.55%	16.19%	17.68%	13.37%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2020 and 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	9 years	10 years	12 years	13 years
Asset valuation method	Fair	Fair	Fair	Smoothing
Salary increases	5%	5%	5%	5%
Investment rate of return	8%	8%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	None
Mortality	IRS 2017 Static Combined	RP2000	RP2000	RRB92
Retirement age	50	50	50	50
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF POLICE PENSION PLAN
INVESTMENT RETURNS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	14.09%	22.26%	-8.30%	14.98%	7.76%	-0.27%	7.28%

NOTES TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET NON-UNIFORMED PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY							
Service cost	$ 173,753	$ 166,271	$ 204,475	$ 195,670	$ 222,208	$ 212,639	$ 200,683
Interest	605,800	586,645	580,830	535,962	464,896	436,841	408,335
Changes of benefit terms	-	-	-	-	-	206,882	-
Differences between expected and actual experience	-	(215,561)	-	650,497	-	(97,094)	-
Changes of assumptions	-	361,638	-	-	-	195,578	-
Benefit payments	(505,802)	(432,651)	(495,760)	(527,814)	(235,630)	(222,241)	(189,726)
NET CHANGE IN TOTAL PENSION LIABILITY	273,751	466,342	289,545	854,315	451,474	732,605	419,292
TOTAL PENSION LIABILITY, BEGINNING	8,211,938	7,745,596	7,456,051	6,601,736	6,150,262	5,417,657	4,998,365
TOTAL PENSION LIABILITY, ENDING (a)	$ 8,485,689	$ 8,211,938	$ 7,745,596	$ 7,456,051	$ 6,601,736	$ 6,150,262	$ 5,417,657
PLAN FIDUCIARY NET POSITION							
Contributions							
Employer	$ 392,050	$ 394,490	$ 220,482	$ 231,309	$ 344,313	$ 343,163	$ 372,463
Member	57,984	70,595	74,810	77,137	94,056	84,401	78,161
Net investment income	975,393	1,276,642	(493,932)	928,341	374,989	(55,752)	276,723
Benefit payments, including refunds of member contributions	(505,802)	(432,651)	(495,760)	(527,814)	(235,630)	(222,241)	(189,726)
Administrative expense	(7,840)	(10,925)	(13,425)	(9,550)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	911,785	1,298,151	(707,825)	699,423	577,728	149,571	537,621
Plan fiduciary net position, beginning	7,082,251	5,784,100	6,491,925	5,792,502	5,214,774	5,065,203	4,527,582
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 7,994,036	$ 7,082,251	$ 5,784,100	$ 6,491,925	$ 5,792,502	$ 5,214,774	$ 5,065,203
NET PENSION LIABILITY, ENDING (a)-(b)	$ 491,653	$ 1,129,687	$ 1,961,496	$ 964,126	$ 809,234	$ 935,488	$ 352,454
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	94.21%	86.24%	74.68%	87.07%	87.74%	84.79%	93.49%
COVERED PAYROLL	$ 1,081,629	$ 1,229,587	$ 1,315,976	$ 1,402,439	$ 1,560,708	$ 1,681,050	$ 1,529,999
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	45 45%	91 88%	149 05%	68.75%	51 85%	55.65%	23.04%

NOTES TO SCHEDULE

Changes of assumptions: In 2019 the mortality rates were updated to the PubS-2010 mortality tables from the IRS 2017 Static Combined Table for Small Plans In 2015, amounts reported as changes of assumptions resulted from a change in projected salary from 5% to 4.5%, and the investment rate of return used was changed from 8% to 7 5% to more closely estimate future experience.

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available

EAST WHITELAND TOWNSHIP
SCHEDULE OF NON-UNIFORMED PENSION PLAN CONTRIBUTIONS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 392,500	$ 394,490	$ 220,482	$ 231,309	$ 344,313	$ 343,163	$ 372,463
Contributions in relation to the actuarially determined contribution	392,500	394,490	220,482	231,309	344,313	343,163	372,463
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 1,229,587	$ 1,229,587	$ 1,315,976	$ 1,402,439	$ 1,560,708	$ 1,681,050	$ 1,529,999
Contribution as a percentage of covered payroll	31.92%	32.08%	16.75%	16.49%	22.06%	20.41%	24.34%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2020 and 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	7 years	4 years	7 years	8 years
Asset valuation method	Fair	Fair	Fair	Smoothing
Salary increases	4.5%	4.5%	5%	6%
Investment rate of return	7.5%	7.5%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	W65
Mortality	IRS 2017 Static Combined Table	RP2000	RP2000	GAM71
Retirement age	64	64	65	63
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF NON-UNIFORMED PENSION PLAN INVESTMENT RETURNS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	13.92%	22.27%	-7.82%	16.33%	7.85%	-0.71%	6.58%

NOTES TO SCHEDULES

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET FIREFIGHTER PENSION PLAN LIABILITY AND RELATED RATIOS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY							
Service cost	$ 113,884	$ 108,980	$ 108,805	$ 104,120	$ 77,718	$ 74,371	$ 63,208
Interest	251,222	227,986	196,448	175,151	141,038	125,776	100,074
Differences between expected and actual experience	-	49,237	-	121,576	-	172,510	-
Changes of assumptions	-	70,248	-	88,108	-	79,132	-
Benefit payments	(41,830)	-	-	-	-	-	-
NET CHANGE IN TOTAL PENSION LIABILITY	323,276	456,451	305,253	488,955	218,756	451,789	163,277
TOTAL PENSION LIABILITY, BEGINNING	3,272,205	2,815,754	2,510,501	2,021,546	1,802,790	1,351,001	1,187,724
TOTAL PENSION LIABILITY, ENDING (a)	$ 3,595,481	$ 3,272,205	$ 2,815,754	$ 2,510,501	$ 2,021,546	$ 1,802,790	$ 1,351,001
PLAN FIDUCIARY NET POSITION							
Contributions							
Employer	$ 174,500	$ 158,964	$ 105,280	$ 106,494	$ 85,040	$ 75,802	$ 85,251
Member	41,683	47,172	47,067	41,742	39,710	40,175	31,575
Net investment income (loss)	373,323	431,042	(158,677)	249,967	102,715	(13,348)	62,845
Benefit payments	(41,830)	-	-	-	-	-	-
Administrative expense	(5,040)	(9,970)	(5,920)	(6,575)	-	-	-
NET CHANGE IN PLAN FIDUCIARY NET POSITION	542,636	627,208	(12,250)	391,628	227,465	102,629	179,671
Plan fiduciary net position, beginning	2,513,081	1,885,873	1,898,123	1,506,495	1,279,030	1,176,401	996,730
PLAN FIDUCIARY NET, POSITION ENDING (b)	$ 3,055,717	$ 2,513,081	$ 1,885,873	$ 1,898,123	$ 1,506,495	$ 1,279,030	$ 1,176,401
NET PENSION LIABILITY, ENDING (a)-(b)	$ 539,764	$ 759,124	$ 929,881	$ 612,378	$ 515,051	$ 523,760	$ 174,600
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	84.99%	76.80%	66.98%	75.61%	74.52%	70.95%	87.08%
COVERED PAYROLL	$ 781,541	$ 865,531	$ 945,635	$ 835,655	$ 801,110	$ 619,306	$ 584,467
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	69.06%	87.71%	98.33%	73.28%	64.29%	84.57%	29.87%

NOTES TO SCHEDULE

Changes of assumptions. In 2019 the mortality rates were updated to the PubS-2010 mortality tables from the IRS 2017 Static Combined Table for Small Plans.In 2017 the mortality rates were based on the IRS 2017 Static Combined Table for Small Plans. In prior years, the mortality rates were based on the RP-2000 Table for Males or Females. In 2015, amounts reported as changes of assumptions resulted from a change in projected salary from 5% to 4.5%, and the investment rate of return used was changed from 8% to 7.5% to more closely estimate future experience.

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF FIREFIGHTER PENSION PLAN CONTRIBUTIONS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 174,500	$ 158,964	$ 105,280	$ 106,494	$ 85,040	$ 75,802	$ 85,251
Contributions in relation to the actuarially determined contribution	174,500	158,964	105,280	106,494	85,040	75,802	85,251
Contribution (excess) deficiency	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 781,541	$ 865,531	$ 945,635	$ 835,655	$ 801,110	$ 619,306	$ 584,487
Contribution as a percentage of covered payroll	22.33%	18.37%	11.13%	12.74%	10.62%	12.24%	14.59%

NOTES TO SCHEDULE

Actuarially determined contribution rates are calculated based on the plan's most recent available Act 205 actuarial valuation report. The January 1, 2017 actuarial valuation report was utilized for the 2020 and 2019 Minimum Municipal Obligation calculation. The January 1, 2015 actuarial valuation report was utilized for the 2018 and 2017 Minimum Municipal Obligation calculation. The January 1, 2013 actuarial valuation report was utilized for the 2016 and 2015 Minimum Municipal Obligation calculation. The January 1, 2011 actuarial valuation report was utilized for the 2014 and 2013 Minimum Municipal Obligation calculations. The following actuarial methods and assumptions were used to determine contribution rates.

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/17	1/1/15	1/1/13	1/1/11
Actuarial cost method	Entry age	Entry age	Entry age	Entry age
Amortization method	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period	11 years	12 years	12 years	14 years
Asset valuation method	Fair	Fair	Fair	Smoothing
Salary increases	4.5%	4.5%	5%	6%
Investment rate of return	7.5%	7.5%	8%	8%
Disability rates	None	None	None	None
Termination rates	W65	W65	W65	W65
Mortality	IRS 2017 Static Combined Table	RP2000	RP2000	GAM71
Retirement age	65	65	65	63
Cost-of-living adjustments	None	None	None	None

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF FIREFIGHTER PENSION PLAN
INVESTMENT RETURNS
LAST SEVEN FISCAL YEARS

	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	14.53%	21.94%	-8.10%	16.09%	7.83%	-0.71%	6.58%

NOTE TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF CHANGES IN THE NET OPEB PLAN LIABILITY AND RELATED RATIOS
LAST FOUR FISCAL YEARS

	2020	2019	2018	2017
TOTAL OPEB LIABILITY				
Service cost	$ 588,144	$ 636,442	$ 666,868	$ 635,160
Interest	631,788	543,836	502,729	472,435
Changes of benefit terms	-	(464,687)	-	-
Differences between expected and actual experience	-	31,275	-	-
Changes of assumptions	4,333,351	1,223,746	(720,439)	-
Benefit payments	(356,593)	(281,412)	(335,508)	(227,399)
NET CHANGE IN TOTAL OPEB LIABILITY	5,196,690	1,689,200	113,650	880,196
TOTAL OPEB LIABILITY, BEGINNING	15,479,099	13,789,899	13,676,249	12,796,053
TOTAL OPEB LIABILITY, ENDING (a)	$ 20,675,789	$ 15,479,099	$ 13,789,899	$ 13,676,249
PLAN FIDUCIARY NET POSITION				
Contributions				
Employer	$ 356,593	$ 381,412	$ 12,396	$ 227,399
Net investment income	251,283	300,991	(143,596)	158,441
Benefit payments, including refunds of member contributions	(356,593)	(281,412)	(335,508)	(227,399)
Administrative expense	(3,641)	(3,668)	(4,073)	(4,607)
NET CHANGE IN PLAN FIDUCIARY NET POSITION	247,642	397,323	(470,781)	153,834
Plan fiduciary net position, beginning	1,595,705	1,198,382	1,669,163	1,515,329
PLAN FIDUCIARY NET POSITION, ENDING (b)	$ 1,843,347	$ 1,595,705	$ 1,198,382	$ 1,669,163
NET OPEB LIABILITY, ENDING (a)-(b)	$ 18,832,442	$ 13,883,394	$ 12,591,517	$ 12,007,086
PLAN FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL OPEB LIABILITY	8.92%	10.31%	8.69%	12.20%
COVERED PAYROLL	$ 4,729,369	$ 4,729,369	$ 4,679,117	$ 4,679,117
NET OPEB LIABILITY AS A PERCENTAGE OF COVERED PAYROLL	398.20%	293.56%	269.10%	256.61%

NOTES TO SCHEDULE

Changes in assumptions: In 2020 the discount rate changed from 3.98% to 2.44%. In 2019 the discount rate changed from 3.81% to 3.98%. The trend assumption was updated. The mortality table was changed from the IRS 2017 Small Plan Combined Static Mortality table to the PubS-2010 mortality table for Police and Fire and the PubG-2010 mortality table for Non-Uniformed employees. In 2018 the discount rate was changed from 3.55% to 3.81%.

Changes in benefit terms: In 2019, police officers retiring after 9/24/2019 will enroll in the active health plan. Also, Non-Uniformed Union employees who do not have 10 years of service as of 12/31/2022 will not receive post 65 benefits.

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF OPEB PLAN
CONTRIBUTIONS
LAST FOUR FISCAL YEARS

	2020	2019	2018	2017
Actuarially determined contribution	$ 356,593	$ 281,412	$ 1,068,349	$ 1,068,349
Contributions in relation to the actuarially determined contribution	356,593	381,412	12,396	227,399
Contribution (excess) deficiency	$ -	$ (100,000)	$ 1,055,953	$ 840,950
Covered payroll	$ 4,729,369	$ 4,729,369	$ 4,679,117	$ 4,679,117
Contribution as a percentage of covered payroll	7.54%	8.06%	0.26%	4.86%

NOTES TO SCHEDULE

Methods and assumptions used to determine contribution rates:

Actuarial valuation date	1/1/19
Actuarial cost method	Entry age
Amortization method	Level dollar
Remaining amortization period	26 years
Asset valuation method	Fair value
Salary increases	4.5% to 5.0%
Investment rate of return	2.44%
Mortality	PubS-2010 mortality table for Police and Fire PubG-2010 mortality table for Non-Uniformed
Healthcare cost trent rates	5.5% decreasing to 4.0%

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

EAST WHITELAND TOWNSHIP
SCHEDULE OF OPEB PLAN
INVESTMENT RETURNS
LAST FOUR FISCAL YEARS

	2020	2019	2018	2017
Annual money-weighted rate of return, net of investment expense	15.52%	23.39%	-8.98%	10.39%

NOTE TO SCHEDULE

This schedule is intended to show information for ten years, all available information is displayed. Additional information will be displayed as it becomes available.

SUPPLEMENTARY INFORMATION SECTION

Special Revenue Funds are used to account for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes as follows:

- The *Street Light Fund* is used to account for street light rents in the three developments that provide street lights.
- The *Park Development Fund* is used to account for park development projects.
- The *State Fund* is used to account for state revenues required to be used primarily for building and improving local roads and highways, including snow removal costs.

Capital Projects Funds are used to account for the proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes as follows:

- The *Transportation Improvement Fund* is used to account for Act 209 Transportation Impact Fees that are collected by the Township and are used for transportation improvement projects.

EAST WHITELAND TOWNSHIP
COMBINING BALANCE SHEET
OTHER GOVERNMENTAL FUNDS
DECEMBER 31, 2020

	Special Revenue Funds			Capital Projects Fund	
	Street Light Fund	Park Development Fund	State Fund	Transportation Improvement Fund	Total Other Governmental Funds
ASSETS					
Cash and cash equivalents	$ 44,255	$ 1,677,273	$ 375,881	$ 620,978	$ 2,718,387
Receivables	619	-	-	-	619
Due from other funds	447	149,600	-	-	150,047
TOTAL ASSETS	$ 45,321	$ 1,826,873	$ 375,881	$ 620,978	$ 2,869,053
LIABILITIES AND FUND BALANCES					
LIABILITIES					
Accounts payable	$ -	$ 4,721	$ -	$ -	$ 4,721
Due to other funds	2,377	247,817	326,767	-	576,961
TOTAL LIABILITIES	2,377	252,538	326,767	-	581,682
FUND BALANCES					
Restricted					
Highway and street projects	-	-	49,114	620,978	670,092
Assigned					
Highway and street projects	42,944	-	-	-	42,944
Park development	-	1,574,335	-	-	1,574,335
TOTAL FUND BALANCES	42,944	1,574,335	49,114	620,978	2,287,371
TOTAL LIABILITIES AND FUND BALANCES	$ 45,321	$ 1,826,873	$ 375,881	$ 620,978	$ 2,869,053

EAST WHITELAND TOWNSHIP

COMBINING SCHEDULE OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
OTHER GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2020

	Special Revenue Funds			Capital Projects Fund	
	Street Light Fund	Park Development Fund	State Fund	Transportation Improvement Fund	Total Other Governmental Funds
REVENUES					
Investment income and rent	$ -	$ 3,183	$ 38	$ 396	$ 3,617
Intergovernmental revenues	-	100,000	363,764	-	463,764
Charges for services	-	-	-	8,000	8,000
Other	10,689	773,623	-	-	784,312
TOTAL REVENUES	10,689	876,806	363,802	8,396	1,259,693
EXPENDITURES					
Public works - highways and streets	6,524	-	326,767	-	333,291
Culture and recreation	-	358,208	-	-	358,208
TOTAL EXPENDITURES	6,524	358,208	326,767	-	691,499
EXCESS OF REVENUES OVER EXPENDITURES	4,165	518,598	37,035	8,396	568,194
FUND BALANCES AT BEGINNING OF YEAR	38,779	1,055,737	12,079	612,582	1,719,177
FUND BALANCES BALANCES AT END OF YEAR	$ 42,944	$ 1,574,335	$ 49,114	$ 620,978	$ 2,287,371

EAST WHITELAND TOWNSHIP
BUDGETARY COMPARISON SCHEDULE
CAPITAL IMPROVEMENT FUND
YEAR ENDED DECEMBER 31, 2020

	Budgeted Amounts		Actual	Over (Under)
	Original	Final	Amounts	Budget
REVENUES				
Interest income	$ 30,000	$ 30,000	$ 14,585	$ (15,415)
Stormwater Remediation Project	292,000	292,000	-	(292,000)
Other	403,400	403,400	57,945	(345,455)
TOTAL REVENUES	725,400	725,400	72,530	(652,870)
EXPENDITURES				
General government				
Building and improvements	212,500	212,500	26,592	(185,908)
Furniture and office equipment	135,000	135,000	57,260	(77,740)
TOTAL GENERAL GOVERNMENT	347,500	347,500	83,852	(263,648)
Public safety				
Fire	12,000	12,000	-	(12,000)
Other expenses	338,200	338,200	86,595	(251,605)
TOTAL PUBLIC SAFETY	350,200	350,200	86,595	(263,605)
Public works - highways and streets				
Repairs and maintenance	986,000	986,000	22,453	(963,547)
Culture and recreation				
Capital construction	600,000	600,000	107,840	(492,160)
Community development				
Repairs and maintenance	160,000	160,000	47,472	(112,528)
TOTAL EXPENDITURES	2,443,700	2,443,700	348,212	(2,095,488)
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	(1,718,300)	(1,718,300)	(275,682)	1,442,618
OTHER FINANCING SOURCES				
Proceeds from sale of capital assets	-	5,000	32,619	27,619
Interfund transfers in, General Fund	-	-	2,106,134	2,106,134
TOTAL OTHER FINANCING SOURCES	-	5,000	2,138,753	2,133,753
NET CHANGE IN FUND BALANCE	(1,718,300)	(1,713,300)	1,863,071	3,576,371
FUND BALANCE AT BEGINNING OF YEAR	8,726,023	8,726,023	8,726,023	-
FUND BALANCE AT END OF YEAR	$ 7,007,723	$ 7,012,723	$ 10,589,094	$ 3,576,371

EAST WHITELAND TOWNSHIP

SCHEDULE OF REVENUES, EXPENDITURES AND CHANGES IN
FUND BALANCES -- BUDGET AND ACTUAL
NONMAJOR FUNDS
YEAR ENDED DECEMBER 31, 2020

	Street Light Fund	
	Budget	Actual
REVENUES		
Interest income	$ -	$ -
Intergovernmental revenues	-	-
Charges for services	-	-
Other	10,713	10,689
TOTAL REVENUES	10,713	10,689
EXPENDITURES		
Public works		
Highways and streets	-	-
Street lighting	7,500	6,524
Culture and recreation		
Parks development	-	-
TOTAL EXPENDITURES	7,500	6,524
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	3,213	4,165
FUND BALANCES AT BEGINNING OF YEAR	38,779	38,779
FUND BALANCES AT END OF YEAR	$ 41,992	$ 42,944

Park Development Fund		State Fund		Transportation Improvement Fund	
Budget	Actual	Budget	Actual	Budget	Actual
$ 6,000	$ 3,183	$ 850	$ 38	$ 3,000	$ 396
614,080	100,000	356,800	363,764	-	-
-	-	-	-	125,000	8,000
150,000	773,623	-	-	-	-
770,080	876,806	357,650	363,802	128,000	8,396
-	-	357,000	326,767	-	-
-	-	-	-	-	-
1,523,000	358,208	-	-	-	-
1,523,000	358,208	357,000	326,767	-	-
(752,920)	518,598	650	37,035	128,000	8,396
1,055,737	1,055,737	12,079	12,079	612,582	612,582
$ 302,817	$ 1,574,335	$ 12,729	$ 49,114	$ 740,582	$ 620,978

STATISTICAL SECTION

STATISTICAL SECTION
(Unaudited)

This part of East Whiteland Township's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, notes disclosures and required supplementary information says about the Township's overall financial health.

Contents

Financial Trends

These schedules contain trend information to help the reader understand how the Township's financial performance and well-being have changed over time.

Revenue Capacity

These schedules contain information to help the reader assess the Township's most significant local revenues sources, the earned income tax, and property tax.

Debt Capacity

These schedules present information to help the reader assess the affordability of the Township's current levels of outstanding debt and the Township's ability to issue additional debt in the future.

Demographic and Economic Information

These schedules offer demographic and economic indicators to help the reader understand the environment within which the Township's financial activities take place.

Operation Information

These schedules contain service and miscellaneous data to help the reader understand how the information in the Township's financial report relates to the service the Township provides and the activities it performs.

Sources: Unless otherwise noted, the information in these schedules is derived from the Annual Financial Reports for the relevant year. The Township implemented GASB Statement No. 34 for fiscal year ended December 31, 2003; schedules presenting government-wide information include information beginning in that year.

Table 1
EAST WHITELAND TOWNSHIP
Net Position by Components of Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Governmental Activities:										
Net Investment in Capital Assets	9,173,011	9,959,378	10,385,140	10,718,379	12,178,959	13,890,258	15,412,589	16,930,528	18,660,672	20,461,105
Restricted	670,092	624,661	407,075	1,164	137	126	-	-	-	-
Unrestricted	3,946,047	1,154,205	(1,528,701)	3,806,634	3,514,948	3,214,797	4,996,470	4,357,889	4,297,548	3,723,264
Total Governmental Activities Net Position	**13,789,150**	**11,738,244**	**9,263,514**	**14,526,177**	**15,694,044**	**17,105,181**	**20,409,059**	**21,288,417**	**22,958,220**	**24,184,369**
Business-type Activities:										
Net Investment in Capital Assets	18,504,711	18,217,920	17,400,739	14,968,372	13,970,651	12,780,609	10,549,269	8,310,714	10,084,680	8,724,618
Restricted	-	-	-	-	-	-	-	201,785	-	-
Unrestricted	8,278,462	8,229,857	7,874,995	6,311,041	6,235,006	6,437,604	9,025,213	9,854,928	7,533,910	8,466,442
Total Business-type Activities Net Position	**26,783,173**	**26,447,777**	**25,275,734**	**21,279,413**	**20,205,657**	**19,218,213**	**19,574,482**	**18,367,427**	**17,618,590**	**17,191,060**
Primary-type Activities:										
Net Investment in Capital Assets	27,677,722	28,177,298	27,785,879	25,686,751	26,149,610	26,670,867	25,961,858	25,241,242	28,745,352	29,185,723
Restricted	670,092	624,661	407,075	1,164	137	126	-	201,785	-	-
Unrestricted	12,224,509	9,384,062	6,346,294	10,117,675	9,749,954	9,652,401	14,021,683	14,212,817	11,831,458	12,189,706
Total Primary-type Activities Net Position	**40,572,323**	**38,186,021**	**34,539,248**	**35,805,590**	**35,899,701**	**36,323,394**	**39,983,541**	**39,655,844**	**40,576,810**	**41,375,429**

Source: East Whiteland Township Annual Financial Statements Statement of Net Position

Table 2

EAST WHITELAND TOWNSHIP
Changes in Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Expenses										
Governmental Activities:										
General Government	1,725,374	1,799,326	1,992,639	1,876,463	1,327,924	1,607,114	1,118,418	1,354,756	1,033,369	968,162
Public Safety	10,178,070	9,312,035	9,895,357	8,573,408	8,364,407	7,602,485	6,839,023	7,689,219	6,445,697	6,283,118
Public Works - Highways and Streets	2,929,672	3,244,902	3,314,877	3,295,339	3,570,145	3,410,649	1,836,437	1,622,598	1,355,881	1,432,080
Public Works - Sanitation	26,754	20,190	17,702	20,286	21,192	22,025	17,142	11,811	11,300	12,309
Culture,Recreation, Community Development	210,275	256,521	201,420	183,755	198,139	347,856	183,829	181,618	170,831	156,036
Other	47,902	-	6,947	4,719	207,028	88,740	-	-	-	-
Transfer to OPEB Fund	-	-	-	-	50,000	200,000	-	-	-	-
Depreciation, unallocated (2)	-	-	-	-	-	-	1,867,549	1,867,549	1,865,883	1,865,883
Debt Service	213,217	221,448	213,653	224,773	331,545	293,650	115,617	6,721	5,276	2,988
Total Governmental Activities	15,331,264	14,854,422	15,642,595	14,178,743	14,070,380	13,572,519	11,978,015	12,734,272	10,888,237	10,720,576
Business-Type Activities:										
Sewer Operating Expenses	3,783,298	3,848,023	3,126,206	3,552,541	3,225,860	2,967,808	2,576,276	2,206,189	2,187,312	2,268,037
Debt Service	543,356	561,324	578,450	607,118	605,904	614,607	245,853	402,040	270,177	409,174
Total Business-Type Activities:	4,326,654	4,409,347	3,704,656	4,159,659	3,831,764	3,582,415	2,822,129	2,608,229	2,457,489	2,677,211
Total Township Activities Expenses	**19,657,918**	**19,263,769**	**19,347,251**	**18,338,402**	**17,902,144**	**17,154,934**	**14,800,144**	**15,342,501**	**13,345,726**	**13,397,787**
Program Revenue										
Governmental Activities:										
Charges for Services:										
General Government (Franchise & Traffic Impact Fees)	221,163	429,891	633,591	233,935	226,810	274,126	205,824	196,525	184,730	180,825
Public Safety (Permits, Fines)	1,768,721	1,491,820	3,009,520	1,694,658	1,581,528	2,063,763	2,096,000	2,696,996	1,811,094	1,407,853
Parks and Recreation	5,380	73,882	41,703	42,435	63,986	47,611	49,310	51,933	49,404	46,544
Grants & Contributions& Intergovernment Aid	1,788,271	1,726,173	1,216,177	1,176,055	921,830	708,926	1,005,362	1,171,596	901,839	916,526
Total Governmental Activities Program Revenue	3,783,535	3,721,766	4,900,991	3,147,083	2,794,154	3,094,426	3,356,496	4,117,050	2,947,067	2,551,748
Business-Type Activities										
Sewer including Tapping Fees	4,327,245	4,745,887	5,115,886	5,000,977	4,833,908	3,269,721	3,770,849	2,517,448	2,675,907	2,670,297
Grants & Contributions	-	181,831	2,057,746	-	-	-	240,000	963,000	116,000	11,250
Total Business-Type Activities Program Revenue	4,327,245	4,927,718	7,173,632	5,000,977	4,833,908	3,269,721	4,010,849	3,480,448	2,791,907	2,681,547
Total Primary Government Program Revenues	**8,110,780**	**8,649,484**	**12,074,623**	**8,148,060**	**7,628,062**	**6,364,147**	**7,367,345**	**7,597,498**	**5,738,974**	**5,233,295**
Net (Expense)/Revenue										
Governmental Activities	(11,547,729)	(11,132,656)	(10,741,604)	(11,031,660)	(11,276,226)	(10,478,093)	(8,621,519)	(8,617,222)	(7,941,170)	(8,168,828)
Business-Type Activities	591	518,371	3,468,976	841,318	1,002,144	(312,694)	1,188,720	872,219	334,418	4,336
Total Primary Government Net Expense	(11,547,138)	(10,614,285)	(7,272,628)	(10,190,342)	(10,274,082)	(10,790,787)	(7,432,799)	(7,745,003)	(7,606,752)	(8,164,492)

Table 2

EAST WHITELAND TOWNSHIP
Changes in Net Position
Last Ten Fiscal Years (unaudited)
(accrual basis of accounting)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
General Revenues and Other Changes in Net Position										
Governmental Activities:										
Real Estate Taxes	775,205	757,124	729,661	671,762	642,400	617,549	591,379	597,985	569,554	579,844
Real Estate Transfer Tax	1,098,937	1,199,970	2,991,303	1,501,457	2,182,702	1,104,855	927,764	574,812	760,791	269,581
Earned Income Tax	10,056,315	9,741,890	6,520,525	6,121,771	5,143,306	6,084,879	5,014,880	4,693,510	4,397,004	3,844,129
Local Services Tax	1,312,250	1,322,836	1,262,897	1,273,571	1,277,561	1,396,149	1,074,886	1,004,423	919,549	843,809
Investment (interest, Rent)	44,901	118,032	55,487	49,713	45,936	40,328	24,098	24,134	25,477	31,393
Gain on Sale of Capital Assets	32,619	43,207	23,529	6,313	517,720	44,998	33,279	39,525	18,960	22,636
Miscellaneous	110,063	258,162	250,281	239,206	55,464	22,485	75,865	13,040	23,686	108,074
Transfers In/Out	168,345	166,165	166,320	-	-	-	-	-	-	-
Total Government Activities General Revenue and Transfers	13,598,635	13,607,386	12,000,003	9,863,793	9,865,089	9,311,243	7,742,151	6,947,429	6,715,021	5,699,466
Business-Type Activities										
Investment Income / Interest	42,081	137,057	27,696	19,510	15,300	16,342	18,335	24,090	25,664	33,029
Gain on Sale of Capital Assets	-	-	-	-	-	-	-	-	-	5,100
Miscellaneous	461,069	682,780	1,563,159	212,928	(30,000)	-	-	-	40,782	-
Transfers In/Out	(168,345)	(166,165)	(166,320)	-	-	-	-	-	-	-
Total Business Activities General Revenue and Transfers	334,805	653,672	1,424,535	232,438	(14,700)	16,342	18,335	24,090	66,446	38,129
Total Primary Government General Revenue	13,933,440	14,261,058	13,424,538	10,096,231	9,850,389	9,327,585	7,760,486	6,971,519	6,781,467	5,737,595
Total Change in Net Position										
Government Activities	2,050,906	2,474,730	1,258,399	(1,167,867)	(1,411,137)	(1,166,850)	(879,368)	(1,669,793)	(1,226,149)	(2,469,362)
Business-Type Activities	335,396	1,172,043	4,893,511	1,073,756	987,444	(296,352)	1,207,055	896,309	400,864	42,465
Total Primary Government	**2,386,302**	**3,646,773**	**6,151,910**	**(94,111)**	**(423,693)**	**(1,463,202)**	**327,687**	**(773,484)**	**(825,285)**	**(2,426,897)**

(1) Net (expense) revenue is the difference between expenses and program revenues of a function or program. It indicates the degree to which a function or program is supported with its own fees and program-specific grants versus its reliance upon funding from taxes and other general revenues. Numbers in parenthesis indicate that expenses were greater than program revenues and therefore general revenues were needed to finance that function or program. Numbers without parenthesis indicate that program revenues were more than sufficient to cover expenses.

(2)Prior to 2015, the depreciation was not allocated to the specific governmental activities in the statement of Activities source document.

Table 3

EAST WHITELAND TOWNSHIP
Fund Balances of Governmental Funds
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
General Fund:										
Restricted	-	-	-	-	-	-	-	-	-	-
Nonspendable, prepaid items	1,493	-	-	112,770	27,301	13,500	13,500	13,500	16,500	13,500
Committed	-	-	-	-	-	-	-	-	-	-
Assigned (1)	8,475,687	7,043,868	4,527,625	5,195,382	4,195,382	3,493,000	-	-	-	-
Unassigned	-	-	-	16,978	69,328	91,961	5,617,519	4,977,835	4,627,422	3,472,425
Total General Fund	**8,477,180**	**7,043,868**	**4,527,625**	**5,325,130**	**4,292,011**	**3,598,461**	**5,631,019**	**4,991,335**	**4,643,922**	**3,485,925**
All Other Governmental Funds:										
Restricted	670,092	624,661	407,075	1,164	2,405,350	4,053,513	9,280,202	2,424,480	2,207,508	2,229,752
Nonspendable	-	-	-	-	-	-	-	-	-	-
Committed	-	-	-	-	-	-	-	-	-	-
Assigned	12,206,373	9,820,539	8,943,125	5,314,079	2,833,450	2,097,467	336,332	343,008	340,457	352,829
Unassigned	-	-	-	-	-	-	-	-	-	-
Total All Other Governmental Funds	**12,876,465**	**10,445,200**	**9,350,200**	**5,315,243**	**5,238,800**	**6,150,980**	**9,616,534**	**2,767,488**	**2,547,965**	**2,582,581**
Total All Governmental Funds	**21,353,645**	**17,489,068**	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**

Compliance with GASB Statement No. 54

Table 4

EAST WHITELAND TOWNSHIP
Change in Fund Balances of Governmental Funds
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Revenues:										
Taxes	13,233,999	13,031,890	11,505,385	9,560,425	9,250,138	9,199,437	7,606,909	6,870,730	6,672,547	5,552,372
Fees, Licenses and Permits	1,911,214	1,573,482	3,023,954	1,645,013	1,534,651	1,879,454	205,824	196,525	185,230	181,025
Fines and Forfeitures	43,635	51,600	50,627	53,852	100,071	205,534	202,461	156,817	191,211	212,981
Interest Income & Rent	44,901	118,032	55,487	49,713	45,936	40,328	24,098	24,134	25,477	31,393
Intergovernmental Revenues	1,008,768	1,495,673	921,582	881,104	921,830	765,240	1,005,362	921,596	901,839	916,526
Charges for Services	40,415	370,511	585,716	250,161	221,102	244,198	1,942,849	2,592,112	1,668,787	1,241,216
Contributions	-	-	-	-	-	-	-	250,000	-	-
Other	883,686	488,662	569,393	552,616	31,556	22,485	75,865	13,039	23,686	108,074
Total Revenue	**17,166,618**	**17,129,850**	**16,712,144**	**12,992,884**	**12,105,284**	**12,356,676**	**11,063,368**	**11,024,953**	**9,668,777**	**8,243,587**
Expenditures:										
General Government	1,673,087	1,770,840	1,952,870	1,890,806	1,492,784	1,564,835	2,470,226	1,180,895	868,203	779,225
Public Safety	8,924,048	8,848,997	8,501,189	7,710,278	7,636,593	8,049,948	6,994,142	6,715,442	6,129,167	5,875,054
Public Works -Highways and Streets	1,754,010	2,055,201	2,395,320	1,790,706	2,658,923	7,223,148	1,852,181	1,473,067	1,494,120	1,418,626
Public Works - Sanitation	20,874	20,190	17,702	20,286	21,192	22,025	17,142	11,811	11,300	12,309
Parks and Recreation	597,429	520,528	284,986	256,683	387,821	310,976	148,832	134,265	137,551	198,296
Contributions to OPEB Trust Fund	-	-	-	-	50,000	200,000	150,000	1,000,000	-	-
Other	23,549	7,992	6,947	4,719	118,761	88,740	9,965	13,720	10,182	10,956
Capital Outlay	-	-	-	-	-	-	-	-	-	-
Debt Service:										
Principal	310,000	295,000	285,000	5,000	225,000	100,000	64,025	60,730	69,919	38,682
Interest and Other Charges	200,008	209,231	220,527	214,700	377,783	340,114	8,295	6,259	5,366	3,732
Total Expenditures	**13,503,005**	**13,727,979**	**13,664,541**	**11,893,178**	**12,968,857**	**17,899,786**	**11,714,808**	**10,596,189**	**8,725,808**	**8,336,880**
Excess (Deficiency) of Revenue over Expenditures:	**3,663,613**	**3,401,871**	**3,047,603**	**1,099,706**	**(863,573)**	**(5,543,110)**	**(651,440)**	**428,764**	**942,969**	**(93,293)**
Other Financing Sources (Uses):										
Proceeds from Long Term Financing		-	-	-	6,160,000	-	8,225,403	102,850	165,000	-
Payment to Refunded Bond Escrow Agent		-	-	-	(6,058,930)					
Proceeds from Sale of Capital Assets	32,619	43,207	23,529	6,313	517,720	44,998	33,279	39,525	18,960	22,636
Refund of Prior Year Revenue		-	-	-	-	-	(3,612)	(4,203)	(3,548)	(3,550)
Refund of Prior Year Expenditures										
Cost of Bond Issuance		-	-	-	(3,847)	-	(114,900)	-	-	-
Interfund Transfers In	2,274,479	1,156,866	4,712,740	247,245	1,221,730	3,287,948	412,730	394,948	248,487	325,935
Interfund Transfers Out	(2,106,134)	(990,701)	(4,546,420)	(243,702)	(1,191,730)	(3,287,948)	(412,730)	(394,948)	(248,487)	(325,935)
Total Other Financing Sources (Uses)	**200,964**	**209,372**	**189,849**	**9,856**	**644,943**	**44,998**	**8,140,170**	**138,172**	**180,412**	**19,086**
Net Change in Fund Balance:	**3,864,577**	**3,611,243**	**3,237,452**	**1,109,562**	**(218,630)**	**(5,498,112)**	**7,488,730**	**566,936**	**1,123,381**	**(74,207)**
Fund Balance Beginning of Year:	**17,489,068**	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**	**6,142,713**
Fund Balance End of Year:	**21,353,645**	**17,489,068**	**13,877,825**	**10,640,373**	**9,530,811**	**9,749,441**	**15,247,553**	**7,758,823**	**7,191,887**	**6,068,506**
Capital Outlay (included in Functional Expenditures above)	855,436	1,261,778	1,444,679	712,232	1,449,897	6,127,087	1,624,489	423,365	374,909	196,976
Ratio of Debt Service to Noncapital Expenditures	**4.0%**	**4.0%**	**4.1%**	**2.0%**	**5.2%**	**3.7%**	**0.7%**	**0.7%**	**0.9%**	**0.5%**

Table 5

EAST WHITELAND TOWNSHIP
General Government Tax Revenues by Source
Last Ten Fiscal Years (unaudited)
(modified accrual basis of accounting)

Year	Real Estate Tax (1)	Real Estate Transfer Tax	Earned Income Tax (2)	Local Services Tax	Total Tax Revenue	% of Total Governmental Revenue	Total Governmental Revenue
2011	594,853	269,581	3,844,129	843,809	5,552,372	67%	8,251,214
2012	595,203	760,791	4,397,004	919,549	6,672,547	69%	9,662,088
2013	597,985	574,812	4,693,510	1,004,423	6,870,730	62%	11,064,479
2014	591,379	927,764	5,014,880	1,074,886	7,608,909	69%	11,098,647
2015	617,549	1,104,855	6,084,879	1,396,149	9,203,432	74%	12,405,669
2016	642,400	2,182,702	5,143,306	1,277,561	9,245,969	76%	12,105,284
2017	671,762	1,501,457	6,121,771	1,273,571	9,568,561	74%	12,992,884
2018	730,660	2,991,303	6,520,525	1,262,897	11,505,385	69%	16,712,144
2019	767,194	1,199,970	9,741,890	1,322,836	13,031,890	76%	17,129,850
2020	775,205	1,098,937	10,056,315	1,312,250	13,242,707	77%	17,181,206
					$ 85,214,960	71%	119,280,533

Notes: All balances as of Year End December 31

(1) The Real Estate Tax rate is .445 mills for all years charged on Assessed Value.
See Table 7 for the values

(2) The Earned Income Tax rate is 0.75 % (Effective January 1, 2019)

Source: Changes in Fund Balances Statement

Table 6

EAST WHITELAND TOWNSHIP
Major Revenue Source Earned Income Tax
Last Ten Fiscal Years (unaudited)

Year	Personal Income all Workers	Earned Income Tax Rate	Earned Income Tax	Percent of Total Revenue
2011	768,825,800	0.0050	3,844,129	47%
2012	879,400,800	0.0050	4,397,004	46%
2013	938,702,000	0.0050	4,693,510	42%
2014	1,002,976,000	0.0050	5,014,880	45%
2015	1,216,975,800	0.0050	6,084,879	49%
2016	1,028,661,200	0.0050	5,143,306	42%
2017	1,224,354,200	0.0050	6,121,771	47%
2018	1,304,105,000	0.0050	6,520,525	39%
2019	1,298,918,667	0.0075	9,741,890	57%
2020	1,340,842,000	0.0075	10,056,315	59%

Source: East Whiteland Township Annual Financial Statements

Note: In 2015, an accounting change was made to accrue payments received 60 days after December 31 in the current year so 2015 includes 14 months of collections

Table 7

EAST WHITELAND TOWNSHIP
Assessed Value and Estimated Actual Value of Taxable Property
Last Ten Fiscal Years (unaudited)

Year	Total Taxable Assessed Value (1)	Common Level Ratio Factor	Estimated Actual Value (2)	Ratio of Total Assessed Value to Estimated Actual Value	Total Township Millage Rate (3)
2011	1,361,606,017	1.79	2,437,274,770	55.9%	0.445
2012	1,343,229,791	1.70	2,283,490,645	58.8%	0.445
2013	1,339,489,503	1.66	2,223,552,575	60.2%	0.445
2014	1,352,321,293	1.73	2,339,515,837	57.8%	0.445
2015	1,384,150,303	1.81	2,505,312,048	55.2%	0.445
2016	1,438,029,865	1.86	2,674,735,549	53.8%	0.445
2017	1,465,755,384	1.89	2,770,277,676	52.9%	0.445
2018	1,606,487,994	1.95	3,132,651,588	51.3%	0.445
2019	1,672,141,764	2.03	3,394,447,781	49.3%	0.445
2020	1,729,508,446	2.13	3,683,852,990	46.9%	0.445

Notes:

(1) Chester County Board of Assessments Statement of Valuations

(2) Estimated Actual Value is calculated by multiplying the assessed value by the common level ratio provided by the PA State Tax Equalization Board

(3) Tax Rates are Mills per $1,000 assessed value

Table 8

EAST WHITELAND TOWNSHIP
Property Tax Rates, Direct and Overlapping Governments
Last Ten Fiscal Years (unaudited)

Year	East Whiteland Township Millage	Great Valley School District Millage	Chester County Millage	Total Millage
2011	0.445	19.030	3.965	23.440
2012	0.445	19.590	3.965	24.000
2013	0.445	19.590	4.163	24.198
2014	0.445	20.000	4.163	24.608
2015	0.445	20.320	4.163	24.928
2016	0.445	20.800	4.163	25.408
2017	0.445	20.800	4.369	25.614
2018	0.445	21.295	4.369	26.109
2019	0.445	21.550	4.369	26.364
2020	0.445	21.550	4.369	26.364

Source: PA Department of Community and Economic Development
Municipal Statistics.

Table 9

EAST WHITELAND TOWNSHIP
Principal Property Taxpayers
Current Year and Ten Years Ago

Rank	Taxpayer	Type of Business	December 31, 2020 Taxable Assessed Value	% of Total Assessment
1	WPT Land 2 LP	Industrial & Commercial Property	98,126,860	5.87%
2	Haven at Atwater Village LLC	Developer	54,406,940	3.25%
3	Cerner Health Services	Computer Services	47,495,290	2.84%
4	Mountain Laurel Funding Co LLC	Commericial Property	45,382,910	2.71%
5	IPXI 1400 Atwater Investors LLC	Developer	35,788,400	2.14%
6	Horatio Realty Trust	Pharmaceutical Products	30,702,000	1.84%
7	Worthington Associates	Apartments & Commercial Property	28,348,830	1.70%
8	425 GVP Property Co LLC	Commericial Property	26,872,670	1.61%
9	Home Properties - William Henry Apts LLC	Apartments	24,200,480	1.45%
10	CLF Westbrook Malvern	Commericial Property	22,557,360	1.35%
	Total		$ 413,881,740	24.75%
	Total Assessed Valuation		**$ 1,672,141,764**	

Rank	Taxpayer	Type of Business	December 31, 2011	
1	Liberty Property	Industrial & Commercial Property	$ 179,226,150	13.12%
2	Shared Medical	Computer Services	66,923,320	4.90%
3	Wyeth Laboratories Inc	Pharmaceutical Products	44,458,550	3.26%
4	National Liberty Life Insurance Co	Insurance	22,311,230	1.63%
5	Riggs Bank Trust Multi Employer Corp	Banking	17,969,930	1.32%
6	Home Properties - William Henry Apts LLC	Apartments	14,891,210	1.09%
7	Valley Brook Land Holding Inc.	Industrial & Commercial Property	12,773,270	0.94%
8	Harte IHR Frazer LP	Hotels	12,636,380	0.93%
9	LP Malvern Limited Partnership	Industrial & Commercial Property	12,051,400	0.88%
10	Morelli Enterprises LP	Commercial Property	11,180,950	0.82%
	Total		$ 383,241,440	28.06%
	Total Assessed Valuation		$ 1,365,831,127	

Source: Tax Duplicate

Table 10

EAST WHITELAND TOWNSHIP
Property Tax Levies and Collections
Last Ten Fiscal Years (unaudited)

Calendar Year	Tax Rate (mills)	Total Tax Levy (1)	Current Tax Collections at Face (1)	Percent of Levy Collected	Delinquent Tax Collections in Current Year	Total Tax Collections (2)
2011	0.445	607,548	599,510	98.68%	4,061	603,571
2012	0.445	598,813	593,718	99.15%	8,493	602,211
2013	0.445	594,955	588,602	98.93%	8,324	596,926
2014	0.445	602,479	595,071	98.77%	7,475	602,546
2015	0.445	615,815	610,809	99.19%	9,030	619,839
2016	0.445	642,027	635,881	99.04%	10,328	646,209
2017	0.445	653,821	645,228	98.69%	9,261	654,489
2018	0.445	713,335	702,157	98.43%	14,332	716,489
2019	0.445	761,692	745,461	97.87%	17,206	762,667
2020	0.445	807,641	765,563	94.79%	26,882	792,445

(1) Source - Real Estate Audit Report

(2) Total includes current year, penalties, discounts, and all prior years delinquent collections

Table 11

EAST WHITELAND TOWNSHIP
Sewer Billing Rates, Revenue and Fees
Last Seven Fiscal Years (unaudited)

Rates:

Residential / Businesses	$100/quarter, $135.50/quarter, $150/quarter, $120/quarter
High Volume Commercial	$6.20 x meter reading
Other municipalities	based on flow and allocation of sewer department cost

Accounts (in units):

Residential / Businesses	3,922
High Volume Commercial	13
Total	3,935

Billing (annual amount in $):

Residential / Businesses	$ 3,242,787
High Volume Commercial	347,140
Other Municipalities	222,396
Total	$ 3,812,323

	Sewer Rents	Connecting & Tapping Fees	Total Operating Revenue
2020	$ 3,812,323	$ 592,450	$ 4,404,773
2019	3,761,787	984,100	4,745,887
2018	3,809,229	1,306,657	5,115,886
2017	3,294,177	1,706,800	5,000,977
2016	3,312,268	844,300	4,156,568
2015	2,715,966	442,750	3,158,716
2014	2,613,696	242,200	2,855,896

Table 12

EAST WHITELAND TOWNSHIP
Computation of Legal Debt Margin
December 31, 2020 (unaudited)

Borrowing Base Revenues		
2018		23,441,415
2019		22,225,217
2020		22,828,165
Total Revenues	$	68,494,797
Debt Limit for General Obligation Debt:		
Average borrowing base revenues		22,831,599
Debt limit percent		250%
Debt limit		57,078,998
Total amount of debt applicable to debt limit		22,985,000
Legal debt margin	$	34,093,998
Debt Limit for General Obligation Bonds and Lease Rental Debt:		
Average borrowing base revenues		22,831,599
Debt limit percent		350%
Debt limit		79,910,597
Total amount of debt applicable to debt limit		22,985,000
Legal debt margin	$	56,925,597

Note: Borrowing base represents total revenues per the PA Local Government Unit Debt Act 177 of 1996
Source: East Whiteland Township Annual Financial Statements

Table 13

EAST WHITELAND TOWNSHIP
Legal Debt Margin Information
Last Ten Years (unaudited)

Year Ended 31-Dec	Three year Average Revenue Borrowing Base	Debt Limit 250%	General Obligation Debt (1)	Legal Debt Margin	Debt Capacity
2011	11,065,586	27,663,965	8,185,229	19,478,736	70.4%
2012 (2)	11,502,488	28,756,219	8,169,013	20,587,206	71.6%
2013 (3)	12,686,783	31,716,957	20,294,274	11,422,683	36.0%
2014 (4)	14,072,430	35,181,074	27,801,060	7,380,014	21.0%
2015	15,129,527	37,823,817	27,003,465	10,820,352	28.6%
2016 (5)	16,099,338	40,248,345	26,523,308	13,725,037	34.1%
2017	17,138,158	42,845,395	25,811,042	17,034,353	39.8%
2018	19,721,386	49,303,464	24,798,777	24,504,687	49.7%
2019	21,303,641	53,259,103	23,806,512	29,452,591	55.3%
2020	22,831,599	57,078,998	22,985,000	34,093,998	59.7%

(1) Includes Bond Discount Credit and Deferred amount on refunding credit
(2) General Obligation Bond 2012A issued for $4,685,000 to refund series 2005 in Proprietary Fund
General Obligation Bond 2012A issued for $4,130,000 to refund series 1999 in Proprietary Fund
(3) General Obligation Bond 2013A issued for $12,145,000 for Proprietary Fund Sewer Expansion
(4) General Obligation Bond 2014 issued for $8,040,000 for General Fund (new Public Works Building)
Partially refunded in 2016 to net balance of $2,130,000
(5) GOB 2016 issued for $6,160,000 for General Fund to partially refund GOB series 2014

Table 14

EAST WHITELAND TOWNSHIP
Ratios of Outstanding Debt by Type
Last Ten Fiscal Years (unaudited)

	Governmental Activities		Business Type Activities					
Year Ended 31-Dec	General Obligation Bonds (1)	Capital Leases (2)	Self Liquidating Sewer Bonds (3)	Total Primary Government Debt	Personal Income (4)	Debt % of Total Income	Population (5)	Debt Per Capita (population)
2011	-	34,738	8,185,229	8,219,967	463,630,323	1.8%	10,569	778
2012	-	129,819	8,169,013	8,298,832	460,982,307	1.8%	10,599	783
2013	-	171,939	20,294,274	20,466,213	427,793,294	4.8%	10,657	1,920
2014	8,218,272	107,914	19,582,788	27,908,974	435,880,929	6.4%	10,681	2,613
2015	8,111,141	45,749	18,892,324	27,049,214	435,880,929	6.2%	10,681	2,532
2016	8,331,448	10,494	18,191,860	26,533,802	434,037,032	6.1%	10,699	2,480
2017	8,324,646	2,913	17,486,396	25,813,955	491,769,678	5.2%	10,858	2,377
2018	8,037,845	-	16,760,932	24,798,777	513,419,712	4.8%	11,072	2,240
2019	7,741,044	-	16,065,468	23,806,512	587,621,370	4.1%	11,415	2,086
2020	7,395,000	-	15,590,000	22,985,000	659,898,432	3.5%	12,832	1,791

(1) Bond issued to construct a new Public Works Building on the Municipal Campus
(2) Capital Lease for equipment & software
(3) All Sewer Bonds are Self Liquidating.
(4) Yr 2019 Personal Income calculated using U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates
(5) Yr 2019 U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates

Table 15

EAST WHITELAND TOWNSHIP
Ratios of Net General Bonded Debt Outstanding
Last Ten Years (unaudited)

Year Ended 31-Dec	Population	Assessed Value	Gross General Obligation Debt	Percentage of General Obligation Debt to Assessed Value	Net General Obligation Debt Per Capita (residents)
2011	10,569	2,437,274,770	8,185,229	0.34%	774
2012	10,599	2,283,490,645	8,169,013	0.36%	771
2013	10,657	2,223,552,575	20,294,274	0.91%	1,904
2014	10,681	2,339,515,837	27,801,060	1.19%	2,603
2015	10,681	2,505,312,048	27,003,465	1.08%	2,528
2016	10,699	2,674,735,549	26,523,308	0.99%	2,479
2017	10,858	2,770,277,676	25,811,042	0.93%	2,377
2018	11,072	3,132,651,588	24,798,777	0.79%	2,240
2019	11,415	3,394,447,781	23,806,512	0.70%	2,086
2020	12,832	3,683,852,990	22,985,000	0.62%	1,791

Sources for Population:
(1) U.S. Census Bureau

Table 16

EAST WHITELAND TOWNSHIP
Computation of Direct and Overlapping Debt
as of December 31, 2020

Jurisdiction	Total Debt Outstanding	Assessed Value	Percentage Applicable to East Whiteland	Amount Applicable to East Whiteland
Direct:				
East Whiteland Township	$ 7,741,044	1,729,508,446	100%	$ 7,741,044
Overlapping:				
Great Valley School District	22,018,449	3,818,966,671	45.3%	9,971,570
Chester County (2)	497,780,000	38,700,276,590	4.5%	22,245,699
Total Overlapping Debt	519,798,449	42,519,243,261		32,217,269
Total Debt	$ 527,539,493	$ 44,248,751,707		$ 39,958,313

(1) Overlapping governments are those that coincide, at least in part, with the geographic boundaries of the Township This schedule estimates the portion of the outstanding debt of those overlapping governments that is borne by the residents and businesses of East Whiteland Township.

(2) Proportional share of existing debt as of December 31, 2019 is based on the ratio of East Whiteland's assessed value tc Chester County's and Great Valley School District's assessed value respectively.

Table 17

EAST WHITELAND TOWNSHIP
Demographic and Economic Statistics
Last Ten Years (unaudited)

Year Ended 31-Dec	Per Capita Income (1)	Population (1)	Total Personal Income	Unemployment Rate (2)	Median Household Income (1)	Median Age (1)
2011	43,867	10,569	463,630,323	5.8	89,673	37.3
2012	43,493	10,599	460,982,307	5.6	91,144	37.1
2013	40,142	10,657	427,793,294	5.3	91,261	36.6
2014	40,809	10,681	435,880,929	4.2	90,327	37.9
2015	40,809	10,681	435,880,929	3.5	90,327	37.9
2016	40,568	10,699	434,037,032	3.9	91,109	38.6
2017	45,291	10,858	491,769,678	3.1	100,000	39.7
2018	46,371	11,072	513,419,712	2.7	103,836	39.1
2019	51,478	11,415	587,621,370	3.1	111,870	37.5
2020	53,022	12,832	680,378,304	4.1	114,486	38.0

(1) Yr 2019 U.S. Census Bureau 2014-2018 American Community Survey 5-Year Estimates
Yr 2018 U.S. Census Bureau 2013-2017 American Community Survey 5-Year Estimates
Yr 2017 U.S. Census Bureau 2012-2016 American Community Survey 5-Year Estimates
Yr 2016 U.S. Census Bureau 2011-2015 American Community Survey 5-Year Estimates
Yr 2015 & 2014 U.S. Census Bureau 2010-2014 American Community Survey 5-Year Estimates
Yr 2013 U.S. Census Bureau 2009-2013 American Community Survey 5-Year Estimates
Yr 2012 U.S. Census Bureau 2008-2012 American Community Survey 5-Year Estimates
Yr 2011 U.S. Census Bureau 2007-2011 American Community Survey 5-Year Estimates

(2) U.S. Dept of Labor - Unemployment Rates By County for Pennsylvania

Table 18

EAST WHITELAND TOWNSHIP
Census Statistics
December 31, 2020

Age Group Comparisons:	Township		State		US	
	2020	2010	2020	2010	2020	2010
% Under 18	21.5%	23.9%	20.6%	24.9%	24.0%	26.9%
% 18-44	34.7%	37.7%		31.4%	36.5%	33.6%
% 45-64	29.8%	26.6%		28.1%	26.4%	26.4%
% 65 and over	14.0%	11.8%	18.7%	15.6%	13.1%	13.1%
Median (years)	38.0	36.0	40.8	40.1	38.4	37.2

Population Density	Township		State		US	
	2020	2010	2020	2010	2020	2010
(persons/sq. mile)	1305.0	968.2	286.1	283.4	92.9	87.3

Average Household Size (persons):	2020	2010
East Whiteland Township	2.63	2.73
Chester County	2.65	2.65
Pennsylvania	2.45	2.45
U.S.	2.53	2.58

Percentage of Owner-Occupied Housing Units	2020	2010
East Whiteland Township	66.8%	76.6%
Chester County	75.0%	79.5%
Pennsylvania	68.9%	69.6%
U.S.	65.8%	65.1%

Median Household Income:	2020	2010
East Whiteland Township	$ 114,486	$ 88,277
Chester County	100,214	84,741
Pennsylvania	63,464	49,737
U.S.	62,843	51,425

Per Capita Income:	2020	2010
East Whiteland Township	$ 51,426	$ 40,051
Chester County	50,927	41,251
Pennsylvania	35,804	26,678
U.S.	34,103	27,041

Source: United States Bureau of the Census - 2010 and 2020 Census Data

Table 19

EAST WHITELAND TOWNSHIP
Principal Employers
Current Year and Nine Years Ago

Employer	Description	(1) 2020 Approximate Employment	Percent of Total Township Employment	2011 Approximate Employment	Percent of Total Township Employment
Vanguard Group, Inc.	Financial Services / Mutual Funds	3,971	13.03%	1,952	8.13%
Cerner Health Services, Inc.	Health Services	1,032	3.39%	-	-
Johnson & Johnson (Centocor Division)	Pharmaceuticals	899	2.95%	694	2.89%
Cerner Corporation	Software / Technology	756	2.48%	-	-
Siemens Medical Solutions USA, Inc.	Software / Technology	741	2.43%	3,163	13.18%
Immaculata University	Education	584	1.92%	1,322	5.51%
Certainteed Corporation	Manufacturer Building Materials	556	1.82%	-	-
Wegman's Food Market, Inc.	Grocery / Food	510	1.67%	736	3.07%
Great Valley School District	Education	366	1.20%	590	2.46%
Ricoh Americas Corp	Digital Business Services /Printing Solutions	363	1.19%	-	-
Verizon Service Corporation	Telecommunications	-	-	1,583	6.60%
Wyeth LLC	Pharmaceuticals	-	-	967	4.03%
Sanofi Aventis US Inc	Pharmaceuticals	-	-	729	3.04%
Cephalon Inc	Pharmaceuticals	-	-	678	2.83%
Total Principal Employers		**9,778**	32.1%	**12,414**	51.7%
Total Township Employment		30,478		24,000	
Top 10 Employers as % of Township Total		32.1%		51.7%	

(1) Source: Local Services Tax Report from Keystone Collections Group

Table 20

EAST WHITELAND TOWNSHIP
Full Time Equivalent Township Government Employees by Function
Last Ten Fiscal Years (unaudited)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
General Government										
Admin, Finance	5	4	4	3	4	4	3	3	3	3
Support Staff / FTE	1.5	1.5	1	1	1	1	1	1	1	1
Police										
Full Time Officers	22	22	21	19	20	20	20	21	20	20
Part Time Officers / FTE	0.1	1.5	2.9	2.1	2.6	2.6	3.2	2.8	3.8	3.6
Admin & IT	1	2	2	3	3	3	3	3	2	2
Fire										
Full Time Firefighters	10	10	10	10	10	10	9	9	9	9
Part Time Firefighters / FTE	4.70	3.72	3.79	2.72	2.85	2.85	4.0	2.45	2.35	2.6
Codes & Safety										
Inspectors/ Codes Enforcement	2	3	4	3	5	5	5	5	5	5
Support Staff	1	1	1	1	1	1	1	1	1	1
Planning & Zoning										
Director	1	1	1	1	1					
Support Staff	2	2								
Public Works										
Maintenance Workers	7	7	8	8	8	8	8	7	7	7
Director & Asst Director	1	2	2	2	2	1	1	1	1	1
Park and Recreation										
Camp Counselors	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.8	0.7	0.8
Sewer										
Maintenance Workers	3	3	2	3	3	3	3	3	3	3
Support Staff	1	1	1	1	1	1	1	1	1	1
Total										
Full Time	59	59	56	53	57	56	54	54	52	52
Part Time / FTE	4.8	6.7	8.7	6.8	7.4	7.4	9.0	7.0	7.9	8.1
Total FTE	**63.3**	**65.7**	**64.7**	**60.8**	**65.4**	**63.4**	**63.0**	**61.0**	**59.9**	**60.1**

Source: December 31 Payroll records for active employees - excludes Interns

Table 21

EAST WHITELAND TOWNSHIP
Operating Indicators by Function
Last Ten Years

General Government	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Police										
Part 1 Uniform Crime Reports	118	145	118	151	128	119	133	128	148	139
Part 2 Uniform Crime Reports	154	120	105	158	235	269	218	177	228	212
Fire										
Vehicle / EMS	1,074	2,104	2,140	1,618	1,018	1,047	1,008	926	975	901
Fire Alarm	305	326	337	254	252	229	216	211	200	207
Structure Fires	35	46	28	31	62	96	60	78	71	63
Other Fire related calls	190	842	887	433	159	171	175	124	148	190
Total Fire	530	1,214	1,252	718	473	496	451	413	419	460
Total Incidents	**1,604**	**3,318**	**3,392**	**2,336**	**1,491**	**1,543**	**1,459**	**1,339**	**1,394**	**1,361**
Codes & Safety										
Building Permits	469	445	538	439	432	300	264	251	238	257
Electrical Permits	313	325	400	368	340	203	155	159	164	158
Mechanical Permits	232	244	322	303	253	130	100	78	86	73
Plumbing Permits	241	248	318	295	249	115	90	69	98	81
Occupancy Permits	126	131	113	126	197	128	129	124	106	106
Total Permits	**1,381**	**1,393**	**1,691**	**1,531**	**1,471**	**876**	**738**	**681**	**692**	**675**
Building Inspections performed	4,764	5,572	6,087	5,175	2,982	1,030	1,103	961	724	575
Public Works - Highway and Streets										
Snow Salt Used Per Ton	875	275	1,157	1,345	800	1,000	1,500	1,500	1,000	1,000
Square Yards of Roads Repaved	44,190	44,010	36,800	39,850	38,485	19,020	17,663	16,745	19,924	13,988
Park and Recreation										
Camp Registration	-	104	74	81	110	121	130	117	81	124
Sewer										
# Pump Stations	13	13	13	13	13	13	13	13	13	13

Source: East Whiteland Township Performance Status reports

Table 22

EAST WHITELAND TOWNSHIP
Capital Asset Statistics by Function
Last Ten Years (unaudited)

General Government	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Municipal Building	1	1	1	1	1	1	1	1	1	1
Square Footage	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312	13,312
Vehicles	1	1	1	1	1	1	1	1	1	1
Public Safety										
Police										
Vehicles	22	23	25	22	21	21	20	19	20	20
Safety & Codes Enforcement										
Vehicles	6	6	6	6	6	6	6	6	6	6
Fire										
Stations (Volunteer Fire Co.)	1	1	1	1	1	1	1	1	1	1
Public Works - Highway and Streets										
Building	1	1	1	1	1	1	1	1	1	1
Streets / roads in miles	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	50.6
# traffic signals	39	39	39	39	39	39	39	39	39	39
# street lights	28	28	28	28	28	28	28	28	28	28
Vehicles	13	13	13	13	13	10	10	10	9	9
Leased Vehicles	-	-	-	-	-	2	2	2	2	2
Park and Recreation										
Parks	8	8	8	8	8	8	8	8	8	8
Acres	94	94	94	94	94	94	94	94	94	94
Waste Water/ Sewer										
# Pumping Stations	13	13	13	13	13	13	13	13	13	13
Miles of Pipe in Service	77	77	77	77	77	77	77	77	77	75
Vehicles	5	5	5	5	5	5	5	5	5	5
Vehicle count year end (Does not include leased vehicles)	48	49	51	48	47	44	43	42	42	42

Source: Township Capital Asset Schedules

Table 23

EAST WHITELAND TOWNSHIP
Fiduciary Funds Obligations
Last Six Fiscal Years

	2020	2019	2018	2017	2016	2015
% of Pension Liability Funded:						
Police Pension Fund	86.3%	79.5%	73.3%	85.3%	82.7%	80.8%
Firefighters Pension Fund	85.0%	76.8%	67.0%	75.6%	74.5%	71.0%
Non-Uniformed Pension Fund	94.2%	86.2%	74.7%	87.1%	87.7%	84.8%
Post Employment Benefits Fund	8.9%	10.3%	8.7%	12.2%	15.9%	14.3%
Fund Balance ($):						
Police Pension Fund	$ 12,682,236	$ 10,943,594	$ 8,897,862	$ 9,726,605	$ 8,716,607	$ 8,020,156
Firefighters Pension Fund	3,055,717	2,513,081	1,885,873	1,898,123	1,506,495	1,279,030
Non-Uniformed Pension Fund	7,994,036	7,082,251	5,784,100	6,491,925	5,792,502	5,214,774
Post Employment Benefits Fund	1,843,347	1,595,705	1,198,382	1,669,163	1,515,329	1,363,029
Total Fiduciary Fund Balances	**$ 25,575,336**	**$ 22,134,631**	**$ 17,766,217**	**$ 19,785,816**	**$ 17,530,933**	**$ 15,876,989**

Source: East Whiteland Township Annual Financial Statements

Table 24

EAST WHITELAND TOWNSHIP
Police Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits
2011	7,204,796	6,395,715	809,081	88.8%	1,690,460	47.9%	17	11
2012	*	*	*	*	*	*	23	7
2013	8,657,790	6,875,791	1,781,999	79.4%	1,716,259	103.8%	16	12
2014	9,654,219	7,984,328	1,669,891	82.7%	1,739,660	96.0%	19	12
2015	9,928,461	8,020,156	1,908,305	80.8%	1,932,369	98.8%	19	13
2016	10,538,693	8,716,607	1,822,086	82.7%	2,181,320	83.5%	19	12
2017	11,403,392	9,726,605	1,676,787	85.3%	2,376,418	70.6%	19	12
2018	12,142,675	8,897,862	3,244,813	73.3%	2,220,748	146.1%	21	13
2019	13,765,847	10,943,594	2,822,253	79.5%	2,617,694	107.8%	22	13
2020	14,703,891	12,682,236	2,021,655	86.3%	2,770,092	73.0%	22	13

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

Table 25

EAST WHITELAND TOWNSHIP
Non-Uniformed Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits (1)	Vested Terminated Employees
2011	4,145,626	2,758,568	1,387,058	66.5%	1,385,203	100.1%	23	7	1
2012	*	*	*	*	*	*	23	7	1
2013	4,530,683	3,545,828	984,855	78.3%	1,395,699	70.6%	22	7	1
2014	5,417,657	5,065,203	352,454	93.5%	1,529,999	23.0%	25	8	1
2015	5,104,712	4,328,258	776,454	84.8%	1,681,050	46.2%	23	12	1
2016	6,601,736	5,792,502	809,234	87.7%	1,560,708	51.9%	25	15	1
2017	7,456,051	6,491,925	964,126	87.1%	1,402,439	68.7%	19	16	3
2018	7,745,596	5,784,100	1,961,496	74.7%	1,315,976	149.1%	18	17	3
2019	8,211,938	7,082,251	1,129,687	86.2%	1,229,587	91.9%	16	21	3
2020	8,485,689	7,994,036	491,653	94.2%	1,081,629	45.5%	14	23	3

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

(1) Includes employees in the Drop Program

Table 26

EAST WHITELAND TOWNSHIP
Firefighters Pension Plan
Liability History Last Ten Fiscal Years

Year	Total Liability	Plan Net Position	Net Liability	Funded Ratio	Covered Payroll	Net Liability % Payroll	Number of Active Members	Retirees Receiving Benefits (1)	Vested Terminated Employees
2011	884,338	493,991	390,347	55.9%	530,853	73.5%	9	0	0
2012	*	*	*	*	*	*	9	0	0
2013	1,039,551	745,740	293,811	71.7%	533,925	55.0%	9	0	0
2014	1,351,001	1,176,401	174,600	87.1%	584,467	29.9%	9	0	1
2015	1,802,790	1,279,030	523,760	71.0%	619,306	84.6%	10	0	1
2016	2,021,546	1,506,495	515,051	74.5%	801,110	64.3%	10	0	1
2017	2,510,501	1,898,123	612,378	75.6%	835,655	73.3%	10	0	1
2018	2,815,754	1,885,873	929,881	67.0%	945,635	98.3%	10	0	1
2019	3,272,205	2,513,081	759,124	76.8%	865,531	87.7%	9	1	1
2020	3,595,481	3,056,717	538,764	85.0%	781,541	68.9%	8	2	1

Source: East Whiteland Township Annual Financial Statements

* At this time, an Actuarial report was required biannually in accordance with Act 205.

(1) Includes employees in the Drop Program

EXHIBIT J3

EAST WHITELAND TOWNSHIP
ADOPTED ANNUAL BUDGET - 2020

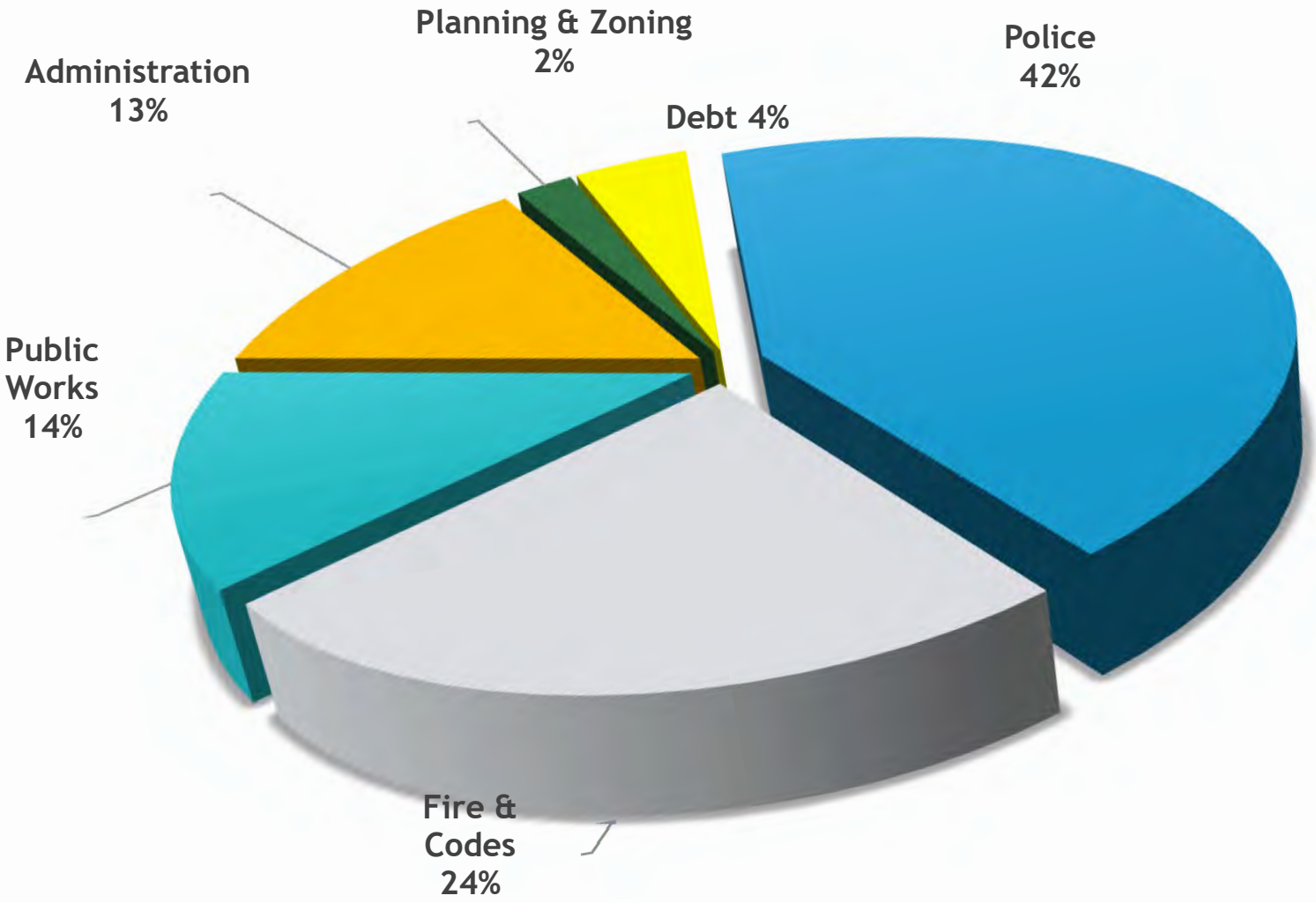
2020 Budget – Final

December 11, 2019

2020 Budget - Process

- All Meetings Advertised & Open to Public
- Revised 5-year plan
- Fall 2019: Budget workshops with staff - 10/16 & 10/29
- November 13: Consider preliminary budget &, advertise
- **December 11: Consider & approve final budget**

2020 Final Budget
General Fund – Expenditures



2020 Final Budget
General Fund – Expenditures

Department	Department 2020	Expeditures 2019	Change %
Administration	$1,883,477	$1,942,795	-3.1
Codes & Life Safety	3,390,505	3,340,657	1.5
Planning & Zoning	439,116	315,872	39.0
Police	6,066,342	5,715,278	6.1
Public Works	1,894,051	1,892,268	0.1
Debt Service	511,130	504,030	1.4
Recreation	139,200	103,300	34.8
Total Expenditures	**$14,323,821**	**$13,814,200**	**3.7%**

2019 Workforce

Department	Full Time	Part Time (FTE)	Total FTE Employees
Administration & Finance	6	0	6
Codes & Life Safety	18	4.6	22.6
Planning & Zoning	2	0	2
Police	24	4	28
Public Works	12	0	12
Property & Recreation	0	1.6	1.6
Total Employees	**62**	**10.2**	**72.2**
FTE – Full Time Equivalent		2,080 Hours	

2020 Preliminary Budget Summary

- Supervisors & staff continually evaluate operations to contain costs & improve efficiency
- Economic & tax climates for residents & businesses remain favorable
- Staff works with developers to fund transportation, infrastructure, park, recreation and open space improvements
- Township seeks grants for desirable projects to benefit residents

Comments and Questions

East Whiteland Township

EAST WHITELAND TOWNSHIP
2020 BUDGET
FUND RECONCILIATION

1/24/2020

FUND	REVENUES	EXPENDITURES	INCOMING TRANSFERS	OUTGOING TRANSFERS	FUND BALANCE BEGINNING	FUND BALANCE ENDING	CHANGE IN FUND BALANCE
Governmental Funds							
General (01)	14,631,717	13,920,421	168,345	403,400	5,313,790	5,790,031	**476,241**
Liquid Fuels (35)	357,650	357,000			2,005	2,655	**650**
Street Light (02)	10,718	7,500			38,592	41,810	**3,218**
Park Development (30)	770,080	1,523,000			1,430,256	677,336	**(752,920)**
Capital Improvement (31)	327,000	2,443,700	403,400		7,737,039	6,023,739	**(1,713,300)**
Act 209 Transportation Improvement (33)	128,000	-			707,174	835,174	**128,000**
Total Governmental Funds	16,225,165	18,251,621	571,745	403,400	15,228,856	13,370,745	(1,858,111)
Proprietary Funds					**Net Position - Unrestricted**		
Sewer (08)	4,399,000	4,360,968		168,345	1,500,000	1,369,687	**(130,313)**
Sewer Reserve (09)	1,204,000	2,738,000			7,195,000	5,661,000	**(1,534,000)**
Total Proprietary Funds	5,603,000	7,098,968	-	168,345	8,695,000	7,030,687	(1,664,313)
TOTAL ALL FUNDS	21,828,165	25,350,589	571,745	571,745	23,923,856	20,401,432	(3,522,424)

Assumes 2019 Budgeted Change in Fund Balance
Assumes 2019 Projected Change in Fund Balance

EAST WHITELAND TOWNSHIP
2020 BUDGET

Fund-Dept/Description	2019 FINAL	2020 BUDGET	Percent Change
Fund 01 - General Fund			
Revenues			
Real Estate Taxes	761,000	755,820	-0.7%
Local Enabling Taxes	11,051,000	11,400,000	3.2%
Licenses & Franchise Fees	230,000	230,200	0.1%
Fines	100,000	67,000	-33.0%
Interest	8,000	28,000	250.0%
Rent	29,400	7,500	-74.5%
Intergovernmental Revenues	458,800	515,900	12.4%
Grants	37,000	40,287	8.9%
Department Earnings	83,000	84,100	1.3%
Department Earnings	1,618,000	1,409,410	-12.9%
Parks & Recreation Revenue	50,000	75,500	51.0%
Miscellaneous Revenue	8,000	18,000	125.0%
Sale of Fixed Assets	-		0.0%
Interfund Operating Transfers	166,165	168,345	1.3%
Total Revenues	**14,600,365**	**14,800,062**	1.4%
Expenditures			
Supervisors	7,500	7,500	0.0%
Administration	896,955	934,787	4.2%
Other Financial & Professional Services	51,000	71,000	39.2%
Tax Collection	117,640	151,240	28.6%
Legal	341,000	242,000	-29.0%
Other Administrative	193,350	215,500	11.5%
Engineering Services	113,400	134,400	18.5%
Municipal Building	71,650	77,650	8.4%
Police Department	5,701,328	5,932,342	4.1%
Fire Protection	2,210,642	2,307,728	4.4%
Regulation, Inspection	1,053,265	988,027	-6.2%
Planning & Zoning	315,872	439,116	39.0%
Emergency Management	6,750	4,750	-29.6%
Solid Waste Collection and Disposal	27,500	25,000	-9.1%
Public Works - General	1,333,017	1,292,024	-3.1%
Public Works - Snow Removal	146,604	159,450	8.8%
Public Works - Traffic	99,077	99,077	0.0%
Public Works - Street	27,000	27,000	0.0%
Public Works - Road Maintenance	184,070	191,500	4.0%
Public Works - Road Construction & Storm Sewer	75,000	100,000	33.3%
Parks & Recreation	34,150	29,550	-13.5%
Parks & Recreation	38,400	68,550	78.5%
Parks Maintenance	30,750	41,100	33.7%
Library	46,700	46,700	0.0%
Community Development	3,600	2,700	-25.0%
Debt Service - General	504,030	511,130	1.4%
Miscellaneous Expenditures	13,950	14,000	0.4%
Intergovenmental Expenditures	70,000	90,000	28.6%
Medical Runout		120,000	100.0%
Refunds	-		
Interfund Operating Transfers	100,000	-	-100.0%
Total Expenditures	**13,814,200**	**14,323,821**	3.7%
Net Revenues/(Appropriations) General Fund	**786,165**	**476,241**	-39.4%

EAST WHITELAND TOWNSHIP
2020 BUDGET

Fund-Dept/Description	2019 FINAL	2020 BUDGET	Percent Change
Fund 02 -Street Light Fund			
Revenues			
Interest	5	5	0.0%
Assessments	10,713	10,713	0.0%
Total Revenues	**10,718**	**10,718**	0.0%
Expenditures			
Street Lighting	7,700	7,500	-2.6%
Miscellaneous Expenditures	-	-	
Total Expenditures	**7,700**	**7,500**	-2.6%
Net Revenues/(Appropriations) Street Light Fund	**3,018**	**3,218**	6.6%
Fund 08 - Sewer Fund			
Revenues			
Interest	4,500	12,000	166.7%
Sewer Fees	4,007,876	3,948,000	-1.5%
Miscellaneous Revenue	105,000	439,000	318.1%
Total Revenues	**4,117,376**	**4,399,000**	6.8%
Expenditures			
Sewer Dept. Expenses	2,773,783	3,106,409	12.0%
Debt - Sewer Dept.	1,249,041	1,251,409	0.2%
Fiscal Agent Fees	3,150	3,150	0.0%
Sewer Dept. Misc. Expenses	-		
Interfund Operating Transfers	166,165	168,345	1.3%
Total Expenditures	**4,192,139**	**4,529,313**	8.0%
Net Revenues/(Appropriations) Sewer Fund	**(74,763)**	**(130,313)**	74.3%
Fund 09 - Sewer Reserve Fund			
Interest	20,000	96,000	380.0%
Sewer Reserve - Fees	1,572,000	1,108,000	-29.5%
Total Revenues	**1,592,000**	**1,204,000**	-24.4%
Sewer Expenses	2,650,000	2,738,000	3.3%
Net Revenues/(Appropriations) Sewer Reserve Fund	**(1,058,000)**	**(1,534,000)**	45.0%

EAST WHITELAND TOWNSHIP
2020 BUDGET

Fund-Dept/Description	2019 FINAL	2020 BUDGET	Percent Change
Fund 30 - Park Development Fund			
Interest	2,000	6,000	200.0%
Grants	42,000	614,080	1362.1%
Park Development Fees	150,000	150,000	0.0%
Total Revenues	**194,000**	**770,080**	296.9%
Park Development	638,000	1,523,000	138.7%
Net Revenues/(Appropriations) Park Development Fund	**(444,000)**	**(752,920)**	69.6%
Fund 31 - Capital Improvement Fund			
Interest	15,000	30,000	100.0%
State Grants	25,000	292,000	1068.0%
Miscellaneous Revenue	55,000	5,000	-90.9%
Interfund Operating Transfers	475,600	403,400	-15.2%
Total Revenues	**570,600**	**730,400**	28.0%
Highway Projects	267,000	986,000	269.3%
Capital Projects	1,168,500	972,500	-16.8%
Capital Exp - New	115,000	-	-100.0%
Capital Exp-Replacements	333,300	485,200	45.6%
Total Expenditures	**1,883,800**	**2,443,700**	29.7%
Net Revenues/(Appropriations) Capital Improvement Fund	**(1,313,200)**	**(1,713,300)**	30.5%
Fund 33 - Act 209 Transportation Improvement Fund			
Interest	2,000	3,000	50.0%
Traffic Impact Fees	300,000	125,000	-58.3%
Total Revenues	**302,000**	**128,000**	-57.6%
Highway Projects	100,000	-	-100.0%
Net Revenues/(Appropriations) Act 209 Transportation Fund	**202,000**	**128,000**	-36.6%
Fund 35 - State Fund			
Liquid Fuels - State Aid Revenue	363,974	357,650	-1.7%
Liquid Fuels - Road Construction	363,870	357,000	-1.9%
Net Revenues/(Appropriations) State Fund	**104**	**650**	100.0%

2018 BUDGET - ALL FUNDS		
Total Revenue - All Funds	21,751,033	22,399,910
Total Expense - All Funds	23,649,709	25,922,334
Grand Total - All Funds	(1,898,676)	(3,522,424)

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Real Estate Taxes	-730,659.71	-761,000.00	-761,000.00	-762,677.69	-766,000.00	-755,820.00	-.7%
Local Enabling Taxes	-10,774,725.58	-11,051,000.00	-11,631,000.00	-10,356,571.94	-11,251,000.00	-11,400,000.00	-2.0%
Licenses & Franchise F	-228,784.96	-230,000.00	-230,000.00	-169,632.42	-230,200.00	-230,200.00	.1%
Fines	-50,627.20	-100,000.00	-100,000.00	-51,599.68	-58,000.00	-67,000.00	-33.0%
Interest	-10,257.08	-8,000.00	-34,000.00	-41,111.68	-37,000.00	-28,000.00	-17.6%
Rent	-28,800.00	-29,400.00	-29,400.00	-23,400.00	-23,400.00	-7,500.00	-74.5%
Intergovernmental Reve	-455,937.02	-458,800.00	-458,800.00	-523,951.80	-525,151.80	-515,900.00	12.4%
Grants	-76,604.75	-37,000.00	-37,000.00	-95,451.65	-92,304.01	-40,287.00	8.9%
Contracted Intergovt S	-24,516.54	.00	.00	.00	.00	.00	.0%
Department Earnings	-127,079.82	-83,000.00	-83,000.00	-76,441.00	-91,100.00	-84,100.00	1.3%
Department Earnings	-2,807,103.46	-1,618,000.00	-1,418,000.00	-1,363,589.91	-1,392,900.00	-1,409,410.00	-.6%
Parks & Recreation Ear	-41,702.89	-50,000.00	-81,530.00	-73,882.35	-73,220.00	-75,500.00	-7.4%
Miscellaneous Revenue	-90,544.49	-8,000.00	-8,000.00	-237,938.14	-79,265.00	-18,000.00	125.0%
Sale of Fixed Assets	-990.55	.00	.00	-785.00	.00	.00	.0%
Transfers From Other F	.00	-166,165.00	-166,165.00	-166,165.00	-166,165.00	-168,345.00	1.3%
Supervisors	7,499.89	7,500.00	7,500.00	8,073.60	7,500.00	7,500.00	.0%
Administration	977,646.01	1,031,205.00	984,205.00	938,527.87	960,485.91	896,117.00	-9.0%
Tax Collection	135,553.44	117,640.00	117,640.00	80,813.11	120,838.00	151,240.00	28.6%
Legal	264,656.49	341,000.00	391,000.00	317,275.66	367,000.00	242,000.00	-38.1%
Finance	96,388.68	110,100.00	130,100.00	90,904.27	130,100.00	325,170.00	149.9%
Engineering Services	116,205.76	113,400.00	136,400.00	113,909.24	136,400.00	134,400.00	-1.5%
Municipal Building	60,279.50	71,650.00	71,650.00	62,294.18	71,650.00	77,650.00	8.4%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Police Department	4,758,687.37	5,701,328.00	5,817,328.00	5,306,328.54	5,715,630.28	5,932,342.00	2.0%
Fire Protection	2,433,314.06	2,210,642.00	2,210,642.00	2,187,447.85	2,208,834.00	2,307,728.00	4.4%
Regulation, Inspection	662,552.77	1,053,265.00	978,265.00	842,523.50	916,628.00	988,027.00	1.0%
Planning & Zoning	299,920.54	315,872.00	315,872.00	298,666.75	318,372.00	439,116.00	39.0%
Emergency Mgmt.	1,587.27	6,750.00	6,750.00	196.45	6,750.00	4,750.00	-29.6%
Solid Waste Coll. & Di	17,701.90	27,500.00	27,500.00	20,189.65	27,500.00	25,000.00	-9.1%
Public Works - General	953,026.48	1,333,017.00	1,333,017.00	1,259,262.16	1,284,586.01	1,292,024.00	-3.1%
Public Works - Snow Re	118,669.41	146,604.00	146,604.00	89,470.49	146,604.00	159,450.00	8.8%
Public Works - Traffic	76,264.70	99,077.00	99,077.00	97,914.35	99,077.00	99,077.00	.0%
Public Works - Street	22,676.98	27,000.00	27,000.00	25,343.37	27,000.00	27,000.00	.0%
Public Works - Road Ma	166,937.56	184,070.00	184,070.00	151,629.44	184,070.00	191,500.00	4.0%
Pub. Works - Road Cont	.00	75,000.00	75,000.00	75,000.00	75,000.00	100,000.00	33.3%
Parks & Recreation Pro	21,515.85	34,150.00	34,150.00	15,256.94	24,150.00	29,550.00	-13.5%
Parks & Recreation Pro	29,452.78	38,400.00	64,400.00	60,897.73	64,504.00	68,550.00	6.4%
Parks Maintenance	14,977.47	30,750.00	30,750.00	22,828.54	31,050.00	41,100.00	33.7%
Library	46,703.00	46,700.00	46,700.00	46,700.00	46,700.00	46,700.00	.0%
Community Development	964.20	3,600.00	3,600.00	860.05	3,600.00	2,700.00	-25.0%
Debt Service - General	505,526.92	504,030.00	504,030.00	504,230.94	504,030.00	511,130.00	1.4%
Miscellaneous Expendit	6,947.19	13,950.00	13,950.00	6,352.82	13,950.00	14,000.00	.4%
Intergovenmental Expen	70,085.58	70,000.00	70,000.00	93,302.51	93,302.51	90,000.00	28.6%
Retiree Benefits - Gen	.00	.00	.00	.00	.00	120,000.00	.0%
Interfund Operating Tr	4,380,100.00	100,000.00	100,000.00	.00	100,000.00	.00	-100.0%
TOTAL General Fund	797,507.75	-786,165.00	-1,110,695.00	-1,226,998.25	-1,100,394.10	-476,241.00	-57.1%
TOTAL REVENUE	-15,448,334.05	-14,600,365.00	-15,037,895.00	-13,943,198.26	-14,785,705.81	-14,800,062.00	-1.6%
TOTAL EXPENSE	16,245,841.80	13,814,200.00	13,927,200.00	12,716,200.01	13,685,311.71	14,323,821.00	2.8%
GRAND TOTAL	797,507.75	-786,165.00	-1,110,695.00	-1,226,998.25	-1,100,394.10	-476,241.00	-57.1%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
01301 Real Estate Taxes							
Real Estate Taxes - Cu	-692,258.67	-730,000.00	-730,000.00	-732,057.76	-730,000.00	-734,600.00	.6%
Real Estate Taxes - De	-14,331.64	-11,000.00	-11,000.00	-16,756.16	-16,000.00	-11,220.00	2.0%
Real Estate Taxes - In	-24,069.40	-20,000.00	-20,000.00	-13,414.09	-20,000.00	-10,000.00	-50.0%
Real Estate Taxes	-730,659.71	-761,000.00	-761,000.00	-762,228.01	-766,000.00	-755,820.00	-.7%
01310 Local Enabling Taxes							
Real Estate Transf Tax	-2,991,303.50	-1,000,000.00	-1,180,000.00	-1,143,970.30	-1,200,000.00	-1,000,000.00	-15.3%
Earned Income Tax	-6,520,525.00	-8,701,000.00	-9,101,000.00	-9,314,546.35	-8,701,000.00	-9,050,000.00	-.6%
Earned Income Tax - Pr	.00	.00	.00	-14,200.00	.00	.00	.0%
Local Services Tax	-1,262,897.08	-1,350,000.00	-1,350,000.00	-977,855.46	-1,350,000.00	-1,350,000.00	.0%
Local Enabling Taxes	-10,774,725.58	-11,051,000.00	-11,631,000.00	-11,450,572.11	-11,251,000.00	-11,400,000.00	-2.0%
01321 Licenses & Franchise Fees							
Junkyard Licenses	-200.00	.00	.00	-200.00	-200.00	-200.00	.0%
Cable TV Franchise Fee	-228,584.96	-230,000.00	-230,000.00	-169,432.42	-230,000.00	-230,000.00	.0%
Licenses & Franchise F	-228,784.96	-230,000.00	-230,000.00	-169,632.42	-230,200.00	-230,200.00	.1%
01331 Fines							
Fines-MotorVeh.Violati	-23,554.50	-75,000.00	-75,000.00	-25,440.16	-33,000.00	-42,000.00	-44.0%
Fines-Ordinance Violat	-27,072.70	-25,000.00	-25,000.00	-21,261.98	-25,000.00	-25,000.00	.0%
Fines	-50,627.20	-100,000.00	-100,000.00	-46,702.14	-58,000.00	-67,000.00	-33.0%
01341 Interest							
Interest Earnings- Che	-9,580.34	-8,000.00	-34,000.00	-36,423.92	-37,000.00	-28,000.00	-17.6%
Interest Earnings CD	-676.74	.00	.00	.00	.00	.00	.0%
Interest	-10,257.08	-8,000.00	-34,000.00	-36,423.92	-37,000.00	-28,000.00	-17.6%
01342 Rent							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Rent - Park House	-13,800.00	-14,400.00	-14,400.00	-8,400.00	-8,400.00	.00	-100.0%
Rent-Mill Lane	-15,000.00	-15,000.00	-15,000.00	-15,000.00	-15,000.00	-7,500.00	-50.0%
Rent	-28,800.00	-29,400.00	-29,400.00	-23,400.00	-23,400.00	-7,500.00	-74.5%
01355 Intergovernmental Revenues							
Public Utility Realty	-9,489.45	-9,500.00	-9,500.00	-10,582.92	-10,582.92	-9,500.00	.0%
PA - Alcoholic Bev. Li	-4,600.00	-4,600.00	-4,600.00	-3,400.00	-4,600.00	-4,600.00	.0%
PA Act 205 Pension Aid	-370,066.69	-373,000.00	-373,000.00	-414,760.42	-414,760.42	-410,000.00	9.9%
PA State - Recycling	-1,695.30	-1,700.00	-1,700.00	-1,905.95	-1,905.95	-1,800.00	5.9%
Foreign Fire Insurance	-70,085.58	-70,000.00	-70,000.00	-93,302.51	-93,302.51	-90,000.00	28.6%
Intergovernmental Reve	-455,937.02	-458,800.00	-458,800.00	-523,951.80	-525,151.80	-515,900.00	12.4%
01357 Grants							
Police Department Gran	-12,060.56	-12,000.00	-12,000.00	-15,014.65	-12,000.00	-12,000.00	.0%
DEP Grant-Hazard.Waste	-59,298.19	-25,000.00	-25,000.00	-70,993.00	-70,993.00	-25,000.00	.0%
Safety Grants	-5,246.00	.00	.00	-9,444.00	-9,311.01	-3,287.00	.0%
Grants	-76,604.75	-37,000.00	-37,000.00	-95,451.65	-92,304.01	-40,287.00	8.9%
01358 Contracted Intergovt Services							
Contract for Police Se	-24,516.54	.00	.00	.00	.00	.00	.0%
Contracted Intergovt S	-24,516.54	.00	.00	.00	.00	.00	.0%
01361 Department Earnings							
Sbdv. & Land Dev Fees	-14,344.00	-16,000.00	-16,000.00	-14,301.00	-16,000.00	-16,000.00	.0%
Hearing Fees (ZHB, Cnd	-45,072.25	-22,000.00	-22,000.00	-26,750.00	-30,000.00	-23,000.00	4.5%
Sale of Maps and Ordin	-6.50	-500.00	-500.00	-10.00	-500.00	-500.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Certificates of Occupa	-34,327.07	-20,000.00	-20,000.00	-12,080.00	-20,000.00	-20,000.00	.0%
Erosion Control Permit	-31,800.00	-23,000.00	-23,000.00	-21,100.00	-23,000.00	-23,000.00	.0%
Zoning Permit Fees	-1,530.00	-1,500.00	-1,500.00	-2,200.00	-1,600.00	-1,600.00	6.7%
Department Earnings	-127,079.82	-83,000.00	-83,000.00	-76,441.00	-91,100.00	-84,100.00	1.3%
01362 Department Earnings							
Police Extra Duty Deta	-94,077.00	-80,000.00	-80,000.00	-56,150.00	-50,000.00	-75,000.00	-6.3%
Sale of Police Reports	-7,365.00	-6,000.00	-6,000.00	-7,065.00	-6,000.00	-6,150.00	2.5%
Security Alarm Fees	-21,900.00	-25,000.00	-25,000.00	-7,650.00	-25,000.00	-22,000.00	-12.0%
Fingerprinting Fees	-1,060.00	-1,000.00	-1,000.00	-1,830.00	-1,400.00	-1,100.00	10.0%
Fire Alarm Fees	.00	-4,500.00	-4,500.00	.00	-4,500.00	.00	-100.0%
Fire Marshal / Haz. Ma	-7,510.00	-7,500.00	-7,500.00	-7,055.00	-7,500.00	-7,500.00	.0%
Bldg, FP, Sign Permits	-1,805,402.04	-1,200,000.00	-1,000,000.00	-952,221.13	-1,000,000.00	-1,000,000.00	.0%
Electrical Permits	-371,842.32	-120,000.00	-120,000.00	-139,784.43	-120,000.00	-120,000.00	.0%
Plumbing Permits	-154,853.49	-60,000.00	-60,000.00	-58,214.90	-60,000.00	-61,000.00	1.7%
Hwy. Occupancy Permits	-12,699.00	-7,500.00	-7,500.00	-14,935.00	-12,000.00	-10,000.00	33.3%
Mechanical Permits	-323,293.61	-100,000.00	-100,000.00	-106,805.45	-100,000.00	-100,000.00	.0%
UCC (State Educ.) Fees	-7,101.00	-6,500.00	-6,500.00	-5,679.00	-6,500.00	-6,660.00	2.5%
Department Earnings	-2,807,103.46	-1,618,000.00	-1,418,000.00	-1,357,389.91	-1,392,900.00	-1,409,410.00	-.6%
01367 Parks & Recreation Earnings							
Park Fees and Permits	-17,055.00	-17,000.00	-17,000.00	-19,560.00	-18,190.00	-17,500.00	2.9%
Summer Rec. Program Fe	-18,075.00	-21,000.00	-52,530.00	-52,530.00	-52,530.00	-53,000.00	.9%
Discount Ticket Progra	-6,572.89	-12,000.00	-12,000.00	-1,792.35	-2,500.00	-5,000.00	-58.3%
Parks & Recreation Ear	-41,702.89	-50,000.00	-81,530.00	-73,882.35	-73,220.00	-75,500.00	-7.4%
01380 Miscellaneous Revenue							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Miscellaneous Revenue	-6,523.53	-5,000.00	-5,000.00	-9,802.68	-10,000.00	-8,000.00	60.0%
Other Non-Revenue Rece	-36,753.28	.00	.00	-224,017.57	-66,265.00	-8,000.00	.0%
Misc. Revenue - Police	-1,140.00	-1,000.00	-1,000.00	-205.00	-1,000.00	-500.00	-50.0%
Misc. Revenue - C&LS D	-1,611.25	-2,000.00	-2,000.00	-300.00	-2,000.00	-1,500.00	-25.0%
Misc Rev-Public Works	-998.70	.00	.00	-345.00	.00	.00	.0%
Asset Forfeiture	-43,517.73	.00	.00	.00	.00	.00	.0%
Miscellaneous Revenue	-90,544.49	-8,000.00	-8,000.00	-234,670.25	-79,265.00	-18,000.00	125.0%
01391 Sale of Fixed Assets							
Sale of Assets (Gen Fu	-990.55	.00	.00	-785.00	.00	.00	.0%
Sale of Fixed Assets	-990.55	.00	.00	-785.00	.00	.00	.0%
01392 Transfers From Other Funds							
Transfer from Sewer Fu	.00	-166,165.00	-166,165.00	-166,165.00	-166,165.00	-168,345.00	1.3%
Transfers From Other F	.00	-166,165.00	-166,165.00	-166,165.00	-166,165.00	-168,345.00	1.3%
01400 Supervisors							
Supervisors Compensati	7,499.89	7,500.00	7,500.00	7,499.88	7,500.00	7,500.00	.0%
FICA (SocSec & Medicar	.00	.00	.00	573.72	.00	.00	.0%
Supervisors	7,499.89	7,500.00	7,500.00	8,073.60	7,500.00	7,500.00	.0%
01401 Administration							
Salary - Township Mana	127,197.58	125,466.00	125,466.00	125,465.60	125,466.00	129,230.00	3.0%
Wages - Full Time I/T	32,479.46	.00	.00	.00	.00	.00	.0%
Salaries/Wages - Cleri	355,573.30	387,000.00	340,000.00	332,760.56	340,000.00	374,000.00	10.0%
Disability Insurance	4,265.06	5,900.00	5,900.00	3,896.16	5,900.00	6,300.00	6.8%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Medical Premiums	-3,386.25	.00	.00	-337.50	.00	.00	.0%
Medical Insurance / He	174,413.03	152,500.00	152,500.00	112,330.29	115,000.00	202,000.00	32.5%
Retiree Benefits(OPEB)	.00	52,000.00	52,000.00	50,581.96	52,000.00	55,000.00	5.8%
Drug and Alcohol Progr	636.50	500.00	500.00	137.80	500.00	.00	-100.0%
Life Insurance	3,094.60	4,500.00	4,500.00	2,889.48	4,500.00	4,500.00	.0%
Pension Contrib. & Exp	46,555.00	50,889.00	50,889.00	50,889.00	50,889.00	43,125.00	-15.3%
457 Employer Contribut	50,476.90	54,200.00	54,200.00	51,342.63	54,200.00	60,500.00	11.6%
FICA (SocSec & Medicar	38,035.76	41,000.00	41,000.00	33,947.86	37,000.00	39,000.00	-4.9%
Unemployment Compensat	18,367.78	7,500.00	7,500.00	11,688.92	15,000.00	5,000.00	-33.3%
Vacation Payout	9,097.76	.00	.00	.00	.00	.00	.0%
Longevity Pay	650.00	1,300.00	1,300.00	1,300.00	1,300.00	3,432.00	164.0%
Overtime - Regular	1,258.95	2,500.00	2,500.00	693.62	2,500.00	1,000.00	-60.0%
Materials & Supplies	581.59	1,000.00	1,000.00	47.14	1,000.00	1,000.00	.0%
Office Supplies	7,778.87	9,000.00	9,000.00	6,754.94	9,000.00	9,000.00	.0%
Vehicle Fuel	1,467.89	1,700.00	1,700.00	1,190.54	1,700.00	1,700.00	.0%
Professional Services	7,307.11	25,000.00	25,000.00	33,219.00	35,000.00	25,000.00	.0%
Banking / Mgmt. Fees	571.42	1,000.00	1,000.00	779.78	1,000.00	1,000.00	.0%
Telephone (inc. Mobile	4,473.05	6,000.00	6,000.00	5,534.16	6,000.00	6,000.00	.0%
Postage & Courier	5,225.90	5,500.00	5,500.00	6,229.04	5,500.00	6,000.00	9.1%
Electronic Communicati	32,328.16	35,000.00	35,000.00	37,774.15	35,000.00	35,000.00	.0%
Training, Conferences,	6,419.12	10,000.00	10,000.00	11,243.42	10,000.00	10,000.00	.0%
Employee Welfare	12,838.49	7,000.00	7,000.00	5,240.06	7,000.00	15,000.00	114.3%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Advertising, Printing	5,840.32	12,000.00	12,000.00	11,953.05	12,000.00	15,000.00	25.0%
Worker's Comp Insuranc	4,238.70	4,500.00	4,500.00	4,780.91	4,780.91	4,900.00	8.9%
Office Equipment Maint	9,783.92	9,000.00	9,000.00	7,018.30	9,000.00	9,000.00	.0%
Vehicle - Maint. & Rep	386.91	1,000.00	1,000.00	298.49	1,000.00	1,000.00	.0%
Books, Subscriptions,	10,322.61	10,000.00	10,000.00	9,279.68	10,000.00	11,000.00	10.0%
Capital Purch - Vehicl	.00	3,750.00	3,750.00	3,750.00	3,750.00	3,800.00	1.3%
Minor Equip Expensed	9,366.52	4,500.00	4,500.00	3,900.11	4,500.00	5,000.00	11.1%
Administration	977,646.01	1,031,205.00	984,205.00	926,579.15	960,485.91	1,082,487.00	10.0%
01403 Tax Collection							
R/E Tax Collector Comp	7,000.08	7,000.00	7,000.00	6,999.98	7,000.00	7,000.00	.0%
FICA (SocSec & Medicar	535.56	540.00	540.00	580.18	540.00	540.00	.0%
EIT & LST Collection F	118,985.17	103,000.00	103,000.00	66,708.94	103,000.00	133,000.00	29.1%
Postage & Courier	6,756.04	4,500.00	4,500.00	2,968.49	7,000.00	7,000.00	55.6%
Official's Bonding	1,510.00	1,600.00	1,600.00	1,619.00	1,619.00	1,700.00	6.3%
Other Expenses	766.59	1,000.00	1,000.00	1,914.03	1,679.00	2,000.00	100.0%
Tax Collection	135,553.44	117,640.00	117,640.00	80,790.62	120,838.00	151,240.00	28.6%
01404 Legal							
Legal Services-Solicit	120,867.88	160,000.00	160,000.00	119,362.75	160,000.00	160,000.00	.0%
Legal Services-Labor A	139,915.61	175,000.00	225,000.00	192,398.16	200,000.00	75,000.00	-66.7%
Legal Other	.00	2,000.00	2,000.00	.00	2,000.00	2,000.00	.0%
Court Reporter Fees	3,873.00	4,000.00	4,000.00	3,467.25	5,000.00	5,000.00	25.0%
Legal	264,656.49	341,000.00	391,000.00	315,228.16	367,000.00	242,000.00	-38.1%
01405 Finance							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Professional Services	12,597.30	.00	20,000.00	17,470.94	20,000.00	20,000.00	.0%
Acctg. Services (Audit	22,935.00	26,000.00	26,000.00	24,085.00	26,000.00	26,000.00	.0%
Computer Services	51,015.53	75,000.00	75,000.00	40,724.31	75,000.00	81,750.00	9.0%
Advertising, Printing	.00	.00	.00	316.10	.00	.00	.0%
Insurance - Liability,	5,356.86	5,700.00	5,700.00	5,659.60	5,700.00	6,050.00	6.1%
Official's Bonding	4,731.00	3,400.00	3,400.00	1,737.00	3,400.00	5,000.00	47.1%
Office Equipment Maint	.00	.00	.00	160.81	.00	.00	.0%
Books, Subscriptions,	.00	.00	.00	99.00	.00	.00	.0%
Capital Purch-office,c	-247.01	.00	.00	.00	.00	.00	.0%
Finance	96,388.68	110,100.00	130,100.00	90,252.76	130,100.00	138,800.00	6.7%
01408 Engineering Services							
Consulting Services	3,354.09	3,400.00	3,400.00	724.12	3,400.00	3,400.00	.0%
Civil Engineer	50,045.80	70,000.00	70,000.00	49,477.61	70,000.00	66,000.00	-5.7%
Traffic Engineer	62,805.87	40,000.00	63,000.00	61,262.57	63,000.00	65,000.00	3.2%
Engineering Services	116,205.76	113,400.00	136,400.00	111,464.30	136,400.00	134,400.00	-1.5%
01409 Municipal Building							
Cleaning Supplies	3,113.70	3,750.00	3,750.00	2,571.93	3,750.00	3,750.00	.0%
Utility Exp. - Electri	22,851.81	27,500.00	27,500.00	21,513.03	27,500.00	27,500.00	.0%
Janitorial Services	12,803.35	17,000.00	17,000.00	12,946.35	17,000.00	18,000.00	5.9%
Buildings - Maint. & R	18,292.84	20,000.00	20,000.00	20,580.03	20,000.00	25,000.00	25.0%
Real Estate Tax	3,217.80	3,400.00	3,400.00	3,249.23	3,400.00	3,400.00	.0%
Municipal Building	60,279.50	71,650.00	71,650.00	60,860.57	71,650.00	77,650.00	8.4%
01410 Police Department							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Salaries - Department	318,067.03	252,000.00	325,000.00	314,537.15	325,000.00	411,000.00	26.5%
Salary/Wages - Profess	1,683,230.64	1,947,000.00	2,100,000.00	2,081,843.33	2,100,000.00	2,245,632.00	6.9%
Part-Time Wages	149,513.14	195,000.00	85,000.00	71,910.00	85,000.00	80,000.00	-5.9%
Wages - Mechanic	25,454.51	25,382.00	25,382.00	26,429.15	26,430.00	27,325.00	7.7%
Salaries/Wages - Cleri	148,632.36	195,000.00	195,000.00	125,218.97	125,000.00	133,000.00	-31.8%
O/T - Police EDD	75,228.92	80,000.00	80,000.00	41,922.29	50,000.00	75,000.00	-6.3%
O/T - Police Grants	3,169.24	6,000.00	6,000.00	7,062.99	6,500.00	8,000.00	33.3%
Disability Insurance	17,437.79	21,850.00	21,850.00	18,502.62	19,000.00	22,600.00	3.4%
Medical Insurance / He	1,021,286.78	805,000.00	805,000.00	735,652.54	805,000.00	690,200.00	-14.3%
Retiree Benefits(OPEB)	.00	317,000.00	317,000.00	176,977.84	317,000.00	301,000.00	-5.0%
Drug and Alcohol Progr	3,142.97	4,000.00	4,000.00	2,679.57	4,000.00	4,000.00	.0%
Life Insurance	9,661.78	12,000.00	12,000.00	11,314.20	12,000.00	13,000.00	8.3%
Pension Contrib. & Exp	312,209.00	555,663.00	555,663.00	555,663.00	555,663.00	570,685.00	2.7%
457 Employer Contribut	1,526.52	.00	.00	.00	.00	.00	.0%
FICA (SocSec & Medicar	205,633.07	232,325.00	232,325.00	221,911.46	232,325.00	256,400.00	10.4%
Physical & Psych. Exam	200.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	.0%
Vacation Payout	46,173.03	28,000.00	28,000.00	.00	28,000.00	30,000.00	7.1%
Personal Days Buyback	13,930.28	20,000.00	20,000.00	10,565.78	20,000.00	20,000.00	.0%
Accum. Sick Payout	15,704.64	.00	.00	.00	.00	.00	.0%
Longevity Pay	111,598.00	105,300.00	105,300.00	104,000.00	105,300.00	109,000.00	3.5%
Overtime - Regular	71,780.73	52,000.00	52,000.00	37,574.88	42,000.00	68,000.00	30.8%
O/T - Fire Arms Traini	10,198.43	24,000.00	24,000.00	9,516.11	20,000.00	24,000.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Shift Differential Pay	9,000.00	11,400.00	11,400.00	12,000.00	11,400.00	12,000.00	5.3%
Holiday Pay	55,936.48	65,000.00	65,000.00	62,469.76	70,000.00	80,000.00	23.1%
Overtime - Court Time	9,027.20	15,000.00	15,000.00	13,023.71	15,000.00	15,000.00	.0%
Shift Supervisor Pay	2,167.50	2,000.00	2,000.00	3,394.50	4,400.00	4,400.00	120.0%
Other Pay	22,533.95	.00	.00	1,000.00	1,000.00	.00	.0%
Materials & Supplies -	600.00	15,000.00	15,000.00	6,020.38	15,000.00	8,000.00	-46.7%
Supplies - ERT	.00	4,000.00	4,000.00	2,500.00	2,500.00	2,500.00	-37.5%
Office Supplies	7,408.68	7,500.00	7,500.00	6,550.67	7,500.00	7,500.00	.0%
Small Items of Equipme	4,996.08	8,000.00	8,000.00	343.99	8,000.00	8,000.00	.0%
Vehicle Fuel	45,984.30	50,000.00	50,000.00	39,419.34	50,000.00	50,000.00	.0%
Uniforms	34,399.55	54,000.00	54,000.00	30,573.50	50,000.00	54,000.00	.0%
Ammunition / Similar S	7,718.74	9,000.00	9,000.00	3,903.15	8,000.00	9,000.00	.0%
Investigation Expenses	2,280.77	6,158.00	6,158.00	7,359.88	7,500.00	13,500.00	119.2%
Professional Services	.00	50,000.00	50,000.00	.00	50,000.00	50,000.00	.0%
Legal Services-Solicit	.00	2,000.00	2,000.00	.00	2,000.00	2,000.00	.0%
Computer Services	46,270.80	60,000.00	60,000.00	122,471.81	60,000.00	65,400.00	9.0%
Telephone (inc. Mobile	15,268.51	27,000.00	27,000.00	14,659.24	27,000.00	27,000.00	.0%
Postage & Courier	197.79	1,000.00	1,000.00	.00	1,000.00	1,000.00	.0%
Radio Equipment Maint.	121.00	3,500.00	3,500.00	602.40	3,500.00	3,500.00	.0%
Training, Conferences,	6,305.11	24,000.00	24,000.00	12,781.62	24,000.00	9,000.00	-62.5%
Fire Arms Training	3.50	2,800.00	2,800.00	2,162.02	2,800.00	3,500.00	25.0%
Accreditation Exp	5,003.90	5,200.00	5,200.00	5,191.65	5,200.00	5,200.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Advertising, Printing	1,948.52	4,000.00	4,000.00	584.96	4,000.00	4,000.00	.0%
Insurance - Liability,	73,238.37	77,000.00	77,000.00	77,460.81	77,460.81	81,700.00	6.1%
Worker's Comp Insuranc	94,777.33	97,000.00	97,000.00	106,901.47	106,901.47	104,000.00	7.2%
Office Equipment Maint	2,097.39	3,000.00	3,000.00	.00	3,000.00	3,000.00	.0%
Equipment - Maint. & R	8,398.04	14,000.00	14,000.00	11,507.58	14,000.00	14,000.00	.0%
Vehicle - Maint. & Rep	39,990.74	52,000.00	52,000.00	39,093.08	52,000.00	52,000.00	.0%
Books, Subscriptions,	5,081.16	7,000.00	7,000.00	1,332.70	7,000.00	6,000.00	-14.3%
Other Expenses	5.00	.00	.00	4.98	.00	.00	.0%
Contributions to Other	1,920.65	.00	.00	.00	.00	.00	.0%
Capital Purch-office,c	549.00	.00	.00	.00	.00	.00	.0%
Buildings - Capital Pu	791.00	.00	.00	.00	.00	.00	.0%
Capital Purch - Vehicl	.00	120,250.00	120,250.00	120,250.00	120,250.00	121,300.00	.9%
Minor Equip Expensed	10,887.45	26,000.00	26,000.00	12,884.95	26,000.00	26,000.00	.0%
Police Department	4,758,687.37	5,701,328.00	5,817,328.00	5,270,730.03	5,715,630.28	5,932,342.00	2.0%
01411 Fire Protection							
Salaries - Department	15,638.52	155,000.00	155,000.00	159,173.24	160,000.00	165,000.00	6.5%
Salary/Wages - Profess	903,561.91	780,000.00	780,000.00	793,589.38	800,000.00	820,000.00	5.1%
Part-Time Wages	235,427.35	226,000.00	226,000.00	252,391.67	236,000.00	282,480.00	25.0%
Disability Insurance	6,811.32	7,300.00	7,300.00	6,811.32	7,300.00	7,200.00	-1.4%
Medical Premiums	-5,590.00	.00	.00	-645.00	.00	.00	.0%
Opt Out Payment	.00	.00	.00	7,307.78	7,310.00	10,000.00	.0%
Medical Insurance / He	319,254.79	297,250.00	297,250.00	243,712.75	245,000.00	245,000.00	-17.6%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Drug and Alcohol Progr	981.52	1,000.00	1,000.00	628.12	1,000.00	1,100.00	10.0%
Life Insurance	4,344.00	4,700.00	4,700.00	4,344.00	4,700.00	4,600.00	-2.1%
Pension Contrib. & Exp	105,850.00	158,964.00	158,964.00	158,964.00	158,964.00	174,500.00	9.8%
FICA (SocSec & Medicar	91,536.46	94,162.00	94,162.00	97,578.36	94,162.00	104,000.00	10.4%
Physical & Psych. Exam	6,624.00	7,200.00	7,200.00	5,786.00	7,200.00	7,500.00	4.2%
Longevity Pay	15,392.00	16,016.00	16,016.00	16,848.00	16,848.00	16,848.00	5.2%
Overtime - Regular	2,570.39	1,500.00	1,500.00	8,709.10	8,600.00	7,800.00	420.0%
Holiday Pay	35,397.49	43,400.00	43,400.00	35,871.82	43,400.00	45,000.00	3.7%
Other Pay	3,500.00	.00	.00	2,500.00	500.00	.00	.0%
Materials & Supplies	2,032.72	7,000.00	7,000.00	2,929.61	7,000.00	2,000.00	-71.4%
Office Supplies	.00	250.00	250.00	117.56	250.00	250.00	.0%
Small Items of Equipme	285.10	500.00	500.00	429.00	500.00	500.00	.0%
Vehicle Fuel	1,683.10	3,000.00	3,000.00	1,367.59	3,000.00	2,000.00	-33.3%
Uniforms	7,820.65	7,500.00	7,500.00	6,923.90	7,500.00	8,400.00	12.0%
Computer Services	30,100.27	30,000.00	30,000.00	26,847.11	30,000.00	29,700.00	-1.0%
Telephone (inc. Mobile	2,027.40	2,000.00	2,000.00	2,295.56	2,000.00	2,000.00	.0%
Training, Conferences,	1,618.86	9,500.00	9,500.00	999.50	9,500.00	7,150.00	-24.7%
In-House Traning Expen	238.69	2,000.00	2,000.00	.00	2,000.00	2,000.00	.0%
Advertising, Printing	232.00	250.00	250.00	323.76	250.00	250.00	.0%
Insurance - Liability,	23,118.21	24,500.00	24,500.00	24,424.80	24,500.00	26,000.00	6.1%
Worker's Comp Insuranc	71,747.59	75,000.00	75,000.00	69,593.75	75,000.00	75,000.00	.0%
Hydrant Rental	86,055.00	87,000.00	87,000.00	64,546.89	87,000.00	89,000.00	2.3%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Vehicle - Maint. & Rep	584.72	2,000.00	2,000.00	2,071.79	2,000.00	2,000.00	.0%
Books, Subscriptions,	3,170.00	1,350.00	1,350.00	68.00	1,350.00	1,350.00	.0%
Contribution - E. W. F	455,000.00	155,000.00	155,000.00	155,000.00	155,000.00	164,000.00	5.8%
Contribution - Malvern	6,300.00	6,300.00	6,300.00	6,000.00	6,000.00	.00	-100.0%
Capital Purch - Vehicl	.00	5,000.00	5,000.00	5,000.00	5,000.00	5,100.00	2.0%
Fire Protection	2,433,314.06	2,210,642.00	2,210,642.00	2,162,509.36	2,208,834.00	2,307,728.00	4.4%
01413 Regulation, Inspections & Code							
Salaries - Department	15,638.52	150,000.00	150,000.00	153,829.20	154,000.00	160,000.00	6.7%
Salary/Wages - Profess	218,202.68	233,000.00	138,000.00	137,313.02	138,000.00	154,000.00	11.6%
Wages - Mechanic	6,354.19	6,346.00	6,346.00	6,464.51	6,465.00	6,830.00	7.6%
Salaries/Wages - Cleri	71,990.93	103,000.00	63,000.00	60,794.32	63,000.00	107,240.00	70.2%
Disability Insurance	2,414.91	4,750.00	4,750.00	2,971.71	3,200.00	3,500.00	-26.3%
Medical Premiums	-1,665.00	.00	.00	-270.00	.00	.00	.0%
Medical Insurance / He	119,965.42	190,000.00	190,000.00	119,352.80	120,000.00	158,000.00	-16.8%
Retiree Benefits(OPEB)	.00	46,000.00	46,000.00	46,061.36	46,000.00	48,550.00	5.5%
Drug and Alcohol Progr	155.30	.00	.00	.00	.00	.00	.0%
Life Insurance	1,520.40	3,255.00	3,255.00	2,063.40	3,255.00	2,800.00	-14.0%
Pension Contrib. & Exp	47,437.00	67,852.00	67,852.00	67,852.00	67,852.00	66,648.00	-1.8%
457 Employer Contribut	.00	15,000.00	15,000.00	15,637.85	15,000.00	16,055.00	7.0%
FICA (SocSec & Medicar	25,161.45	39,000.00	39,000.00	29,014.76	39,000.00	34,000.00	-12.8%
Physical & Psych. Exam	482.00	1,200.00	1,200.00	.00	1,200.00	1,200.00	.0%
Vacation Payout	4,255.06	6,000.00	6,000.00	1,300.80	6,000.00	6,000.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Accum. Sick Payout	.00	.00	.00	4,878.00	4,878.00	.00	.0%
Longevity Pay	5,122.00	5,122.00	5,122.00	5,538.00	5,538.00	4,394.00	-14.2%
Overtime - Regular	14,280.09	6,000.00	6,000.00	4,675.70	6,000.00	6,000.00	.0%
Other Pay	2,500.00	.00	.00	500.00	500.00	.00	.0%
Office Supplies	764.16	750.00	750.00	.00	750.00	1,000.00	33.3%
Vehicle Fuel	5,492.20	9,000.00	9,000.00	4,795.18	9,000.00	9,000.00	.0%
Professional Services	74,325.45	30,000.00	90,000.00	79,038.97	90,000.00	85,000.00	-5.6%
UCC / State Educ. Fees	8,068.50	6,660.00	6,660.00	4,734.00	6,660.00	6,660.00	.0%
Computer Services	20,721.96	28,290.00	28,290.00	23,662.51	28,290.00	31,000.00	9.6%
Telephone (inc. Mobile	3,471.53	7,940.00	7,940.00	3,589.94	7,940.00	5,000.00	-37.0%
Postage & Courier	83.95	1,000.00	1,000.00	.00	1,000.00	1,000.00	.0%
Training, Conferences,	1,607.00	4,000.00	4,000.00	960.00	4,000.00	4,000.00	.0%
Advertising, Printing	147.00	1,750.00	1,750.00	1,481.00	1,750.00	1,750.00	.0%
Insurance - Liability,	5,624.70	5,900.00	5,900.00	5,942.60	5,900.00	6,300.00	6.8%
Worker's Comp Insuranc	2,204.12	2,255.00	2,255.00	2,486.08	2,255.00	2,500.00	10.9%
Office Equipment Maint	.00	24,200.00	24,200.00	3,136.00	24,200.00	20,000.00	-17.4%
Equipment - Maint. & R	.00	800.00	800.00	.00	800.00	800.00	.0%
Vehicle - Maint. & Rep	2,254.22	3,000.00	3,000.00	14,712.98	3,000.00	4,000.00	33.3%
Books, Subscriptions,	1,515.72	6,995.00	6,995.00	1,078.95	6,995.00	7,000.00	.1%
Capital Purch - Vehicl	.00	25,000.00	25,000.00	25,000.00	25,000.00	25,300.00	1.2%
Minor Equip Expensed	2,457.31	19,200.00	19,200.00	1,030.55	19,200.00	2,500.00	-87.0%
Regulation, Inspection	662,552.77	1,053,265.00	978,265.00	829,626.19	916,628.00	988,027.00	1.0%

01414 Planning & Zoning

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Salaries - Department	138,811.35	147,000.00	147,000.00	94,828.80	95,000.00	155,000.00	5.4%
Salary/Wages - Profess	.00	.00	.00	56,328.90	57,000.00	75,000.00	.0%
Disability Insurance	884.25	1,677.00	1,677.00	1,040.15	1,677.00	2,200.00	31.2%
Medical Premiums	-690.00	.00	.00	-37.50	.00	.00	.0%
Medical Insurance / He	38,186.09	43,500.00	43,500.00	32,999.58	34,000.00	55,500.00	27.6%
Drug and Alcohol Progr	200.60	300.00	300.00	200.60	300.00	200.00	-33.3%
Life Insurance	506.80	930.00	930.00	687.80	930.00	1,400.00	50.5%
Pension Contrib. & Exp	11,084.00	.00	.00	.00	.00	11,761.00	.0%
457 Employer Contribut	.00	11,800.00	11,800.00	7,586.21	11,800.00	8,055.00	-31.7%
FICA (SocSec & Medicar	10,808.11	11,250.00	11,250.00	11,806.10	11,250.00	18,000.00	60.0%
Vacation Payout	5,644.21	.00	.00	.00	.00	.00	.0%
Other Pay	.00	.00	.00	500.00	.00	.00	.0%
Materials & Supplies	89.96	500.00	500.00	.00	500.00	1,000.00	100.0%
Vehicle Fuel	707.43	750.00	750.00	449.51	750.00	1,000.00	33.3%
Professional Services	33,010.70	10,000.00	10,000.00	.00	10,000.00	10,000.00	.0%
Legal Services-Solicit	18,401.11	25,000.00	25,000.00	25,902.97	25,000.00	25,000.00	.0%
Court Reporter Fees	1,966.50	6,000.00	6,000.00	3,478.00	6,000.00	5,000.00	-16.7%
Computer Services	22,137.44	30,000.00	30,000.00	31,585.49	30,000.00	32,700.00	9.0%
Telephone (inc. Mobile	1,719.32	2,000.00	2,000.00	1,860.44	2,000.00	2,100.00	5.0%
Training, Conferences,	908.77	3,000.00	3,000.00	456.53	3,000.00	5,000.00	66.7%
Educational Reimb	.00	.00	.00	5,855.65	7,000.00	7,000.00	.0%
Advertising, Printing	7,941.32	10,000.00	10,000.00	6,152.63	10,000.00	10,000.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Insurance - Liability,	3,063.45	3,200.00	3,200.00	3,236.60	3,200.00	3,400.00	6.3%
Worker's Comp Insuranc	1,186.84	1,215.00	1,215.00	1,338.64	1,215.00	1,500.00	23.5%
Vehicle - Maint. & Rep	800.29	1,000.00	1,000.00	.00	1,000.00	1,000.00	.0%
Books, Subscriptions,	2,052.00	1,000.00	1,000.00	1,242.00	1,000.00	2,000.00	100.0%
Other Exp-ZHB	500.00	2,000.00	2,000.00	1,025.00	2,000.00	1,500.00	-25.0%
Capital Purch - Vehicl	.00	3,750.00	3,750.00	3,750.00	3,750.00	3,800.00	1.3%
Planning & Zoning	299,920.54	315,872.00	315,872.00	292,274.10	318,372.00	439,116.00	39.0%
01415 Emergency Mgmt.							
Materials & Supplies	1,587.27	.00	.00	.00	.00	2,000.00	.0%
Training, Conferences,	.00	6,000.00	6,000.00	.00	6,000.00	2,000.00	-66.7%
Books, Subscriptions,	.00	750.00	750.00	196.45	750.00	750.00	.0%
Emergency Mgmt.	1,587.27	6,750.00	6,750.00	196.45	6,750.00	4,750.00	-29.6%
01427 Solid Waste Coll. & Disposal							
Solid Waste Disposal &	10,969.62	10,000.00	10,000.00	10,270.68	10,000.00	12,000.00	20.0%
Household Haz. Waste C	2,639.98	2,500.00	2,500.00	4,342.14	2,500.00	3,000.00	20.0%
Other Contracted Servi	4,092.30	15,000.00	15,000.00	5,004.06	15,000.00	10,000.00	-33.3%
Solid Waste Coll. & Di	17,701.90	27,500.00	27,500.00	19,616.88	27,500.00	25,000.00	-9.1%
01430 Public Works - General Service							
Salaries - Department	95,987.41	97,615.00	97,615.00	101,156.65	97,615.00	105,000.00	7.6%
Salary/Wages - Profess	238,494.39	271,000.00	271,000.00	266,162.63	271,000.00	290,000.00	7.0%
Sal / Wages Staff Spec	.00	.00	.00	3,575.04	.00	.00	.0%
Wages - Mechanic	25,454.51	25,382.00	25,382.00	26,429.15	25,382.00	27,325.00	7.7%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Salaries/Wages - Other	.00	1,600.00	1,600.00	519.18	1,600.00	1,600.00	.0%
Disability Insurance	5,431.20	5,300.00	5,300.00	4,685.75	5,300.00	4,700.00	-11.3%
Medical Premiums	-1,102.50	.00	.00	-135.00	.00	.00	.0%
Medical Insurance / He	253,690.46	301,250.00	301,250.00	255,066.18	260,000.00	244,000.00	-19.0%
Retiree Benefits(OPEB)	.00	70,000.00	70,000.00	67,830.60	70,000.00	73,500.00	5.0%
Drug and Alcohol Progr	528.11	900.00	900.00	1,299.04	900.00	900.00	.0%
Life Insurance	3,348.50	4,200.00	4,200.00	3,629.05	4,200.00	3,700.00	-11.9%
Pension Contrib. & Exp	71,819.00	148,720.00	148,720.00	148,720.00	148,720.00	148,980.00	.2%
FICA (SocSec & Medicar	31,754.88	31,000.00	31,000.00	32,109.92	31,000.00	33,000.00	6.5%
Vacation Payout	25,383.03	.00	.00	.00	.00	.00	.0%
Accum. Sick Payout	22,987.17	.00	.00	.00	.00	.00	.0%
Longevity Pay	15,431.00	12,740.00	12,740.00	14,248.00	14,248.00	15,972.00	25.4%
Overtime - Regular	974.83	2,500.00	2,500.00	919.53	2,500.00	2,500.00	.0%
Other Pay	.00	.00	.00	3,500.00	3,500.00	.00	.0%
Materials & Supplies	1,352.23	4,000.00	4,000.00	2,705.21	4,000.00	4,000.00	.0%
Office Supplies	737.52	600.00	600.00	509.73	600.00	600.00	.0%
Small Items of Equipme	.00	.00	.00	9,444.00	9,311.01	3,287.00	.0%
Utility Exp. - Electri	16,928.16	18,000.00	18,000.00	15,508.11	18,000.00	18,000.00	.0%
Vehicle Fuel	22,826.30	25,000.00	25,000.00	21,952.60	25,000.00	25,000.00	.0%
Uniforms	7,169.56	9,000.00	9,000.00	5,204.89	9,000.00	9,000.00	.0%
Computer Services	14,481.64	25,000.00	25,000.00	16,930.26	25,000.00	27,250.00	9.0%
Telephone (inc. Mobile	3,689.61	4,200.00	4,200.00	3,833.79	4,200.00	4,200.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Training, Conferences,	309.00	1,000.00	1,000.00	21.40	1,000.00	1,000.00	.0%
Advertising, Printing	1,201.11	2,000.00	2,000.00	2,567.14	2,500.00	2,500.00	25.0%
Insurance - Liability,	23,419.53	25,000.00	25,000.00	24,743.12	25,000.00	27,000.00	8.0%
Worker's Comp Insuranc	20,684.86	21,000.00	21,000.00	23,330.93	21,000.00	23,000.00	9.5%
Office Equipment Maint	256.72	1,500.00	1,500.00	.00	1,500.00	1,500.00	.0%
Buildings - Maint. & R	5,474.38	5,300.00	5,300.00	6,050.76	5,300.00	5,300.00	.0%
Vehicle - Maint. & Rep	36,819.70	40,000.00	40,000.00	52,793.81	50,000.00	40,000.00	.0%
Books, Subscriptions,	65.00	860.00	860.00	75.00	860.00	860.00	.0%
Amortization Expense	.00	32,000.00	32,000.00	.00	.00	.00	-100.0%
Capital Purch - Vehicl	.00	137,850.00	137,850.00	137,850.00	137,850.00	139,100.00	.9%
Minor Equip Expensed	7,429.17	8,500.00	8,500.00	740.10	8,500.00	9,250.00	8.8%
Public Works - General	953,026.48	1,333,017.00	1,333,017.00	1,253,976.57	1,284,586.01	1,292,024.00	-3.1%
01432 Public Works - Snow Removal							
Salary/Wages - Profess	12,619.49	19,354.00	19,354.00	4,929.32	19,354.00	21,000.00	8.5%
Salaries/Wages - Other	341.68	2,000.00	2,000.00	.00	2,000.00	2,000.00	.0%
FICA (SocSec & Medicar	2,941.58	4,000.00	4,000.00	2,041.64	4,000.00	4,200.00	5.0%
Overtime - Regular	21,826.18	32,000.00	32,000.00	21,758.94	32,000.00	32,000.00	.0%
Highway Materials & Su	66,727.47	78,000.00	78,000.00	57,662.62	78,000.00	78,000.00	.0%
Training, Conferences,	.00	250.00	250.00	45.92	250.00	250.00	.0%
Vehicle - Maint. & Rep	14,213.01	8,500.00	8,500.00	3,032.05	8,500.00	8,500.00	.0%
Other Contracted Servi	.00	1,000.00	1,000.00	.00	1,000.00	12,000.00	1100.0%
Minor Equip Expensed	.00	1,500.00	1,500.00	.00	1,500.00	1,500.00	.0%
Public Works - Snow Re	118,669.41	146,604.00	146,604.00	89,470.49	146,604.00	159,450.00	8.8%
01433 Public Works - Traffic Signals							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
FICA (SocSec & Medicar	.00	77.00	77.00	.00	77.00	77.00	.0%
Overtime - Regular	.00	1,000.00	1,000.00	.00	1,000.00	1,000.00	.0%
Utility Exp. - Electri	5,900.05	8,000.00	8,000.00	6,191.06	8,000.00	8,000.00	.0%
Traffic Signal Maint.	52,616.75	60,000.00	60,000.00	65,431.84	60,000.00	60,000.00	.0%
Traffic Signs R & M. /	17,747.90	25,000.00	25,000.00	19,552.79	25,000.00	25,000.00	.0%
Capital Purch - Traffi	.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	.0%
Public Works - Traffic	76,264.70	99,077.00	99,077.00	96,175.69	99,077.00	99,077.00	.0%
01434 Public Works - Street Lighting							
Electric - Energizing	22,676.98	27,000.00	27,000.00	23,339.82	27,000.00	27,000.00	.0%
Public Works - Street	22,676.98	27,000.00	27,000.00	23,339.82	27,000.00	27,000.00	.0%
01438 Public Works - Road Maint. & R							
Salary/Wages - Profess	102,231.25	96,770.00	96,770.00	84,100.42	96,770.00	104,000.00	7.5%
FICA (SocSec & Medicar	8,084.42	8,300.00	8,300.00	6,550.94	8,300.00	8,500.00	2.4%
Overtime - Regular	2,779.33	3,000.00	3,000.00	1,533.14	3,000.00	3,000.00	.0%
Highway Materials & Su	45,740.56	60,000.00	60,000.00	55,491.89	60,000.00	60,000.00	.0%
Contracted Services -	8,102.00	16,000.00	16,000.00	1,157.00	16,000.00	16,000.00	.0%
Public Works - Road Ma	166,937.56	184,070.00	184,070.00	148,833.39	184,070.00	191,500.00	4.0%
01439 Pub. Works - Road Contruction							
Highway Materials & Su	.00	75,000.00	75,000.00	75,000.00	75,000.00	100,000.00	33.3%
Pub. Works - Road Cont	.00	75,000.00	75,000.00	75,000.00	75,000.00	100,000.00	33.3%
01451 Parks & Recreation Programs							
Discount Ticket Progra	6,630.00	15,000.00	15,000.00	1,603.50	5,000.00	10,000.00	-33.3%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Insurance - Liability,	3,230.85	3,400.00	3,400.00	3,413.44	3,400.00	3,700.00	8.8%
Worker's Comp Insuranc	.00	500.00	500.00	.00	500.00	600.00	20.0%
Park Activities & Prog	11,535.00	15,000.00	15,000.00	10,000.00	15,000.00	15,000.00	.0%
Other Expenses	120.00	250.00	250.00	240.00	250.00	250.00	.0%
Parks & Recreation Pro	21,515.85	34,150.00	34,150.00	15,256.94	24,150.00	29,550.00	-13.5%
01452 Parks & Recreation Programs							
Salary/Wages - Profess	20,053.58	24,000.00	50,000.00	45,287.44	50,000.00	48,000.00	-4.0%
Drug and Alcohol Progr	695.60	1,600.00	1,600.00	1,035.00	1,600.00	1,500.00	-6.3%
FICA (SocSec & Medicar	1,534.09	1,800.00	1,800.00	3,472.45	1,800.00	4,000.00	122.2%
Overtime - Regular	.00	.00	.00	103.94	104.00	500.00	.0%
Supplies - Summer Rec	4,180.12	5,500.00	5,500.00	7,649.51	5,500.00	8,100.00	47.3%
Computer Services	2,895.00	5,000.00	5,000.00	2,895.00	5,000.00	5,450.00	9.0%
Advertising, Printing	94.39	500.00	500.00	454.39	500.00	500.00	.0%
New Equip- Summer Rec	.00	.00	.00	.00	.00	500.00	.0%
Parks & Recreation Pro	29,452.78	38,400.00	64,400.00	60,897.73	64,504.00	68,550.00	6.4%
01454 Parks Maintenance							
Electric/Fuel/Water -	-1,325.48	.00	.00	1,241.93	300.00	1,300.00	.0%
Electric/Fuel/Water -	696.40	1,200.00	1,200.00	892.05	1,200.00	1,200.00	.0%
Electric - Energizing	.00	550.00	550.00	303.39	550.00	2,000.00	263.6%
Park System - Maint. &	11,561.05	20,000.00	20,000.00	18,670.96	20,000.00	27,600.00	38.0%
Buildings - Maint. & R	4,045.50	9,000.00	9,000.00	2,023.60	9,000.00	9,000.00	.0%
Parks Maintenance	14,977.47	30,750.00	30,750.00	23,131.93	31,050.00	41,100.00	33.7%
01456 Library							

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Contribution - Library	46,703.00	46,700.00	46,700.00	46,700.00	46,700.00	46,700.00	.0%
Library	46,703.00	46,700.00	46,700.00	46,700.00	46,700.00	46,700.00	.0%
01461 Community Development							
Gunkle Mill (Maint. &	564.78	600.00	600.00	640.05	600.00	700.00	16.7%
Historical Commission	399.42	1,500.00	1,500.00	220.00	1,500.00	1,000.00	-33.3%
Environmental Advisory	.00	1,500.00	1,500.00	.00	1,500.00	1,000.00	-33.3%
Community Development	964.20	3,600.00	3,600.00	860.05	3,600.00	2,700.00	-25.0%
01470 Debt Service - General Fund							
Principal GOB 2014	285,000.00	295,000.00	295,000.00	295,000.00	295,000.00	310,000.00	5.1%
Bond Interest	219,026.92	208,530.00	208,530.00	208,230.94	208,530.00	200,130.00	-4.0%
Other Expenses	1,500.00	500.00	500.00	1,000.00	500.00	1,000.00	100.0%
Debt Service - General	505,526.92	504,030.00	504,030.00	504,230.94	504,030.00	511,130.00	1.4%
01480 Miscellaneous Expenditures							
Contribution to SPCA	6,947.19	9,000.00	9,000.00	2,489.62	9,000.00	9,000.00	.0%
Contributions to Other	.00	4,950.00	4,950.00	3,000.00	4,950.00	5,000.00	1.0%
Miscellaneous Expendit	6,947.19	13,950.00	13,950.00	5,489.62	13,950.00	14,000.00	.4%
01481 Intergovenmental Expenditures							
Contribution - Fireman	70,085.58	70,000.00	70,000.00	93,302.51	93,302.51	90,000.00	28.6%
Intergovenmental Expen	70,085.58	70,000.00	70,000.00	93,302.51	93,302.51	90,000.00	28.6%
01487 Retiree Benefits - General Gov							
Medical Insurance / He	.00	.00	.00	.00	.00	120,000.00	.0%
Retiree Benefits - Gen	.00	.00	.00	.00	.00	120,000.00	.0%
01492 Interfund Operating Transfers							

PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

General Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Transfer to Sewer Fund	-166,320.00	.00	.00	.00	.00	.00	.0%
Transfer to Cap. Impro	4,546,420.00	100,000.00	100,000.00	.00	100,000.00	.00	-100.0%
Interfund Operating Tr	4,380,100.00	100,000.00	100,000.00	.00	100,000.00	.00	-100.0%
TOTAL General Fund	797,507.75	-786,165.00	-1,110,695.00	-2,412,827.71	-1,100,394.10	-476,241.00	-57.1%
TOTAL REVENUE	-15,448,334.05	-14,600,365.00	-15,037,895.00	-15,017,695.56	-14,785,705.81	-14,800,062.00	-1.6%
TOTAL EXPENSE	16,245,841.80	13,814,200.00	13,927,200.00	12,604,867.85	13,685,311.71	14,323,821.00	2.8%
GRAND TOTAL	797,507.75	-786,165.00	-1,110,695.00	-2,412,827.71	-1,100,394.10	-476,241.00	-57.1%

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PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

Act 209 Transportation Improve	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
33341 Interest							
Interest Earnings- Che	-174.37	-2,000.00	-2,000.00	-2,407.95	-2,500.00	-3,000.00	50.0%
Interest	-174.37	-2,000.00	-2,000.00	-2,407.95	-2,500.00	-3,000.00	50.0%
33383 Misc Revenue							
Traffic Impact Fees	-405,000.00	-300,000.00	-300,000.00	-205,000.00	-300,000.00	-125,000.00	-58.3%
Misc Revenue	-405,000.00	-300,000.00	-300,000.00	-205,000.00	-300,000.00	-125,000.00	-58.3%
33439 Highway Projects							
Engineering Other	.00	100,000.00	100,000.00	.00	.00	.00	-100.0%
Highway Projects	.00	100,000.00	100,000.00	.00	.00	.00	-100.0%
TOTAL Act 209 Transportation	-405,174.37	-202,000.00	-202,000.00	-207,407.95	-302,500.00	-128,000.00	-36.6%
TOTAL REVENUE	-405,174.37	-302,000.00	-302,000.00	-207,407.95	-302,500.00	-128,000.00	-57.6%
TOTAL EXPENSE	.00	100,000.00	100,000.00	.00	.00	.00	-100.0%
GRAND TOTAL	-405,174.37	-202,000.00	-202,000.00	-207,407.95	-302,500.00	-128,000.00	-36.6%

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PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Capital Improvement Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
31341 Interest							
Interest Earnings- Che	-13,792.77	-15,000.00	-15,000.00	-39,302.36	-40,000.00	-30,000.00	100.0%
Interest	-13,792.77	-15,000.00	-15,000.00	-39,302.36	-40,000.00	-30,000.00	100.0%
31354 State Grants							
State Grants	-128,336.27	-25,000.00	-25,000.00	-58,494.50	-500,000.00	-292,000.00	1068.0%
State Grants	-128,336.27	-25,000.00	-25,000.00	-58,494.50	-500,000.00	-292,000.00	1068.0%
31380 Miscellaneous Revenue							
Miscellaneous Revenue	-15,711.00	-50,000.00	-50,000.00	-104,108.27	-104,108.27	.00	-100.0%
Capital Purch - Vehicl	.00	-375,600.00	-375,600.00	-375,600.00	-375,600.00	-403,400.00	7.4%
Miscellaneous Revenue	-15,711.00	-425,600.00	-425,600.00	-479,708.27	-479,708.27	-403,400.00	-5.2%
31391 Sale of Fixed Assets							
Sale of Property	-22,538.00	-5,000.00	-5,000.00	-42,422.00	-42,422.00	-5,000.00	.0%
Sale of Fixed Assets	-22,538.00	-5,000.00	-5,000.00	-42,422.00	-42,422.00	-5,000.00	.0%
31392 Transfers from General Fund							
Transfer from General	-4,546,420.00	-100,000.00	-100,000.00	.00	-100,000.00	.00	-100.0%
Transfers from General	-4,546,420.00	-100,000.00	-100,000.00	.00	-100,000.00	.00	-100.0%
31410 Police Department							
Life Insurance	50,000.00	.00	.00	.00	.00	.00	.0%
Physical & Psych. Exam	18,041.91	.00	.00	6,825.00	.00	.00	.0%
Police Department	68,041.91	.00	.00	6,825.00	.00	.00	.0%
31439 Highway Projects							
Engineering Other	7,275.14	92,000.00	92,000.00	28,361.25	92,000.00	80,000.00	-13.0%

PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

Capital Improvement Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Other Contracted Servi	371,891.52	25,000.00	55,000.00	51,470.49	60,000.00	316,000.00	474.5%
Road Construction & Re	308,140.51	150,000.00	150,000.00	119,008.85	150,000.00	590,000.00	293.3%
Highway Projects	687,307.17	267,000.00	297,000.00	198,840.59	302,000.00	986,000.00	232.0%
31480 Miscellaneous Expenditures							
Professional Services	161,557.26	197,500.00	197,500.00	11,252.50	100,000.00	187,500.00	-5.1%
Gunkle Mill (Maint. &	2,614.00	50,000.00	50,000.00	11,007.35	50,000.00	160,000.00	220.0%
Stormwater Remediation	24,586.90	25,000.00	25,000.00	11,688.07	25,000.00	25,000.00	.0%
Capital Construction -	47,520.48	896,000.00	896,000.00	266,890.91	350,000.00	600,000.00	-33.0%
Miscellaneous Expendit	236,278.64	1,168,500.00	1,168,500.00	300,838.83	525,000.00	972,500.00	-16.8%
31482 Capital Exp - New							
Capital Purch-office,c	77,754.71	15,000.00	30,000.00	27,115.00	15,000.00	.00	-100.0%
Capital Pur-video,audi	.00	100,000.00	100,000.00	101,985.50	101,986.00	.00	-100.0%
Capital Exp - New	77,754.71	115,000.00	130,000.00	129,100.50	116,986.00	.00	-100.0%
31484 Capital Exp-Replacements							
Uniforms	10,780.65	12,000.00	12,000.00	6,960.00	7,000.00	12,000.00	.0%
Capital Purch-office,c	20,367.24	57,000.00	57,000.00	47,301.36	57,000.00	135,000.00	136.8%
Capital Purch - Vehicl	167,918.09	239,300.00	377,284.65	262,564.89	377,284.65	313,200.00	-17.0%
Capital Purch - Traffi	28,300.00	25,000.00	25,000.00	.00	25,000.00	25,000.00	.0%
Capital Exp-Replacemen	227,365.98	333,300.00	471,284.65	316,826.25	466,284.65	485,200.00	3.0%
31492 Interfund Operating Transfers							
Transfer to Park Devel	.00	.00	.00	15,101.14	15,101.14	.00	.0%
Interfund Operating Tr	.00	.00	.00	15,101.14	15,101.14	.00	.0%
TOTAL Capital Improvement Fu	-3,430,049.63	1,313,200.00	1,496,184.65	347,605.18	263,241.52	1,713,300.00	14.5%
TOTAL REVENUE	-4,726,798.04	-570,600.00	-570,600.00	-619,927.13	-1,162,130.27	-730,400.00	28.0%
TOTAL EXPENSE	1,296,748.41	1,883,800.00	2,066,784.65	967,532.31	1,425,371.79	2,443,700.00	18.2%
GRAND TOTAL	-3,430,049.63	1,313,200.00	1,496,184.65	347,605.18	263,241.52	1,713,300.00	14.5%

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PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

State Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
35341 Interest							
Interest Earnings- Che	-213.37	-100.00	-100.00	-1,149.53	-1,100.00	-850.00	750.0%
Interest	-213.37	-100.00	-100.00	-1,149.53	-1,100.00	-850.00	750.0%
35355 Intergovernmental Revenues							
State Liquid Fuels Tax	-349,643.09	-348,993.68	-348,993.68	-357,895.15	-357,895.15	-341,920.00	-2.0%
State Turnback Allocat	-14,880.00	-14,880.00	-14,880.00	-14,880.00	-14,880.00	-14,880.00	.0%
Intergovernmental Reve	-364,523.09	-363,873.68	-363,873.68	-372,775.15	-372,775.15	-356,800.00	-1.9%
35439 Liq Fuels -Road Construction							
Highway Materials & Su	364,000.00	363,870.00	363,870.00	363,746.47	363,870.00	357,000.00	-1.9%
Liq Fuels -Road Constr	364,000.00	363,870.00	363,870.00	363,746.47	363,870.00	357,000.00	-1.9%
TOTAL State Fund	-736.46	-103.68	-103.68	-10,178.21	-10,005.15	-650.00	526.9%
TOTAL REVENUE	-364,736.46	-363,973.68	-363,973.68	-373,924.68	-373,875.15	-357,650.00	-1.7%
TOTAL EXPENSE	364,000.00	363,870.00	363,870.00	363,746.47	363,870.00	357,000.00	-1.9%
GRAND TOTAL	-736.46	-103.68	-103.68	-10,178.21	-10,005.15	-650.00	526.9%

** END OF REPORT - Generated by Cathy Kleponis **

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Park Development Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
30341 Interest							
Interest Earnings- Che	-2,240.28	-2,000.00	-2,000.00	-7,177.14	-7,000.00	-6,000.00	200.0%
Interest	-2,240.28	-2,000.00	-2,000.00	-7,177.14	-7,000.00	-6,000.00	200.0%
30357 Grants							
County Grants	.00	-42,000.00	-42,000.00	.00	.00	-614,080.00	1362.1%
Grants	.00	-42,000.00	-42,000.00	.00	.00	-614,080.00	1362.1%
30367 Park Deveop. Fee							
Fee in Lieu of	-319,112.00	-150,000.00	-150,000.00	-230,500.00	-825,000.00	-150,000.00	.0%
Park Deveop. Fee	-319,112.00	-150,000.00	-150,000.00	-230,500.00	-825,000.00	-150,000.00	.0%
30380 Miscellaneous Revenue							
Miscellaneous Revenue	-5,000.00	.00	.00	-1,270.00	-1,270.00	.00	.0%
Miscellaneous Revenue	-5,000.00	.00	.00	-1,270.00	-1,270.00	.00	.0%
30393 Transfers							
Transfer From Cap. Imp	.00	.00	.00	-15,101.14	-15,101.14	.00	.0%
Transfers	.00	.00	.00	-15,101.14	-15,101.14	.00	.0%
30402 Profess.& Consult.Svc							
Professional Services	.00	.00	.00	692.00	.00	.00	.0%
Consulting Services	.00	.00	.00	3,050.00	.00	.00	.0%
Legal Services-Solicit	.00	.00	.00	9,570.00	.00	.00	.0%
Profess.& Consult.Svc	.00	.00	.00	13,312.00	.00	.00	.0%
30454 Park Development							
Capital Construction -	121,238.26	638,000.00	638,000.00	95,753.33	325,000.00	1,523,000.00	138.7%
Park Development	121,238.26	638,000.00	638,000.00	95,753.33	325,000.00	1,523,000.00	138.7%
TOTAL Park Development Fund	-205,114.02	444,000.00	444,000.00	-144,982.95	-523,371.14	752,920.00	69.6%
TOTAL REVENUE	-326,352.28	-194,000.00	-194,000.00	-254,048.28	-848,371.14	-770,080.00	296.9%
TOTAL EXPENSE	121,238.26	638,000.00	638,000.00	109,065.33	325,000.00	1,523,000.00	138.7%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Park Development Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
GRAND TOTAL	-205,114.02	444,000.00	444,000.00	-144,982.95	-523,371.14	752,920.00	69.6%

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PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
08341 Interest							
Interest Earnings- Che	-5,039.85	-4,500.00	-4,500.00	-16,889.08	-15,000.00	-12,000.00	166.7%
Interest	-5,039.85	-4,500.00	-4,500.00	-16,889.08	-15,000.00	-12,000.00	166.7%
08364 Sewer Dept. Earning							
Sewer Rents - Other Mu	-189,532.00	-195,376.00	-195,376.00	-259,500.00	-207,000.00	-210,000.00	7.5%
Sewer Connection/Tappi	-83,800.00	-52,500.00	-52,500.00	-40,100.00	-52,500.00	-35,000.00	-33.3%
Sewer Rents	-3,613,283.26	-3,760,000.00	-3,760,000.00	-4,189,713.17	-3,760,000.00	-3,703,000.00	-1.5%
Sewer Dept. Earning	-3,886,615.26	-4,007,876.00	-4,007,876.00	-4,489,313.17	-4,019,500.00	-3,948,000.00	-1.5%
08380 Miscellaneous Revenue							
Sewer Certifications	-6,100.00	-5,000.00	-5,000.00	-4,510.00	-5,000.00	-5,000.00	.0%
Other Non-Revenue Rece	-314.45	.00	.00	-475.40	.00	.00	.0%
Refund from VFSA	-156,653.18	-100,000.00	-288,000.00	-287,779.92	-288,000.00	-434,000.00	50.7%
Miscellaneous Revenue	-163,067.63	-105,000.00	-293,000.00	-292,765.32	-293,000.00	-439,000.00	49.8%
08387 Donations/Contributions							
Capital Contributions	-2,057,746.00	.00	.00	.00	.00	.00	.0%
Donations/Contribution	-2,057,746.00	.00	.00	.00	.00	.00	.0%
08429 Sewer Dept. Expenses							
Salaries - Department	124,693.77	129,000.00	129,000.00	132,523.05	129,000.00	138,000.00	7.0%
Salary/Wages - Profess	140,932.64	215,750.00	215,750.00	132,562.95	175,000.00	181,100.00	-16.1%
Wages - Mechanic	6,354.19	6,346.00	6,346.00	6,464.51	6,346.00	6,830.00	7.6%
Salaries/Wages - Other	7,446.93	.00	.00	22,631.31	.00	.00	.0%
Salaries/Wages - Cleri	146,891.42	176,107.00	176,107.00	143,319.06	160,000.00	177,000.00	.5%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Disability Insurance	2,383.12	3,100.00	3,100.00	2,255.75	3,100.00	3,000.00	-3.2%
Medical Premiums	-67.50	.00	.00	.00	.00	.00	.0%
Medical Insurance / He	168,351.09	230,050.00	230,050.00	134,139.53	150,000.00	163,500.00	-28.9%
Retiree Benefits(OPEB)	112,674.00	24,000.00	24,000.00	21,227.24	24,000.00	25,250.00	5.2%
Drug and Alcohol Progr	.00	525.00	525.00	363.00	525.00	525.00	.0%
Life Insurance	1,882.40	2,325.00	2,325.00	1,748.46	2,325.00	2,325.00	.0%
Pension Contrib. & Exp	95,222.00	76,140.00	76,140.00	76,140.00	76,140.00	86,251.00	13.3%
FICA (SocSec & Medicar	35,775.76	41,950.00	41,950.00	36,166.04	41,950.00	41,000.00	-2.3%
Vacation Payout	1,308.72	2,900.00	2,900.00	.00	2,900.00	2,500.00	-13.8%
Longevity Pay	9,503.00	6,110.00	6,110.00	7,358.00	7,358.00	7,358.00	20.4%
Overtime - Regular	14,397.70	12,000.00	12,000.00	25,091.27	25,000.00	15,000.00	25.0%
Other Pay	.00	.00	.00	1,500.00	1,500.00	.00	.0%
Materials & Supplies	1,395.45	4,000.00	4,000.00	3,148.47	4,000.00	4,000.00	.0%
Small Items of Equipme	462.97	8,735.00	8,735.00	2,292.31	8,735.00	5,000.00	-42.8%
Utility Exp. - Electri	85,608.52	91,200.00	91,200.00	83,084.95	91,200.00	91,200.00	.0%
Vehicle Fuel	6,914.23	10,000.00	10,000.00	7,405.11	10,000.00	10,000.00	.0%
Uniforms	2,091.46	3,800.00	3,800.00	2,118.69	3,800.00	3,800.00	.0%
Acctg. Services (Audit	7,500.00	9,000.00	9,000.00	7,875.00	9,000.00	9,000.00	.0%
Civil Engineer	72,709.37	55,000.00	55,000.00	14,225.85	55,000.00	55,000.00	.0%
Legal Services-Solicit	16,610.00	15,000.00	15,000.00	10,709.00	15,000.00	15,000.00	.0%
Computer Services	9,324.29	25,000.00	25,000.00	13,184.23	25,000.00	27,250.00	9.0%
Telephone (inc. Mobile	12,899.13	15,500.00	15,500.00	14,019.77	15,500.00	15,500.00	.0%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Postage & Courier	4,600.00	7,475.00	7,475.00	5,952.50	7,475.00	7,500.00	.3%
Training, Conferences,	340.00	2,500.00	2,500.00	818.20	2,500.00	2,500.00	.0%
Advertising, Printing	3,269.84	4,000.00	4,000.00	3,581.63	4,000.00	4,000.00	.0%
Insurance - Liability,	30,350.03	31,900.00	31,900.00	32,065.28	32,065.28	34,000.00	6.6%
Worker's Comp Insuranc	7,290.56	7,460.00	7,460.00	8,223.22	7,476.48	8,000.00	7.2%
Office Equipment Maint	760.00	1,200.00	1,200.00	837.75	1,200.00	1,200.00	.0%
Sewer System - Maint.	96,758.27	118,320.00	118,320.00	81,640.99	118,320.00	120,120.00	1.5%
Road Maintenance	.00	3,000.00	3,000.00	.00	3,000.00	1,000.00	-66.7%
Buildings - Maint. & R	57,429.05	76,000.00	176,000.00	149,402.85	135,000.00	76,000.00	-56.8%
Equipment - Maint. & R	38.75	700.00	700.00	315.17	700.00	700.00	.0%
Vehicle - Maint. & Rep	6,520.64	6,000.00	6,000.00	3,232.86	6,000.00	6,000.00	.0%
Sewer Rentals - Other	1,174,936.36	1,313,690.00	1,803,690.00	1,721,730.12	1,744,000.00	1,760,000.00	-2.4%
Capital Purch - Vehicl	-6,904.50	38,000.00	38,000.00	32,891.00	38,000.00	.00	-100.0%
Depreciation - Infrast	718,196.04	.00	.00	.00	.00	.00	.0%
Sewer Dept. Expenses	3,176,849.70	2,773,783.00	3,363,783.00	2,942,245.12	3,142,115.76	3,106,409.00	-7.7%
08470 Debt - Sewer Dept.							
GOB 2013 Bond - Princi	.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	.0%
GOB 2012 A Bond - Prin	.00	665,000.00	665,000.00	665,000.00	665,000.00	350,000.00	-47.4%
GOB 2012 B Bond - Prin	.00	.00	.00	.00	.00	335,000.00	.0%
Debt Service	578,767.08	534,041.00	534,041.00	533,962.03	534,041.00	516,409.00	-3.3%
Debt - Sewer Dept.	578,767.08	1,249,041.00	1,249,041.00	1,248,962.03	1,249,041.00	1,251,409.00	.2%
08475 Fiscal Agent Fees							

PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

Sewer Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
Fiscal Agent Fees	3,116.25	3,150.00	3,150.00	1,500.00	3,150.00	3,150.00	.0%
Fiscal Agent Fees	3,116.25	3,150.00	3,150.00	1,500.00	3,150.00	3,150.00	.0%
08492 Interfund Operating Transfers							
Transfer to General Fu	166,320.00	166,165.00	166,165.00	166,165.00	166,165.00	168,345.00	1.3%
Interfund Operating Tr	166,320.00	166,165.00	166,165.00	166,165.00	166,165.00	168,345.00	1.3%
TOTAL Sewer Fund	-2,187,415.71	74,763.00	476,763.00	-440,095.42	232,971.76	130,313.00	-72.7%
TOTAL REVENUE	-6,112,468.74	-4,117,376.00	-4,305,376.00	-4,798,967.57	-4,327,500.00	-4,399,000.00	2.2%
TOTAL EXPENSE	3,925,053.03	4,192,139.00	4,782,139.00	4,358,872.15	4,560,471.76	4,529,313.00	-5.3%
GRAND TOTAL	-2,187,415.71	74,763.00	476,763.00	-440,095.42	232,971.76	130,313.00	-72.7%

** END OF REPORT - Generated by Cathy Kleponis **

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
09341 Interest							
Interest Earnings- Che	-22,656.37	-20,000.00	-120,000.00	-112,512.56	-120,000.00	-96,000.00	-20.0%
Interest	-22,656.37	-20,000.00	-120,000.00	-112,512.56	-120,000.00	-96,000.00	-20.0%
09364 Sewer Reserve - Earnings							
Sewer Connection/Tappi	-1,222,857.19	-1,572,000.00	-1,300,000.00	-944,000.00	-1,300,000.00	-1,108,000.00	-14.8%
Sewer Reserve - Earnin	-1,222,857.19	-1,572,000.00	-1,300,000.00	-944,000.00	-1,300,000.00	-1,108,000.00	-14.8%
09380 Sewer Reserve - Earnings							
Miscellaneous Revenue	-1,406,505.94	.00	-400,000.00	.00	-400,000.00	.00	-100.0%
Sewer Reserve - Earnin	-1,406,505.94	.00	-400,000.00	.00	-400,000.00	.00	-100.0%
09429 Sewer Expenses							
Capital Construction -	1,000.00	2,500,000.00	2,500,000.00	528,310.47	250,000.00	2,500,000.00	.0%
Valley Creek Sewer Lin	30,847.00	150,000.00	150,000.00	135,873.00	150,000.00	38,000.00	-74.7%
Capital Construction -	-97,809.00	.00	-1,476,000.00	482,447.20	525,000.00	200,000.00	-113.6%
Sewer Expenses	-65,962.00	2,650,000.00	1,174,000.00	1,146,630.67	925,000.00	2,738,000.00	133.2%
09470 Bond Interest Exp							
Debt Service	-317.00	.00	.00	.00	.00	.00	.0%
Bond Interest Exp	-317.00	.00	.00	.00	.00	.00	.0%
09472 Bond Amortization							
Amortization Expense	11,699.00	.00	.00	.00	.00	.00	.0%
Bond Amortization	11,699.00	.00	.00	.00	.00	.00	.0%
09480 Miscellaneous Expenditures							
Consulting Services	.00	.00	.00	7,869.08	.00	.00	.0%
Miscellaneous Expendit	.00	.00	.00	7,869.08	.00	.00	.0%
TOTAL Sewer Reserve Fund	-2,706,599.50	1,058,000.00	-646,000.00	97,987.19	-895,000.00	1,534,000.00	-337.5%
TOTAL REVENUE	-2,652,019.50	-1,592,000.00	-1,820,000.00	-1,056,512.56	-1,820,000.00	-1,204,000.00	-33.8%
TOTAL EXPENSE	-54,580.00	2,650,000.00	1,174,000.00	1,154,499.75	925,000.00	2,738,000.00	133.2%

PROJECTION: 20201 2020 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund		2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
	GRAND TOTAL	-2,706,599.50	1,058,000.00	-646,000.00	97,987.19	-895,000.00	1,534,000.00	-337.5%

** END OF REPORT - Generated by Cathy Kleponis **

PROJECTION: 20201 2020 Budget **FOR PERIOD 99**

ACCOUNTS FOR:

Street Light Fund	2018 ACTUAL	2019 ORIG BUD	2019 REVISED BUD	2019 ACTUAL	2019 PROJECTION	2020 Final	PCT CHANGE
02341 Interest							
Interest Earnings- Che	.00	-5.00	-5.00	.00	-5.00	-5.00	.0%
Interest	.00	-5.00	-5.00	.00	-5.00	-5.00	.0%
02363 Assessments							
Street Lighting Assess	-10,688.73	-10,713.00	-10,713.00	-10,688.73	-10,713.00	-10,713.00	.0%
Assessments	-10,688.73	-10,713.00	-10,713.00	-10,688.73	-10,713.00	-10,713.00	.0%
02434 Street Lighting							
Utility Exp. - Electri	6,436.19	7,500.00	7,500.00	6,890.52	7,500.00	7,500.00	.0%
Postage & Courier	.00	200.00	200.00	.00	.00	.00	-100.0%
Street Lighting	6,436.19	7,700.00	7,700.00	6,890.52	7,500.00	7,500.00	-2.6%
TOTAL Street Light Fund	-4,252.54	-3,018.00	-3,018.00	-3,798.21	-3,218.00	-3,218.00	6.6%
TOTAL REVENUE	-10,688.73	-10,718.00	-10,718.00	-10,688.73	-10,718.00	-10,718.00	.0%
TOTAL EXPENSE	6,436.19	7,700.00	7,700.00	6,890.52	7,500.00	7,500.00	-2.6%
GRAND TOTAL	-4,252.54	-3,018.00	-3,018.00	-3,798.21	-3,218.00	-3,218.00	6.6%

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EXHIBIT J4

EAST WHITELAND TOWNSHIP
ADOPTED ANNUAL BUDGET - 2021

2021 Final Budget

December 9, 2020

2021 Budget - Process

- All Meetings Advertised & Open to Public
- Fall 2020: Budget workshops with staff - 10/20 & 10/27
- November 11: Consider preliminary budget &, advertise
- December 9: Consider & approve final budget
- Condensed Review; Revisit Budget 2Q2021

2021 Final Budget
General Fund – Revenues

Department	Revenues 2020	Revenues 2021	Change %
Earned Income Taxes	$8,370,000	$7,470,000	-10.7
Local Services Taxes	1,350,000	1,215,000	-10.0
RE Transfer Taxes	1,000,000	500,000	-50.0
Building Permits	1,000,000	500,000	-50.0
RE Property Taxes	734,600	734,600	0.0
Other	2,345,462	2,318,462	-1.1
Total Revenues	**$14,800,062**	**$12,738,062**	**-13.9%**

2021 Final Budget
General Fund – Expenditures

Department	Department 2020	Expenditures 2021	Change %
Administration	$1,883,477	$1,810,117	-3.9
Codes & Life Safety	3,390,505	3,011,337	-11.2
Planning & Zoning	439,116	460,317	-4.8
Police	6,066,342	5,977,820	-1.5
Public Works	1,894,051	1,874,035	-1.1
Debt Service	511,130	511,130	0
Recreation	139,200	104,000	-25.3
Total Expenditures	**$14,323,821**	**$13,748,756**	**-4.1%**

2021 Final Budget Revenues

- Earned Income Taxes
  - Earlier this year, our Board asked staff to project potential lost EIT revenue as a result of the pandemic. So far, that situation has not occurred.
  - We budgeted $9 million for EIT in 2020 and will likely surpass that. However, with a possible surge this Fall or Winter, we may experience a significant loss in revenue for 2021. Staff had projected possible losses, of 10% and 20%. We included a 10% reduction in 2021 collections.
- Real Estate Transfer Taxes
  - Normally robust volume and level of property transfers, averaging over $1 million annually.
  - Limited mount of significant “shovel ready” projects expected in 2021, recommending a $500,000 reduction budget, to $500,000.
  - Core amount of transfer activity as well as one or two significant “speculative” transfers that occur in a municipality that has potential for development or redevelopment.
- Building Permits
  - Similar to Real Estate Transfer Taxes, we anticipate a significant reduction in permit revenue for 2021. Staff projects a loss of $500,000 in permit revenue in 2021.

2021 Final Budget Expenditures

- Compensation – Our organization costs are mostly driven by labor contracts. In 2021, all three contracts are settled (Police – 3.6%; Fire – 3.5%; and AFSCME – 3.75%). Non union budgeted raises at 3.5%.
- Medical Insurance – DVHT We continue to benefit from arbitration awards and negotiated settlements of labor contracts that resulted in significant, sustainable healthcare concessions. Our current estimate for medical insurance for 2021 is $1,381,836, compared with $1,768,200 for 2020, or an annual savings of $386,364. In addition, we terminated our self insured plan in February 2020. We continue to pay a modest amount of "run out" or timing of claims through December 2020. In 2021 and years after, we will recognize an additional annual savings of $120,000.
- Pension – In September, our Board approved Minimum Municipal Obligation budgets for 2021, resulting in a $217,676 increase due to life expectancies and poor investment performance.
- OPEB – Our OPEB costs are a combination of full group plan coverage for retirees only, through DVHT, and Medicare reimbursement for retirees only. Our current estimate for OPEB for 2021 is $429,900, compared with $503,300 for 2020, or an annual savings of $73,400. We are recognizing similar savings through our arbitration awards and negotiated settlements of labor contracts.

2021 Final Budget Expenditures (Continued)

- Overtime – Due to the pandemic, overtime this year continues to be moderate. Staff recommends the same overtime budgets for 2021.
- Information Technology – We have service contracts (IT) for police and civilian departments with All Covered. Our contract rates will not increase in 2021. We maintain software applications for each department and are looking to streamline applications next year.
- Vehicle & Equipment Replacement Plans – Since 2015, the Township has invested in the future replacement of our fleet and essential equipment. Each item is annually evaluated for useful life and replacement cost. Staff recommends that we continue funding ($305,063) these plans in 2021.
- Debt Service – Our only non Sewer debt is for the Public Works facility. The debt service for 2021 is $508,930. Our outstanding non Sewer debt is $7,395,000 as of December 2020.

2021 Final Budget
Net Deficit

- As of September 2020, we projected $12.7 million in revenues and $14.7 million in expenses, for a net deficit of $2 million.
- As of November 2020, we identified additional cost savings that reduced our net deficit to about $1 million.
- Through December 2020 and throughout 2021, staff will be identifying further cost reductions to help reduce our net deficit even further.

Fund Balance (Designated Reserves) – 12/31/2019

- Tax Rate Stabilization - $4,050,000
- Budgetary Reserve - $2,093,868
- Renovate Municipal Infrastructure - $3,250,000
- Volunteer Committee Resources - $2,650,000
- Highway & Street Projects - $1,000,000
- Capital Improvement - $726,023
- Stormwater Management - $650,000
- Equipment - $500,000
- Pension - $500,000
- OPEB - $350,000
- Total - $15,769,891

Comments and Questions

East Whiteland Township

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Real Estate Taxes	-767,193.69	-755,820.00	-755,820.00	-770,560.38	-755,820.00	-755,820.00	.0%
Local Enabling Taxes	-12,264,696.03	-11,400,000.00	-11,400,000.00	-12,329,798.28	-11,400,000.00	-9,865,000.00	-13.5%
Licenses & Franchise F	-225,081.00	-230,200.00	-230,200.00	-160,687.89	-230,200.00	-230,200.00	.0%
Fines	-51,599.68	-67,000.00	-67,000.00	-43,635.12	-67,000.00	-67,000.00	.0%
Interest	-41,078.68	-28,000.00	-28,000.00	-11,699.12	-28,000.00	-28,000.00	.0%
Rent	-23,400.00	-7,500.00	-7,500.00	-15,000.00	-7,500.00	-7,500.00	.0%
Intergovernmental Reve	-523,951.80	-515,900.00	-515,900.00	-545,568.52	-515,900.00	-538,900.00	4.5%
Grants	-95,451.65	-40,287.00	-40,287.00	564.91	-40,287.00	-40,287.00	.0%
Department Earnings	-76,441.00	-84,100.00	-84,100.00	-89,133.84	-84,100.00	-84,100.00	.0%
Department Earnings	-1,363,589.91	-1,409,410.00	-1,409,410.00	-1,635,751.57	-1,409,410.00	-859,410.00	-39.0%
Parks & Recreation Ear	-73,882.35	-75,500.00	-75,500.00	-5,379.84	-75,500.00	-75,500.00	.0%
Miscellaneous Revenue	-142,095.44	-18,000.00	-18,000.00	-41,428.01	-18,000.00	-18,000.00	.0%
Sale of Fixed Assets	-785.00	.00	.00	.00	.00	.00	.0%
Transfers From Other F	-166,165.00	-168,345.00	-168,345.00	-168,345.00	-168,345.00	-168,345.00	.0%
Supervisors	8,073.60	7,500.00	7,500.00	8,073.64	7,500.00	9,750.00	30.0%
Administration	938,594.12	896,117.00	896,117.00	751,962.07	896,117.00	778,964.46	-13.1%
Tax Collection	153,892.57	151,240.00	151,240.00	208,246.09	151,240.00	138,200.00	-8.6%
Legal	328,053.66	242,000.00	242,000.00	211,472.56	242,000.00	212,000.00	-12.4%
Finance	90,904.27	325,170.00	325,170.00	231,416.39	325,170.00	351,652.04	8.1%
Engineering Services	111,194.24	134,400.00	134,400.00	91,460.79	134,400.00	134,400.00	.0%
Municipal Building	61,471.18	77,650.00	77,650.00	90,381.36	77,650.00	84,120.00	8.3%
Police Department	5,210,485.84	5,932,342.00	5,932,342.00	5,336,063.23	5,932,342.00	5,977,820.00	.8%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

General Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Fire Protection	2,187,447.85	2,307,728.00	2,307,728.00	2,317,151.98	2,307,728.00	2,203,609.00	-4.5%
Regulation, Inspection	842,523.50	988,027.00	988,027.00	744,442.31	988,027.00	807,728.46	-18.2%
Planning & Zoning	298,666.75	439,116.00	439,116.00	501,540.52	439,116.00	460,317.04	4.8%
Emergency Mgmt.	196.45	4,750.00	4,750.00	1,124.50	4,750.00	4,750.00	.0%
Solid Waste Coll. & Di	20,189.65	25,000.00	25,000.00	20,874.15	25,000.00	27,000.00	8.0%
Public Works - General	1,257,491.05	1,292,024.00	1,292,024.00	1,294,138.71	1,292,024.00	1,347,665.00	4.3%
Public Works - Snow Re	88,710.76	159,450.00	159,450.00	7,948.99	159,450.00	132,250.00	-17.1%
Public Works - Traffic	97,914.35	99,077.00	99,077.00	68,295.46	99,077.00	99,000.00	-.1%
Public Works - Street	25,343.37	27,000.00	27,000.00	22,080.25	27,000.00	27,000.00	.0%
Public Works - Road Ma	151,629.44	191,500.00	191,500.00	148,615.87	191,500.00	84,000.00	-56.1%
Pub. Works - Road Cont	75,000.00	100,000.00	100,000.00	.00	100,000.00	100,000.00	.0%
Parks & Recreation Pro	15,256.94	29,550.00	29,550.00	4,220.83	29,550.00	30,800.00	4.2%
Parks & Recreation Pro	60,897.73	68,550.00	68,550.00	6,229.25	68,550.00	36,700.00	-46.5%
Parks Maintenance	22,143.54	41,100.00	41,100.00	26,328.13	41,100.00	36,500.00	-11.2%
Library	46,700.00	46,700.00	46,700.00	46,700.00	46,700.00	46,700.00	.0%
Community Development	860.05	2,700.00	2,700.00	430.11	2,700.00	2,700.00	.0%
Debt Service - General	504,230.94	511,130.00	511,130.00	510,008.29	511,130.00	511,130.00	.0%
Miscellaneous Expendit	7,991.91	14,000.00	14,000.00	23,550.66	14,000.00	14,000.00	.0%
Intergovenmental Expen	93,302.51	90,000.00	90,000.00	92,625.24	90,000.00	90,000.00	.0%
Retiree Benefits - Gen	.00	120,000.00	120,000.00	.00	120,000.00	.00	-100.0%
Interfund Operating Tr	600,000.00	.00	.00	.00	.00	.00	.0%
TOTAL General Fund	-2,516,244.96	-476,241.00	-476,241.00	-3,051,041.28	-476,241.00	1,010,694.00	-312.2%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Street Light Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	.00	-5.00	-5.00	.00	-5.00	-5.00	.0%
Assessments	-10,688.73	-10,713.00	-10,713.00	-10,688.73	-10,713.00	-10,713.00	.0%
Street Lighting	7,482.64	7,500.00	7,500.00	6,524.27	7,500.00	7,500.00	.0%
TOTAL Street Light Fund	-3,206.09	-3,218.00	-3,218.00	-4,164.46	-3,218.00	-3,218.00	.0%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-17,845.60	-12,000.00	-12,000.00	-6,133.66	-12,000.00	-12,000.00	.0%
Sewer Dept. Earning	-3,711,901.77	-3,948,000.00	-3,948,000.00	-3,773,888.70	-3,948,000.00	-3,948,000.00	.0%
Miscellaneous Revenue	-377,765.32	-439,000.00	-439,000.00	-463,088.76	-439,000.00	-380,000.00	-13.4%
Donations/Contribution	-181,831.00	.00	.00	.00	.00	.00	.0%
Sewer Dept. Expenses	3,691,085.71	3,106,409.00	3,106,409.00	3,505,512.80	3,106,409.00	3,122,278.00	.5%
Debt - Sewer Dept.	561,657.03	1,251,409.00	1,251,409.00	1,251,074.77	1,251,409.00	1,251,409.00	.0%
Fiscal Agent Fees	1,500.00	3,150.00	3,150.00	2,500.00	3,150.00	3,150.00	.0%
Interfund Operating Tr	166,165.00	168,345.00	168,345.00	168,345.00	168,345.00	168,345.00	.0%
TOTAL Sewer Fund	131,064.05	130,313.00	130,313.00	684,321.45	130,313.00	205,182.00	57.5%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-119,211.83	-96,000.00	-96,000.00	-35,949.18	-96,000.00	-96,000.00	.0%
Sewer Reserve - Earnin	-944,000.00	-1,108,000.00	-1,108,000.00	-548,000.00	-1,108,000.00	-792,000.00	-28.5%
Sewer Reserve - Earnin	-395,000.00	.00	.00	-3,335.18	.00	.00	.0%
Sewer Expenses	135,872.03	2,738,000.00	2,738,000.00	451,978.32	2,738,000.00	2,038,000.00	-25.6%
Bond Interest Exp	-333.00	.00	.00	.00	.00	.00	.0%
Bond Amortization	11,699.00	.00	.00	.00	.00	.00	.0%
Miscellaneous Expendit	7,869.08	.00	.00	208,876.87	.00	100,000.00	.0%
TOTAL Sewer Reserve Fund	-1,303,104.72	1,534,000.00	1,534,000.00	73,570.83	1,534,000.00	1,250,000.00	-18.5%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Park Development Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-7,612.72	-6,000.00	-6,000.00	-3,182.96	-6,000.00	-6,000.00	.0%
Grants	.00	-614,080.00	-614,080.00	-100,000.00	-614,080.00	-1,534,000.00	149.8%
Park Deveop. Fee	-230,500.00	-150,000.00	-150,000.00	-773,622.50	-150,000.00	-150,000.00	.0%
Miscellaneous Revenue	-1,270.00	.00	.00	.00	.00	.00	.0%
Transfers	-15,101.14	.00	.00	.00	.00	.00	.0%
Profess.& Consult.Svc	13,762.00	.00	.00	57,490.33	.00	.00	.0%
Park Development	92,240.23	1,523,000.00	1,523,000.00	300,717.77	1,523,000.00	3,503,000.00	130.0%
TOTAL Park Development Fund	-148,481.63	752,920.00	752,920.00	-518,597.36	752,920.00	1,813,000.00	140.8%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Capital Improvement Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-42,373.88	-30,000.00	-30,000.00	-14,584.37	-30,000.00	-30,000.00	.0%
State Grants	-503,494.50	-292,000.00	-292,000.00	.00	-292,000.00	-375,000.00	28.4%
Miscellaneous Revenue	-479,708.27	-403,400.00	-403,400.00	-360,058.58	-403,400.00	-403,400.00	.0%
Sale of Fixed Assets	-42,422.00	-5,000.00	-5,000.00	-32,619.00	-5,000.00	-5,000.00	.0%
Transfers from General	-600,000.00	.00	.00	.00	.00	.00	.0%
Police Department	6,825.00	.00	.00	.00	.00	.00	.0%
Highway Projects	205,733.09	986,000.00	986,000.00	22,452.68	986,000.00	941,900.00	-4.5%
Miscellaneous Expendit	291,608.93	972,500.00	972,500.00	194,566.36	972,500.00	805,000.00	-17.2%
Capital Exp - New	129,100.50	.00	.00	.00	.00	.00	.0%
Capital Exp-Replacemen	293,902.25	485,200.00	485,200.00	131,192.69	485,200.00	487,000.00	.4%
Interfund Operating Tr	15,101.14	.00	.00	.00	.00	.00	.0%
TOTAL Capital Improvement Fu	-725,727.74	1,713,300.00	1,713,300.00	-59,050.22	1,713,300.00	1,420,500.00	-17.1%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Act 209 Transportation Improve	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-2,407.95	-3,000.00	-3,000.00	-395.59	-3,000.00	-3,000.00	.0%
Misc Revenue	-205,000.00	-125,000.00	-125,000.00	-8,000.00	-125,000.00	-125,000.00	.0%
TOTAL Act 209 Transportation	-207,407.95	-128,000.00	-128,000.00	-8,395.59	-128,000.00	-128,000.00	.0%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

State Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Interest	-1,149.53	-850.00	-850.00	-37.69	-850.00	-850.00	.0%
Intergovernmental Reve	-372,775.15	-356,800.00	-356,800.00	-363,764.04	-356,800.00	-314,415.71	-11.9%
Liq Fuels -Road Constr	363,746.47	357,000.00	357,000.00	326,766.58	357,000.00	357,000.00	.0%
TOTAL State Fund	-10,178.21	-650.00	-650.00	-37,035.15	-650.00	41,734.29	-6520.7%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Police Pension Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Pol. Pension Fund Earn	-1,985,737.03	.00	.00	-1,569,811.08	.00	.00	.0%
Pension Contributions	-645,127.52	.00	.00	-672,561.59	.00	.00	.0%
Pension Expense	585,132.76	.00	.00	503,730.21	.00	.00	.0%
TOTAL Police Pension Fund	-2,045,731.79	.00	.00	-1,738,642.46	.00	.00	.0%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Fire Fighters Pension Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Investment Gain/ (loss	-436,277.20	.00	.00	-380,167.17	.00	.00	.0%
Pension contribution	-206,136.17	.00	.00	-216,183.24	.00	.00	.0%
Pension Payments	15,205.21	.00	.00	52,714.82	.00	.00	.0%
TOTAL Fire Fighters Pension	-627,208.16	.00	.00	-543,635.59	.00	.00	.0%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Non-Uniformed Pension Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Investment Gains / (Lo	-1,292,071.31	.00	.00	-991,325.82	.00	.00	.0%
Non-Uniform Pension Co	-465,084.57	.00	.00	-450,034.59	.00	.00	.0%
Non-Uniform Pension Pa	459,005.31	.00	.00	529,575.52	.00	.00	.0%
TOTAL Non-Uniformed Pension	-1,298,150.57	.00	.00	-911,784.89	.00	.00	.0%

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

OPEB Trust Fund	2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
Investment Gains/(Loss	-300,990.69	.00	.00	-251,282.49	.00	.00	.0%
Twp. Contribution - OP	-381,412.00	.00	.00	.00	.00	.00	.0%
Interfund Transfer Rev	.00	-125,000.00	-125,000.00	.00	-125,000.00	-125,000.00	.0%
Expenses - OPEB Trust	285,079.87	.00	.00	3,640.72	.00	.00	.0%
TOTAL OPEB Trust Fund	-397,322.82	-125,000.00	-125,000.00	-247,641.77	-125,000.00	-125,000.00	.0%
TOTAL REVENUE	-29,790,307.11	-22,524,910.00	-22,524,910.00	-26,845,137.58	-22,524,910.00	-21,048,445.71	-6.6%
TOTAL EXPENSE	20,638,606.52	25,922,334.00	25,922,334.00	20,483,041.09	25,922,334.00	26,533,338.00	2.4%
GRAND TOTAL	-9,151,700.59	3,397,424.00	3,397,424.00	-6,362,096.49	3,397,424.00	5,484,892.29	61.4%

** END OF REPORT - Generated by Usha Hogan **

EXHIBIT K

EAST WHITELAND TOWNSHIP
MOST RECENT REPORT TO THE DEPARTMENT
OF COMMUNITY AND ECONOMIC DEVELOPMENT

DCED-CLGS-30 (12-20)

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
ph: 888-223-6837 | fax: 717-783-1402

2020 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

City of: _____ County: _____

Borough of: _____ County: _____

Township of: EAST WHITELAND County: CHESTER

Municipality of: _____ County: _____

Section I - Introduction

Statutory Requirements

- State law, under the provisions of the Borough Code, First Class Township Code and Second Class Township Code, requires that either the borough controller, elected auditors or appointed auditors file an Annual Audit and Financial Report.
- State law, under the provisions of the Third Class City Code, requires a city's Director of Accounts and Finance to file an Annual Audit and Financial Report.
- The state's Administrative Code requires home rule municipalities to file an Annual Audit and Financial Report.
- The Annual Audit and Financial Report forms, supplied by the Pennsylvania Department of Community and Economic Development (DCED), were developed and approved by a Uniform Forms Committee composed of representatives of the respective municipal associations.
- Form DCED-CLGS-30 (See Section IV) is the form adopted by the Committee for use by all municipalities in Pennsylvania to fulfill their statutory reporting requirements.

One Form

All municipalities are required to submit forms electronically to DCED. The online form contains the same categories as in previous years: assets, liabilities, revenues and expenditures. Enter data only for those funds that your municipality uses. Leave the remaining columns blank. The online form will automatically calculate the amounts in the "Total" column.

Submitting the Report

- File one copy by the designated date at each of the places listed on page 9.
- DO NOT submit a paper copy of this report to DCED. Reports must be submitted online at: www.munstats.pa.gov/forms/login.aspx (Please see the e-filing instructions on page 7.)
- The online system will automatically round all figure to the nearest whole dollar. The system will also add all rows and columns, following basic accounting principles.
- Appointed independent auditors should attach their own opinion in the "Final Review" step of the online form. Additionally, appointed independent auditors should place a checkmark in Section II at the bottom of the "Final Review" step, then choose the "Appointed Auditor/CPA" title from the dropdown and provide a name and contact number in order to submit the form online.
- Elected controllers should place a checkmark in the box in Section I at the bottom of the "Final Review" step of the online form then choose the "Controller" title from the dropdown and provide a name and contact number in order to submit the form online.
- Elected Auditors must place a check mark in the box in Section I of the "Final Review" step of the online form, then choose the "Elected Auditor" title from the dropdown and provide the name and phone number for **at least 2 of the 3 elected auditors**. If you appointed an auditor to fill an elected auditor position, please choose the "Elected Auditor" title, not the "Appointed Auditor/CPA" title when submitting online.
- If you need assistance or have any questions when completing this report, please contact the Governor's Center for Local Government Services (GCLGS) toll-free at 888-223-6837.

BALANCE SHEET

December 31, 2020

		GOVERNMENTAL FUNDS			
	ASSETS AND OTHER DEBITS	General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
100-120	Cash and Investments	7,285,389	2,097,409	9,264,941	-
140-144	Tax Receivable	2,512,102	-	-	-
121-129 145-149	Accounts Receivable (excluding taxes)	357,694	619	-	-
130	Due From Other Funds	1,156,991	150,047	302,113	-
131-139 150-159	Other Current Assets	1,493	-	-	-
160-169	Fixed Assets	-	-	-	-
180-189	Other Debits	-	-	-	-
	TOTAL ASSETS AND OTHER DEBITS	$ 11,313,669	$ 2,248,075	$ 9,567,054	$ -
	LIABILITIES AND OTHER CREDITS				
210-229	Payroll Taxes and Other Payroll Withholdings	-	-	-	-
200-209 231-239	All Other Current Liabilities	580,567	4,721	13,367	-
230	Due To Other Funds	451,901	576,961	147,636	-
260-269	Long-Term Liabilities	-	-	-	-
240-259	Current Portion of Long-Term Debt & Other Credits	-	-	-	-
	TOTAL LIABILITIES AND OTHER CREDITS	1,032,468	581,682	161,003	-
	FUND AND ACCOUNT GROUP EQUITY				
281-284	Contributed Capital	-	-	-	-
290	Investment in General Fixed Assets	-	-	-	-
270-289	Fund Balance/Retained Earnings on 12/31	10,281,201	1,666,393	9,406,051	-
291-299	Other Equity	-	-	-	-
	TOTAL FUND AND ACCOUNT GROUP EQUITY	10,281,201	1,666,393	9,406,051	-

Total Assets and Other Debits minus Total Liabilities and Other Credits must equal the Total Fund and Account Group Equity.

		PROPRIETARY FUNDS		FIDUCIARY FUND	ACCOUNT GROUPS		TOTAL
ASSETS AND OTHER DEBITS		Enterprise	Internal Service	Trust & Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
100-120	Cash and Investments	10,632,439	-	26,424,920	-	-	55,705,098
140-144	Tax Receivable	-	-	-	-	-	2,512,102
121-129 145-149	Accounts Receivable (excluding taxes)	728,725	-	-	-	-	1,087,038
130	Due From Other Funds	188	-	-	-	-	1,609,339
131-139 150-159	Other Current Assets	-	-	47,239	-	-	48,732
160-169	Fixed Assets	33,740,402	-	-	16,310,116	-	50,050,518
180-189	Other Debits	521,006	-	-	-	28,041,053	28,562,059
TOTAL ASSETS AND OTHER DEBITS		$ 45,622,760	$ -	$ 26,472,159	$ 16,310,116	$ 28,041,053	$ 139,574,886
LIABILITIES AND OTHER CREDITS							
210-229	Payroll Taxes and Other Payroll Withholdings	-	-	-	-	-	-
200-209 231-239	All Other Current Liabilities	1,263,189	-	1	-	-	1,861,845
230	Due To Other Funds	432,841	-	-	-	-	1,609,339
260-269	Long-Term Liabilities	16,386,297	-	-	-	27,721,901	44,108,198
240-259	Current Portion of Long-Term Debt & Other Credits	757,260	-	-	-	319,152	1,076,412
TOTAL LIABILITIES AND OTHER CREDITS		18,839,587	-	1	-	28,041,053	48,655,794
FUND AND ACCOUNT GROUP EQUITY							
281-284	Contributed Capital	-	-	-	-	-	-
290	Investment in General Fixed Assets	-	-	-	16,310,116	-	16,310,116
270-289	Fund Balance/Retained Earnings on 12/31	26,783,173	-	26,472,158	-	-	74,608,976
291-299	Other Equity	-	-	-	-	-	-
TOTAL FUND AND ACCOUNT GROUP EQUITY		26,783,173	-	26,472,158	16,310,116	-	90,919,092

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	$ 139,574,886

Total Assets and Other Debits minus Total Liabilities and Other Credits must equal the Total Fund and Account Group Equity.

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

REVENUES		GOVERNMENTAL FUNDS			
		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
TAXES					
301.00	Real Estate Taxes	766,497	-	-	-
305.00	Occupation Taxes (levied under municipal code)	-	-	-	-
308.00	Residence Taxes (levied by cities of the 3rd Class)	-	-	-	-
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)	-	-	-	-
310.00	Per Capita Taxes	-	-	-	-
310.10	Real Estate Transfer Taxes	1,098,937	-	-	-
310.20	Earned Income Taxes/Wage Taxes	10,056,315	-	-	-
310.30	Business Gross Receipts Taxes	-	-	-	-
310.40	Occupation Taxes (levied under Act 511)	-	-	-	-
310.50	Local Services Tax**	1,312,250	-	-	-
310.60	Amusement/Admission Taxes	-	-	-	-
310.70	Mechanical Device Taxes	-	-	-	-
310.90	Other Local Tax Enabling Act/Act 511 Taxes	-	-	-	-
	_____				
	_____				
	_____				
TOTAL TAXES		$ 13,233,999	$ -	$ -	$ -
LICENSES & PERMITS					
320-322	All Other Licenses and Permits	1,698,051	-	-	-
321.80	Cable Television Franchise Fees	213,163	-	-	-
TOTAL LICENSES & PERMITS		1,911,214	-	-	-
FINES & FORFEITS					
330-332	Fines and Forfeits	43,635	-	-	-
TOTAL FINES & FORFEITS		43,635	-	-	-
INTEREST, RENTS & ROYALTIES					
341.00	Interest Earnings	11,699	3,221	14,981	-
342.00	Rents and Royalties	15,000	-	-	-
TOTAL INTEREST, RENTS & ROYALTIES		26,699	3,221	14,981	-

***This tax was known as the Occupational Privilege Tax (OPT) prior to 2005 and the Emergency and Municipal Services Tax prior to 2008.*

REVENUES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
TAXES		Enterprise	Internal Service	Trust and Agency	Memorandum Only
301.00	Real Estate Taxes	-	-	-	766,497
305.00	Occupation Taxes (levied under municipal code)	-	-	-	-
308.00	Residence Taxes (levied by cities of the 3rd Class)	-	-	-	-
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)	-	-	-	-
310.00	Per Capita Taxes	-	-	-	-
310.10	Real Estate Transfer Taxes	-	-	-	1,098,937
310.20	Earned Income Taxes/Wage Taxes	-	-	-	10,056,315
310.30	Business Gross Receipts Taxes	-	-	-	-
310.40	Occupation Taxes (levied under Act 511)	-	-	-	-
310.50	Local Services Tax**	-	-	-	1,312,250
310.60	Amusement/Admission Taxes	-	-	-	-
310.70	Mechanical Device Taxes	-	-	-	-
310.90	Other Local Tax Enabling Act/Act 511 Taxes	-	-	-	-
	_____				-
	_____				-
	_____				-
TOTAL TAXES		$ -	$ -	$ -	$ 13,233,999
LICENSES & PERMITS					
320-322	All Other Licenses and Permits	-	-	-	1,698,051
321.80	Cable Television Franchise Fees	-	-	-	213,163
TOTAL LICENSES & PERMITS		-	-	-	1,911,214
FINES & FORFEITS					
330-332	Fines and Forfeits	-	-	-	43,635
TOTAL FINES & FORFEITS		-	-	-	43,635
INTEREST, RENTS & ROYALTIES					
341.00	Interest Earnings	42,081	-	3,145,901	3,217,883
342.00	Rents and Royalties	-	-	-	15,000
TOTAL INTEREST, RENTS & ROYALTIES		42,081	-	3,145,901	3,232,883

***This tax was known as the Occupational Privilege Tax (OPT) prior to 2005 and the Emergency and Municipal Services Tax prior to 2008.*

INTERGOVERNMENTAL REVENUES		GOVERNMENTAL FUNDS			
			Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
FEDERAL		**General Fund**			
351.03	Highways and Streets	-	-	-	-
351.09	Community Development	-	-	-	-
351.00	All Other Federal Capital and Operating Grants	-	-	-	-
352.01	National Forest	-	-	-	-
352.00	All Other Federal Shared Revenue & Entitlements	-	-	-	-
353.00	Federal Payments in Lieu of Taxes	-	-	-	-
TOTAL FEDERAL		-	-	-	-
STATE					
354.03	Highways and Streets	-	-	-	-
354.09	Community Development	-	-	-	-
354.15	Recycling/Act 101	1,981	-	-	-
354.00	All Other State Capital and Operating Grants	-	-	-	-
355.01	Public Utility Realty Tax (PURTA)	12,765	-	-	-
355.02 - 355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback	-	363,764	-	-
355.04	Alcoholic Beverage Licenses	4,900	-	-	-
355.05	General Municipal Pension System State Aid	433,298	-	-	-
355.07	Foreign Fire Insurance Tax Distribution	92,625	-	-	-
355.08	Local Share Assessment/Gaming Proceeds	-	-	-	-
355.09	Marcellus Shale Impact Fee Distribution**	-	-	-	-
355.00	All Other State Shared Revenues & Entitlements	-	-	-	-
356.00	State Payments in Lieu of Taxes	-	-	-	-
TOTAL STATE		545,569	363,764	-	-
LOCAL GOVERNMENT UNITS					
357.03	Highways and Streets	-	-	-	-
357.00	All Other Local Governmental Units Capital and Operating Grants	5,315	100,000	-	-
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	-	-	-	-
359.00	Local Governmental Units, Authorities Payments and Payments in Lieu of Taxes	-	-	-	-
TOTAL LOCAL GOVERNMENT UNITS		5,315	100,000	-	-

** *New line item in 2012*

INTERGOVERNMENTAL REVENUES	PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
FEDERAL	Enterprise	Internal Service	Trust and Agency	Memorandum Only
351.03 Highways and Streets	-	-	-	-
351.09 Community Development	-	-	-	-
351.00 All Other Federal Capital and Operating Grants	-	-	-	-
352.01 National Forest	-	-	-	-
352.00 All Other Federal Shared Revenue & Entitlements	-	-	-	-
353.00 Federal Payments in Lieu of Taxes	-	-	-	-
TOTAL FEDERAL	-	-	-	-
STATE				
354.03 Highways and Streets	-	-	-	-
354.09 Community Development	-	-	-	-
354.15 Recycling/Act 101	-	-	-	1,981
354.00 All Other State Capital and Operating Grants	-	-	-	-
355.01 Public Utility Realty Tax (PURTA)	-	-	-	12,765
355.02 - 355.03 Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback	-	-	-	363,764
355.04 Alcoholic Beverage Licenses	-	-	-	4,900
355.05 General Municipal Pension System State Aid	-	-	-	433,298
355.07 Foreign Fire Insurance Tax Distribution	-	-	-	92,625
355.08 Local Share Assessment/Gaming Proceeds	-	-	-	-
355.09 Marcellus Shale Impact Fee Distribution**	-	-	-	-
355.00 All Other State Shared Revenues & Entitlements	-	-	-	-
356.00 State Payments in Lieu of Taxes	-	-	-	-
TOTAL STATE	-	-	-	909,333
LOCAL GOVERNMENT UNITS				
357.03 Highways and Streets	-	-	-	-
357.00 All Other Local Governmental Units Capital and Operating Grants	-	-	-	105,315
358.00 Local Government Unit Shared Payments for Contracted Intergovernmental Services	-	-	-	-
359.00 Local Governmental Units, Authorities Payments and Payments in Lieu of Taxes	-	-	-	-
TOTAL LOCAL GOVERNMENT UNITS	-	-	-	105,315

TOTAL INTERGOVERNMENTAL REVENUES	1,014,648

** *New line item in 2012*

REVENUES		GOVERNMENTAL FUNDS			
CHARGES FOR SERVICE		General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
361.00	General Government	-	-	-	-
362.00	Public Safety	27,035	-	-	-
363.20	Parking	-	-	-	-
363.00	All Other Charges for Highway & Streets Services	-	-	-	-
364.10	Wastewater/Sewage Charges	-	-	-	-
364.30	Solid Waste Collection & Disposal Charge (trash)	-	-	-	-
364.60	Host Municipality Benefit Fee for Solid Waste Facility	-	-	-	-
364.00	All Other Charges for Sanitation Services	-	-	-	-
365.00	Health	-	-	-	-
366.00	Human Services	-	-	-	-
367.00	Culture and Recreation	5,380	-	-	-
368.00	Airports	-	-	-	-
369.00	Bars	-	-	-	-
370.00	Cemeteries	-	-	-	-
372.00	Electric System	-	-	-	-
373.00	Gas System	-	-	-	-
374.00	Housing System	-	-	-	-
375.00	Markets	-	-	-	-
377.00	Transit Systems	-	-	-	-
378.00	Water System	-	-	-	-
379.00	All Other Charges for Service	-	-	-	-
TOTAL CHARGES FOR SERVICE		32,415	-	-	-
UNCLASSIFIED OPERATING REVENUES					
383.00	Assessments	-	10,689	8,000	-
386.00	Escheats (sale of personal property)	-	-	-	-
387.00	Contributions & Donations from Private Sectors	-	773,623	-	-
388.00	Fiduciary Fund Pension Contributions				
389.00	All Other Unclassified Operating Revenues***	21,266	-	-	-
TOTAL UNCLASSIFIED OPERATING REVENUES		21,266	784,312	8,000	-
OTHER FINANCING SOURCES					
391.00	Proceeds of General Fixed Asset Disposition	-	-	32,619	-
392.00	Interfund Operating Transfers**	168,345	-	302,113	-
393.00	Proceeds of General Long-Term Debt	-	-	-	-
394.00	Proceeds of Short-Term Debt	-	-	-	-
395.00	Refunds of Prior Year Expenditures	14,283	-	57,945	-
TOTAL OTHER FINANCING SOURCES		182,628	-	392,677	-
TOTAL REVENUES		16,002,740	1,251,297	415,658	-

** *The total of line 392.00 must match the total of line 492.00*

*** *This amount cannot be greater than 1% of "TOTAL REVENUES" in each of the funds.*

REVENUES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
CHARGES FOR SERVICE		Enterprise	Internal Service	Trust and Agency	Memorandum Only
361.00	General Government	-	-	-	-
362.00	Public Safety	-	-	-	27,035
363.20	Parking	-	-	-	-
363.00	All Other Charges for Highway & Streets Services	-	-	-	-
364.10	Wastewater/Sewage Charges	4,327,245	-	-	4,327,245
364.30	Solid Waste Collection & Disposal Charge (trash)	-	-	-	-
364.60	Host Municipality Benefit Fee for Solid Waste Facility	-	-	-	-
364.00	All Other Charges for Sanitation Services	-	-	-	-
365.00	Health	-	-	-	-
366.00	Human Services	-	-	-	-
367.00	Culture and Recreation	-	-	-	5,380
368.00	Airports	-	-	-	-
369.00	Bars	-	-	-	-
370.00	Cemeteries	-	-	-	-
372.00	Electric System	-	-	-	-
373.00	Gas System	-	-	-	-
374.00	Housing System	-	-	-	-
375.00	Markets	-	-	-	-
377.00	Transit Systems	-	-	-	-
378.00	Water System	-	-	-	-
379.00	All Other Charges for Service	-	-	-	-
TOTAL CHARGES FOR SERVICE		4,327,245	-	-	4,359,660
UNCLASSIFIED OPERATING REVENUES					
383.00	Assessments	-	-	-	18,689
386.00	Escheats (sale of personal property)	-	-	-	-
387.00	Contributions & Donations from Private Sectors	-	-	239,653	1,013,276
388.00	Fiduciary Fund Pension Contributions			1,695,373	1,695,373
389.00	All Other Unclassified Operating Revenues***	-	-	-	21,266
TOTAL UNCLASSIFIED OPERATING REVENUES		-	-	1,935,026	2,748,604
OTHER FINANCING SOURCES					
391.00	Proceeds of General Fixed Asset Disposition	3,335	-	-	35,954
392.00	Interfund Operating Transfers**	-	-	-	470,458
393.00	Proceeds of General Long-Term Debt	-	-	-	-
394.00	Proceeds of Short-Term Debt	-	-	-	-
395.00	Refunds of Prior Year Expenditures	457,734	-	-	529,962
TOTAL OTHER FINANCING SOURCES		461,069	-	-	1,036,374
TOTAL REVENUES		4,830,395	-	5,080,927	27,581,017

*** The total of line 392.00 must match the total of line 492.00*

**** This amount cannot be greater than 1% of "TOTAL REVENUES" in each of the funds.*

EXPENDITURES		GOVERNMENTAL FUNDS			
			Special Revenue (Including State Liquid Fuels)	Capital Projects	
GENERAL GOVERNMENT		General Fund			Debt Service
400.00	Legislative (Governing) Body	8,074	-	83,852	-
401.00	Executive (Manager or Mayor)	748,164	-	-	-
402.00	Auditing Services/Financial Administration	231,415	-	-	-
403.00	Tax Collection	208,269	-	-	-
404.00	Solicitor/Legal Services	211,471	-	-	-
405.00	Secretary/Clerk	-	-	-	-
406.00	Other General Government Administration	-	-	-	-
407.00	IT-Networking Services-Data Processing	-	-	-	-
408.00	Engineering Services	91,461	-	-	-
409.00	General Government Buildings and Plant	90,381	-	-	-
TOTAL GENERAL GOVERNMENT		1,589,235	-	83,852	-
PUBLIC SAFETY					
410.00	Police	5,214,764	-	86,595	-
411.00	Fire	2,404,679	-	-	-
412.00	Ambulance/Rescue	-	-	-	-
413.00	UCC and Code Enforcement	719,144	-	-	-
414.00	Planning and Zoning	497,741	-	-	-
415.00	Emergency Management & Communications	1,125	-	-	-
416.00	Militia and Armories	-	-	-	-
417.00	Examination of Licensed Occupations	-	-	-	-
418.00	Public Scales (weights and measures)	-	-	-	-
419.00	Other Public Safety	-	-	-	-
TOTAL PUBLIC SAFETY		8,837,453	-	86,595	-
HEALTH AND HUMAN SERVICES					
420.00-425.00	Health and Human Services	-	-	-	-
PUBLIC WORKS - SANITATION					
426.00	Recycling Collection and Disposal	-	-	-	-
427.00	Solid Waste Collection and Disposal (trash)	20,874	-	-	-
428.00	Weed Control	-	-	-	-
429.00	Wastewater/Sewage Collection & Treatment	-	-	-	-
TOTAL PUBLIC WORKS - SANITATION		20,874	-	-	-

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
GENERAL GOVERNMENT		Enterprise	Internal Service	Trust and Agency	Memorandum Only
400.00	Legislative (Governing) Body	-	-	-	91,926
401.00	Executive (Manager or Mayor)	-	-	-	748,164
402.00	Auditing Services/Financial Administration	-	-	-	231,415
403.00	Tax Collection	-	-	-	208,269
404.00	Solicitor/Legal Services	-	-	-	211,471
405.00	Secretary/Clerk	-	-	-	-
406.00	Other General Government Administration	-	-	-	-
407.00	IT-Networking Services-Data Processing	-	-	-	-
408.00	Engineering Services	-	-	-	91,461
409.00	General Government Buildings and Plant	-	-	-	90,381
TOTAL GENERAL GOVERNMENT		-	-	-	1,673,087
PUBLIC SAFETY					
410.00	Police	-	-	-	5,301,359
411.00	Fire	-	-	-	2,404,679
412.00	Ambulance/Rescue	-	-	-	-
413.00	UCC and Code Enforcement	-	-	-	719,144
414.00	Planning and Zoning	-	-	-	497,741
415.00	Emergency Management & Communications	-	-	-	1,125
416.00	Militia and Armories	-	-	-	-
417.00	Examination of Licensed Occupations	-	-	-	-
418.00	Public Scales (weights and measures)	-	-	-	-
419.00	Other Public Safety	-	-	-	-
TOTAL PUBLIC SAFETY		-	-	-	8,924,048
HEALTH AND HUMAN SERVICES					
420.00-425.00	Health and Human Services	-	-	-	-
PUBLIC WORKS - SANITATION					
426.00	Recycling Collection and Disposal	-	-	-	-
427.00	Solid Waste Collection and Disposal (garbage)	-	-	-	20,874
428.00	Weed Control	-	-	-	-
429.00	Wastewater/Sewage Collection & Treatment	3,783,298	-	-	3,783,298
TOTAL PUBLIC WORKS - SANITATION		3,783,298	-	-	3,804,172

EXPENDITURES		GOVERNMENTAL FUNDS			
	PUBLIC WORKS - HIGHWAYS & STREETS	General Fund	Special Revenue *(Including State Liquid Fuels)*	Capital Projects	Debt Service
430.00	General Services - Administration	1,156,326	-	-	-
431.00	Cleaning of Streets and Gutters	-	-	-	-
432.00	Winter Maintenance - Snow Removal	7,948	-	-	-
433.00	Traffic Control Devices	63,295	-	-	-
434.00	Street Lighting	22,080	6,524	-	-
435.00	Sidewalks and Crosswalks	-	-	-	-
436.00	Storm Sewers and Drains	-	-	-	-
437.00	Repairs of Tools and Machinery	-	-	-	-
438.00	Maintenance & Repairs of Roads & Bridges	148,617	-	-	-
439.00	Highway Construction and Rebuilding Projects	-	326,767	22,453	-
	TOTAL PUBLIC WORKS - HIGHWAYS & STREETS	1,398,266	333,291	22,453	-
	PUBLIC WORKS - OTHER SERVICES				
440.00	Airports	-	-	-	-
441.00	Cemeteries	-	-	-	-
442.00	Electric System	-	-	-	-
443.00	Gas System	-	-	-	-
444.00	Markets	-	-	-	-
445.00	Parking	-	-	-	-
446.00	Storm Water and Flood Control	-	-	-	-
447.00	Transit System	-	-	-	-
448.00	Water System	-	-	-	-
449.00	Water Transport and Terminals	-	-	-	-
	TOTAL PUBLIC WORKS - OTHER SERVICES	-	-	-	-
	CULTURE AND RECREATION				
451.00	Culture-Recreation Administration	4,221	-	-	-
452.00	Participant Recreation	6,230	-	-	-
453.00	Spectator Recreation	-	-	-	-
454.00	Parks	26,328	358,208	107,840	-
455.00	Shade Trees	-	-	-	-
456.00	Libraries	46,700	-	-	-
457.00	Civil and Military Celebrations	-	-	-	-
458.00	Senior Citizens' Centers	-	-	-	-
459.00	All Other Culture and Recreation	-	-	-	-
	TOTAL CULTURE AND RECREATION	83,479	358,208	107,840	-
	COMMUNITY DEVELOPMENT				
461.00	Conservation of Natural Resources	430	-	-	-
462.00	Community Development and Housing	-	-	-	-
463.00	Economic Development	-	-	-	-
464.00	Economic Opportunity	-	-	-	-
465.00 - 469.00	All Other Community Development	-	-	47,472	-
	TOTAL COMMUNITY DEVELOPMENT	430	-	47,472	-

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
PUBLIC WORKS - HIGHWAYS & STREETS		Enterprise	Internal Service	Trust and Agency	Memorandum Only
430.00	General Services - Administration	-	-	-	1,156,326
431.00	Cleaning of Streets and Gutters	-	-	-	-
432.00	Winter Maintenance - Snow Removal	-	-	-	7,948
433.00	Traffic Control Devices	-	-	-	63,295
434.00	Street Lighting	-	-	-	28,604
435.00	Sidewalks and Crosswalks	-	-	-	-
436.00	Storm Sewers and Drains	-	-	-	-
437.00	Repairs of Tools and Machinery	-	-	-	-
438.00	Maintenance & Repairs of Roads & Bridges	-	-	-	148,617
439.00	Highway Construction and Rebuilding Projects	-	-	-	349,220
TOTAL PUBLIC WORKS - HIGHWAYS & STREETS		-	-	-	1,754,010
PUBLIC WORKS - OTHER SERVICES					
440.00	Airports	-	-	-	-
441.00	Cemeteries	-	-	-	-
442.00	Electric System	-	-	-	-
443.00	Gas System	-	-	-	-
444.00	Markets	-	-	-	-
445.00	Parking	-	-	-	-
446.00	Storm Water and Flood Control	-	-	-	-
447.00	Transit System	-	-	-	-
448.00	Water System	-	-	-	-
449.00	Water Transport and Terminals	-	-	-	-
TOTAL PUBLIC WORKS - OTHER SERVICES		-	-	-	-
CULTURE AND RECREATION					
451.00	Culture-Recreation Administration	-	-	-	4,221
452.00	Participant Recreation	-	-	-	6,230
453.00	Spectator Recreation	-	-	-	-
454.00	Parks	-	-	-	492,376
455.00	Shade Trees	-	-	-	-
456.00	Libraries	-	-	-	46,700
457.00	Civil and Military Celebrations	-	-	-	-
458.00	Senior Citizens' Centers	-	-	-	-
459.00	All Other Culture and Recreation	-	-	-	-
TOTAL CULTURE AND RECREATION		-	-	-	549,527
COMMUNITY DEVELOPMENT					
461.00	Conservation of Natural Resources	-	-	-	430
462.00	Community Development and Housing	-	-	-	-
463.00	Economic Development	-	-	-	-
464.00	Economic Opportunity	-	-	-	-
465.00 - 469.00	All Other Community Development	-	-	-	47,472
TOTAL COMMUNITY DEVELOPMENT		-	-	-	47,902

EXPENDITURES		GOVERNMENTAL FUNDS			
			Special Revenue (Including State Liquid Fuels)	Capital Projects	
DEBT SERVICE		General Fund			Debt Service
471.00	Debt Principal (short-term and long-term)	310,000	-	-	-
472.00	Debt Interest (short-term and long-term)	200,008	-	-	-
475.00	Fiscal Agent Fees	-	-	-	-
TOTAL DEBT SERVICE		510,008	-	-	-
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS					
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	-	-	-	-
482.00	Judgments and Losses	-	-	-	-
483.00	Pension/Retirement Fund Contributions	-	-	-	-
484.00	Worker Compensation Insurance	-	-	-	-
487.00	Group Insurance and Other Benefits	-	-	-	-
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS		-	-	-	-
INSURANCE					
486.00	Insurance, Casualty and Surety	-	-	-	-
UNCLASSIFIED OPERATING EXPENDITURES					
488.00	Fiduciary Fund Benefits and Refunds Paid				
489.00	All Other Unclassified Expenditures***	23,549	-	-	-
TOTAL UNCLASSIFIED OPERATING EXPENDITURES		23,549	-	-	-
OTHER FINANCING USES					
491.00	Refund of Prior Year Revenues	-	-	-	-
492.00	Interfund Operating Transfers**	302,113	-	-	-
493.00	All Other Financing Uses	-	-	-	-
TOTAL OTHER FINANCING USES		302,113	-	-	-
TOTAL EXPENDITURES		12,765,407	691,499	348,212	-
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		3,237,333	559,798	67,446	-

*** The total of line 492.00 must match the total of line 392.00*

**** This amount cannot be greater than 1% of "TOTAL EXPENDITURES" in each of the funds.*

EXPENDITURES		PROPRIETARY FUNDS		FIDUCIARY FUND	TOTAL
DEBT SERVICE		Enterprise	Internal Service	Trust and Agency	Memorandum Only
471.00	Debt Principal (short-term and long-term)	-	-	-	310,000
472.00	Debt Interest (short-term and long-term)	543,356	-	-	743,364
475.00	Fiscal Agent Fees	-	-	-	-
TOTAL DEBT SERVICE		543,356	-	-	1,053,364
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS					
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	-	-	-	-
482.00	Judgments and Losses	-	-	-	-
483.00	Pension/Retirement Fund Contributions	-	-	-	-
484.00	Worker Compensation Insurance	-	-	-	-
487.00	Group Insurance and Other Benefits	-	-	-	-
EMPLOYER PAID BENEFITS & WITHHOLDING ITEMS		-	-	-	-
INSURANCE					
486.00	Insurance, Casualty and Surety	-	-	-	-
UNCLASSIFIED OPERATING EXPENDITURES					
488.00	Fiduciary Fund Benefits and Refunds Paid			1,390,890	1,390,890
489.00	All Other Unclassified Expenditures***	-	-	623,915	647,464
TOTAL UNCLASSIFIED OPERATING EXPENDITURES		-	-	2,014,805	2,038,354
OTHER FINANCING USES					
491.00	Refund of Prior Year Revenues	-	-	-	-
492.00	Interfund Operating Transfers**	168,345	-	-	470,458
493.00	All Other Financing Uses	-	-	-	-
TOTAL OTHER FINANCING USES		168,345	-	-	470,458
TOTAL EXPENDITURES		4,494,999	-	2,014,805	20,314,922
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		335,396	-	3,066,122	7,266,095

*** The total of line 492.00 must match the total of line 392.00*

**** This amount cannot be greater than 1% of "TOTAL EXPENDITURES" in each of the funds.*

DEBT STATEMENT

Purpose	Bond (B) Note (N)	Issue Date (year)	Maturity Date (year)	Original Amount of Issue	Outstanding Beginning of Year	Principal Incurred This Year (Additions)	Principal Paid This Year	Current Year Accretion of Compound Interest Bonds	Outstanding Year End	Plus (less) Unamortized Premium (Discount)	Total Balan
L OBLIGATION BONDS AND NOTES											
bligation Bond	B	2012	2020	4,685,000	350,000		350,000		-		$
bligation Bond	B	2012	2025	4,130,000	4,030,000		335,000		3,695,000		$ 3,695,0
bligation Bond	B	2013	2038	12,145,000	11,945,000		50,000		11,895,000		$ 11,895,0
bligation Bond	B	2014	2039	8,040,000	1,640,000		260,000		1,380,000		$ 1,380,0
bligation Bond	B	2016	2039	6,160,000	6,065,000		50,000		6,015,000		$ 6,015,0
									-		$
									-		$
									-		$
									-		$
E BONDS AND NOTES											
									-		$
									-		$
									-		$
									-		$
									-		$
ENTAL DEBT/GENERAL LEASES											
									-		$
									-		$
									-		$
									-		$
									-		$
									-		$
									-		$
									-		$

Total bonds and notes outstanding	$ 22,985,0
Capitalized lease obligations	
Other debt	
TOTAL OUTSTANDING DEBT	$ 22,985,0

STATEMENT OF CAPITAL EXPENDITURES

CATEGORY:	Capital Purchases	Capital Construction	Total
Community Development	-	-	-
Electric	-	-	-
Fire	-	-	-
Gas System	-	-	-
General Government	52,918	41,170	94,088
Health	-	-	-
Housing	-	-	-
Libraries	-	-	-
Mass Transit	-	-	-
Parks	11,138	298,478	309,616
Police	102,511	-	102,511
Recreation	-	-	-
Sewer	-	379,484	379,484
Solid Waste	-	-	-
Streets/Highways		349,221	349,221
Water	-	-	-
Other (Please specify)			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			

TOTAL CAPITAL EXPENDITURES* $ 1,234,920

**Capital expenditures are generally considered to be those which result in additions to the value of fixed assets (land, buildings and other structures, machinery and equipment).*

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year
(including all employees and elected officials) ** $ 6,341,102

***Use income from box 16 of the W-3 Statement*

ELECTED CONTROLLER'S/AUDITOR'S CERTIFIED OPINION

To the: Governing Body of the Municipality
President Judge of the Court of Common Pleas
Secretary of the Department of Community & Economic Development

I/We, the undersigned, the duly elected (or appointed replacement), qualified, and acting controller/auditors of the _____ have audited, adjusted, and settled the various funds and account groups of the _____ for the year ended December 31, 2015. My/Our audit, adjustment, and settlement was made in accordance with law rather than with generally accepted auditing standards.

(PLEASE CROSS OUT ONLY IF ON MODIFIED ACCRUAL/ACCRUAL BASIS)

This municipality's policy is to prepare its financial statements on the basis of cash receipts and disbursements; consequently, certain revenues and the related assets are recognized when received rather than when earned, and certain expenditures or expenses are recognized when paid rather than when a liability is incurred. Accordingly, the accompanying financial statements are not intended to present the financial position and results of operations of this municipality in conformity with generally accepted accounting principles.

These financial statements do not include all of the disclosures required by generally accepted accounting principles.

In my/our opinion, the aforementioned financial statements present the financial position of the various funds and account groups of the municipality of _____ for the year ended December 31, 2015, and the results of operations of such funds in accordance with the law.

SIGNATURE AND VERIFICATION

Signed**: _____ _____ *(Print Name)*

_____ _____ *(Print Name)*

_____ _____ *(Print Name)*

Contact Phone Number: (_____) - _____ - _____

Notary Only

Subscribed and sworn to before me this _____ day of _____, _____.

Signed: _____
(Witness)

MUNICIPAL SEAL

Independent Public Accountants and Certified Public Accountants may submit opinions resulting from such audits in lieu of this page.

****Must be signed by the controller or at least two of the three elected auditors and affixed with either a notary or municipal seal**

EXHIBIT L

JOHN M. BRIGHT'S WASTEWATER OPERATOR'S LICENSE

Commonwealth of Pennsylvania

Department of Environmental Protection

In accordance with the
State Board for Certification of Water and Wastewater Systems Operators
and the Regulations of the
Department of Environmental Protection

JOHN M BRIGHT

Is Hereby Authorized to Operate
WASTEWATER SYSTEM

Class: A,E, Wastewater
Subclass: 1,3,4

Client ID: 243803

JOHN M BRIGHT
[redacted]

Issue Date Oct 1, 2018
Expiration Date Sep 30, 2021

Joseph J. Svanderski
Board Chairman

Certificate No. S14565

EXHIBIT M1

WATER QUALITY MANAGEMENT PERMIT FOR THE MALVERN HUNT WASTEWATER TREATMENT PLANT

3800-PM-WSFR0015 1/2011
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 1599418

AMENDMENT NO. _____

APS ID. 916602

AUTH. ID. 1139890

A. PERMITTEE (Name and Address): CLIENT ID#: **78789**
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

B. PROJECT/FACILITY (Name):
Malvern Hunt WWTP

C. LOCATION (Municipality, County): SITE ID#: **527339**
East Whiteland Township, Chester County

D. THIS PERMIT APPROVES THE OPERATION OF SEWAGE FACILITIES CONSISTING OF:
The Malvern Hunt Pump Station with comminutor, an influent bar screen, a two sell aerated treatment lagoon, a storage lagoon, a chlorine disinfection system, and spray fields.

Pump Stations: _____	Manure Storage:	Sewage Treatment Facility:		
Design Capacity: _____ GPM	Volume: _____ MG	Annual Average Flow:	**0.105**	MGD
	Freeboard: _____ inches	Design Hydraulic Capacity:	**0.128**	MGD
		Design Organic Capacity:	**222**	lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Permit Renewal:** All operations and procedures shall be in accordance with the Water Quality Management Permit application dated **5/23/2016**, its supporting documentation and addendums dated _____, which are hereby made a part of this permit.

   Amendments: All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation and addendums dated _____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

   Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.
3. Special Conditions **1 through XVII** are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED:
November 21, 2016

BY: _____
Jenifer L. Fields, P.E.
TITLE: **Clean Water Program Manager**
Southeast Regional Office

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS

Water Quality Management Permit No. 1599418

Malvern Hunt WWTP

East Whiteland Township, Chester County

I. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled at a point after chlorination and shall be limited at all times as follows:

	Discharge Limitations (mg/l)			Monitoring Requirements	
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent Flow (mgd)	0.105			Continuous	Recorded
$CBOD_5$	25		50	1/Month	Grab
Suspended Solids	30		60	1/Month	Grab
Fecal Coliform	200/100 ml as geometric average			1/Month	Grab
pH	Within limits of 6.0 to 9.0 standard units at all times			1/Month	Grab

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters.

Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

II. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

III. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

A. Quarterly analysis of groundwater sampled at groundwater monitoring wells **MW-L1, MW-L2, MW-L3, MW-S1, MW-S2, MW-S3, MW-S6, MW-S7, and MW-S8,** shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.

B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.

C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.

D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

IV. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP **annually** and be in **report form.** The report shall be due to DEP within 28 days of the end of the month of permit issuance. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Water Management Program
2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

V. The annual groundwater monitoring report shall include the following information:

A. General Information

i. Facility name
ii. Facility permit number
iii. Facility location (including municipality and county)
iv. Facility contact information:

a. permittee name, address, and telephone number
b. contact name and title
c. facility operator name, address, and telephone number
d. facility consultant name, address, and telephone number

B. Site Data

i. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

ii. Average effluent flow for the year covered by this report.

iii. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

a. Date of sampling
b. Groundwater elevations
c. Sampling depth
d. Identification of upgradient and downgradient wells
e. The results of the analysis of the samples

iii. Background groundwater data generated prior to system start-up. **This information is absolutely needed and needs to be included in the data tabulation.**

C. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

D. **Groundwater Background Report**

Within 60 days of system start up, or upon issuance of permit renewal a Groundwater Background Report shall be submitted to DEP. The report shall include the follow information:

i. Site Information

a. Brief narrative, including site limitations.
b. Soil type and bedrock lithology beneath the absorption areas.
c. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.

ii. Construction details of each groundwater monitoring well shall include:

a. Well depth.
b. Casing depth.
c. Static water levels.
d. Surface elevation.
e. Well log.
f. Water bearing zones.
g. Top of casing elevation.
h. Ground surface elevation.

VI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.

VII. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration neither greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value nor greater than 1000/100 ml of these organisms in a more than 10 percent of the samples tested.

VIII. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

IX. The authorization to discharge contained in Section D of this permit shall expire in five years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.

X. Sprayfield Weekly Maximum Hydraulic Loadings

A. Effluent flows to each sprayfield must be consistent with the maximum hydraulic loading requirements of the following tables, which provide the weekly maximum gallons for each irrigation zone.

MAXIMUM WEEKLY SPRAYFIELD HYDRAULIC LOADINGS IN GALLONS

Spray Zone 1 6.16 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,671
February	0.50	83,671
March	1.27	212,539
April	1.50	251,020
May	2.00	334,691
June	2.50	418,369
July	2.50	418,369
August	2.50	418,369
September	2.50	418,369
October	1.55	259,410
November	1.16	194,126
December	0.50	83,671

Spray Zone 2 6.19 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	84,079
February	0.50	84,079
March	1.27	213,574
April	1.50	252,243
May	2.00	336,321
June	2.50	420,406
July	2.50	420,406
August	2.50	420,406
September	2.50	420,406
October	1.55	260,673
November	1.16	195,072
December	0.50	84,079

Spray Zone 3 6.15 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,536
February	0.50	83,536
March	1.27	212,194
April	1.50	250,613
May	2.00	334,148
June	2.50	417,690
July	2.50	417,690
August	2.50	417,690
September	2.50	417,690
October	1.55	258,989
November	1.16	193,811
December	0.50	83,536

B. The permittee shall include with the monthly Discharge Monitoring Report a Supplemental Land Application System Form 3800-FM-BPNPSM0449 that indicates the gallons per day discharged to the spray irrigation zones.

C. Spray irrigation events shall consist of simultaneous operation of two zones with one zone left off for a week-long resting period. All zones shall be rested each month.

D. Application of the effluent shall be managed to prevent runoff from the permitted spray fields and ponding of effluent.

E. No irrigation is to occur on frozen soils.

F. No irrigation is to occur if more than 0.5 inches of rainfall has fallen during the previous 24 hours.

G. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

H. The spray fields shall be maintained to ensure that vegetation does not interfere with or impair proper operation of the spray heads.

I. Fallen trees in wooded spray fields are required to be removed. All work must be conducted during dry or frozen soil conditions to prevent damage to the soil.

XI. At all times, the wastewater level in the storage lagoon shall be managed within the low and high water level parameters as designed. The water level shall be controlled so that a freeboard of at least 24 inches is maintained at all times. The Department must be notified if the water level is anticipated to enter freeboard.

XII. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

A. The exact place, date, and time of sampling or measurement.
B. The person(s) who performed the sampling or measurement.
C. The dates the analyses were performed.
D. The person(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The results of such analyses.

XIII. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XIV. The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

XV. Laboratory Certification

Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of act 90 of 2002 (27 Pa. Code C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XVI. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Stream Law, the permittee shall allow authorized representatives of Department of Environmental Protection upon the presentation of credentials and other documents as may be required by law:

A. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.

B. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

C. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or The Clean Streams Law, any substances or parameters at any location.

XVII. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.

3100 Horizon Drive
Suite 200
King of Prussia, PA 19406
T: 610-277-2402
F: 610-277-7449

www.pennoni.com

May 27, 2021

EWTPX 01003

Pravin Patel, PE, Permits Section
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

RE: Malvern Hunt Pump Station
East Whiteland Township, Chester County
Water Quality Management (WQM) Part II Permit Application

Dear Mr. Patel:

On behalf of East Whiteland Township, please find enclosed the WQM Part II Permit Application for the existing Malvern Hunt Pump Station. The application has been submitted through the OnBase Forms Upload tool. The $100 application fee will be mailed under a separate cover. In addition, a copy of the Application has also been sent to the Delaware River Basin Commission.

The application package includes the following:

1. Engineers Report.
2. PaDEP Permit Application General Information Form.
3. WQM Part II Permit Application
4. USGS 7.5' Topographic Map (Phoenixville, PA Quadrangle).
5. Act 14 Notifications
6. Record Drawings

Please note that the Malvern Hunt Pump Station is an existing station that was originally permitted in conjunction with the Water Quality Management (WQM) permit for the Malvern Hunt Wastewater Treatment plant. The Township has received approval to decommission the Treatment plant and divert the flows from this station to public sewer. This application is intended to create a new (separate) WQM permit for the pump station.

Should you require any further information, or have any questions, please feel free to contact me.

Sincerely,

PENNONI

Charles Faulkner

Charles Faulkner, PE
Township Wastewater Engineer

CF/rkm

Cc: John Neild, Director of Public Works, via email
Delaware River Basin Commission

ENGINEER'S REPORT

for the

MALVERN HUNT PUMP STATION

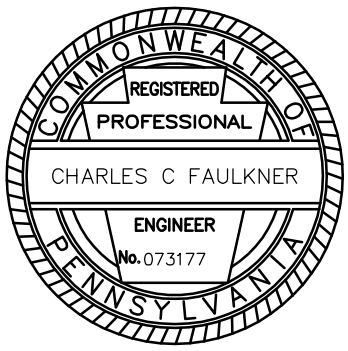
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

May 2021

EWTPX 01003

Prepared by:

Pennoni Associates Inc.
Consulting Engineers
1900 Market Street, Suite 300
Philadelphia PA 19103
www.Pennoni.com



Charles C. Faulkner, PE
License No. PE-073177

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2.0 EXISTING WASTEWATER PUMPING STATION 3
4.0 WASTEWATER PUMPING STATION UPGRADES 5

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A. DEP FORMS

B. EAST WHITELAND SEWER SYSTEM MAP

C. EXISTING PUMP STATION DRAWINGS

D. MALVERN HUNT EXHIBITS

1.0 INTRODUCTION

This permit application is being submitted to establish a new Water Quality Management (WQM) Permit for the existing Malvern Hunt Pump Station. The current WQM Permit (WQM1599418) is for the pump station, influent bar screen, aerated treatment lagoon, a storage lagoon, chlorine disinfection and spray field. The Township desires to decommission the existing Malvern Hunt WWTP. To maintain the operations of the station a new WQM permit for the existing pump station is required.

East Whiteland Township is proposing to redirect all flows from the Malvern Hunt Wastewater Treatment Plant (WWTP) to the existing public sewer system. Wastewater would be conveyed through the Valley Creek Trunk sewer for treatment at Valley Forge Sewer Authority's wastewater treatment plant.

The WWTP treats an average of 46,000 GPD of wastewater from the Malvern Hunt residential development. The WWTP is permitted for the treatment of 105,000 GPD annual average with a hydraulic capacity of 128,000 GPD. The facility was constructed in 2000 by The Cutler Group who operated and maintained the facility until 2007 when ownership was transferred to East Whiteland Township. Flows to the WWTP consist entirely of sewage from the Malvern Hunt residential development; the plant does not receive flows form any other source.

In 2010, a 10-inch sewer extension was constructed along the Chester Valley Trail adjacent to the WWTP to serve the proposed Whiteland Village Retirement Community. The main was dedicated to East Whiteland Township. The main flows to the Mill Lane Pump Station, which conveys the flows through the Mathews Road meter to the Valley Creek trunk sewer and ultimately to the Valley Forge Wastewater Treatment Plant.

The WWTP influent pump station associated with the Malvern Hunt development will remain in its entirety. The existing 6-inch force main will be redirected and extended approximately 250 LF to the public sewer within the Chester Valley Trail. A manhole will be constructed on the 10-inch main to facilitate the connection. The WWTP will be abandoned in accordance with the closure plan approved by PADEP.

2.0 EXISTING WASTEWATER PUMPING STATION

Constructed in 2000, the Malvern Hunt Pump Station is located at 30 Corbin Drive, Malvern PA 19341. The station is bound by N Malvern Hunt Way on the north and Fairwind Lane on the South. Thus, station serves 279 residential homes. No future connections are projected. The station is a typical submersible type station, equipped with two (2) explosion proof pumps. Wastewater is discharged through a 6-inch force main which discharges into the Malvern Hunt WWTP. The pumps are rated at 300 gpm at 48.4 feet TDH.

Since the pump station was designed and constructed in 2000 and no future connections are projected, the basis of design year of 2000 was used to establish design capacity. Using the 2000 census data of 2.70 persons per household, 100 gpd per person and the 279 existing residential homes, the pump stations design average annual flow is 0.0753 MGD. From the PADEP Sewage Pumping Station Guidance a peaking factor of 3.87 was selected to establish a peak instantaneous

flow of 0.2914 MGD. Table 1 below shows the historic flows for the pump station. Over the last 5-years the average annual flow is 0.0455 MGD.

Table 1 – Malvern Hunt Pump Station Historic Flows

Malvern Hunt Pump Station Historic Flows					
Month	**2015**	**2016**	**2017**	**2018**	**2019**
January	46,006	44,600	46,900	45,300	46,400
February	44,542	48,800	43,900	48,600	44,900
March	48,405	40,500	45,200	45,900	47,600
April	41,969	43,300	42,300	46,000	41,200
May	42,980	46,800	45,900	64,700	47,800
June	45,394	53,200	44,800	46,500	47,700
July	41,507	44,900	44,300	46,500	43,600
August	40,948	44,900	44,380	46,500	39,400
September	43,269	44,900	42,400	46,500	40,800
October	44,883	54,600	43,600	43,700	43,000
November	43,706	46,900	42,900	50,200	43,400
December	46,442	47,900	45,600	47,500	45,700
Average Annal Flow (GPD)	**44,171**	**46,775**	**44,348**	**48,158**	**44,292**
Max 3 Month Ave Flow (GPD)	**46,318**	**49,800**	**45,333**	**52,567**	**46,367**

Malvern Hunt Pump Station consists of the following features:

A. Wetwell Chamber:

- The pump wet well is a below-grade, precast concrete structure (8'-0" Ø x 18'- 3" deep) with one to one slope chamfers.
- The wet well is equipped with a grinder unit on the 10" DIP influent line.

B. Valve Vault Chambers:

The first valve vault chamber is a detached below-grade, precast concrete structure (6'-0" Ø x 6'- 0" high) with access hatch and aluminum ladder.

There are two 6" check valves, two 6" gate valves and two pressure gauges installed. The effluent lines combine into a common 6-inch DIP force main.

The second valve vault chamber is a detached below-grade, precast concrete structure 4'-0" Ø housing the flow meter.

C. Force main:

Wastewater is discharged through approximately 2,725 linear foot 6-inch DIP force main which discharges into Malvern Hunt WWTP. Minimum velocities within the force main are approximately 3.1 feet per second at 300 gpm.

D. Site Property:

The site property is surrounded by a cyclone fence with barbed wire, under lock and key for security.

A masonry building exists for locating the station's electrical power controls, pump controls, auto dialer, diesel generator and storage supply equipment.

Lighting for the site is provided for any night work. Water service is provided at the site for wash-down of the pump station equipment.

An alarm system with automatic callout dialer notifies personnel of an emergency at the stations. The wetwell is monitored for low water level, high water level, and motor failure alarms, as well as for loss of electrical service, emergency generator shutdown and low fuel alarm.

4.0 FLOW DIVERSION

The Township plans to extend the force main approximately 250 LF to an existing 10-inch gravity main south of the WWTP property. The main is a tributary to Mill Lane Pump Station and will ultimately be treated at the Valley Forge Wastewater Treatment Plant.

A. DEP FORMS

Applicant Name: East Whiteland

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

APPLICATION FOR WATER QUALITY MANAGEMENT PERMIT

Before completing this form, read the step-by-step instructions provided in this application package.

Related ID#s (If Known)				DEP USE ONLY
Client ID#	78789	**APS ID#**	_____	Date Received & General Notes
Site ID#	_____	**Auth ID#**	_____	
Facility ID#	_____			

APPLICANT IDENTIFIER

Application Type: ☐ New ☒ Modification ☐ Renewal Permit Number (if modification or renewal) 1599418

Applicant Name: East Whiteland Township

Current Mailing Address: 209 Conestoga Road, Frazer, PA 19355

Current Phone Number: (610) 6480600

FACILITY TYPE (Check all appropriate boxes below)

- ☐ Treatment Plant Summary – Module 1
- ☐ Sewer System – Module 2
- ☐ Flow Equalization and Grit Chambers – Module 3
- ☐ Screening and Settling – Module 4
- ☐ Trickling Filters and Aeration – Module 5
- ☐ Chemical Treatment – Module 6
- ☐ Rapid Sand Filters – Module 7
- ☐ Other Filters and Disinfection – Module 8
- ☐ Aerobic Digestion Tanks – Module 9
- ☐ Anaerobic Digestion – Module 10
- ☐ Sludge Filters and Centrifuges – Module 11
- ☐ Sludge Drying Beds – Module 12
- ☐ Stream Encroachment and Crossings – Module 13
- ☐ Spray Irrigation – Module 14
- ☐ Industrial Wastewater Treatment Facility – Module 15
- ☐ Small Flow Treatment Facility – Module 16
- ☒ Sewer Extensions – Module 17
- ☐ Manure Storage Facilities – Module 18
- ☐ Supplementary Geology and Groundwater Information – Module 19
- ☐ Impoundments – Module 20
- ☐ Sequencing Batch Reactor – Module 21
- ☒ Pump Stations – Module 22

COMPLIANCE HISTORY REVIEW		
Is/was the facility owner or operator in violation of any DEP regulation, permit, order or schedule of compliance at this or any other facility?	☐ Yes	☒ No
If "Yes," list each permit, order and schedule of compliance and provide compliance status. Use additional sheets to provide information on all permits.		
Permit Program	Permit No.	
Brief Description of Noncompliance		
Steps Taken to Achieve Compliance	Date(s) Compliance Achieved	
Current Compliance Status ☒ In Compliance	☐ In Noncompliance	

CERTIFICATION (Check appropriate box below.)

I certify under penalty of law that I

☒ am the applicant
☐ am an officer or official of the applicant
☐ have the authority to make this application (attach delegation of signatory authority) and that the plans, reports and documents designated and attached here with part of the application are true and correct to the best of my knowledge and belief.

John Nagel	Township Manager
Name (type or print legibly)	Official Title
Signature	5/27/2021 Date

(Use corporate or professional seal as appropriate.)

Taken, sworn and subscribed before me, this 27th day of May 20 21

Notary Seal

Commonwealth of Pennsylvania - Notary Seal
JOSEPH E MILES JR - Notary Public
Chester County
My Commission Expires Jun 10, 2022
Commission Number 1334106

Joseph E. Miles

LICENSED PROFESSIONAL ENGINEER

This is to certify that I have personally reviewed all engineering information contained in the accompanying modules, drawings, specifications and other documents which are part of this application and that I have found it to be of good engineering quality, true and correct, and is in conformance with the requirements of the Department of Environmental Protection (DEP), and it does not, to the best of my knowledge, withhold information that is pertinent to a determination of compliance with the requirements of DEP.

Name of Design Engineer: Charels Faulkner
Design Firm: Pennoni Associates Inc.
Mailing Address: 1900 Market Street, Suite 300
Philadelphia, PA 19103
Telephone Number: (215) 254-7751
E-mail Address: CFaulkner@pennoni.com

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
CHARLES C FAULKNER
ENGINEER
No. 073177

Charles Faulkner
Signature of Professional Engineer

NOTICE: It is an offense under Pennsylvania Criminal Code to affirm a false statement in documents submitted to DEP.

DEP will consider the licensed professional engineer whose seal is affixed to design documents to be fully responsible for the adequacy of all aspects of facility designs. The application and supporting documentation submitted for sewerage projects will be reviewed to ensure general consistency with good engineering practices, and the applicable design guidelines of DEP.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

CHECKLIST FOR WATER QUALITY MANAGEMENT PERMIT

	APPLICANT'S √ CHECKLIST	
APPLICANT NAME	East Whiteland Township	

Check the following list to make sure that you have included all the required information. Place a checkmark in the column provided for all items completed and/or provided. Failure to provide all of the requested information will delay the processing of the application.

ENCLOSE THIS CHECKLIST WITH YOUR APPLICATION FORM.

		Check √ If Included	DEP Use Only
1.	General Information Form (GIF).	☒	
2.	Appropriate application fee, with check payable to the Commonwealth of PA	☒	
3.	Two (2) copies (original and 1 copy) of application, design module(s), and accompanying drawings and plans.	☒	
	a. Certification and proper signatures.	☒	
	b. Engineer's professional seal on each plan sheet.	☒	
	c. *Design Engineer's Report* with signature and seal on cover	☒	
	d. Properly notarized (original).	☒	
	e. Technical specifications with engineer's seal and signature on cover	☒	
	f. Additional copy for Delaware River Basin or Erie and Allegheny counties (if required).	☒	
4.	Supplemental Information:	☒	
	a. General Layout Diagram (unless design plans provide this information).	☒	
	b. Sizes, Capacities and Dimensions Diagram (unless design plans provide this information).	☒	
5.	Design Modules.	☒	
6.	Topographic map with appropriate details.	☒	
7.	Act 14 Notification.	☒	
8.	Act 537 Approval (if required).	☒	
9.	Cultural Resources Notification	☒	
10.	Acts 67, 68 and 127 Notification (IW and Manure Storage Facilities only).	☐	
11.	Proof of Public Notification (IW and Manure Storage Facilities only)	☐	
12.	DRBC Notification (if required).	☒	
13.	Other (specify):	☐	

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#	78789	**APS ID#**		Date Received & General Notes
Site ID#		**Auth ID#**		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type / Code	Dun & Bradstreet ID#
78789	MUNI	

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
East Whiteland Township	236000322	☐ Yes ☒ NO

State of Incorporation or Registration of Fictious Name

☐ Corporation ☐ LLC ☐ Partnership ☐ LLP ☐ LP
☐ Sole Proprietorship ☐ Association/Organization
☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix

Additional Individual Last Name	First Name	MI	Suffix

Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line – City	State	ZIP+4	Country
Frazer	PA	19355	USA

Client Contact Last Name	First Name	MI	Suffix
Nagel	John		

Client Contact Title	Phone	Ext	Cell Phone
Township Manager	610-897-4205		

Email Address	FAX
JNagel@EastWhiteland.org	

SITE INFORMATION

DEP Site ID#	Site Name
	Malvern Hunt Sewage Pump Station

EPA ID# **Estimated Number of Employees to be Present at Site** 1

Description of Site
Existing sewage pump station within the Malvern Hunt Development

Tax Parcel ID(s): 42-003-0370.0000

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Chester	East Whiteland	☐	☐	☒	PA
		☐	☐	☐	
		☐	☐	☐	
		☐	☐	☐	

Site Location Line 1	Site Location Line 2
30 Corbin Drive	

Site Location Last Line – City	State	ZIP+4
Malvern	PA	19341

Detailed Written Directions to Site
Heading north on US-202 N, take exit to US-30, turn left on US30, after 0.5 miles turn right on Valley Creek Blvd, after 0.7 miles turn right on Sweedesford Rd, after 0.4 miles turn left on N Malvern Hunt Way, take the first left turn onto Corbin Dr. The pump station is 0.4 miles on the left inbetween 28 and 32 Corbin Dr.

Site Contact Last Name	First Name	MI	Suffix
Nagel	John		

Site Contact Title	Site Contact Firm
Township Manager	East Whiteland Township

Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Mailing Address Last Line – City	State	ZIP+4
Frazer	PA	19355

Phone	Ext	FAX	Email Address
610-897-4205			JNagel@EastWhiteland

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) **6-Digit Code** (Optional)

Client to Site Relationship
OWN

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. **Will this project modify an existing facility, system, or activity?**	☒	☐
2. **Will this project involve an addition to an existing facility, system, or activity?**	☒	☐

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☒	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	2	**41**	75	35	**34**

Horizontal Accuracy Measure	Feet	*--or--*	Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☐ North American Datum of 1983 ☐ World Geodetic System of 1984		
Horizontal Collection Method Code	EMAP		
Reference Point Code	CNTAR		
Altitude	Feet 361.5	*--or--*	Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☒ The North American Vertical Datum of 1988 (NAVD88)		
Altitude (Vertical) Location Datum Collection Method Code	SURVY		
Geometric Type Code	POINT		
Data Collection Date	1999		
Source Map Scale Number	Inch(es) = Feet		
--or--	Centimeter(s) = Meters		

PROJECT INFORMATION

Project Name
Malvern Hunt Pump Station

Project Description
This permit application is required to establish a new Water Quality Management (WQM) Permit for the existing Malvern Hunt Pump Station. Currently the WQM Permit is grouped-in with the Malvern Hunt WWTP. The Township desires to decommission the WWTP and redirect flows from the pump station to the existing public sewer system via an approximately 250 LF extension of the force main for treatment at Valley Forge Sewer Authority WWTP.

Project Consultant Last Name	First Name	MI	Suffix
Faulkner	Charles		

Project Consultant Title	Consulting Firm
Senior Engineer	Pennoni Associates Inc.

Mailing Address Line 1	Mailing Address Line 2
1900 Market Street	Suite 300

Address Last Line – City	State	ZIP+4
Philadelphia	PA	19103

Phone	Ext	FAX	Email Address
215-254-7751			CFaulkner@pennoni.com

Time Schedules	Project Milestone (Optional)
February 2021	537 Sewer Planning Approval
May 2021	WQM Part II Permit Approval
July 2021	Connect Existing Pump Station to Public Sewer

1. **Is the project located in or within a 0.5-mile radius of an Environmental Justice community as defined by DEP?** ☒ Yes ☐ No

   To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online Environmental Justice Areas Viewer.

2. **Have you informed the surrounding community prior to submitting the application to the Department?** ☒ Yes ☐ No

   Method of notification: Advertisement with sewage facility planning module

3. **Have you addressed community concerns that were identified?** ☐ Yes ☐ No ☒ N/A

   If no, please briefly describe the community concerns that have been expressed and not addressed.

   No public comments were received

4. **Is your project funded by state or federal grants?** ☐ Yes ☒ No

   Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

   Aspect of Project Related to Grant
   Grant Source: _____
   Grant Contact Person: _____
   Grant Expiration Date: _____

5.	**Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions)** **Note:** If "No" to Question 5, the application is not subject to the Land Use Policy. If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.	☒	Yes	☐	No

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there a county stormwater management plan?**	☒	Yes	☐	No
3.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
4.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** **Note:** If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below. If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.	☒	Yes	☐	No
5.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
6.	**Have you attached Municipal and County Land Use Letters for the project?**	☐	Yes	☒	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the Project Review Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No

2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐	Yes	☒	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☐	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒	Yes	☐	No
4.0.1	**Total Disturbed Acreage** 0.016				
4.0.2	**Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?**	☒	Yes	☐	No
4.0.3	**Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?**	☐	Yes	☒	No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☐	Yes	☒	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☐	Yes	☐	No

5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐	Yes	☐	No
5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☐	No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐	Yes	☐	No
5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐	Yes	☐	No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☐	No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐	Yes	☐	No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☐	Yes	☒	No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)** 45,000 avg.	☒	Yes	☐	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☒	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No
12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No

13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?**	☐	Yes	☒	No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	☐	Yes	☐	No
	13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. **Enter all types & amounts of emissions; separate each set with semicolons.**				
14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served _____				
	14.0.2 Number of Employee/Guests _____				
	14.0.3 Number of Connections _____				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☐	Yes	☒	No
	16.0.1 Supplier's Name _____				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project be served by on-lot drinking water wells?**	☐	Yes	☒	No
18.0	**Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes", reference Safe Drinking Water Program.	☐	Yes	☒	No
	18.0.1 Source Name				
19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☐	Yes	☒	No
	19.0.1 Type & Amount				
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐	Yes	☒	No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons. _____				

22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
	NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks				
25.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name Charles Faulkner

Signature	Title	Date
Charles Faulkner	Senior Engineer	04/01/2021

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM -- AUTHORIZATION APPLICATION APPLICANT'S CHECKLIST

This final checklist is to assist the applicant in assuring that all requests for responses, contacts, additional documentation, etc. have been addressed. Please check the following list to make sure that you have included all the required information. Failure to provide all of the requested information will delay the processing of the application and may result in the application being placed on hold with no action, or will be considered withdrawn and the application file closed. This applicant's checklist need not be returned to DEP with your completed application.

REQUIREMENTS		
☒	**1.**	**ATTACHMENTS.** The completion of the GIF may require the submission of some or all of the following. Where appropriate, include the appropriate attachment(s) with the completed GIF.
	☒	**a) Site Information, Written Directions to Site** – Attach additional sheets as necessary.
	☒	**b) Facility Information, Latitude/Longitude** – Attach additional sheets as necessary.
	☒	**c) Project Information, Project Description** – Attach additional sheets as necessary.
	☒	**d) Project Information, Time Schedules** -- Attach additional sheets as necessary.
	☒	**e) Land Use Information** – Please attached completed County and Municipal Land Use Letters. If County and Municipal Land Use Letters are not included, please attach documentation indicating zoning approval (for early opt-out option), or certified mail receipts indicating that requests for County and Municipal Land Use Letters were sent to the county and municipality. For more information, see GIF Instructions and the Department's Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in DEP Review of Authorizations for Facilities and Infrastructure – Document ID: 012-0200-001.
	☒	**f) Coordination Information** - If land is disturbed, it may be the applicant's responsibility to also notify the PA Historical and Museum Commission, Bureau of Historic Preservation, 400 North Street, Floor 2, Harrisburg, PA 17120-0093, (717) 787-3362.
		PHMC notification is required for construction activities that have not been exempted under DEP's Policy for PHMC and DEP Coordination During Permit Application Review and Evaluation of Historic Resources:
		For additional information, see Project Review Form instructions to determine whether submission of information to PHMC is required for this permit application.
	☒	**g) Coordination Information, Question 9.0.1** – Attach copy – Act 537 Approval Letter. Note: Approval required prior to 105/NPDES approval.
	☐	**h) Coordination Information, Question 16.0.2** – Attach copy – Public Water Supplier's Agreement Letter to Serve the Project.
☒	**2.**	**CONTACTS MADE.** According to information provided in the Coordination Information section, the appropriate DEP office may need to be contacted; as well as some agencies outside DEP. See the Instructions document for appropriate contact per coordination question.
		In addition to contacts referenced above, prior to proceeding with any project, DEP encourages applicants to be in touch with municipal and county governments to get information on and secure, if possible, any local permits or approvals that might be required for the project. By doing so, potential conflicts at the local level can be resolved prior to application submission to DEP.
☒	**3.**	**BEFORE YOU DIG -- CONTACT.** Pennsylvania One Call System at 1-800-242-1776.
☒	**4.**	**APPLICATION SUBMITTED.** Application has been completed and properly signed according to instructions and type codes; and will be submitted to the appropriate DEP office.

Applicant Name: East Whiteland Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

SEWER EXTENSIONS
MODULE 17

APPLICANT NAME	East Whiteland Township

PROJECT INFORMATION

If the project is associated with existing or proposed residential or industrial development, complete the following:

Name of Development: Malvern Hunt
Type of Development: Residential
Number of Units: 279 Project Acreage:

BASIS OF DESIGN

Design Year: 2000	Design Population: 753

SEWER SYSTEM

1. CLASS OF CONSTRUCTION ☐ NEW SYSTEM ☐ REPLACEMENT OF EXISTING SYSTEMS ☒ SANITARY
2. INITIAL POPULATION 753 DESIGN YEAR POPULATION 753

3. List the WQM permit number of the sewer to which this system connects.	E15-821
4. List the WQM permit number of the treatment facility receiving flow from this system.	1599422 1599422A2
5. What is the reserve capacity of the most limiting component between this connection and the treatment facility?	Valley Creek Trunk Sewer (see attached capacity letters)

6. LOCATION

USGS Quadrangle Name: Malvern

Latitude/Longitude of Connection Point	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	2	41	78	35	34

7. DESIGN FLOW DATA

a.	Laterals and Submain Sewers		(GPCD)	
b.	Average Daily Flow		(mgd)	0.0753
c.	Infiltration/Inflow (I/I)		(mgd)	
d.	Industrial Waste Flow		(mgd)	
e.	Total Average Design Flow		(mgd)	0.0753
f.	Maximum Expected Flowrate	(Peak Instantaneous)	(mgd)	0.2914

8. Describe measures taken to minimize I/I in the system including leakage test and reference applicable portion of the specifications.

The tie-in point, Whiteland Village Sewer Extension, was installed in 2009. During construction the sewer was pressure tested and manholes were vacuum tested to minimize I/I. All new lines installed will be pressure tested and manholes will be vacuum tested to minimize I/I.

Applicant Name: East Whiteland Township

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

PUMP STATIONS
MODULE 22

APPLICANT NAME	East Whiteland Township

PUMP STATION (Submit separate module for each pump station.)

1.	PUMP STATION NAME: Malvern Hunt Pump Station	
2.	List the WQM permit number of the sewer to which this system connects.	E15-821
3.	List the WQM permit number of the treatment facility receiving flow from this system.	1599422 1599422 A2
4.	What is the reserve capacity of the most limiting component between this connection and the treatment facility?	Valley Creek Trunk Sewer (See attached capacity Letters)

5. LOCATION (street name, etc.): Corbin Drive, Malvern PA 19341

USGS Quadrangle Name: Malvern

Latitude/Longitude of Pump Station	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	2	41	78	35	34

Latitude/Longitude of Connection Point	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	2	28	75	35	12

6. TYPE (e.g., conventional, suction lift, ejector or submersible): submersible

7. INITIAL POPULATION TO BE SERVED: 753 FUTURE POPULATION TO BE SERVED:
DESIGN YEAR: 2000

8. DESIGN INFORMATION:		AVG (mgd)	MAX (Peak Instantaneous) (mgd)
a.	Domestic Flowrate (based on design population to be served)	0.0753	0.2914
b.	Industrial Flowrate		
c.	Infiltration/Inflow (I/I) Rate		
d.	Design Flowrate		
e.	Effective Wet Well Capacity	(gal) 1,691	
f.	Detention Time	(min) 5.64	
g.	Design Average Velocity in Force Main	(fps) 3.1	
h.	Total Dynamic Head (Pump Station + Force Main)	Static Head 12.5 ft	
		Friction Loss 35.9 ft	
		TDH 48.4 ft	
i.	Diameter of Force Main	6 inches	

9. Describe the proposed project with respect to the 100-year flood elevation, ventilation, emergency power provision and alarm system.
The Existing pump station is outside the 100-year flood elevation. The station is submersible, the wet well is vented through the building roof. They system has a emergency diesel generator and alarm dialer currently.

Applicant Name: East Whiteland Township

PUMPS

LIST ALL THE PUMPS IN THE PUMPING STATION

NUMBER OF IDENTICAL PUMPS	Describe Pump Use	Type of Pump	Check Columns That Apply To Each Pump								Pump Capacity	
			EXISTING	PROPOSED	VARIABLE SPEED	CONSTANT SPEED	AUTOMATIC CONTROL	MANUAL CONTROL	PNEUMATIC EJECTOR	STANDBY	gpm	TDH (ft)
2	Raw wastewater transfer	Submersible	☒	☐	☐	☐	☐	☐	☐	☐	300	48.4
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
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			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		

1900 Market Street
Suite 300
Philadelphia, PA 19104
T: 215-222-3000
F: 215-222-3588

www.pennoni.com

April 1, 2021

EWTPX 01003 CERTIFIED MAIL/RETURN RECEIPT

John Nagel, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: Act 14 Notification
Application for Water Quality Management Permit
Malvern Hunt Pump Station Redirection

Dear Mr. Nagel:

The purpose of this notification is to inform you of our intent to submit a Water Quality Management Permit (WQMP) application to the Pennsylvania Department of Environmental Protection (DEP) for the following:

Application Type: WQMP
Applicant Name: East Whiteland Township
Facility Name: Malvern Hunt Pump Station
Facility Address: 30 Corbin Drive
Municipality: East Whiteland Township
County: Chester
Description of Project: This permit application is required to establish a new Water Quality Management (WQM) Permit for the existing Malvern Hunt Pump Station. Currently the WQM Permit is grouped-in with the Malvern Hunt WWTP. The Township desires to decommission the WWTP and redirect flows from the WWTP to the existing public sewer system via an approximately 250 LF extension of the force main for treatment at Valley Forge Sewer Authority WWTP.

This notice is required by Act 14, which amended the Commonwealth of Pennsylvania Administrative Code. Act 14 requires that each applicant for a DEP permit give written notice to the municipality and the county in which the permitted activity is located. The written notices must be received by the Municipality and County at least 30 days before the DEP may issue or deny a permit.

If you have any questions, please contact the Pennsylvania Department of Environmental Protection (DEP) at the office below:

Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Sincerely,

PENNONI ASSOCIATES INC.

Charles Faulkner, PE
Senior Engineer
U:\Accounts\EWTPX\EWTPX01003 - Malvern Hunt WWTP\DOC PREP\WQM Permit Application\Act 14s\Act 14 LTRS WQMP twp.doc

1900 Market Street
Suite 300
Philadelphia, PA 19104
T: 215-222-3000
F: 215-222-3588

www.pennoni.com

April 1, 2021

EWTPX 01003 CERTIFIED MAIL/RETURN RECEIPT

Marian Moskowitz, Chair
Chester County Commissioner
313 West Market Street Suite 6202
West Chester, PA 19380

RE: Act 14 Notification
Application for Water Quality Management Permit
Malvern Hunt Pump Station Redirection

Dear Mrs. Moskowitz:

The purpose of this notification is to inform you of our intent to submit a Water Quality Management Permit (WQMP) application to the Pennsylvania Department of Environmental Protection (DEP) for the following:

Application Type: WQMP
Applicant Name: East Whiteland Township
Facility Name: Malvern Hunt Pump Station
Facility Address: 30 Corbin Drive
Municipality: East Whiteland Township
County: Chester
Description of Project: This permit application is required to establish a new Water Quality Management (WQM) Permit for the existing Malvern Hunt Pump Station. Currently the WQM Permit is grouped-in with the Malvern Hunt WWTP. The Township desires to decommission the WWTP and redirect flows from the WWTP to the existing public sewer system via an approximately 250 LF extension of the force main for treatment at Valley Forge Sewer Authority WWTP.

This notice is required by Act 14, which amended the Commonwealth of Pennsylvania Administrative Code. Act 14 requires that each applicant for a DEP permit give written notice to the municipality and the county in which the permitted activity is located. The written notices must be received by the Municipality and County at least 30 days before the DEP may issue or deny a permit.

If you have any questions, please contact the Pennsylvania Department of Environmental Protection (DEP) at the office below:

Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Sincerely,

PENNONI ASSOCIATES INC.

Charles Faulkner

Charles Faulkner, PE
Senior Engineer
U:\Accounts\EWTPX\EWTPX01003 - Malvern Hunt WWTP\DOC PREP\WQM Permit Application\Act 14s\Act 14 LTRS WQMP county.doc

1900 Market Street
Suite 300
Philadelphia, PA 19104
T: 215-222-3000
F: 215-222-3588

www.pennoni.com

April 1, 2021

EWTPX 01003 CERTIFIED MAIL/RETURN RECEIPT

David Kovach, Water Resource Management Manager, Project Review
DRBC
P.O. Box 7360
West Trenton, NJ 08628-0360

RE: DRBC Notification
Application for Water Quality Management Permit
Malvern Hunt Pump Station Redirection

Dear Mr. Kovach:

The purpose of this notification is to inform you of our intent to submit a Water Quality Management Permit (WQMP) application to the Pennsylvania Department of Environmental Protection (DEP) for the following:

Application Type: WQMP
Applicant Name: East Whiteland Township
Facility Name: Malvern Hunt Pump Station
Facility Address: 30 Corbin Drive
Municipality: East Whiteland Township
County: Chester
Description of Project: This permit application is required to establish a new Water Quality Management (WQM) Permit for the existing Malvern Hunt Pump Station. Currently the WQM Permit is grouped-in with the Malvern Hunt WWTP. The Township desires to decommission the WWTP and redirect flows from the WWTP to the existing public sewer system via an approximately 250 LF extension of the force main for treatment at Valley Forge Sewer Authority WWTP.

This notice is required by Act 14, which amended the Commonwealth of Pennsylvania Administrative Code. Act 14 requires that each applicant for a DEP permit give written notice to the municipality and the county in which the permitted activity is located. The written notices must be received by the Municipality and County at least 30 days before the DEP may issue or deny a permit.

If you have any questions, please contact the Pennsylvania Department of Environmental Protection (DEP) at the office below:

Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Sincerely,

PENNONI ASSOCIATES INC.

Charles Faulkner

Charles Faulkner, PE
Senior Engineer
U:\Accounts\EWTPX\EWTPX01003 - Malvern Hunt WWTP\DOC PREP\WQM Permit Application\Act 14s\DRBC Notification WQMP.doc

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Nagel, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

9590 9402 6057 0125 2637 91

2. Article Number *(Transfer from service label)*

7017 3380 0000 9200 5801

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

RM – EWTPX 01003

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Marian Moskowitz, Chair
Chester County Commissioner
313 West Market Street Suite 6202
West Chester, PA 19380

9590 9402 6057 0125 2625 89

2. Article Number *(Transfer from service label)*

7017 3380 0000 9200 5795

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

RM EWTPX01003

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

David Kovach, Water Resource Management Manager, Project Review
DRBC
P.O. Box 7360
West Trenton, NJ 08628-0360

9590 9402 6057 0125 2625 96

2. Article Number *(Transfer from service label)*

7017 3380 0000 9200 5788

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

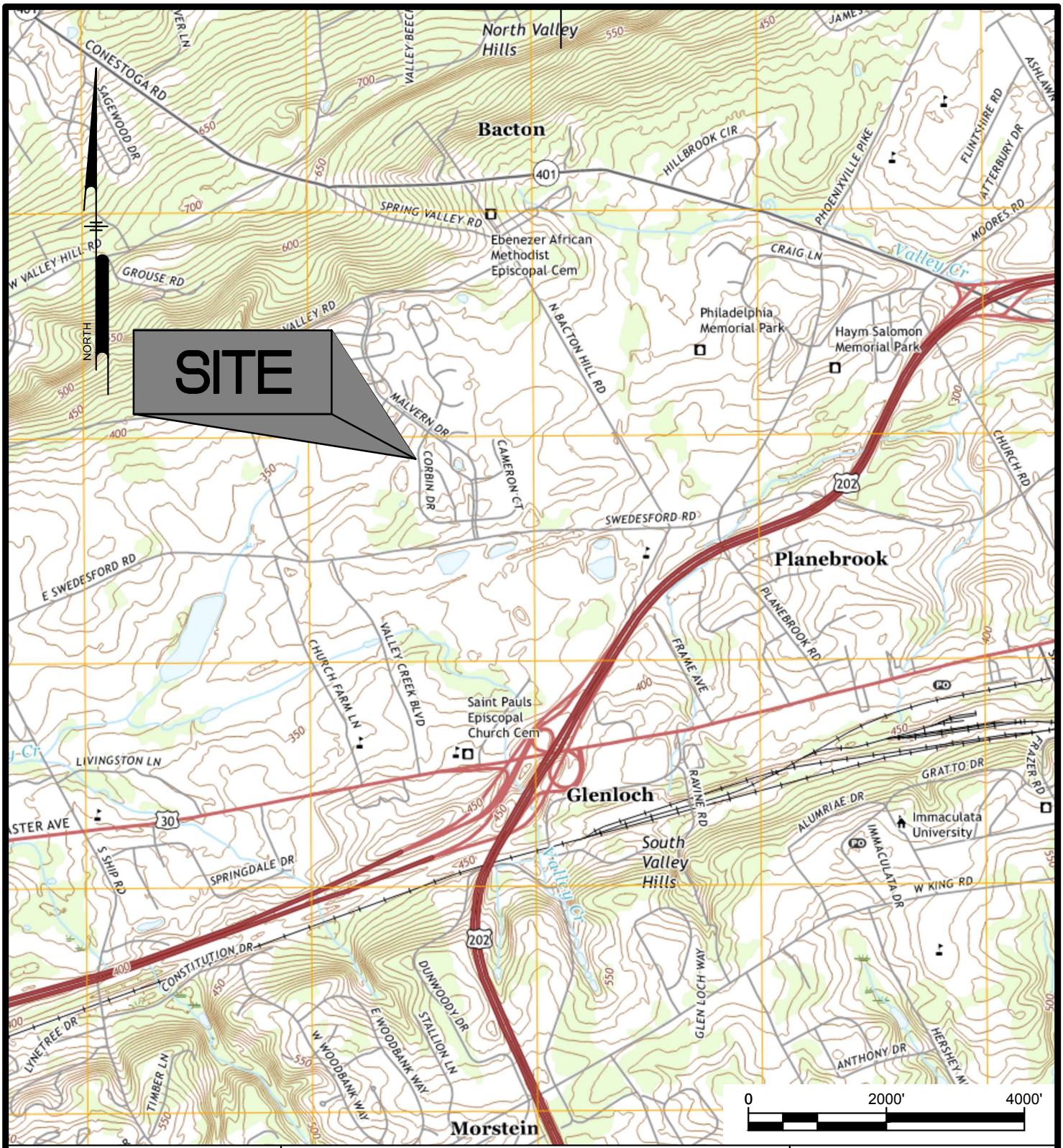
B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt



ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON THE EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 **F** 215.222.3588

MALVERN HUNT PUMP STATION REDIRECTION
CORBIN DRIVE
CHADDS FORD, PA 19317

LOCATION MAP

EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, PA 19355

PROJECT	EWTPX01003
DATE	2020-11-11
DRAWING SCALE	1"=2000'
DRAWN BY	RKM
APPROVED BY	CF

G-1000

SHEET 1 OF 1

U:\ACCOUNTS\EWTPX\EWTPX01003 - MALVERN HUNT WWTP\DOC PREP\WQM PERMIT APPLICATION\LOCATION MAP\G-1000.DWG
PLOTTED: 7/20/2012 10:46:48 AM, BY: RYAN MINNICK PLOTSTYLE: PENNONI NCS.STB, PROJECT STATUS: ---

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ____/____
DATE RECEIVED: 4/15/20	DATE DUE: 5/14/20
ER NUMBER: 2020-1324-029-A	HRSF: ☐

REV: 03/2020

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? ◉ YES ○ NO **OR** ○ **This is additional information for ER Number:**

Project Name: Malvern Hunt WWTP Decomissioning | County: Chester | Municipality: East Whiteland

Project Address: East Swedesford Road | City/State/ Zip: Exton | PA | 19341

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Charles Faulkner, PE | Phone: (215) 254-7751

Company: Pennoni | Fax:

Street/PO Box: 1900 Market Street, Suite 300 | Email: Cfaulkner@pennoni.com

City/State/Zip: Philadelphia | PA | 19103 | Email cc: JNeild@eastwhiteland.org

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☐ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.	Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
	State	PADEP/ Bureau of Point/Non Point Source Ma	Site ID #527339/Permit NO #1599418

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 13.74 | Total acres of earth disturbance: 5.23 ac

Are there any buildings or structures within the project area? ◉ Yes ○ No | Approximate age of buildings: 30

Does this project involve properties listed in or eligible for the National Register of Historic Places, or locally designated? Inventory here: https://gis.penndot.gov/crgis	Yes	No	Unsure
	○	◉	○

Name: _____

Key Number: _____

Please email this form and pdf attachments to:
RA-PH-PASHPO-ER@pa.gov

Or, please print and mail completed form and all attachments to:
PHMC- PA State Historic Preservation Office
400 North Street
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad, streetmap, or parcel map showing the project's Area of Potential Effect
- ☑ **Description/Scope of Work**– Narrative description of the project, including any ground disturbance and previous land use, and any potential to impact historic resources
- ☑ **Site Plans/Drawings** – Indicate location and age of buildings, any proposed improvements, and past and present land use
- ☑ **Photographs** – Attach digital photographs of the project site, including images of all buildings and structures keyed to a site plan, for buildings older than 50 years use the Abbreviated HRSF

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☑ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties: _____ Key# _____
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

DIVISION CHIEF, ENVIRONMENTAL REVIEW: [signature] **DATE:** 4/16/20

SHPO REVIEWER: SC

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SENT VIA ELECTRONIC MAIL ONLY

February 26, 2021

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Approval Letter – Minor Act 537 Plan Update
Decommissioning of Malvern Hunt Wastewater Treatment Plant
Special Study
Status: ISSUED
APS No. 38912, AUTH ID No. 1344008
East Whiteland Township
Chester County

Dear Mr. Nagel:

We have completed our review of your municipality's Act 537 Special Study for the Decommissioning of Malvern Hunt Wastewater Treatment Plant for East Whiteland Township ("Township"), Chester County, as prepared by Pennoni Associates, Inc. The plan was received by the Department of Environmental Protection ("DEP") on October 23, 2020. Additional information in support of this plan was received by DEP on February 1, 2021, February 10, 2021 and February 25, 2021. This plan is being submitted to the Department in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the plan is hereby granted.

The plan provides for the decommissioning of the Malvern Hunt Wastewater Treatment Plant ("WWTP") and the connection of the Malvern Hunt development to the Township public sewer system. The existing 279 residential units within the Malvern Hunt development will connect via the existing influent pump station and an approximately 250 linear foot extension of the existing six-inch pump station force main that will connect into the existing ten-inch interceptor sewer located within the Chester Valley Trail adjacent to the WWTP lagoons.

This project will be connected to the Township's collection system and will generate 76,725 gallons of sewage per day to be treated at the Valley Forge Sewer Authority Wastewater Treatment Facility.

The existing Malvern Hunt collection and conveyance system including the pump station and force main will continue to be owned by the Township. The parcels containing the WWTP's storage lagoons and spray fields will also continue to be owned by the Township. The Township has stated that there are no redevelopment plans for either the WWTP storage lagoon parcel or the spray field parcel at this time. Should the Township consider redevelopment of either parcel in the future, the Township will contact DEP in order to determine if additional sewage facilities planning is required.

The decommissioning of the WWTP and connection of the existing development to the public sewer system shall be completed consistent with the implementation schedule received by DEP on February 1, 2021.

We ask that the Township submit an acceptable closure plan for the WWTP, storage lagoons and spray system. Unless otherwise directed to electronically submit the closure plan, mail the plan to: Department of Environmental Protection, Clean Water Program, 2 East Main Street, Norristown, PA 19401 (attention: Permits Section). The permittee must develop and submit a Closure Plan to DEP describing how and when the sewage treatment facility will be closed with a proposed schedule.

This approval is specifically made contingent upon the applicant acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance, and replacement of all sewerage structures associated with the approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

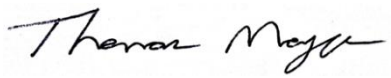
A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at http://ehb.courtapps.com or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions, please contact Ms. Kelly Boettlin of this office at 484.250.5184 or at kboettlin@pa.gov.

Sincerely,



Mr. Thomas Magge
Regional Manager
Clean Water

cc: Mr. Skiljo - Chester County Health Department (via email)
Ms. Conwell - Chester County Planning Commission (via email)
Mr. Strohmaier - Chester County Conservation District (via email)
Mr. Stoltz - Valley Forge Sewer Authority (via email)
Mr. Bubel - Aqua America (via email))
Mr. Burgo - Tredyffrin Township (via email)
Mr. Faulkner - Pennoni Associates, Inc. (via email)
Mr. Neild - East Whiteland Township (via email)
RCSOB, 11th Floor, Sewage Facilities, Attn.: Janice Vollero (via email)
Planning Section
Re

3800-PM-WSFR0015 1/2011
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 1599418

AMENDMENT NO. _____

APS ID. 916602

AUTH. ID. 1139890

A. PERMITTEE (Name and Address): CLIENT ID#: **78789** **East Whiteland Township** **209 Conestoga Road** **Frazer, PA 19355**	B. PROJECT/FACILITY (Name): **Malvern Hunt WWTP**
C. LOCATION (Municipality, County): **East Whiteland Township, Chester County**	SITE ID#: **527339**

D. THIS PERMIT APPROVES THE OPERATION OF SEWAGE FACILITIES CONSISTING OF:

The Malvern Hunt Pump Station with comminutor, an influent bar screen, a two sell aerated treatment lagoon, a storage lagoon, a chlorine disinfection system, and spray fields.

Pump Stations: _____	Manure Storage:	Sewage Treatment Facility:		
Design Capacity: _____ GPM	Volume: _____ MG	Annual Average Flow:	**0.105**	MGD
	Freeboard: _____ inches	Design Hydraulic Capacity:	**0.128**	MGD
		Design Organic Capacity:	**222**	lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Permit Renewal:** All operations and procedures shall be in accordance with the Water Quality Management Permit application dated **5/23/2016**, its supporting documentation and addendums dated _____, which are hereby made a part of this permit.

   Amendments: All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation and addendums dated _____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

   Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.
3. Special Conditions **1 through XVII** are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED:

November 21, 2016

BY: _____

TITLE: Jenifer L. Fields, P.E.
Clean Water Program Manager
Southeast Regional Office

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS

Water Quality Management Permit No. 1599418

Malvern Hunt WWTP

East Whiteland Township, Chester County

I. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled at a point after chlorination and shall be limited at all times as follows:

	Discharge Limitations (mg/l)			Monitoring Requirements	
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent Flow (mgd)	0.105			Continuous	Recorded
$CBOD_5$	25		50	1/Month	Grab
Suspended Solids	30		60	1/Month	Grab
Fecal Coliform	200/100 ml as geometric average			1/Month	Grab
pH	Within limits of 6.0 to 9.0 standard units at all times			1/Month	Grab

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters.

Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

II. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

III. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

A. Quarterly analysis of groundwater sampled at groundwater monitoring wells **MW-L1, MW-L2, MW-L3, MW-S1, MW-S2, MW-S3, MW-S6, MW-S7, and MW-S8,** shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.

B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.

C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.

D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

IV. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP **annually** and be in **report form.** The report shall be due to DEP within 28 days of the end of the month of permit issuance. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Water Management Program
2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

V. The annual groundwater monitoring report shall include the following information:

A. General Information

i. Facility name
ii. Facility permit number
iii. Facility location (including municipality and county)
iv. Facility contact information:

a. permittee name, address, and telephone number
b. contact name and title
c. facility operator name, address, and telephone number
d. facility consultant name, address, and telephone number

B. Site Data

i. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

ii. Average effluent flow for the year covered by this report.

iii. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

a. Date of sampling
b. Groundwater elevations
c. Sampling depth
d. Identification of upgradient and downgradient wells
e. The results of the analysis of the samples

iii. Background groundwater data generated prior to system start-up. **This information is absolutely needed and needs to be included in the data tabulation.**

C. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

D. **Groundwater Background Report**

Within 60 days of system start up, or upon issuance of permit renewal a Groundwater Background Report shall be submitted to DEP. The report shall include the follow information:

i. Site Information

a. Brief narrative, including site limitations.
b. Soil type and bedrock lithology beneath the absorption areas.
c. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.

ii. Construction details of each groundwater monitoring well shall include:

a. Well depth.
b. Casing depth.
c. Static water levels.
d. Surface elevation.
e. Well log.
f. Water bearing zones.
g. Top of casing elevation.
h. Ground surface elevation.

VI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.

VII. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration neither greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value nor greater than 1000/100 ml of these organisms in a more than 10 percent of the samples tested.

VIII. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

IX. The authorization to discharge contained in Section D of this permit shall expire in five years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.

X. Sprayfield Weekly Maximum Hydraulic Loadings

A. Effluent flows to each sprayfield must be consistent with the maximum hydraulic loading requirements of the following tables, which provide the weekly maximum gallons for each irrigation zone.

MAXIMUM WEEKLY SPRAYFIELD HYDRAULIC LOADINGS IN GALLONS

Spray Zone 1 6.16 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,671
February	0.50	83,671
March	1.27	212,539
April	1.50	251,020
May	2.00	334,691
June	2.50	418,369
July	2.50	418,369
August	2.50	418,369
September	2.50	418,369
October	1.55	259,410
November	1.16	194,126
December	0.50	83,671

Spray Zone 2 6.19 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	84,079
February	0.50	84,079
March	1.27	213,574
April	1.50	252,243
May	2.00	336,321
June	2.50	420,406
July	2.50	420,406
August	2.50	420,406
September	2.50	420,406
October	1.55	260,673
November	1.16	195,072
December	0.50	84,079

Spray Zone 3 6.15 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,536
February	0.50	83,536
March	1.27	212,194
April	1.50	250,613
May	2.00	334,148
June	2.50	417,690
July	2.50	417,690
August	2.50	417,690
September	2.50	417,690
October	1.55	258,989
November	1.16	193,811
December	0.50	83,536

B. The permittee shall include with the monthly Discharge Monitoring Report a Supplemental Land Application System Form 3800-FM-BPNPSM0449 that indicates the gallons per day discharged to the spray irrigation zones.

C. Spray irrigation events shall consist of simultaneous operation of two zones with one zone left off for a week-long resting period. All zones shall be rested each month.

D. Application of the effluent shall be managed to prevent runoff from the permitted spray fields and ponding of effluent.

E. No irrigation is to occur on frozen soils.

F. No irrigation is to occur if more than 0.5 inches of rainfall has fallen during the previous 24 hours.

G. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

H. The spray fields shall be maintained to ensure that vegetation does not interfere with or impair proper operation of the spray heads.

I. Fallen trees in wooded spray fields are required to be removed. All work must be conducted during dry or frozen soil conditions to prevent damage to the soil.

XI. At all times, the wastewater level in the storage lagoon shall be managed within the low and high water level parameters as designed. The water level shall be controlled so that a freeboard of at least 24 inches is maintained at all times. The Department must be notified if the water level is anticipated to enter freeboard.

XII. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

A. The exact place, date, and time of sampling or measurement.
B. The person(s) who performed the sampling or measurement.
C. The dates the analyses were performed.
D. The person(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The results of such analyses.

XIII. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XIV. The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

XV. Laboratory Certification

Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of act 90 of 2002 (27 Pa. Code C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XVI. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Stream Law, the permittee shall allow authorized representatives of Department of Environmental Protection upon the presentation of credentials and other documents as may be required by law:

A. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.

B. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

C. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or The Clean Streams Law, any substances or parameters at any location.

XVII. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.

B. EAST WHITELAND TOWNSHIP SEWER SYSTEM MAP

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA

Pump Stations
1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
* 9. ~~Church Rd~~
* 10. ~~Frame Ave~~
11. Hillbrook Circle
12. King Rd
13. Malvern Hunt
14. Planebrook Rd

* Decommissioned

Meters
I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows
XII. Atwater

LEGEND
- Manholes
- Meters
- Pump Stations
- Laterals
- Weston Master Plan Area
- Municipal Boundaries
- Lakes & Ponds
- Streams
- Subdivisions
- Pump Station Drainage Basins
- Parcel Boundaries
- Valley Forge Service Area
- Valley Forge Service Area Proposed
- Force Mains & Size
- 8" Gravity Sewer
- 8" Proposed Gravity Sewer
- 10" Gravity Sewer
- 12" Gravity Sewer
- 15" Gravity Sewer
- 15" Proposed Gravity Sewer
- 16" Gravity Sewer
- 18" Gravity Sewer
- 18" Proposed Gravity Sewer
- 20" Gravity Sewer
- 21" Gravity Sewer
- 24" Gravity Sewer
- 27" Gravity Sewer
- 36" Gravity Sewer
- Unknown Pipe Diameter

N W E S

0 600 1,200 Feet

1 inch = 600 feet

REVISION DATE: 3/3/2020

MAP NOTES:

Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohli & Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as-built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.

Data Sources: East Whiteland Township, Schoor DePalma, Kohli & Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.

NOTES:

1. PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2. CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020

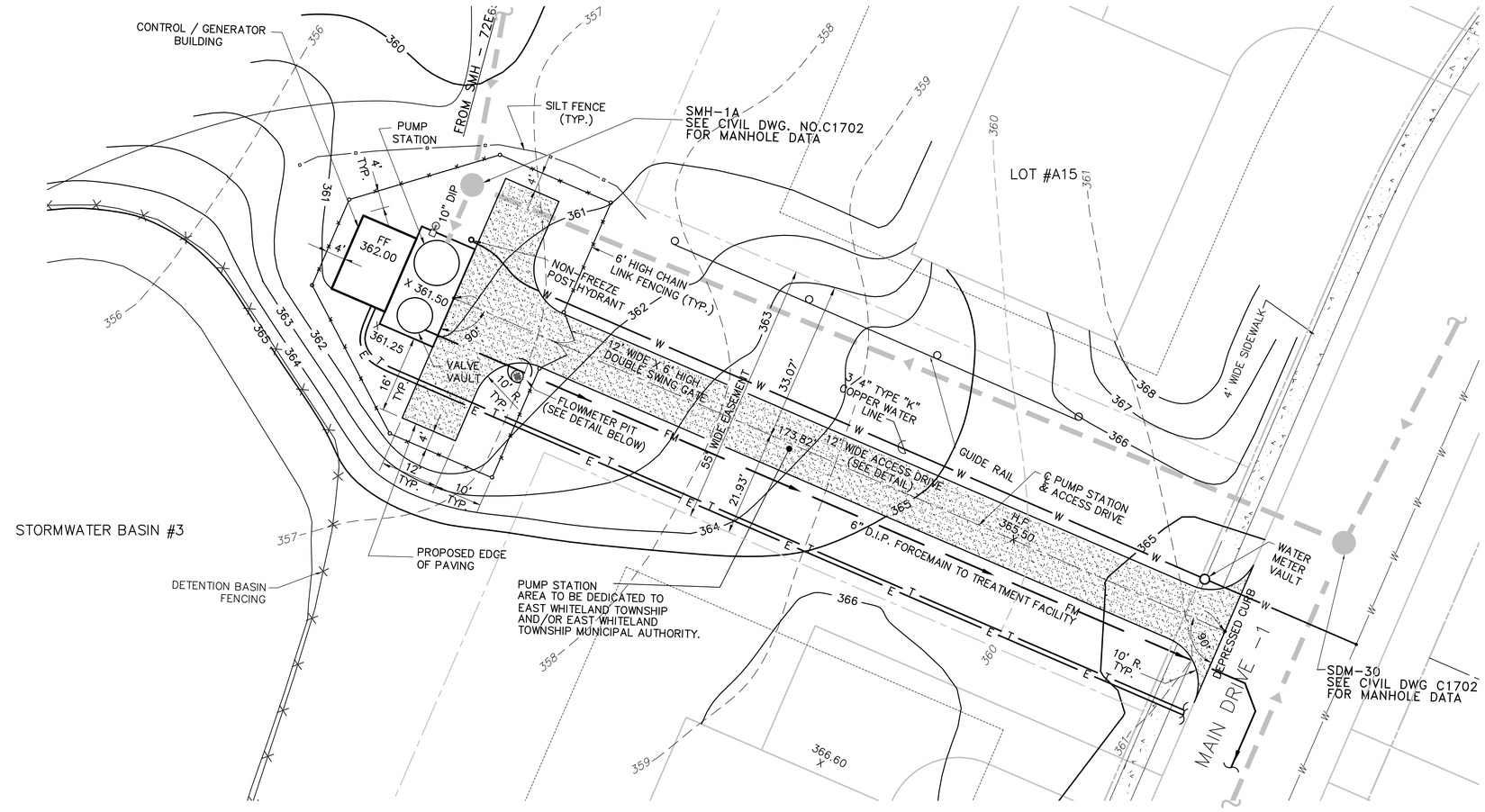
LEGEND: APPROVED/PENDING DEVELOPMENTS

- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN

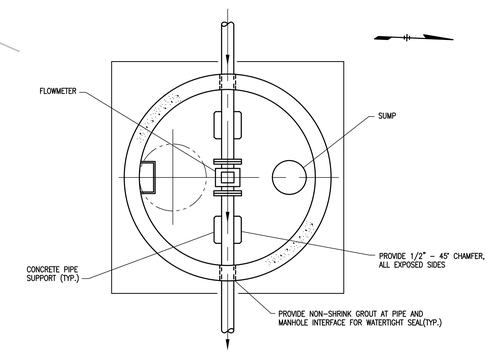
Charlestown Meadows PS
XI. Charlestown Meadows Meter
Hillbrook Circle PS
ROUTE 401 AREA
BACTION WAY SUBDIVISION (5 SINGLE FAMILY HOMES)
MALVERN HUNT WWTP SPRAY IRRIGATION FIELD
Malvern Hunt PS
Malvern Hunt PS #13
MALVERN CROSSING (66 TOWNHOUSES)
WHITELAND VILLAGE SANITARY SEWER EXTENSION
Mill Ln PS
BACTON HILL ROAD AREA
GREAT VALLEY COMMUNITY ORGANIZATION (41,128 S.F COMMUNITY CENTER)
SWEDESFORD ROAD AREA
Planebrook Road PS
Frame Ave PS #10
Frame Ave PS
PLANEBROOK AREA
GMH FRAZER LANES (227-UNIT MULTI-FAMILY APARTMENTS)
Church Rd PS
OLD ORCHARD PARK (10 MANUFACTURED HOUSING UNITS)
SHIRTZ FARM (14 SINGLE FAMILY HOMES) LOW PRESSURE SEWER
To East Goshen
Immaculata University
Hillbrook Circle PS #11
MALVERN DUCKLINGS 10,000 FT^2 DAYCARE (PENDING)
GREAT VALLEY CROSSING 42 SINGLE FAMILY HOMES
CHURCH ROAD SEWER EXTENSION (1600 LF GRAVITY SEWER); ABANDON CHURCH ROAD PUMP STATION
Meadow View PS #5
Westgate PS #8
Westgate PS
King Rd PS #12
King Rd PS
Mill Lane PS #2
Deer Run PS #1
Deer Run PS
Meadow View PS
X. Charlestown Oaks Meter
Lee Blvd PS #4
III. Lee Blvd Meter
Lee Blvd PS
FLAT ROAD SUBDIVISION (37 SINGLE FAMILY HOUSES)
Wilburdale Rd PS #3
Wilburdale Rd PS
Flat Rd PS #6
Flat Rd PS
Lapp Rd PS #7
Lapp Rd PS
XII. Atwater Meter
ATWATER
IV. Church Rd Meter (Tredyffrin Township eliminated meter on 8-3-13 due to additional gravity sewer extension.)
VI. Unisys Meter
SWEEDESFORD SQUARE APARTMENTS 244 APARTMENTS
WATERWALK 153 ROOM HOTEL
V. Matthews Rd Meter
UPTOWN WORTHINGTON MOVIE THEATER AND OFFICE BUILDINGS
VANGUARD
VII. Northridge/Miner Hill Meter
IX. Woodview Apt Meter
VIII. Erin Glen Meter
II. Warren Ave Meter
I. Old Lincoln Hwy Meter
Charlestown Elementary School
Devault Foods
Atwater Phase B Lot 14

\\Jandfiles\gis\east_whiteland\projects\EastWhiteland_DrainageBasins_Current.mxd

C. EXISTING PUMP STATION DRAWINGS



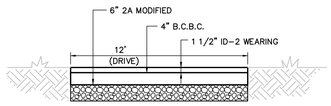
PLAN
1" = 10'



PLAN BELOW GRADE

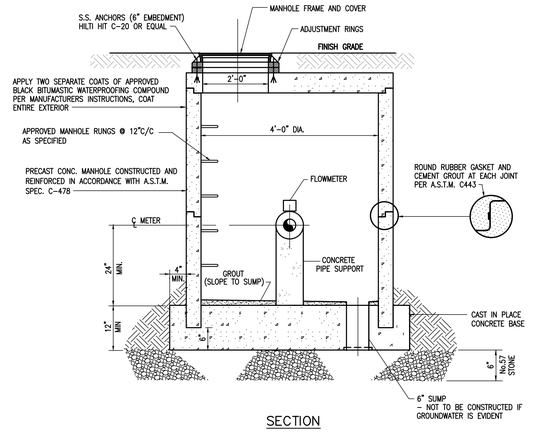
GENERAL NOTES:

1. THE STRUCTURAL DESIGN OF THE WETWELL AND VALVE CHAMBER IS TO BE PROVIDED BY THE PRECAST CONCRETE MANUFACTURER. THE WALL AND SLAB THICKNESSES HAVE BEEN NOTED ON THE PLANS BUT ARE SUBJECT TO CHANGE BASED ON THE STRUCTURAL DESIGN.
2. ALL HATCHES ARE TO BE EQUIPPED WITH FACTORY INSTALLED NEOPRENE GASKETS TO INSURE TIGHT WEATHERPROOF SEALS.
3. SEE MALVERN HUNT DEVELOPMENT DRAWINGS FOR CONSTRUCTION BENCHMARK.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES ARE INCLUDED IN SITE DRAWINGS.
5. SEE MALVERN HUNT DEVELOPMENT DRAWINGS FOR LANDSCAPING OF PUMP STATION & ACCESS DRIVE.
6. ALL APPROVED SHOP DRAWINGS ARE TO BE SUBMITTED TO EAST WHITELAND TOWNSHIP.



TYPICAL SECTION

PUMP STATION ACCESS DRIVE
N.T.S.



SECTION

FLOWMETER PIT
N.T.S.

ISSUED FOR BID
MARCH 31, 2000

NOTE: THIS PLAN FOR PUMP STATION SITE ONLY.

Pennoni Associates Inc.
One Drexel Plaza, 3001 Market Street, Philadelphia, PA 19104
Engineers • Surveyors • Planners • Landscape Architects

NO.	DATE	REVISIONS	BY
2	11/11/99	ADD METER PIT, REV. NOTES	RRW
1	1/1/99	PER TOWNSHIP ENGINEER COMMENTS	

ALL DIMENSIONS, MUST BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE PROCEEDING WITH THE WORK.

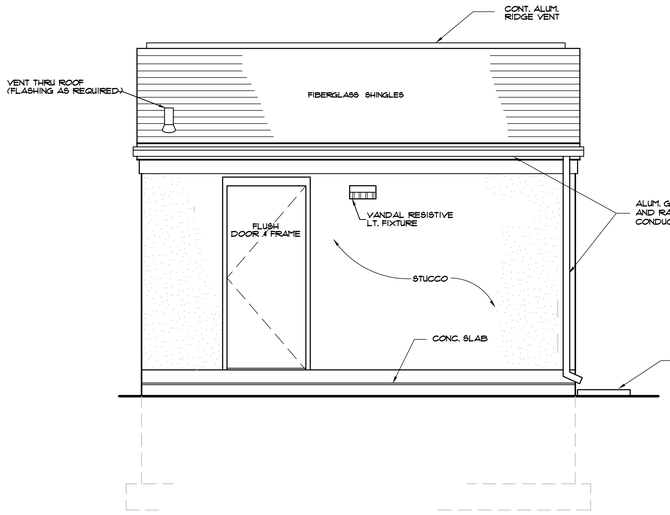
MALVERN HUNT
EAST WHITELAND TOWNSHIP, CHESTER COUNTY

PUMP STATION - SITE PLAN

THE CUTLER GROUP, INC.
C/O RICHARD P. McBRIDE
McBRIDE AND MURPHY
P.O. BOX 159
HORSHAM, PA. 19044

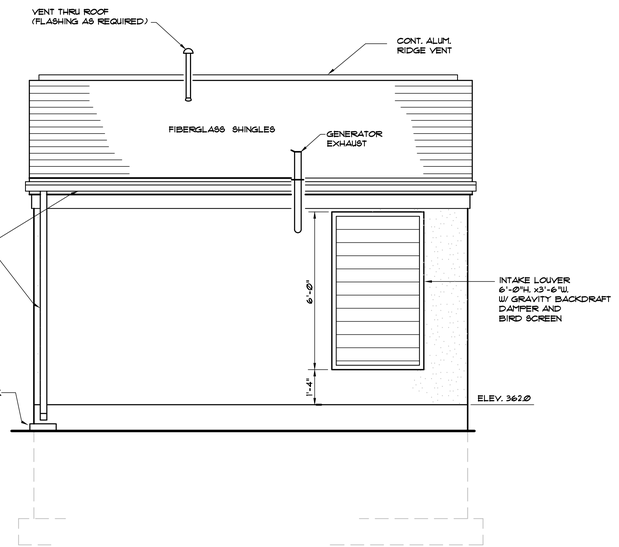
ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM

JOB NUMBER	TCGR 98A8004
SCALE: 1"=10'-0"	DRAWING NO.: PS-1
DRAWN BY: Z.D.	
DATE: 11/30/98	
APPROVED	SHEET: 2 OF 5



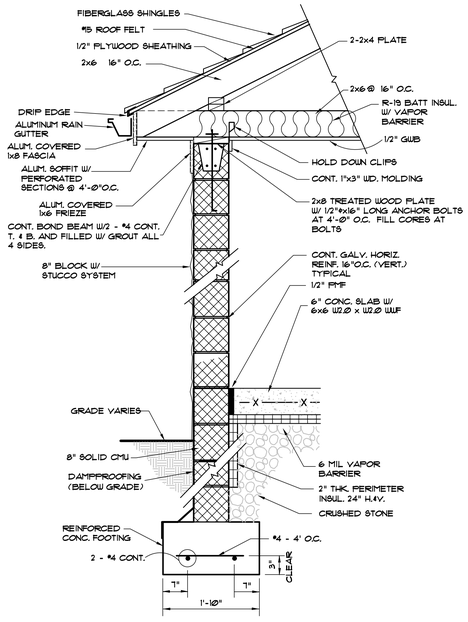
FRONT ELEVATION

SCALE: 1/2" = 1'-0"



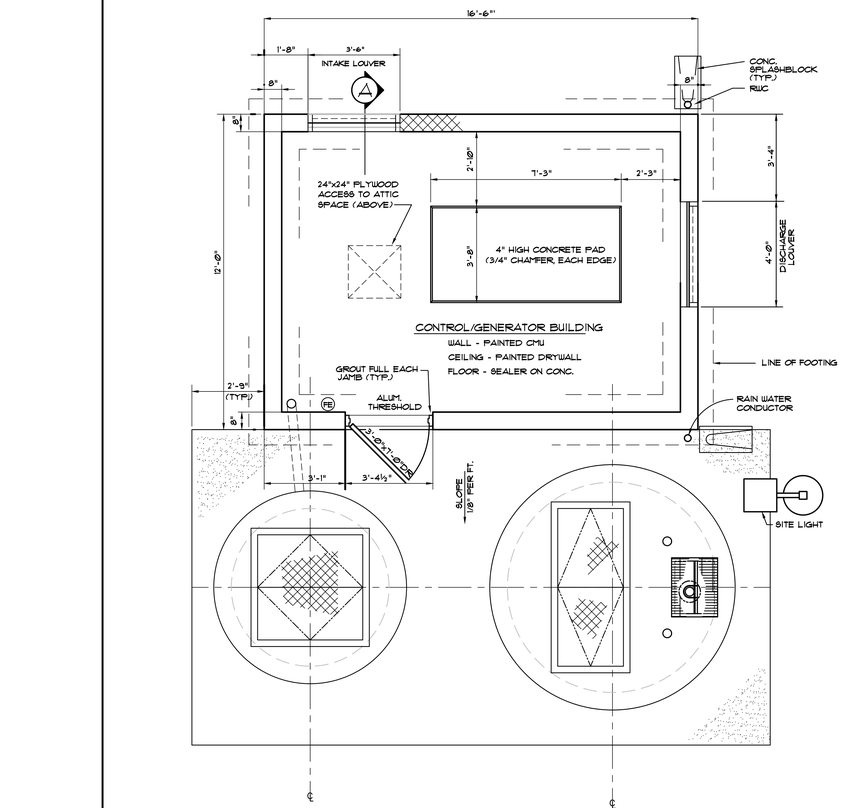
REAR ELEVATION

SCALE: 1/2" = 1'-0"



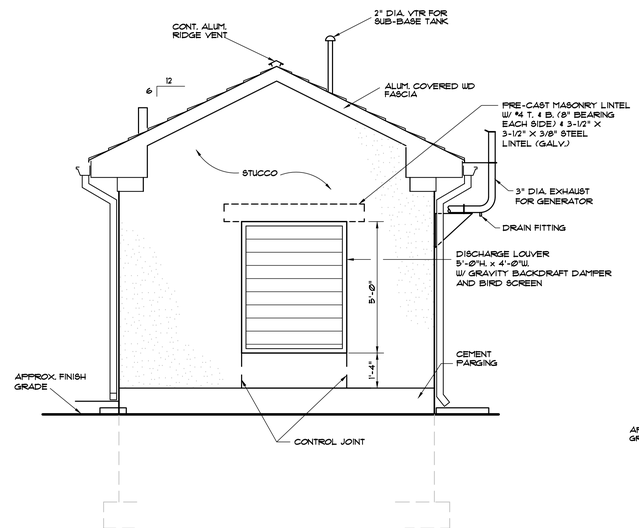
TYPICAL WALL SECTION

SCALE: 1" = 1'-0"



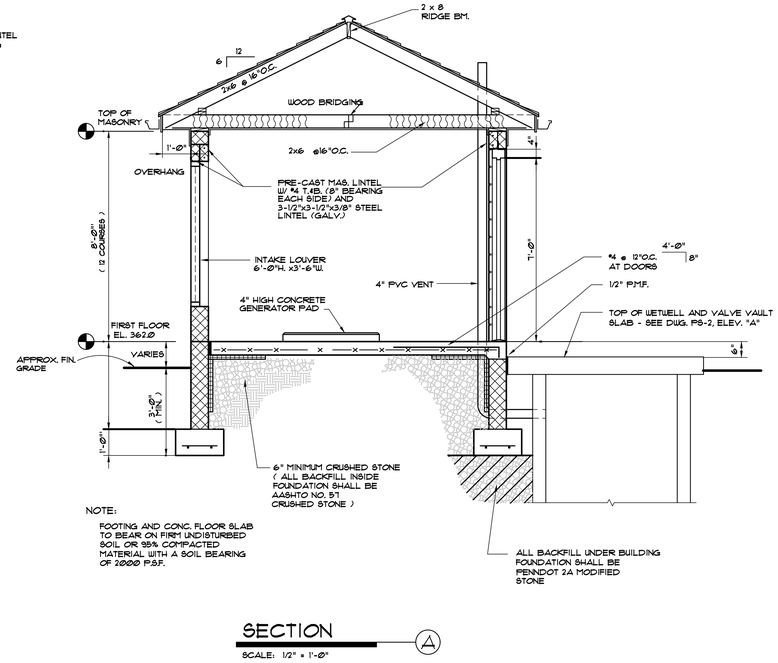
FLOOR PLAN

SCALE: 1/2" = 1'-0"



RIGHT SIDE ELEVATION

SCALE: 1/2" = 1'-0"



NOTE:

FOOTING AND CONC. FLOOR SLAB TO BEAR ON FIRM UNDISTURBED SOIL OR 95% COMPACTED MATERIAL WITH A SOIL BEARING OF 2000 P.S.F.

SECTION

SCALE: 1/2" = 1'-0"

ISSUED FOR BID
MARCH 31, 2000

Pennoni Associates Inc.
Engineers • Surveyors • Planners • Landscape Architects
One Drexel Plaza, 3001 Market Street, Philadelphia, PA 19104

Pennoni

NO.	DATE	REVISIONS	BY
		PERMIT SUBMISSION	PBU
1	4/1/99	PER TOWNSHIP ENGINEER COMMENTS	
2	5/5/99	NO REVISIONS THIS SHEET	

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER'S REP. SEE CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS BEFORE PROCEEDING WITH THE WORK.

MALVERN HUNT
EAST WHITELAND TOWNSHIP, CHESTER COUNTY

PUMP STATION - ARCHITECTURAL

THE CUTLER GROUP, INC.
C/O RICHARD A. MURRIDUE
ALBERT J. MURRIDUE
P.O. BOX 629
HORSHAM, PA. 19044

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JOB NUMBER	TCGR 98A8004
SCALE: AS NOTED	DRAWING NO. PS-2
DRAWN BY: Z.D.	
DATE: 4/1/99	
APPROVED	SHEET: 3 OF 5

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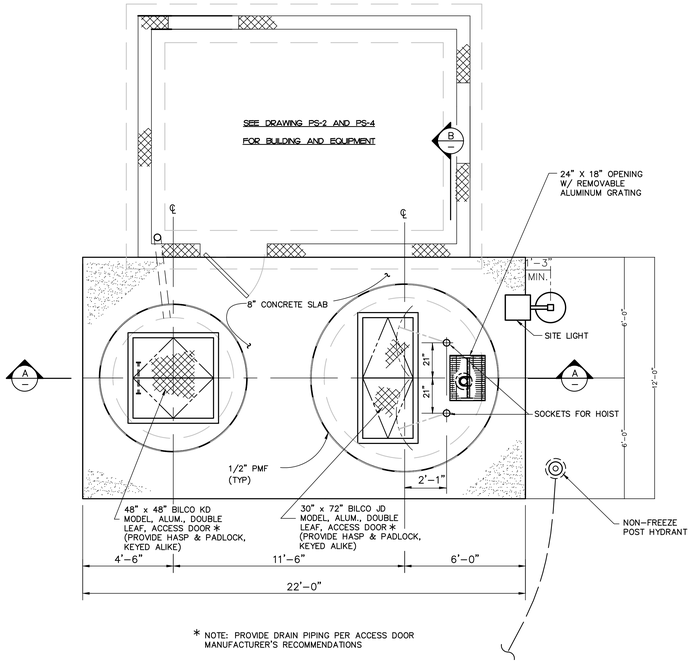
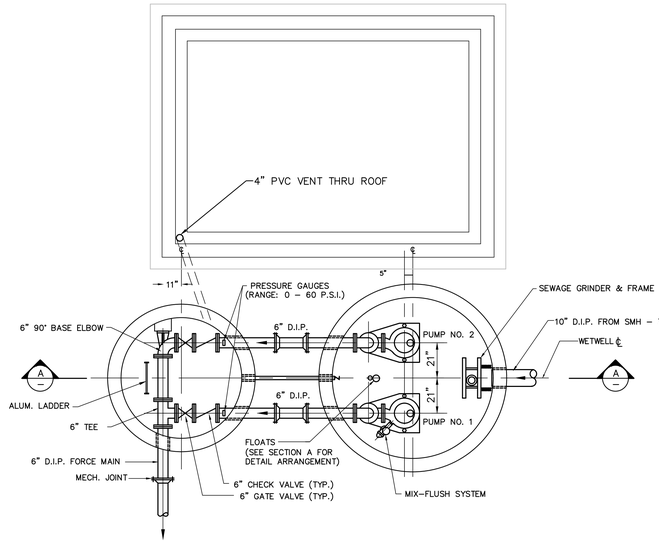


* NOTE: PROVIDE DRAIN PIPING PER ACCESS DOOR MANUFACTURER'S RECOMMENDATIONS

PLAN ABOVE GRADE

SCALE : 3/8" = 1'-0"



PLAN BELOW GRADE

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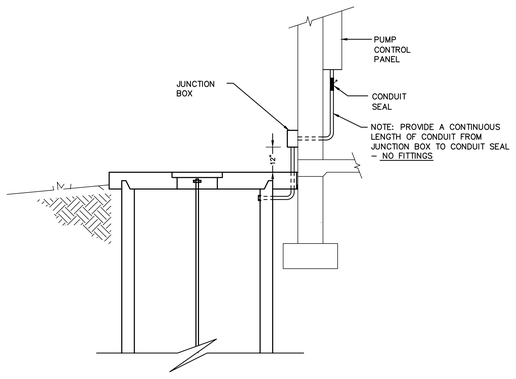
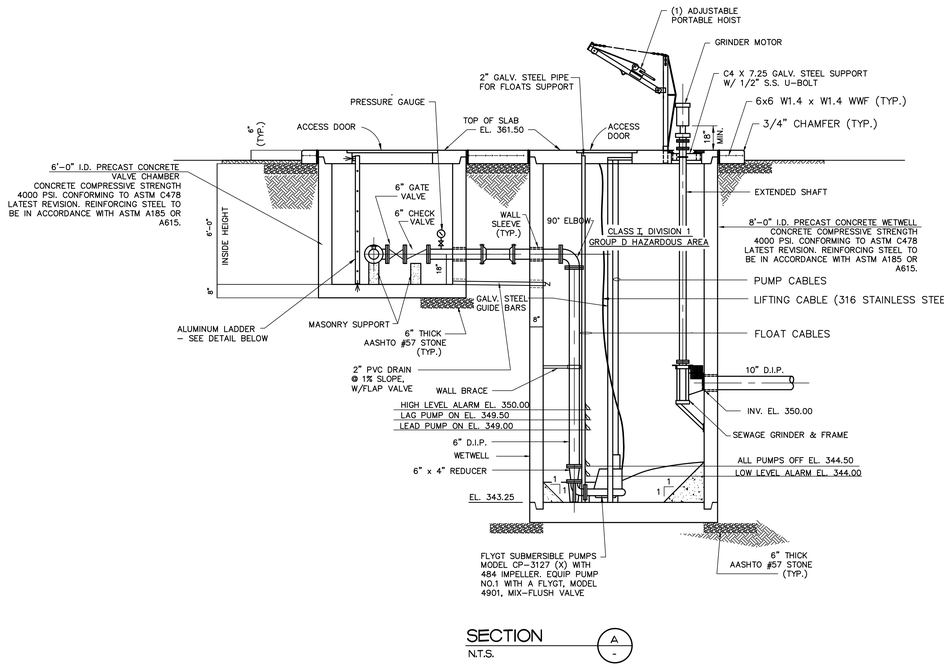


SECTION

SCALE : 3/8" = 1'-0"



SECTION

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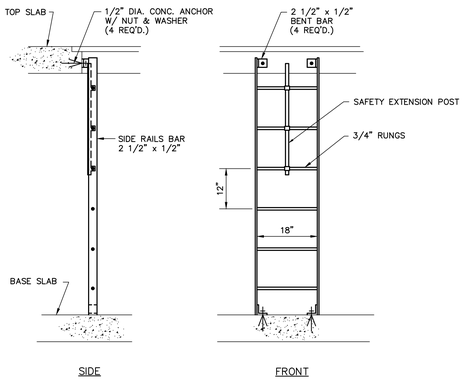
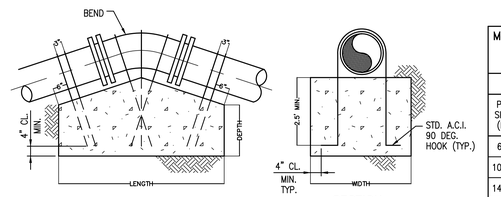


ALUMINUM LADDER DETAIL

N.T.S.



ELEVATION

SECTION

NOTES

1. FOR 4" AND 6" PIPE, USE THREE # 4 BARS OVER FITTING ONLY.
2. FOR 8" THROUGH 20" PIPE, USE SIX # 6 BARS WITH TWO OVER FITTINGS AND FOUR OVER PIPES.
3. FOR 24" PIPE, USE SEVEN # 7 BARS AS SHOWN.
4. CONCRETE TO HAVE 3,000 P.S.I. MINIMUM 28 DAY COMPRESSIVE STRENGTH.
5. REINFORCING STEEL TO BE ASTM A-615, GRADE 60
6. COVER ALL FITTINGS AND JOINTS WITH POLYETHYLENE FILM BEFORE PLACING CONCRETE
7. COAT ALL EXPOSED FERROUS SURFACES WITH TWO COATS BITUMASTIC, APPLIED PER MFG'S RECOMENDATIONS
8. BEND REINFORCING BARS TO U SHAPE CONFORMING TO OUTSIDE PIPE DIAMETER.
9. KEEP CONCRETE CLEAR OF JOINTS AND LUGS.
10. FORM UNSUPPORTED AREAS OF CONCRETE.

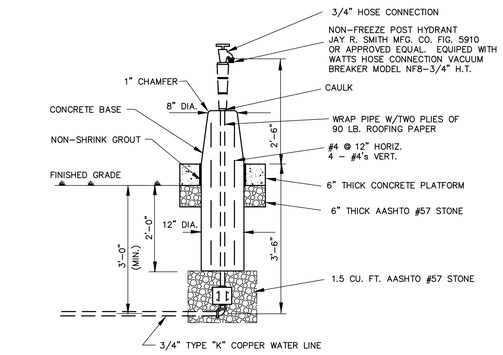
MINIMUM THRUST BLOCKING DIMENSIONS * FOR VERTICAL UPWARD THRUST 200 P.S.I. TEST PRESSURE

PIPE SIZES (IN.)	DEGREE OF BEND OR DEFLECTION								
	11.25	22.5	45	11.25	22.5	45	11.25	22.5	45
	LENGTH (FT.)			WIDTH (FT.)			DEPTH (FT.)		
6–8	4.0	4.5	6.5	3.0	4.0	4.5	3.0	4.0	5.0
10–12	4.5	5.0	8.0	4.0	5.0	5.5	4.0	6.0	6.0
14–16	5.5	8.0	11.5	5.0	6.0	6.5	5.0	5.5	6.5
18–20	6.0	7.5	13.0	6.0	7.0	7.5	5.0	7.0	7.5
24	6.5	10.0	14.0	6.5	8.0	9.5	6.5	7.0	8.0

* ALLOWANCES MUST BE MADE FOR SATURATED SOILS AND SIZES ADJUSTED ACCORDINGLY.

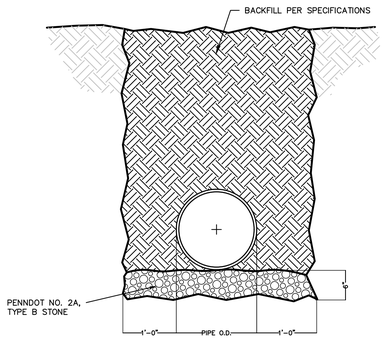
CONCRETE THRUST BLOCKS FOR VERTICAL UPWARD THRUST

N.T.S.



NON-FREEZE POST HYDRANT DETAIL

N.T.S.



TYPICAL PIPE TRENCH

GENERAL NOTES[1]

1. THE STRUCTURAL DESIGN OF THE WETWELL AND VALVE VAULT, IN ADDITION TO ANTI–FLOATATION CALCULATIONS, ARE TO BE PROVIDED BY THE PRECAST CONCRETE MANUFACTURER AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA. THE WALL AND SLAB THICKNESSES HAVE BEEN NOTED ON THE PLANS BUT ARE SUBJECT TO CHANGE BASED ON THE STRUCTURAL DESIGN.
2. ALL HATCHES ARE TO BE EQUIPPED WITH FACTORY INSTALLED NEOPRENE GASKETS TO INSURE TIGHT WEATHERPROOF SEALS.
3. CONCRETE EDGES ABOVE FINISHED GRADE TO HAVE 3/4" CHAMFER.

ISSUED FOR BID
MARCH 31, 2000

Pennoni Associates Inc.
One Drexel Plaza, 3001 Market Street, Philadelphia, PA 19104

Engineers • Surveyors • Planners • Landscape Architects

Pennoni

NO.	DATE	REVISIONS	BY
3	02/21/00	REVISED DRAWING	Z.D.
2	11/11/99	NO REVISIONS THIS SHEET	RRW
1	9/1/99	PER TOWNSHIP ENGINEER COMMENTS	

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE PROCEEDING WITH THE WORK.

MALVERN HUNT
EAST WHITELAND TOWNSHIP, CHESTER COUNTY

PUMP STATION - WET WELL & VALVE CHAMBER

THE CUTLER GROUP, INC.
C/O RICHARD P. McBRIDE
McBRIDE AND MURPHY
P.O. BOX 1
HORSHAM, PA. 19044

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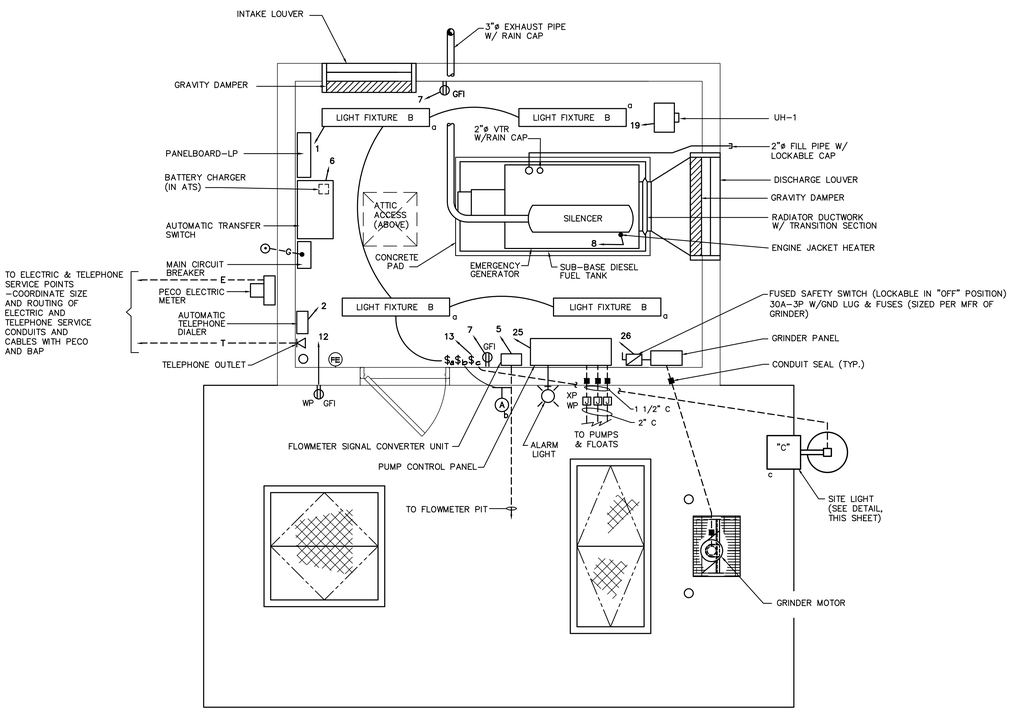
JOB NUMBER	TCGR 98A8004
SCALE	AS NOTED
DRAWN BY	Z.D.
DATE	11/30/98
APPROVED	
DRAWING NO.	PS–3
SHEET	4 OF 5

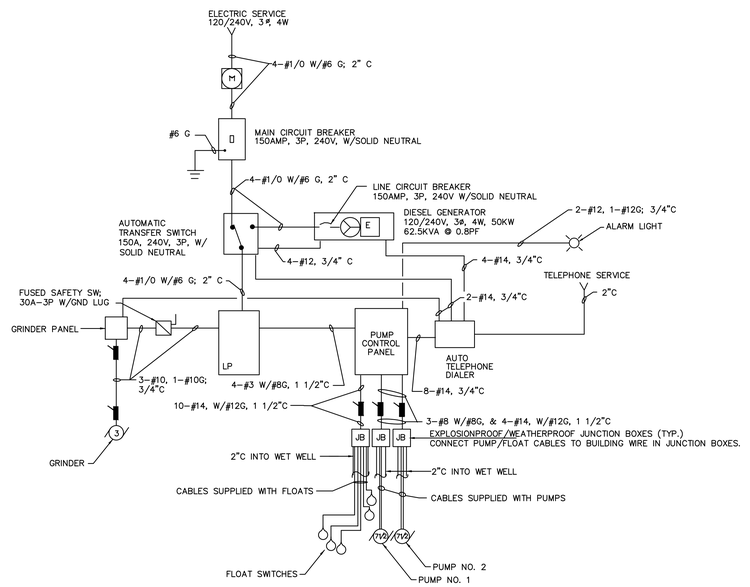


FLOOR PLAN

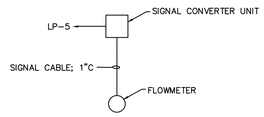
SCALE: 1/2" = 1'-0"

LIGHTING FIXTURE SCHEDULE							
TYPE	MANUFACTURER/CATALOG NO.	LAMP			MOUNTING		REMARKS
		NO.	TYPE	WATT	TYPE	HEIGHT	
A	HUBBELL PERIMALITER SERIES PVL-0070S-118	1	HPS	70	WALL	7'-0"	W/ PHOTOCELL CONTROL PBT-1 & KIT PVL-PK
B	USI/COLUMBIA LU240DMR120CW	2	FLUOR	40	CEILING	—	U.L. LISTED FOR DUST & MOISTURE APPLICATIONS.
C	HUBBELL MSSA150S3A81PCR1-MAS101-SAP4146A4M51	1	HPS	150	POLE	15'-0"	W/10" MOUNTING ARM; ALL ITEMS SHALL HAVE DARK BRONZE FINISH

UNIT HEATER SCHEDULE							
SYMBOL	MFR/CATALOG NO.	HEAT			MOUNTING		REMARKS
		NO.	TYPE	WATT	TYPE	HEIGHT	
UH-1	CHROMALOX LUH-05-23	1	ELEC	5,000	WALL	7'-6"	HORIZONTAL UNIT HEATER FOR 240V, 3ø OPERATION INCL. WALL BRACKET & INTEGRAL THERMOSTAT.



PUMP STATION SCHEMATIC DIAGRAM



FLOWMETER SCHEMATIC DIAGRAM

PANEL SCHEDULE

PANEL: LP — INTERRUPTING RATING: 10,000 AMP RMS SYM — MOUNTING: SURFACE
VOLTAGE: 120/240 — AMP: 225 — PHASE: 3ø — WIRE: 4 — MAIN: 225A MLO

CIRCUIT	DESCRIPTION	WIRE	POLES	BKR SIZE	VA/PHASE A LEFT	A RIGHT	B LEFT	B RIGHT	C LEFT	C RIGHT	BKR SIZE	POLES	WIRE	DESCRIPTION	CIRCUIT
1	LIGHTING	12	1	20	488	40					20	1	12	AUTO. TEL. DIALER	2
3	SPACE													SPACE	4
5	FLOWMETER/SIG. CONV.	12	1	20					25	240	20	1	12	BATTERY CHARGER	6
7	RECEPTACLE - INTERIOR	12	1	20	360	500					20	2	12	JACKET HEATER	8
9	SPACE						500				1	1			10
11	SPARE *		1	20						180	20	1	12	RECEPTACLE - EXTERIOR	12
13	SITE LIGHT	12	1	20	188						20	1		SPARE *	14
15	SPACE													SPACE	16
17															18
19	UNIT HEATER	12	3	20	1667										20
21							1667								22
23									1667						24
25	PUMP CONTROL PANEL	3	3	80	6097	1330					30	3	10	GRINDER PANEL	26
27							6097	1330							28
29									6097	1330					30
	TOTALS				10,670		9,594		9,539						
					29,803										

NOTE: 1. NEMA TYPE 1 ENCLOSURE
2. COPPER GROUND BUS
3. * INDICATES GFI TYPE CKT BKR
4. BØ SHALL BE "HIGH LEG"-- MARK "HIGH LEG" POLES IN ORANGE COLOR PER NATIONAL ELECTRICAL CODE

SPECIAL NOTE: THE WET WELL SHALL BE CONSIDERED A CLASSIFIED AREA--CLASS I, DIVISION 1, GROUPS C AND D. ALL EQUIPMENT AND WIRING INSTALLED IN THIS AREA SHALL MEET THE REQUIREMENTS FOR THIS TYPE OF HAZARDOUS LOCATION.

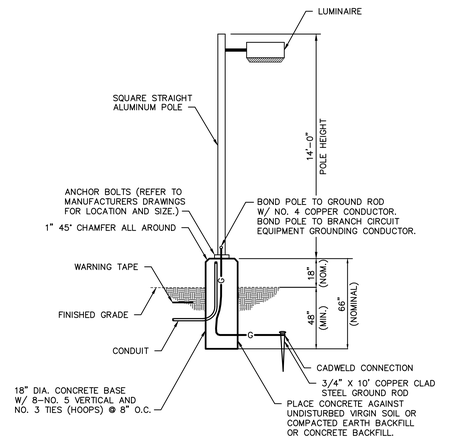
AUTOMATIC TELEPHONE DIALER STATUS AND ALARM SCHEDULE
1. GENERATOR STATUS (ON/OFF) FROM AUXILIARY (RUN) RELAY.
2. GENERATOR FAILURE ALARM FROM FAULT RELAY.
3. AUTOMATIC TRANSFER SWITCH STATUS (NORMAL/ALTERNATE) FROM AUXILARY CONTACTS.
4. HIGH WATER LEVEL ALARM FROM PUMP CONTROL PANEL.
5. LOW WATER LEVEL ALARM FROM PUMP CONTROL PANEL.
6. PUMP NO. 1 FAILURE ALARM (THERMAL SENSOR AND/OR SEAL LEAK SENSOR) FROM PUMP CONTROL PANEL.
7. PUMP NO. 2 FAILURE ALARM (THERMAL SENSOR AND/OR SEAL LEAK SENSOR) FROM PUMP CONTROL PANEL.
8. GRINDER JAMMED/FAILURE FROM GRINDER PANEL.

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
BAP	BELL ATLANTIC - PA.
BKR	BREAKER
C, CND	CONDUIT
CKT	CIRCUIT
ELEC	ELECTRICAL
FLUOR	FLUORESCENT
G, GND	GROUND
GFI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
INCL	INCLUDING
J, JB	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
LP	LIGHTING PANEL
M	METER
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MLO	MAIN LUG ONLY
OC	ON CENTER
P	POLE
PECO	PECO ENERGY COMPANY
PF	POWER FACTOR
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
V	VOLT
VA	VOLT AMPERES
VTR	VENT THRU ROOF
W	WATT, WIRE
W/	WITH
WP	WEATHERPROOF
XP	EXPLOSIONPROOF

ELECTRICAL LEGEND

- B_a — FLUORESCENT LIGHTING FIXTURE; UPPER CASE LETTER DENOTES TYPE IN SCHEDULE, LOWER CASE LETTER DENOTES SWITCH LEG
- WALL MOUNTED LIGHT FIXTURE, LETTERS SAME AS ABOVE
- WP / GFI — DUPLEX RECEPTACLE, 120V, 20A, "WP" INDICATES WEATHERPROOF, "GFI" INICATES GROUND FAULT INTERRUPTING
- S_a — TOGGLE SWITCH,120V, 20A, LOWER CASE LETTER DENOTES FIXTURES TO BE SWITCHED
- (10) — MOTOR, NUMBER DENOTES HP
- J JB — JUNCTION BOX
- E — DIESEL GENERATOR
- UNIT HEATER
- 8 — WIRING, ARROW INDICATES HOMERUN TO PANEL NUMBER "8" INDICATES CIRCUIT
- CIRCUIT BREAKER
- M — METER
- AUTOMATIC TRANSFER SWITCH
- PHASE, DIAMETER
- BURIED CONDUIT
- CONDUIT SEAL
- GROUND ROD
- G — GROUND CONDUCTOR
- FE — FIRE EXTINGUISHER
- GROUND CONNECTION
- TELEPHONE OUTLET
- FUSED DISCONNECT SWITCH
- E — ELECTRIC LINE
- T — TELEPHONE LINE



LIGHT POLE DETAIL

SCALE: = N.T.S.

ISSUED FOR BID
MARCH 31, 2000

Pennoni Associates Inc.
One Drexel Plaza, 3001 Market Street, Philadelphia, PA 19104
Engineers • Surveyors • Planners • Landscape Architects

NO	DATE	REVISIONS	BY
		R&W	
1	4/1/99	PER TOWNSHIP ENGINEER COMMENTS	
2	11/1/99	NO REVISIONS THIS SHEET	

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MALVERN HUNT
EAST WHITELAND TOWNSHIP, CHESTER COUNTY

PUMP STATION - ELECTRICAL

THE CUTLER GROUP, INC.
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JOB NUMBER	TCGR 98A8004
SCALE	AS NOTED
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DATE	4/1/99
APPROVED	
DRAWING NO.	PS-4
SHEET	5 OF 5

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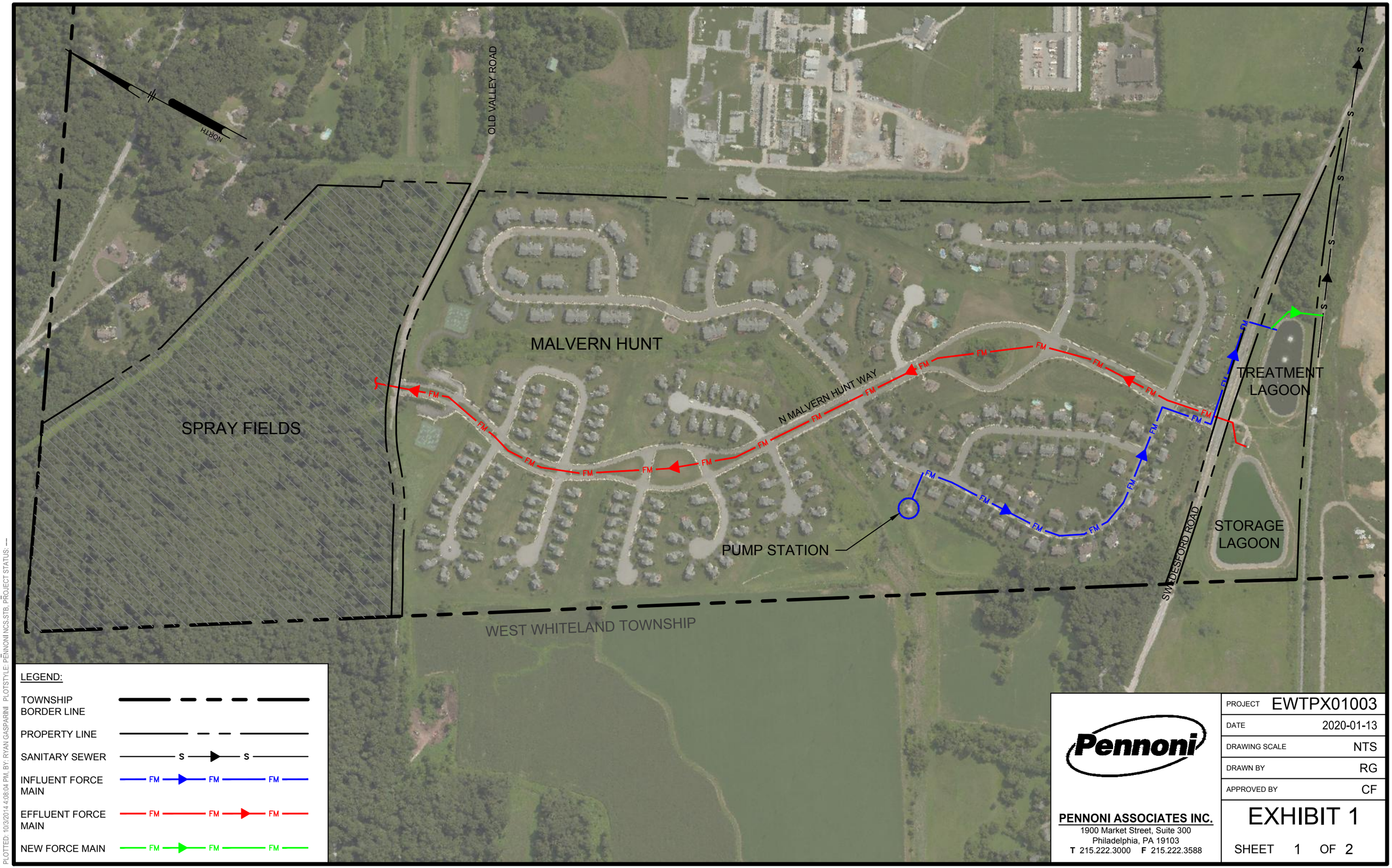
D. MALVERN HUNT EXHIBITS



LEGEND:

- TOWNSHIP BORDER LINE
- PROPERTY LINE
- SANITARY SEWER (S)
- INFLUENT FORCE MAIN (FM)
- EFFLUENT FORCE MAIN (FM)
- NEW FORCE MAIN (FM)

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

PROJECT	EWTPX01003
DATE	2020-01-13
DRAWING SCALE	NTS
DRAWN BY	RG
APPROVED BY	CF

EXHIBIT 1

SHEET 1 OF 2

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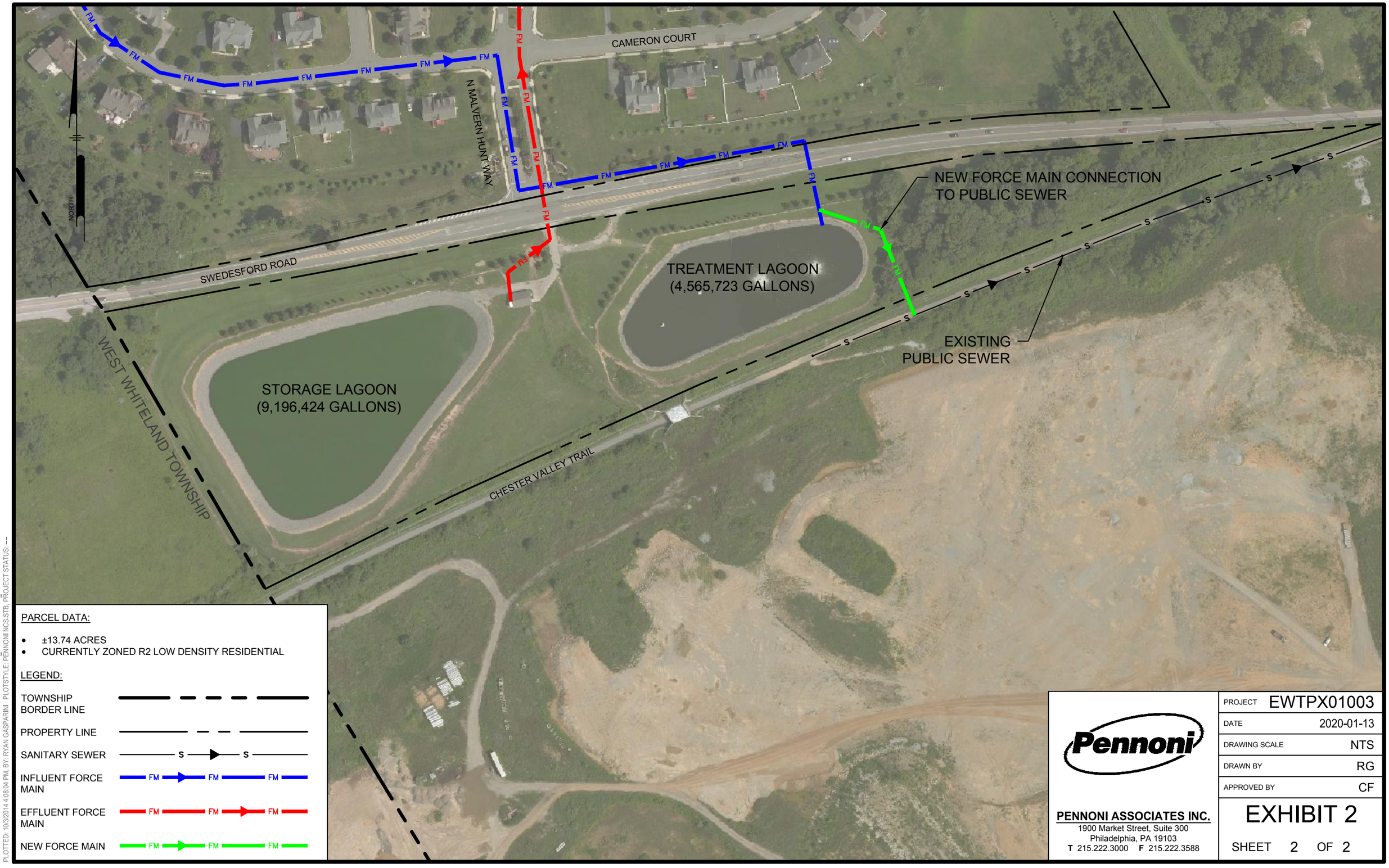
PLOTTED: 10/3/2014 4:08:04 PM, BY: RYAN GASPARINI PLOTSTYLE: PENNONI NCS.STB, PROJECT STATUS: ---



PARCEL DATA:

- ±13.74 ACRES
- CURRENTLY ZONED R2 LOW DENSITY RESIDENTIAL

LEGEND:

TOWNSHIP BORDER LINE

PROPERTY LINE

SANITARY SEWER — S — S

INFLUENT FORCE MAIN — FM — FM — FM

EFFLUENT FORCE MAIN — FM — FM — FM

NEW FORCE MAIN — FM — FM — FM

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

PROJECT	EWTPX01003
DATE	2020-01-13
DRAWING SCALE	NTS
DRAWN BY	RG
APPROVED BY	CF

EXHIBIT 2

SHEET 2 OF 2

U:\ACCOUNTS\EWTPX\EWTPX01003 - MALVERN HUNT WWTP\DESIGN_SHEETS\EXHIBIT 1_2.DWG
PLOTTED: 10/3/2014 4:08:04 PM, BY: RYAN GASPARINI PLOTSTYLE: PENNONI NCS.STB, PROJECT STATUS: ---

EXHIBIT M2

WATER QUALITY MANAGEMENT PERMIT FOR THE VALLEY FORGE SEWER AUTHORITY WASTEWATER TREATMENT PLANT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

December 28, 2010

Mr. Martin Goldberg, P.E.
Operations Manager
Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA 19460

Re: Valley Forge Sewer Authority
WWTP – Expansion
Sewerage 1599422-A2
File Type: Permit
Schuylkill Township
Chester County

Dear Mr. Goldberg:

Your permit is enclosed.

You must comply with all Standard and Special Conditions attached to this permit. Construction must be done in accordance with the permit application and all supporting documentation. Please review the permit conditions and the supporting documentation submitted with your application before starting construction.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please call Mr. James Roth at 484.250.5169.

Sincerely,

Jenifer Fields, P.E.
Regional Manager
Water Management

Enclosures

cc: Mr. Lutter, P.E. – Buchart Horn, Inc.
Mr. Muszynski – DRBC
Operations Section
Re 30 (joh10wqm)306-3

3800-PM-WSWM0015 Rev. 6/2004
Permit

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT NO. 1599422
AMENDMENT NO. 2
APS ID 731341
AUTH ID 851147

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER QUALITY MANAGEMENT PERMIT

A. PERMITTEE (Name and Address): CLIENT ID#: **85898** **Valley Forge Sewer Authority** **333 Pawling Road** **Phoenixville, PA 19460**	B. PRIMARY FACILITY (Name): **Valley Forge Sewer Authority WWTP** SUB FACILITY (Name): **VFSA WWTP – Expansion from 9.2 mgd to 11.75 mgd**
C. LOCATION (Municipality, County): **Schuylkill Township** **Chester County**	SITE ID#: **255005**

D. THIS AMENDMENT APPROVES THE EXPANSION OF SEWERAGE FACILITIES FROM 9.2 MGD to 11.75 MGD. MODFICATIONS TO ACCOMMODATE THE EXPANSION CONSIST OF: **construction of a new headworks facility, maintenance and design improvements to the primary clarifier system, construction of a third aeration tank, installation of a fourth secondary clarifier, upgrades to the return activated sludge system, installation of a third gravity sludge thickener, installation of a third sludge dewatering centrifuge, replacement of scum box pumps, various plant electrical improvements, and modifications to the Operations Building odor control system.**

Pump Stations: ____ Design Capacity: ____ GPM Average Annual Flow: ____ GPD	Manure Storage: Volume _____ MG Freeboard: _____ inches	Industrial Wastewater/Sewage Treatment Facility: Annual Average Flow: **11.75** MGD Design Hydraulic Capacity: **11.75** MGD Design Organic Capacity: **26,700** lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **New Permits:** All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated ____, its supporting documentation, and addendums dated ____, which are hereby made a part of this permit.

   Amendments: All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated **09/15/10** and its supporting documentation, and addendums dated ____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permits Nos. **1599422 and 1599422A1** dated **06/19/00 and 03/22/10, respectively**, shall remain in effect.

   Transfers: Water Quality Management Permit No. ____ dated ____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. **Permit Conditions Relating to Sewerage** are attached and made part of this permit.

3. Special Conditions numbered ____ are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of thia permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED: December 28, 2010

BY: _____

TITLE: Water Management Program Manager

Re 30 (joh10wqm)306-3d

3800-PM-WSWM0020E 12/2003

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER QUALITY MANAGEMENT
POST CONSTRUCTION CERTIFICATION

APPLICANT IDENTIFIER	
Permittee	Valley Forge Sewer Authority
Address	333 Pawling Road, Phoenixville, PA 19460
Municipality	Schuylkill Township
County	Chester

CERTIFICATION

The following information must be completed and returned to the permits section of the DEP regional office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, along with as-built drawings, photographs (if available), and a discussion of any DEP approved deviations from the design plans during construction.

I, _____, being a Registered Professional Engineer in accordance with the Pennsylvania Professional Engineer's Registration Law do hereby certify that the pump station approved under Water Quality Management Permit No. **1599422-A2 (VFSA WWTP Expansion to 11.75 MGD)** has been inspected and constructed in accordance with the plans and specifications approved by DEP.

Construction Completion Date (MM/DD/YYYY): _____

	Supervising Professional Engineer
	Name _____ (Please Print or Type)
	Signature
	Date
	Title
	Firm or Agency
	Telephone
Permittee's Authorized Representative:	**Principal Operator Information (For Sewage Facilities):**
Name _____ (Please Print or Type)	Name _____ (Please Print or Type)
Signature	Certification Number (if applicable)
Title	Class
Telephone	Type

Re 30 (joh10wqm)306-3b

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT CONDITIONS RELATING TO SEWERAGE

For use in Water Quality Management Permits

(Place a √ in the box that applies)

General

☒ 1. Consistent with the Department of Environmental Protection's (DEP) technical guidance document *Conducting Technical Reviews of Water Quality Management Permit Wastewater Treatment Facilities* (DEP ID: 362-2000-007) available on DEP's website at www.dep.state.pa.us . DEP considers the registered Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.

☒ 2. The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.

☐ 3. The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.

☒ 4. The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.

☒ 5. When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.

☒ 6. If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.

☐ 7. This permit authorizes the construction and operation of the proposed sewerage facilities until such time as facilities for conveyance and treatment at a more suitable location are installed and capable of receiving and treating the permittee's sewage. Such facilities must be in accordance with the applicable municipal official plan adopted pursuant to Section 5 of the Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended. When such municipal sewerage facilities become available, the permittee shall provide for the conveyance of the sewage to these sewerage facilities, abandon the use of these approved facilities and notify DEP accordingly. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.

☒ 8. This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.

☒ 9. This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.

☐ 10. The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No. **PA0043974** and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.

Construction

☒ 11. An Erosion and Sedimentation (E&S) Plan must be developed prior to construction of the permitted facility, pursuant to Title 25 Pa. Code Chapter 102, and implemented during and after the earth disturbance activity.

If the activity involves 5 or more acres of earth disturbance, or from 1 to 5 acres of earth disturbance with a point source discharge to surface waters of the Commonwealth, an NPDES permit for the Discharge of Stormwater Associated with Construction Activity is required.

In addition to the state NPDES permitting requirements, some municipalities, through local ordinances, require the E&S Control Plan to be reviewed and approved by the local County Conservation District office prior to construction. For specific information regarding E&S control planning approval and NPDES permitting requirements, please contact your local County Conservation District office.

☒ 12. The facilities shall be constructed under the supervision of a Pennsylvania registered Professional Engineer in accordance with the approved reports, plans and specifications.

☒ 13. A Pennsylvania registered Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" (3800-PM-WSWM0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. If requested, "es-built" drawings, photographs (if available) and a description of any DEP-approved deviations from the application and design plans must be submitted to DEP within 30 days of certification.

☐ 14. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.

☐ 15. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

Operation and Maintenance

☒ 16. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.

☐ 17. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.

☒ 18. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.

☐ 19. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.

☒ 20. The sewerage facilities shall be properly operated and maintained to perform as designed.

☒ 21. The attention of the permittee is called to the highly explosive nature of certain gases genereted by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.

☒ 22. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, *et seq.* shall operate the sewage treatment plant.

☒ 23. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.

☒ 24. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.

☐ 25. All connections to the approved sanitary sewers must be in accordance with the corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.

☒ 26. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.

EXHIBIT M3

WATER QUALITY MANAGEMENT PERMIT FOR THE EAST GOSHEN MUNICIPAL AUTHORITY WASTEWATER TREATMENT PLANT

EGMA0707/02

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
August 5, 2008

Southeast Regional Office

Phone: 484-250-5970
Fax: 484-250-5971

Mr. Louis F. Smith, Manager
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Re: Ridley Creek STP Upgrades
Sewerage 1502404
File Type: Permit
East Goshen Township
Chester County

Dear Mr. Smith:

Your permit is enclosed.

You must comply with all Standard and Special Conditions attached to this permit. Construction must be done in accordance with the permit application and all supporting documentation. Please review the permit conditions and the supporting documentation submitted with your application before starting construction.

Enclosed is the "Sewage and Industrial Wastewater Facilities Construction Certification" form. A Pennsylvania-registered Professional Engineer must sign and complete this form prior to startup of the facilities (see Special Conditions). You or your authorized representative must also sign the form. This certification and other post-construction documentation must be submitted to the Department within 30 days following startup of the facilities.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions, please call Mr. David Talley at 484-250-5181.

Sincerely,

Jenifer Fields, P.E.
Regional Manager
Water Management

Enclosures

cc: Mr. Andrews – Pennoni Association
Operations Section
Mr. Sheckler
Re (GJE08WQ)196-10A

3800-PM-WSWM0015 Rev. 6/2004
Permit

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT NO. 1502404
AMENDMENT NO. _____
APS ID 638484
AUTH ID 714199

WATER QUALITY MANAGEMENT PERMIT

A. PERMITTEE (Name and Address): CLIENT ID#: 62683	B. PRIMARY FACILITY (Name):
East Goshen Township Municipal Authority **1580 Paoli Poke** **West Chester, PA 19380**	**Ridley Creek STP Upgrade**

C. LOCATION (Municipality, County): **East Goshen Township, Chester County**
SITE ID#: **256818**

D. **This permit approves the modification of sewerage facilities consisting of:**

-The following upgrades to the facility to increase capacity to 0.750 mgd:

- **New influent grinder with fine screen**
- **New influent lift station**
- **New 4 tank SBR systems**
- **New rotary disc filters**
- **Conversion of existing aeration tanks to aerobic sludge digesters**
- **New UV disinfection system**
- **Conversion of existing clarifiers to Post EQ**
- **New SBR equipment building**
- **New centrifuge to replace belt filter press**

Pump Stations: ____	Manure Storage:	Industrial Wastewater/Sewage Treatment Facility:
Design Capacity: ____ GPM		Annual Average Flow: **0.750** MGD
Average Annual Flow: ____ GPD	Volume _____ MG	Design Hydraulic Capacity: **0.750** MGD
	Freeboard: _____ inches	Design Organic Capacity: **2,098** lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **New Permits:** All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated **02/05/08**, its supporting documentation, and addendums dated **05/30/08**, which are hereby made a part of this permit.

   Amendments: All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated ____ and its supporting documentation, and addendums dated ____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. ____ dated ____ shall remain in effect.

   Transfers: Water Quality Management Permit No. ____ dated ____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. **Permit Conditions Relating to sewerage** are attached and made part of this permit.

3. Special Conditions numbered ____ are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.

2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.

3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED: August 5, 2008

BY: _____

TITLE: Water Management Program Manager

Re 30 (GJE08)196-10

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

RECEIVED
BY:
FEB 23 2012

RECEIVED
BY:
FEB 23 2012

February 21, 2012

Mr. Louis F. Smith, Jr.
Township Manager
East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380

Re: Ridley Creek STP
Applebrook Golf Course
Sewage Renewal Application No. 1500410 A1
File Type: WQM Permit
East Goshen Township
Chester County

Dear Mr. Smith:

Your permit is enclosed.

You must comply with all Standard and Special Conditions attached to this permit.

We would like to bring your attention to the Department's new electronic Discharge Monitoring Report (eDMR) program. The program can be accessed through the Internet at www.dep.state.pa.us/edmr and can be used in lieu of paper DMR submissions. Please find enclosed additional information concerning eDMR. We highly encourage your participation in this program.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please call Ms. Karen McDaniel at 484.250.5126.

Sincerely,

Jenifer Fields, P.E.
Regional Manager
Water Management

Enclosures

cc: East Goshen Township
Chester County Health Department
Mr. Semanchik - Pennoni Associates, Inc.
Ms. McDaniel, PADEP - SERO
Operations Section
Ms. Lashley
Re 30 (joh11wqm)363-3

3800-PM-WSWM0015 Rev. 6/2004
Permit

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

PERMIT NO. 1500410
AMENDMENT NO. 1
Renewal
APS ID 752003
AUTH ID 883096

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER QUALITY MANAGEMENT PERMIT

A. PERMITTEE (Name and Address): CLIENT ID#: 62683 **East Goshen Municipal Authority** **1580 Paoli Pike** **West Chester, PA 19380**	B. PRIMARY FACILITY (Name): **Ridley Creek STP - (Applebrook Golf Course Spray Irrigation System)**
C. LOCATION (Municipality, County): **East Goshen Township** **Chester County**	SITE ID#: **256818**

D. **This permit approves the renewal of sewerage facilities consisting of: 135,000 gpd of diverted, treated effluent from Ridley Creek Sewage Treatment Plant to a 5-million-gallon lagoon (pond) on the golf course. The treated effluent is disposed of by spray irrigation onto 60 acres of the golf course.**

Pump Stations: ____ Design Capacity: ____ GPM Average Annual Flow: ____ GPD	Manure Storage: Volume _____ MG Freeboard: _____ inches	Industrial Wastewater/Sewage Treatment Facility: Annual Average Flow: 0.135 MGD Design Hydraulic Capacity: 0.135 MGD Design Organic Capacity: _____ lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **New Permits:** All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated ____, its supporting documentation, and addendums dated ____, which are hereby made a part of this permit.

   Amendments: All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated ____ and its supporting documentation, and addendums dated ____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. ____ dated ____ shall remain in effect.

   Transfers: Water Quality Management Permit No. ____ dated ____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. **Permit Conditions Relating to Sewerage** are attached and made part of this permit.

3. Special Conditions numbered **I-XVIII** are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED: February 21, 2012

BY: _____

TITLE: Water Management Program Manager

Re 30 (joh11wqm)363-3a

Sewerage Permit No. 1500410
East Goshen Municipal Authority
East Goshen Township, Chester County

This permit is subject to the following Special Condition(s):

I. **Groundwater Monitoring Requirements**

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested and frequency of analysis and other monitoring requirements shall be as follows:

- Quarterly analysis of groundwater sampled at groundwater monitoring wells MW-1, MW-2, and MW-3 shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphates, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.

- All groundwater monitoring wells shall be properly purged prior to collection of the groundwater sample.

- All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

II. **Groundwater Monitoring Data Reporting Requirements**

All groundwater data shall be submitted to the Department of Environmental Protection (Department) **annually** and be in **report form.** The report shall be due to the Department within 28 days of the end of your annual permit cycle. For example, if your permit was issued on March 4, 2008, then your Annual Report is due by April 28, 2009. The Annual Report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Water Management Program
2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

The annual groundwater monitoring report shall include the following information:

1. General Information

   A. Facility name
   B. Facility permit number
   C. Facility location (including municipality and county)

D. Facility contact information:

- Permittee name, address, and telephone number
- Contact name and title
- Facility operator name, address, and telephone number
- Facility consultant name, address, and telephone number

2. Site Information

A. Brief narrative, including site limitations.

B. Soil type and bedrock lithology beneath the absorption areas.

C. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.

3. Construction details of each groundwater monitoring well shall include:

A. Well depth.
B. Casing depth.
C. Static water levels.
D. Surface elevation.
E. Well log.
F. Water bearing zones.
G. Top of casing elevation.
H. Ground surface elevation.

4. Site History

A. Date site 537 approval issued.

B. Date site permit issued.

C. Date groundwater monitoring began.

D. Date treatment plant started operation.

E. Date land application of treated wastewater started.

F. Date of any additional permit actions and description of actions (e.g., waiver of special conditions or anything else which may impact content within this permit). Include copy of any correspondence in correspondence section.

G. Date and description of any enforcement action.

H. Date and description of any facility event which impacted any part of the facility, including the groundwater monitoring wells, whether or not it resulted in an enforcement action (e.g., irrigation pump failure, collapse of groundwater monitoring well, etc.).

5. Site Data

   A. Average effluent flow for the year covered by the report.

   B. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

      i. Date of sampling.
      ii. Groundwater elevation.
      iii. Sampling depth.
      iv. Identification of upgradient and downgradient wells.
      v. The results of the analysis of the samples.

   C. Background groundwater data generated prior to system startup. **This information is absolutely needed.**

6. Correspondence

   This section shall contain copies of correspondence with the Department relevant to system operations. Correspondence to be included is the following:

   A. Recent permit modifications or amendments.
   B. Any approvals related to facility operation.
   C. Enforcement actions, including NOVs.
   D. Any other correspondence pertinent to system operation.

7. Comprehensive Groundwater Evaluation (CGE)

   As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

III. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration not greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value nor greater than 1,000/100 ml of these organisms in more than 10 percent of the samples tested.

IV. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.

V. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

VI. The water level, within the impoundments, shall be controlled so that a freeboard of at least 24 inches is maintained at all times.

VII. Spray irrigation shall not occur on frozen soil or during prolonged or heavy rainfall events. Effluent may not be applied if more than 0.5 inches of rainfalls during the previous 24-hour period.

VIII. If the effluent from the, herein approved, sewage treatment facilities creates a health hazard or nuisance, the permittee shall, upon notice from the Department, provide such additional treatment as may be required by the Department.

IV. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled from the effluent port at the pump station and shall be limited at all times as follows:

	Discharge Limitations (mg/l)			**Monitoring Requirements**	
Parameter	**Average Monthly**	**Average Weekly**	**Instantaneous Maximum**	**Measurement Frequency**	**Sample Type**
Flow (mgd)	0.135			Continuous	Recorded
$CBOD_5$	25	40	50	1/Month	8 Hour Composite
Suspended Solids	30	45	60	1/Month	8 Hour Composite
Fecal Coliform	200/100 ml as geometric average			1/Month	Grab
pH	Within limits of 6.0 to 9.0 standard units at all times			1/Month	Grab

*Total Nitrogen = Total Kjeldahl Nitrogen + Nitrite (NO_2) + Nitrate (NO_3)

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste, and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters. Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "composite" sample means a combination of individual samples collected at regular intervals over a time period. The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

X. The authorization to discharge contained in Section C of this permit shall expire in 5 years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous 5 years, including a discussion of groundwater quality trends resulting from this discharge.

XI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of $CBOD_5$, consult Section 507 of Standard Methods.

XII. Application of effluent shall be managed to prevent runoff of effluent from the permitted sprayfield and ponding of effluent in the spray area.

XIII. **Sprayfield Hydraulic Loading Requirements**

The recorded effluent flow to the Applebrook Golf Course must be consistent with the maximum hydraulic loading rates per week shown in the following table (the maximum hydraulic rates per week cannot be exceeded):

Month	Number of Spray Days	Application Rate Inches/Acre/Week	Maximum Hydraulic – Loading in Gallons per Week on 60 Acres of Wetted Golf Course Area
January	0		
February	0		
March	0		
April	27	0.6	945,000
May	31	0.6	945,000
June	30	0.6	945,000
July	31	0.6	945,000
August	31	0.6	945,000
September	30	0.6	945,000
October	31	0.6	945,000
November	0		
December	0		

At no time shall the application rate exceed 0.199-inch per hour for any spray area. The wastewater application shall be determined by the golf conrse manager based on turf conditions and best golf course management practices.

During drought emergency, the treated wastewater from the Ridley Creek sewage treatment plant for spray application shall be pumped directly to the wet well serving the spray pumps. The wastewater may be sprayed on greens, trees, fairways, and rough areas of the golf course.

XIV. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

XV. **Recording of Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The exact place, date, and time of sampling or measurement.

2. The person(s) who performed the sampling or measurement.

3. The dates the analyses were performed.

4. The person(s) who performed the analyses.

5. The analytical techniques or methods used.

6. The results of such analyses.

XVI. **Recordkeeping and Retention**

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XVII. Consistent with Department policy, the Department did not conduct a detailed technical review of the application for this permit. The Department considers the registered professional engineer whose seal is affixed to the design documents, to be fully responsible for the adequacy of all aspects of the facility design.

XVIII. **Laboratory Certification**

The Environmental Laboratory Accreditation Act of 2002 requires that all environmental laboratories register with the Department. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

800-PM-WSFR0462 9/2009

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PRIMARY FACILITY: Ridley Creek STP
Applebrook Golf Course - Site id. 256818

CLIENT: East Goshen Municipal Authority Client Id. 62683

ADDRESS: 1580 Paoli Pike
WEST CHESTER, PA 19380

MUNICIPALITY: East Goshen Township

COUNTY: Chester County

1500410-A1 Renewal		Effluent Port @ Ridley Creek STP
PERMIT NUMBER		DISCHARGE

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

PERMIT EXPIRES: 02-28-2017
PERMIT APPLICATION DUE: 09-01-2016

☐ Check here if No Discharge

NOTE: Read instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MONTHLY AVERAGE	WEEKLY AVERAGE	UNITS	INST. MINIMUM	MONTHLY AVERAGE	AVERAGE WEEKLY	UNITS			
FLOW	Sample Measurement			MGD	XXXX	XXXX	XXXX	XXXX		CONTINOUS	METER
	Permit Requirement	.135	XXXX		XXXX	XXXX	XXXX				
PH	Sample Measurement	XXXX	XXXX	STD UNITS		XXXX				1/MONTH	GRAB
	Permit Requirement				6.0	XXXX	9.0 INST MAX				
CBOD	Sample Measurement	XXXX	XXXX	MG/L	XXXX		XXXX			1/MONTH	8HC
	Permit Requirement	XXXX	XXXX		XXXX	25	40				
TOTAL SUSPENDED SOLIDS	Sample Measurement	XXXX	XXXX	MG/L	XXXX					1/MONTH	8HC
	Permit Requirement	XXXX	XXXX		XXXX	30	45				
FECAL COLIFORM	Sample Measurement	XXXX	XXXX	#COL/ 100ML	XXXX		XXXX			1/MONTH	GRAB
	Permit Requirement	XXXX	XXXX		XXXX	200 GEOMETRIC MEAN	XXXX				
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPE OR PRINT

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa.C.S.A. § 4904 (relating to unsworn falsification).

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE
AREA CODE NUMBER

DATE
YEAR MO DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

EXHIBIT N1

NPDES PERMIT – VALLEY FORGE SEWER AUTHORITY
WASTEWATER TREATMENT PLANT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR PUBLICLY OWNED TREATMENT WORKS (POTWs)

NPDES PERMIT NO: PA0043974

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460-2656

is authorized to discharge from a facility known as **Valley Forge Sewer Authority WWTP**, located at **333 Pawling Road, Schuylkill Township, Chester County**, to **Schuylkill River (WWF, MF)** in Watershed(s) **3-F** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON JANUARY 1, 2020

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON DECEMBER 31, 2024

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))

3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d))

   In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code §§ 92a.7(b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED December 11, 2019

ISSUED BY /s/
Thomas L. Magge
Environmental Program Manager
Southeast Regional Office

Permit No. PA0043974

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 40º 7' 6.55" , **Longitude** 75º 28' 2.12" , **River Mile Index** 32.00 , **Stream Code** 00833

Receiving Waters: Schuylkill River (WWF, MF)

Type of Effluent: Treated Sewage Effluent

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Outfall 001 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Recorded
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0 Inst Min	Report	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.42	XXX	0.52	1/day*	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	1918	3069	XXX	20	30 Wkly Avg	40	1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	1535	2302	XXX	16	24 Wkly Avg	32	1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Total Suspended Solids	2939	4410	XXX	30	45 Wkly Avg	60	1/day	24-Hr Composite
Total Dissolved Solids	XXX	XXX	XXX	1000	2000	2500	1/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000**	1/day	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/day	Grab
Ultraviolet light transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	1228	XXX	XXX	12.5	XXX	25	1/day	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	614	XXX	XXX	6.3	XXX	12.5	1/day	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Copper, Total	2.65	4.21 Daily Max	XXX	0.027	0.043	0.068	1/month	24-Hr Composite
Sulfate, Total	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Chloride	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Bromide	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
PCBs Dry Weather Analysis (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
PCBs Wet Weather Analysis (pg/L)	XXX	XXX	XXX	XXX	Report	XXX	1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	***	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	***	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Toxicity, Chronic - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	***	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	***	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 001. *Monitor only during the use of chlorine. **Shall not exceed in more than 10% of samples. ***See Part C. IV. WET Condition

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 002 , **Latitude** 40º 17' 0.00" , **Longitude** 75º 27' 50.00" , **River Mile Index** 31.0700 , **Stream Code** 00833

Receiving Waters: Schuylkill River (WWF, MF)

Type of Effluent: Stormwater

1. The permittee is authorized to discharge during the period from **Permit Effective Date** through **Permit Expiration Date**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Outfall 002 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Chemical Oxygen Demand (COD)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Total Suspended Solids	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Total Kjeldahl Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab
Iron, Dissolved	XXX	XXX	XXX	XXX	Report	XXX	Upon Request	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at Outfall 002

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS (Continued)

Additional Requirements

1. The permittee may not discharge:

   a. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code § 92a.41(c))

   b. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))

   c. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code § 93.6(a))

   d. Foam or substances that produce an observed change in the color, taste, odor or turbidity of the receiving water, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. For the purpose of determining compliance with this condition, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water. (25 Pa Code § 92a.41(c))

2. The monthly average percent removal of BOD_5 or $CBOD_5$ and TSS must be at least 85% for POTW facilities on a concentration basis except where 25 Pa. Code 92a.47(g) and (h) are applicable to facilities with combined sewer overflows (CSOs) or as otherwise specified in this permit. (25 Pa. Code § 92a.47(a)(3))

3. If the permit requires the reporting of average weekly statistical results, the maximum weekly average concentration and maximum weekly average mass loading shall be reported, regardless of whether the results are obtained for the same or different weeks.

4. The permittee shall monitor the sewage effluent discharge(s) for the effluent parameters identified in the Part A limitations table(s) during all bypass events at the facility, using the sample types that are specified in the limitations table(s). Where the required sample type is “composite”, the permittee must commence sample collection within one hour of the start of the bypass, wherever possible. The results shall be reported on the Daily Effluent Monitoring supplemental form (3800-FM-BCW0435) and be incorporated into the calculations used to report self-monitoring data on Discharge Monitoring Reports (DMRs).

Footnotes

(1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.

(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

Supplemental Information

(1) The hydraulic design capacity of 11.75 million gallons per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to help determine whether a "hydraulic overload" situation exists, as defined in Title 25 Pa. Code Chapter 94.

(2) The effluent limitations for Outfall 001 were determined using an effluent discharge rate of 11.75 MGD.

(3) The organic design capacity of 26,700 lbs BOD_5 per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to determine whether an “organic overload” condition exists, as defined in 25 Pa. Code Chapter 94.

(4) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

II. DEFINITIONS

At Outfall (XXX) means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line (XXX), or where otherwise specified.

Average refers to the use of an arithmetic mean, unless otherwise specified in this permit. (40 CFR 122.41(l)(4)(iii))

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollutant loading to surface waters of the Commonwealth. The term also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term includes activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. (25 Pa. Code § 92a.2)

Bypass means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i))

Calendar Week is defined as the seven consecutive days from Sunday through Saturday, unless the permittee has been given permission by DEP to provide weekly data as Monday through Friday based on showing excellent performance of the facility and a history of compliance. In cases when the week falls in two separate months, the month with the most days in that week shall be the month for reporting.

Clean Water Act means the Federal Water Pollution Control Act, as amended (33 U.S.C.A. §§ 1251 to 1387).

Composite Sample (for all except GC/MS volatile organic analysis) means a combination of individual samples (at least eight for a 24-hour period or four for an 8-hour period) of at least 100 milliliters (mL) each obtained at spaced time intervals during the compositing period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval is proportional to the flow rates over the time period used to produce the composite. (EPA Form 2C)

Composite Sample (for GC/MS volatile organic analysis) consists of at least four aliquots or grab samples collected during the sampling event (not necessarily flow proportioned). The samples must be combined in the laboratory immediately before analysis and then one analysis is performed. (EPA Form 2C)

Daily Average Temperature means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Daily Maximum Discharge Limitation means the highest allowable "daily discharge."

Discharge Monitoring Report (DMR) means the DEP or EPA supplied form(s) for the reporting of self-monitoring results by the permittee. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Estimated Flow means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

Geometric Mean means the average of a set of n sample results given by the nth root of their product.

Grab Sample means an individual sample of at least 100 mL collected at a randomly selected time over a period not to exceed 15 minutes. (EPA Form 2C)

Hauled-In Wastes means any waste that is introduced into a treatment facility through any method other than a direct connection to the sewage collection system. The term includes wastes transported to and disposed of within the treatment facility or other entry points within the collection system.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act. (40 CFR 122.2)

Immersion Stabilization (i-s) means a calibrated device is immersed in the wastewater until the reading is stabilized.

Indirect Discharger means a non-domestic discharger introducing pollutants to a Publicly Owned Treatment Works (POTW) or other treatment works. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Industrial User means a source of Indirect Discharge. (40 CFR 403.3)

Instantaneous Maximum Effluent Limitation means the highest allowable discharge of a concentration or mass of a substance at any one time as measured by a grab sample. (25 Pa. Code § 92a.2)

Measured Flow means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

Monthly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. (25 Pa. Code § 92a.2)

Municipality means a city, town, borough, county, township, school district, institution, authority or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes. (25 Pa. Code § 92a.2)

Municipal Waste means garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility. (25 Pa. Code § 271.1)

Publicly Owned Treatment Works (POTW) means a treatment works as defined by §212 of the Clean Water Act, owned by a state or municipality. The term includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also includes sewers, pipes or other conveyances if they convey wastewater to a POTW providing treatment. The term also means the municipality as defined in section 502(4) of the Clean Water Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. (25 Pa Code § 92a.2, 40 CFR 122.2)

Residual Waste means garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law. (25 Pa Code § 287.1)

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii))

Stormwater means the runoff from precipitation, snow melt runoff, and surface runoff and drainage. (25 Pa. Code § 92a.2)

Stormwater Associated With Industrial Activity means the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, and as defined at 40 CFR §122.26(b)(14)(i) – (ix) and (xi) and 25 Pa. Code § 92a.2.

Toxic Pollutant means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in these organisms or their offspring. (25 Pa. Code § 92a.2)

Weekly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

III. SELF-MONITORING, REPORTING AND RECORDKEEPING

A. Representative Sampling

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(j)(1)). Representative sampling includes the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance and changes in treatment plant loading. If possible, effluent samples must be collected where the effluent is well mixed near the center of the discharge conveyance and at the approximate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized. (40 CFR 122.48, 25 Pa. Code § 92a.61)

2. Records Retention (40 CFR 122.41(j)(2))

   Except for records of monitoring information required by this permit related to the permittee's sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for 3 years from the date of the sample measurement, report or application, unless a longer retention period is required by the permit. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

3. Recording of Results (40 CFR 122.41(j)(3))

   For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

   a. The exact place, date and time of sampling or measurements.
   b. The person(s) who performed the sampling or measurements.
   c. The date(s) the analyses were performed.
   d. The person(s) who performed the analyses.
   e. The analytical techniques or methods used; and the associated detection level.
   f. The results of such analyses.

4. Test Procedures

   a. Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of Act 90 of 2002 (27 Pa. C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation.

   b. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be those approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, unless the method is specified in this permit or has been otherwise approved in writing by DEP. (40 CFR 122.41(j)(4), 122.44(i)(1)(iv))

   c. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be sufficiently sensitive. A method is sufficiently sensitive when 1) the method minimum level is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or 3) the method is specified in this permit or has been otherwise approved in writing by DEP for the measured pollutant or pollutant parameter. Permittees have the option of providing matrix or sample-specific minimum levels rather than the published levels. (40 CFR 122.44(i)(1)(iv))

5. Quality/Assurance/Control

In an effort to assure accurate self-monitoring analyses results:

a. The permittee, or its designated laboratory, shall participate in the periodic scheduled quality assurance inspections conducted by DEP and EPA. (40 CFR 122.41(e), 122.41(i)(3))

b. The permittee, or its designated laboratory, shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit, in accordance with 40 CFR Part 136. (40 CFR 122.41(j)(4))

B. Reporting of Monitoring Results

1. The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.44, 92a.61(i) and 40 CFR §§ 122.41(e), 122.44(i)(1))

2. The permittee shall use DEP's electronic Discharge Monitoring Report (eDMR) system to report the results of compliance monitoring under this permit (see www.dep.pa.gov/edmr). Permittees that are not using the eDMR system as of the effective date of this permit shall submit the necessary registration and trading partner agreement forms to DEP's Bureau of Clean Water (BCW) within 30 days of the effective date of this permit and begin using the eDMR system when notified by DEP BCW to do so. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))

3. Submission of a physical (paper) copy of a Discharge Monitoring Report (DMR) is acceptable under the following circumstances:

   a. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.

   b. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).

4. DMRs must be completed in accordance with DEP's published DMR instructions (3800-FM-BCW0463). DMRs must be received by DEP no later than 28 days following the end of the monitoring period. DMRs are based on calendar reporting periods and must be received by DEP in accordance with the following schedule:

   - Monthly DMRs must be received within 28 days following the end of each calendar month.
   - Quarterly DMRs must be received within 28 days following the end of each calendar quarter, i.e., January 28, April 28, July 28, and October 28.
   - Semiannual DMRs must be received within 28 days following the end of each calendar semiannual period, i.e., January 28 and July 28.
   - Annual DMRs must be received by January 28, unless Part C of this permit requires otherwise.

5. The permittee shall complete all Supplemental Reporting forms (Supplemental DMRs) attached to this permit, or an approved equivalent, and submit the signed, completed forms as attachments to the DMR, through DEP's eDMR system. DEP's Supplemental Laboratory Accreditation Form (3800-FM-BCW0189) must be completed and submitted to DEP with the first DMR following issuance of this permit, and anytime thereafter when changes to laboratories or methods occur. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))

6. The completed DMR Form shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

- For a corporation - by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency - by a principal executive officer or ranking elected official.

If signed by a person other than the above and for co-permittees, written notification of delegation of DMR signatory authority must be submitted to DEP in advance of or along with the relevant DMR form. (40 CFR § 122.22(b))

7. If the permittee monitors any pollutant at monitoring points as designated by this permit, using analytical methods described in Part A III.A.4. herein, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR. (40 CFR 122.41(l)(4)(ii))

C. Reporting and Notification Requirements

1. Planned Changes to Physical Facilities – The permittee shall give notice to DEP as soon as possible but no later than 30 days prior to planned physical alterations or additions to the permitted facility. A permit under 25 Pa. Code Chapter 91 may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to DEP, can be used to satisfy the notification requirements of this section.

   Notice is required when:

   a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b). (40 CFR 122.41(l)(1)(i))

   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this permit. (40 CFR 122.41(l)(1)(ii))

   c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii))

   d. The planned change may result in noncompliance with permit requirements. (40 CFR 122.41(l)(2))

2. Planned Changes to Waste Stream – Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream as a result of indirect discharges or hauled-in wastes, as specified in paragraphs 2.a. and 2.b., below. Notice shall be provided on the “Planned Changes to Waste Stream” Supplemental Report (3800-FM-BCW0482), available on DEP’s website. The permittee shall provide information on the quality and quantity of waste introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR 122.42(b)(3)). The Report shall be sent via Certified Mail or other means to confirm DEP’s receipt of the notification. DEP will determine if the submission of a new application and receipt of a new or amended permit is required.

   a. Introduction of New Pollutants (25 Pa. Code § 92a.24(a), 40 CFR 122.42(b)(1))

      New pollutants are defined as parameters that meet one or more of the following criteria:

(i) Any pollutants that were not detected in the facilities' influent waste stream as reported in the permit application; and have not been approved to be included in the permittee's influent waste stream by DEP in writing.

(ii) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants (40 CFR 122.42(b)(1)).

The permittee shall provide notification of the introduction of new pollutants in accordance with paragraph 2 above. The permittee may not authorize the introduction of new pollutants until the permittee receives DEP's written approval.

b. Increased Loading of Approved Pollutants (25 Pa. Code § 92a.24(a), 40 CFR 122.42(b)(2))

Approved pollutants are defined as parameters that meet one or more of the following criteria:

(i) Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or have been previously approved to be included in the permittee's influent waste stream by DEP in writing.

(ii) Have an effluent limitation or monitoring requirement in this permit.

The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP and/or EPA, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the POTW (as defined at 40 CFR 403.3), or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading of approved pollutants may not result in an exceedance of ELGs or effluent limitations, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, and may not cause exceedances of the applicable water quality standards in the receiving stream.

3. Reporting Requirements for Hauled-In Wastes

a. Receipt of Residual Waste

(i) The permittee shall document the receipt of all hauled-in residual wastes (including but not limited to wastewater from oil and gas wells, food processing waste, and landfill leachate), as defined at 25 Pa. Code § 287.1, that are received for processing at the treatment facility. The permittee shall report hauled-in residual wastes on a monthly basis to DEP on the "Hauled In Residual Wastes" Supplemental Report (3800-FM-BCW0450) as an attachment to the DMR. If no residual wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report. The information used to develop the Report shall be retained by the permittee for five years from the date of receipt and must be made available to DEP or EPA upon request.

(1) The dates that residual wastes were received.

(2) The volume (gallons) of wastes received.

(3) The license plate number of the vehicle transporting the waste to the treatment facility.

(4) The permit number(s) of the well(s) where residual wastes were generated, if applicable.

(5) The name and address of the generator of the residual wastes.

(6) The type of wastewater.

The transporter of residual waste must maintain these and other records as part of the daily operational record (25 Pa. Code § 299.219). If the transporter is unable to provide this information or the permittee has not otherwise received the information from the generator, the residual wastes shall not be accepted by the permittee until such time as the permittee receives such information from the transporter or generator.

(ii) The following conditions apply to the characterization of residual wastes received by the permittee:

(1) If the generator is required to complete a chemical analysis of residual wastes in accordance with 25 Pa. Code § 287.51, the permittee must receive and maintain on file a chemical analysis of the residual wastes it receives. The chemical analysis must conform to the Bureau of Waste Management's Form 26R except as noted in paragraph (2), below. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it.

(2) For wastewater generated from hydraulic fracturing operations ("frac wastewater") within the first 30 production days of a well site, the chemical analysis may be a general frac wastewater characterization approved by DEP. Thereafter, the chemical analysis must be waste-specific and be reported on the Form 26R.

b. Receipt of Municipal Waste

(i) The permittee shall document the receipt of all hauled-in municipal wastes (including but not limited to septage and liquid sewage sludge), as defined at 25 Pa. Code § 271.1, that are received for processing at the treatment facility. The permittee shall report hauled-in municipal wastes on a monthly basis to DEP on the "Hauled In Municipal Wastes" Supplemental Report (3800-FM-BCW0437) as an attachment to the DMR. If no municipal wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report:

(1) The dates that municipal wastes were received.

(2) The volume (gallons) of wastes received.

(3) The BOD_5 concentration (mg/l) and load (lbs) for the wastes received.

(4) The location(s) where wastes were disposed of within the treatment facility.

(ii) Sampling and analysis of hauled-in municipal wastes must be completed to characterize the organic strength of the wastes, unless composite sampling of influent wastewater is performed at a location downstream of the point of entry for the wastes. The influent BOD_5 characterization for the treatment facility, as reported in the annual Municipal Wasteload Management Report per 25 Pa. Code Chapter 94, must be representative of the hauled-in municipal wastes received.

4. Unanticipated Noncompliance or Potential Pollution Reporting

   a. Immediate Reporting - The permittee shall immediately report any incident causing or threatening pollution in accordance with the requirements of 25 Pa. Code §§ 91.33 and 92a.41(b).

      (i) If, because of an accident, other activity or incident a toxic substance or another substance which would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, the permittee shall immediately notify DEP by telephone of the location and nature of the danger. Oral notification to the Department is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution.

      (ii) If reasonably possible to do so, the permittee shall immediately notify downstream users of the waters of the Commonwealth to which the substance was discharged. Such notice shall include the location and nature of the danger.

      (iii) The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove the residual substances contained thereon or therein from the ground and from the affected waters of this Commonwealth to the extent required by applicable law.

   b. The permittee shall report any noncompliance which may endanger health or the environment in accordance with the requirements of 40 CFR 122.41(l)(6). These requirements include the following obligations:

      (i) 24 Hour Reporting - The permittee shall orally report any noncompliance with this permit which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):

         (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;

         (2) Any upset which exceeds any effluent limitation in the permit; and

         (3) Violation of the maximum daily discharge limitation for any of the pollutants listed in the permit as being subject to the 24-hour reporting requirement.

      (ii) Written Report - A written submission shall also be provided within 5 days of the time the permittee becomes aware of any noncompliance which may endanger health or the environment. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

      (iii) Waiver of Written Report - DEP may waive the written report on a case-by-case basis if the associated oral report has been received within 24 hours from the time the permittee becomes aware of the circumstances which may endanger health or the environment. Unless such a waiver is expressly granted by DEP, the permittee shall submit a written report in accordance with this paragraph. (40 CFR 122.41(l)(6)(iii))

5. Other Noncompliance

   The permittee shall report all instances of noncompliance not reported under paragraph C.4 of this section or specific requirements of compliance schedules, at the time DMRs are submitted, on the Non-Compliance Reporting Form (3800-FM-BCW0440). The reports shall contain the information listed in paragraph C.4.b.(ii) of this section. (40 CFR 122.41(l)(7))

PART B

I. MANAGEMENT REQUIREMENTS

A. Compliance

1. The permittee shall comply with all conditions of this permit. If a compliance schedule has been established in this permit, the permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit. (40 CFR 122.41(a)(1))

2. The permittee shall submit reports of compliance or noncompliance, or progress reports as applicable, for any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline. (25 Pa. Code § 92a.51(c), 40 CFR 122.47(a)(4))

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term in accordance with 25 Pa. Code § 92a.72 and 40 CFR 122.41(f).

2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. (40 CFR 122.41(f))

3. In the absence of DEP action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions. (40 CFR 122.41(a)(1))

C. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. (40 CFR 122.41(h))

2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this permit. (40 CFR 122.41(h))

3. Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to DEP, it shall promptly submit the correct and complete facts or information. (40 CFR 122.41(l)(8))

4. The permittee shall provide the following information in the annual Municipal Wasteload Management Report, required under the provisions of Title 25 Pa. Code Chapter 94:

   a. The requirements identified in 25 Pa. Code § 94.12.

   b. The identity of any indirect discharger(s) served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the indirect discharger.

   c. A “Solids Management Inventory” if specified in Part C of this permit.

   d. The total volume of hauled-in residual and municipal wastes received during the year, by source.

   e. The Annual Report requirements for permittees required to implement an industrial pretreatment program listed in Part C, as applicable.

D. General Pretreatment Requirements

1. Any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (MGD) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to Pretreatment Standards will be required to establish a POTW Pretreatment Program unless specifically exempted by the Approval Authority. A POTW with a design flow of 5 MGD or less may be required to develop a POTW Pretreatment Program if the Approval Authority finds that the nature or volume of the industrial influent, treatment process upsets, violations of effluent limitations, contamination of sludge, or other circumstances warrant in order to prevent interference or pass through. (40 CFR 403.8)

2. Each POTW with an approved Pretreatment Program pursuant to 40 CFR 403.8 shall develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5(a)(1) and (b), and shall continue to develop these limits as necessary and effectively enforce such limits. This condition applies, for example, when there are planned changes to the waste stream as identified in Part A III.C.2. If the permittee is required to develop or continue implementation of a Pretreatment Program, detailed requirements will be contained in Part C of this permit.

3. For all POTWs, where pollutants contributed by indirect dischargers result in interference or pass through, and a violation is likely to recur, the permittee shall develop and enforce specific limits for indirect dischargers and other users, as appropriate, that together with appropriate facility or operational changes, are necessary to ensure renewed or continued compliance with this permit or sludge use or disposal practices. Where POTWs do not have an approved Pretreatment Program, the permittee shall submit a copy of such limits to DEP when developed. (25 Pa. Code § 92a.47(d))

E. Proper Operation and Maintenance

1. The permittee shall employ operators certified in compliance with the Water and Wastewater Systems Operators Certification Act (63 P.S. §§ 1001-1015.1).

2. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit. (40 CFR 122.41(e))

F. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d))

G. Bypassing

1. Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions in paragraphs two, three and four of this section. (40 CFR 122.41(m)(2))

2. Other Bypassing - In all other situations, bypassing is prohibited and DEP may take enforcement action against the permittee for bypass unless:

a. A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage." (40 CFR 122.41(m)(4)(i)(A))

b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance. (40 CFR 122.41(m)(4)(i)(B))

c. The permittee submitted the necessary notice required in paragraph G.4 below. (40 CFR 122.41(m)(4)(i)(C))

3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in paragraph G.2 above. (40 CFR 122.41(m)(4)(ii))

4. Notice

a. Anticipated Bypass – If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the bypass. (40 CFR 122.41(m)(3)(i))

b. Unanticipated Bypass – The permittee shall submit oral notice of any other unanticipated bypass within 24 hours, regardless of whether the bypass may endanger health or the environment or whether the bypass exceeds effluent limitations. The notice shall be in accordance with Part A III.C.4.b.

H. Sanitary Sewer Overflows (SSOs)

An SSO is an overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility. SSOs are not authorized under this permit. The permittee shall immediately report any SSO to DEP in accordance with Part A III.C.4 of this permit.

I. Termination of Permit Coverage (25 Pa. Code § 92a.74 and 40 CFR 122.64)

1. Notice of Termination (NOT) – If the permittee plans to cease operations or will otherwise no longer require coverage under this permit, the permittee shall submit DEP's NPDES Notice of Termination (NOT) for Permits Issued Under Chapter 92a (3800-BCW-0410), signed in accordance with Part A III.B.6 of this permit, at least 30 days prior to cessation of operations or the date by which coverage is no longer required.

2. Where the permittee plans to cease operations, NOTs must be accompanied with an operation closure plan that identifies how tankage and equipment will be decommissioned and how pollutants will be managed.

3. The permittee shall submit the NOT to the DEP regional office with jurisdiction over the county in which the operation is located.

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality, who violates any provision of this permit; any rule, regulation or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

B. Falsifying Information

Any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or

- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or noncompliance)

Shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 Pa.C.S.A § 4904 and 40 CFR 122.41(j)(5) and (k)(2).

C. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (40 CFR 122.41(c))

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law, and Title 25 Pa. Code Chapter 92a and 40 CFR 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law:

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit; (40 CFR 122.41(i)(1))

2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit; (40 CFR 122.41(i)(2))

3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and (40 CFR 122.41(i)(3))

4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location. (40 CFR 122.41(i)(4))

B. Transfer of Permits

1. Transfers by modification. Except as provided in paragraph 2 of this section, a permit may be transferred by the permittee to a new owner or operator only if this permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (40 CFR 122.61(a))

2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:

   a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b. of this section; (40 CFR 122.61(b)(1))

   b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; and (40 CFR 122.61(b)(2))

   c. DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue this permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b. of this section. (40 CFR 122.61(b)(3))

   d. The new permittee is in compliance with existing DEP issued permits, regulations, orders and schedules of compliance, or has demonstrated that any noncompliance with the existing permits has been resolved by an appropriate compliance action or by the terms and conditions of the permit (including compliance schedules set forth in the permit), consistent with 25 Pa. Code § 92a.51 (relating to schedules of compliance) and other appropriate Department regulations. (25 Pa. Code § 92a.71)

3. In the event DEP does not approve transfer of this permit, the new owner or operator must submit a new permit application.

C. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege. (40 CFR 122.41(g))

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit. (40 CFR 122.41(b))

E. Other Laws

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

IV. ANNUAL FEE

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. Annual fee amounts are specified in the following schedule and are due on each anniversary of the effective date of the most recent new or reissued permit. All flows identified in the schedule are annual average design flows. (25 Pa. Code § 92a.62)

Small Flow Treatment Facility (SRSTP and SFTF)	$0
Minor Sewage Facility < 0.05 MGD (million gallons per day)	$250
Minor Sewage Facility ≥ 0.05 and < 1 MGD	$500
Minor Sewage Facility with CSO (Combined Sewer Overflow)	$750
Major Sewage Facility ≥ 1 and < 5 MGD	$1,250
Major Sewage Facility ≥ 5 MGD	$2,500
Major Sewage Facility with CSO	$5,000

As of the effective date of this permit, the facility covered by the permit is classified in the following fee category: **Major Sewage Facility >=5 MGD**.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Throughout a five year permit term, permittees will pay four annual fees followed by a permit renewal application fee in the last year of permit coverage. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees. The fees identified above are subject to change in accordance with 25 Pa. Code § 92a.62(e).

Payment for annual fees shall be remitted to DEP at the address below by the anniversary date. Checks should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Clean Water
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

PART C

I. OTHER REQUIREMENTS

A. No storm water from pavements, area ways, roofs, foundation drains or other sources shall be directly admitted to the sanitary sewers associated with the herein approved discharge.

B. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance or replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

C. Collected screenings, slurries, sludges, and other solids shall be handled and disposed of in compliance with 25 Pa. Code, Chapters 271, 273, 275, 283, and 285 (related to permits and requirements for landfilling, land application, incineration, and storage of sewage sludge), Federal Regulation 40 CFR 257, Pennsylvania Clean Streams Law, Pennsylvania Solid Waste Management Act of 1980, and the Federal Clean Water Act and its amendments. The permittee is responsible to obtain or assure that contracted agents have all necessary permits and approvals for the handling, storage, transport, and disposal of solid waste materials generated as a result of wastewater treatment.

D. In accordance with 40 CFR Part 435, Subpart C, the permittee shall not accept wastewater pollutants associated with production, field exploration, drilling, well completion, or well treatment for unconventional oil and gas extraction (including, but not limited to, drilling muds, drill cuttings, produced sand, produced water). Unconventional oil and gas means crude oil and natural gas produced by a well drilled into a shale and/or tight formation (including, but not limited to, shale gas, shale oil, tight gas, and tight oil). This prohibition does not apply to wastewater generated from stripper wells as defined at 40 CFR Part 435, Subpart F.

E. The permittee shall optimize chlorine dosages used for disinfection or other purposes to minimize the concentration of Total Residual Chlorine (TRC) in the effluent, meet applicable effluent limitations, and reduce the possibility of adversely affecting the receiving waters. Optimization efforts may include an evaluation of wastewater characteristics, mixing characteristics, and contact times, adjustments to process controls, and maintenance of the disinfection facilities. If DEP determines that effluent TRC is causing adverse water quality impacts, DEP may reopen this permit to apply new or more stringent effluent limitations and/or require implementation of control measures or operational practices to eliminate such impacts.

   Where the permittee does not use chlorine for primary or backup disinfection, but proposes the use of chlorine for cleaning or other purposes, the permittee shall notify DEP prior to initiating use of chlorine and monitor TRC concentrations in the effluent on each day in which chlorine is used. The results shall be submitted as an attachment to the DMR.

F. Notification of the designation of the responsible operator must be submitted to the permitting agency by the permittee within 60 days after the effective date of the permit and from time to time thereafter as the operator is replaced.

G. The DEP may identify and require certain discharge specific data to be submitted before the expiration date of this permit. Upon notification by the DEP, the permittee will have 12 months from the date of the notice to provide the required data. These data, along with any other data available to the DEP, will be used in completing the Watershed TMDL/WLA Analysis and in establishing discharge effluent limits. In the event that DEP requires the submission of data pursuant to this condition, the permittee shall have the right to appeal or otherwise contest the requirement.

H. The seasonal effluent limitations for fecal coliform are based on Chapter 92a (§ 92a.47(4) & (5)) of DEP's regulations and Delaware River Basin Commission's (DRBC's) Water Quality Regulations at § 4.30.4.A. DEP's regulations govern the summer limits for fecal coliform while the winter limits are based on DRBC's regulations. The DRBC regulations state that during winter season from October through April, the instantaneous maximum concentration of fecal coliform organisms shall not be greater than 1,000 per 100

milliliters in more than 10 percent of the samples tested. For reporting purposes, a copy of the guidelines on the 10 percent rule is enclosed with the permit.

I. The permittee shall not accept hauled-in wastes at the treatment facility under the following conditions, unless otherwise approved by DEP in writing:

- When acceptance of hauled-in wastes would cause a hydraulic or organic overload as defined in Chapter 94.1 of the DEP's regulations.
- When the treatment facility is considered to be in an existing hydraulic or organic overload condition, as determined by the permittee or DEP, as defined in Chapter 94.1 of the DEP's regulations.
- When the instantaneous flow at the treatment facility exceeds the Chapter 94 hydraulic design capacity of the facility multiplied by a peaking factor of three, and for 24 hours following exceedance of this threshold.

J. The permittee shall develop a treatment facility operations and maintenance (O&M) plan addressing key wastewater processes. The plan shall be reviewed annually and updated when appropriate. The plan shall be submitted to DEP for review upon request. For the purpose of this paragraph, a key wastewater process includes any equipment or process that, if it fails, may cause the discharge of raw wastewater or wastewater that fails to meet NPDES permit discharge requirements, or a failure that may threaten human or environmental health. The O&M plan shall include the following, at a minimum:

1. A process control strategy that includes a schedule for process control sampling, monitoring, testing, and recordkeeping.
2. A plan that identifies how key wastewater processes shall be monitored and adjusted while the facility is staffed.
3. A plan that identifies how key wastewater processes will be monitored while the treatment facility is not staffed.
4. For treatment plants that are impacted by wet weather flows, the permittee shall develop and implement a wet weather operations strategy that minimizes or eliminates the wash out of solids from the treatment system while maximizing the flow through the treatment plant.
5. An emergency plan that identifies how the facility will be operated during times of emergency. For example, the plan shall detail how key wastewater processes will be repaired or replaced in the event of a failure while minimizing loss of life and property damage to the facility. This plan shall also include emergency contact numbers for local emergency response agencies, plant personnel, critical suppliers and vendors, and DEP contacts, at a minimum.
6. A preventative maintenance plan that includes a schedule for preventative maintenance for all equipment within the treatment system. A spare parts inventory shall be included as part of this plan.
7. A solids management plan that identifies how solids produced by the facility will be wasted, treated, and ultimately disposed of.

II. POTW PRETREATMENT PROGRAM IMPLEMENTATION

A. General Requirement – The permittee shall operate and implement a POTW pretreatment program in accordance with the federal Clean Water Act, the Pennsylvania Clean Streams Law, and the federal General Pretreatment Regulations at 40 CFR Part 403. The program shall also be implemented in accordance with the permittee's approved pretreatment program and any modifications thereto submitted by the permittee and approved by the Approval Authority.

B. Annual Report and Other Requirements – The permittee shall submit a Pretreatment Annual Report by March 31 of each year to EPA that describes the permittee's pretreatment activities for the previous calendar

year. The Pretreatment Annual Report shall include a description of pretreatment activities in all municipalities from which wastewater is received at the permittee's POTW. The Pretreatment Annual Report shall include the following information, at minimum:

1. Industrial Listing – The Annual Report shall contain an updated industrial listing providing the names and addresses of all current Significant Industrial Users (SIUs) and Non-Significant Categorical Industrial Users (NSCIUs), as defined in 40 CFR 403.3, and the categorical standard, if any, applicable to each. The listing must: (1) identify any users that are subject to reduced reporting requirements under 40 CFR 403.12(e)(3); (2) identify which users are NSCIUs; (3) identify any users that have been granted a monitoring waiver in accordance with 40 CFR 403.12(e)(2) as well as the pollutants for which the waiver was granted and the date of the last POTW sampling event for each pollutant; and (4) identify any categorical industrial users that have been given mass-based limits in place of concentration-based categorical limits in accordance with 40 CFR 403.6(c)(5) or concentration-based limits in place of mass-based categorical limits in accordance with 40 CFR 403.6(c)(6).

   In addition, the Annual Report shall contain a summary of any hauled-in wastes accepted at the POTW including the source of the wastes (domestic, commercial or industrial) and the receiving location for acceptance of the wastes. For each industrial source (whether or not classified as an SIU), the report shall indicate (1) the name and address of the industrial source; (2) the average daily amount of wastewater received; (3) a brief description of the type of process operations conducted at the industrial facility; (4) whether the source facility is a categorical industrial user (including NSCIU), significant industrial users, or non-significant industrial user; and (5) any controls imposed on the user.

2. Control Mechanism Issuance – The Annual Report shall contain a summary of SIU control mechanism issuance, including a list of issuance, effective, and expiration dates for each SIU control mechanism. For each general control mechanism issued, provide the names of all SIUs covered by the general control mechanism and an explanation of how the users meet the criteria of 40 CFR 403.8(f)(1)(iii)(A) for issuance of a general control mechanism.

3. Sampling and Inspection – The Annual Report shall contain a summary of the number and types of inspections and sampling events of SIUs by the permittee, including a list of all SIUs either not sampled or not inspected, and the reason that the sampling and/or inspection was not conducted. For any user subject to reduced reporting under 40 CFR 403.12(e)(3), the list shall include the date of the last POTW sampling event and the date of the last POTW inspection of the user. In addition, the report shall include a summary of the number of self-monitoring events conducted by each SIU and the number required to be conducted, including a list of all SIUs that did not submit the required number of reports and the reason why the reports were not submitted. For NSCIUs, the report shall provide the date of the compliance certification required under 40 CFR 403.12(q).

4. Industrial User Compliance and POTW Enforcement – The Annual Report shall contain a summary of the number and type of violations of pretreatment standards and requirements, including local limits, and the actions taken by the permittee to obtain compliance, including compliance schedules, penalty assessments and actions for injunctive relief. The report shall state whether each SIU was in significant noncompliance, as that term is defined in 40 CFR Section 403.8(f)(2)(viii), and include the parameter(s) in violation, the period of violation, the actions taken by the POTW in response to the violations, and the compliance status at the end of the reporting period. A copy of the publication of users meeting the significant noncompliance criteria shall be included. In addition, the report shall provide a list of users previously designated as NSCIUs that have violated (to any extent) any pretreatment standard or requirement during the year and the date and description of the violation(s).

5. Summary of POTW Operations – The Annual Report shall contain a summary of any interference, pass-through, or permit violations by the POTW and indicate the following: (1) which, if any, permit violations may be attributed to industrial users; (2) which IU(s) are responsible for such violations; and (3) the actions taken to address these events. The report shall also include all sampling and analysis of POTW treatment plant influent, effluent, and sludge conducted during the year for local limit and priority pollutants identified pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. 1313(d).

6. Pretreatment Program Changes – The Annual Report shall contain a summary of any changes made or proposed to the approved program during the period covered by the report and the date of submission to the Approval Authority.

A summary of pretreatment activities shall be incorporated into the permittee's Annual Municipal Wasteload Management Report required by 25 Pa. Code Chapter 94 and referenced in Part B I.C.4 of this permit.

C. Routine Monitoring – The permittee shall conduct monitoring at its treatment plant that, at a minimum, includes quarterly influent, effluent, and sludge analysis for all pollutants for which local limits have been established, and an annual priority pollutant scan for influent and sludge.

D. Notification of Pass Through or Interference – The permittee shall notify EPA and DEP, in writing, of any instance of pass through or interference, as defined at 40 CFR 403.3(p) and (k), respectively, known or suspected to be related to a discharge from an IU into the POTW. The notification shall be attached to the DMR submitted to EPA and DEP and shall describe the incident, including the date, time, length, cause (including responsible user if known), and the steps taken by the permittee and IU (if identified) to address the incident. A copy of the notification shall also be sent to the EPA at the address provided below.

E. Headworks Analysis – The permittee shall submit to EPA a reevaluation of its local limits based on a headworks analysis of its treatment plant within one (1) year of permit issuance, and provide a revised submission within three (3) months of receipt of comments from EPA or DEP unless a longer period of time is granted in writing by EPA or DEP. In order to ensure that the permittee's discharge complies with water quality standards, the reevaluation of local limits shall consider, at a minimum, all water quality standards under 25 Pa. Code Chapter 93 applicable to the pollutants included in the reevaluation, unless the POTW is subject to an effluent limitation for the pollutant in Part A of this permit. The list of pollutants to be evaluated, as well as a sampling plan for collection of necessary data, shall be submitted to EPA within three (3) months of permit issuance. Unless otherwise approved in writing, the list of pollutants shall include arsenic, cadmium, chromium, copper, cyanide, lead, mercury, molybdenum, nickel, selenium, silver, zinc, BOD_5, TSS, ammonia, any pollutants for which a local limit currently exists, any pollutant limited in this permit, as well as any other pollutants that have been identified in the POTW through monitoring or the receipt of indirect discharges and hauled-in wastes in quantities that have the potential to cause pass through and/or interference. For example, facilities receiving residual waste from oil and gas operations should include pollutants such as Total Dissolved Solids (TDS), specific ions such as chlorides and sulfates, specific radionuclides, metals such as barium and strontium, and other pollutants that could reasonably be expected to be present. Within four (4) months of acceptance of the headworks analysis by the Approval Authority, the permittee shall adopt the revised local limits and, if necessary to ensure that the limits are enforceable throughout the service area, notify all contributing municipalities of the need to adopt the revised local limits.

F. Changes to Pretreatment Program – EPA and DEP may require the permittee to submit for approval changes to its pretreatment program if any one or more of the following conditions is present:

1. The program is not implemented in accordance with 40 CFR Part 403;

2. Problems such as interference, pass through or sludge contamination develop or continue;

3. The POTW proposes to introduce new pollutants or an increased loading of approved pollutants as described in Part A III.C.2 of this permit;

4. Federal, State, or local requirements change;

5. Changes are needed to assure protection of waters of the Commonwealth.

Program modification is necessary whenever there is a significant change in the operation of the pretreatment program that differs from the information contained in the permittee's submission, as approved under 40 CFR 403.11.

G. Procedure for Pretreatment Program Changes – Upon submittal by the permittee, and written notice of approval by the Approval Authority to the permittee of any changes to the permittee's approved pretreatment

program, such changes are effective and binding upon the permittee unless the permittee objects within 30 days of receipt of the written notice of approval. Any objection must be submitted in writing to EPA and DEP.

H. Correspondence – The Approval Authority shall be EPA at the following address:

Pretreatment Coordinator (3WD41)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

III. SOLIDS MANAGEMENT

A. The permittee shall manage and properly dispose of sewage sludge and/or biosolids by performing sludge wasting that maintains an appropriate mass balance of solids within the treatment system. The wasting rate must be developed and implemented considering the specific treatment process type, system loadings, and seasonal variation while maintaining compliance with effluent limitations. Holding excess sludge within clarifiers or in the disinfection process is not permissible.

B. The permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Sewage Sludge/Biosolids Production and Disposal" (Form No. 3800-FM-BCW0438) and "Supplemental Report – Influent & Process Control" (Form No. 3800-FM-BCW0436), as attachments to the DMR on a monthly basis. When applicable, the permittee shall submit the Supplemental Reports entitled, "Supplemental Report – Hauled In Municipal Wastes" (Form No. 3800-FM-BCW0437) and "Supplemental Report – Hauled In Residual Wastes" (Form No. 3800-FM-BCW0450), as attachments to the DMR.

C. By March 31 of each year, the permittee shall submit a "Sewage Sludge Management Inventory" that summarizes the amount of sewage sludge and/or biosolids produced and wasted during the calendar year from the system. The "Sewage Sludge Management Inventory" may be submitted with the Municipal Wasteload Management Report required by Chapter 94. This summary shall include the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, "Improving POTW Performance Using the Composite Correction Approach" (EPA-625/6-84-008)), compared with the actual amount disposed during the year. Sludge quantities shall be expressed as dry weight in addition to gallons or other appropriate units.

IV. WHOLE EFFLUENT TOXICITY (WET)

A. General Requirements

1. The permittee shall conduct Chronic WET tests as specified in this section. The permittee shall collect discharge samples and perform WET tests to generate chronic survival and reproduction data for the cladoceran, *Ceriodaphnia dubia* and chronic survival and growth data for the fathead minnow, *Pimephales promelas*.

2. Samples shall be collected at Outfall 001 in accordance with paragraph E.

3. The permittee shall perform testing using the following dilution series: 3%, 6%, 12%, 56%, and 100% effluent, with a control, where 12% is the facility-specific Target In-Stream Waste Concentration (TIWC).

4. The determination of whether a test endpoint passes or fails shall be made using DEP's WET Analysis Spreadsheet (available at www.dep.pa.gov/wett) by comparing replicate data for the control with replicate data for the TIWC dilution or any dilution greater than the TIWC.

5. The permittee shall submit only valid WET test results to DEP.

B. Test Frequency and Reporting

1. WET testing shall be conducted annually, at a minimum, during the period January 1 – December 31. Annual WET tests must be completed at least 6 months apart, and shall start in the year the permit becomes effective if the permit effective date is prior to October 1.

2. A complete WET test report shall be submitted to the DEP regional office that issued the permit within 45 days of test completion. A complete WET test report submission shall include the information contained in paragraph H, below. The permittee shall continue annual WET monitoring, at a minimum, during the permit renewal review period and during any period of administrative extension of this permit.

3. If a test failure is determined for any endpoint during annual monitoring, the permittee shall initiate a re-test for the species with the failure within 45 days of test completion. All endpoints for the species shall be evaluated in the re-test. The results of the re-test shall be submitted to the DEP regional office that issued the permit.

4. If a passing result is determined for all endpoints in a re-test, the permittee may resume annual monitoring.

5. If there is a failure for one or more endpoints in a re-test, the permittee shall initiate or continue quarterly WET testing for both species until there are four consecutive passing results for all endpoints. The results of all tests shall be submitted to the DEP regional office that issued the permit. In addition, the permittee shall initiate a Phase I Toxicity Reduction Evaluation (TRE) as specified in paragraph C, below.

6. The permittee must report the results of each test endpoint that has a WET reporting requirement in Part A of this permit on the Discharge Monitoring Report (DMR). Test results shall be reported on the DMR in terms of acute or chronic Toxicity Units (TUa or TUc), where TUa is used for acute tests and TUc is used for chronic tests. If DEP's WET Analysis Spreadsheet indicates a passing result for an endpoint, report the value obtained from the expression "1/TIWC". If the Spreadsheet indicates a failure, report the value obtained from the expression "> 1/TIWC". If a dilution higher than the TIWC dilution is used for the comparison with the control, report the value obtained from the expression "1/dilution". For example, an acute test endpoint failure at a TIWC dilution of 50% would be reported as "> 2.0 TUa" (1/0.5).

7. The permittee shall attach the WET Analysis Spreadsheet for the latest four consecutive WET tests to the NPDES permit renewal application that is submitted to DEP at least 180 days prior to the permit expiration date.

C. Phase I Toxicity Reduction Evaluation (TRE)

1. The Phase I TRE trigger is one WET endpoint failure followed by a re-test that confirms the failure for the same species. When the TRE process is triggered, quarterly WET testing shall be initiated for both species until there are four consecutive passing results for all endpoints. The Phase I TRE may include a Toxicity Identification Evaluation (TIE) if the permittee cannot immediately identify the possible causes of the effluent toxicity and the possible sources of the causative agents.

2. The permittee shall, within one year following the Phase I TRE trigger, submit a Phase I TRE report to the DEP regional office that issued the permit. The Phase I TRE shall be conducted in accordance with EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. If a TIE is conducted as part of the Phase I TRE, it shall conform to EPA's guidance, "Methods for Aquatic Toxicity Identification Evaluations Phase I" (EPA/600/6-91/003), "Phase II" (EPA/600/R-92/080), "Phase III" (EPA/600/R-92/081) and other relevant EPA guidance. The Phase I TRE report shall be submitted with the fourth quarterly WET test report that is completed following the Phase I TRE trigger. The TRE shall include all activities undertaken to identify the cause(s) and source(s) of toxicity and any control efforts.

3. If all four quarterly WET tests produce passing results for all endpoints during the Phase I TRE process, performance of a Phase II TRE is not required, and annual WET testing in accordance with paragraph B.1 may resume.

4. If the four WET tests produce at least one failing result during the Phase I TRE process, the permittee shall continue quarterly WETT monitoring for both species and initiate a Phase II TRE in accordance with paragraph D. In this case, the Phase I TRE must include a schedule for completion of the Phase II TRE. The schedule must include interim milestones and a final completion date not to exceed two years from the initiation of the Phase II TRE. The permittee shall implement the Phase II TRE in accordance with the schedule unless DEP issues written approval to modify the schedule or cease performance of the Phase II TRE.

5. Re-tests during the TRE process are required for invalid tests but are optional and at the discretion of the permittee for valid tests. The results of all re-tests must be submitted to the DEP regional office that issued the permit along with the required elements in paragraph H.

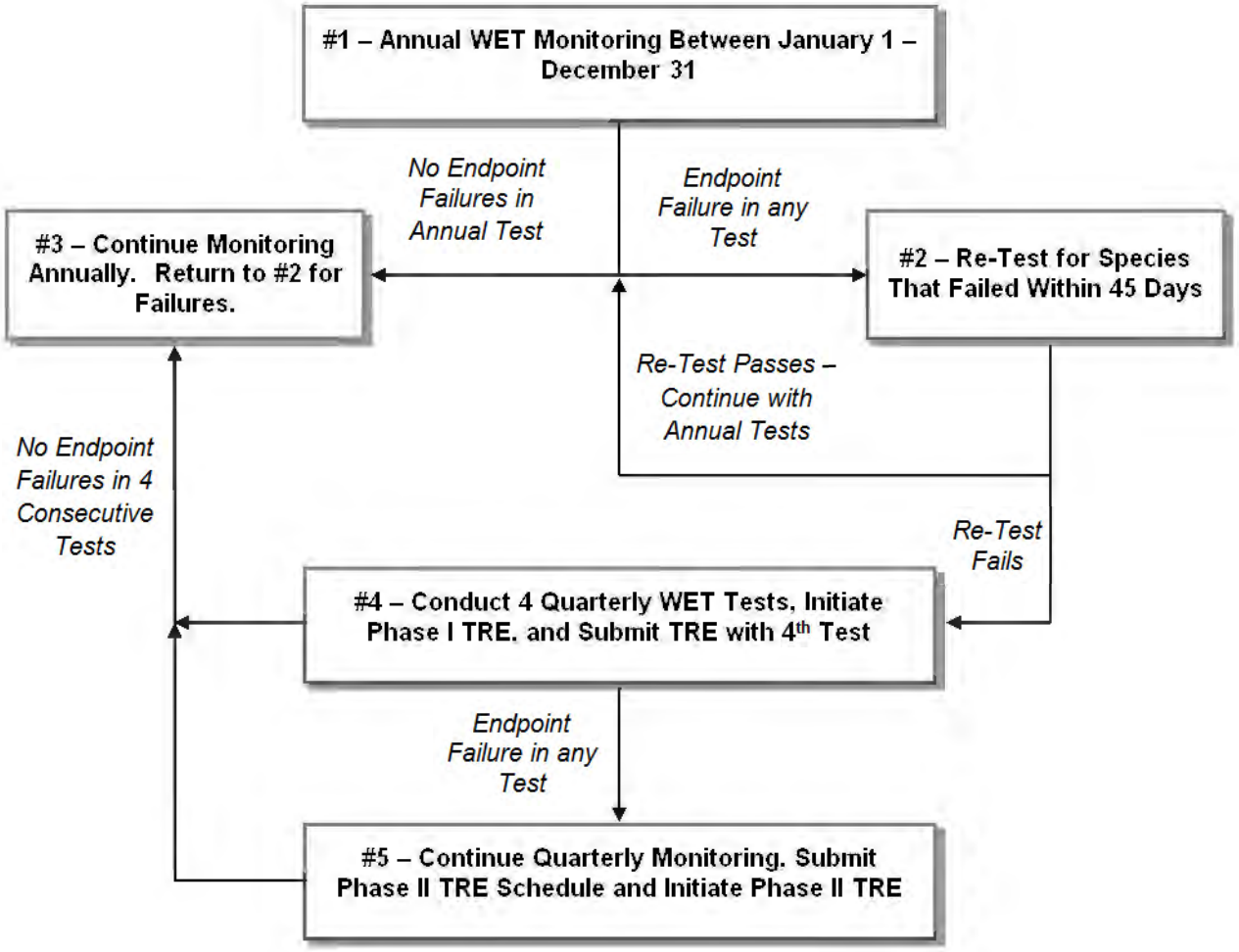
D. Phase II Toxicity Reduction Evaluation (TRE)

1. The Phase II TRE trigger is one WET endpoint failure during performance of the Phase I TRE. A Phase II TRE, if required, shall conform to EPA's guidance, "Toxicity Reduction Evaluation for Municipal Wastewater Treatment Plants" (EPA/833B-99/002), "Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations" (EPA/600/2-88/070), and other relevant EPA guidance, as applicable. A Phase II TRE evaluates the possible control options to reduce or eliminate the effluent toxicity and the implementation of controls.

2. Once initiated, the Phase II TRE must continue until the source(s) of toxicity are controlled as evidenced by four consecutive WET test passing results for all endpoints, and a final TRE report must be submitted on or before the date specified in the schedule, unless otherwise approved by DEP in writing.

3. If four consecutive quarterly WET tests produce passing results for all endpoints during the Phase II TRE process, annual WET testing in accordance with paragraph B.1 may be initiated or resume.

An overview of the process described in paragraphs B, C and D is presented below:



E. Sample Collection

For each acute testing event, a 24-hour flow-proportioned composite sample shall be collected. For each chronic testing event, three 24-hour flow-proportioned, composite samples shall be collected over a seven day exposure period. The samples must be collected at a frequency of not greater than every two hours and must be flow-proportioned. The samples must be collected at the permit compliance sampling location. Samples must be analyzed within 36 hours from the end of the compositing period and must be placed on ice and held at ≤ 6°C. Refer to the sample handling and preservation regulations set forth in 40 CFR 136, 25 Pa. Code Chapter 252, The NELAC Institute (TNI) Standard, and the appropriate EPA methods.

F. Test Conditions and Methods

Laboratories must be accredited by the DEP Laboratory Accreditation Program in order to perform and report WET tests for NPDES permit compliance. Laboratories must be either State or NELAP accredited.

1. Acute tests shall be completed in accordance with EPA's "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012, latest edition). Forty eight (48) hour static non-renewal tests shall be used.

2. Chronic tests shall be completed in accordance with EPA's "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (EPA-821-R-02-013, latest edition). Seven (7) day tests shall be used with renewal every 24 hours.

3. The quality assurance and control (QA/QC) requirements and test acceptability standards specified in EPA's test methods and the requirements set forth in 25 Pa Code Chapter 252 or the TNI Standard must be followed.

4. If the permittee or its accredited laboratory determines that QA/QC requirements and/or test acceptability standards have not been met, a re-test shall be initiated within 45 days. Original test data must be maintained by the laboratory and be submitted to DEP upon request. The justification for a re-test must be clearly documented and kept on file with the sample results.

G. Chemical Analyses

Chemical analyses must follow the requirements of the EPA methods and applicable State and/or Federal regulations.

1. Chemical analysis on effluent samples shall include pH, Conductivity, Total Alkalinity, Total Hardness, Total Residual Chlorine, Total Ammonia (Unionized Ammonia), Dissolved Oxygen and temperature. Chemical analyses as described in the EPA Methods (above) shall be performed for each sampling event, including each new batch of dilution water and each testing event.

2. In addition to the chemical analyses required above, those parameters listed in Part A of the NPDES permit for the outfall(s) tested shall be analyzed concurrently with the WET test by using the method(s) specified in the permit.

H. WET Report Elements

WET test reports that are submitted to DEP must include the requirements identified in 25 Pa. Code § 252.401(j)(1) – (15) or in the TNI Standard, or equivalent, as well as the following information:

1. A general test description, including the origin and age of test organisms, dates and results of reference toxicant tests, light and temperature regimes, and other documentation that QA and test acceptability criteria as specified in EPA's methods and DEP's QA Summaries have been met.

2. A description of sample collection procedures and sampling location.

3. Name(s) of individual(s) collecting and transporting samples, including sample renewals, and the date(s) and time(s) of sample collection.

4. All chemical and physical data including laboratory quantitation limits and observations made on the species. The hardness shall be reported for each test condition.

5. Copies of raw data sheets and/or bench sheets with data entries and signatures.

6. When effluents are dechlorinated, dechlorination procedures must be described and if applicable a thiosulfate control used in addition to the normal dilution water control. If the thiosulfate control results are significantly different from the normal control, as determined using DEP's WET Analysis Spreadsheet, the thiosulfate control shall be used in the spreadsheet for comparison with the TIWC condition. The WET report must specify which control was used to determine whether the test result is pass or fail.

7. A description of all observations or test conditions that may have affected the test outcome.

8. Control charts for the species tested regarding age, temperature test range, mortality data and all reference toxicant tests.

9. A completed WET test summary report (3800-FM-BCW0485).

10. A DEP WET Analysis Spreadsheet printout that provides control and TIWC replicate data and displays the outcome of the test (pass or fail) for each endpoint tested.

    WETT reports shall be submitted to the DEP regional office that issued the permit and, for discharges to the Delaware River basin, the Delaware River Basin Commission (DRBC).

V. REQUIREMENTS APPLICABLE TO STORMWATER OUTFALLS

A. The permittee is authorized to discharge non-polluting stormwater from its site, alone or in combination with other wastewaters, through the following outfall: Outfall 002

   Monitoring requirements and effluent limitations for these outfalls are specified in Part A of this permit, if applicable.

B. Preparedness, Prevention and Contingency (PPC) Plan

   1. The permittee shall develop and implement a PPC Plan in accordance with 25 Pa. Code § 91.34 following the guidance contained in DEP's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" (DEP ID 400-2200-001), its NPDES-specific addendum and the minimum requirements below.

      a. The PPC Plan must identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the facility.

      b. The PPC Plan must describe preventative measures and BMPs that will be implemented to reduce or eliminate pollutants from coming into contact with stormwater resulting from routine site activities and spills.

      c. The PPC Plan must address actions that will be taken in response to on-site spills or other pollution incidents.

      d. The PPC Plan must identify areas which, due to topography or other factors, have a high potential for soil erosion, and identify measures to limit erosion. Where necessary, erosion and sediment control measures must be developed and implemented in accordance with 25 Pa. Code Chapter 102 and DEP's "Erosion and Sediment Pollution Control Manual" (DEP ID 363-2134-008).

      e. The PPC Plan must address security measures to prevent accidental or intentional entry which could result in an unintentional discharge of pollutants.

      f. The PPC Plan must include a plan for training employees and contractors on pollution prevention, BMPs, and emergency response measures.

      g. If the facility is subject to SARA Title III, Section 313, the PPC Plan must identify releases of "Water Priority Chemicals" within the previous three years. Water Priority Chemicals are those identified in EPA's "Guidance for the Determination of Appropriate Methods for the Detection of Section 313 Water Priority Chemicals" (EPA 833-B-94-001, April 1994). The Plan must include an evaluation of all activities that may result in the stormwater discharge of Water Priority Chemicals.

      h. Spill Prevention Control and Countermeasure (SPCC) plans may be used to meet the requirements of this section if the minimum requirements are addressed.

   2. The permittee shall review and if necessary update the PPC Plan on an annual basis, at a minimum, and when one or more of the following occur:

      a. Applicable DEP or federal regulations are revised, or this permit is revised.

      b. The PPC Plan fails in an emergency.

c. The facility's design, industrial process, operation, maintenance, or other circumstances change in a manner that materially increases the potential for fires, explosions or releases of toxic or hazardous constituents; or which changes the response necessary in an emergency.

d. The list of emergency coordinators or equipment changes.

e. When notified in writing by DEP.

The permittee shall maintain all PPC Plan updates on-site, make the updates available to DEP upon request.

C. Minimum Required BMPs

In addition to BMPs identified in the PPC Plan, the permittee shall implement the following minimum BMPs relating to stormwater pollution prevention:

1. If applicable, post-construction stormwater BMPs that are required under 25 Pa. Code Chapter 102 must be maintained.

2. Manage sludge in accordance with all applicable permit requirements.

3. Store chemicals in secure and covered areas on impervious surfaces away from storm drains.

4. For new facilities and upgrades, design wastewater treatment facilities to avoid, to the maximum extent practicable, stormwater commingling with sanitary wastewater, sewage sludge, and biosolids.

5. Efficiently use herbicides for weed control. Where practicable, use the least toxic herbicide that will achieve pest management objectives. Do not apply during windy conditions.

6. Do not wash parts or equipment over impervious surfaces that wash into storm drains.

7. Implement infiltration techniques, including infiltration basins, trenches, dry wells, porous pavement, etc., wherever practicabl

D. Routine Inspections.

Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. BMPs in the PPC Plan and required by this permit shall be inspected on a semiannual basis, at a minimum, to determine whether they are adequate and properly implemented in accordance with the terms of this permit or whether additional control measures are needed. Documentation of inspections shall be maintained on-site and be made available to DEP upon request.

E. Stormwater Sampling Requirements

If stormwater sampling is required in Part A of this permit, the following requirements apply:

1. All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The 72-hour storm interval is waived when the preceding storm did not yield a measurable discharge, or if the permittee is able to document that a less than 72-hour interval is representative for local storm events during the sample period.

2. Grab samples shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is not possible, a grab sample can be taken during the first hour of the discharge, in which case the discharger shall provide an explanation of why a grab sample during the first 30 minutes was not possible.

VI. PCB POLLUTANT MINIMIZATION PLAN AND MONITORING

A. On April 7, 2007, the U.S. Environmental Protection Agency (EPA) Region 3 adopted a Total Maximum Daily Load (TMDL) for Polychlorinated Biphenyls (PCBs) in the Schuylkill River. Implementation of the TMDL requires that permitted facilities that discharge directly to the Schuylkill River conduct sampling for PCBs and, based upon review of the results, develop and implement a PCB Pollutant Minimization Plan (PMP). The Schuylkill River's PCB TMDL was established using a water quality criterion of 0.044 ng/l for PCBs. Based on the sampling results submitted by the facility, this facility is required to develop and implement a PCB PMP.

B. The permittee shall collect one 24-hour composite sample annually during a wet weather flow and one 24-hour composite sample annually during a dry weather flow. The samples shall be collected from Outfall 001.

C. All sample analyses shall be performed using EPA Method 1668A, Revision A: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by HRGC/HRMS (EPA-821-R-00-002, December 1999) as supplemented or amended, and results for all 209 PCB congeners shall be reported. Project-specific sample collection protocols, analytical procedures, and reporting requirements of the Delaware River Basin Commission (DRBC) shall be followed (see www.nj.gov/drbc/quality/toxics/pcbs/monitoring.html). Monitoring information, sample data, and reports associated with PCB monitoring shall be submitted to DEP and DRBC in the form of two compact discs in the format referenced at www.nj.gov/drbc/library/documents/PCB-EDD011309.pdf.

D. In accordance with the EPA TMDL for PCBs for the Schuylkill River, the permittee submitted a PMP for PCBs to DEP and DRBC on March 29, 2017 and a completeness determination was made on August 8, 2017. The permittee shall continue to comply with the requirements of Section 4.30.9 of DRBC's Water Quality Regulations. Additional information regarding PMP development may be found at www.nj.gov/drbc/programs/quality/pmp.html. In addition, the permittee shall:

1. Continue to implement the PMP to achieve PCB loading reduction goals.

2. Submit an Annual Report on the yearly anniversary of the commencement of the PMP to DEP and DRBC consistent with the guidance at www.nj.gov/drbc/programs/quality/pmp.html.

The PMP Annual Report, and PCB data shall be submitted to DEP and DRBC at the following addresses:

PA Department of Environmental Protection
Southeast Regional Office
Clean Water Program
2 East Main Street
Norristown, PA 19401

Delaware River Basin Commission
Modeling, Monitoring & Assessment Branch
P.O. Box 7360
West Trenton, NJ 08628

EXHIBIT N2

NPDES PERMIT
EAST GOSHEN MUNICIPAL AUTHORITY
WASTEWATER TREATMENT PLANT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

April 18, 2017

CERTIFIED MAIL NO. 7015 0640 0002 3147 7148

Mr. Louis Smith
Township Manager
East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6107

Re: Final NPDES Permit- Sewage
East Goshen Municipal Authority
NPDES Permit No. PA0050504
Authorization ID No. 1150974
East Goshen Township, Chester County

Dear Mr. Smith:

Your NPDES permit is enclosed. Please read the permit carefully. The permit expires on the date identified on page 1 of the permit. A renewal application must be submitted to this office 180 days prior to the permit expiration date, if a discharge is expected to continue past the expiration date of the permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Mr. James (Jim) M. McTish, Jr. at 484.250.5180.

Sincerely,

Jenifer L. Fields, P.E.
Environmental Program Manager
Clean Water Program

Enclosures

cc: Mr. Michael Ellis – Pennoni Associates, Inc.
Mr. David Kovach - DRBC
Chester County Health Department (w/o enclosures)
Central Office, Division of Operations, Monitoring and Data Systems
Operations Section
Re

RECEIVED
APR 21 2017
PENNONI ASSOCIATES INC

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR PUBLICLY OWNED TREATMENT WORKS (POTWs)

NPDES PERMIT NO: PA0050504

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

East Goshen Municipal Authority Chester County
1580 Paoli Pike
West Chester, PA 19380-6107

is authorized to discharge from a facility known as **East Goshen Municipal Authority STP & Sewer System**, located in **East Goshen Township, Chester County**, to **Ridley Creek** in Watershed(s) **3-G** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON **May 1, 2017**

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON **April 30, 2022**

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms, conditions or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. (40 CFR 122.41(a))

3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form. (40 CFR 122.41(b), 122.21(d))

   In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application. (25 Pa. Code §§ 92a.7(b), (c))

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED April 18, 2017 **ISSUED BY**

Jenifer L. Fields, P.E.
Clean Water Program Manager
Southeast Regional Office

Permit No. PA0050504

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. A. For Outfall 001 , **Latitude** 39° 59' 9.19" , **Longitude** 75° 31' 26.33" , **River Mile Index** 18.72 , **Stream Code** 00621

Receiving Waters: Ridley Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **May 1, 2017** through **April 30, 2022**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	125	188	XXX	20	30	40	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	62	94	XXX	10	15	20	1/week	24-Hr Composite
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Suspended Solids	62	94	XXX	10.0	15.0	XXX	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab

Outfall 001, Continued (from May 1, 2017 through April 30, 2022)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Ammonia-Nitrogen Nov 1 - Apr 30	44	XXX	XXX	7.0	XXX	14	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	16	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Total Phosphorus	3.0	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):
At discharge prior to wetland for Outfall 001, and at effluent pump chamber for Outfall 002 (3).

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

I. B. For Outfall 002 , **Latitude** 40° 0' 19.00" , **Longitude** 75° 32' 5.00" , **River Mile Index** 18.72 , **Stream Code** 00621

Receiving Waters: Ridley Creek

Type of Effluent: Sewage Effluent

1. The permittee is authorized to discharge during the period from **May 1, 2017** through **April 30, 2022**.

2. Based on the anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements and Footnotes).

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	9.0 Max	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	125	188	XXX	20	30	40	1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	62	94	XXX	10	15	20	1/week	24-Hr Composite
Total Suspended Solids	62	94	XXX	10.0	15.0	XXX	1/week	24-Hr Composite
Fecal Coliform (CFU/100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	44	XXX	XXX	7.0	XXX	14	1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	16	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite

Outfall 002, Continued (from May 1, 2017 through April 30, 2022)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [2] Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	3.0	XXX	XXX	0.5	XXX	1	1/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

At discharge prior to wetland for Outfall 001, and at effluent pump chamber for Outfall 002 [3].

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS (Continued)

Additional Requirements

1. The permittee may not discharge:

   a. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water. (25 Pa Code § 92a.41(c))

   b. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code § 92a.47(a)(7), § 95.2(2))

   c. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa Code § 93.6(a))

   d. Foam or substances that produce an observed change in the color, taste, odor or turbidity of the receiving water, unless those conditions are otherwise controlled through effluent limitations or other requirements in this permit. For the purpose of determining compliance with this condition, DEP will compare conditions in the receiving water upstream of the discharge to conditions in the receiving water approximately 100 feet downstream of the discharge to determine if there is an observable change in the receiving water. (25 Pa Code § 92a.41(c))

2. The monthly average percent removal of BOD_5 or $CBOD_5$ and TSS must be at least 85% for POTW facilities on a concentration basis except where 25 Pa. Code 92a.47(g) and (h) are applicable to facilities with combined sewer overflows (CSOs) or as otherwise specified in this permit. (25 Pa. Code § 92a.47(a)(3))

3. If the permit requires the reporting of average weekly statistical results, the maximum weekly average concentration and maximum weekly average mass loading shall be reported, regardless of whether the results are obtained for the same or different weeks.

4. The permittee shall monitor the sewage effluent discharge(s) for the effluent parameters identified in the Part A limitations table(s) during all bypass events at the facility, using the sample types that are specified in the limitations table(s). Where the required sample type is "composite", the permittee must commence sample collection within one hour of the start of the bypass, wherever possible. The results shall be reported on the Daily Effluent Monitoring supplemental form (3800-FM-BPNPSM0435) and be incorporated into the calculations used to report self-monitoring data on Discharge Monitoring Reports (DMRs).

5. The total average flow for Outfalls 001 and 002 may not exceed 0.75 MGD. Outfall 002 flows reported to DEP must be measured based on pumping rate and time or other methods.

Footnotes

(1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.

(2) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

(3) Samples collected at Outfall 001 may be used to represent effluent quality at Outfall 002.

Supplemental Information

(1) The hydraulic design capacity of 0.75 million gallons per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to help determine whether a "hydraulic overload" situation exists, as defined in Title 25 Pa. Code Chapter 94.

Permit No. PA0050504

(2) The effluent limitations for Outfalls 001 and 002 were determined using effluent discharge rates of 0.75 MGD and 0.135 MGD, respectively.

(3) The organic design capacity of 2098 lbs BOD_5 per day for the treatment facility is used to prepare the annual Municipal Wasteload Management Report to determine whether an "organic overload" condition exists, as defined in 25 Pa. Code Chapter 94.

(4) Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

II. DEFINITIONS

At Outfall (XXX) means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line (XXX), or where otherwise specified.

Average refers to the use of an arithmetic mean, unless otherwise specified in this permit. (40 CFR 122.41(l)(4)(iii))

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollutant loading to surface waters of the Commonwealth. The term also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term includes activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. (25 Pa. Code § 92a.2)

Bypass means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i))

Calendar Week is defined as the seven consecutive days from Sunday through Saturday, unless the permittee has been given permission by DEP to provide weekly data as Monday through Friday based on showing excellent performance of the facility and a history of compliance. In cases when the week falls in two separate months, the month with the most days in that week shall be the month for reporting.

Clean Water Act means the Federal Water Pollution Control Act, as amended (33 U.S.C.A. §§ 1251 to 1387).

Composite Sample (for all except GC/MS volatile organic analysis) means a combination of individual samples (at least eight for a 24-hour period or four for an 8-hour period) of at least 100 milliliters (mL) each obtained at spaced time intervals during the compositing period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval is proportional to the flow rates over the time period used to produce the composite. (EPA Form 2C)

Composite Sample (for GC/MS volatile organic analysis) consists of at least four aliquots or grab samples collected during the sampling event (not necessarily flow proportioned). The samples must be combined in the laboratory immediately before analysis and then one analysis is performed. (EPA Form 2C)

Daily Average Temperature means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Daily Maximum Discharge Limitation means the highest allowable "daily discharge."

Discharge Monitoring Report (DMR) means the DEP or EPA supplied form(s) for the reporting of self-monitoring results by the permittee. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Estimated Flow means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

Geometric Mean means the average of a set of n sample results given by the nth root of their product.

Grab Sample means an individual sample of at least 100 mL collected at a randomly selected time over a period not to exceed 15 minutes. (EPA Form 2C)

Hauled-In Wastes means any waste that is introduced into a treatment facility through any method other than a direct connection to the sewage collection system. The term includes wastes transported to and disposed of within the treatment facility or other entry points within the collection system.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act. (40 CFR 122.2)

Immersion Stabilization (i-s) means a calibrated device is immersed in the wastewater until the reading is stabilized.

Indirect Discharger means a non-domestic discharger introducing pollutants to a Publicly Owned Treatment Works (POTW) or other treatment works. (25 Pa. Code § 92a.2, 40 CFR 122.2)

Industrial User means a source of Indirect Discharge. (40 CFR 403.3)

Instantaneous Maximum Effluent Limitation means the highest allowable discharge of a concentration or mass of a substance at any one time as measured by a grab sample. (25 Pa. Code § 92a.2)

Measured Flow means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

Monthly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. (25 Pa. Code § 92a.2)

Municipality means a city, town, borough, county, township, school district, institution, authority or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes. (25 Pa. Code § 92a.2)

Municipal Waste means garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility. (25 Pa. Code § 271.1)

Publicly Owned Treatment Works (POTW) means a treatment works as defined by §212 of the Clean Water Act, owned by a state or municipality. The term includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. The term also includes sewers, pipes or other conveyances if they convey wastewater to a POTW providing treatment. The term also means the municipality as defined in section 502(4) of the Clean Water Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. (25 Pa Code § 92a.2, 40 CFR 122.2)

Residual Waste means garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous. The term does not include coal refuse as defined in the Coal Refuse Disposal Control Act. The term does not include treatment sludges from coal mine drainage treatment plants, disposal of which is being carried on under and in compliance with a valid permit issued under the Clean Streams Law. (25 Pa Code § 287.1)

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii))

Stormwater means the runoff from precipitation, snow melt runoff, and surface runoff and drainage. (25 Pa. Code § 92a.2)

Stormwater Associated With Industrial Activity means the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, and as defined at 40 CFR §122.26(b)(14)(i) – (ix) and (xi) and 25 Pa. Code § 92a.2.

Toxic Pollutant means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in these organisms or their offspring. (25 Pa. Code § 92a.2)

Weekly Average Discharge Limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

III. SELF-MONITORING, REPORTING AND RECORDKEEPING

A. Representative Sampling

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(j)(1)). Representative sampling includes the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance and changes in treatment plant loading. If possible, effluent samples must be collected where the effluent is well mixed near the center of the discharge conveyance and at the approximate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized. (40 CFR 122.48, 25 Pa. Code § 92a.61)

2. Records Retention (40 CFR 122.41(j)(2))

   Except for records of monitoring information required by this permit related to the permittee's sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for 3 years from the date of the sample measurement, report or application, unless a longer retention period is required by the permit. The 3-year period shall be extended as requested by DEP or the EPA Regional Administrator.

3. Recording of Results (40 CFR 122.41(j)(3))

   For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

   a. The exact place, date and time of sampling or measurements.
   b. The person(s) who performed the sampling or measurements.
   c. The date(s) the analyses were performed.
   d. The person(s) who performed the analyses.
   e. The analytical techniques or methods used; and the associated detection level.
   f. The results of such analyses.

4. Test Procedures

   a. Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of Act 90 of 2002 (27 Pa. C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation.

   b. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be those approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, unless the method is specified in this permit or has been otherwise approved in writing by DEP. (40 CFR 122.41(j)(4), 122.44(i)(1)(iv))

   c. Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be sufficiently sensitive. A method is sufficiently sensitive when 1) the method minimum level is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or 3) the method is specified in this permit or has been otherwise approved in writing by DEP for the measured pollutant or pollutant parameter. Permittees have the option of providing matrix or sample-specific minimum levels rather than the published levels. (40 CFR 122.44(i)(1)(iv))

5. Quality/Assurance/Control

   In an effort to assure accurate self-monitoring analyses results:

   a. The permittee, or its designated laboratory, shall participate in the periodic scheduled quality assurance inspections conducted by DEP and EPA. (40 CFR 122.41(e), 122.41(i)(3))

   b. The permittee, or its designated laboratory, shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit, in accordance with 40 CFR Part 136. (40 CFR 122.41(i)(4))

B. Reporting of Monitoring Results

1. The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.44, 92a.61(i) and 40 CFR §§ 122.41(e), 122.44(i)(1))

2. The permittee shall use DEP's electronic Discharge Monitoring Report (eDMR) system to report the results of compliance monitoring under this permit (see www.dep.pa.gov/edmr). Permittees that are not using the eDMR system as of the effective date of this permit shall submit the necessary registration and trading partner agreement forms to DEP's Bureau of Clean Water (BCW) within 30 days of the effective date of this permit and begin using the eDMR system when notified by DEP BCW to do so. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))

3. Submission of a physical (paper) copy of a Discharge Monitoring Report (DMR) is acceptable under the following circumstances:

   a. For a permittee that is not yet using the eDMR system, the permittee shall submit a physical copy of a DMR to the DEP regional office that issued the permit during the interim period between the submission of registration and trading partner agreement forms to DEP and DEP's notification to begin using the eDMR system.

   b. For any permittee, as a contingency a physical DMR may be mailed to the DEP regional office that issued the permit if there are technological malfunction(s) that prevent the successful submission of a DMR through the eDMR system. In such situations, the permittee shall submit the DMR through the eDMR system within 5 days following remedy of the malfunction(s).

4. DMRs must be completed in accordance with DEP's published DMR instructions (3800-FM-BPNPSM0463). DMRs must be received by DEP no later than 28 days following the end of the monitoring period. DMRs are based on calendar reporting periods and must be received by DEP in accordance with the following schedule:

   - Monthly DMRs must be received within 28 days following the end of each calendar month.
   - Quarterly DMRs must be received within 28 days following the end of each calendar quarter, i.e., January 28, April 28, July 28, and October 28.
   - Semiannual DMRs must be received within 28 days following the end of each calendar semiannual period, i.e., January 28 and July 28.
   - Annual DMRs must be received by January 28, unless Part C of this permit requires otherwise.

5. The permittee shall complete all Supplemental Reporting forms (Supplemental DMRs) attached to this permit, or an approved equivalent, and submit the signed, completed forms as attachments to the DMR, through DEP's eDMR system. DEP's Supplemental Laboratory Accreditation Form (3800-FM-BPNPSM0189) must be completed and submitted to DEP with the first DMR following issuance of this permit, and anytime thereafter when changes to laboratories or methods occur. (25 Pa. Code §§ 92a.3(c), 92a.41(a), 92a.61(g) and 40 CFR § 122.41(l)(4))

6. The completed DMR Form shall be signed and certified by either of the following applicable persons, as defined in 25 Pa. Code § 92a.22:

- For a corporation - by a principal executive officer of at least the level of vice president, or an authorized representative, if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency - by a principal executive officer or ranking elected official.

If signed by a person other than the above and for co-permittees, written notification of delegation of DMR signatory authority must be submitted to DEP in advance of or along with the relevant DMR form. (40 CFR § 122.22(b))

7. If the permittee monitors any pollutant at monitoring points as designated by this permit, using analytical methods described in Part A III.A.4. herein, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR. (40 CFR 122.41(l)(4)(ii))

C. Reporting and Notification Requirements

1. Planned Changes to Physical Facilities – The permittee shall give notice to DEP as soon as possible but no later than 30 days prior to planned physical alterations or additions to the permitted facility. A permit under 25 Pa. Code Chapter 91 may be required for these situations prior to implementing the planned changes. A permit application, or other written submission to DEP, can be used to satisfy the notification requirements of this section.

   Notice is required when:

   a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b). (40 CFR 122.41(l)(1)(i))

   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this permit. (40 CFR 122.41(l)(1)(ii))

   c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii))

   d. The planned change may result in noncompliance with permit requirements. (40 CFR 122.41(l)(2))

2. Planned Changes to Waste Stream – Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream as a result of indirect discharges or hauled-in wastes, as specified in paragraphs 2.a. and 2.b., below. Notice shall be provided on the "Planned Changes to Waste Stream" Supplemental Report (3800-FM-BPNPSM0482), available on DEP's website. The permittee shall provide information on the quality and quantity of waste introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW (40 CFR 122.42(b)(3)). The Report shall be sent via Certified Mail or other means to confirm DEP's receipt of the notification. DEP will determine if the submission of a new application and receipt of a new or amended permit is required.

   a. Introduction of New Pollutants (25 Pa. Code § 92a.24(a), 40 CFR 122.42(b)(1))

      New pollutants are defined as parameters that meet one or more of the following criteria:

(i) Any pollutants that were not detected in the facilities' influent waste stream as reported in the permit application; and have not been approved to be included in the permittee's influent waste stream by DEP in writing.

(ii) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants (40 CFR 122.42(b)(1)).

The permittee shall provide notification of the introduction of new pollutants in accordance with paragraph 2 above. The permittee may not authorize the introduction of new pollutants until the permittee receives DEP's written approval.

b. Increased Loading of Approved Pollutants (25 Pa. Code § 92a.24(a), 40 CFR 122.42(b)(2))

Approved pollutants are defined as parameters that meet one or more of the following criteria:

(i) Were detected in the facilities' influent waste stream as reported in the permittee's permit application; or have been previously approved to be included in the permittee's influent waste stream by DEP in writing.

(ii) Have an effluent limitation or monitoring requirement in this permit.

The permittee shall provide notification of the introduction of increased influent loading (lbs/day) of approved pollutants in accordance with paragraph 2 above when (1) the cumulative increase in influent loading (lbs/day) exceeds 20% of the maximum loading reported in the permit application, or a loading previously approved by DEP and/or EPA, or (2) may cause an exceedance in the effluent of Effluent Limitation Guidelines (ELGs) or limitations in Part A of this permit, or (3) may cause interference or pass through at the POTW, or (4) may cause exceedances of the applicable water quality standards in the receiving stream. Unless specified otherwise in this permit, if DEP does not respond to the notification within 30 days of its receipt, the permittee may proceed with the increase in loading. The acceptance of increased loading of approved pollutants may not result in an exceedance of ELGs or effluent limitations, may not result in a hydraulic or organic overload condition as defined in 25 Pa. Code § 94.1, and may not cause exceedances of the applicable water quality standards in the receiving stream.

3. Reporting Requirements for Hauled-In Wastes

a. Receipt of Residual Waste

(i) The permittee shall document the receipt of all hauled-in residual wastes (including but not limited to wastewater from oil and gas wells, food processing waste, and landfill leachate), as defined at 25 Pa. Code § 287.1, that are received for processing at the treatment facility. The permittee shall report hauled-in residual wastes on a monthly basis to DEP on the "Hauled In Residual Wastes" Supplemental Report (3800-FM-BPNPSM0450) as an attachment to the DMR. If no residual wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report. The information used to develop the Report shall be retained by the permittee for five years from the date of receipt and must be made available to DEP or EPA upon request.

(1) The dates that residual wastes were received.

(2) The volume (gallons) of wastes received.

(3) The license plate number of the vehicle transporting the waste to the treatment facility.

(4) The permit number(s) of the well(s) where residual wastes were generated, if applicable.

(5) The name and address of the generator of the residual wastes.

(6) The type of wastewater.

The transporter of residual waste must maintain these and other records as part of the daily operational record (25 Pa. Code § 299.219). If the transporter is unable to provide this information or the permittee has not otherwise received the information from the generator, the residual wastes shall not be accepted by the permittee until such time as the permittee receives such information from the transporter or generator.

(ii) The following conditions apply to the characterization of residual wastes received by the permittee:

(1) If the generator is required to complete a chemical analysis of residual wastes in accordance with 25 Pa. Code § 287.51, the permittee must receive and maintain on file a chemical analysis of the residual wastes it receives. The chemical analysis must conform to the Bureau of Waste Management's Form 26R except as noted in paragraph (2), below. Each load of residual waste received must be covered by a chemical analysis if the generator is required to complete it.

(2) For wastewater generated from hydraulic fracturing operations ("frac wastewater") within the first 30 production days of a well site, the chemical analysis may be a general frac wastewater characterization approved by DEP. Thereafter, the chemical analysis must be waste-specific and be reported on the Form 26R.

b. Receipt of Municipal Waste

(i) The permittee shall document the receipt of all hauled-in municipal wastes (including but not limited to septage and liquid sewage sludge), as defined at 25 Pa. Code § 271.1, that are received for processing at the treatment facility. The permittee shall report hauled-in municipal wastes on a monthly basis to DEP on the "Hauled In Municipal Wastes" Supplemental Report (3800-FM-BPNPSM0437) as an attachment to the DMR. If no municipal wastes were received during a month, submission of the Supplemental Report is not required.

The following information is required by the Supplemental Report:

(1) The dates that municipal wastes were received.

(2) The volume (gallons) of wastes received.

(3) The BOD_5 concentration (mg/l) and load (lbs) for the wastes received.

(4) The location(s) where wastes were disposed of within the treatment facility.

(ii) Sampling and analysis of hauled-in municipal wastes must be completed to characterize the organic strength of the wastes, unless composite sampling of influent wastewater is performed at a location downstream of the point of entry for the wastes. The influent BOD_5 characterization for the treatment facility, as reported in the annual Municipal Wasteload Management Report per 25 Pa. Code Chapter 94, must be representative of the hauled-in municipal wastes received.

4. Unanticipated Noncompliance or Potential Pollution Reporting

   a. Immediate Reporting - The permittee shall immediately report any incident causing or threatening pollution in accordance with the requirements of 25 Pa. Code §§ 91.33 and 92a.41(b).

      (i) If, because of an accident, other activity or incident a toxic substance or another substance which would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, the permittee shall immediately notify DEP by telephone of the location and nature of the danger. Oral notification to the Department is required as soon as possible, but no later than 4 hours after the permittee becomes aware of the incident causing or threatening pollution.

      (ii) If reasonably possible to do so, the permittee shall immediately notify downstream users of the waters of the Commonwealth to which the substance was discharged. Such notice shall include the location and nature of the danger.

      (iii) The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove the residual substances contained thereon or therein from the ground and from the affected waters of this Commonwealth to the extent required by applicable law.

   b. The permittee shall report any noncompliance which may endanger health or the environment in accordance with the requirements of 40 CFR 122.41(l)(6). These requirements include the following obligations:

      (i) 24 Hour Reporting - The permittee shall orally report any noncompliance with this permit which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):

         (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;

         (2) Any upset which exceeds any effluent limitation in the permit; and

         (3) Violation of the maximum daily discharge limitation for any of the pollutants listed in the permit as being subject to the 24-hour reporting requirement.

      (ii) Written Report - A written submission shall also be provided within 5 days of the time the permittee becomes aware of any noncompliance which may endanger health or the environment. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

      (iii) Waiver of Written Report - DEP may waive the written report on a case-by-case basis if the associated oral report has been received within 24 hours from the time the permittee becomes aware of the circumstances which may endanger health or the environment. Unless such a waiver is expressly granted by DEP, the permittee shall submit a written report in accordance with this paragraph. (40 CFR 122.41(l)(6)(iii))

5. Other Noncompliance

   The permittee shall report all instances of noncompliance not reported under paragraph C.4 of this section or specific requirements of compliance schedules, at the time DMRs are submitted, on the Non-Compliance Reporting Form (3800-FM-BPNPSM0440). The reports shall contain the information listed in paragraph C.4.b.(ii) of this section. (40 CFR 122.41(l)(7))

PART B

I. MANAGEMENT REQUIREMENTS

A. Compliance

1. The permittee shall comply with all conditions of this permit. If a compliance schedule has been established in this permit, the permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit. (40 CFR 122.41(a)(1))

2. The permittee shall submit reports of compliance or noncompliance, or progress reports as applicable, for any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline. (25 Pa. Code § 92a.51(c), 40 CFR 122.47(a)(4))

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term in accordance with 25 Pa. Code § 92a.72 and 40 CFR 122.41(f).

2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. (40 CFR 122.41(f))

3. In the absence of DEP action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions. (40 CFR 122.41(a)(1))

C. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. (40 CFR 122.41(h))

2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this permit. (40 CFR 122.41(h))

3. Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to DEP, it shall promptly submit the correct and complete facts or information. (40 CFR 122.41(l)(8))

4. The permittee shall provide the following information in the annual Municipal Wasteload Management Report, required under the provisions of Title 25 Pa. Code Chapter 94:

   a. The requirements identified in 25 Pa. Code § 94.12.

   b. The identity of any indirect discharger(s) served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the indirect discharger.

   c. A "Solids Management Inventory" if specified in Part C of this permit.

   d. The total volume of hauled-in residual and municipal wastes received during the year, by source.

   e. The Annual Report requirements for permittees required to implement an industrial pretreatment program listed in Part C, as applicable.

D. General Pretreatment Requirements

1. Any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (MGD) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to Pretreatment Standards will be required to establish a POTW Pretreatment Program unless specifically exempted by the Approval Authority. A POTW with a design flow of 5 MGD or less may be required to develop a POTW Pretreatment Program if the Approval Authority finds that the nature or volume of the industrial influent, treatment process upsets, violations of effluent limitations, contamination of sludge, or other circumstances warrant in order to prevent interference or pass through. (40 CFR 403.8)

2. Each POTW with an approved Pretreatment Program pursuant to 40 CFR 403.8 shall develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5(a)(1) and (b), and shall continue to develop these limits as necessary and effectively enforce such limits. This condition applies, for example, when there are planned changes to the waste stream as identified in Part A III.C.2. If the permittee is required to develop or continue implementation of a Pretreatment Program, detailed requirements will be contained in Part C of this permit.

3. For all POTWs, where pollutants contributed by indirect dischargers result in interference or pass through, and a violation is likely to recur, the permittee shall develop and enforce specific limits for indirect dischargers and other users, as appropriate, that together with appropriate facility or operational changes, are necessary to ensure renewed or continued compliance with this permit or sludge use or disposal practices. Where POTWs do not have an approved Pretreatment Program, the permittee shall submit a copy of such limits to DEP when developed. (25 Pa. Code § 92a.47(d))

E. Proper Operation and Maintenance

1. The permittee shall employ operators certified in compliance with the Water and Wastewater Systems Operators Certification Act (63 P.S. §§ 1001-1015.1).

2. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit. (40 CFR 122.41(e))

F. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR 122.41(d))

G. Bypassing

1. Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions in paragraphs two, three and four of this section. (40 CFR 122.41(m)(2))

2. Other Bypassing - In all other situations, bypassing is prohibited and DEP may take enforcement action against the permittee for bypass unless:

   a. A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage." (40 CFR 122.41(m)(4)(i)(A))

b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance. (40 CFR 122.41(m)(4)(i)(B))

c. The permittee submitted the necessary notice required in paragraph G.4 below. (40 CFR 122.41(m)(4)(i)(C))

3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in paragraph G.2 above. (40 CFR 122.41(m)(4)(ii))

4. Notice

a. Anticipated Bypass – If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the bypass. (40 CFR 122.41(m)(3)(i))

b. Unanticipated Bypass – The permittee shall submit oral notice of any other unanticipated bypass within 24 hours, regardless of whether the bypass may endanger health or the environment or whether the bypass exceeds effluent limitations. The notice shall be in accordance with Part A III.C.4.b.

H. Sanitary Sewer Overflows (SSOs)

An SSO is an overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility. SSOs are not authorized under this permit. The permittee shall immediately report any SSO to DEP in accordance with Part A III.C.4 of this permit.

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality, who violates any provision of this permit; any rule, regulation or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

B. Falsifying Information

Any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or

- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or noncompliance)

Shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 Pa.C.S.A § 4904 and 40 CFR 122.41(j)(5) and (k)(2).

C. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (40 CFR 122.41(c))

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law, and Title 25 Pa. Code Chapter 92a and 40 CFR 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law:

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit; (40 CFR 122.41(i)(1))

2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit; (40 CFR 122.41(i)(2))

3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and (40 CFR 122.41(i)(3))

4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location. (40 CFR 122.41(i)(4))

B. Transfer of Permits

1. Transfers by modification. Except as provided in paragraph 2 of this section, a permit may be transferred by the permittee to a new owner or operator only if this permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (40 CFR 122.61(a))

2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:

   a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b. of this section; (40 CFR 122.61(b)(1))

   b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them; and (40 CFR 122.61(b)(2))

   c. DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue this permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b. of this section. (40 CFR 122.61(b)(3))

d. The new permittee is in compliance with existing DEP issued permits, regulations, orders and schedules of compliance, or has demonstrated that any noncompliance with the existing permits has been resolved by an appropriate compliance action or by the terms and conditions of the permit (including compliance schedules set forth in the permit), consistent with 25 Pa. Code § 92a.51 (relating to schedules of compliance) and other appropriate Department regulations. (25 Pa. Code § 92a.71)

3. In the event DEP does not approve transfer of this permit, the new owner or operator must submit a new permit application.

C. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege. (40 CFR 122.41(g))

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit. (40 CFR 122.41(b))

E. Other Laws

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

IV. ANNUAL FEE

Permittees shall pay an annual fee in accordance with 25 Pa. Code § 92a.62. Annual fee amounts are specified in the following schedule and are due on each anniversary of the effective date of the most recent new or reissued permit. All flows identified in the schedule are annual average design flows. (25 Pa. Code § 92a.62)

Small Flow Treatment Facility (SRSTP and SFTF)	$0
Minor Sewage Facility < 0.05 MGD (million gallons per day)	$250
Minor Sewage Facility ≥ 0.05 and < 1 MGD	$500
Minor Sewage Facility with CSO (Combined Sewer Overflow)	$750
Major Sewage Facility ≥ 1 and < 5 MGD	$1,250
Major Sewage Facility ≥ 5 MGD	$2,500
Major Sewage Facility with CSO	$5,000

As of the effective date of this permit, the facility covered by the permit is classified in the following fee category: **Minor Sewage Facility >=0.05 and <1 MGD**.

Invoices for annual fees will be mailed to permittees approximately three months prior to the due date. In the event that an invoice is not received, the permittee is nonetheless responsible for payment. Throughout a five year permit term, permittees will pay four annual fees followed by a permit renewal application fee in the last year of permit coverage. Permittees may contact the DEP at 717-787-6744 with questions related to annual fees. The fees identified above are subject to change in accordance with 25 Pa. Code § 92a.62(e).

Payment for annual fees shall be remitted to DEP at the address below by the anniversary date. Checks should be made payable to the Commonwealth of Pennsylvania.

PA Department of Environmental Protection
Bureau of Clean Water
Re: Chapter 92a Annual Fee
P.O. Box 8466
Harrisburg, PA 17105-8466

PART C

I. OTHER REQUIREMENTS

A. No storm water from pavements, area ways, roofs, foundation drains or other sources shall be directly admitted to the sanitary sewers associated with the herein approved discharge.

B. The approval herein given is specifically made contingent upon the permittee acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance or replacement of all sewers or sewerage structures associated with the herein approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

C. Collected screenings, slurries, sludges, and other solids shall be handled and disposed of in compliance with 25 Pa. Code, Chapters 271, 273, 275, 283, and 285 (related to permits and requirements for landfilling, land application, incineration, and storage of sewage sludge), Federal Regulation 40 CFR 257, Pennsylvania Clean Streams Law, Pennsylvania Solid Waste Management Act of 1980, and the Federal Clean Water Act and its amendments. The permittee is responsible to obtain or assure that contracted agents have all necessary permits and approvals for the handling, storage, transport, and disposal of solid waste materials generated as a result of wastewater treatment.

D. Notification of the designation of the responsible operator must be submitted to the permitting agency by the permittee within 60 days after the effective date of the permit and from time to time thereafter as the operator is replaced.

Supplemental Form Inventory

The following supplemental forms (indicated in the check box column) are attached to this permit and must be completed and submitted to DEP in accordance with the permit and the supplemental form instructions. If the eDMR system is used to submit DMR reports, the spreadsheet versions of these supplemental forms, where applicable, should be used and attached to the eDMR submissions. A link to DEP's supplemental form website is available when logging into the eDMR system.

Check Box	Supplemental Form Name and No.
☒	Daily Effluent Monitoring (3800-FM-BPNPSM0435)
☒	Influent & Process Control (3800-FM-BPNPSM0436)
☒	Hauled in Municipal Wastes (3800-FM-BPNPSM0437)
☒	Sewage Sludge/Biosolids Production and Disposal (3800-FM-BPNPSM0438)
☐	Chemical Additives Usage (3800-FM-BPNPSM0439)
☒	Non-Compliance Reporting Form (3800-FM-BPNPSM0440)
☐	CSO Monthly Summary Report (3800-FM-BPNPSM0441)
☐	CSO Detailed Report (3800-FM-BPNPSM0442)
☐	Groundwater Monitoring Data Report (3800-FM-BPNPSM0443)
☐	TMDL Annual Load Summary (3800-FM-BPNPSM0448)
☐	Land Application Systems (3800-FM-BPNPSM0449)
☐	Hauled in Residual Wastes (3800-FM-BPNPSM0450)
☐	Surface Water Monitoring Data Report (3800-FM-BPNPSM0461)
☒	Lab Accreditation Form (3800-FM-BPNPSM0189)
☐	Whole Effluent Toxicity Test Summary Report (3800-FM-BPNPSM0485)
☐	Storm Water Annual Inspection Form (3800-PM-WSFR0083v)
☐	Storm Water Additional Information (3800-PM-WSFR0083t)
☐	Other:

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INSTRUCTIONS FOR COMPLETING DAILY EFFLUENT MONITORING SUPPLEMENTAL REPORT

Use this form to report daily monitoring results for the parameters that must be monitored in effluent for compliance with the permit. Results for influent parameters are normally reported on Form 3800-FM-BPNPSM0436.

1. Enter Facility Name, Municipality, County, Watershed No., Laboratories, Month, Year, NPDES Permit No., Outfall No., and Permit Expiration Date (it is noted that this information may be pre-populated if you have received this form with your permit). For Laboratories, list the names of all laboratories where samples were analyzed during the month, including on-site analysis.

2. In the column headers, below "Effluent Parameters," enter the names of parameters in the permit. Since limited space is provided, abbreviation may be necessary. If there are more parameters for an outfall than columns provided on the form, attach an additional sheet.

3. Below parameter names, and to the right of "Q" (Qualifier) column headers, enter the units associated each parameter (it is noted that this information may be pre-populated if you have received this form with your permit).

4. Enter monitoring results for parameters in the rows corresponding to the day of the month in which samples were collected. Enter results exactly as reported by the laboratory, or if measured with on-site equipment, to the level of precision recommended by the equipment manufacturer. Enter data qualifiers such as "<," ">," "J," and others in the "Q" column.

5. Calculate and report average values at the bottom of the table in accordance with the DMR Instructions (3800-FM-BPNPSM0463) and DEP guidance (3800-BK-DEP3047). Note – for bacteria, calculate and report the geometric mean value.

6. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0435 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: East Goshen Municipal Authority STP & Sewer System Month: _____
Year: _____
Municipality: East Goshen Township County: Chester NPDES Permit No.: PA0050504 Outfall No.: 002
Watershed: 3-G Renewal application due **180 days** prior to expiration
Laboratories: _____ This permit will expire on _____

Day	Effluent Parameters																	
	Flow		pH		DO		CBOD5		TSS		Fecal Coliform		Ammonia		Total Phosphorus			
	Q	*MGD*	Q	*S.U.*	Q	*mg/L*	Q	*mg/L*	Q	*mg/L*	Q	*CFU/100 ml*	Q	*mg/L*	Q	*mg/L*	Q	
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Avg																		

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____
Title: _____ Date: _____

3800-FM-BPNPSM0435 3/2012

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: East Goshen Municipal Authority STP & Sewer System Month: _____
Year: _____
Municipality: East Goshen Township County: Chester NPDES Permit No.: PA0050504 Outfall No.: 001
Watershed: 3-G Renewal application due **180 days** prior to expiration
Laboratories: _____ This permit will expire on _____

	Effluent Parameters																	
	Flow		pH		DO		CBOD5		TSS		Fecal Coliform		Ammonia		Total Phosphorus			
Day	Q	*MGD*	Q	*S.U.*	Q	*mg/L*	Q	*mg/L*	Q	*mg/L*	Q	*CFU/100 ml*	Q	*mg/L*	Q	*mg/L*	Q	
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Prepared By: _____ Signature: _____

Title: _____ Date: _____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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INSTRUCTIONS FOR COMPLETING INFLUENT & PROCESS CONTROL SUPPLEMENTAL REPORT

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., and Permit Expiration Date.

2. For **Influent**, enter daily average Influent Flow (MGD) (if an influent flow meter is in use), daily influent BOD_5 or BOD_5 concentrations (mg/l) and loads (lbs), and daily influent TSS concentrations (mg/l) and loads (lbs). Calculate loads by multiplying daily average flow (MGD) by daily average concentration (mg/l) and a conversion factor of 8.34. If an influent flow meter is not in use, you may use results from an effluent flow meter.

3. For **Process Control**, enter daily average Mixed Liquor Suspended Solids (MLSS) (mg/l) and daily average Aeration Dissolved Oxygen (DO) for aerobic biological treatment systems, and total daily Sludge Wasted (removed from biological treatment), in gallons, for all treatment system types. If a parameter does not apply to your facility, leave the column blank. Information for other parameters such as Return Activated Sludge (RAS) Rate, Recirculation Rate (for fixed media treatment systems), Sludge Blanket Thickness, Sludge Volume Index, and others may be requested by the DEP office that issued the permit.

4. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0436 3/2012

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT – INFLUENT & PROCESS CONTROL

Facility Name: East Goshen Municipal Authority STP & Sewer System
Municipality: East Goshen Township County: Chester
Watershed: 3-G

Month: _____ Year: _____
NPDES Permit No.: PA0050504
Renewal application due **180 days** prior to expiration
This permit will expire on

Day	Influent					Process Control				
	Flow (MGD)	BOD5 (mg/l)	BOD5 (lbs)	TSS (mg/l)	TSS (lbs)	Aeration MLSS (mg/l)	Aeration DO (mg/l)	Sludge Wasted (gallons)		
1										
2										
3										
4										
5										
6										
7										
8										
9										
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Avg										
Max										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

INSTRUCTIONS FOR COMPLETING HAULED IN MUNICIPAL WASTES SUPPLEMENTAL REPORT

This form is intended for documenting the receipt of municipal wastes including sewage sludge, septage and other municipal wastewaters hauled in from other facilities for processing and/or disposal at your facility. This form should not be used for reporting receipt of residual wastes (e.g., food processing wastes, oil and gas wastewater, landfill leachate, etc.) - please use Form 3800-FM-BPNPSM0450 for reporting this information.

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., and Permit Expiration Date.

2. For septage, sludge and other wastewaters (specify type in the space provided), record the daily volume received in gallons, the daily BOD_5 concentration (average), the daily BOD_5 load in lbs (average), and the disposal location. For disposal location, specify the plant location or tank receiving hauled in wastes (e.g., headworks, primarily clarifier, digester, etc.).

3. Determine daily BOD_5 concentrations in mg/l by sampling loads in accordance with the permit or otherwise as determined by the facility. Periodic sampling of loads is encouraged to improve confidence in reported results.

4. Calculate the average, daily total and monthly total values and report the values in the spaces provided.

5. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0437 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT – HAULED IN MUNICIPAL WASTES

Facility Name: East Goshen Municipal Authority STP & Sewer System
Municipality: East Goshen Township County: Chester
Watershed: 3-G

Month: _____ Year: _____
NPDES Permit No.: PA0050504
Renewal application due **180 days** prior to expiration
This permit will expire on

Day	SEPTAGE				SLUDGE				OTHER (specify):				DAILY TOTALS	
	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (mg/l)	BOD_5 (lbs)	Disposal Location	Gallons	BOD_5 (lbs)
1														
2														
3														
4														
5														
6														
7														
8														
9														
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27														
28														
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30														
31														
Avg												Monthly Totals:		

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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INSTRUCTIONS FOR COMPLETING SEWAGE SLUDGE / BIOSOLIDS SUPPLEMENTAL REPORT

1. Enter Facility Name, Municipality, County, Watershed No., Month, Year, NPDES Permit No., and Permit Expiration Date.

Biosolids Production Information

2. For each off-site removal event for liquid sewage sludge or biosolids and for dewatered sewage sludge or biosolids, and for each event where dewatered sewage sludge or biosolids are incinerated on-site, list the date of the event, identify the gallons (liquid) or tons (dewatered) removed or incinerated and the percent solids (e.g., 10%, 20%, etc.) Report only sewage sludge or biosolids that have been removed from the plant digesters and other solids which have been **permanently** removed from the treatment process. Do **not** include sewage sludge or biosolids from other facilities that are processed at your facility. (If there were no off-site removal events during the month, check the box above the table).

   Calculate dry tons for liquid sewage sludge or biosolids by multiplying the volume (gallons) by the percent solids and by a conversion factor of 0.0000417. For example, if 2,500 gallons of liquid biosolids is removed, and the percent solids is 3.0%, dry tons is calculated as:

   2,500 gallons x 3.0% x 0.0000417 = 0.31 dry tons

   Calculate dry tons for dewatered sewage sludge or biosolids by multiplying the tons dewatered by the percent solids and by a conversion factor of 0.01. For example, if 5 tons of dewatered biosolids is removed, and the percent solids is 50%, dry tons is calculated as:

   5 tons x 50% x 0.01 = 2.5 dry tons

   The **% Solids** of liquid or dewatered sewage sludge or biosolids must be determined periodically through laboratory testing. Do not estimate or guess this value. An acceptable test method is method 2540B in *Standard Methods for the Examination of Water and Wastewater*, 18th edition, where samples are dried at 103-105°C. Other references such as ASTM may have equivalent tests which are also acceptable.

Biosolids and Incinerator Ash Disposal and Beneficial Use Information

3. Report sewage sludge, biosolids, and ash disposal and beneficial use information by disposal/application site. There are columns for four possible sites per month - if more sites are needed, attach additional pages. For each Site Name, listed at the top of the column, enter the Municipality and County of the site, the DEP Permit No. (i.e., Biosolids permit number for land application, landfill waste management permit number, etc.), Type of Material (sewage sludge, biosolids, or incinerator ash), Dry Tons Applied/Disposed at the site for the month, Type of Disposal/Use (e.g., reed beds, agricultural utilization, composting, landfill, other treatment plant, etc.) and the name of the hauler (company or individual name).

4. Type the name of the person who prepared the form, the person's job title, and sign and date the form after reading the certification statement.

3800-FM-BPNPSM0438 3/2012

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: East Goshen Municipal Authority STP & Sewer System
Municipality: East Goshen Township County: Chester
Watershed: 3-G

Month: _____ Year: _____
NPDES Permit No.: PA0050504
Renewal application due **180 days** prior to expiration
This permit will expire on

SEWAGE SLUDGE/BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
		TOTAL:			TOTAL:			TOTAL:	

SEWAGE SLUDGE/BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION
(Identify all sites where sewage sludge/biosolids or ash were disposed or land applied)

Site Name				
Municipality				
County				
DEP Permit No.				
Type of Material*				
Dry Tons Applied/Disposed				
Type of Disposal/Use*				
Hauler Name				

*See Instructions for explanation

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: _____ Signature: _____

Title: _____ Date: _____

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

INSTRUCTIONS FOR COMPLETING NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). If you are reporting other non-compliance events, and the deadline for a written report (e.g., 5 days) does not coincide with your submission of the DMR, this form should be submitted separately to the Department by the reporting deadline set forth in the permit.

If you are unsure of whether an incident constitutes non-compliance that may endanger health or the environment, it is recommended that you notify the Department verbally as soon as possible after you become aware of the incident. Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.

Instructions:

1. Enter the name of the facility, the municipality and county where it is located, the month and year when violations occurred, and the NPDES or WQM permit number for the facility.

2. If there were violations of permit effluent limitations during the month, check the box next to "Violations of Permit Effluent Limitations." (Note – if using the electronic version of this form, check the boxes first, and then select Tools – Unprotect Document to enter additional information). Enter the date of the violation (if a violation of a minimum or maximum limit, the date of sample collection, or if a violation of an average limit, the end of the monitoring period), the parameter name, the permit limit and units, the statistical code (e.g., "MIN", "MAX", "MO AVG", etc.), the measured result and units, the cause of the violation and the corrective action taken. **If there are more than two violations during the monitoring period and/or if the space provided is insufficient to explain the cause or corrective action, please attach additional pages.**

3. If there are Sanitary Sewer Overflow (SSO) discharges or other unauthorized discharges from the facility (e.g., spills, leaks, etc.) that enter or have the potential to enter waters of the Commonwealth, including groundwater, notify DEP by phone as soon as possible, and document the discharge on this form by checking the box next to "Sanitary Sewer Overflows and Other Unauthorized Discharges." Record the event (discharge) date, the substance discharged (e.g., sewage, on-site chemicals, etc.), the location where the discharge occurred (e.g., manhole number, pump station name, equipment description, etc.), the volume discharged (gallons), the approximate duration of the discharge (hours), the receiving waters (name of stream or groundwater), the impact on the receiving waters, if observed (e.g., solids deposition, foam, fish kill, etc.), the cause of the discharge, and the date on which the Department was verbally notified. **If there are more than two discharge events during the monitoring period and/or if the space provided is insufficient to explain the discharge, please attach additional pages.**

4. If there are other violations of the permit, check the box next to "Other Permit Violations," and check the appropriate box that describes the violation type. If not identified on the form, check the box next to "Other" and provide a written explanation. **If the space provided is insufficient to explain the violation, please attach additional pages.**

5. Type your name and title and sign and date the form after reading the certification statement.

If you have questions about completing this form, contact the Clean Water Program Operations Section of the Department in your region:

Southeast Region – (484) 250-5970
Northeast Region – (570) 826-2553
Southcentral Region – (717) 705-4707
Northcentral Region – (570) 327-3636
Southwest Region – (412) 442-4060
Northwest Region – (814) 332-6942

3800-FM-BPNPSM0440 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

NON-COMPLIANCE REPORTING FORM

Use this supplemental form to report all permit violations and any other non-compliance that may endanger health or the environment, in accordance with your permit. Complete all sections that apply. If you are reporting violations of permit limits, monitoring requirements or schedules that do not pose an immediate threat to health or the environment, you may attach this form to the Discharge Monitoring Report (DMR). **Title 25, Pa. Code §§ 91.33 and 91.34 (regarding incidents causing or threatening pollution and activities utilizing pollutants, respectively), in part requires immediate notification by telephone to the Department of pollution incidents, remediation, and may require an additional report on the incident or plan of pollution prevention measures.** If you are reporting other non-compliance events, and the reporting deadline does not coincide with your submission of the DMR, it should be submitted separately to the Department by the reporting deadline set forth in the permit. See instructions for more information.

Facility Name: East Goshen Municipal Authority STP & Sewer System Month: _____ Year: _____

Municipality: East Goshen Township County: Chester Permit No.: PA0050504

☐ **Violations of Permit Effluent Limitations***

Date	Parameter	Permit Limit	Units	Statistical Code	Result	Units	Cause of Violation	Corrective Action Taken

☐ **Sanitary Sewer Overflows and Other Unauthorized Discharges***

Event Date	Substance Discharged	Location	Volume (gals)	Duration (hrs)	Receiving Waters	Impact on Waters	Cause of Discharge	Date DEP Notified

☐ **Other Permit Violations***

☐ Sample collection less frequent than required Explain _____
☐ Sample type not in compliance with permit Explain _____
☐ Violation of permit schedule Explain _____
☐ Other Explain _____
☐ Other Explain _____

*** If the space provided is not sufficient to record all information, please attach additional sheets.**

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Prepared By: _____ Signature: _____

Title: _____ Date: _____

3800-FM-BPNPSM0189 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SUPPLEMENTAL LABORATORY ACCREDITATION FORM[1]

Permittee Name: East Goshen Municipal Authority Chester County

Address: 1580 Paoli Pike
West Chester, PA 19380-6107

PERMIT NUMBER	MONITORING PERIOD Year/Month/Day						
PA0050504				TO			

PARAMETER	ANALYSIS METHOD	LAB NAME	LAB ID NUMBER[2]

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibly of fine and imprisonment for knowing violations.

Name/Title Principal Executive Officer **Phone:** _____ **Signature of Principal Executive Officer or Authorized Agent**

_____ **Date:** _____ _____

[1] Submit this form with the first Discharge Monitoring Report (DMR) or Annual Report, where sample results are submitted to the Department for compliance purposes. You do not need to send this form to the Department again UNLESS there has been a change to the lab(s), parameter(s) or method(s) of analysis.

[2] For parameter(s) covered under accreditation-by-rule, submit the lab's registration number in lieu of an accreditation number.

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PRIMARY FACILITY NAME/ADDRESS

NAME: Ridley Creek STP
CLIENT: East Goshen Municipal Authority / Chester County
ADDRESS: 1580 Paoli Pike / West Chester, PA 19380-6107
LOCATION: East Goshen Township / Chester County
WATERSHED: 3-G

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: May 1, 2017
DMR Effective To: April 30, 2022
Permit Expires: April 30, 2022
Permit Application Due: November 1, 2021

___ Check Here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT			MGD	XXX	XXX	XXX	XXX		Continuous	Measured
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max								
pH	SAMPLE MEASUREMENT			XXX	6.0 Min	XXX	9.0 Max	S.U.		1/day	Grab
	PERMIT REQUIREMENT	XXX	XXX								
Dissolved Oxygen	SAMPLE MEASUREMENT			XXX	5.0 Min	XXX	XXX	mg/L		1/day	Grab
	PERMIT REQUIREMENT	XXX	XXX								
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	SAMPLE MEASUREMENT			lbs/day	XXX	20 Avg Mo	30 Wkly Avg	mg/L		1/week	24-Hr Composite
	PERMIT REQUIREMENT	125 Avg Mo	188 Wkly Avg								
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	SAMPLE MEASUREMENT			lbs/day	XXX	10 Avg Mo	15 Wkly Avg	mg/L		1/week	24-Hr Composite
	PERMIT REQUIREMENT	62 Avg Mo	94 Wkly Avg								
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day	XXX	Report Avg Mo	XXX	mg/L		1/week	24-Hr Composite
	PERMIT REQUIREMENT	Report Avg Mo	XXX								

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).		TELEPHONE		DATE		
			AREA CODE	NUMBER	YEAR	MO	DAY
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT					

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PRIMARY FACILITY NAME/ADDRESS

NAME: Ridley Creek STP
CLIENT: East Goshen Municipal Authority / Chesler County
ADDRESS: 1580 Paoli Pike / West Chester, PA 19380-6107
LOCATION: East Goshen Township / Chester County
WATERSHED: 3-G

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: May 1, 2017
DMR Effective To: April 30, 2022
Permit Expires: April 30, 2022
Permit Application Due: November 1, 2021

___ Check Here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Suspended Solids Raw Sewage Influent	SAMPLE MEASUREMENT			lbs/day				mg/L			
	PERMIT REQUIREMENT	Report Avg Mo	XXX		XXX	Report Avg Mo	XXX			1/week	24-Hr Composite
Total Suspended Solids	SAMPLE MEASUREMENT			lbs/day				mg/L			
	PERMIT REQUIREMENT	62 Avg Mo	94 Wkly Avg		XXX	10.0 Avg Mo	15.0 Wkly Avg			1/week	24-Hr Composite
Fecal Coliform	SAMPLE MEASUREMENT			XXX				CFU/100 ml			
	PERMIT REQUIREMENT	XXX	XXX		XXX	200 Geo Mean	1000 IMAX			1/week	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	SAMPLE MEASUREMENT			lbs/day				mg/L			
	PERMIT REQUIREMENT	44 Avg Mo	XXX		XXX	7.0 Avg Mo	XXX			1/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	SAMPLE MEASUREMENT			lbs/day				mg/L			
	PERMIT REQUIREMENT	16 Avg Mo	XXX		XXX	2.5 Avg Mo	XXX			1/week	24-Hr Composite
Total Phosphorus	SAMPLE MEASUREMENT			lbs/day				mg/L			
	PERMIT REQUIREMENT	3.0 Avg Mo	XXX		XXX	0.5 Avg Mo	XXX			1/week	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).		TELEPHONE		DATE		
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PRIMARY FACILITY NAME/ADDRESS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME	Ridley Creek STP
CLIENT	East Goshen Municipal Authority Chester County
ADDRESS	1580 Paoli Pike
	West Chester, PA 19380-6107
LOCATION	East Goshen Township
	Chester County
WATERSHED	3-G

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: May 1, 2017
DMR Effective To: April 30, 2022
Permit Expires: April 30, 2022
Permit Application Due: November 1, 2021

___ Check Here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	Report Avg Mo	Report Daily Max	MGD	XXX	XXX	XXX	XXX		Continuous	Measured
pH	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	XXX	XXX	XXX	6.0 Min	XXX	9.0 Max	S.U.		1/day	Grab
Dissolved Oxygen	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	XXX	XXX	XXX	5.0 Min	XXX	XXX	mg/L		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	125 Avg Mo	188 Wkly Avg	lbs/day	XXX	20 Avg Mo	30 Wkly Avg	mg/L		1/week	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	62 Avg Mo	94 Wkly Avg	lbs/day	XXX	10 Avg Mo	15 Wkly Avg	mg/L		1/week	24-Hr Composite
Total Suspended Solids	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT	62 Avg Mo	94 Wkly Avg	lbs/day	XXX	10.0 Avg Mo	15.0 Wkly Avg	mg/L		1/week	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).					
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PRIMARY FACILITY NAME/ADDRESS

NAME: Ridley Creek STP
CLIENT: East Goshen Municipal Authority / Chester County
ADDRESS: 1580 Paoli Pike / West Chester, PA 19380-6107
LOCATION: East Goshen Township / Chester County
WATERSHED: 3-G

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY

Reporting Frequency: Monthly
DMR Effective From: May 1, 2017
DMR Effective To: April 30, 2022
Permit Expires: April 30, 2022
Permit Application Due: November 1, 2021

___ Check Here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
	SAMPLE MEASUREMENT										
Fecal Coliform	PERMIT REQUIREMENT	XXX	XXX	XXX	XXX	200 Geo Mean	1000 IMAX	CFU/100 ml		1/week	Grab
	SAMPLE MEASUREMENT										
Ammonia-Nitrogen Nov 1 - Apr 30	PERMIT REQUIREMENT	44 Avg Mo	XXX	lbs/day	XXX	7.0 Avg Mo	XXX	mg/L		1/week	24-Hr Composite
	SAMPLE MEASUREMENT										
Ammonia-Nitrogen May 1 - Oct 31	PERMIT REQUIREMENT	16 Avg Mo	XXX	lbs/day	XXX	2.5 Avg Mo	XXX	mg/L		1/week	24-Hr Composite
	SAMPLE MEASUREMENT										
Total Phosphorus	PERMIT REQUIREMENT	3.0 Avg Mo	XXX	lbs/day	XXX	0.5 Avg Mo	XXX	mg/L		1/week	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).		TELEPHONE		DATE		
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS *(Report all violations on the "Non-Compliance Reporting Form")*

EXHIBIT N3

DISCHARGE MONITORING REPORTS
MALVERN HUNT WASTEWATER TREATMENT PLANT

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	01/01/2016-01/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	***	***	gal	***	***	***	***		
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0446	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments		Spray fields have been shut down for the winter.								

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
January 14, 2016 influent sampling results: BOD5 = 168 mg/L; TSS = 142 mg/L; Average Daily Influent Flow = 0.0446 MGD	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	2/11/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	02/01/2016-02/29/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	***	***	gal	***	***	***	***		
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0488	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent data: Influent flow = 0.0488 MGD; Influent BOD5 = 179 mg/L; Influent TSS = 122 mg/L.	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

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Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	3/8/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	03/01/2016-03/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	1290196	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	7.5	***	7.97	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	5	5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.041619	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	<2	<2	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0405	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
Mar 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-04-12T13:52:14-04:00	
Cryptographic Hash Value of File (SHA-512)	D573E27EF724A4A84F0DE47248DB4CD6733ED80F4F0F8DFD961471010AA55C231C5FC4C4D48C95298C4C09D83EA97AC2B0614A42F23638364037307EF7AAC599		
Mar 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-04-12T13:51:44-04:00	
Cryptographic Hash Value of File (SHA-512)	829AC8A5E2C15AA89FD562AC6B70DBE930096F398FF09562AFB231E1B29A868B9E18A2535BF71C8B812575974AC90F5569B5A542D936DC8F835F44CB6BE5E45B		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Flow = 0.0405; Influent BOD5 = 211 mg/L; Influent TSS = 200 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	4/12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **3** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	2/28/16	0.0															
	Mon	2/29/16	0.0															
	Tue	3/1/16	0.0															
	Wed	3/2/16	0.0															
	Thu	3/3/16	0.0															
	Fri	3/4/16	0.0															
	Sat	3/5/16	0.0															
2	Sun	3/6/16	0.0484															
	Mon	3/7/16	0.0357	<	2.0		5.0				7.5							
	Tue	3/8/16	0.05163						<	1.0								
	Wed	3/9/16	0.05163															
	Thu	3/10/16	0.05163															
	Fri	3/11/16	0.05163															
	Sat	3/12/16	0.05163															
3	Sun	3/13/16	0.05163															
	Mon	3/14/16	0.0242															
	Tue	3/15/16	0.0309															
	Wed	3/16/16	0.0547															
	Thu	3/17/16	0.0572															
	Fri	3/18/16	0.05045															
	Sat	3/19/16	0.05045															
4	Sun	3/20/16	0.0604															
	Mon	3/21/16	0.05287															
	Tue	3/22/16	0.05287															
	Wed	3/23/16	0.05287															
	Thu	3/24/16	0.05635															
	Fri	3/25/16	0.05635															
	Sat	3/26/16	0.0562								7.97							
5	Sun	3/27/16	0.0562															
	Mon	3/28/16	0.0564															
	Tue	3/29/16	0.0394															
	Wed	3/30/16	0.0394															
	Thu	3/31/16	0.0491															
	Fri	4/1/16	0.05885															
	Sat	4/2/16	0.05885															
Statistics for DMR																		
Daily Minimum (Conc.):				<	2		5	<	1		7.5							
Daily Maximum (Conc):				<	2		5	<	1		7.97							
Max Avg Weekly (Conc.):				<	2		5											
Avg Monthly (Conc.):				<	2		5											
Geometric Mean (Conc.):								<	1									
Max Avg Weekly (Load):			0.055414	<	0.6		1											
Avg Monthly (Load):			0.041619	<	0.6		1											
Total Monthly (Load):			1.290196	<	18		46											
Daily Minimum (Load):			0	<	0.6		1											
Daily Maximum (Load):			0.0604	<	0.6		1											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **12-Apr-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **3** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	2/28/16	0	0	0						
	Mon	2/29/16	0	0	0						
	Tue	3/1/16	0	0	0						
	Wed	3/2/16	0	0	0					32	Frozen
	Thu	3/3/16	0	0	0						
	Fri	3/4/16	0	0	0						
	Sat	3/5/16	0	0	0						
2	Sun	3/6/16	24,200	24,200	0						
	Mon	3/7/16	17,850	17,850	0						
	Tue	3/8/16	25,816	25,816	0						
	Wed	3/9/16	25,816	25,816	0						
	Thu	3/10/16	25,816	25,816	0						
	Fri	3/11/16	25,816	0	25,816						
	Sat	3/12/16	25,816	0	25,816						
3	Sun	3/13/16	25,816	0	25,816						
	Mon	3/14/16	12,100	0	12,100					70	Dry
	Tue	3/15/16	15,450	15,450	0					61	Dry
	Wed	3/16/16	27,350	27,350	0					55	Dry
	Thu	3/17/16	28,600	28,600	0					58	Dry
	Fri	3/18/16	25,225	25,225	0						
	Sat	3/19/16	25,225	25,225	0					40	Dry
4	Sun	3/20/16	30,200	30,200	0					50	Dry
	Mon	3/21/16	26,433	26,433	0						
	Tue	3/22/16	26,433	26,433	0						
	Wed	3/23/16	26,433	26,433	0					70	Dry
	Thu	3/24/16	28,175	28,175	0						
	Fri	3/25/16	28,175	28,175	0						
	Sat	3/26/16	28,100	28,100	0					39	Dry
5	Sun	3/27/16	28,100	28,100	0						
	Mon	3/28/16	28,200	28,200	0			0.30	Rain	55	Dry
	Tue	3/29/16	0	19,700	19,700					55	Dry
	Wed	3/30/16	0	19,700	19,700					65	Dry
	Thu	3/31/16	0	24,550	24,550					65	Dry
	Fri	4/1/16	0	29,425	29,425					78	Dry
	Sat	4/2/16	0	29,425	29,425						
		Monthly Totals:	**581,145**	**555,547**	**153,498**			**0.30**			
		Max Weekly:	**193,949**	**193,949**	**122,800**	**0**	**0**				
		Inches/Acre/Week (Max):	**1.16**	**1.15**	**0.74**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **4/12/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	04/01/2016-04/30/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	1686896	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	<5	<5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.05623	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	<2	<2	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0433	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
Apr 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-05-24T08:44:52-04:00	
Cryptographic Hash Value of File (SHA-512)	56B299C6FCE50985E8B58240EA80AF8655768346273A24FB58CC5410A6C9C2307E132526BF1DD6E4B0647B8F8ADD38D753FB46F4D4D81B41702528F17802A3F9		
Apr 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-05-24T08:45:30-04:00	
Cryptographic Hash Value of File (SHA-512)	D889D1CFC7D41ED2CA56FAAE2DFB5FAA684029FC914A160BFD17819E9F0F18636240673DCFB189DF817051DEB06A8BFBB532CE4285591D6E653E6DA8C88C4273		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow = 0.0433 MGD; Influent BOD5 = 189 mg/L; Influent TSS = 170 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	5/24/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **4** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow	CBOD5		TSS		Fecal Coliform		pH							
		Stage	1														
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Fri	4/1/16	0.05885														
	Sat	4/2/16	0.05885														
1	Sun	4/3/16	0.0496														
	Mon	4/4/16	0.0574														
	Tue	4/5/16	0.0531														
	Wed	4/6/16	0.0531														
	Thu	4/7/16	0.0531														
	Fri	4/8/16	0.0542														
	Sat	4/9/16	0.0576														
2	Sun	4/10/16	0.0576														
	Mon	4/11/16	0.0711	<	2.0	<	5.0	<	1.0		8.1						
	Tue	4/12/16	0.0711														
	Wed	4/13/16	0.0711														
	Thu	4/14/16	0.0811														
	Fri	4/15/16	0.04877														
	Sat	4/16/16	0.04877														
3	Sun	4/17/16	0.04877														
	Mon	4/18/16	0.0528														
	Tue	4/19/16	0.06106														
	Wed	4/20/16	0.06106														
	Thu	4/21/16	0.06106														
	Fri	4/22/16	0.06106														
	Sat	4/23/16	0.06106														
4	Sun	4/24/16	0.0627														
	Mon	4/25/16	0.0														
	Tue	4/26/16	0.04627														
	Wed	4/27/16	0.04627														
	Thu	4/28/16	0.04627														
	Fri	4/29/16	0.0666														
	Sat	4/30/16	0.0666														
5																	
Statistics for DMR																	
Daily Minimum (Conc.):				<	2	<	5	<	1		8.1						
Daily Maximum (Conc):				<	2	<	5	<	1		8.1						
Max Avg Weekly (Conc.):				<	2	<	5										
Avg Monthly (Conc.):				<	2	<	5										
Geometric Mean (Conc.):								<	1								
Max Avg Weekly (Load):			0.064219	<	1	<	3										
Avg Monthly (Load):			0.05623	<	1	<	3										
Total Monthly (Load):			1.686896	<	36	<	89										
Daily Minimum (Load):			0	<	1	<	3										
Daily Maximum (Load):			0.0811	<	1	<	3										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **24-May-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **4** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	4/1/16	0	29,425	29,425						
	Sat	4/2/16	0	29,425	29,425			0.40	Rain	50	Wet
1	Sun	4/3/16	0	24,800	24,800					45	Damp
	Mon	4/4/16	28,700	0	28,700			0.20	Rain	55	Wet
	Tue	4/5/16	26,550	0	26,550					45	Damp
	Wed	4/6/16	26,550	0	26,550						
	Thu	4/7/16	26,550	0	26,550					44	Dry
	Fri	4/8/16	27,100	0	27,100					44	Dry
	Sat	4/9/16	28,800	28,800	0			0.10	Snow	38	Wet
2	Sun	4/10/16	28,800	28,800	0						
	Mon	4/11/16	35,550	35,550	0			0.20	Rain	60	Damp
	Tue	4/12/16	35,550	35,550	0						
	Wed	4/13/16	35,550	35,550	0						
	Thu	4/14/16	40,550	0	40,550					60	Dry
	Fri	4/15/16	24,383	0	24,383					66	Dry
	Sat	4/16/16	24,383	0	24,383						
3	Sun	4/17/16	24,383	0	24,383						
	Mon	4/18/16	26,400	0	26,400					82	Dry
	Tue	4/19/16	0	30,530	30,530					74	Dry
	Wed	4/20/16	0	30,530	30,530						
	Thu	4/21/16	0	30,530	30,530						
	Fri	4/22/16	0	30,530	30,530						
	Sat	4/23/16	0	30,530	30,530						
4	Sun	4/24/16	31,350	31,350	0						
	Mon	4/25/16	0	0	0						
	Tue	4/26/16	23,133	23,133	0						
	Wed	4/27/16	23,133	23,133	0						
	Thu	4/28/16	23,133	23,133	0						
	Fri	4/29/16	33,300	0	33,300			0.20	Rain	55	Wet
	Sat	4/30/16	33,300	0	33,300						
5											
Monthly Totals:			**607,148**	**501,299**	**578,449**			**1.10**			
Max Weekly:			**224,766**	**152,650**	**203,433**	**0**	**0**				
Inches/Acre/Week (Max):			**1.34**	**0.91**	**1.22**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **5/24/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	05/01/2016-05/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	2614899	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	7.7	***	7.7	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	<5	<5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0844	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	<2	<2	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0468	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
May 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-06-14T13:26:51-04:00	
Cryptographic Hash Value of File (SHA-512)	E6510A35F9D6E700C088981AC67B2E02605AF59CD7D853F2C0C48F085146BC56B7D8606C576DE714DEF3AC4ABC6B320A091E5C9CC23C2B83194FAB6956E52524		
May 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-06-14T13:27:23-04:00	
Cryptographic Hash Value of File (SHA-512)	A4A2EF1602CEFEFA88C6329072169FF0833A3E63A6B278E5D2889580F787190FA3FA62C3D998E0F18C5CA94E56ABCBFAD643F9FFF5473F08B672708F78E5F691		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	6/14/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **5** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	5/1/16	0.0666															
	Mon	5/2/16	0.0845															
	Tue	5/3/16	0.0845															
	Wed	5/4/16	0.08568															
	Thu	5/5/16	0.08568															
	Fri	5/6/16	0.08568															
	Sat	5/7/16	0.08568															
2	Sun	5/8/16	0.0639															
	Mon	5/9/16	0.0639	<	2.0	<	5.0				7.7							
	Tue	5/10/16	0.0639					<	1.0									
	Wed	5/11/16	0.0639															
	Thu	5/12/16	0.0857															
	Fri	5/13/16	0.09433															
	Sat	5/14/16	0.09433															
3	Sun	5/15/16	0.09433															
	Mon	5/16/16	0.08805															
	Tue	5/17/16	0.08805															
	Wed	5/18/16	0.0919															
	Thu	5/19/16	0.0895															
	Fri	5/20/16	0.0895															
	Sat	5/21/16	0.0895															
4	Sun	5/22/16	0.0895															
	Mon	5/23/16	0.0894															
	Tue	5/24/16	0.0894															
	Wed	5/25/16	0.0855															
	Thu	5/26/16	0.0855															
	Fri	5/27/16	0.0853															
	Sat	5/28/16	0.0853															
5	Sun	5/29/16	0.0853															
	Mon	5/30/16	0.0903															
	Tue	5/31/16	0.0903															
Statistics for DMR																		
Daily Minimum (Conc.):				<	2	<	5	<	1		7.7							
Daily Maximum (Conc):				<	2	<	5	<	1		7.7							
Max Avg Weekly (Conc.):				<	2	<	5											
Avg Monthly (Conc.):				<	2	<	5											
Geometric Mean (Conc.):								<	1									
Max Avg Weekly (Load):			0.090119	<	1	<	3											
Avg Monthly (Load):			0.084352	<	1	<	3											
Total Monthly (Load):			2.614899	<	33	<	83											
Daily Minimum (Load):			0.0639	<	1	<	3											
Daily Maximum (Load):			0.094333	<	1	<	3											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **14-Jun-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **5** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

			Zone: 1 Acres: 6.16	Zone: 2 Acres: 6.19	Zone: 3 Acres: 6.15	Zone: Acres:	Zone: Acres:	Precipitation		Average Temp	
Week	Day	Date	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Inches*	*Type*	*°F*	Ground Conditions
1	Sun	5/1/16	33,300	0	33,300						
	Mon	5/2/16	42,250	0	42,250			0.30	Rain	70	Wet
	Tue	5/3/16	42,250	0	42,250						
	Wed	5/4/16	0	42,837	42,837			0.40	Rain	51	Wet
	Thu	5/5/16	0	42,837	42,837						
	Fri	5/6/16	0	42,837	42,837						
	Sat	5/7/16	0	42,837	42,837			0.20	Rain		
2	Sun	5/8/16	0	31,950	31,950			0.10	Rain	60	Wet
	Mon	5/9/16	31,950	31,950	0					70	Dry
	Tue	5/10/16	31,950	31,950	0						
	Wed	5/11/16	31,950	31,950	0						
	Thu	5/12/16	42,850	42,850	0					64	Dry
	Fri	5/13/16	47,166	47,166	0			0.10	Rain	72	Damp
	Sat	5/14/16	47,166	0	47,166						
3	Sun	5/15/16	47,166	0	47,166						
	Mon	5/16/16	44,025	0	44,025					58	Dry
	Tue	5/17/16	44,025	0	44,025						
	Wed	5/18/16	45,950	0	45,950					68	Dry
	Thu	5/19/16	0	44,750	44,750					68	Dry
	Fri	5/20/16	0	44,750	44,750						
	Sat	5/21/16	0	44,750	44,750						
4	Sun	5/22/16	0	44,750	44,750						
	Mon	5/23/16	0	44,700	44,700			0.10	Rain	74	Damp
	Tue	5/24/16	44,700	44,700	0						
	Wed	5/25/16	42,750	42,750	0					80	Dry
	Thu	5/26/16	42,750	42,750	0						
	Fri	5/27/16	42,650	42,650	0					87	Dry
	Sat	5/28/16	42,650	42,650	0						
5	Sun	5/29/16	42,650	0	42,650			0.40	Rain	86	Damp
	Mon	5/30/16	45,150	0	45,150			0.30	Rain	81	Wet
	Tue	5/31/16	45,150	0	45,150						
Monthly Totals:			**880,448**	**828,364**	**906,080**			**1.90**			
Max Weekly:			**233,032**	**304,950**	**315,416**	**0**	**0**				
Inches/Acre/Week (Max):			**1.39**	**1.81**	**1.89**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **6/14/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	06/01/2016-06/30/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	3217748	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.1	***	8.2	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	<5	<5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.107258	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	<2	<2	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0532	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
June 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-07-25T13:22:57-04:00	
Cryptographic Hash Value of File (SHA-512)	A5DCB9892E7067676614AD82E902ED60D10E2704CF5837FD0494BA746CB757B37CFB42EC9B07B067D4D258453398EA90A20D3DF6E0D957A10C44211E2C7B550C		
June 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-07-25T13:23:35-04:00	
Cryptographic Hash Value of File (SHA-512)	CC1F093B49EC1F246FD6D838F23E4F08B8A576031CD32312AFEA2E911FBDC7849348C064C6CCE14D81D4EB1A82CF30D92CFD623CEF9CB38A3559BE15F35B06EF		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent flow = 0.0532 MGD; Influent BOD5 = 222 mg/L; Influent TSS = 210 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	7/25/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **6** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow	CBOD5		TSS		Fecal Coliform		pH							
		Stage	1														
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
1	Sun	5/29/16	0.0853														
	Mon	5/30/16	0.0903														
	Tue	5/31/16	0.0903														
	Wed	6/1/16	0.09105								8.2						
	Thu	6/2/16	0.09105														
	Fri	6/3/16	0.09105														
	Sat	6/4/16	0.09975														
2	Sun	6/5/16	0.09975														
	Mon	6/6/16	0.11334														
	Tue	6/7/16	0.11334														
	Wed	6/8/16	0.11334														
	Thu	6/9/16	0.11334														
	Fri	6/10/16	0.11334														
	Sat	6/11/16	0.11														
3	Sun	6/12/16	0.11														
	Mon	6/13/16	0.1086	<	2.0	<	5.0				8.1						
	Tue	6/14/16	0.10953					<	1.0								
	Wed	6/15/16	0.10953														
	Thu	6/16/16	0.10953														
	Fri	6/17/16	0.11055														
	Sat	6/18/16	0.11055														
4	Sun	6/19/16	0.1176														
	Mon	6/20/16	0.1176														
	Tue	6/21/16	0.1185														
	Wed	6/22/16	0.11095														
	Thu	6/23/16	0.11095														
	Fri	6/24/16	0.10453														
	Sat	6/25/16	0.10453														
5	Sun	6/26/16	0.10453														
	Mon	6/27/16	0.1047														
	Tue	6/28/16	0.1053														
	Wed	6/29/16	0.10045														
	Thu	6/30/16	0.10045														
	Fri	7/1/16	0.10045														
	Sat	7/2/16	0.10045														
Statistics for DMR																	
Daily Minimum (Conc.):				<	2	<	5	<	1		8.1						
Daily Maximum (Conc):				<	2	<	5	<	1		8.2						
Max Avg Weekly (Conc.):				<	2	<	5										
Avg Monthly (Conc.):				<	2	<	5										
Geometric Mean (Conc.):								<	1								
Max Avg Weekly (Load):			0.112095	<	2	<	5										
Avg Monthly (Load):			0.107258	<	2	<	5										
Total Monthly (Load):			3.217748	<	54	<	136										
Daily Minimum (Load):			0.09105	<	2	<	5										
Daily Maximum (Load):			0.1185	<	2	<	5										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **25-Jul-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **6** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	5/29/16	42,650	0	42,650			0.40	Rain	86	Damp
	Mon	5/30/16	45,150	0	45,150			0.30	Rain	81	Wet
	Tue	5/31/16	45,150	0	45,150						
	Wed	6/1/16	45,525	0	45,525						
	Thu	6/2/16	45,525	0	45,525						
	Fri	6/3/16	45,525	0	45,525			0.40	Rain	74	Damp
	Sat	6/4/16	0	49,875	49,875						
2	Sun	6/5/16	0	49,875	49,875					86	Dry
	Mon	6/6/16	0	56,670	56,670						
	Tue	6/7/16	0	56,670	56,670						
	Wed	6/8/16	0	56,670	56,670						
	Thu	6/9/16	56,670	56,670	0						
	Fri	6/10/16	56,670	56,670	0						
	Sat	6/11/16	55,000	55,000	0						
3	Sun	6/12/16	55,000	55,000	0						
	Mon	6/13/16	54,300	54,300	0					80	Dry
	Tue	6/14/16	54,766	0	54,766					81	Dry
	Wed	6/15/16	54,766	0	54,766						
	Thu	6/16/16	54,766	0	54,766			0.40	Rain	84	Wet
	Fri	6/17/16	55,275	0	55,275					80	Dry
	Sat	6/18/16	55,275	0	55,275						
4	Sun	6/19/16	0	58,800	58,800					69	Dry
	Mon	6/20/16	0	58,800	58,800					91	Dry
	Tue	6/21/16	0	59,250	59,250					86	Dry
	Wed	6/22/16	0	55,475	55,475						
	Thu	6/23/16	0	55,475	55,475			0.40	Rain	84	Wet
	Fri	6/24/16	52,266	52,266	0					84	Dry
	Sat	6/25/16	52,266	52,266	0						
5	Sun	6/26/16	52,266	52,266	0						
	Mon	6/27/16	52,350	52,350	0					87	Dry
	Tue	6/28/16	52,650	52,650	0			0.20	Rain	65	Wet
	Wed	6/29/16	50,225	0	50,225						
	Thu	6/30/16	50,225	0	50,225						
	Fri	7/1/16	50,225	0	50,225						
	Sat	7/2/16	50,255	0	50,255						
		Monthly Totals:	**1,051,311**	**1,096,998**	**1,069,433**			**1.40**			
		Max Weekly:	**384,148**	**392,332**	**319,400**	**0**	**0**				
		Inches/Acre/Week (Max):	**2.30**	**2.33**	**1.91**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **7/25/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	07/01/2016-07/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	1948896	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.4	***	8.8	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	16	16	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0629	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	3.5	3.5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0449	***	MGD	***	***	***	***	Calculation	1/month
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
July 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-08-18T15:03:10-04:00	
Cryptographic Hash Value of File (SHA-512)	C7485D178931EDAFA159EF722841FCDCF19B448ED88878D086CF6D99EAD97ECE74E7AEC798FCE1226AC5E3DDEEE0BF0462964898BDBECBDBAA2928A26A1D29C4		
July 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-08-18T15:04:00-04:00	
Cryptographic Hash Value of File (SHA-512)	870DEB3D4020F024E88B60034B485CD6235C37B3DC156BB72D2B0BF2AAE0E75FD6D8A7A08BDEE7BEB5C4252EF008D397B183A6077D3976A0278A0407AA60383E		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
33471	Raw Sewage Influent(001)	Flow	Sample type not in accordance with permit	The influent flow meter is down for repairs and we are currently waiting for parts to arrive. The average monthly influent flow was calculated from the most recent 12 months of influent flow data.
33472	Raw Sewage Influent(001)	Flow	Sample collection less frequent than required	The influent flow meter is down for repairs and we are currently waiting for parts to arrive. The average monthly influent flow was calculated from the most recent 12 months of influent flow data.

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	8/18/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **7** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Fri	7/1/16	0.10045															
	Sat	7/2/16	0.10045															
1	Sun	7/3/16	0.1001															
	Mon	7/4/16	0.11265															
	Tue	7/5/16	0.11265															
	Wed	7/6/16	0.11295								8.8							
	Thu	7/7/16	0.11295															
	Fri	7/8/16	0.106															
	Sat	7/9/16	0.0															
2	Sun	7/10/16	0.0															
	Mon	7/11/16	0.0															
	Tue	7/12/16	0.0															
	Wed	7/13/16	0.0074															
	Thu	7/14/16	0.0															
	Fri	7/15/16	0.0															
	Sat	7/16/16	0.0															
3	Sun	7/17/16	0.0															
	Mon	7/18/16	0.07735		3.5		16.0				8.4							
	Tue	7/19/16	0.07735						<		1.0							
	Wed	7/20/16	0.0744															
	Thu	7/21/16	0.0744															
	Fri	7/22/16	0.078															
	Sat	7/23/16	0.078															
4	Sun	7/24/16	0.078															
	Mon	7/25/16	0.08997															
	Tue	7/26/16	0.08997															
	Wed	7/27/16	0.08997															
	Thu	7/28/16	0.0															
	Fri	7/29/16	0.09197															
	Sat	7/30/16	0.09197															
5	Sun	7/31/16	0.09197															
Statistics for DMR																		
Daily Minimum (Conc.):					**3.5**		**16**		< **1**		**8.4**							
Daily Maximum (Conc):					**3.5**		**16**		< **1**		**8.8**							
Max Avg Weekly (Conc.):					**3.5**		**16**											
Avg Monthly (Conc.):					**3.5**		**16**											
Geometric Mean (Conc.):									< **1**									
Max Avg Weekly (Load):			**0.0939**		**2**		**10**											
Avg Monthly (Load):			**0.062868**		**2**		**10**											
Total Monthly (Load):			**1.948896**		**70**		**320**											
Daily Minimum (Load):			**0**		**2**		**10**											
Daily Maximum (Load):			**0.11295**		**2**		**10**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **18-Aug-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **7** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	7/1/16	50,225	0	50,225						
	Sat	7/2/16	50,225	0	50,225					65	Dry
1	Sun	7/3/16	50,050	0	50,050					82	Dry
	Mon	7/4/16	0	56,325	56,325					80	Dry
	Tue	7/5/16	0	56,325	56,325			0.40	Rain	86	Damp
	Wed	7/6/16	0	56,475	56,475					92	Dry
	Thu	7/7/16	0	56,475	56,475						
	Fri	7/8/16	53,000	53,000	0					94	Dry
	Sat	7/9/16	0	0	0						
2	Sun	7/10/16	0	0	0						
	Mon	7/11/16	0	0	0						
	Tue	7/12/16	0	0	0						
	Wed	7/13/16	3,700	0	3,700						
	Thu	7/14/16	0	0	0						
	Fri	7/15/16	0	0	0						
	Sat	7/16/16	0	0	0						
3	Sun	7/17/16	0	0	0						
	Mon	7/18/16	38,675	0	38,675			0.20	Rain	73	Damp
	Tue	7/19/16	38,675	0	38,675						
	Wed	7/20/16	37,200	0	37,200					87	Dry
	Thu	7/21/16	37,200	0	37,200						
	Fri	7/22/16	39,000	0	39,000					92	Dry
	Sat	7/23/16	0	39,000	39,000						
4	Sun	7/24/16	0	39,000	39,000						
	Mon	7/25/16	0	44,983	44,983			0.20	Rain	92	Dry
	Tue	7/26/16	0	44,983	44,983						
	Wed	7/27/16	0	44,983	44,983						
	Thu	7/28/16	0	0	0			1.00	Rain	93	Wet
	Fri	7/29/16	45,983	45,983	0						
	Sat	7/30/16	45,983	45,983	0			0.40	Rain	85	Wet
5	Sun	7/31/16	45,983	45,983	0			0.30	Rain	85	Wet
Monthly Totals:			**535,899**	**629,498**	**783,499**			**2.50**			
Max Weekly:			**190,750**	**278,600**	**275,650**	**0**	**0**				
Inches/Acre/Week (Max):			**1.14**	**1.66**	**1.65**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **8/18/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	08/01/2016-08/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	2389650	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.4	***	8.6	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	23	23	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.077085	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	11.1	11.1	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0449	***	MGD	***	***	***	***	Estimate	1/month
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
Aug 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-09-08T15:53:32-04:00	
Cryptographic Hash Value of File (SHA-512)	50B08A5F31751EE6146156FD8309DA0F61522A75A44647371E507FAC9F45822B162D0C772C29096DF725F3339F43B52F00F4BA80365FC81D86360667C6EB43BC		
Aug 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-09-08T15:54:14-04:00	
Cryptographic Hash Value of File (SHA-512)	994CE28BB5C0FE817E51BD70DE3FDC0EE012022B2F0ECEFE9B831F60CD86F14BFCFBEBE165A99CA696B6BDEE0319D5AEB60A0F9FB656AFD0029364782BBC5FFC		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
34364	Raw Sewage Influent(001)	Flow	Sample type not in accordance with permit	Influent flow meter repair parts have been backordered for several weeks. Delivery is expected in the very near future. Influent flow is estimated from the most recent 12-month average that data was available.
34365	Raw Sewage Influent(001)	Flow	Sample collection less frequent than required	Influent flow meter repair parts have been backordered for several weeks. Delivery is expected in the very near future. Influent flow is estimated from the most recent 12-month average that data was available.

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow (estimated) = 0.0449 MGD; Influent BOD5 = 269 mg/L; Influent TSS = 186 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	9/8/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **8** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	7/31/16	0.09197															
	Mon	8/1/16	0.09855															
	Tue	8/2/16	0.09855															
	Wed	8/3/16	0.09005															
	Thu	8/4/16	0.09005															
	Fri	8/5/16	0.0891															
	Sat	8/6/16	0.0891															
2	Sun	8/7/16	0.0891															
	Mon	8/8/16	0.10125		11.1		23.0				8.6							
	Tue	8/9/16	0.10125						<		1.0							
	Wed	8/10/16	0.0763															
	Thu	8/11/16	0.0763															
	Fri	8/12/16	0.0763															
	Sat	8/13/16	0.07205															
3	Sun	8/14/16	0.07205															
	Mon	8/15/16	0.0646								8.4							
	Tue	8/16/16	0.0611															
	Wed	8/17/16	0.0611															
	Thu	8/18/16	0.04838															
	Fri	8/19/16	0.04838															
	Sat	8/20/16	0.04838															
4	Sun	8/21/16	0.04838															
	Mon	8/22/16	0.0684															
	Tue	8/23/16	0.09598															
	Wed	8/24/16	0.09598															
	Thu	8/25/16	0.09598															
	Fri	8/26/16	0.09598															
	Sat	8/27/16	0.09598															
5	Sun	8/28/16	0.0972															
	Mon	8/29/16	0.0491															
	Tue	8/30/16	0.0491															
	Wed	8/31/16	0.04565															
	Thu	9/1/16	0.04565															
	Fri	9/2/16	0.0															
	Sat	9/3/16	0.0															
Statistics for DMR																		
Daily Minimum (Conc.):					**11.1**		**23**	<	**1**		**8.4**							
Daily Maximum (Conc):					**11.1**		**23**	<	**1**		**8.6**							
Max Avg Weekly (Conc.):					**11.1**		**23**											
Avg Monthly (Conc.):					**11.1**		**23**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.092481**		**9**		**19**											
Avg Monthly (Load):			**0.077085**		**9**		**19**											
Total Monthly (Load):			**2.38965**		**291**		**602**											
Daily Minimum (Load):			**0.04565**		**9**		**19**											
Daily Maximum (Load):			**0.10125**		**9**		**19**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **8-Sep-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **8** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	7/31/16	45,983	45,983	0			0.30	Rain	85	Wet
	Mon	8/1/16	49,275	49,275	0						Wet
	Tue	8/2/16	49,275	49,275	0						
	Wed	8/3/16	45,025	0	45,025						
	Thu	8/4/16	45,025	0	45,025						
	Fri	8/5/16	44,550	0	44,550						
	Sat	8/6/16	44,550	0	44,550						
2	Sun	8/7/16	44,550	0	44,550						
	Mon	8/8/16	0	50,625	50,625					82	Dry
	Tue	8/9/16	0	50,625	50,625						
	Wed	8/10/16	0	38,150	38,150					90	Dry
	Thu	8/11/16	0	38,150	38,150						
	Fri	8/12/16	0	38,150	38,150						
	Sat	8/13/16	36,025	36,025	0						
3	Sun	8/14/16	36,025	36,025	0			0.20	Rain	94	Damp
	Mon	8/15/16	32,300	32,300	0			0.10	Rain	91	Damp
	Tue	8/16/16	30,550	30,550	0					92	Damp
	Wed	8/17/16	30,550	30,550	0						
	Thu	8/18/16	24,187	0	24,187			0.20	Rain	87	Damp
	Fri	8/19/16	24,187	0	24,187						
	Sat	8/20/16	24,187	0	24,187						
4	Sun	8/21/16	24,187	0	24,187						
	Mon	8/22/16	34,200	0	34,200					80	Dry
	Tue	8/23/16	0	47,990	47,990					82	Dry
	Wed	8/24/16	0	47,990	47,990						
	Thu	8/25/16	0	47,990	47,990						
	Fri	8/26/16	0	47,990	47,990						
	Sat	8/27/16	0	47,990	47,990						
5	Sun	8/28/16	48,600	48,600	0					71	Dry
	Mon	8/29/16	24,550	24,550	0					89	Dry
	Tue	8/30/16	24,550	24,550	0						
	Wed	8/31/16	22,825	22,825	0					86	Dry
	Thu	9/1/16	22,825	22,825	0						
	Fri	9/2/16	0	0	0					75	Dry
	Sat	9/3/16	0	0	0						
		Monthly Totals:	**739,173**	**840,175**	**810,298**			**0.50**			
		Max Weekly:	**323,683**	**251,725**	**298,337**	**0**	**0**				
		Inches/Acre/Week (Max):	**1.94**	**1.50**	**1.79**	**0.00**	**0.00**				

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Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **9/8/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	09/01/2016-09/30/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	1026695	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.3	***	8.4	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	25	25	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.034223	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	6.3	6.3	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0449	***	MGD	***	***	***	***	Estimate	Monthly When Discharging
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
Sept 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-10-24T10:41:02-04:00	
Cryptographic Hash Value of File (SHA-512)	3955CAE8491F7AC3B3058623B4B1E16F3715321C1EAD71554EBDBC11E800CB1DDB609612538CF78DF14F25341D69A723490609FD8844C87D77BF0EE4E3929D61		
Sept 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-10-24T10:40:16-04:00	
Cryptographic Hash Value of File (SHA-512)	CF632B6F0F803315D2653258FD3DAD25E6CE0EE751B8EDC32BAED8DA564BA7403D6B25FED9D4429C4E7239858F68F57EF4B647A85BFEB32E7899EF6B58E8E427		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
35656	Raw Sewage Influent(001)	Flow	Sample type not in accordance with permit	We are still experiencing problems with inaccurate influent flow readings from the recently repaired flow meter. The daily influent flow for September was estimated using the average of the most recent 12 months of flow data. Troubleshooting, final repair and calibration of the flow meter was still in progress.
35657	Raw Sewage Influent(001)	Flow	Sample collection less frequent than required	We are still experiencing problems with inaccurate influent flow readings from the recently repaired flow meter. The daily influent flow for September was estimated using the average of the most recent 12 months of flow data. Troubleshooting, final repair and calibration of the flow meter was still in progress.

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent data: Influent flow (estimated) = 0.0449 MGD; Influent BOD = 190 mg/L ; Influent TSS = 158 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	10/24/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **9** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Thu	9/1/16	0.04565															
	Fri	9/2/16	0.0															
	Sat	9/3/16	0.0															
1	Sun	9/4/16	0.0															
	Mon	9/5/16	0.0															
	Tue	9/6/16	0.0															
	Wed	9/7/16	0.0															
	Thu	9/8/16	0.0															
	Fri	9/9/16	0.06395															
	Sat	9/10/16	0.06395															
2	Sun	9/11/16	0.0428								8.4							
	Mon	9/12/16	0.03427		6.3		25.0				8.3							
	Tue	9/13/16	0.03427						<		1.0							
	Wed	9/14/16	0.03427															
	Thu	9/15/16	0.0															
	Fri	9/16/16	0.0															
	Sat	9/17/16	0.0															
3	Sun	9/18/16	0.0															
	Mon	9/19/16	0.04075															
	Tue	9/20/16	0.04075															
	Wed	9/21/16	0.06503															
	Thu	9/22/16	0.06503															
	Fri	9/23/16	0.06503															
	Sat	9/24/16	0.0722															
4	Sun	9/25/16	0.0722															
	Mon	9/26/16	0.0357															
	Tue	9/27/16	0.06855															
	Wed	9/28/16	0.06855															
	Thu	9/29/16	0.05687															
	Fri	9/30/16	0.05687															
	Sat	10/1/16	0.05687															
5																		

Statistics for DMR

Daily Minimum (Conc.):			**6.3**		**25**	<	**1**		**8.3**									
Daily Maximum (Conc):			**6.3**		**25**	<	**1**		**8.4**									
Max Avg Weekly (Conc.):			**6.3**		**25**													
Avg Monthly (Conc.):			**6.3**		**25**													
Geometric Mean (Conc.):						<	**1**											
Max Avg Weekly (Load):	**0.059375**		**2**		**7**													
Avg Monthly (Load):	**0.034223**		**2**		**7**													
Total Monthly (Load):	**1.026695**		**54**		**214**													
Daily Minimum (Load):	**0**		**2**		**7**													
Daily Maximum (Load):	**0.0722**		**2**		**7**													

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **24-Oct-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **9** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Thu	9/1/16	22,825	22,825	0						
	Fri	9/2/16	0	0	0					75	Dry
	Sat	9/3/16	0	0	0						
1	Sun	9/4/16	0	0	0						
	Mon	9/5/16	0	0	0					74	Dry
	Tue	9/6/16	0	0	0						
	Wed	9/7/16	0	0	0						
	Thu	9/8/16	0	0	0						
	Fri	9/9/16	31,975	0	31,975						
	Sat	9/10/16	31,975	0	31,975					75	Dry
2	Sun	9/11/16	21,400	0	21,400					78	Dry
	Mon	9/12/16	17,133	0	17,133					78	Dry
	Tue	9/13/16	17,133	0	17,133						
	Wed	9/14/16	17,133	0	17,133						
	Thu	9/15/16	0	0	0					78	Dry
	Fri	9/16/16	0	0	0					78	Dry
	Sat	9/17/16	0	0	0						
3	Sun	9/18/16	0	0	0			0.40	Rain	80	Wet
	Mon	9/19/16	20,375	0	20,375			0.40	Rain	78	Wet
	Tue	9/20/16	20,375	0	20,375						
	Wed	9/21/16	32,516	0	32,516					80	Dry
	Thu	9/22/16	32,516	0	32,516						
	Fri	9/23/16	32,516	0	32,516						
	Sat	9/24/16	0	36,100	36,100						
4	Sun	9/25/16	0	36,100	36,100						
	Mon	9/26/16	0	17,850	17,850					60	Dry
	Tue	9/27/16	0	34,275	34,275					68	Dry
	Wed	9/28/16	0	34,275	34,275			0.40	Rain	61	Wet
	Thu	9/29/16	0	28,437	28,437			0.40	Rain	60	Wet
	Fri	9/30/16	0	28,437	28,437						
	Sat	10/1/16	0	28,437	28,437						
5											
Monthly Totals:			**297,872**	**238,299**	**490,521**			**1.60**			
Max Weekly:			**138,298**	**207,811**	**207,811**	**0**	**0**				
Inches/Acre/Week (Max):			**0.83**	**1.24**	**1.24**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **10/24/2016**

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	556180	**Facility Name:**	MALVERN HUNT STP	**Location Address:**	SWEEDSFORD ROAD, FRAZER PA, 19355
Permit Number:	1599418	**Monitoring Period:**	10/01/2016-10/31/2016	**Mailing Address:**	209 CONESTOGA RD, FRAZER PA, 19355

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Flow	Sample Measurement	1465297	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	24	24	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.047268	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	6.1	6.1	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0546	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
Oct 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-11-07T13:11:01-05:00	
Cryptographic Hash Value of File (SHA-512)	271D33A53563D658CDBCD0732D34D7E11CE726611ED18B28B2B4709A7D9A80E11928C4AB8E3AF7B363DE9D3E47F3C3CE83D95CEE67176A21CCC952757788EFA8		
Oct 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-11-07T13:11:31-05:00	
Cryptographic Hash Value of File (SHA-512)	6DF5208A8900ACBE2DFBB7353AE69A59839258BA351D1507F4C71D5E770ED1473ABB46A54466F53CF53A74D3797999BBFA104FCBD5FB8290DDD8FEF57E864A5F		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**RUFFINIP**	**Submitted By Full Name**	**Paul Ruffini**
Email Address	paul.ruffini@thearrogroup.com	**Document Generated**	11/7/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **10** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **December 31, 2016**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Sat	10/1/16	0.05688															
1	Sun	10/2/16	0.05688															
	Mon	10/3/16	0.06093															
	Tue	10/4/16	0.06093															
	Wed	10/5/16	0.06093															
	Thu	10/6/16	0.0648															
	Fri	10/7/16	0.06443															
	Sat	10/8/16	0.06443															
2	Sun	10/9/16	0.06443															
	Mon	10/10/16	0.06475		6.1		24.0				8.1							
	Tue	10/11/16	0.06475															
	Wed	10/12/16	0.05465															
	Thu	10/13/16	0.05465															
	Fri	10/14/16	0.05463															
	Sat	10/15/16	0.05463															
3	Sun	10/16/16	0.05463															
	Mon	10/17/16	0.04135															
	Tue	10/18/16	0.04135															
	Wed	10/19/16	0.0342						<		1.0							
	Thu	10/20/16	0.0342															
	Fri	10/21/16	0.0342															
	Sat	10/22/16	0.0342															
4	Sun	10/23/16	0.03155															
	Mon	10/24/16	0.03155															
	Tue	10/25/16	0.0194															
	Wed	10/26/16	0.0303															
	Thu	10/27/16	0.03123															
	Fri	10/28/16	0.03123															
	Sat	10/29/16	0.03123															
5	Sun	10/30/16	0.03123															
	Mon	10/31/16	0.05075															
Statistics for DMR																		
Daily Minimum (Conc.):					**6.1**		**24**	<	**1**		**8.1**							
Daily Maximum (Conc):					**6.1**		**24**	<	**1**		**8.1**							
Max Avg Weekly (Conc.):					**6.1**		**24**											
Avg Monthly (Conc.):					**6.1**		**24**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.061906**		**3**		**13**											
Avg Monthly (Load):			**0.047268**		**3**		**13**											
Total Monthly (Load):			**1.465297**		**102**		**402**											
Daily Minimum (Load):			**0.0194**		**3**		**13**											
Daily Maximum (Load):			**0.0648**		**3**		**13**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **7-Nov-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **10** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 31-Dec-16

			Zone: 1 Acres: 6.16	Zone: 2 Acres: 6.19	Zone: 3 Acres: 6.15	Zone: Acres:	Zone: Acres:	Precipitation		Average Temp	
Week	Day	Date	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Inches*	*Type*	*°F*	Ground Conditions
	Sat	10/1/16	28,437	28,437							
1	Sun	10/2/16	28,437	28,437						73	Dry
	Mon	10/3/16	30,466	30,466							
	Tue	10/4/16	30,466	30,466							
	Wed	10/5/16	30,466	30,466						70	Dry
	Thu	10/6/16	32,400	32,400							
	Fri	10/7/16	32,216	0	32,216						
	Sat	10/8/16	32,216	0	32,216						
2	Sun	10/9/16	32,216	0	32,216					52	Dry
	Mon	10/10/16	32,375	0	32,375						
	Tue	10/11/16	32,375	0	32,375					52	Dry
	Wed	10/12/16	0	27,325	27,325						
	Thu	10/13/16	0	27,325	27,325					58	Dry
	Fri	10/14/16	0	27,316	27,316						
	Sat	10/15/16	0	27,316	27,316						
3	Sun	10/16/16	0	27,316	27,316					80	Dry
	Mon	10/17/16	20,675	20,675	0						
	Tue	10/18/16	20,675	20,675	0					84	Dry
	Wed	10/19/16	17,100	17,100	0						
	Thu	10/20/16	17,100	17,100	0						
	Fri	10/21/16	17,100	17,100	0						
	Sat	10/22/16	17,100	17,100	0						
4	Sun	10/23/16	15,775	0	15,775					64	Dry
	Mon	10/24/16	15,775	0	15,775						
	Tue	10/25/16	9,700	0	9,700					51	Dry
	Wed	10/26/16	15,150	0	15,150			0.20	Rain	55	Wet
	Thu	10/27/16	15,612	0	15,612						
	Fri	10/28/16	0	15,612	15,612						
	Sat	10/29/16	0	15,612	15,612						
5	Sun	10/30/16	0	15,612	15,612					60	Dry
	Mon	10/31/16	0	25,375	25,375						
Monthly Totals:			**523,832**	**499,231**	**442,219**			**0.20**			
Max Weekly:			**216,667**	**152,235**	**206,248**	**0**	**0**				
Inches/Acre/Week (Max):			**1.30**	**0.91**	**1.24**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **11/7/2016**

3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	11	01	TO	2016	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2016**
DMR Effective To: **11/30/2016**
Permit Expires: **12/31/2016**
Permit Application Due **12/28/2016**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	1273048	***	gal	***	***	***	***	Calculation	1/month
	Permit Measurement	Monitor & Report Total Mo	***		***	***	***		Calculation	1/month
pH	Sample Measurement	***	***	***	7.3	***	7.3	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	5	5	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30 Avg Mo	45 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.042435	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	***		***	***	***		Recorded	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	3.3	3.3	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25 Avg Mo	40 Wkly Avg		Grab	1/month
Flow	Sample Measurement	.0469	***	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	***		***	***	***		Recorded	Continuous
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Nov 2016 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2016-12-13T14:55:25-05:00	
Nov 2016 Land App Supp Form.pdf	Land Application Systems Form	2016-12-13T14:56:02-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow = 0.0469 MGD; Influent BOD5 = 211 mg/L; Influent TSS = 106 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2016	12	13
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **11** (select number) Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	10/30/16	0.03123															
	Mon	10/31/16	0.05075															
	Tue	11/1/16	0.05075															
	Wed	11/2/16	0.05043															
	Thu	11/3/16	0.05043															
	Fri	11/4/16	0.05043															
	Sat	11/5/16	0.05043															
2	Sun	11/6/16	0.0405															
	Mon	11/7/16	0.0405		3.3		5.0				7.3							
	Tue	11/8/16	0.03735						<		1.0							
	Wed	11/9/16	0.03735															
	Thu	11/10/16	0.0438															
	Fri	11/11/16	0.0438															
	Sat	11/12/16	0.0438															
3	Sun	11/13/16	0.0438															
	Mon	11/14/16	0.0477															
	Tue	11/15/16	0.0477															
	Wed	11/16/16	0.04717															
	Thu	11/17/16	0.04717															
	Fri	11/18/16	0.04717															
	Sat	11/19/16	0.04715															
4	Sun	11/20/16	0.04715															
	Mon	11/21/16	0.0467															
	Tue	11/22/16	0.0405															
	Wed	11/23/16	0.03788															
	Thu	11/24/16	0.03788															
	Fri	11/25/16	0.03788															
	Sat	11/26/16	0.03788															
5	Sun	11/27/16	0.03788															
	Mon	11/28/16	0.04095															
	Tue	11/29/16	0.04095															
	Wed	11/30/16	0.0															
	Thu	12/1/16	0.0															
	Fri	12/2/16	0.0															
	Sat	12/3/16	0.0															
Statistics for DMR																		
Daily Minimum (Conc.):					**3.3**		**5**	**<**	**1**		**7.3**							
Daily Maximum (Conc):					**3.3**		**5**	**<**	**1**		**7.3**							
Max Avg Weekly (Conc.):					**3.3**		**5**											
Avg Monthly (Conc.):					**3.3**		**5**											
Geometric Mean (Conc.):								**<**	**1**									
Max Avg Weekly (Load):			**0.047776**		**1**		**2**											
Avg Monthly (Load):			**0.042435**		**1**		**2**											
Total Monthly (Load):			**1.273048**		**33**		**51**											
Daily Minimum (Load):			**0**		**1**		**2**											
Daily Maximum (Load):			**0.05075**		**1**		**2**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **13-Dec-16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **11** *(Select number)* Year: **2016**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	10/30/16	0	15,612	15,612						
	Mon	10/31/16	0	25,375	25,375						
	Tue	11/1/16	0	25,375	25,375					75	Dry
	Wed	11/2/16	25,212	25,212	0						
	Thu	11/3/16	25,212	25,212	0						
	Fri	11/4/16	25,212	25,212	0						
	Sat	11/5/16	25,212	25,212	0						
2	Sun	11/6/16	20,250	20,250	0					41	Dry
	Mon	11/7/16	20,250	0	20,250					50	Dry
	Tue	11/8/16	18,675	0	18,675					55	Dry
	Wed	11/9/16	18,675	0	18,675						
	Thu	11/10/16	21,900	0	21,900					51	Dry
	Fri	11/11/16	0	21,900	21,900						
	Sat	11/12/16	0	21,900	21,900						
3	Sun	11/13/16	0	21,900	21,900						
	Mon	11/14/16	0	23,850	23,850					59	Dry
	Tue	11/15/16	0	23,850	23,850					62	Dry
	Wed	11/16/16	0	23,583	23,583					60	Dry
	Thu	11/17/16	23,583	23,583	0						
	Fri	11/18/16	23,583	23,583	0						
	Sat	11/19/16	23,575	23,575	0						
4	Sun	11/20/16	23,575	23,575	0						
	Mon	11/21/16	23,350	23,350	0					35	Dry
	Tue	11/22/16	20,250	0	20,250					40	Dry
	Wed	11/23/16	18,940	0	18,940					32	Dry
	Thu	11/24/16	18,940	0	18,940						
	Fri	11/25/16	18,940	0	18,940						
	Sat	11/26/16	18,940	0	18,940						
5	Sun	11/27/16	0	18,940	18,940						
	Mon	11/28/16	0	20,475	20,475					50	Dry
	Tue	11/29/16	0	20,475	20,475			0.40	Rain	55	Dry
	Wed	11/30/16	0	0	0			1.10	Rain	60	Wet
	Thu	12/1/16	0	0	0						
	Fri	12/2/16	0	0	0						
	Sat	12/3/16	0	0	0						
	Monthly Totals:		**414,274**	**461,012**	**397,758**			**1.50**			
	Max Weekly:		**142,935**	**167,210**	**123,300**	**0**	**0**				
	Inches/Acre/Week (Max):		**0.85**	**0.99**	**0.74**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **12/13/2016**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2016**	**12**	**01**	TO	**2016**	**12**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2016**	**12**	**01**	TO	**2016**	**12**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0479	.0595	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Avg. Daily Influent Flow = 0.0479 MGD; Influent BOD5 = 126 mg/L; Influent TSS = 105 mg/L	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2017	1	10
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	01	31

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**01**	**01**	TO	**2017**	**01**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0469	.0677	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Raw influent average daily flow = 0.0469 MGD; Raw influent BOD5 = 194 mg/L; Raw influent TSS = 228 mg/L.	Paul F. Ruffini	S6899	717 278-3444

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2017	2	7
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	02	01	TO	2017	02	28

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**02**	**01**	TO	**2017**	**02**	**28**

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0439	.0498	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent flow = 0.0439 MGD; Influent BOD5 = 236 mg/L; Influent TSS = 152 mg/L.	Edwin D. Jamieson III	T1655	484 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2017	3	7
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	03	01	TO	2017	03	31

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**03**	**01**	TO	**2017**	**03**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0452	.0638	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent data: Average Daily Influent Flow = 0.0452 MGD; Influent BOD5 = 202 mg/L; Influent TSS = 138 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2017	4	6
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	04	01	TO	2017	04	30

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	6.8	***	8.04	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	21.5	***	***	mg/L	Grab	2/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	4.6	***	***	mg/L	Grab	2/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**04**	**01**	TO	**2017**	**04**	**30**

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0423	.0671	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Apr 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-05-16T10:45:37-04:00	
Apr 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-05-16T10:46:23-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow = 0.0423 MGD; Influent BOD5 = 121 mg/L; Influent TSS = 83 mg/L	Edwin D. Jamieson III	T1655	484 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	5	16
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **4** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Sat	4/1/17	0.05405															
1	Sun	4/2/17	0.05405															
	Mon	4/3/17	0.0728								6.8							
	Tue	4/4/17	0.0728															
	Wed	4/5/17	0.0488															
	Thu	4/6/17	0.0															
	Fri	4/7/17	0.048															
	Sat	4/8/17	0.048															
2	Sun	4/9/17	0.056															
	Mon	4/10/17	0.0589		6.7		32.0				8.04							
	Tue	4/11/17	0.0589						<		1.0							
	Wed	4/12/17	0.0589															
	Thu	4/13/17	0.0589															
	Fri	4/14/17	0.06973															
	Sat	4/15/17	0.06973															
3	Sun	4/16/17	0.06973															
	Mon	4/17/17	0.06593															
	Tue	4/18/17	0.06593															
	Wed	4/19/17	0.06593															
	Thu	4/20/17	0.0631		2.5		11.0											
	Fri	4/21/17	0.0631															
	Sat	4/22/17	0.0631															
4	Sun	4/23/17	0.0631															
	Mon	4/24/17	0.06268															
	Tue	4/25/17	0.06268															
	Wed	4/26/17	0.06268															
	Thu	4/27/17	0.06268															
	Fri	4/28/17	0.0563															
	Sat	4/29/17	0.0563															
5	Sun	4/30/17	0.0563															

Statistics for DMR

Daily Minimum (Conc.):			**2.5**		**11**	<	**1**		**6.8**									
Daily Maximum (Conc):			**6.7**		**32**	<	**1**		**8.04**									
Max Avg Weekly (Conc.):			**6.7**		**32**													
Avg Monthly (Conc.):			**4.6**		**22**													
Geometric Mean (Conc.):						<	**1**											
Max Avg Weekly (Load):	**0.065261**		**3**		**16**													
Avg Monthly (Load):	**0.05897**		**2**		**11**													
Total Monthly (Load):	**1.769095**		**69**		**323**													
Daily Minimum (Load):	**0**		**1**		**6**													
Daily Maximum (Load):	**0.0728**		**3**		**16**													

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **16-May-17**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **4** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Sat	4/1/17	27,025	27,025	0					60	Dry
1	Sun	4/2/17	27,025	27,025	0					62	Dry
	Mon	4/3/17	36,400	36,400	0			0.20	Rain	76	Wet
	Tue	4/4/17	36,400	36,400	0					70	Dry
	Wed	4/5/17	24,400	24,400	0					70	Dry
	Thu	4/6/17	0	0	0			0.71	Rain	45	Wet
	Fri	4/7/17	24,000	0	24,000						
	Sat	4/8/17	24,000	0	24,000					39	Dry
2	Sun	4/9/17	28,000	0	28,000						
	Mon	4/10/17	29,450	0	29,450					80	Dry
	Tue	4/11/17	29,450	0	29,450						
	Wed	4/12/17	29,450	0	29,450						
	Thu	4/13/17	29,450	0	29,450						
	Fri	4/14/17	0	34,866	34,866					58	Dry
	Sat	4/15/17	0	34,866	34,866						
3	Sun	4/16/17	0	34,866	34,866						
	Mon	4/17/17	0	32,966	32,966			0.10	Rain	70	Damp
	Tue	4/18/17	0	32,966	32,966						
	Wed	4/19/17	0	32,966	32,966						
	Thu	4/20/17	0	31,550	31,550					73	Dry
	Fri	4/21/17	31,550	31,550	0						
	Sat	4/22/17	31,550	31,550	0						
4	Sun	4/23/17	31,500	31,500	0						
	Mon	4/24/17	31,338	31,338	0					58	Damp
	Tue	4/25/17	31,338	31,338	0						
	Wed	4/26/17	31,338	31,338	0						
	Thu	4/27/17	31,338	31,338	0						
	Fri	4/28/17	28,150	0	28,150					68	Dry
	Sat	4/29/17	28,150	0	28,150						
5	Sun	4/30/17	28,150	0	28,150						
Monthly Totals:			**649,452**	**606,248**	**513,296**			**1.01**			
Max Weekly:			**213,152**	**228,414**	**215,532**	**0**	**0**				
Inches/Acre/Week (Max):			**1.27**	**1.36**	**1.29**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **5/16/2017**

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	05	01	TO	2017	05	31

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.89	***	7.89	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	8.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	2.9	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**05**	**01**	TO	**2017**	**05**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **11/30/2050**
Permit Application Due **06/03/1950**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0459	.0568	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
May 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-06-08T11:26:39-04:00	
May 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-06-08T11:25:53-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Monthly Average Influent Flow = 0.0459 MGD; Influent BOD5 = 207 mg/L; Influent TSS = 194 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	6	8
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **5** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	4/30/17	0.0563															
	Mon	5/1/17	0.0836															
	Tue	5/2/17	0.0836															
	Wed	5/3/17	0.0828															
	Thu	5/4/17	0.0828															
	Fri	5/5/17	0.0															
	Sat	5/6/17	0.0															
2	Sun	5/7/17	0.0															
	Mon	5/8/17	0.09187		2.9		8.0				7.89							
	Tue	5/9/17	0.09187						<		1.0							
	Wed	5/10/17	0.09187															
	Thu	5/11/17	0.0935															
	Fri	5/12/17	0.0954															
	Sat	5/13/17	0.0954															
3	Sun	5/14/17	0.0954															
	Mon	5/15/17	0.0522															
	Tue	5/16/17	0.0															
	Wed	5/17/17	0.0916															
	Thu	5/18/17	0.0916															
	Fri	5/19/17	0.0787															
	Sat	5/20/17	0.0787															
4	Sun	5/21/17	0.0788															
	Mon	5/22/17	0.07838															
	Tue	5/23/17	0.07838															
	Wed	5/24/17	0.07838															
	Thu	5/25/17	0.07838															
	Fri	5/26/17	0.0879															
	Sat	5/27/17	0.0879															
5	Sun	5/28/17	0.0879															
	Mon	5/29/17	0.08775															
	Tue	5/30/17	0.08775															
	Wed	5/31/17	0.08715															
	Thu	6/1/17	0.8715															
	Fri	6/2/17	0.1032															
	Sat	6/3/17	0.10995															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.9**		**8**		< **1**		**7.89**							
Daily Maximum (Conc):					**2.9**		**8**		< **1**		**7.89**							
Max Avg Weekly (Conc.):					**2.9**		**8**											
Avg Monthly (Conc.):					**2.9**		**8**											
Geometric Mean (Conc.):									< **1**									
Max Avg Weekly (Load):			**0.205029**		**2**		**6**											
Avg Monthly (Load):			**0.074179**		**2**		**6**											
Total Monthly (Load):			**2.299548**		**69**		**190**											
Daily Minimum (Load):			**0**		**2**		**6**											
Daily Maximum (Load):			**0.0954**		**2**		**6**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **8-Jun-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **5** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

			Zone: 1 Acres: 6.16	Zone: 2 Acres: 6.19	Zone: 3 Acres: 6.15	Zone: Acres:	Zone: Acres:	Precipitation		Average Temp	
Week	Day	Date	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Inches*	*Type*	*°F*	Ground Conditions
1	Sun	4/30/17	28,150	0	28,150					67	Dry
	Mon	5/1/17	41,800	0	41,800						
	Tue	5/2/17	41,800	0	41,800						
	Wed	5/3/17	41,400	0	41,400					66	Dry
	Thu	5/4/17	41,400	0	41,400						
	Fri	5/5/17	0	0	0			1.20	Rain	66	Wet
	Sat	5/6/17	0	0	0						
2	Sun	5/7/17	0	0	0						
	Mon	5/8/17	45,933	45,933	0					62	Dry
	Tue	5/9/17	45,933	45,933	0						
	Wed	5/10/17	45,933	45,933	0						
	Thu	5/11/17	46,750	46,750	0			0.20	Rain	56	Damp
	Fri	5/12/17	0	47,700	47,700					56	Dry
	Sat	5/13/17	0	47,700	47,700						
3	Sun	5/14/17	0	47,700	47,700						
	Mon	5/15/17	0	26,100	26,100					70	Dry
	Tue	5/16/17	0	0	0						
	Wed	5/17/17	0	45,800	45,800					93	Dry
	Thu	5/18/17	0	45,800	45,800						
	Fri	5/19/17	39,350	0	39,350					93	Dry
	Sat	5/20/17	39,350	0	39,350						
4	Sun	5/21/17	39,400	0	39,400					60	Dry
	Mon	5/22/17	39,188	0	39,187			0.20	Rain	65	Wet
	Tue	5/23/17	39,188	0	39,187			0.40	Rain		
	Wed	5/24/17	39,188	0	39,187			0.40	Rain		
	Thu	5/25/17	39,188	0	39,187			0.40	Rain		
	Fri	5/26/17	43,950	43,950	0					72	Dry
	Sat	5/27/17	43,950	43,950	0						
5	Sun	5/28/17	43,950	43,950	0						
	Mon	5/29/17	43,875	43,875	0			0.40	Rain	70	Wet
	Tue	5/30/17	43,875	43,875	0						
	Wed	5/31/17	43,575	43,575	0						
	Thu	6/1/17	43,575	43,575	0					81	Dry
	Fri	6/2/17	0	51,600	51,600					77	Dry
	Sat	6/3/17	0	54,975	54,975						
		Monthly Totals:	**888,976**	**708,524**	**702,048**			**3.20**			
		Max Weekly:	**284,052**	**325,425**	**244,100**	**0**	**0**				
		Inches/Acre/Week (Max):	**1.70**	**1.94**	**1.46**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **6/8/2017**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reorting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	8.2	***	8.2	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	12.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	4.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reorting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0448	.0592	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
June 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-07-10T14:17:15-04:00	
June 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-07-10T14:16:33-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow = 0.0448 MGD; Influent BOD5 = 284 mg/L; Influent TSS = 224 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	7	10
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **6** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Thu	6/1/17	0.08715															
	Fri	6/2/17	0.1032															
	Sat	6/3/17	0.10995															
1	Sun	6/4/17	0.10995															
	Mon	6/5/17	0.10115															
	Tue	6/6/17	0.10115															
	Wed	6/7/17	0.10115															
	Thu	6/8/17	0.10115															
	Fri	6/9/17	0.10483															
	Sat	6/10/17	0.10483															
2	Sun	6/11/17	0.10483															
	Mon	6/12/17	0.10085		4.0		12.0				8.2							
	Tue	6/13/17	0.10085						<		1.0							
	Wed	6/14/17	0.11085															
	Thu	6/15/17	0.11085															
	Fri	6/16/17	0.1245															
	Sat	6/17/17	0.10575															
3	Sun	6/18/17	0.10575															
	Mon	6/19/17	0.0															
	Tue	6/20/17	0.10617															
	Wed	6/21/17	0.10617															
	Thu	6/22/17	0.10617															
	Fri	6/23/17	0.10953															
	Sat	6/24/17	0.10953															
4	Sun	6/25/17	0.10953															
	Mon	6/26/17	0.10875															
	Tue	6/27/17	0.10875															
	Wed	6/28/17	0.10885															
	Thu	6/29/17	0.10885															
	Fri	6/30/17	0.0945															
	Sat	7/1/17	0.063															
5																		

Statistics for DMR

Daily Minimum (Conc.):			4		12	<	1		8.2									
Daily Maximum (Conc):			4		12	<	1		8.2									
Max Avg Weekly (Conc.):			4		12													
Avg Monthly (Conc.):			4		12													
Geometric Mean (Conc.):						<	1											
Max Avg Weekly (Load):	0.108355		3		10													
Avg Monthly (Load):	0.102185		3		10													
Total Monthly (Load):	3.065546		101		303													
Daily Minimum (Load):	0		3		10													
Daily Maximum (Load):	0.1245		3		10													

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **10-Jul-17**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **6** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

			Zone: 1 Acres: 6.16	Zone: 2 Acres: 6.19	Zone: 3 Acres: 6.15	Zone: Acres:	Zone: Acres:	Precipitation		Average Temp	
Week	Day	Date	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Inches*	*Type*	*°F*	Ground Conditions
	Thu	6/1/17	43,575	43,575	0						
	Fri	6/2/17	0	51,600	51,600					78	Dry
	Sat	6/3/17	0	54,975	54,975						
1	Sun	6/4/17	0	54,975	54,975						
	Mon	6/5/17	0	50,575	50,575			0.70	Rain	71	Wet
	Tue	6/6/17	0	50,575	50,575						
	Wed	6/7/17	0	50,575	50,575						
	Thu	6/8/17	0	50,575	50,575						
	Fri	6/9/17	52,417	0	52,417					70	Dry
	Sat	6/10/17	52,417	0	52,417						
2	Sun	6/11/17	52,417	0	52,417						
	Mon	6/12/17	50,425	0	50,425					93	Dry
	Tue	6/13/17	50,425	0	50,425						
	Wed	6/14/17	55,425	0	55,425					84	Dry
	Thu	6/15/17	55,425	0	55,425						
	Fri	6/16/17	62,250	62,250	0					84	Dry
	Sat	6/17/17	52,875	52,875	0					70	Damp
3	Sun	6/18/17	52,875	52,875	0						
	Mon	6/19/17	0	0	0						
	Tue	6/20/17	53,083	53,083	0			1.40	Rain	89	Dry
	Wed	6/21/17	53,083	53,083	0					85	Wet
	Thu	6/22/17	53,083	53,083	0						
	Fri	6/23/17	0	54,766	54,766						
	Sat	6/24/17	0	54,766	54,766					88	Dry
4	Sun	6/25/17	0	54,766	54,766						
	Mon	6/26/17	0	54,375	54,375						
	Tue	6/27/17	0	54,375	54,375					83	Dry
	Wed	6/28/17	0	54,425	54,425						
	Thu	6/29/17	0	54,425	54,425					81	Dry
	Fri	6/30/17	47,250	0	47,250						
	Sat	7/1/17	31,500	0	31,500					93	Dry
5											
Monthly Totals:			**787,025**	**1,116,572**	**1,161,949**			**2.10**			
Max Weekly:			**379,242**	**321,656**	**362,109**	**0**	**0**				
Inches/Acre/Week (Max):			**2.27**	**1.91**	**2.17**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **7/10/2017**

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reorting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.2	***	7.5	S.U.	Grab	2/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	16.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	9.3	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reorting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0443	.0555	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
July 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-08-08T09:47:23-04:00	
July 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-08-08T09:46:32-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Avg. Daily Influent Flow = 0.0443 MGD; Influent BOD5 = 235 mg/L; Influent TSS = 164 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	8	8
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **7** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Sat	7/1/17	0.063															
1	Sun	7/2/17	0.063															
	Mon	7/3/17	0.1006															
	Tue	7/4/17	0.09277								7.2							
	Wed	7/5/17	0.09277															
	Thu	7/6/17	0.09277															
	Fri	7/7/17	0.0577															
	Sat	7/8/17	0.0															
2	Sun	7/9/17	0.0															
	Mon	7/10/17	0.0866		9.3		16.0	<	1.0		7.5							
	Tue	7/11/17	0.0866															
	Wed	7/12/17	0.0955															
	Thu	7/13/17	0.0955															
	Fri	7/14/17	0.1113															
	Sat	7/15/17	0.1111															
3	Sun	7/16/17	0.1111															
	Mon	7/17/17	0.1126															
	Tue	7/18/17	0.11187															
	Wed	7/19/17	0.11187															
	Thu	7/20/17	0.11187															
	Fri	7/21/17	0.0594															
	Sat	7/22/17	0.0594															
4	Sun	7/23/17	0.0															
	Mon	7/24/17	0.0981															
	Tue	7/25/17	0.10573															
	Wed	7/26/17	0.10573															
	Thu	7/27/17	0.10573															
	Fri	7/28/17	0.0985															
	Sat	7/29/17	0.1016															
5	Sun	7/30/17	0.1016															
	Mon	7/31/17	0.109															
Statistics for DMR																		
Daily Minimum (Conc.):					**9.3**		**16**	<	**1**		**7.2**							
Daily Maximum (Conc):					**9.3**		**16**	<	**1**		**7.5**							
Max Avg Weekly (Conc.):					**9.3**		**16**											
Avg Monthly (Conc.):					**9.3**		**16**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.096871**		**7**		**12**											
Avg Monthly (Load):			**0.08559**		**7**		**12**											
Total Monthly (Load):			**2.653295**		**208**		**358**											
Daily Minimum (Load):			**0**		**7**		**12**											
Daily Maximum (Load):			**0.1126**		**7**		**12**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **8-Aug-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **7** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Sat	7/1/17	31,500	0	31,500						
1	Sun	7/2/17	31,500	0	31,500						
	Mon	7/3/17	50,300	0	50,300					90	Dry
	Tue	7/4/17	46,383	0	46,383						
	Wed	7/5/17	46,383	0	46,383						
	Thu	7/6/17	46,383	0	46,383			0.40	Rain	78	Wet
	Fri	7/7/17	28,850	0	28,850			0.40		76	Wet
	Sat	7/8/17	0	0	0						
2	Sun	7/9/17	0	0	0						
	Mon	7/10/17	43,300	0	43,300					84	Dry
	Tue	7/11/17	43,300	0	43,300					89	Dry
	Wed	7/12/17	47,250	0	47,250						
	Thu	7/13/17	47,250	0	47,250						
	Fri	7/14/17	0	55,650	55,650			0.10	Rain		
	Sat	7/15/17	0	55,550	55,550					77	Wet
3	Sun	7/16/17	0	55,550	55,550						
	Mon	7/17/17	0	56,300	56,300					86	Dry
	Tue	7/18/17	0	55,933	55,933					84	Dry
	Wed	7/19/17	0	55,933	55,933						
	Thu	7/20/17	0	55,933	55,933						
	Fri	7/21/17	29,700	0	29,700						
	Sat	7/22/17	29,700	0	29,700			0.37	Rain	90	Wet
4	Sun	7/23/17	0	0	0			0.40	Rain	90	Wet
	Mon	7/24/17	49,050	0	49,050						
	Tue	7/25/17	52,866	0	52,866			0.40	Rain	82	Wet
	Wed	7/26/17	52,866	0	52,866						
	Thu	7/27/17	52,866	0	52,866						
	Fri	7/28/17	49,250	49,250	0					88	Dry
	Sat	7/29/17	50,800	50,800	0						
5	Sun	7/30/17	50,800	50,800	0						
	Mon	7/31/17	54,500	54,500	0					88	Dry
	Monthly Totals:		**934,797**	**596,199**	**1,120,296**			**2.07**			
	Max Weekly:		**307,698**	**279,649**	**339,049**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.84**	**1.66**	**2.03**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **8/8/2017**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**08**	**01**	TO	**2017**	**08**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	8.2	***	8.2	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	<17.0	***	***	mg/L	Grab	3/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	7.2	***	***	mg/L	Grab	3/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	08	01	TO	2017	08	31

Reorting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.04438	.05245	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Aug 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-09-12T10:58:21-04:00	
Aug 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-09-12T10:59:00-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow = 0.04438; Influent BOD = 113 mg/L; Influent TSS = 68 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	9	12
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **8** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	7/30/17	0.1016															
	Mon	7/31/17	0.109															
	Tue	8/1/17	0.109															
	Wed	8/2/17	0.11345															
	Thu	8/3/17	0.11345															
	Fri	8/4/17	0.11567															
	Sat	8/5/17	0.11567															
2	Sun	8/6/17	0.11567															
	Mon	8/7/17	0.0															
	Tue	8/8/17	0.11317		13.2		41.0	<	1.0		8.2							
	Wed	8/9/17	0.11317															
	Thu	8/10/17	0.11317															
	Fri	8/11/17	0.09475															
	Sat	8/12/17	0.09475															
3	Sun	8/13/17	0.1176															
	Mon	8/14/17	0.10597															
	Tue	8/15/17	0.10597															
	Wed	8/16/17	0.10597															
	Thu	8/17/17	0.11493		6.1	<	5.0											
	Fri	8/18/17	0.11493															
	Sat	8/19/17	0.11493															
4	Sun	8/20/17	0.11493															
	Mon	8/21/17	0.11865															
	Tue	8/22/17	0.11865															
	Wed	8/23/17	0.1072															
	Thu	8/24/17	0.11185		2.3	<	5.0											
	Fri	8/25/17	0.11185															
	Sat	8/26/17	0.1119															
5	Sun	8/27/17	0.1119															
	Mon	8/28/17	0.06995															
	Tue	8/29/17	0.06995															
	Wed	8/30/17	0.0737															
	Thu	8/31/17	0.06593															
	Fri	9/1/17	0.06593															
	Sat	9/2/17	0.06593															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.3**	<	**5**	<	**1**		**8.2**							
Daily Maximum (Conc):					**13.2**		**41**	<	**1**		**8.2**							
Max Avg Weekly (Conc.):					**13.2**		**41**											
Avg Monthly (Conc.):					**7.2**	<	**17**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.113575**		**12**		**39**											
Avg Monthly (Load):			**0.102536**		**7**	<	**16**											
Total Monthly (Load):			**3.178624**		**211**	<	**498**											
Daily Minimum (Load):			**0**		**2**	<	**5**											
Daily Maximum (Load):			**0.11865**		**12**		**39**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **12-Sep-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **8** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	7/30/17	50,800	50,800	0					87	Dry
	Mon	7/31/17	54,500	54,500	0					89	Dry
	Tue	8/1/17	54,500	54,500	0						
	Wed	8/2/17	56,725	56,725	0			0.10	Rain	88	Damp
	Thu	8/3/17	56,725	56,725	0						
	Fri	8/4/17	0	57,833	57,833						Dry
	Sat	8/5/17	0	57,833	57,833						
2	Sun	8/6/17	0	57,833	57,833						
	Mon	8/7/17	0	0	0			0.70	Rain	65	Wet
	Tue	8/8/17	0	56,583	56,583						
	Wed	8/9/17	0	56,583	56,583						
	Thu	8/10/17	0	56,583	56,583						
	Fri	8/11/17	47,375	0	47,375					65	Dry
	Sat	8/12/17	47,375	0	47,375						
3	Sun	8/13/17	58,800	0	58,800			0.10	Rain	70	Dry
	Mon	8/14/17	52,983	0	52,983					80	Dry
	Tue	8/15/17	52,983	0	52,983						
	Wed	8/16/17	52,983	0	52,983						
	Thu	8/17/17	57,462	0	57,462					90	Dry
	Fri	8/18/17	57,462	57,462	0						
	Sat	8/19/17	57,462	57,462	0						
4	Sun	8/20/17	57,462	57,462	0						
	Mon	8/21/17	59,325	59,325	0					68	Dry
	Tue	8/22/17	59,325	59,325	0			0.40	Rain		
	Wed	8/23/17	53,600	53,600	0			0.30	Rain	77	Damp
	Thu	8/24/17	0	55,925	55,925					75	Dry
	Fri	8/25/17	0	55,925	55,925						
	Sat	8/26/17	0	55,950	55,950					59	Dry
5	Sun	8/27/17	0	55,950	55,950						
	Mon	8/28/17	0	34,975	34,975					70	Dry
	Tue	8/29/17	0	34,975	34,975			0.30	Rain	65	Wet
	Wed	8/30/17	0	36,850	36,850					70	
	Thu	8/31/17	32,963	0	32,963						
	Fri	9/1/17	32,963	0	32,963						
	Sat	9/2/17	32,963	0	32,963						
		Monthly Totals:	**915,510**	**1,186,384**	**1,076,722**			**1.90**			
		Max Weekly:	**390,135**	**397,512**	**322,332**	**0**	**0**				
		Inches/Acre/Week (Max):	**2.33**	**2.37**	**1.93**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **9/12/2017**

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reorting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	8.3	***	8.3	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	9.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	4.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reorting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0424	.0498	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Sept 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-10-05T10:54:22-04:00	
Sept 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-10-05T10:55:00-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Avg. Daily Influent Flow = 0.0424 MGD; Influent BOD5 = 211 mg/L; Influent TSS = 84 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	10	5
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **9** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Fri	9/1/17	0.06593															
	Sat	9/2/17	0.06593															
1	Sun	9/3/17	0.06593															
	Mon	9/4/17	0.06485															
	Tue	9/5/17	0.06485															
	Wed	9/6/17	0.07535															
	Thu	9/7/17	0.07535															
	Fri	9/8/17	0.08465															
	Sat	9/9/17	0.08465															
2	Sun	9/10/17	0.0967															
	Mon	9/11/17	0.08203		4.0		9.0				8.3							
	Tue	9/12/17	0.08203						<		1.0							
	Wed	9/13/17	0.08203															
	Thu	9/14/17	0.08203															
	Fri	9/15/17	0.0															
	Sat	9/16/17	0.0															
3	Sun	9/17/17	0.0															
	Mon	9/18/17	0.0															
	Tue	9/19/17	0.0															
	Wed	9/20/17	0.0															
	Thu	9/21/17	0.0															
	Fri	9/22/17	0.0															
	Sat	9/23/17	0.0															
4	Sun	9/24/17	0.0															
	Mon	9/25/17	0.0															
	Tue	9/26/17	0.0															
	Wed	9/27/17	0.0															
	Thu	9/28/17	0.0															
	Fri	9/29/17	0.0															
	Sat	9/30/17	0.0															
5																		

Statistics for DMR

Daily Minimum (Conc.):			4		9	<	1		8.3							
Daily Maximum (Conc):			4		9	<	1		8.3							
Max Avg Weekly (Conc.):			4		9											
Avg Monthly (Conc.):			4		9											
Geometric Mean (Conc.):						<	1									
Max Avg Weekly (Load):	0.073661		3		6											
Avg Monthly (Load):	0.035743		3		6											
Total Monthly (Load):	1.072275		82		185											
Daily Minimum (Load):	0		3		6											
Daily Maximum (Load):	0.0967		3		6											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **5-Oct-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **9** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	9/1/17	32,963	0	32,963						
	Sat	9/2/17	32,963	0	32,963						
1	Sun	9/3/17	32,963	0	32,963						
	Mon	9/4/17	32,425	0	32,425					81	Dry
	Tue	9/5/17	32,425	0	32,425			0.40	Rain	65	Wet
	Wed	9/6/17	37,675	0	37,675					65	Dry
	Thu	9/7/17	0	37,675	37,675					72	Dry
	Fri	9/8/17	0	42,325	42,325					72	
	Sat	9/9/17	0	42,325	42,325						
2	Sun	9/10/17	0	48,350	48,350						
	Mon	9/11/17	0	41,013	41,013					76	Dry
	Tue	9/12/17	0	41,013	41,013						
	Wed	9/13/17	0	41,013	41,013						
	Thu	9/14/17	0	41,013	41,013						
	Fri	9/15/17	0	0	0					78	Dry
	Sat	9/16/17	0	0	0						
3	Sun	9/17/17	0	0	0						
	Mon	9/18/17	0	0	0						
	Tue	9/19/17	0	0	0						
	Wed	9/20/17	0	0	0						
	Thu	9/21/17	0	0	0						
	Fri	9/22/17	0	0	0						
	Sat	9/23/17	0	0	0						
4	Sun	9/24/17	0	0	0						
	Mon	9/25/17	0	0	0						
	Tue	9/26/17	0	0	0						
	Wed	9/27/17	0	0	0					87	Dry
	Thu	9/28/17	0	0	0					73	Dry
	Fri	9/29/17	0	0	0					70	Dry
	Sat	9/30/17	0	0	0						
5											
Monthly Totals:			**201,414**	**334,727**	**536,141**			**0.40**			
Max Weekly:			**135,488**	**212,402**	**257,813**	**0**	**0**				
Inches/Acre/Week (Max):			**0.81**	**1.26**	**1.54**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **10/5/2017**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	10	01	TO	2017	10	31

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.9	***	7.9	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	<5.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	2.4	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2017**	**10**	**01**	TO	**2017**	**10**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0436	.0594	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Oct 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-11-06T10:11:42-05:00	
Oct 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-11-06T10:12:23-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Influent Flow = 0.0436 MGD; Influent BOD5 = 113 mg/L; Influent TSS = 88 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	11	6
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **10** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	10/1/17	0.0															
	Mon	10/2/17	0.05698															
	Tue	10/3/17	0.05698															
	Wed	10/4/17	0.05698															
	Thu	10/5/17	0.05698															
	Fri	10/6/17	0.05667															
	Sat	10/7/17	0.05667		2.4	<	5.0											
2	Sun	10/8/17	0.05667															
	Mon	10/9/17	0.0718								7.9							
	Tue	10/10/17	0.0718						<		1.0							
	Wed	10/11/17	0.0503															
	Thu	10/12/17	0.0503															
	Fri	10/13/17	0.0															
	Sat	10/14/17	0.0															
3	Sun	10/15/17	0.0															
	Mon	10/16/17	0.0															
	Tue	10/17/17	0.0															
	Wed	10/18/17	0.0657															
	Thu	10/19/17	0.0657															
	Fri	10/20/17	0.066															
	Sat	10/21/17	0.066															
4	Sun	10/22/17	0.066															
	Mon	10/23/17	0.06595															
	Tue	10/24/17	0.06595															
	Wed	10/25/17	0.06598															
	Thu	10/26/17	0.06598															
	Fri	10/27/17	0.06598															
	Sat	10/28/17	0.06598															
5	Sun	10/29/17	0.0															
	Mon	10/30/17	0.06598															
	Tue	10/31/17	0.04915															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.4**	**<**	**5**	**<**	**1**		**7.9**							
Daily Maximum (Conc):					**2.4**	**<**	**5**	**<**	**1**		**7.9**							
Max Avg Weekly (Conc.):					**2.4**	**<**	**5**											
Avg Monthly (Conc.):					**2.4**	**<**	**5**											
Geometric Mean (Conc.):								**<**	**1**									
Max Avg Weekly (Load):			**0.065974**		**1**	**<**	**2**											
Avg Monthly (Load):			**0.047821**		**1**	**<**	**2**											
Total Monthly (Load):			**1.482448**		**35**	**<**	**73**											
Daily Minimum (Load):			**0**		**1**	**<**	**2**											
Daily Maximum (Load):			**0.0718**		**1**	**<**	**2**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **6-Nov-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **10** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	10/1/17	0	0	0						
	Mon	10/2/17	28,488	28,488	0					78	Dry
	Tue	10/3/17	28,488	28,488	0						
	Wed	10/4/17	28,488	28,488	0					75	Dry
	Thu	10/5/17	28,488	28,488	0						
	Fri	10/6/17	28,333	28,333	0					80	Dry
	Sat	10/7/17	28,333	28,333	0						
2	Sun	10/8/17	28,333	28,333	0						
	Mon	10/9/17	35,900	0	35,900			0.40	Rain	80	Wet
	Tue	10/10/17	35,900	0	35,900						
	Wed	10/11/17	25,150	0	25,150					75	Dry
	Thu	10/12/17	25,150	0	25,150						
	Fri	10/13/17	0	0	0					63	Dry
	Sat	10/14/17	0	0	0						
3	Sun	10/15/17	0	0	0						
	Mon	10/16/17	0	0	0						
	Tue	10/17/17	0	0	0						
	Wed	10/18/17	32,850	32,850	0					73	Dry
	Thu	10/19/17	32,850	32,850	0						
	Fri	10/20/17	33,000	33,000	0					74	Dry
	Sat	10/21/17	33,000	33,000	0					68	Dry
4	Sun	10/22/17	33,000	33,000	0						
	Mon	10/23/17	32,975	32,975	0					73	Dry
	Tue	10/24/17	32,975	32,975	0						
	Wed	10/25/17	0	32,990	32,990					58	Dry
	Thu	10/26/17	0	32,990	32,990						
	Fri	10/27/17	0	32,990	32,990						
	Sat	10/28/17	0	32,990	32,990						
5	Sun	10/29/17	0	0	0			1.00	Rain		Wet
	Mon	10/30/17	0	32,990	32,990			0.40	Rain	54	Wet
	Tue	10/31/17	0	24,575	24,575					52	Dry
Monthly Totals:			**551,701**	**619,126**	**311,625**			**1.80**			
Max Weekly:			**170,618**	**230,910**	**131,960**	**0**	**0**				
Inches/Acre/Week (Max):			**1.02**	**1.37**	**0.79**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **11/6/2017**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	11	01	TO	2017	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2017**
DMR Effective To: **11/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.8	***	7.8	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	<5.0	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	2.7	***	***	mg/L	Grab	1/month
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	11	01	TO	2017	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2017**
DMR Effective To: **11/30/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0429	.0496	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments	Raw Influent Data: Average Daily Influent Flow = 0.0429 MGD; Influent BOD5 = 238 mg/L; Influent TSS = 212 mg/L.									

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3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Nov 2017 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2017-12-11T11:00:17-05:00	
Nov 2017 Land App Supp Form.pdf	Land Application Systems Form	2017-12-11T11:00:52-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Influent Flow = 0.0429 MGD; Influent BOD5 = 238 mg/L; Influent TSS = 212 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	12	11
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **11** (select number) Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1															
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	10/29/17	0.0															
	Mon	10/30/17	0.06598															
	Tue	10/31/17	0.04915															
	Wed	11/1/17	0.04915															
	Thu	11/2/17	0.05018															
	Fri	11/3/17	0.05018															
	Sat	11/4/17	0.05018															
2	Sun	11/5/17	0.05018															
	Mon	11/6/17	0.0502															
	Tue	11/7/17	0.05002															
	Wed	11/8/17	0.05002															
	Thu	11/9/17	0.05002															
	Fri	11/10/17	0.05002															
	Sat	11/11/17	0.05002															
3	Sun	11/12/17	0.05002															
	Mon	11/13/17	0.04637		2.7	<	5.0	<	1.0		7.8							
	Tue	11/14/17	0.04637															
	Wed	11/15/17	0.04637															
	Thu	11/16/17	0.05003															
	Fri	11/17/17	0.05003															
	Sat	11/18/17	0.05003															
4	Sun	11/19/17	0.04993															
	Mon	11/20/17	0.04993															
	Tue	11/21/17	0.04993															
	Wed	11/22/17	0.0499															
	Thu	11/23/17	0.05314															
	Fri	11/24/17	0.05314															
	Sat	11/25/17	0.05314															
5	Sun	11/26/17	0.05314															
	Mon	11/27/17	0.05314															
	Tue	11/28/17	0.05314															
	Wed	11/29/17	0.05314															
	Thu	11/30/17	0.0															
	Fri	12/1/17	0.0															
	Sat	12/2/17	0.0															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.7**	<	**5**	<	**1**		**7.8**							
Daily Maximum (Conc):					**2.7**	<	**5**	<	**1**		**7.8**							
Max Avg Weekly (Conc.):					**2.7**	<	**5**											
Avg Monthly (Conc.):					**2.7**	<	**5**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.051304**		**1**	<	**2**											
Avg Monthly (Load):			**0.048701**		**1**	<	**2**											
Total Monthly (Load):			**1.461036**		**31**	<	**58**											
Daily Minimum (Load):			**0**		**1**	<	**2**											
Daily Maximum (Load):			**0.053142**		**1**	<	**2**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **11-Dec-17**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **11** *(Select number)* Year: **2017**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	10/29/17	0	0	0						
	Mon	10/30/17	0	32,990	32,990						
	Tue	10/31/17	0	24,575	24,575						
	Wed	11/1/17	24,575	0	24,575						
	Thu	11/2/17	25,087	0	25,087					75	Dry
	Fri	11/3/17	25,087	0	25,087						
	Sat	11/4/17	25,087	0	25,087						
2	Sun	11/5/17	25,087	0	25,087						
	Mon	11/6/17	25,100	0	25,100					65	Dry
	Tue	11/7/17	25,008	0	25,008					50	Dry
	Wed	11/8/17	0	25,008	25,008						
	Thu	11/9/17	0	25,008	25,008						
	Fri	11/10/17	0	25,008	25,008						
	Sat	11/11/17	0	25,008	25,008						
3	Sun	11/12/17	0	25,008	25,008						
	Mon	11/13/17	0	23,183	23,183						
	Tue	11/14/17	0	23,183	23,183						
	Wed	11/15/17	0	23,183	23,183						
	Thu	11/16/17	25,016	25,016	0					58	Dry
	Fri	11/17/17	25,016	25,016	0						
	Sat	11/18/17	25,016	25,016	0						
4	Sun	11/19/17	24,966	24,966	0						
	Mon	11/20/17	24,966	24,966	0						
	Tue	11/21/17	24,966	24,966	0						
	Wed	11/22/17	24,950	24,950	0			0.10	Rain	53	Dry
	Thu	11/23/17	26,571	0	26,571					29	Dry
	Fri	11/24/17	26,571	0	26,571						
	Sat	11/25/17	26,571	0	26,571						
5	Sun	11/26/17	26,571	0	26,571						
	Mon	11/27/17	26,571	0	26,571						
	Tue	11/28/17	26,571	0	26,571						
	Wed	11/29/17	26,571	0	26,571						
	Thu	11/30/17	0	0	0					50	Dry
	Fri	12/1/17	0	0	0						
	Sat	12/2/17	0	0	0						
		Monthly Totals:	**535,924**	**369,485**	**555,617**			**0.10**			
		Max Weekly:	**179,561**	**169,605**	**175,227**	**0**	**0**				
		Inches/Acre/Week (Max):	**1.07**	**1.01**	**1.05**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **12/11/2017**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	12	01	TO	2017	12	31

Reorting Frequency: **Monthly**
DMR Effective From: **12/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		30.0 Avg Mo	***	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		25.0 Avg Mo	***	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	12	01	TO	2017	12	31

Reorting Frequency: **Monthly**
DMR Effective From: **12/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0456	.0544	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent data: Average Daily Influent Flow = 0.0456 MGD; Influent BOD5 = 238 mg/L; Influent TSS = 87 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2018	1	9
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0453	.0565	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments	Influent BOD5 = 207 mg/L; Influent TSS = 220 mg/L.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Influent Daily Flow = 0.0453; Influent BOD5 = 207 mg/L; Influent TSS = 220 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2018	2	8
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2018**	**02**	**01**	TO	**2018**	**02**	**28**

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	02	01	TO	2018	02	28

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0486	.0638	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Influent Flow = 0.0486 MGD; Influent BOD5 = 128 mg/L; Influent TSS = 116 mg/L.	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2018	3	7
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	03	01	TO	2018	03	31

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2018**	**03**	**01**	TO	**2018**	**03**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0459	.0714	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Influent Flow = 0.0459 MGD; Influent BOD5 = 299 mg/L; Influent TSS = 172 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
RUFFINIP			AREA CODE	NUMBER	2018	4	5
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	04	01	TO	2018	04	30

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	8.5	***	8.5	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	12.0	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	2.6	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2018**	**04**	**01**	TO	**2018**	**04**	**30**

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0460	.0591	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Apr 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-05-14T09:29:04-04:00	
Apr 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-05-14T09:30:02-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average daily influent flow = 0.0460 MGD; Influent BOD5 = 389 mg/L; Influent TSS = 260 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	5	14
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **4** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	4/1/18	0.05415															
	Mon	4/2/18	0.05415															
	Tue	4/3/18	0.06055															
	Wed	4/4/18	0.06055															
	Thu	4/5/18	0.06187															
	Fri	4/6/18	0.06187															
	Sat	4/7/18	0.06187															
2	Sun	4/8/18	0.0712								8.5							
	Mon	4/9/18	0.06487		2.6		12.0											
	Tue	4/10/18	0.06487						<		1.0							
	Wed	4/11/18	0.06487															
	Thu	4/12/18	0.06513															
	Fri	4/13/18	0.06513															
	Sat	4/14/18	0.06513															
3	Sun	4/15/18	0.0648															
	Mon	4/16/18	0.0															
	Tue	4/17/18	0.06225															
	Wed	4/18/18	0.06225															
	Thu	4/19/18	0.06947															
	Fri	4/20/18	0.06947															
	Sat	4/21/18	0.06947															
4	Sun	4/22/18	0.06255															
	Mon	4/23/18	0.06255															
	Tue	4/24/18	0.06255															
	Wed	4/25/18	0.06255															
	Thu	4/26/18	0.06057															
	Fri	4/27/18	0.06057															
	Sat	4/28/18	0.06057															
5	Sun	4/29/18	0.06787															
	Mon	4/30/18	0.06787															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.6**		**12**	<	**1**		**8.5**							
Daily Maximum (Conc):					**2.6**		**12**	<	**1**		**8.5**							
Max Avg Weekly (Conc.):					**2.6**		**12**											
Avg Monthly (Conc.):					**2.6**		**12**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.065885**		**1**		**6**											
Avg Monthly (Load):			**0.061384**		**1**		**6**											
Total Monthly (Load):			**1.841523**		**42**		**195**											
Daily Minimum (Load):			**0**		**1**		**6**											
Daily Maximum (Load):			**0.0712**		**1**		**6**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **5/10/2018 15:01**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **4** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	4/1/18	27,075	0	27,075					53	
	Mon	4/2/18	27,075	0	27,075			0.20	Rain	48	
	Tue	4/3/18	30,275	0	30,275						
	Wed	4/4/18	30,275	0	30,275						
	Thu	4/5/18	30,933	0	30,933					52	
	Fri	4/6/18	30,933	0	30,933						
	Sat	4/7/18	30,933	0	30,933						
2	Sun	4/8/18	35,600	35,600	0					40	
	Mon	4/9/18	32,433	32,433	0					40	
	Tue	4/10/18	32,433	32,433	0						
	Wed	4/11/18	32,433	32,433	0						
	Thu	4/12/18	32,566	32,566	0					61	
	Fri	4/13/18	32,566	32,566	0						
	Sat	4/14/18	32,566	32,566	0			0.40	Rain	48	
3	Sun	4/15/18	0	32,400	32,400			0.40	Rain	50	
	Mon	4/16/18	0	0	0			2.00	Rain	42	
	Tue	4/17/18	0	31,125	31,125					42	
	Wed	4/18/18	0	31,125	31,125						
	Thu	4/19/18	0	34,733	34,733			0.10	Rain	48	
	Fri	4/20/18	0	34,733	34,733						
	Sat	4/21/18	0	34,733	34,733						
4	Sun	4/22/18	31,275	0	31,275					48	
	Mon	4/23/18	31,275	0	31,275						
	Tue	4/24/18	31,275	0	31,275						
	Wed	4/25/18	31,275	0	31,275						
	Thu	4/26/18	30,283	0	30,283					66	
	Fri	4/27/18	30,283	0	30,283						
	Sat	4/28/18	30,283	0	30,283			0.40	Rain	70	
5	Sun	4/29/18	33,933	33,933	0					45	
	Mon	4/30/18	33,933	33,933	0						
Monthly Totals:			**721,911**	**497,312**	**622,297**			**3.50**			
Max Weekly:			**230,597**	**230,597**	**215,949**	**0**	**0**				
Inches/Acre/Week (Max):			**1.38**	**1.37**	**1.29**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **5/10/2018**

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	05	01	TO	2018	05	31

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.5	***	7.5	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	6.0	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	5.1	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2018**	**05**	**01**	TO	**2018**	**05**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0647	.0841	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
May 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-06-11T13:29:06-04:00	
May 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-06-11T13:29:47-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Average Daily Influent Flow = 0.0647 MGD; Influent BOD5 = 312 mg/L; Influent TSS = 520 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	6	11
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **5** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	4/29/18	0.06787															
	Mon	4/30/18	0.06787															
	Tue	5/1/18	0.06787															
	Wed	5/2/18	0.0869															
	Thu	5/3/18	0.0869															
	Fri	5/4/18	0.08705															
	Sat	5/5/18	0.08705															
2	Sun	5/6/18	0.0774															
	Mon	5/7/18	0.07927		5.1		6.0				7.5							
	Tue	5/8/18	0.07927					<	1.0									
	Wed	5/9/18	0.07927															
	Thu	5/10/18	0.0776															
	Fri	5/11/18	0.0776															
	Sat	5/12/18	0.0776															
3	Sun	5/13/18	0.0776															
	Mon	5/14/18	0.08827															
	Tue	5/15/18	0.08827															
	Wed	5/16/18	0.08827															
	Thu	5/17/18	0.0															
	Fri	5/18/18	0.0															
	Sat	5/19/18	0.0															
4	Sun	5/20/18	0.0839															
	Mon	5/21/18	0.0909															
	Tue	5/22/18	0.0909															
	Wed	5/23/18	0.0909															
	Thu	5/24/18	0.09103															
	Fri	5/25/18	0.09103															
	Sat	5/26/18	0.09103															
5	Sun	5/27/18	0.0912															
	Mon	5/28/18	0.082															
	Tue	5/29/18	0.082															
	Wed	5/30/18	0.082															
	Thu	5/31/18	0.08227															
	Fri	6/1/18	0.05484															
	Sat	6/2/18	0.05484															
Statistics for DMR																		
Daily Minimum (Conc.):					**5.1**		**6**	<	**1**		**7.5**							
Daily Maximum (Conc):					**5.1**		**6**	<	**1**		**7.5**							
Max Avg Weekly (Conc.):					**5.1**		**6**											
Avg Monthly (Conc.):					**5.1**		**6**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.089957**		**3**		**4**											
Avg Monthly (Load):			**0.075978**		**3**		**4**											
Total Monthly (Load):			**2.355327**		**105**		**123**											
Daily Minimum (Load):			**0**		**3**		**4**											
Daily Maximum (Load):			**0.0912**		**3**		**4**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **6/11/2018 12:40**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **5** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	4/29/18	33,933	33,933	0						
	Mon	4/30/18	33,933	33,933	0						
	Tue	5/1/18	33,933	33,933	0					85	Dry
	Wed	5/2/18	43,450	43,450	0						
	Thu	5/3/18	43,450	43,450	0						
	Fri	5/4/18	43,525	43,525	0					78	Dry
	Sat	5/5/18	43,525	43,525	0						
2	Sun	5/6/18	38,700	0	38,700						
	Mon	5/7/18	39,633	0	39,633						
	Tue	5/8/18	39,633	0	39,633						
	Wed	5/9/18	39,633	0	39,633						
	Thu	5/10/18	38,800	0	38,800					74	Dry
	Fri	5/11/18	38,800	0	38,800						
	Sat	5/12/18	38,800	0	38,800						
3	Sun	5/13/18	38,800	0	38,800			0.40	Rain	70	Wet
	Mon	5/14/18	0	44,133	44,133			0.30	Rain	59	Wet
	Tue	5/15/18	0	44,133	44,133						
	Wed	5/16/18	0	44,133	44,133						
	Thu	5/17/18	0	0	0			1.50	Rain	61	Wet
	Fri	5/18/18	0	0	0						
	Sat	5/19/18	0	0	0						
4	Sun	5/20/18	41,950	41,950	0			1.70	Rain	62	Wet
	Mon	5/21/18	45,450	45,450	0					80	Damp
	Tue	5/22/18	45,450	45,450	0					80	Dry
	Wed	5/23/18	45,450	45,450	0						
	Thu	5/24/18	45,516	45,516	0					80	Dry
	Fri	5/25/18	45,516	45,516	0						
	Sat	5/26/18	45,516	45,516	0						
5	Sun	5/27/18	45,600	45,600	0			0.40	Rain	70	Wet
	Mon	5/28/18	41,000	0	41,000						
	Tue	5/29/18	41,000	0	41,000						
	Wed	5/30/18	41,000	0	41,000			0.01	Rain	74	Wet
	Thu	5/31/18	41,133	0	41,133						
	Fri	6/1/18	27,422	0	27,422						
	Sat	6/2/18	27,422	0	27,422						
		Monthly Totals:	**1,045,263**	**700,730**	**609,331**			**4.31**			
		Max Weekly:	**314,848**	**314,848**	**273,999**	**0**	**0**				
		Inches/Acre/Week (Max):	**1.88**	**1.87**	**1.64**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **6/11/2018**

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reorting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH	Sample Measurement	***	***	***	7.6	***	7.6	S.U.	Grab	1/month
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/month
Total Suspended Solids	Sample Measurement	***	***	***	***	9.0	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	30.0 Avg Mo	***		Grab	1/month
Fecal Coliform	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	Grab	1/month
	Permit Measurement	***	***		***	200 Geo Mean	***		Grab	1/month
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	8.4	***	mg/L	Grab	1/month
	Permit Measurement	***	***		***	25.0 Avg Mo	***		Grab	1/month
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reorting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due **06/03/2021**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow	Sample Measurement	.0465	.0596	MGD	***	***	***	***	Estimate	1/month
	Permit Measurement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Facility Comments	It was determined that the influent flow meter is malfunctioning due to unusually high recorded flows during the month. The most recent 12-month average was used to estimate average monthly and daily maximum influent flows. The flow meter will be serviced as soon as possible.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
June 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-07-10T11:11:15-04:00	
June 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-07-10T11:11:52-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
59544	Influent(516778)	Flow	Sample type not in accordance with permit	It was determined that the influent flow meter is malfunctioning due to unusually high recorded flows during the month. The most recent 12-month average was used to estimate average monthly and daily maximum influent flows. The flow meter will be serviced as soon as possible.
59545	Influent(516778)	Flow	Sample collection less frequent than required	It was determined that the influent flow meter is malfunctioning due to unusually high recorded flows during the month. The most recent 12-month average was used to estimate average monthly and daily maximum influent flows. The flow meter will be serviced as soon as possible.

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Influent Flow Data: ESTIMATED average daily effluent flow = 0.0465 MGD (12-month average); Influent BOD5 = 168 mg/L; Influent TSS = 124 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Paul Ruffini	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	7	10
RUFFINIP		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **6** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Fri	6/1/18	0.08227															
	Sat	6/2/18	0.08227															
1	Sun	6/3/18	0.0817															
	Mon	6/4/18	0.097															
	Tue	6/5/18	0.097															
	Wed	6/6/18	0.097															
	Thu	6/7/18	0.1065															
	Fri	6/8/18	0.10655															
	Sat	6/9/18	0.10655															
2	Sun	6/10/18	0.1189															
	Mon	6/11/18	0.115		8.4		9.0				7.6							
	Tue	6/12/18	0.115						<		1.0							
	Wed	6/13/18	0.115															
	Thu	6/14/18	0.11377															
	Fri	6/15/18	0.11377															
	Sat	6/16/18	0.11377															
3	Sun	6/17/18	0.1013															
	Mon	6/18/18	0.10543															
	Tue	6/19/18	0.10543															
	Wed	6/20/18	0.10543															
	Thu	6/21/18	0.1058															
	Fri	6/22/18	0.1058															
	Sat	6/23/18	0.1058															
4	Sun	6/24/18	0.1058															
	Mon	6/25/18	0.11923															
	Tue	6/26/18	0.11923															
	Wed	6/27/18	0.11923															
	Thu	6/28/18	0.0															
	Fri	6/29/18	0.0															
	Sat	6/30/18	0.0931															
5																		

Statistics for DMR

Daily Minimum (Conc.):			**8.4**		**9**	<	**1**		**7.6**						
Daily Maximum (Conc):			**8.4**		**9**	<	**1**		**7.6**						
Max Avg Weekly (Conc.):			**8.4**		**9**										
Avg Monthly (Conc.):			**8.4**		**9**										
Geometric Mean (Conc.):						<	**1**								
Max Avg Weekly (Load):	**0.115028**		**8**		**9**										
Avg Monthly (Load):	**0.098454**		**8**		**9**										
Total Monthly (Load):	**2.953628**		**242**		**259**										
Daily Minimum (Load):	**0**		**8**		**9**										
Daily Maximum (Load):	**0.119233**		**8**		**9**										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **7/10/2018 10:12**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **6** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	6/1/18	41,133	0	41,133						
	Sat	6/2/18	41,133	0	41,133						
1	Sun	6/3/18	40,850	0	40,850						
	Mon	6/4/18	0	48,500	48,500					73	Dry
	Tue	6/5/18	0	48,500	48,500						
	Wed	6/6/18	0	48,500	48,500						
	Thu	6/7/18	0	53,250	53,250					80	Dry
	Fri	6/8/18	0	53,275	53,275					73	Dry
	Sat	6/9/18	0	53,275	53,275						
2	Sun	6/10/18	59,450	59,450	0			0.45	Rain	71	Dry
	Mon	6/11/18	57,500	57,500	0			0.45	Rain	78	Damp
	Tue	6/12/18	57,500	57,500	0						
	Wed	6/13/18	57,500	57,500	0						
	Thu	6/14/18	56,833	56,833	0					82	Dry
	Fri	6/15/18	56,833	56,833	0						
	Sat	6/16/18	56,833	56,833	0						
3	Sun	6/17/18	50,650	0	50,650					84	Dry
	Mon	6/18/18	52,716	0	52,716					68	Dry
	Tue	6/19/18	52,716	0	52,716						
	Wed	6/20/18	52,716	0	52,716						
	Thu	6/21/18	52,900	0	52,900					70	Dry
	Fri	6/22/18	52,900	0	52,900						
	Sat	6/23/18	52,900	0	52,900						
4	Sun	6/24/18	0	52,900	52,900			0.30	Rain	75	Damp
	Mon	6/25/18	0	59,616	59,616						
	Tue	6/26/18	0	59,616	59,616						
	Wed	6/27/18	0	59,616	59,616						
	Thu	6/28/18	0	0	0			1.50	Rain	87	Wet
	Fri	6/29/18	0	0	0						
	Sat	6/30/18	0	46,550	46,550						
5											
Monthly Totals:			**893,063**	**986,047**	**1,074,212**			**2.70**			
Max Weekly:			**402,449**	**402,449**	**367,498**	**0**	**0**				
Inches/Acre/Week (Max):			**2.41**	**2.39**	**2.20**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **7/10/2018**

3800-FM-BPNPSM0462 3/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	7.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	<2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2018**	**07**	**01**	TO	**2018**	**07**	**31**

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow (50050)	Sample Measurement	.0465	.0596	MGD	***	***	***	***	1/month	Estimate
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments	The influent flow meter is beyond repair and is scheduled to be replaced. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
July 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-08-07T10:22:11-04:00	
July 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-08-07T10:22:45-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point	Cause Of NC	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
69005	Influent (516778)	Flow	Sample type not in accordance with permit	The influent flow meter is beyond repair and is scheduled to be replaced. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.
69006	Influent (516778)	Flow	Sample collection less frequent than required	The influent flow meter is beyond repair and is scheduled to be replaced. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Estimated Influent Flow = 0.0465 MGD; Influent BOD5 = 423 mg/L; Influent TSS = 348 mg/L	Edwin D. Jamieson III	T1655	(484) 746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER		Paul Ruffini	TELEPHONE		DATE		
			717	2783444	2018	8	7
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **7** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	7/1/18	0.0931															
	Mon	7/2/18	0.11505															
	Tue	7/3/18	0.11505															
	Wed	7/4/18	0.11165															
	Thu	7/5/18	0.11165															
	Fri	7/6/18	0.112															
	Sat	7/7/18	0.112															
2	Sun	7/8/18	0.098															
	Mon	7/9/18	0.104	<	2.0		7.0				8.1							
	Tue	7/10/18	0.104					<	1.0									
	Wed	7/11/18	0.104															
	Thu	7/12/18	0.10457															
	Fri	7/13/18	0.10457															
	Sat	7/14/18	0.10457															
3	Sun	7/15/18	0.1203															
	Mon	7/16/18	0.1207															
	Tue	7/17/18	0.1098															
	Wed	7/18/18	0.1098															
	Thu	7/19/18	0.1103															
	Fri	7/20/18	0.1103															
	Sat	7/21/18	0.0															
4	Sun	7/22/18	0.0971															
	Mon	7/23/18	0.1075															
	Tue	7/24/18	0.1075															
	Wed	7/25/18	0.0															
	Thu	7/26/18	0.0															
	Fri	7/27/18	0.0															
	Sat	7/28/18	0.0															
5	Sun	7/29/18	0.1036															
	Mon	7/30/18	0.10625															
	Tue	7/31/18	0.10625															
Statistics for DMR																		
Daily Minimum (Conc.):				<	2		7	<	1		8.1							
Daily Maximum (Conc):				<	2		7	<	1		8.1							
Max Avg Weekly (Conc.):				<	2		7											
Avg Monthly (Conc.):				<	2		7											
Geometric Mean (Conc.):								<	1									
Max Avg Weekly (Load):			0.110071	<	2		6											
Avg Monthly (Load):			0.090439	<	2		6											
Total Monthly (Load):			2.803598	<	54		188											
Daily Minimum (Load):			0	<	2		6											
Daily Maximum (Load):			0.1207	<	2		6											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **8/7/2018 9:50**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **7** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	7/1/18	46,550	46,550	0						
	Mon	7/2/18	57,525	57,525	0					75	Dry
	Tue	7/3/18	57,525	57,525	0			0.40	Rain		
	Wed	7/4/18	55,825	55,825	0			0.40	Rain	86	Dry
	Thu	7/5/18	55,825	55,825	0						
	Fri	7/6/18	56,000	56,000	0			0.30	Rain	83	Damp
	Sat	7/7/18	56,000	56,000	0						
2	Sun	7/8/18	49,000	0	49,000					75	Dry
	Mon	7/9/18	52,000	0	52,000					70	Dry
	Tue	7/10/18	52,000	0	52,000						
	Wed	7/11/18	52,000	0	52,000						
	Thu	7/12/18	52,283	0	52,283					89	Dry
	Fri	7/13/18	52,283	0	52,283						
	Sat	7/14/18	52,283	0	52,283						
3	Sun	7/15/18	0	60,150	60,150					72	
	Mon	7/16/18	0	60,350	60,350			0.40	Rain	71	Damp
	Tue	7/17/18	0	54,900	54,900			0.40	Rain	77	Damp
	Wed	7/18/18	0	54,900	54,900						
	Thu	7/19/18	0	55,150	55,150					70	Dry
	Fri	7/20/18	0	55,150	55,150						
	Sat	7/21/18	0	0	0			1.50	Rain	68	Wet
4	Sun	7/22/18	48,550	48,550	0			0.40	Rain	72	Damp
	Mon	7/23/18	53,750	53,750	0			0.40	Rain	74	Wet
	Tue	7/24/18	53,750	53,750	0			0.40	Rain		
	Wed	7/25/18	0	0	0			0.40	Rain	78	Wet
	Thu	7/26/18	0	0	0			0.70	Rain		
	Fri	7/27/18	0	0	0						
	Sat	7/28/18	0	0	0						
5	Sun	7/29/18	51,800	0	51,800					72	Damp
	Mon	7/30/18	53,125	0	53,125					70	Dry
	Tue	7/31/18	53,125	0	53,125						
Monthly Totals:			**1,061,199**	**881,900**	**860,499**			**5.70**			
Max Weekly:			**385,250**	**385,250**	**361,849**	**0**	**0**				
Inches/Acre/Week (Max):			**2.30**	**2.29**	**2.17**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **8/7/2018**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.9	***	7.9	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	11.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	4.1	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow (50050)	Sample Measurement	.0465	.0596	MGD	***	***	***	***	1/month	Estimate
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments	The influent flow meter is beyond repair and is scheduled to be replaced on September 12, 2018. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Aug 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-09-11T11:08:33-04:00	
Aug 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-09-11T11:09:06-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
70973	Sample type not in accordance with permit	Influent (516778)	Flow	Estimate	Recorded	The influent flow meter is beyond repair and is scheduled to be replaced on September 12, 2018. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.
70974	Sample collection less frequent than required	Influent (516778)	Flow	1/month	Continuous	The influent flow meter is beyond repair and is scheduled to be replaced on September 12, 2018. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow (estimated) = 0.0465 MGD; Influent BOD5 = 121 mg/L; Influent TSS = 168 mg/L.	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Paul Ruffini	TELEPHONE		DATE		
				(717)	278-3444	2018	9	11
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **8** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	7/29/18	0.1036															
	Mon	7/30/18	0.10625															
	Tue	7/31/18	0.10625															
	Wed	8/1/18	0.10578															
	Thu	8/2/18	0.10578															
	Fri	8/3/18	0.10578															
	Sat	8/4/18	0.10578															
2	Sun	8/5/18	0.1191															
	Mon	8/6/18	0.11763															
	Tue	8/7/18	0.11763															
	Wed	8/8/18	0.11763															
	Thu	8/9/18	0.11617								7.9							
	Fri	8/10/18	0.11617															
	Sat	8/11/18	0.11617															
3	Sun	8/12/18	0.0															
	Mon	8/13/18	0.11715		4.1		11.0											
	Tue	8/14/18	0.11715						2.0									
	Wed	8/15/18	0.11715															
	Thu	8/16/18	0.11715															
	Fri	8/17/18	0.1177															
	Sat	8/18/18	0.1177															
4	Sun	8/19/18	0.1202															
	Mon	8/20/18	0.11687															
	Tue	8/21/18	0.11687															
	Wed	8/22/18	0.11687															
	Thu	8/23/18	0.11733															
	Fri	8/24/18	0.11733															
	Sat	8/25/18	0.11733															
5	Sun	8/26/18	0.1048															
	Mon	8/27/18	0.1042															
	Tue	8/28/18	0.1042															
	Wed	8/29/18	0.1042															
	Thu	8/30/18	0.09693															
	Fri	8/31/18	0.09693															
	Sat	9/1/18	0.09693															
Statistics for DMR																		
Daily Minimum (Conc.):					**4.1**		**11**		**2**		**7.9**							
Daily Maximum (Conc):					**4.1**		**11**		**2**		**7.9**							
Max Avg Weekly (Conc.):					**4.1**		**11**											
Avg Monthly (Conc.):					**4.1**		**11**											
Geometric Mean (Conc.):									**2**									
Max Avg Weekly (Load):			**0.117542**		**4**		**11**											
Avg Monthly (Load):			**0.109086**		**4**		**11**											
Total Monthly (Load):			**3.38166**		**124**		**333**											
Daily Minimum (Load):			**0**		**4**		**11**											
Daily Maximum (Load):			**0.1202**		**4**		**11**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **9/11/2018 10:39**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **8** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	7/29/18	51,800	0	51,800					72	Dry
	Mon	7/30/18	53,125	0	53,125					70	Damp
	Tue	7/31/18	53,125	0	53,125						
	Wed	8/1/18	52,887	0	52,887			0.20	Rain	89	Damp
	Thu	8/2/18	52,887	0	52,887						
	Fri	8/3/18	52,887	0	52,887						
	Sat	8/4/18	52,887	0	52,887					89	Dry
2	Sun	8/5/18	59,550	59,550	0					89	Dry
	Mon	8/6/18	58,816	58,816	0						
	Tue	8/7/18	58,816	58,816	0						
	Wed	8/8/18	58,816	58,816	0						
	Thu	8/9/18	58,083	58,083	0					91	Dry
	Fri	8/10/18	58,083	58,083	0						
	Sat	8/11/18	58,083	58,083	0						
3	Sun	8/12/18	0	0	0						
	Mon	8/13/18	58,575	0	58,575						
	Tue	8/14/18	58,575	0	58,575						
	Wed	8/15/18	58,575	0	58,575						
	Thu	8/16/18	58,575	0	58,575						
	Fri	8/17/18	58,850	0	58,850					91	Dry
	Sat	8/18/18	58,850	0	58,850			0.10	Rain		
4	Sun	8/19/18	0	60,100	60,100					72	Wet
	Mon	8/20/18	0	58,433	58,433			0.40	Rain	76	Damp
	Tue	8/21/18	0	58,433	58,433						
	Wed	8/22/18	0	58,433	58,433						
	Thu	8/23/18	0	58,666	58,666					82	Dry
	Fri	8/24/18	0	58,666	58,666						
	Sat	8/25/18	0	58,666	58,666						
5	Sun	8/26/18	52,400	52,400	0					84	Dry
	Mon	8/27/18	52,100	52,100	0						Dry
	Tue	8/28/18	52,100	52,100	0						
	Wed	8/29/18	52,100	52,100	0						
	Thu	8/30/18	48,466	48,466	0					83	Dry
	Fri	8/31/18	48,466	48,466	0						
	Sat	9/1/18	48,466	48,466	0						
	Monthly Totals:		**1,279,427**	**1,127,276**	**974,945**			**0.70**			
	Max Weekly:		**410,247**	**411,397**	**411,397**	**0**	**0**				
	Inches/Acre/Week (Max):		**2.45**	**2.45**	**2.46**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **9/11/2018**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2018**
DMR Effective To: **09/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.7	***	7.7	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	17.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	20	***	CFU/100 ml	2/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	11.6	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2018**
DMR Effective To: **09/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Flow (50050)	Sample Measurement	.0465	.0596	MGD	***	***	***	***	1/month	Estimate
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments	The influent flow meter was replaced on September 12, 2018, but additional calibration is necessary. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Sept 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-10-04T12:17:10-04:00	
Sept 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-10-04T12:16:28-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
72488	Sample type not in accordance with permit	Influent (516778)	Flow	Estimate	Recorded	The influent flow meter was replaced on September 12, 2018, but additional calibration is necessary. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.
72489	Sample collection less frequent than required	Influent (516778)	Flow	1/month	Continuous	The influent flow meter was replaced on September 12, 2018, but additional calibration is necessary. The most recent 12-month average was used to estimate influent monthly average and daily maximum flows.

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Raw Influent Data: Influent Flow (estimated) = 0.0465 MGD; Influent BOD5 = 254 mg/L; Influent TSS = 144 mg/L	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2018**	**10**	**4**
ruffinip		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **9** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

	Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
	Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Sat	9/1/18	0.09693														
1	Sun	9/2/18	0.0874														
	Mon	9/3/18	0.09927														
	Tue	9/4/18	0.09927														
	Wed	9/5/18	0.09927														
	Thu	9/6/18	0.10847								7.7						
	Fri	9/7/18	0.10847														
	Sat	9/8/18	0.10847														
2	Sun	9/9/18	0.1094														
	Mon	9/10/18	0.11297		11.6		17.0										
	Tue	9/11/18	0.11297						420.0								
	Wed	9/12/18	0.11297														
	Thu	9/13/18	0.113														
	Fri	9/14/18	0.113														
	Sat	9/15/18	0.113														
3	Sun	9/16/18	0.1259														
	Mon	9/17/18	0.11183														
	Tue	9/18/18	0.11183														
	Wed	9/19/18	0.11183														
	Thu	9/20/18	0.11183														
	Fri	9/21/18	0.11355														
	Sat	9/22/18	0.11355														
4	Sun	9/23/18	0.1018														
	Mon	9/24/18	0.10225														
	Tue	9/25/18	0.10225					<	1.0								
	Wed	9/26/18	0.1129														
	Thu	9/27/18	0.1129														
	Fri	9/28/18	0.1129														
	Sat	9/29/18	0.1129														
5	Sun	9/30/18	0.0803														
Statistics for DMR																	
Daily Minimum (Conc.):					**11.6**		**17**	<	**1**		**7.7**						
Daily Maximum (Conc):					**11.6**		**17**		**420**		**7.7**						
Max Avg Weekly (Conc.):					**11.6**		**17**										
Avg Monthly (Conc.):					**11.6**		**17**										
Geometric Mean (Conc.):								<	**20**								
Max Avg Weekly (Load):			**0.114329**		**11**		**16**										
Avg Monthly (Load):			**0.107778**		**11**		**16**										
Total Monthly (Load):			**3.233327**		**328**		**480**										
Daily Minimum (Load):			**0.0803**		**11**		**16**										
Daily Maximum (Load):			**0.1259**		**11**		**16**										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **10/4/2018 11:21**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **9** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Sat	9/1/18	48,466	48,466	0						
1	Sun	9/2/18	43,700	0	43,700			0.40	Rain	78	Damp
	Mon	9/3/18	49,633	0	49,633					80	Dry
	Tue	9/4/18	49,633	0	49,633						
	Wed	9/5/18	49,633	0	49,633						
	Thu	9/6/18	54,233	0	54,233					95	Dry
	Fri	9/7/18	54,233	0	54,233			0.40	Rain		
	Sat	9/8/18	54,233	0	54,233			0.40	Rain		
2	Sun	9/9/18	0	54,700	54,700			0.40	Rain		Wet
	Mon	9/10/18	0	56,483	56,483			0.40	Rain	67	Wet
	Tue	9/11/18	0	56,483	56,483						
	Wed	9/12/18	0	56,483	56,483						
	Thu	9/13/18	0	56,500	56,500					76	Damp
	Fri	9/14/18	0	56,500	56,500						
	Sat	9/15/18	0	56,500	56,500						
3	Sun	9/16/18	62,950	62,950	0					78	Dry
	Mon	9/17/18	55,912	55,912	0			0.40	Rain	78	Wet
	Tue	9/18/18	55,912	55,912	0						
	Wed	9/19/18	55,912	55,912	0						
	Thu	9/20/18	55,912	55,912	0						
	Fri	9/21/18	56,775	56,775	0					76	Dry
	Sat	9/22/18	56,775	56,775	0						
4	Sun	9/23/18	50,900	0	50,900			0.40	Rain	60	Wet
	Mon	9/24/18	51,125	0	51,125			0.40	Rain	61	Damp
	Tue	9/25/18	51,125	0	51,125			0.40	Rain		
	Wed	9/26/18	56,450	0	56,450			0.40	Rain	84	Damp
	Thu	9/27/18	56,450	0	56,450						
	Fri	9/28/18	56,450	0	56,450						
	Sat	9/29/18	56,450	0	56,450						
5	Sun	9/30/18	0	40,150	40,150					60	Dry
Monthly Totals:			**1,182,862**	**882,413**	**1,168,047**			**4.00**			
Max Weekly:			**400,148**	**400,148**	**393,649**	**0**	**0**				
Inches/Acre/Week (Max):			**2.39**	**2.38**	**2.36**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **10/4/2018**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	14.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	7.3	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	209	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	140	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0437	.0474	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Oct 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-11-13T11:13:04-05:00	
Oct 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-11-13T11:13:44-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2018**	**11**	**13**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **10** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	9/30/18	0.0803															
	Mon	10/1/18	0.07315															
	Tue	10/2/18	0.07315															
	Wed	10/3/18	0.07315															
	Thu	10/4/18	0.07315															
	Fri	10/5/18	0.0726															
	Sat	10/6/18	0.0726															
2	Sun	10/7/18	0.074															
	Mon	10/8/18	0.07257		7.3		14.0				8.1							
	Tue	10/9/18	0.07257						<		1.0							
	Wed	10/10/18	0.07257															
	Thu	10/11/18	0.07275															
	Fri	10/12/18	0.07275															
	Sat	10/13/18	0.07275															
3	Sun	10/14/18	0.07275															
	Mon	10/15/18	0.0735															
	Tue	10/16/18	0.0733															
	Wed	10/17/18	0.07315															
	Thu	10/18/18	0.07315															
	Fri	10/19/18	0.07315															
	Sat	10/20/18	0.07315															
4	Sun	10/21/18	0.0731															
	Mon	10/22/18	0.07295															
	Tue	10/23/18	0.07295															
	Wed	10/24/18	0.07295															
	Thu	10/25/18	0.07295															
	Fri	10/26/18	0.0725															
	Sat	10/27/18	0.0725															
5	Sun	10/28/18	0.0735															
	Mon	10/29/18	0.07333															
	Tue	10/30/18	0.07333															
	Wed	10/31/18	0.07333															
	Thu	11/1/18	0.07333															
	Fri	11/2/18	0.0488															
	Sat	11/3/18	0.0488															
Statistics for DMR																		
Daily Minimum (Conc.):					**7.3**		**14**	<	**1**		**8.1**							
Daily Maximum (Conc):					**7.3**		**14**	<	**1**		**8.1**							
Max Avg Weekly (Conc.):					**7.3**		**14**											
Avg Monthly (Conc.):					**7.3**		**14**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.074014**		**4**		**8**											
Avg Monthly (Load):			**0.073009**		**4**		**8**											
Total Monthly (Load):			**2.263273**		**137**		**263**											
Daily Minimum (Load):			**0.0725**		**4**		**8**											
Daily Maximum (Load):			**0.074**		**4**		**8**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **11/13/2018 9:51**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **10** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	9/30/18	0	40,150	40,150					80	Dry
	Mon	10/1/18	0	36,575	36,575						
	Tue	10/2/18	0	36,575	36,575						
	Wed	10/3/18	0	36,575	36,575						
	Thu	10/4/18	0	36,575	36,575						
	Fri	10/5/18	0	36,300	36,300					63	Dry
	Sat	10/6/18	0	36,300	36,300						
2	Sun	10/7/18	0	37,000	37,000					68	Dry
	Mon	10/8/18	36,283	36,283	0					76	Damp
	Tue	10/9/18	36,283	36,283	0						
	Wed	10/10/18	36,283	36,283	0						
	Thu	10/11/18	36,375	36,375	0			0.10	Rain	82	Damp
	Fri	10/12/18	36,375	36,375	0						
	Sat	10/13/18	36,375	36,375	0						
3	Sun	10/14/18	36,375	36,375	0						
	Mon	10/15/18	36,750	0	36,750			0.10	Rain	70	Damp
	Tue	10/16/18	36,650	0	36,650					60	Dry
	Wed	10/17/18	36,575	0	36,575					60	Dry
	Thu	10/18/18	36,575	0	36,575						
	Fri	10/19/18	36,575	0	36,575						
	Sat	10/20/18	36,575	0	36,575			0.10	Rain		
4	Sun	10/21/18	0	36,550	36,550					44	Wet
	Mon	10/22/18	0	36,475	36,475					50	Dry
	Tue	10/23/18	0	36,475	36,475						
	Wed	10/24/18	0	36,475	36,475						
	Thu	10/25/18	0	36,475	36,475						
	Fri	10/26/18	0	36,250	36,250			0.30	Rain	55	Wet
	Sat	10/27/18	0	36,250	36,250			0.40	Rain		
5	Sun	10/28/18	36,750	36,750	0			0.10	Rain	55	Wet
	Mon	10/29/18	36,662	36,662	0					55	Damp
	Tue	10/30/18	36,662	36,662	0						
	Wed	10/31/18	36,662	36,662	0						
	Thu	11/1/18	36,662	36,662	0						
	Fri	11/2/18	24,400	24,400	0					71	Dry
	Sat	11/3/18	24,400	24,400	0						
	Monthly Totals:		**620,785**	**911,935**	**730,550**			**1.10**			
	Max Weekly:		**256,075**	**259,050**	**259,050**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.53**	**1.54**	**1.55**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **11/13/2018**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.7	***	7.7	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	<5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	34	***	CFU/100 ml	3/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	3.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	199	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	128	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0502	.0701	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Nov 2018 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2018-12-11T10:14:43-05:00	
Nov 2018 Land App Supp Form.pdf	Land Application Systems Form	2018-12-11T10:15:10-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2018**	**12**	**11**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **11** (select number) Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Thu	11/1/18	0.07333															
	Fri	11/2/18	0.0488															
	Sat	11/3/18	0.0488															
1	Sun	11/4/18	0.0486															
	Mon	11/5/18	0.0616															
	Tue	11/6/18	0.0616															
	Wed	11/7/18	0.0616															
	Thu	11/8/18	0.0616															
	Fri	11/9/18	0.0															
	Sat	11/10/18	0.0															
2	Sun	11/11/18	0.0															
	Mon	11/12/18	0.0137		3.0	<	5.0				7.7							
	Tue	11/13/18	0.06223						1920.0									
	Wed	11/14/18	0.06223															
	Thu	11/15/18	0.06223															
	Fri	11/16/18	0.0457															
	Sat	11/17/18	0.0457															
3	Sun	11/18/18	0.0525															
	Mon	11/19/18	0.0525															
	Tue	11/20/18	0.0525															
	Wed	11/21/18	0.0															
	Thu	11/22/18	0.0															
	Fri	11/23/18	0.07615															
	Sat	11/24/18	0.07615															
4	Sun	11/25/18	0.0413															
	Mon	11/26/18	0.05183															
	Tue	11/27/18	0.05183						1.0									
	Wed	11/28/18	0.05183						21.0									
	Thu	11/29/18	0.05183															
	Fri	11/30/18	0.0															
	Sat	12/1/18	0.0															
5																		
Statistics for DMR																		
Daily Minimum (Conc.):					**3**	<	**5**		**1**		**7.7**							
Daily Maximum (Conc):					**3**	<	**5**		**1920**		**7.7**							
Max Avg Weekly (Conc.):					**3**	<	**5**											
Avg Monthly (Conc.):					**3**	<	**5**											
Geometric Mean (Conc.):									**34**									
Max Avg Weekly (Load):			**0.044257**		**0.3**	<	**0.6**											
Avg Monthly (Load):			**0.043871**		**0.3**	<	**0.6**											
Total Monthly (Load):			**1.316124**		**10**	<	**17**											
Daily Minimum (Load):			**0**		**0.3**	<	**0.6**											
Daily Maximum (Load):			**0.07615**		**0.3**	<	**0.6**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **12/11/2018 9:16**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **11** *(Select number)* Year: **2018**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Thu	11/1/18	36,662	36,662	0					71	Dry
	Fri	11/2/18	24,400	24,400	0						
	Sat	11/3/18	24,400	24,400	0			0.40	Rain	43	Wet
1	Sun	11/4/18	24,300	0	24,300			0.40	Rain	55	Wet
	Mon	11/5/18	30,800	0	30,800						
	Tue	11/6/18	30,800	0	30,800						
	Wed	11/7/18	30,800	0	30,800						
	Thu	11/8/18	30,800	0	30,800						
	Fri	11/9/18	0	0	0						
	Sat	11/10/18	0	0	0						
2	Sun	11/11/18	0	0	0						
	Mon	11/12/18	0	6,850	6,850			0.40	Rain	55	Wet
	Tue	11/13/18	0	31,116	31,116			0.40	Rain	45	Wet
	Wed	11/14/18	0	31,116	31,116			0.40	Snow		
	Thu	11/15/18	0	31,116	31,116			0.40	Snow		Wet
	Fri	11/16/18	0	22,850	22,850						
	Sat	11/17/18	0	22,850	22,850					50	Dry
3	Sun	11/18/18	26,250	26,250	0						
	Mon	11/19/18	26,275	26,275	0						
	Tue	11/20/18	26,275	26,275	0						
	Wed	11/21/18	0	0	0					38	Dry
	Thu	11/22/18	0	0	0						
	Fri	11/23/18	38,075	38,075	0			0.40			
	Sat	11/24/18	38,075	38,075	0			0.40	Rain	50	Wet
4	Sun	11/25/18	20,650	0	20,650			0.40	Rain	50	Wet
	Mon	11/26/18	25,912	0	25,912						
	Tue	11/27/18	25,912	0	25,912						
	Wed	11/28/18	25,912	0	25,912						
	Thu	11/29/18	25,912	0	25,912						
	Fri	11/30/18	0	0	0					36	Dry
	Sat	12/1/18	0	0	0						
5											
Monthly Totals:			**512,210**	**386,310**	**417,696**			**3.60**			
Max Weekly:			**154,950**	**154,950**	**147,500**	**0**	**0**				
Inches/Acre/Week (Max):			**0.93**	**0.92**	**0.88**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **12/11/2018**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	223	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	216	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0475	.0921	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2019**	**1**	**8**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	161	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	132	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0464	.0892	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2019**	**2**	**11**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	318	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	148	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0449	.0629	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Influent sample for BOD5 and TSS was collected on 2/19/2019.	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2019**	**3**	**7**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.26	***	7.31	S.U.	3/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	15.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	89	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	3.4	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	163	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	124	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0476	.0613	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Mar 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-04-03T13:53:24-04:00	
Mar 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-04-03T13:53:58-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**4**	**3**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **3** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Fri	3/1/19	0.0														
	Sat	3/2/19	0.0														
1	Sun	3/3/19	0.0														
	Mon	3/4/19	0.0														
	Tue	3/5/19	0.0														
	Wed	3/6/19	0.0														
	Thu	3/7/19	0.0														
	Fri	3/8/19	0.0														
	Sat	3/9/19	0.06425														
2	Sun	3/10/19	0.06425		3.4		15.0										
	Mon	3/11/19	0.0								7.26						
	Tue	3/12/19	0.0						89.0								
	Wed	3/13/19	0.04285														
	Thu	3/14/19	0.04285														
	Fri	3/15/19	0.0481								7.26						
	Sat	3/16/19	0.0481														
3	Sun	3/17/19	0.0481														
	Mon	3/18/19	0.0496								7.31						
	Tue	3/19/19	0.0496														
	Wed	3/20/19	0.0558														
	Thu	3/21/19	0.0558														
	Fri	3/22/19	0.0543														
	Sat	3/23/19	0.0543														
4	Sun	3/24/19	0.0543														
	Mon	3/25/19	0.0586														
	Tue	3/26/19	0.0586														
	Wed	3/27/19	0.0581														
	Thu	3/28/19	0.0581														
	Fri	3/29/19	0.0558														
	Sat	3/30/19	0.0558														
5	Sun	3/31/19	0.0558														
Statistics for DMR																	
Daily Minimum (Conc.):					**3.4**		**15**		**89**		**7.26**						
Daily Maximum (Conc):					**3.4**		**15**		**89**		**7.31**						
Max Avg Weekly (Conc.):					**3.4**		**15**										
Avg Monthly (Conc.):					**3.4**		**15**										
Geometric Mean (Conc.):									**89**								
Max Avg Weekly (Load):			**0.05704**		**2**		**8**										
Avg Monthly (Load):			**0.03655**		**2**		**8**										
Total Monthly (Load):			**1.133**		**56**		**249**										
Daily Minimum (Load):			**0**		**2**		**8**										
Daily Maximum (Load):			**0.06425**		**2**		**8**										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **4/3/2019 13:22**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **3** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

			Zone: 1 Acres: 6.16	Zone: 2 Acres: 6.19	Zone: 3 Acres: 6.15	Zone: Acres:	Zone: Acres:	Precipitation		Average Temp	
Week	Day	Date	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Inches*	*Type*	*°F*	Ground Conditions
	Fri	3/1/19	0	0	0						
	Sat	3/2/19	0	0	0						
1	Sun	3/3/19	0	0	0						
	Mon	3/4/19	0	0	0			0.20	Rain	34	Wet
	Tue	3/5/19	0	0	0						
	Wed	3/6/19	0	0	0						
	Thu	3/7/19	0	0	0						
	Fri	3/8/19	0	0	0						
	Sat	3/9/19	32,125	32,125	0					45	Thawing/Wet
2	Sun	3/10/19	32,125	32,125	0			0.20	Rain		
	Mon	3/11/19	0	0	0					41	Thawing
	Tue	3/12/19	0	0	0						
	Wed	3/13/19	21,425	21,425	0					57	Thawing
	Thu	3/14/19	21,425	21,425	0						
	Fri	3/15/19	24,050	24,050	0					71	Wet
	Sat	3/16/19	24,050	24,050	0						
3	Sun	3/17/19	24,050	24,050	0						
	Mon	3/18/19	24,800	0	24,800					46	Dry
	Tue	3/19/19	24,800	0	24,800						
	Wed	3/20/19	27,900	0	27,900			0.40	Rain	50	Dry/Wet
	Thu	3/21/19	27,900	0	27,900			0.40	Rain		Wet
	Fri	3/22/19	27,150	0	27,150			0.40	Rain		Wet
	Sat	3/23/19	27,150	0	27,150						
4	Sun	3/24/19	27,150	0	27,150						
	Mon	3/25/19	0	29,300	29,300					40	Wet
	Tue	3/26/19	0	29,300	29,300						
	Wed	3/27/19	0	29,050	29,050					49	Dry
	Thu	3/28/19	0	29,050	29,050						
	Fri	3/29/19	0	27,900	27,900					50	Dry
	Sat	3/30/19	0	27,900	27,900						
5	Sun	3/31/19	0	27,900	27,900						
Monthly Totals:			**366,100**	**379,650**	**387,250**			**1.60**			
Max Weekly:			**183,750**	**172,500**	**199,650**	**0**	**0**				
Inches/Acre/Week (Max):			**1.10**	**1.03**	**1.20**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **4/3/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	11.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	2.9	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	256	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	100	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0412	.0523	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Raw influent sampling date: 4/8/2019.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Apr 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-05-14T13:41:52-04:00	
Apr 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-05-14T13:42:37-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent sampling date: 4/8/2019	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**5**	**14**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **4** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	3/31/19	0.0558															
	Mon	4/1/19	0.07545															
	Tue	4/2/19	0.07545															
	Wed	4/3/19	0.05715															
	Thu	4/4/19	0.05715															
	Fri	4/5/19	0.0674															
	Sat	4/6/19	0.0674															
2	Sun	4/7/19	0.0674															
	Mon	4/8/19	0.06415		2.9		11.0											
	Tue	4/9/19	0.06415						<		1.0							
	Wed	4/10/19	0.0645															
	Thu	4/11/19	0.0645															
	Fri	4/12/19	0.0645															
	Sat	4/13/19	0.0645															
3	Sun	4/14/19	0.0645															
	Mon	4/15/19	0.0645															
	Tue	4/16/19	0.0645															
	Wed	4/17/19	0.0645															
	Thu	4/18/19	0.0															
	Fri	4/19/19	0.0															
	Sat	4/20/19	0.0															
4	Sun	4/21/19	0.0															
	Mon	4/22/19	0.0															
	Tue	4/23/19	0.0															
	Wed	4/24/19	0.0															
	Thu	4/25/19	0.0															
	Fri	4/26/19	0.0															
	Sat	4/27/19	0.066															
5	Sun	4/28/19	0.066															
	Mon	4/29/19	0.066								8.1							
	Tue	4/30/19	0.066															
Statistics for DMR																		
Daily Minimum (Conc.):					**2.9**		**11**		<	**1**		**8.1**						
Daily Maximum (Conc):					**2.9**		**11**		<	**1**		**8.1**						
Max Avg Weekly (Conc.):					**2.9**		**11**											
Avg Monthly (Conc.):					**2.9**		**11**											
Geometric Mean (Conc.):									<	**1**								
Max Avg Weekly (Load):			**0.06511**		**2**		**6**											
Avg Monthly (Load):			**0.04586**		**2**		**6**											
Total Monthly (Load):			**1.3757**		**47**		**177**											
Daily Minimum (Load):			**0**		**2**		**6**											
Daily Maximum (Load):			**0.07545**		**2**		**6**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **5/14/2019 12:56**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **4** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	3/31/19	0	27,900	27,900						
	Mon	4/1/19	37,725	37,725	0					50	Dry
	Tue	4/2/19	37,725	37,725	0						
	Wed	4/3/19	28,575	28,575	0						
	Thu	4/4/19	28,575	28,575	0						
	Fri	4/5/19	33,700	33,700	0					48	Dry
	Sat	4/6/19	33,700	33,700	0						
2	Sun	4/7/19	33,700	33,700	0						
	Mon	4/8/19	32,075	0	32,075			0.10	Rain	60	Damp
	Tue	4/9/19	32,075	0	32,075						
	Wed	4/10/19	32,250	0	32,250					68	Dry
	Thu	4/11/19	32,250	0	32,250						
	Fri	4/12/19	32,250	0	32,250					64	Wet
	Sat	4/13/19	32,250	0	32,250						
3	Sun	4/14/19	32,250	0	32,250			0.20	Rain		
	Mon	4/15/19	0	32,250	32,250			0.20	Rain	58	Damp
	Tue	4/16/19	0	32,250	32,250						
	Wed	4/17/19	0	32,250	32,250					58	Dry
	Thu	4/18/19	0	0	0					60	Dry
	Fri	4/19/19	0	0	0						
	Sat	4/20/19	0	0	0						
4	Sun	4/21/19	0	0	0						
	Mon	4/22/19	0	0	0					60	Dry
	Tue	4/23/19	0	0	0						
	Wed	4/24/19	0	0	0					78	Dry
	Thu	4/25/19	0	0	0					62	Dry
	Fri	4/26/19	0	0	0						
	Sat	4/27/19	33,000	33,000	0						
5	Sun	4/28/19	33,000	33,000	0						
	Mon	4/29/19	33,000	0	33,000					62	Dry
	Tue	4/30/19	33,000	0	33,000						
Monthly Totals:			**591,100**	**396,450**	**388,150**			**0.50**			
Max Weekly:			**226,850**	**227,900**	**193,150**	**0**	**0**				
Inches/Acre/Week (Max):			**1.36**	**1.36**	**1.16**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **5/14/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.2	***	8.2	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	<5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	<2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	54.9	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	108	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0478	.0627	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date 5/14/2019.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
May 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-06-12T10:47:24-04:00	
May 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-06-12T10:48:07-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER									
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY
			(717)	**278-3444**	**2019**	**6**	**12**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **5** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter			Flow		CBOD5		TSS		Fecal Coliform		pH							
Stage			1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	4/28/19	0.066															
	Mon	4/29/19	0.066															
	Tue	4/30/19	0.066															
	Wed	5/1/19	0.072															
	Thu	5/2/19	0.0															
	Fri	5/3/19	0.08															
	Sat	5/4/19	0.08															
2	Sun	5/5/19	0.08															
	Mon	5/6/19	0.084															
	Tue	5/7/19	0.084															
	Wed	5/8/19	0.084															
	Thu	5/9/19	0.072															
	Fri	5/10/19	0.072															
	Sat	5/11/19	0.072															
3	Sun	5/12/19	0.072															
	Mon	5/13/19	0.0															
	Tue	5/14/19	0.087	<	2.0	<	5.0	<	1.0		8.2							
	Wed	5/15/19	0.087															
	Thu	5/16/19	0.087															
	Fri	5/17/19	0.0932															
	Sat	5/18/19	0.0932															
4	Sun	5/19/19	0.0932															
	Mon	5/20/19	0.093															
	Tue	5/21/19	0.093															
	Wed	5/22/19	0.093															
	Thu	5/23/19	0.087															
	Fri	5/24/19	0.087															
	Sat	5/25/19	0.087															
5	Sun	5/26/19	0.087															
	Mon	5/27/19	0.096															
	Tue	5/28/19	0.096															
	Wed	5/29/19	0.096															
	Thu	5/30/19	0.096															
	Fri	5/31/19	0.096															
	Sat	6/1/19	0.06															
Statistics for DMR																		
Daily Minimum (Conc.):				<	**2**	<	**5**	<	**1**		**8.2**							
Daily Maximum (Conc):				<	**2**	<	**5**	<	**1**		**8.2**							
Max Avg Weekly (Conc.):				<	**2**	<	**5**											
Avg Monthly (Conc.):				<	**2**	<	**5**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.090457**	<	**1**	<	**4**											
Avg Monthly (Load):			**0.080632**	<	**1**	<	**4**											
Total Monthly (Load):			**2.499597**	<	**45**	<	**112**											
Daily Minimum (Load):			**0**	<	**1**	<	**4**											
Daily Maximum (Load):			**0.096**	<	**1**	<	**4**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **6/12/2019 8:53**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **5** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	4/28/19	33,000	33,000	0						
	Mon	4/29/19	33,000	0	33,000					80	Dry
	Tue	4/30/19	33,000	0	33,000						
	Wed	5/1/19	36,000	0	36,000						
	Thu	5/2/19	0	0	0					72	Dry
	Fri	5/3/19	40,000	0	40,000						
	Sat	5/4/19	40,000	0	40,000						
2	Sun	5/5/19	40,000	0	40,000					67	Dry
	Mon	5/6/19	0	42,000	42,000						
	Tue	5/7/19	0	42,000	42,000					65	Dry
	Wed	5/8/19	0	42,000	42,000					62	Dry
	Thu	5/9/19	0	36,000	36,000						
	Fri	5/10/19	0	36,000	36,000						
	Sat	5/11/19	0	36,000	36,000			0.40	Rain		
3	Sun	5/12/19	0	36,000	36,000			0.40	Rain		
	Mon	5/13/19	0	0	0			1.40	Rain	50	Wet
	Tue	5/14/19	43,500	43,500	0			0.20	Rain	50	Wet
	Wed	5/15/19	43,500	43,500	0						
	Thu	5/16/19	43,500	43,500	0						
	Fri	5/17/19	46,600	46,600	0					78	Dry
	Sat	5/18/19	46,600	46,600	0						
4	Sun	5/19/19	46,600	46,600	0						
	Mon	5/20/19	46,500	0	46,500					75	Dry
	Tue	5/21/19	46,500	0	46,500						
	Wed	5/22/19	46,500	0	46,500					72	Dry
	Thu	5/23/19	43,500	0	43,500						
	Fri	5/24/19	43,500	0	43,500						
	Sat	5/25/19	43,500	0	43,500						
5	Sun	5/26/19	43,500	0	43,500						
	Mon	5/27/19	0	48,000	48,000					80	Dry
	Tue	5/28/19	0	48,000	48,000			0.40	Rain		
	Wed	5/29/19	0	48,000	48,000					90	Dry
	Thu	5/30/19	0	48,000	48,000						
	Fri	5/31/19	0	48,000	48,000					83	Dry
	Sat	6/1/19	0	30,000	30,000						
	Monthly Totals:		**739,800**	**780,300**	**979,500**			**2.80**			
	Max Weekly:		**316,600**	**270,000**	**313,500**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.89**	**1.61**	**1.88**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **6/12/2019**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.8	***	7.8	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	<5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	7	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	<2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	154	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	98	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0477	.0887	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
June 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-07-09T11:31:13-04:00	
June 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-07-09T11:31:44-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Influent sampling date: 6/10/2019	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**7**	**9**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **6** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter		Flow		CBOD5		TSS		Fecal Coliform		pH							
Stage		1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Sat	6/1/19	0.0														
1	Sun	6/2/19	0.0														
	Mon	6/3/19	0.06														
	Tue	6/4/19	0.0														
	Wed	6/5/19	0.0														
	Thu	6/6/19	0.108														
	Fri	6/7/19	0.108														
	Sat	6/8/19	0.108														
2	Sun	6/9/19	0.108														
	Mon	6/10/19	0.108	<	2.0	<	5.0										
	Tue	6/11/19	0.108						7.0								
	Wed	6/12/19	0.108														
	Thu	6/13/19	0.1113														
	Fri	6/14/19	0.1113														
	Sat	6/15/19	0.1113														
3	Sun	6/16/19	0.1113														
	Mon	6/17/19	0.118														
	Tue	6/18/19	0.0														
	Wed	6/19/19	0.0														
	Thu	6/20/19	0.067														
	Fri	6/21/19	0.03967														
	Sat	6/22/19	0.03967														
4	Sun	6/23/19	0.03967														
	Mon	6/24/19	0.132								7.8						
	Tue	6/25/19	0.1225														
	Wed	6/26/19	0.1225														
	Thu	6/27/19	0.004														
	Fri	6/28/19	0.062														
	Sat	6/29/19	0.062														
5	Sun	6/30/19	0.069														

Statistics for DMR

Daily Minimum (Conc.):		<	2	<	5		7		7.8								
Daily Maximum (Conc):		<	2	<	5		7		7.8								
Max Avg Weekly (Conc.):		<	2	<	5												
Avg Monthly (Conc.):		<	2	<	5												
Geometric Mean (Conc.):							7										
Max Avg Weekly (Load):	0.109414	<	2	<	5												
Avg Monthly (Load):	0.071307	<	2	<	5												
Total Monthly (Load):	2.139198	<	54	<	135												
Daily Minimum (Load):	0	<	2	<	5												
Daily Maximum (Load):	0.132	<	2	<	5												

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **7/9/2019 11:05**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **6** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Sat	6/1/19	0	15,000	15,000			0.30	Rain		Wet
1	Sun	6/2/19	0	15,000	15,000			0.30	Rain		Wet
	Mon	6/3/19	0	0	0					71	Dry
	Tue	6/4/19	0	0	0						
	Wed	6/5/19	0	0	0					76	Dry
	Thu	6/6/19	54,000	54,000	0					81	Dry
	Fri	6/7/19	54,000	54,000	0						
	Sat	6/8/19	54,000	54,000	0						
2	Sun	6/9/19	54,000	54,000	0						
	Mon	6/10/19	54,000	0	54,000			0.10	Rain	80	Wet
	Tue	6/11/19	54,000	0	54,000						
	Wed	6/12/19	54,000	0	54,000			1.00	Rain	60	Wet
	Thu	6/13/19	55,650	0	55,650						
	Fri	6/14/19	55,650	0	55,650						
	Sat	6/15/19	55,650	0	55,650						
3	Sun	6/16/19	55,650	0	55,650						
	Mon	6/17/19	0	59,000	59,000					80	Dry
	Tue	6/18/19	0	0	0					78	Dry
	Wed	6/19/19	0	0	0			1.50	Rain		
	Thu	6/20/19	0	33,500	33,500			1.50	Rain	86	Wet
	Fri	6/21/19	0	19,833	19,833					77	Dry
	Sat	6/22/19	0	19,833	19,833						
4	Sun	6/23/19	0	19,833	19,833						
	Mon	6/24/19	66,000	66,000	0					89	Dry
	Tue	6/25/19	61,250	61,250	0						
	Wed	6/26/19	61,250	61,250	0						
	Thu	6/27/19	2,000	2,000	0					91	Dry
	Fri	6/28/19	31,000	31,000	0						
	Sat	6/29/19	31,000	31,000	0						
5	Sun	6/30/19	34,500	34,500	0					86	Dry
Monthly Totals:			**887,600**	**684,999**	**566,599**			**4.70**			
Max Weekly:			**382,950**	**272,333**	**328,950**	**0**	**0**				
Inches/Acre/Week (Max):			**2.29**	**1.62**	**1.97**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **7/9/2019**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.9	***	7.9	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	<5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	<2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	163	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 7/8/2019.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	103	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 7/8/19								
Flow (50050)	Sample Measurement	.0436	.0845	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
July 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-08-12T14:18:54-04:00	
July 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-08-12T14:19:44-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Influent sample date: 7/8/2019	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**8**	**12**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **7** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	6/30/19	0.069															
	Mon	7/1/19	0.069															
	Tue	7/2/19	0.101															
	Wed	7/3/19	0.101															
	Thu	7/4/19	0.128															
	Fri	7/5/19	0.114															
	Sat	7/6/19	0.114															
2	Sun	7/7/19	0.114															
	Mon	7/8/19	0.143	<	2.0	<	5.0											
	Tue	7/9/19	0.121					<	1.0									
	Wed	7/10/19	0.12325								7.9							
	Thu	7/11/19	0.12325															
	Fri	7/12/19	0.12325															
	Sat	7/13/19	0.12325															
3	Sun	7/14/19	0.121															
	Mon	7/15/19	0.1385															
	Tue	7/16/19	0.1385															
	Wed	7/17/19	0.101															
	Thu	7/18/19	0.11188															
	Fri	7/19/19	0.11188															
	Sat	7/20/19	0.11188															
4	Sun	7/21/19	0.11188															
	Mon	7/22/19	0.11188															
	Tue	7/23/19	0.11188															
	Wed	7/24/19	0.11188															
	Thu	7/25/19	0.11188															
	Fri	7/26/19	0.1															
	Sat	7/27/19	0.0															
5	Sun	7/28/19	0.0															
	Mon	7/29/19	0.1095															
	Tue	7/30/19	0.1095															
	Wed	7/31/19	0.1095															
	Thu	8/1/19	0.1095															
	Fri	8/2/19	0.1095															
	Sat	8/3/19	0.1095															
Statistics for DMR																		
Daily Minimum (Conc.):				<	2	<	5	<	1		7.9							
Daily Maximum (Conc):				<	2	<	5	<	1		7.9							
Max Avg Weekly (Conc.):				<	2	<	5											
Avg Monthly (Conc.):				<	2	<	5											
Geometric Mean (Conc.):								<	1									
Max Avg Weekly (Load):			0.124429	<	2	<	6											
Avg Monthly (Load):			0.107113	<	2	<	6											
Total Monthly (Load):			3.3205	<	74	<	185											
Daily Minimum (Load):			0	<	2	<	6											
Daily Maximum (Load):			0.143	<	2	<	6											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **8/12/2019 13:40**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **7** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	6/30/19	34,500	34,500	0						
	Mon	7/1/19	34,500	34,500	0					90	Dry
	Tue	7/2/19	50,500	0	50,500					88	Dry
	Wed	7/3/19	50,500	0	50,500						
	Thu	7/4/19	64,000	0	64,000					89	Dry
	Fri	7/5/19	57,000	0	57,000					86	Dry
	Sat	7/6/19	57,000	0	57,000						
2	Sun	7/7/19	57,000	0	57,000			0.20	Rain	78	Damp
	Mon	7/8/19	71,500	71,500	0						
	Tue	7/9/19	60,500	60,500	0						
	Wed	7/10/19	61,625	61,625	0						
	Thu	7/11/19	61,625	61,625	0			0.30	Rain	85	Wet
	Fri	7/12/19	0	61,625	61,625						
	Sat	7/13/19	0	61,625	61,625						
3	Sun	7/14/19	0	60,500	60,500					88	Dry
	Mon	7/15/19	69,250	69,250	0					78	Dry
	Tue	7/16/19	69,250	69,250	0						
	Wed	7/17/19	50,500	50,500	0					95	Dry
	Thu	7/18/19	55,938	55,938	0			0.20	Rain	79	Wet
	Fri	7/19/19	55,938	55,938	0						
	Sat	7/20/19	55,938	55,938	0						
4	Sun	7/21/19	55,938	55,938	0						
	Mon	7/22/19	55,938	0	55,938					90	Dry
	Tue	7/23/19	55,938	0	55,938						
	Wed	7/24/19	55,938	0	55,938						
	Thu	7/25/19	55,938	0	55,938						
	Fri	7/26/19	50,000	0	50,000					89	Dry
	Sat	7/27/19	0	0	0						
5	Sun	7/28/19	0	0	0						
	Mon	7/29/19	0	54,750	54,750					81	Dry
	Tue	7/30/19	0	54,750	54,750					92	Dry
	Wed	7/31/19	0	54,750	54,750			0.50	Rain	88	Wet
	Thu	8/1/19	0	54,750	54,750					82	Dry
	Fri	8/2/19	0	54,750	54,750					81	Dry
	Sat	8/3/19	0	54,750	54,750						
	Monthly Totals:		**1,312,254**	**1,050,502**	**957,752**			**1.20**			
	Max Weekly:		**356,814**	**417,314**	**328,500**	**0**	**0**				
	Inches/Acre/Week (Max):		**2.13**	**2.48**	**1.97**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **8/12/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.7	***	8.7	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	6.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	<2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	172	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: August 11, 2019								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	86	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: August 11, 2019.								
Flow (50050)	Sample Measurement	.0394	.0456	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
August 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-09-11T11:58:57-04:00	
August 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-09-11T11:57:50-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Influent sample date: August 11, 2019.	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	**(717)**	**278-3444**	**2019**	**9**	**11**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **8** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter		Flow		CBOD5		TSS		Fecal Coliform		pH							
Stage		1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Thu	8/1/19	0.1095														
	Fri	8/2/19	0.1095														
	Sat	8/3/19	0.1095														
1	Sun	8/4/19	0.1095														
	Mon	8/5/19	0.104														
	Tue	8/6/19	0.161														
	Wed	8/7/19	0.112														
	Thu	8/8/19	0.112														
	Fri	8/9/19	0.1125														
	Sat	8/10/19	0.1125														
2	Sun	8/11/19	0.1125	<	2.0		6.0										
	Mon	8/12/19	0.1125														
	Tue	8/13/19	0.1125					<	1.0								
	Wed	8/14/19	0.1125														
	Thu	8/15/19	0.09762														
	Fri	8/16/19	0.09762														
	Sat	8/17/19	0.09762														
3	Sun	8/18/19	0.09762														
	Mon	8/19/19	0.1085														
	Tue	8/20/19	0.1085														
	Wed	8/21/19	0.118								8.7						
	Thu	8/22/19	0.118														
	Fri	8/23/19	0.118														
	Sat	8/24/19	0.118														
4	Sun	8/25/19	0.118														
	Mon	8/26/19	0.096														
	Tue	8/27/19	0.119														
	Wed	8/28/19	0.118														
	Thu	8/29/19	0.115														
	Fri	8/30/19	0.115														
	Sat	8/31/19	0.115														
5																	

Statistics for DMR

Daily Minimum (Conc.):			<	2		6	<	1		8.7							
Daily Maximum (Conc):			<	2		6	<	1		8.7							
Max Avg Weekly (Conc.):			<	2		6											
Avg Monthly (Conc.):			<	2		6											
Geometric Mean (Conc.):							<	1									
Max Avg Weekly (Load):	0.117643		<	2		6											
Avg Monthly (Load):	0.112177		<	2		6											
Total Monthly (Load):	3.477496		<	58		175											
Daily Minimum (Load):	0.096		<	2		6											
Daily Maximum (Load):	0.161		<	2		6											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **9/11/2019 11:28**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **8** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Thu	8/1/19	0	54,750	54,750					82	Dry
	Fri	8/2/19	0	54,750	54,750					81	Dry
	Sat	8/3/19	0	54,750	54,750						
1	Sun	8/4/19	0	54,750	54,750						
	Mon	8/5/19	52,000	52,000	0					90	Dry
	Tue	8/6/19	80,500	80,500	0					92	Dry
	Wed	8/7/19	56,000	56,000	0					92	Dry
	Thu	8/8/19	56,000	56,000	0						
	Fri	8/9/19	56,250	56,250	0					90	Dry
	Sat	8/10/19	56,250	56,250	0						
2	Sun	8/11/19	56,250	56,250	0					77	Dry
	Mon	8/12/19	56,250	0	56,250					70	Dry
	Tue	8/13/19	56,250	0	56,250						
	Wed	8/14/19	56,250	0	56,250			0.20	Rain		
	Thu	8/15/19	48,812	0	48,812			0.20	Rain	87	Dry
	Fri	8/16/19	48,812	0	48,812						
	Sat	8/17/19	48,812	0	48,812						
3	Sun	8/18/19	48,812	0	48,812						
	Mon	8/19/19	0	54,250	54,250					94	Dry
	Tue	8/20/19	0	54,250	54,250						
	Wed	8/21/19	0	59,000	59,000					92	Dry
	Thu	8/22/19	0	59,000	59,000						
	Fri	8/23/19	0	59,000	59,000			0.10	Rain	75	Wet/Damp
	Sat	8/24/19	0	59,000	59,000						
4	Sun	8/25/19	0	59,000	59,000						
	Mon	8/26/19	48,000	48,000	0					74	Dry
	Tue	8/27/19	59,500	59,500	0					69	Dry
	Wed	8/28/19	59,000	59,000	0					75	Dry
	Thu	8/29/19	57,500	57,500	0					79	
	Fri	8/30/19	57,500	57,500	0						
	Sat	8/31/19	57,500	57,500	0						
5											
Monthly Totals:			**1,116,248**	**1,374,750**	**986,498**			**0.50**			
Max Weekly:			**371,436**	**411,750**	**393,312**	**0**	**0**				
Inches/Acre/Week (Max):			**2.22**	**2.45**	**2.36**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **9/11/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.3	***	8.3	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	4.6	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	275	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	142	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0408	.0474	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 9/9/2019.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Sept 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-10-08T14:01:01-04:00	
Sept 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-10-08T14:02:26-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Influent sample date: 9/9/2019.	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**10**	**8**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **9** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	9/1/19	0.12067															
	Mon	9/2/19	0.12067															
	Tue	9/3/19	0.12067															
	Wed	9/4/19	0.118															
	Thu	9/5/19	0.12															
	Fri	9/6/19	0.12															
	Sat	9/7/19	0.12															
2	Sun	9/8/19	0.12															
	Mon	9/9/19	0.12		4.6		5.0											
	Tue	9/10/19	0.114						<		1.0							
	Wed	9/11/19	0.114															
	Thu	9/12/19	0.1185															
	Fri	9/13/19	0.1185															
	Sat	9/14/19	0.1185															
3	Sun	9/15/19	0.1185															
	Mon	9/16/19	0.0415								8.3							
	Tue	9/17/19	0.0415															
	Wed	9/18/19	0.077															
	Thu	9/19/19	0.065															
	Fri	9/20/19	0.065															
	Sat	9/21/19	0.065															
4	Sun	9/22/19	0.065															
	Mon	9/23/19	0.06733															
	Tue	9/24/19	0.06733															
	Wed	9/25/19	0.06733															
	Thu	9/26/19	0.06525															
	Fri	9/27/19	0.06525															
	Sat	9/28/19	0.06525															
5	Sun	9/29/19	0.06525															
	Mon	9/30/19	0.0465															
Statistics for DMR																		
Daily Minimum (Conc.):					**4.6**		**5**		**<**		**1**		**8.3**					
Daily Maximum (Conc):					**4.6**		**5**		**<**		**1**		**8.3**					
Max Avg Weekly (Conc.):					**4.6**		**5**											
Avg Monthly (Conc.):					**4.6**		**5**											
Geometric Mean (Conc.):									**<**		**1**							
Max Avg Weekly (Load):			**0.12**		**5**		**5**											
Avg Monthly (Load):			**0.090383**		**5**		**5**											
Total Monthly (Load):			**2.711497**		**138**		**150**											
Daily Minimum (Load):			**0.0415**		**5**		**5**											
Daily Maximum (Load):			**0.120666**		**5**		**5**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **10/8/2019 11:22**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **9** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	9/1/19	60,333	0	60,333						
	Mon	9/2/19	60,333	0	60,333						
	Tue	9/3/19	60,333	0	60,333						
	Wed	9/4/19	59,000	0	59,000					80	Dry
	Thu	9/5/19	60,000	0	60,000					80	Dry
	Fri	9/6/19	60,000	0	60,000						
	Sat	9/7/19	60,000	0	60,000						
2	Sun	9/8/19	60,000	0	60,000						
	Mon	9/9/19	0	60,000	60,000					80	Dry
	Tue	9/10/19	0	57,000	57,000					80	Dry
	Wed	9/11/19	0	57,000	57,000						
	Thu	9/12/19	0	59,250	59,250					86	Dry
	Fri	9/13/19	0	59,250	59,250						
	Sat	9/14/19	0	59,250	59,250						
3	Sun	9/15/19	0	59,250	59,250						
	Mon	9/16/19	20,750	20,750	0					80	Dry
	Tue	9/17/19	20,750	20,750	0						
	Wed	9/18/19	38,500	38,500	0						
	Thu	9/19/19	32,500	32,500	0					74	Dry
	Fri	9/20/19	32,500	32,500	0						
	Sat	9/21/19	32,500	32,500	0						
4	Sun	9/22/19	32,500	32,500	0						
	Mon	9/23/19	33,666	0	33,666					76	Dry
	Tue	9/24/19	33,666	0	33,666						
	Wed	9/25/19	33,666	0	33,666					78	Dry
	Thu	9/26/19	32,625	0	32,625					76	Dry
	Fri	9/27/19	32,625	0	32,625						
	Sat	9/28/19	32,625	0	32,625						
5	Sun	9/29/19	32,625	0	32,625						
	Mon	9/30/19	0	23,250	23,250					76	Dry
Monthly Totals:			**921,497**	**644,250**	**1,145,747**						
Max Weekly:			**419,999**	**351,750**	**419,999**	**0**	**0**				
Inches/Acre/Week (Max):			**2.51**	**2.09**	**2.52**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **10/8/2019**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	10	01	TO	2019	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2019**
DMR Effective To: **10/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.1	***	8.1	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	<5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	4.7	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	10	01	TO	2019	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2019**
DMR Effective To: **10/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	136	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	310	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.043	.067	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 10/7/19									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Oct 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-11-11T14:25:53-05:00	
Oct 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-11-11T14:26:27-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent sample date: 10/7/19	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**11**	**11**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **10** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

			Flow		CBOD5		TSS		Fecal Coliform		pH							
Parameter																		
Stage			1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	9/29/19	0.06525															
	Mon	9/30/19	0.0465															
	Tue	10/1/19	0.0465															
	Wed	10/2/19	0.044															
	Thu	10/3/19	0.044															
	Fri	10/4/19	0.04															
	Sat	10/5/19	0.04															
2	Sun	10/6/19	0.04															
	Mon	10/7/19	0.04		4.7	<	5.0											
	Tue	10/8/19	0.041					<	1.0									
	Wed	10/9/19	0.0404															
	Thu	10/10/19	0.0404															
	Fri	10/11/19	0.0404															
	Sat	10/12/19	0.0404															
3	Sun	10/13/19	0.0404															
	Mon	10/14/19	0.035															
	Tue	10/15/19	0.0															
	Wed	10/16/19	0.001								8.1							
	Thu	10/17/19	0.0															
	Fri	10/18/19	0.0															
	Sat	10/19/19	0.0															
4	Sun	10/20/19	0.0															
	Mon	10/21/19	0.0															
	Tue	10/22/19	0.013															
	Wed	10/23/19	0.039															
	Thu	10/24/19	0.033															
	Fri	10/25/19	0.033															
	Sat	10/26/19	0.033															
5	Sun	10/27/19	0.033															
	Mon	10/28/19	0.05															
	Tue	10/29/19	0.05															
	Wed	10/30/19	0.05															
	Thu	10/31/19	0.051															
	Fri	11/1/19	0.051															
	Sat	11/2/19	0.051															
Statistics for DMR																		
Daily Minimum (Conc.):					**4.7**	**<**	**5**	**<**	**1**		**8.1**							
Daily Maximum (Conc):					**4.7**	**<**	**5**	**<**	**1**		**8.1**							
Max Avg Weekly (Conc.):					**4.7**	**<**	**5**											
Avg Monthly (Conc.):					**4.7**	**<**	**5**											
Geometric Mean (Conc.):								**<**	**1**									
Max Avg Weekly (Load):			**0.048**		**2**	**<**	**2**											
Avg Monthly (Load):			**0.03092**		**2**	**<**	**2**											
Total Monthly (Load):			**0.9585**		**49**	**<**	**52**											
Daily Minimum (Load):			**0**		**2**	**<**	**2**											
Daily Maximum (Load):			**0.051**		**2**	**<**	**2**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **11/11/2019 13:35**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **10** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	9/29/19	32,625	0	32,625						
	Mon	9/30/19	0	23,250	23,250					76	Dry
	Tue	10/1/19	0	23,250	23,250						
	Wed	10/2/19	0	22,000	22,000					93	Dry
	Thu	10/3/19	0	22,000	22,000						
	Fri	10/4/19	0	20,000	20,000					67	Dry
	Sat	10/5/19	0	20,000	20,000						
2	Sun	10/6/19	0	20,000	20,000						
	Mon	10/7/19	20,000	20,000	0					70	Dry
	Tue	10/8/19	20,500	20,500	0					74	Dry
	Wed	10/9/19	20,200	20,200	0			0.10	Rain	68	Wet
	Thu	10/10/19	20,200	20,200	0						
	Fri	10/11/19	20,200	20,200	0						
	Sat	10/12/19	20,200	20,200	0						
3	Sun	10/13/19	20,200	20,200	0						
	Mon	10/14/19	17,500	0	17,500					74	Dry
	Tue	10/15/19	0	0	0						
	Wed	10/16/19	500	0	500			0.30	Rain	65	Wet
	Thu	10/17/19	0	0	0					64	Dry
	Fri	10/18/19	0	0	0						
	Sat	10/19/19	0	0	0						
4	Sun	10/20/19	0	0	0						
	Mon	10/21/19	0	0	0			0.30	Rain		
	Tue	10/22/19	0	6,500	6,500			0.10	Rain	64	Wet
	Wed	10/23/19	0	19,500	19,500					66	Dry
	Thu	10/24/19	0	16,500	16,500					65	Dry
	Fri	10/25/19	0	16,500	16,500						
	Sat	10/26/19	0	16,500	16,500						
5	Sun	10/27/19	0	16,500	16,500						
	Mon	10/28/19	25,000	25,000	0					65	Dry
	Tue	10/29/19	25,000	25,000	0						
	Wed	10/30/19	25,000	25,000	0			0.40	Rain	70	Wet
	Thu	10/31/19	25,500	25,500	0			0.10		72	Wet
	Fri	11/1/19	25,500	25,500	0						
	Sat	11/2/19	25,000	25,500	0						
	Monthly Totals:		**260,000**	**461,250**	**237,250**			**1.30**			
	Max Weekly:		**151,000**	**168,000**	**163,125**	**0**	**0**				
	Inches/Acre/Week (Max):		**0.90**	**1.00**	**0.98**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **11/11/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.79	***	7.79	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	13.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	10.2	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	277	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 11/11/2019								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	272	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 11/11/2019								
Flow (50050)	Sample Measurement	.0434	.0673	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
	Facility Parameter Comments	Sample date: 11/11/2019								
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Nov 2019 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2019-12-11T08:48:55-05:00	
Nov 2019 Land App Supp Form.pdf	Land Application Systems Form	2019-12-11T08:52:08-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2019**	**12**	**11**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **11** (select number) Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter / Stage			Flow 1		CBOD5 1		TSS 1		Fecal Coliform 1		pH 1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Fri	11/1/19	0.051															
	Sat	11/2/19	0.051															
1	Sun	11/3/19	0.051															
	Mon	11/4/19	0.052															
	Tue	11/5/19	0.052															
	Wed	11/6/19	0.052															
	Thu	11/7/19	0.051															
	Fri	11/8/19	0.051															
	Sat	11/9/19	0.051															
2	Sun	11/10/19	0.051															
	Mon	11/11/19	0.051		10.2		13.0				7.79							
	Tue	11/12/19	0.051						<		1.0							
	Wed	11/13/19	0.051															
	Thu	11/14/19	0.04575															
	Fri	11/15/19	0.04575															
	Sat	11/16/19	0.04575															
3	Sun	11/17/19	0.04575															
	Mon	11/18/19	0.0394															
	Tue	11/19/19	0.0394															
	Wed	11/20/19	0.0394															
	Thu	11/21/19	0.046															
	Fri	11/22/19	0.046															
	Sat	11/23/19	0.046															
4	Sun	11/24/19	0.046															
	Mon	11/25/19	0.0505															
	Tue	11/26/19	0.0505															
	Wed	11/27/19	0.05															
	Thu	11/28/19	0.05															
	Fri	11/29/19	0.05															
	Sat	11/30/19	0.0															
5																		
Statistics for DMR																		
Daily Minimum (Conc.):					**10.2**		**13**		<	**1**		**7.79**						
Daily Maximum (Conc):					**10.2**		**13**		<	**1**		**7.79**						
Max Avg Weekly (Conc.):					**10.2**		**13**											
Avg Monthly (Conc.):					**10.2**		**13**											
Geometric Mean (Conc.):									<	**1**								
Max Avg Weekly (Load):			**0.05143**		**4**		**6**											
Avg Monthly (Load):			**0.04674**		**4**		**6**											
Total Monthly (Load):			**1.4022**		**130**		**166**											
Daily Minimum (Load):			**0**		**4**		**6**											
Daily Maximum (Load):			**0.052**		**4**		**6**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **12/11/2019 8:44**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **11** *(Select number)* Year: **2019**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	11/1/19	25,500	25,500	0						
	Sat	11/2/19	25,500	25,500	0						
1	Sun	11/3/19	25,500	25,500	0					51	Dry
	Mon	11/4/19	26,000	0	26,000						
	Tue	11/5/19	26,000	0	26,000					58	Dry
	Wed	11/6/19	26,000	0	26,000					57	Dry
	Thu	11/7/19	25,500	0	25,500						
	Fri	11/8/19	25,500	0	25,500						
	Sat	11/9/19	25,500	0	25,500						
2	Sun	11/10/19	25,500	0	25,500						
	Mon	11/11/19	0	25,500	25,500					48	Dry
	Tue	11/12/19	0	25,500	25,500						
	Wed	11/13/19	0	25,500	25,500					40	Dry
	Thu	11/14/19	0	22,875	22,875					38	Dry
	Fri	11/15/19	0	22,875	22,875						
	Sat	11/16/19	0	22,875	22,875						
3	Sun	11/17/19	0	22,875	22,875						
	Mon	11/18/19	19,666	19,666	0					42	Dry
	Tue	11/19/19	19,666	19,666	0						
	Wed	11/20/19	19,666	19,666	0					44	Dry
	Thu	11/21/19	23,000	23,000	0					43	Dry
	Fri	11/22/19	23,000	23,000	0						
	Sat	11/23/19	23,000	23,000	0			0.50	Rain		
4	Sun	11/24/19	23,000	23,000	0						
	Mon	11/25/19	25,250	0	25,250					44	Dry
	Tue	11/26/19	25,250	0	25,250						
	Wed	11/27/19	25,000	0	25,000					46	Dry
	Thu	11/28/19	25,000	0	25,000						
	Fri	11/29/19	25,000	0	25,000					40	Dry
	Sat	11/30/19	0	0	0					40	Dry
5											
Monthly Totals:			**532,998**	**395,498**	**473,500**			**0.50**			
Max Weekly:			**180,000**	**150,873**	**170,625**	**0**	**0**				
Inches/Acre/Week (Max):			**1.08**	**0.90**	**1.02**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **12/11/2019**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	267	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 12/9/2019								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	135	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 12/9/2019								
Flow (50050)	Sample Measurement	.0457	.0687	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
	Facility Parameter Comments	Sample date: 12/9/2019								
Facility Sampling Point Comments	Sample date: 12/9/2019									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
Raw influent sample date: 12/9/2019	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2020**	**1**	**7**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	316	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 1/13/20.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	190	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 1/13/20.								
Flow (50050)	Sample Measurement	.0438	.0580	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 1/13/20.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2020**	**02**	**13**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	491	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample Date: 2/10/20.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	146	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample Date: 2/10/20.								
Flow (50050)	Sample Measurement	.0429	.0503	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample Date: 2/10/20.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2020**	**03**	**09**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	120	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 3/9/2020								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	47	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 3/9/2020								
Flow (50050)	Sample Measurement	.0507	.0719	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 3/9/2020									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2020**	**04**	**09**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.4	***	7.4	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	17.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	10.7	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	130	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 4/13/2020								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	87	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 4/13/2020								
Flow (50050)	Sample Measurement	.0543	.0977	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 4/13/2020									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Apr 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-05-11T13:46:09-04:00	
Apr 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-05-11T13:46:44-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	278-3444	2020	05	11
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **4** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	3/29/20	0.0															
	Mon	3/30/20	0.0															
	Tue	3/31/20	0.0															
	Wed	4/1/20	0.0															
	Thu	4/2/20	0.0															
	Fri	4/3/20	0.0															
	Sat	4/4/20	0.14															
2	Sun	4/5/20	0.066															
	Mon	4/6/20	0.067															
	Tue	4/7/20	0.024															
	Wed	4/8/20	0.024															
	Thu	4/9/20	0.024															
	Fri	4/10/20	0.04533															
	Sat	4/11/20	0.04533															
3	Sun	4/12/20	0.04533															
	Mon	4/13/20	0.034		10.7		17.0				7.4							
	Tue	4/14/20	0.034						<		1.0							
	Wed	4/15/20	0.07															
	Thu	4/16/20	0.07															
	Fri	4/17/20	0.07333															
	Sat	4/18/20	0.07333															
4	Sun	4/19/20	0.07333															
	Mon	4/20/20	0.0715															
	Tue	4/21/20	0.0715															
	Wed	4/22/20	0.0685															
	Thu	4/23/20	0.0685															
	Fri	4/24/20	0.06433															
	Sat	4/25/20	0.06433															
5	Sun	4/26/20	0.06433															
	Mon	4/27/20	0.0745															
	Tue	4/28/20	0.0745															
	Wed	4/29/20	0.069															
	Thu	4/30/20	0.0785															
	Fri	5/1/20	0.0785															
	Sat	5/2/20	0.0785															
Statistics for DMR																		
Daily Minimum (Conc.):					**10.7**		**17**	<	**1**		**7.4**							
Daily Maximum (Conc):					**10.7**		**17**	<	**1**		**7.4**							
Max Avg Weekly (Conc.):					**10.7**		**17**											
Avg Monthly (Conc.):					**10.7**		**17**											
Geometric Mean (Conc.):								<	**1**									
Max Avg Weekly (Load):			**0.073976**		**3**		**5**											
Avg Monthly (Load):			**0.055949**		**3**		**5**											
Total Monthly (Load):			**1.678479**		**91**		**145**											
Daily Minimum (Load):			**0**		**3**		**5**											
Daily Maximum (Load):			**0.14**		**3**		**5**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini
Title: Agent

License No.: **S6899**
Date: **5/11/2020 11:27**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahic**

Month: **4** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	3/29/20	0	0	0						
	Mon	3/30/20	0	0	0					65	Dry
	Tue	3/31/20	0	0	0						
	Wed	4/1/20	0	0	0						
	Thu	4/2/20	0	0	0					50	Dry
	Fri	4/3/20	0	0	0						
	Sat	4/4/20	70,000	70,000	0					47	Dry
2	Sun	4/5/20	33,000	33,000	0						
	Mon	4/6/20	33,500	33,500	0					58	Dry
	Tue	4/7/20	12,000	12,000	0					65	Dry
	Wed	4/8/20	12,000	12,000	0						
	Thu	4/9/20	12,000	12,000	0						
	Fri	4/10/20	22,666	22,666	0					34	Dry
	Sat	4/11/20	22,666	22,666	0						
3	Sun	4/12/20	22,666	22,666	0						
	Mon	4/13/20	17,000	0	17,000			0.50	Rain	78	Wet
	Tue	4/14/20	17,000	0	17,000						
	Wed	4/15/20	35,000	0	35,000					58	Dry
	Thu	4/16/20	35,000	0	35,000						
	Fri	4/17/20	36,665	0	36,665					56	Dry
	Sat	4/18/20	36,665	36,665	0						
4	Sun	4/19/20	36,665	36,665	0						
	Mon	4/20/20	35,750	35,750	0						
	Tue	4/21/20	35,750	35,750	0						
	Wed	4/22/20	0	34,250	34,250					55	Dry
	Thu	4/23/20	0	34,250	34,250						
	Fri	4/24/20	0	32,166	32,166			0.40	Rain	50	Wet
	Sat	4/25/20	0	32,166	32,166						
5	Sun	4/26/20	0	32,166	32,166						
	Mon	4/27/20	0	37,250	37,250			0.10	Rain	41	Wet
	Tue	4/28/20	0	37,250	37,250						
	Wed	4/29/20	0	34,500	34,500					66	Dry
	Thu	4/30/20	0	39,375	39,375					54	Dry
	Fri	5/1/20	0	39,375	39,375						
	Sat	5/2/20	39,375	0	39,375						
	Monthly Totals:		**525,993**	**698,701**	**454,038**			**1.00**			
	Max Weekly:		**199,996**	**240,997**	**259,291**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.20**	**1.43**	**1.55**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **5/11/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.6	***	7.6	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	< 21.0	***	mg/L	2/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	12.4	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	281	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 5/11/2020.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	280	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 5/11/2020.								
Flow (50050)	Sample Measurement	.0497	.0621	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 5/11/2020.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
May 2020 Eff Mon Supp Form.xls.pdf	Daily Effluent Monitoring Form	2020-06-09T11:44:23-04:00	
May 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-06-09T11:43:35-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	278-3444	2020	06	09
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **5** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter		Flow		CBOD5		TSS		Fecal Coliform		pH							
Stage		1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Fri	5/1/20	0.0785														
	Sat	5/2/20	0.0785														
1	Sun	5/3/20	0.0785														
	Mon	5/4/20	0.118														
	Tue	5/5/20	0.0965														
	Wed	5/6/20	0.0965														
	Thu	5/7/20	0.09225														
	Fri	5/8/20	0.09225														
	Sat	5/9/20	0.09225														
2	Sun	5/10/20	0.09225														
	Mon	5/11/20	0.09		12.4		37.0	<	1.0		7.6						
	Tue	5/12/20	0.0925														
	Wed	5/13/20	0.0925														
	Thu	5/14/20	0.08525														
	Fri	5/15/20	0.08525														
	Sat	5/16/20	0.08525														
3	Sun	5/17/20	0.08525														
	Mon	5/18/20	0.1075														
	Tue	5/19/20	0.1075														
	Wed	5/20/20	0.092			<	5.0										
	Thu	5/21/20	0.092														
	Fri	5/22/20	0.09233														
	Sat	5/23/20	0.09233														
4	Sun	5/24/20	0.09233														
	Mon	5/25/20	0.0895														
	Tue	5/26/20	0.0895														
	Wed	5/27/20	0.092														
	Thu	5/28/20	0.092														
	Fri	5/29/20	0.08767														
	Sat	5/30/20	0.08767														
5	Sun	5/31/20	0.08767														

Statistics for DMR

Daily Minimum (Conc.):			**12.4**	**<**	**5**	**<**	**1**		**7.6**								
Daily Maximum (Conc):			**12.4**		**37**	**<**	**1**		**7.6**								
Max Avg Weekly (Conc.):			**12.4**		**37**												
Avg Monthly (Conc.):			**12.4**	**<**	**21**												
Geometric Mean (Conc.):						**<**	**1**										
Max Avg Weekly (Load):	**0.095559**		**9**		**28**												
Avg Monthly (Load):	**0.091403**		**9**	**<**	**16**												
Total Monthly (Load):	**2.833497**		**289**	**<**	**490**												
Daily Minimum (Load):	**0.0785**		**9**	**<**	**4**												
Daily Maximum (Load):	**0.118**		**9**		**28**												

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **6/9/2020 11:34**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **5** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Fri	5/1/20	0	39,375	39,375						
	Sat	5/2/20	39,375	0	39,375						
1	Sun	5/3/20	39,375	0	39,375						
	Mon	5/4/20	59,000	0	59,000					63	Dry
	Tue	5/5/20	48,250	0	48,250					66	Dry
	Wed	5/6/20	48,250	0	48,250						
	Thu	5/7/20	46,125	0	46,125					64	Dry
	Fri	5/8/20	46,125	0	46,125						
	Sat	5/9/20	46,125	0	46,125						
2	Sun	5/10/20	46,125	0	46,125						
	Mon	5/11/20	45,000	45,000	0			0.20	Rain	52	Wet
	Tue	5/12/20	46,250	46,250	0						
	Wed	5/13/20	46,250	46,250	0						
	Thu	5/14/20	42,625	42,625	0					65	Dry
	Fri	5/15/20	42,625	42,625	0						
	Sat	5/16/20	42,625	42,625	0						
3	Sun	5/17/20	0	42,625	42,625						
	Mon	5/18/20	0	53,750	53,750						
	Tue	5/19/20	0	53,750	53,750						
	Wed	5/20/20	0	46,000	46,000					62	Dry
	Thu	5/21/20	0	46,000	46,000						
	Fri	5/22/20	0	46,166	46,166			0.30	Rain	65	Dry
	Sat	5/23/20	0	46,166	46,166						
4	Sun	5/24/20	0	46,166	46,166						
	Mon	5/25/20	44,750	0	44,750					66	Dry
	Tue	5/26/20	44,750	0	44,750						
	Wed	5/27/20	46,000	0	46,000					77	Dry
	Thu	5/28/20	46,000	0	46,000						
	Fri	5/29/20	43,833	0	43,833			0.10	Rain	77	Damp
	Sat	5/30/20	43,833	0	43,833						
5	Sun	5/31/20	43,833	0	43,833						
	Monthly Totals:		**997,124**	**685,373**	**1,151,747**			**0.60**			
	Max Weekly:		**333,250**	**334,457**	**334,457**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.99**	**1.99**	**2.00**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **6/9/2020**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	6.91	***	6.91	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	< 5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	7.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	337	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 6/17/20								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	488	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 6/17/20								
Flow (50050)	Sample Measurement	.0480	.0562	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
June 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-07-15T15:24:33-04:00	
June 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-07-15T15:25:10-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	278-3444	2020	07	15
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **6** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

Parameter		Flow		CBOD5		TSS		Fecal Coliform		pH							
Stage		1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
1	Sun	5/31/20	0.08767														
	Mon	6/1/20	0.1025														
	Tue	6/2/20	0.1025														
	Wed	6/3/20	0.0925														
	Thu	6/4/20	0.0925														
	Fri	6/5/20	0.082														
	Sat	6/6/20	0.082														
2	Sun	6/7/20	0.082														
	Mon	6/8/20	0.1065		7.0	<	5.0				6.91						
	Tue	6/9/20	0.1065					<	1.0								
	Wed	6/10/20	0.092														
	Thu	6/11/20	0.09375														
	Fri	6/12/20	0.09375														
	Sat	6/13/20	0.09375														
3	Sun	6/14/20	0.09375														
	Mon	6/15/20	0.092														
	Tue	6/16/20	0.092														
	Wed	6/17/20	0.0925														
	Thu	6/18/20	0.0925														
	Fri	6/19/20	0.08167														
	Sat	6/20/20	0.08167														
4	Sun	6/21/20	0.08167														
	Mon	6/22/20	0.108														
	Tue	6/23/20	0.108														
	Wed	6/24/20	0.092														
	Thu	6/25/20	0.0845														
	Fri	6/26/20	0.0845														
	Sat	6/27/20	0.0845														
5	Sun	6/28/20	0.0845														
	Mon	6/29/20	0.09233														
	Tue	6/30/20	0.09233														
Statistics for DMR																	
Daily Minimum (Conc.):					**7**	**<**	**5**	**<**	**1**		**6.91**						
Daily Maximum (Conc):					**7**	**<**	**5**	**<**	**1**		**6.91**						
Max Avg Weekly (Conc.):					**7**	**<**	**5**										
Avg Monthly (Conc.):					**7**	**<**	**5**										
Geometric Mean (Conc.):								**<**	**1**								
Max Avg Weekly (Load):			**0.095464**		**6**	**<**	**4**										
Avg Monthly (Load):			**0.092022**		**6**	**<**	**4**										
Total Monthly (Load):			**2.760664**		**187**	**<**	**133**										
Daily Minimum (Load):			**0.081666**		**6**	**<**	**4**										
Daily Maximum (Load):			**0.108**		**6**	**<**	**4**										

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **7/15/2020 15:03**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **6** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	5/31/20	43,833	0	43,833						
	Mon	6/1/20	51,250	51,250	0					65	Dry
	Tue	6/2/20	51,250	51,250	0						
	Wed	6/3/20	46,250	46,250	0			0.20	Rain	85	Damp
	Thu	6/4/20	46,250	46,250	0			0.40	Rain	87	Wet
	Fri	6/5/20	41,000	41,000	0			0.40	Rain	75	Wet
	Sat	6/6/20	41,000	41,000	0						
2	Sun	6/7/20	41,000	41,000	0						
	Mon	6/8/20	0	53,250	53,250					68	Dry
	Tue	6/9/20	0	53,250	53,250						
	Wed	6/10/20	0	46,000	46,000					76	Wet
	Thu	6/11/20	0	46,875	46,875			0.20	Rain		
	Fri	6/12/20	0	46,875	46,875						
	Sat	6/13/20	0	46,875	46,875						
3	Sun	6/14/20	0	46,875	46,875						
	Mon	6/15/20	46,000	0	46,000					79	Dry
	Tue	6/16/20	46,000	0	46,000						
	Wed	6/17/20	46,250	0	46,250					80	Dry
	Thu	6/18/20	46,250	0	46,250						
	Fri	6/19/20	40,833	0	40,833					84	Dry
	Sat	6/20/20	40,833	3	40,833						
4	Sun	6/21/20	40,833	0	40,833						
	Mon	6/22/20	54,000	54,000	0					82	Dry
	Tue	6/23/20	54,000	54,000	0						
	Wed	6/24/20	46,000	46,000	0					85	Dry
	Thu	6/25/20	42,250	42,250	0					83	Dry
	Fri	6/26/20	42,250	42,250	0						
	Sat	6/27/20	42,250	42,250	0						
5	Sun	6/28/20	42,250	42,250	0						
	Mon	6/29/20	0	46,166	46,166					78	Dry
	Tue	6/30/20	0	46,166	46,166						
Monthly Totals:			**947,999**	**1,073,335**	**739,331**			**1.20**			
Max Weekly:			**321,583**	**334,125**	**313,041**	**0**	**0**				
Inches/Acre/Week (Max):			**1.92**	**1.99**	**1.87**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **7/15/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.3	***	8.3	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	< 5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	3.8	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	235	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	243	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0494	.0726	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 7/13/20.									

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3800-FM-BCW0462 12/2016

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
July 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-08-11T09:43:15-04:00	
July 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-08-11T09:43:53-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2020**	**08**	**11**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **7** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

			Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
			Stage	1		1		1		1		1							
Week	Day	Date		MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	6/28/20		0.0845															
	Mon	6/29/20		0.09233															
	Tue	6/30/20		0.09233															
	Wed	7/1/20		0.09233															
	Thu	7/2/20		0.123															
	Fri	7/3/20		0.09233															
	Sat	7/4/20		0.09233															
2	Sun	7/5/20		0.09233															
	Mon	7/6/20		0.092															
	Tue	7/7/20		0.0925															
	Wed	7/8/20		0.0925															
	Thu	7/9/20		0.09225															
	Fri	7/10/20		0.09225															
	Sat	7/11/20		0.09225															
3	Sun	7/12/20		0.09225															
	Mon	7/13/20		0.092		3.8	<	5.0											
	Tue	7/14/20		0.092							<	1.0							
	Wed	7/15/20		0.092															
	Thu	7/16/20		0.0925															
	Fri	7/17/20		0.0925															
	Sat	7/18/20		0.0925															
4	Sun	7/19/20		0.0925															
	Mon	7/20/20		0.092															
	Tue	7/21/20		0.092															
	Wed	7/22/20		0.092															
	Thu	7/23/20		0.073															
	Fri	7/24/20		0.0															
	Sat	7/25/20		0.0															
5	Sun	7/26/20		0.0															
	Mon	7/27/20		0.112															
	Tue	7/28/20		0.0935								8.3							
	Wed	7/29/20		0.0935															
	Thu	7/30/20		0.09225															
	Fri	7/31/20		0.09225															
	Sat	8/1/20		0.09225															
Statistics for DMR																			
			Daily Minimum (Conc.):			**3.8**	**<**	**5**	**<**	**1**		**8.3**							
			Daily Maximum (Conc):			**3.8**	**<**	**5**	**<**	**1**		**8.3**							
			Max Avg Weekly (Conc.):			**3.8**	**<**	**5**											
			Avg Monthly (Conc.):			**3.8**	**<**	**5**											
			Geometric Mean (Conc.):						**<**	**1**									
			Max Avg Weekly (Load):	**0.095595**		**3**	**<**	**4**											
			Avg Monthly (Load):	**0.084414**		**3**	**<**	**4**											
			Total Monthly (Load):	**2.616832**		**90**	**<**	**119**											
			Daily Minimum (Load):	**0**		**3**	**<**	**4**											
			Daily Maximum (Load):	**0.123**		**3**	**<**	**4**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **8/10/2020 15:28**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **7** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	6/28/20	42,250	42,250	0						
	Mon	6/29/20	0	46,166	46,166						
	Tue	6/30/20	0	46,166	46,166						
	Wed	7/1/20	0	46,166	46,166						
	Thu	7/2/20	0	61,500	61,500					74	Dry
	Fri	7/3/20	0	46,166	46,166					91	Dry
	Sat	7/4/20	0	46,166	46,166						
2	Sun	7/5/20	0	46,166	46,166						
	Mon	7/6/20	46,000	0	46,000			0.50	Rain	85	Wet
	Tue	7/7/20	46,250	0	46,250					88	Dry
	Wed	7/8/20	46,250	0	46,250						
	Thu	7/9/20	46,125	0	46,125					88	Dry
	Fri	7/10/20	46,125	0	46,125						
	Sat	7/11/20	46,125	0	46,125						
3	Sun	7/12/20	46,125	0	46,125						
	Mon	7/13/20	46,000	46,000	0					85	Dry
	Tue	7/14/20	46,000	46,000	0						
	Wed	7/15/20	46,000	46,000	0					85	Dry
	Thu	7/16/20	46,250	46,250	0					85	Dry
	Fri	7/17/20	46,250	46,250	0						
	Sat	7/18/20	46,250	46,250	0						
4	Sun	7/19/20	46,250	46,250	0						
	Mon	7/20/20	0	46,000	46,000					88	Dry
	Tue	7/21/20	0	46,000	46,000					93	Dry
	Wed	7/22/20	0	46,000	46,000						
	Thu	7/23/20	0	36,500	36,500			0.50	Rain	89	Damp
	Fri	7/24/20	0	0	0						
	Sat	7/25/20	0	0	0						
5	Sun	7/26/20	0	0	0						
	Mon	7/27/20	56,000	0	56,000					97	Dry
	Tue	7/28/20	46,750	0	46,750					92	Dry
	Wed	7/29/20	46,750	0	46,750						
	Thu	7/30/20	46,125	0	46,125					90	Dry
	Fri	7/31/20	46,125	0	46,125						
	Sat	8/1/20	46,125	0	46,125						
	Monthly Totals:		**887,750**	**743,664**	**985,414**			**1.00**			
	Max Weekly:		**322,875**	**334,580**	**323,041**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.93**	**1.99**	**1.93**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **8/10/2020**

3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.7	***	7.7	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	< 5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 24	***	CFU/100 ml	2/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	3.8	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	231	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	89	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.0511	.0949	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Aug 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-09-15T09:09:08-04:00	
Aug 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-09-15T09:09:49-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2020**	**09**	**15**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **8** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

			Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
			Stage	1		1		1		1		1							
Week	Day	Date		MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
	Sat	8/1/20		0.09225															
1	Sun	8/2/20		0.09225															
	Mon	8/3/20		0.09233															
	Tue	8/4/20		0.09233															
	Wed	8/5/20		0.09233															
	Thu	8/6/20		0.092															
	Fri	8/7/20		0.093															
	Sat	8/8/20		0.093															
2	Sun	8/9/20		0.093															
	Mon	8/10/20		0.0965		3.8	<	5.0											
	Tue	8/11/20		0.0965						590.0									
	Wed	8/12/20		0.084															
	Thu	8/13/20		0.09175															
	Fri	8/14/20		0.09175															
	Sat	8/15/20		0.09175															
3	Sun	8/16/20		0.09175															
	Mon	8/17/20		0.002															
	Tue	8/18/20		0.0						1.0	<								
	Wed	8/19/20		0.0															
	Thu	8/20/20		0.103															
	Fri	8/21/20		0.0															
	Sat	8/22/20		0.0															
4	Sun	8/23/20		0.0															
	Mon	8/24/20		0.125															
	Tue	8/25/20		0.0															
	Wed	8/26/20		0.125								7.7							
	Thu	8/27/20		0.064															
	Fri	8/28/20		0.064															
	Sat	8/29/20		0.064															
5	Sun	8/30/20		0.064															
	Mon	8/31/20		0.005															
Statistics for DMR																			
			Daily Minimum (Conc.):			**3.8**	**<**	**5**	**<**	**1**		**7.7**							
			Daily Maximum (Conc):			**3.8**	**<**	**5**		**590**		**7.7**							
			Max Avg Weekly (Conc.):			**3.8**	**<**	**5**											
			Avg Monthly (Conc.):			**3.8**	**<**	**5**											
			Geometric Mean (Conc.):						**<**	**24**									
			Max Avg Weekly (Load):	**0.092464**		**3**	**<**	**4**											
			Avg Monthly (Load):	**0.0675**		**3**	**<**	**4**											
			Total Monthly (Load):	**2.092499**		**95**	**<**	**125**											
			Daily Minimum (Load):	**0**		**3**	**<**	**4**											
			Daily Maximum (Load):	**0.125**		**3**	**<**	**4**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **9/14/2020 15:30**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **8** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Sat	8/1/20	46,125	0	46,125						
1	Sun	8/2/20	46,125	0	46,125						
	Mon	8/3/20	46,166	46,166	0						
	Tue	8/4/20	46,166	46,166	0						
	Wed	8/5/20	46,166	46,166	0						
	Thu	8/6/20	46,000	46,000	0						
	Fri	8/7/20	46,500	46,500	0						
	Sat	8/8/20	46,500	46,500	0						
2	Sun	8/9/20	46,500	46,500	0						
	Mon	8/10/20	0	48,250	48,250					90	Dry
	Tue	8/11/20	0	48,250	48,250						
	Wed	8/12/20	0	42,000	42,000			0.30	Rain	86	Damp
	Thu	8/13/20	0	45,875	45,875			0.10	Rain	77	Damp
	Fri	8/14/20	0	45,875	45,875						
	Sat	8/15/20	0	45,875	45,875						
3	Sun	8/16/20	0	45,875	45,875						
	Mon	8/17/20	1,000	0	1,000					78	Dry
	Tue	8/18/20	0	0	0						
	Wed	8/19/20	0	0	0					84	Dry
	Thu	8/20/20	51,500	0	51,500					84	Dry
	Fri	8/21/20	0	0	0						
	Sat	8/22/20	0	0	0						
4	Sun	8/23/20	0	0	0						
	Mon	8/24/20	0	62,500	62,500					86	Dry
	Tue	8/25/20	0	0	0						
	Wed	8/26/20	0	62,500	62,500					80	Dry
	Thu	8/27/20	0	32,000	32,000					84	Dry
	Fri	8/28/20	0	32,000	32,000						
	Sat	8/29/20	0	32,000	32,000						
5	Sun	8/30/20	0	32,000	32,000						
	Mon	8/31/20	2,500	2,500	0					74	Dry
Monthly Totals:			**471,248**	**901,498**	**719,750**			**0.40**			
Max Weekly:			**323,623**	**322,625**	**276,125**	**0**	**0**				
Inches/Acre/Week (Max):			**1.93**	**1.92**	**1.65**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **9/14/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	09	01	TO	2020	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2020**
DMR Effective To: **09/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	8.3	***	8.3	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	14.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	64	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	6.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	09	01	TO	2020	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2020**
DMR Effective To: **09/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	329	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 9/7/20.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	440	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 9/7/20.								
Flow (50050)	Sample Measurement	.0452	.0635	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
	Facility Parameter Comments	Sample date: 9/7/20.								
Facility Sampling Point Comments	Sample date: 9/7/20.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Sept 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-10-13T11:25:28-04:00	
Sept 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-10-13T11:26:01-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER									
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY
			(717)	**278-3444**	**2020**	**10**	**13**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **9** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

		Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
		Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	8/30/20	0.064															
	Mon	8/31/20	0.005															
	Tue	9/1/20	0.0															
	Wed	9/2/20	0.1185															
	Thu	9/3/20	0.1185															
	Fri	9/4/20	0.08															
	Sat	9/5/20	0.0															
2	Sun	9/6/20	0.0															
	Mon	9/7/20	0.1095		6.0		14.0											
	Tue	9/8/20	0.1095						64.0									
	Wed	9/9/20	0.092															
	Thu	9/10/20	0.121															
	Fri	9/11/20	0.0															
	Sat	9/12/20	0.0															
3	Sun	9/13/20	0.0															
	Mon	9/14/20	0.119															
	Tue	9/15/20	0.118															
	Wed	9/16/20	0.09467															
	Thu	9/17/20	0.09467															
	Fri	9/18/20	0.09467															
	Sat	9/19/20	0.0															
4	Sun	9/20/20	0.0675															
	Mon	9/21/20	0.0675															
	Tue	9/22/20	0.118															
	Wed	9/23/20	0.118															
	Thu	9/24/20	0.11267															
	Fri	9/25/20	0.11267															
	Sat	9/26/20	0.11267															
5	Sun	9/27/20	0.164								8.3							
	Mon	9/28/20	0.11175															
	Tue	9/29/20	0.11175															
	Wed	9/30/20	0.11175															
	Thu	10/1/20	0.11175															
	Fri	10/2/20	0.005															
	Sat	10/3/20	0.0															
Statistics for DMR																		
Daily Minimum (Conc.):					**6**		**14**		**64**		**8.3**							
Daily Maximum (Conc):					**6**		**14**		**64**		**8.3**							
Max Avg Weekly (Conc.):					**6**		**14**											
Avg Monthly (Conc.):					**6**		**14**											
Geometric Mean (Conc.):									**64**									
Max Avg Weekly (Load):			**0.101285**		**5**		**13**											
Avg Monthly (Load):			**0.082608**		**5**		**13**											
Total Monthly (Load):			**2.478246**		**164**		**384**											
Daily Minimum (Load):			**0**		**5**		**13**											
Daily Maximum (Load):			**0.164**		**5**		**13**											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **10/13/2020 10:52**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **9** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	8/30/20	0	32,000	32,000						
	Mon	8/31/20	2,500	2,500	0					74	Dry
	Tue	9/1/20	0	0	0						
	Wed	9/2/20	59,250	59,250	0					80	Dry
	Thu	9/3/20	59,250	59,250	0						
	Fri	9/4/20	40,000	40,000	0					80	Dry
	Sat	9/5/20	0	0	0						
2	Sun	9/6/20	0	0	0						
	Mon	9/7/20	54,750	0	54,750					82	Dry
	Tue	9/8/20	54,750	0	54,750						
	Wed	9/9/20	46,000	0	46,000					82	Dry
	Thu	9/10/20	60,500	0	60,500			0.40	Rain	84	Damp
	Fri	9/11/20	0	0	0						
	Sat	9/12/20	0	0	0						
3	Sun	9/13/20	0	0	0						
	Mon	9/14/20	59,500	0	59,500					74	Dry
	Tue	9/15/20	59,000	0	59,000					71	Dry
	Wed	9/16/20	47,333	0	47,333						
	Thu	9/17/20	47,333	0	47,333					70	Dry
	Fri	9/18/20	47,333	0	47,333					72	Dry
	Sat	9/19/20	0	0	0						
4	Sun	9/20/20	0	33,750	33,750					59	Dry
	Mon	9/21/20	0	33,750	33,750					68	Dry
	Tue	9/22/20	0	59,000	59,000					75	Dry
	Wed	9/23/20	0	59,000	59,000						
	Thu	9/24/20	0	56,333	56,333					76	Dry
	Fri	9/25/20	0	56,333	56,333						
	Sat	9/26/20	0	56,333	56,333			0.10	Rain	75	Damp
5	Sun	9/27/20	82,000	82,000	0					71	Dry
	Mon	9/28/20	55,875	55,875	0						
	Tue	9/29/20	55,875	55,875	0						
	Wed	9/30/20	55,875	55,875	0						
	Thu	10/1/20	55,875	55,875	0					70	Dry
	Fri	10/2/20	2,500	2,500	0						
	Sat	10/3/20	0	0	0						
	Monthly Totals:		**884,624**	**762,624**	**830,998**			**0.50**			
	Max Weekly:		**308,000**	**354,499**	**354,499**	**0**	**0**				
	Inches/Acre/Week (Max):		**1.84**	**2.11**	**2.12**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **10/13/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.46	***	7.46	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	< 5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1.0	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	2.5	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	195	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Total Suspended Solids (00530)	Sample Measurement	***	***	***	136	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
Flow (50050)	Sample Measurement	.04913	.1012	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sampling date: 10/12/2020.									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Oct 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-11-11T13:31:27-05:00	
Oct 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-11-11T13:31:01-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	278-3444	2020	11	11
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **10** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

	Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
	Stage	1		1		1		1		1							
Week	Day	Date	MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q	
	Thu	10/1/20	0.11175														
	Fri	10/2/20	0.005														
	Sat	10/3/20	0.0														
1	Sun	10/4/20	0.074														
	Mon	10/5/20	0.063														
	Tue	10/6/20	0.011														
	Wed	10/7/20	0.076														
	Thu	10/8/20	0.0														
	Fri	10/9/20	0.0625														
	Sat	10/10/20	0.0625														
2	Sun	10/11/20	0.089														
	Mon	10/12/20	0.0645		2.5	<	5.0				7.46						
	Tue	10/13/20	0.0645					<	1.0								
	Wed	10/14/20	0.066														
	Thu	10/15/20	0.06625														
	Fri	10/16/20	0.06625														
	Sat	10/17/20	0.06625														
3	Sun	10/18/20	0.06625														
	Mon	10/19/20	0.072														
	Tue	10/20/20	0.072														
	Wed	10/21/20	0.071														
	Thu	10/22/20	0.071														
	Fri	10/23/20	0.067														
	Sat	10/24/20	0.067														
4	Sun	10/25/20	0.067														
	Mon	10/26/20	0.07867														
	Tue	10/27/20	0.07867														
	Wed	10/28/20	0.07867														
	Thu	10/29/20	0.063														
	Fri	10/30/20	0.076														
	Sat	10/31/20	0.076														
5																	

Statistics for DMR

Daily Minimum (Conc.):			**2.5**	**<**	**5**	**<**	**1**		**7.46**								
Daily Maximum (Conc):			**2.5**	**<**	**5**	**<**	**1**		**7.46**								
Max Avg Weekly (Conc.):			**2.5**	**<**	**5**												
Avg Monthly (Conc.):			**2.5**	**<**	**5**												
Geometric Mean (Conc.):						**<**	**1**										
Max Avg Weekly (Load):	**0.074**		**1**	**<**	**3**												
Avg Monthly (Load):	**0.062992**		**1**	**<**	**3**												
Total Monthly (Load):	**1.952748**		**42**	**<**	**83**												
Daily Minimum (Load):	**0**		**1**	**<**	**3**												
Daily Maximum (Load):	**0.11175**		**1**	**<**	**3**												

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **11/11/2020 12:39**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **10** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
	Thu	10/1/20	55,875	55,875	0					70	Dry
	Fri	10/2/20	2,500	2,500	0			0.20	Rain	70	Damp
	Sat	10/3/20	0	0	0						
1	Sun	10/4/20	37,000	0	37,000					54	Dry
	Mon	10/5/20	31,500	0	31,500					67	Dry
	Tue	10/6/20	5,500	0	5,500					69	Dry
	Wed	10/7/20	38,000	0	38,000					62	Dry
	Thu	10/8/20	0	0	0					74	Dry
	Fri	10/9/20	31,250	0	31,250						
	Sat	10/10/20	31,250	0	31,250						
2	Sun	10/11/20	44,500	0	44,500					63	Dry
	Mon	10/12/20	0	32,250	32,250			0.20	Rain	60	Wet
	Tue	10/13/20	0	32,250	32,250						
	Wed	10/14/20	0	33,000	33,000					68	Dry
	Thu	10/15/20	0	33,125	33,125					72	Dry
	Fri	10/16/20	0	33,125	33,125						
	Sat	10/17/20	0	33,125	33,125						
3	Sun	10/18/20	0	33,125	33,125						
	Mon	10/19/20	36,000	36,000	0					65	Dry
	Tue	10/20/20	36,000	36,000	0						
	Wed	10/21/20	35,500	35,500	0					67	Dry
	Thu	10/22/20	35,500	35,500	0						
	Fri	10/23/20	33,500	33,500	0					74	Dry
	Sat	10/24/20	33,500	33,500	0						
4	Sun	10/25/20	33,500	33,500	0						
	Mon	10/26/20	39,333	0	39,333			0.20	Rain	50	Wet
	Tue	10/27/20	39,333	0	39,333						
	Wed	10/28/20	39,333	0	39,333						
	Thu	10/29/20	31,500	0	31,500			1.00	Rain	57	Wet
	Fri	10/30/20	38,000	0	38,000			0.50	Rain	45	Wet
	Sat	10/31/20	38,000	0	38,000						
5											
Monthly Totals:			**746,374**	**531,875**	**674,499**			**2.10**			
Max Weekly:			**258,999**	**243,125**	**241,375**	**0**	**0**				
Inches/Acre/Week (Max):			**1.55**	**1.45**	**1.45**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **11/11/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	7.3	***	7.3	S.U.	1/month	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	5.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	***	CFU/100 ml	1/month	Grab
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	< 2.0	***	mg/L	1/month	Grab
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	396	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 11/9/2020								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	470	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 11/9/2020								
Flow (50050)	Sample Measurement	.0511	.0647	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 11/9/2020									

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Nov 2020 Eff Mon Supp Form.pdf	Daily Effluent Monitoring Form	2020-12-03T12:15:43-05:00	
Nov 2020 Land App Supp Form.pdf	Land Application Systems Form	2020-12-03T12:16:20-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Paul Ruffini**	TELEPHONE		DATE		
			(717)	**278-3444**	**2020**	**12**	**03**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

3800-FM-BPNPSM0435 3/2012

SUPPLEMENTAL REPORT
DAILY EFFLUENT MONITORING

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Twp.** County: **Chester**
Watershed: **3F-Wissahickon**
Laboratories: **ALS Environmental**

Month: **11** (select number) Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
Renewal application due **180 days** prior to expiration.
This permit will expire on: **November 30, 2021**

			Parameter	Flow		CBOD5		TSS		Fecal Coliform		pH							
			Stage	1		1		1		1		1							
Week	Day	Date		MGD	Q	mg/L	Q	mg/L	Q	CFU/100 ml	Q	S.U.	Q		Q		Q		
1	Sun	11/1/20		0.076															
	Mon	11/2/20		0.045															
	Tue	11/3/20		0.06															
	Wed	11/4/20		0.0525															
	Thu	11/5/20		0.0525															
	Fri	11/6/20		0.04633															
	Sat	11/7/20		0.04633															
2	Sun	11/8/20		0.04633															
	Mon	11/9/20		0.071	<	2.0		5.0				7.3							
	Tue	11/10/20		0.052						<		1.0							
	Wed	11/11/20		0.0532															
	Thu	11/12/20		0.0532															
	Fri	11/13/20		0.0532															
	Sat	11/14/20		0.0532															
3	Sun	11/15/20		0.0532															
	Mon	11/16/20		0.056															
	Tue	11/17/20		0.0505															
	Wed	11/18/20		0.0505															
	Thu	11/19/20		0.047															
	Fri	11/20/20		0.047															
	Sat	11/21/20		0.047															
4	Sun	11/22/20		0.047															
	Mon	11/23/20		0.035															
	Tue	11/24/20		0.035															
	Wed	11/25/20		0.089															
	Thu	11/26/20		0.056															
	Fri	11/27/20		0.056															
	Sat	11/28/20		0.056															
5	Sun	11/29/20		0.056															
	Mon	11/30/20		0.0															
Statistics for DMR																			
Daily Minimum (Conc.):					<	2		5	<	1		7.3							
Daily Maximum (Conc):					<	2		5	<	1		7.3							
Max Avg Weekly (Conc.):					<	2		5											
Avg Monthly (Conc.):					<	2		5											
Geometric Mean (Conc.):									<	1									
Max Avg Weekly (Load):				0.05459	<	1		3											
Avg Monthly (Load):				0.0514	<	1		3											
Total Monthly (Load):				1.541999	<	36		89											
Daily Minimum (Load):				0	<	1		3											
Daily Maximum (Load):				0.089	<	1		3											

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: Paul F. Ruffini License No.: **S6899**
Title: Agent Date: **12/3/2020 11:26**

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT
LAND APPLICATION SYSTEMS

Facility Name: **Malvern Hunt STP**
Municipality: **East Whiteland Township** County: **Chester**
Watershed: **3F-Wissahicl**

Month: **11** *(Select number)* Year: **2020**
Permit No.: **1599418** Outfall: **Spray**
This permit will expire on: 30-Nov-21

Week	Day	Date	Zone: 1 Acres: 6.16 Gallons	Zone: 2 Acres: 6.19 Gallons	Zone: 3 Acres: 6.15 Gallons	Zone: Acres: Gallons	Zone: Acres: Gallons	Precipitation Inches	Precipitation Type	Average Temp °F	Ground Conditions
1	Sun	11/1/20	38,000	0	38,000						
	Mon	11/2/20	0	22,500	22,500					50	Damp
	Tue	11/3/20	0	30,000	30,000					48	Dry
	Wed	11/4/20	0	26,250	26,250					60	Dry
	Thu	11/5/20	0	26,250	26,250						
	Fri	11/6/20	0	23,166	23,166						
	Sat	11/7/20	0	23,166	23,166						
2	Sun	11/8/20	0	23,166	23,166						
	Mon	11/9/20	35,500	35,500	0					60	Dry
	Tue	11/10/20	26,000	26,000	0					70	Dry
	Wed	11/11/20	26,600	26,600	0			0.20	Rain	60	Wet
	Thu	11/12/20	26,600	26,600	0						
	Fri	11/13/20	26,600	26,600	0						
	Sat	11/14/20	26,600	26,600	0						
3	Sun	11/15/20	26,600	26,600	0						
	Mon	11/16/20	28,000	0	28,000					58	Dry
	Tue	11/17/20	25,250	0	25,250						
	Wed	11/18/20	25,250	0	25,250						
	Thu	11/19/20	23,500	0	23,500						
	Fri	11/20/20	23,500	0	23,500						
	Sat	11/21/20	23,500	0	23,500						
4	Sun	11/22/20	23,500	0	23,500			0.10	Rain	45	Wet
	Mon	11/23/20	0	17,500	17,500						
	Tue	11/24/20	0	17,500	17,500					50	Dry
	Wed	11/25/20	0	44,500	44,500			0.10	Rain	60	Wet
	Thu	11/26/20	0	28,000	28,000						
	Fri	11/27/20	0	28,000	28,000						
	Sat	11/28/20	0	28,000	28,000						
5	Sun	11/29/20	0	28,000	28,000						
	Mon	11/30/20	0	0	0			3.00	Rain	62	Wet
Monthly Totals:			**405,000**	**560,498**	**576,498**			**3.40**			
Max Weekly:			**175,600**	**191,066**	**189,332**	**0**	**0**				
Inches/Acre/Week (Max):			**1.05**	**1.14**	**1.13**	**0.00**	**0.00**				

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: **Paul F. Ruffini** License No.: **S 6899**
Title: **Agent** Date: **12/3/2020**

3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Final Effluent**

1599418	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/month	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	30.0 Avg Mo	***		1/month	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	***		1/month	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	25.0 Avg Mo	***		1/month	Grab
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST WHITELAND TWP CHESTER CNTY**
ADDRESS: **209 CONESTOGA RD, FRAZER PA, 19355-1633**
FACILITY: **MALVERN HUNT STP**
LOCATION: **SWEEDSFORD ROAD, FRAZER PA, 19355**
STAGE: **Influent**

1599418	516778
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **11/30/2021**
Permit Application Due: **06/03/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	***	***	***	265	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 12/7/20.								
Total Suspended Solids (00530)	Sample Measurement	***	***	***	133	***	***	mg/L	1/month	Grab
	Permit Requirement	***	***		Monitor & Report Avg Mo	***	***		Monitor & Report	Monitor & Report
	Facility Parameter Comments	Sample date: 12/7/20.								
Flow (50050)	Sample Measurement	.0551	.0614	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	.105 Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Facility Sampling Point Comments	Sample date: 12/7/20.									

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Edwin D. Jamieson III	T1655	(484)-746-0895

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
ruffinip	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Paul Ruffini**	**(717)**	**278-3444**	**2021**	**01**	**11**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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EXHIBIT N4

DISCHARGE MONITORING REPORTS
VALLEY FORGE SEWER AUTHORITY
WASTEWATER TREATMENT PLANT

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	01/01/2016-01/31/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.7	9.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	263	423	lbs/day	***	5	8	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	21.7	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<33	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	5.6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	***	***	***	***	.012	***	mg/L	24-Hr Composite	1/month
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/month
Flow	Sample Measurement	6.465	8.13	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	1/day
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	23.2	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	503	524	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	18	101	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<169	257	lbs/day	***	<3	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	8444	***	lbs/day	***	159	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8874	***	lbs/day	***	167	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7351	***	lbs/day	***	138	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA JAN 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-02-26T13:12:31-05:00	
Cryptographic Hash Value of File (SHA-512)	09D2EA80C0D772FAA64322796C95BEF51C332C17A34022844E2D3768434C4FB2DAAE22495033869F9184D8980CDD6560D63862A9C56CF4D303A6BF2297AD6EF4		
VFSA JAN 2016 INFLUENT AND PROCESS CONTROL 2.xls	Influent and Process Control Form	2016-02-26T13:13:13-05:00	
Cryptographic Hash Value of File (SHA-512)	33C72808C3D2FFEA336FDA898951189009DF539E9A17436217B197558956DB7BA955F1790F3BD295C705C3B7C7BFF975A52EC32A3E2C67D096CE72DB57D7DEB4		
VFSA RESIDUAL WASTE JAN 2016 FORM.xls	Hauled-In Residual Waste Form	2016-02-26T13:14:34-05:00	
Cryptographic Hash Value of File (SHA-512)	9384BC2620DAF94D0462CCC607D70F9A509B0B218D9AA964D16F7C3DA751F473C34C9AC66089C8F95D200E0F8BF3290532B74EC032A484C9EC57E44E70A13524		
VFSA JAN 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-02-26T13:13:53-05:00	
Cryptographic Hash Value of File (SHA-512)	5103456516A7A125F200BFEE254F910235059B570AF94498CDEF6C6D089220AEA983B99F79F79B89A97E1F04721CB946B4431A0A62084AC15589E402ABAD7C3A		
VFSA JAN 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-02-26T13:15:47-05:00	
Cryptographic Hash Value of File (SHA-512)	269A141FDB1565FBC084293EE1F4E2FB3AA66A33F03C17272BEC391BF88676984B6787FFBB82EF95AC787401E85006B6EE380F14739939A35AC3184CCC15516C		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for January 4, 5, 13, 18, 19, the FINAL Effluent Fecal coliform analyses for January 4, 5, 6, 18, 19, 20, the TDS, Total Nitrogen, and Total Phosphorus analyses for January 6, 13, 20, 27, and the Total Copper analysis for January 6 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	2/26/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	02/01/2016-02/29/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	9.0	9.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	333	496	lbs/day	***	4	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	15.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<62	***	lbs/day	***	<.8	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	4.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	2.00	2.00	lbs/day	***	.024	.024	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	8.999	12.876	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	1/day
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	23.3	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	601	717	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	9	25	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<279	444	lbs/day	***	<4	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	11288	***	lbs/day	***	153	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	12796	***	lbs/day	***	175	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	8945	***	lbs/day	***	127	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA FEB 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-03-23T17:13:04-04:00	
Cryptographic Hash Value of File (SHA-512)	04076D6AEBFBF553DE6E4F68E7FFC0D96DD6E38973FF483D5712BE592BC73C31A654190D47284083A7A8A3197EA5807485B6BA311712B0B86452825A828DD729		
VFSA FEB 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-03-23T17:15:36-04:00	
Cryptographic Hash Value of File (SHA-512)	5AB5159465EBE62BA40F3852A3EAC4282A2F6289B6524FA5264B1ED1CE1F9BE154ED94E4471B2C72185FE7C5C5CBC974C0E621EA8FB9B05A2CA3C23A2B6E896A		
VFSA RESIDUAL WASTE FEB 2016 FORM.xls	Hauled-In Residual Waste Form	2016-03-23T17:17:43-04:00	
Cryptographic Hash Value of File (SHA-512)	40DD4B37C8BDC9E1596288CA671F52B862DF30F8327248C61C262FD4E6D102330EBE20C3F47DB3DB81B0A3FEEDE6A9D81760BF73BB1744CF9C6FBCA587C0BDBB		
VFSA FEB 2016 INFLUENT AND PROCESS CONTROL 2.xls	Influent and Process Control Form	2016-03-23T17:16:54-04:00	
Cryptographic Hash Value of File (SHA-512)	584BA5695FFB8F83FE6759CE29A3CEFBAD7A9138CD4B03DD87004C1BA3FA7B223EC85B55A7E66851EB4C50A15ACE4A9DB45C52227EC9068726259AC1004649B7		
VFSA FEB 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-03-23T17:17:20-04:00	
Cryptographic Hash Value of File (SHA-512)	DCD67274AE5B77A318D2B02E9F171DEAFE717D82A2221D5269D7540FABABDD8026E40F78ED8EA0DA833BDB5605ADDEEEF75C28B2E2C37E24C147E8E430FABF2A		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for February 1, 5, 6, 19, 20, the FINAL Effluent Fecal coliform analyses for February 5, 6, 7, 19, 20, 21, the TDS, Total Nitrogen, and Total Phosphorus analyses for February 3, 10, 17, 24, and the Total Copper analysis for February 3 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	3/23/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	03/01/2016-03/31/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.6	9.1	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	198	214	lbs/day	***	3	3	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	19	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<31	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	5.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.50	.50	lbs/day	***	.007	.007	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	7.346	8.969	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	1/day
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	24.5	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	506	542	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	7	18	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<162	<187	lbs/day	***	<3	3	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	10847	***	lbs/day	***	179	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	13923	***	lbs/day	***	230	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	9282	***	lbs/day	***	153	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA MAR 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-04-27T16:49:11-04:00	
Cryptographic Hash Value of File (SHA-512)	9B8B38FF8938B3DD56BF524C331276C255B36C3D716B659EEC9A43AB6F6D333EAE5BC2221666ED3D2C58374C29D231464BE7ABC2A8B15B9B3732538454E202E5		
VFSA MAR 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-04-27T16:47:10-04:00	
Cryptographic Hash Value of File (SHA-512)	66CFDB5673374745BDA41808022BBA59A060D6FAEA6A2AC75B7CF8660248B9C2B9117F32FB6D4473AA21252861C624A714795A2C5C7A16EB054BAF7B8FFA1C1F		
VFSA MAR 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-04-27T16:47:52-04:00	
Cryptographic Hash Value of File (SHA-512)	826FEA421F9C565B892F1A672F12282B385B527FE7C31A2D9707E46A7D2F2D87A88872CA3A82B862B79927374E7B0327D6DF0CC5D489A83A45748CF70825E05D		
VFSA MAR 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-04-27T16:48:28-04:00	
Cryptographic Hash Value of File (SHA-512)	847FBA64D040ACF4AFEF4694B7B41910413AC69FB9E81F6A7F8EC74527750DCF1B5E0AE4F71F8712FBD8DF5F2F4EBA8A0FFAAF777E2F0DF6A5DB2DC0658355E2		
VFSA RESIDUAL WASTE MAR 2016 FORM.xls	Hauled-In Residual Waste Form	2016-04-27T16:49:57-04:00	
Cryptographic Hash Value of File (SHA-512)	EC9405C73D340693FB35E709B90C821B7541CB899480FEFA7E7BC7E496FF6F13A93F3AEC8C2B46F9C5DBEB50B253BA300189ED5E73DE03A0A90531E65F30C2DD		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for March 13, 18, 19, 20, 25, 26 the FINAL Effluent Fecal coliform analyses for March 18, 19, 20, 25, 26, 27, the TDS, Total Nitrogen, and Total Phosphorus analyses for March 2, 9, 16, 23, 30, and the Total Copper analysis for March 2 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	4/27/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	04/01/2016-04/30/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.4	8.8	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	309	336	lbs/day	***	6	7	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	22.6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<25	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	6.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	3.17	3.76	lbs/day	***	.079	.110	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.891	6.839	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	1/day
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	26.2	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	530	548	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<7	176	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<178	228	lbs/day	***	<4	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	8315	***	lbs/day	***	172	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9771	***	lbs/day	***	205	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6955	***	lbs/day	***	144	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA APR 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-05-27T09:19:59-04:00	
Cryptographic Hash Value of File (SHA-512)	323866F5A20F839B0A6EB77E6F30609FDEA32A5BA548C4BCB988FB21EE7BA8405F3DAA4B0A9D1A1F890C6EDA48F2407714767848C6E4BA474FA69C355446E5A9		
PADEP Non-Compliance Reporting Form VFSA April 2016.doc	Other	2016-05-27T09:51:36-04:00	Non-Compliance Reporting Form
Cryptographic Hash Value of File (SHA-512)	F80535CAA11A1D766D05B991C96F735B556518D20F80597D9F9481453FC49EE433703DD2A4F6327B30615DC24EE2A1521A1EA099BFD19EBF3C998131391818C1		
VFSA Letter to PADEP RE Copper Discharge Limitations.pdf	Other	2016-05-27T09:47:00-04:00	VFSA Letter to PADEP SE Office Regarding Copper Discharge Limitations
Cryptographic Hash Value of File (SHA-512)	4BD0CB93DDAD5069900C400D7B184600473720F68EEF6782B0DF55C1E27972A0D9B299595C2374FB76DCB782DC1A26631A6BF705602D2AA2D7F05C0C8E7D5E0C		
VFSA APR 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-05-27T09:19:21-04:00	
Cryptographic Hash Value of File (SHA-512)	A2995C2FCE7C590D256EB9E110E380DB09F5907C8190F87E213D4B079EF2589F3AE548E240EE770B6C774EA4630E0C1352E488844A5D6FB9D6EC9B9431921CC1		
VFSA APR 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-05-27T09:20:27-04:00	
Cryptographic Hash Value of File (SHA-512)	80500C3CE17CCED494FEEB3F20AAE991AB51B6318C09730204596D4751EF1B7DBA710805E14A071C7AF23BEBB3BAB53F5BA74448B08837A4EB720D5817CD6FF2		
VFSA APR 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-05-27T09:20:55-04:00	
Cryptographic Hash Value of File (SHA-512)	A22BA2D150F44CDC18F856E05D6182378742AD60F2F4C8F87370AD7306C139B188986FFF26DCBB385D3B1231C6BA7A773C5182300884BED0E57F7B5AF14D462F		
VFSA RESIDUAL WASTE APR 2016 FORM.xls	Hauled-In Residual Waste Form	2016-05-27T09:21:33-04:00	
Cryptographic Hash Value of File (SHA-512)	CEDE1EBBC3662A87208129B4178F54EE9F6541628C101B8CD2AC484A8069877B91324A13F33F4FC0CCBBC1B26F058CAC95A11E0250A7297AEA76798C1A0FE79A		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments
31088	04/01/2016	04/30/2016	Copper, Total	Average Monthly	.079	.035	lbs/day	001			
31089	04/01/2016	04/30/2016	Copper, Total	Daily Maximum	.11	.055	lbs/day	001			

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for April 10, 15, 16, 24, 29, 30 the FINAL Effluent Fecal coliform analyses for April 15, 16, 17, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for April 6, 13, 20, 27, and the Total Copper analyses for April 6 and 21 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	5/27/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	05/01/2016-05/31/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.9	8.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	541	578	lbs/day	***	10	11	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<22.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<44	***	lbs/day	***	<.8	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	6.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	4.73	5.38	lbs/day	***	.076	.120	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	6.66	9.741	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	27.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	533	577	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	>13	>240	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	344	364	lbs/day	***	6	7	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	8091	***	lbs/day	***	152	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9922	***	lbs/day	***	188	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7332	***	lbs/day	***	138	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA RESIDUAL WASTE MAY 2016 FORM.xls	Hauled-In Residual Waste Form	2016-06-28T11:04:34-04:00	
Cryptographic Hash Value of File (SHA-512)	CC3E5980D5E256FABD9D92433EC75671307BFD6AFE7BB9CB207AA867C01332586892001AD10D8E717F7B7EED3A8BA1094408DCC1CE04BC44643B9D2C0C7D6A52		
VFSA May 2016 Non-Compliance Reporting Forms.pdf	Other	2016-06-28T11:06:22-04:00	VFSA May 2016 Non-Compliance Reporting Forms
Cryptographic Hash Value of File (SHA-512)	510CE22BF3E014481F82AE7120DF95D0DB799498D337B11D292F1FFFDC0AC205D13B787D76E58F55FE13360D39F0F4923C3C3B60902031A1FAC6DF72BAB9E6E7		
VFSA MAY 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-06-28T11:04:04-04:00	
Cryptographic Hash Value of File (SHA-512)	6E44B675FE2C0E169631AE7CB2C67B79CDAD46F570C10D99F345654BE917000180B399B8A0CAF82694593F564730579547049573C19904AB162AE29EA386ED6D		
VFSA MAY 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-06-28T11:02:46-04:00	
Cryptographic Hash Value of File (SHA-512)	29ABAB354606FBD7BF089B1F247B1517544F5EBAF344A411896DE687C1FCA3043971A028F6EBB69C00A46BC43EBCE77F4FC4168A6C596ABC364C18F4A2E3A502		
VFSA MAY 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-06-28T11:03:21-04:00	
Cryptographic Hash Value of File (SHA-512)	C322110A04F7955746469D2A7E07EA2B065AC3728E89F27CA87F3262272D837449223D896E5D87F8D645D9BE9B3D4F8B07FA63585B099061FDE1FFE6596BBBCD		
VFSA MAY 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-06-28T10:50:21-04:00	
Cryptographic Hash Value of File (SHA-512)	8125EBC95AB4426E383199EE3F22222F1E4B4AD7E4828A7F617035FAAA1543EFA3754654B3ABE732F569AC400F46F46B9ABBDB94D7A7C81AE4F64F57D148B973		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments
31959	05/01/2016	05/31/2016	Copper, Total	Average Monthly	4.73	3.43	lbs/day	001	Unknown	Other	Please see attached PDF file
31960	05/01/2016	05/31/2016	Copper, Total	Average Monthly	.076	.035	lbs/day	001	Unknown	Other	Please see attached PDF file.
31961	05/01/2016	05/31/2016	Copper, Total	Daily Maximum	.12	.055	lbs/day	001	Unknown	Other	Please see attached PDF file.

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for May 9, 13, 14, 15, 20, 21 the FINAL Effluent Fecal coliform analyses for May 13, 14, 15, 20, 21, 22, the TDS, Total Nitrogen, and Total Phosphorus analyses for May 4, 11, 18, 25, and the Total Copper analyses for May 4, 6, 7, 24 and 25 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	6/28/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION					
Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	06/01/2016-06/30/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.7	8.0	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	293	456	lbs/day	***	6	9	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	24.7	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<30	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.7	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	3.28	4.14	lbs/day	***	.065	.077	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.891	6.444	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	1/day
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	25.5	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	565	591	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	6	50	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<208	334	lbs/day	***	<4	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7993	***	lbs/day	***	165	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9631	***	lbs/day	***	199	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6842	***	lbs/day	***	141	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA JUNE 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-07-26T15:40:16-04:00	
Cryptographic Hash Value of File (SHA-512)	1812D4FDC8E9F84F50B30BCADD883246B44AAFD6A0246913453FAE55FA686D4F8C6D4BB35FDB7E20DE9D37F75182D940E609E7EA42DC38B4AA4943273D008B4B		
VFSA JUN 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-07-26T15:40:49-04:00	
Cryptographic Hash Value of File (SHA-512)	3479C00BE54816BA7CFE725F000817429AD260F398E3FDB13ED572F625C452D67B9B4FBACDE258270A5594AF317B1FCAB502E453ECD51C3B151CBF9852D39635		
VFSA RESIDUAL WASTE JUN 2016 FORM.xls	Hauled-In Residual Waste Form	2016-07-26T15:42:11-04:00	
Cryptographic Hash Value of File (SHA-512)	4B603510884673A221559CAB7E61017A4512EB108EC8E1E9B1B075A71BB8588A481E18D95436692EC043E6D63C66B8009217BF532F637B094818CBBD4088A1FA		
VFSA JUN 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-07-26T15:41:14-04:00	
Cryptographic Hash Value of File (SHA-512)	108A74497F2FDB3FCFC6BE08D929AE1492B02145688A8F0D25CEBFFC2E138E56380BC8AF10EEB0789DAAD213E7A3D6B18CF26D78792CDCDCC12BE5F88A0C8455		
VFSA JUNE 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-07-28T15:41:44-04:00	
Cryptographic Hash Value of File (SHA-512)	C3BD22EB70D44B79E117A90C2923C1C28ADCCB8DFD4402DC45E814358A15E9392A1A32F642947D53853F5BA2D985BB4FA5F464AF5233D97191D7C41B8980778C		
VFSA June 2016 Non-Compliance Reporting Forms.pdf	Other	2016-07-28T15:45:07-04:00	Non-compliance reporting forms
Cryptographic Hash Value of File (SHA-512)	93A9FF7C4A2DA256FB559B31A23CDA639F8FDD106C206CE66FB82AC3B7B8762B9AF6D39C4595DE822843D6887A719BD68398DFD7C0B82EC9D38EC00B6461A391		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments
32734	06/01/2016	06/30/2016	Copper, Total	Average Monthly	.065	.035	lbs/day	001	Unknown	See attached comments	Additional Sampling, PADEP Notification, Source Research
32735	06/01/2016	06/30/2016	Copper, Total	Daily Maximum	.077	.055	lbs/day	001	Unknown	See attached comments	Additional Sampling, PADEP Notification, Source Research

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Dete	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for June 12, 17, 18, 19, 24, 25 the FINAL Effluent Fecal coliform analyses for June 17, 18, 19, 24, 25, 26, the TDS, Total Nitrogen, and Total Phosphorus analyses for June 1, 8, 15, 22, 29, and the Total Copper analyses for June 1, 29 and 30 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	7/26/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION					
Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	07/01/2016-07/31/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.7	8.0	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	262	314	lbs/day	***	6	7	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<26.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	1.58	1.58	lbs/day	***	.034	.034	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.335	5.942	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	25.3	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	567	623	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	5	36	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<140	181	lbs/day	***	<3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	6468	***	lbs/day	***	147	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8061	***	lbs/day	***	184	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6095	***	lbs/day	***	139	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA JULY 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-08-24T12:17:44-04:00	
Cryptographic Hash Value of File (SHA-512)	4B4F6CBD4F2F3880854F4B4E78C1B37BA2F6CB0320E6D589D10C7A610677D35BD21282CCBF7BA41918E35D3826D6AFC6722C5424B9B8ACD53B249864D2D007B8		
VFSA PADEP Supplemental Laboratory Accreditation Forms 1 and 2 July 2016.pdf	Laboratory Accreditation Form	2016-08-24T12:20:52-04:00	
Cryptographic Hash Value of File (SHA-512)	965B6FE1A7AE196B00FF39151B4036BEE44081DC667446EF452420E74E73E6763D135C656FD623404A90365BA7EB479B301B4B663EE75E013EB3442E36EA9F69		
VFSA JULY 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-08-24T12:18:16-04:00	
Cryptographic Hash Value of File (SHA-512)	B812EFAD4A4240F6CDBBE33CC18E75F22F64780514415C689C8F657F690E918104BEB7274F7E6C6F8F1C4B50998FAE3959E1EB969C410D18518EF1D82111E0C4		
VFSA RESIDUAL WASTE JULY 2016 FORM.xls	Hauled-In Residual Waste Form	2016-08-24T12:21:38-04:00	
Cryptographic Hash Value of File (SHA-512)	5ED23DCC7B01C641B63B040092398E3C55A04BBC131F9B4AC3C221830D6E583E3A62D5464B230342B14A08CBFC2107B24C46432B1280EE3B0E6B9415E184D14F		
VFSA JULY 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-08-24T12:18:40-04:00	
Cryptographic Hash Value of File (SHA-512)	C0DB4D31C03CB0DAF1B8B5F47430AC413CE191830134EE2AA0A4B5F92E9ADEE7EEB1F0FB2F59F5E78B135515FC18B3553E60092FCADC31C87D40F77796251215		
VFSA JULY 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-08-24T12:19:06-04:00	
Cryptographic Hash Value of File (SHA-512)	80C5974F27D21F38F1F8568C489A01952A0ADF3FF867D245D599801A8983F80C7601A76EF47EBC266EC557B5613C6F949B637CD59F695013D78F4D7E60E6F051		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for July 10, 15, 16, 17, 22, 23, 24, 29, 30, the FINAL Effluent Fecal coliform analyses for July 15, 16, 17, 22, 23, 24, 29, 30, 31, the TDS, Total Nitrogen, and Total Phosphorus analyses for July 6, 13, 20, 27, and the Total Copper analysis for July 1, were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	8/24/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION					
Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	08/01/2016-08/31/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.3	7.8	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	577	1423	lbs/day	***	13	30	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	30.7	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	1.27	1.27	lbs/day	***	.029	.029	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.289	5.435	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	FF	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	666	795	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	34	757	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<196	371	lbs/day	***	<5	8	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	6554	***	lbs/day	***	153	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9556	***	lbs/day	***	222	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6052	***	lbs/day	***	141	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA AUG 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-09-26T10:11:36-04:00	
Cryptographic Hash Value of File (SHA-512)	AF42695FF1CE74B73734FBFAB5098F7EA357D9C2470CC8F4284F76A3820ECB0AA02F0F3BF79B959CAA8B76D77E21EA5B4476429F3318E5483B7652F15E4E179E		
VFSA AUG 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-09-26T10:11:59-04:00	
Cryptographic Hash Value of File (SHA-512)	69AA9E2D6349266B071A59E5BBBF1B8C968DEB6EE196BED8C76EF8E12A6F69C1D21EA6F150884C81A44D4BDF49DD50BF89B8839828D8A53E19607D0C48047EC4		
VFSA RESIDUAL WASTE AUG 2016 FORM.xls	Hauled-In Residual Waste Form	2016-09-26T10:13:15-04:00	
Cryptographic Hash Value of File (SHA-512)	5EDF093F0C5C82CD8EA21FC359FC16EB284DA3CB8DAC6B5986C339256F64158EFB563B2F6A4EFCDB64A0867086EB4579251EC9FD8B5EEBBD8BD4AFD5E98956F2		
VFSA AUG 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-09-26T10:12:24-04:00	
Cryptographic Hash Value of File (SHA-512)	B9509331F5190272A2A3F2195F39D74F036705FEDF7DC7A3EA45BE1BECCAF33C917239E6671B43876626AA237ACEA222FD3ADDB547AA31A3A278C01456DFB149		
VFSA AUGUST 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-09-26T10:12:52-04:00	
Cryptographic Hash Value of File (SHA-512)	14F569C6A4AD500884316964B9FDA9D547D25196AAD56EB989CB7B62FE3182E8B8D81481B0745D50A4385EF0F93B4A458022C5FD8B89BAC3509FACABB6DD13CF		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for August 14, 19, 20, 21, 26, 27, the FINAL Effluent Fecal coliform analyses for August 19, 20, 21, 26, 27, 28, the TDS, Total Nitrogen, and Total Phosphorus analyses for August 1, 10, 17, 24, 31, and the Total Copper analysis for August 5, were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	9/26/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	266800	**Facility Name:**	VALLEY FORGE SEWER AUTHORITY WWTP	**Location Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460
Permit Number:	PA0043974	**Monitoring Period:**	09/01/2016-09/30/2016	**Mailing Address:**	333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.4	7.8	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.1	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	474	565	lbs/day	***	11	14	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<29.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.40	.40	lbs/day	***	.0097	.0097	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.062	6.137	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	FF	FF	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	28.6	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	604	644	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<13	82	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	166	194	lbs/day	***	4	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7375	***	lbs/day	***	177	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	10700	***	lbs/day	***	257	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day

Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6698	***	lbs/day	***	161	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
VFSA SEP 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-10-27T15:17:07-04:00	
Cryptographic Hash Value of File (SHA-512)	7EC950DEAC686B3879A1754C74E3AD5869A720E4FDBA44CFB6E887E153E3E80A7413AE93DB3D7B2C8B59370569D3F4875AF0F3195B4A4A6D67BCBBD0C6BE045A		
VFSA SEP 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-10-27T15:18:22-04:00	
Cryptographic Hash Value of File (SHA-512)	41D7D28D84940AF0D5002AB53DDEE45A722DEBEFCFE6D0B2A6D1293D1516810ACBF89BF7777DCF5F9DB56A53E66484E86119373ACEFA78B3D2364DCCAE7189E5		
VFSA SEP 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-10-27T15:16:22-04:00	
Cryptographic Hash Value of File (SHA-512)	5864FC36FDAF52F52433808C22E4E4076DAB09CF7E36D9388C0468CFCF505F692B2A39DA31C3E1756B01E46F98FA7C09E8490B509811F91044EFBD241B68AB43		
VFSA RESIDUAL WASTE SEP 2016 FORM.xls	Hauled-In Residual Waste Form	2016-10-27T15:16:46-04:00	
Cryptographic Hash Value of File (SHA-512)	F3C419286EF8466B9C52331B6A086866377F318BF12D7C20C084E92D45C2632635111B4637E47CE583918299EE1BE788DC3DDD12FB01C8780F1C0A775902CC79		
VFSA SEP 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-10-27T15:17:51-04:00	
Cryptographic Hash Value of File (SHA-512)	29B571347A322E6D576B78C9EF809A3141A9D9034F677E37D22677AD785C8A3761A2C1080652A6C58CF68F1AAC1F5D27EFE5B7B4D3AE823BA4ADAB6E854E9B48		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for September 11, 16, 17, 18, 23, 24, the FINAL Effluent Fecal coliform analyses for September 16, 17, 18, 23, 24, 25, the TDS, Total Nitrogen, and Total Phosphorus analyses for September 7, 14, 21, 28, and the Total Copper analysis for September 9, were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TAYLORR**	**Submitted By Full Name**	**Richard Taylor**
Email Address	taylor@vfsa.com	**Document Generated**	10/27/2016

3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	10	01	TO	2016	10	31

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2016**
DMR Effective To: **10/31/2016**
Permit Expires: **01/31/2020**
Permit Application Due **11/28/2016**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.2	8.6	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.8	***	7.1	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	488	755	lbs/day	***	11	16	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	30.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	1.26	1.26	lbs/day	***	.029	.049	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.386	6.010	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	27.7	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	553	585	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<5	230	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<160	199	lbs/day	***	<4	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7644	***	lbs/day	***	189	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	10755	***	lbs/day	***	265	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6510	***	lbs/day	***	161	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA OCT 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-11-17T15:50:41-05:00	
VFSA OCT 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-11-17T15:51:11-05:00	
VFSA RESIDUAL WASTE OCT 2016 FORM.xls	Hauled-In Residual Waste Form	2016-11-17T15:52:54-05:00	
VFSA OCT 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-11-17T15:51:35-05:00	
VFSA OCT 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-11-17T15:52:32-05:00	
VFSA 2016 Stormwater Outfall Annual Inspection.doc	Stormwater Annual Inspection Report	2016-11-17T15:53:23-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for October 2, 7, 8, 9, 14, 15, 23, 28, 29, 30, the FINAL Effluent Fecal coliform analyses for October 7, 8, 9, 14, 15, 16, 28, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for October 5, 12, 19, 26, and the Total Copper analysis for October 2 and 7 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2016	11	17
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	11	01	TO	2016	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2016**
DMR Effective To: **11/30/2016**
Permit Expires: **01/31/2020**
Permit Application Due **12/28/2016**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.5	8.9	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.7	***	7.1	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	478	610	lbs/day	***	14	18	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<30.7	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<19	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.70	.70	lbs/day	***	.019	.019	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.199	4.647	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	60	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	545	619	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<4	39	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<163	181	lbs/day	***	<5	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7146	***	lbs/day	***	208	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	11191	***	lbs/day	***	326	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6666	***	lbs/day	***	194	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA NOV 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2016-12-21T11:23:27-05:00	
VFSA NOV 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2016-12-21T11:23:51-05:00	
VFSA RESIDUAL WASTE NOV 2016 FORM.xls	Hauled-In Residual Waste Form	2016-12-21T11:25:52-05:00	
VFSA NOV 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2016-12-21T11:24:20-05:00	
VFSA NOV 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2016-12-21T11:25:33-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for November 4, 5, 7, 18, 19, 27, the FINAL Effluent Fecal coliform analyses for November 4, 5, 6, 18, 19, 20, the TDS, Total Nitrogen, and Total Phosphorus analyses for November 2, 9, 16, 23, 30, and the Total Copper analysis for November 1 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

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			AREA CODE	NUMBER	2016	12	21
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	12	01	TO	2016	12	31

Reorting Frequency: **Monthly**
DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.6	9.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.2	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	389	460	lbs/day	***	9	10	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<20.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	6.6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.30	.30	lbs/day	***	.0051	.0051	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.121	6.925	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	54.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	503	584	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<3	20	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	155	200	lbs/day	***	4	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7550	***	lbs/day	***	181	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8433	***	lbs/day	***	202	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6480	***	lbs/day	***	156	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA DEC 2016 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-01-26T15:26:19-05:00	
VFSA DEC 2016 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-01-26T15:25:42-05:00	
VFSA RESIDUAL WASTE DEC 2016 FORM.xls	Hauled-In Residual Waste Form	2017-01-26T15:27:46-05:00	
VFSA DEC 2016 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-01-26T15:26:52-05:00	
VFSA DEC 2016 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-01-26T15:27:19-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for December 2, 3, 4, 9, 10, 11, 16, 17, the FINAL Effluent Fecal coliform analyses for December 2, 3, 4, 9, 10, 11, 16, 17, 18, the TDS, Total Nitrogen, and Total Phosphorus analyses for December 7, 14, 21, 28, and the Total Copper analysis for December 1 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	1	26
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	01	01	TO	2016	12	31

Reorting Frequency: **Annually**
DMR Effective From: **01/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
PCBs Wet Weather Analysis	Sample Measurement	***	***	***	***	2105.015	***	pg/L	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
PCBs Dry Weather Analysis	Sample Measurement	***	***	***	***	1360.22	***	pg/L	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Ceriodaphnia Survival	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Pimephales Growth	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Ceriodaphnia Reproduction	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Pimephales Survival	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2016**	**01**	**01**	TO	**2016**	**12**	**31**

Reorting Frequency: **Annually**
DMR Effective From: **01/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Chemical Oxygen Demand (COD)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Oil and Grease	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Kjeldahl Nitrogen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Phosphorus	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Iron, Dissolved	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	No./100 ml		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA 2016 WETT Results.pdf	WET Test Summary Report	2017-01-26T16:11:51-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
VFSA has not received the complete Electronic Data Deliverable (EDD) package to date from the laboratory which performed the Dry Weather and Wet Weather PCB analyses for 2016. VFSA will submit the complete EDD package to PADEP and DRBC in a timely fashion once the packages are received.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	1	26
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	01	31

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.7	9.5	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.8	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	252	323	lbs/day	***	5	7	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<21.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<33	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	6.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.60	.60	lbs/day	***	.0093	.0093	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	6.163	6.748	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	62.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	556	642	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<2	6	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<147	<180	lbs/day	***	<3	<4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	8081	***	lbs/day	***	167	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8475	***	lbs/day	***	175	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6745	***	lbs/day	***	140	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA JAN 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-02-27T10:14:18-05:00	
VFSA JAN 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-02-27T10:15:30-05:00	
VFSA RESIDUAL WASTE JAN 2017 FORM.xls	Hauled-In Residual Waste Form	2017-02-27T10:16:49-05:00	
VFSA JAN 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-02-27T10:16:00-05:00	
VFSA JAN 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-02-27T10:16:28-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for January 2, 6, 7, the FINAL Effluent Fecal coliform analyses for January 6, 7, 8, the TDS, Total Nitrogen, and Total Phosphorus analyses for January 4, 11, 18, 25, and the Total Copper analysis for January 4 were performed by ALS Environmental, PA Lab ID 22-293	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	2	27
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	02	01	TO	2017	02	28

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	9.0	9.5	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	183	194	lbs/day	***	4	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<23.3	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<24	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.40	.40	lbs/day	***	.008	.0075	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.698	6.35	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	58.8	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	584	637	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<1	5	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<147	168	lbs/day	***	<3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7646	***	lbs/day	***	166	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8384	***	lbs/day	***	182	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6842	***	lbs/day	***	148	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA FEB 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-03-28T12:32:17-04:00	
VFSA FEB 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-03-28T12:34:11-04:00	
VFSA RESIDUAL WASTE FEB 2017 FORM.xls	Hauled-In Residual Waste Form	2017-03-28T12:34:57-04:00	
VFSA FEB 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-03-28T12:34:32-04:00	
VFSA FEB 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-03-28T12:35:42-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for February 5, 10, 11, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for February 10, 11, 12, 24, 25, 26, the TDS, Total Nitrogen, and Total Phosphorus analyses for February 1, 8, 15, 22, and the Total Copper analysis for February 1 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	3	28
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	03	01	TO	2017	03	31

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.9	9.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.6	***	7.0	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	262	281	lbs/day	***	5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<25.6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<29	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.50	.50	lbs/day	***	.011	.011	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	6.096	7.2	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	59	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	566	617	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<1	6	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	154	173	lbs/day	***	3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	9137	***	lbs/day	***	187	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	10586	***	lbs/day	***	214	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7387	***	lbs/day	***	151	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA MAR 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-04-20T09:11:54-04:00	
VFSA MAR 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-04-20T09:12:20-04:00	
VFSA RESIDUAL WASTE MAR 2017 FORM.xls	Hauled-In Residual Waste Form	2017-04-20T09:13:37-04:00	
VFSA MAR 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-04-20T09:12:44-04:00	
VFSA MAR 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-04-20T09:13:15-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for March 5, 10, 11, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for March 10, 11, 12, 24, 25, 26, the TDS, Total Nitrogen, and Total Phosphorus analyses for March 1, 8, 15, 22, 29 and the Total Copper analysis for March 2 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	4	20
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	04	01	TO	2017	04	30

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.5	9	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	<252	284	lbs/day	***	<5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<20.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<33	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	4.3	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.70	.70	lbs/day	***	.011	.011	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	6.8	12.22	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	58.9	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	540	572	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<2	78	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<181	<237	lbs/day	***	<3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7300	***	lbs/day	***	136	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8448	***	lbs/day	***	157	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6560	***	lbs/day	***	122	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA APR 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-05-26T11:12:51-04:00	
VFSA APR 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-05-26T11:13:20-04:00	
VFSA APR 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-05-26T11:13:41-04:00	
VFSA APR 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-05-26T11:14:05-04:00	
VFSA RESIDUAL WASTE APR 2017 FORM.xls	Hauled-In Residual Waste Form	2017-05-26T11:14:24-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for April 2, 7, 8, 9, 10, 14, 15, 16, 21, 22, the FINAL Effluent Fecal coliform analyses for April 7, 8, 9, 14, 15, 16, 21, 22, 23, the TDS, Total Nitrogen, and Total Phosphorus analyses for April 5, 12, 19, 26, and the Total Copper analysis for April 11 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	5	26
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	05	01	TO	2017	05	31

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.1	8.7	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.2	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	295	409	lbs/day	***	6	9	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<24.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<23	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	4.9	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.50	.50	lbs/day	***	.011	.011	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.619	8.12	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	60.2	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	524	569	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<4	75	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<153	176	lbs/day	***	<3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7599	***	lbs/day	***	152	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9545	***	lbs/day	***	190	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6544	***	lbs/day	***	131	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA MAY 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-06-28T12:20:39-04:00	
VFSA MAY 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-06-28T12:21:04-04:00	
VFSA RESIDUAL WASTE MAY 2017 FORM.xls	Hauled-In Residual Waste Form	2017-06-28T12:21:50-04:00	
VFSA MAY 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-06-28T12:21:28-04:00	
VFSA MAY 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-06-28T12:23:22-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for May 5, 6, 14, 19, 20, the FINAL Effluent Fecal coliform analyses for May 5, 6, 7, 19, 20, 21, the TDS, Total Nitrogen, and Total Phosphorus analyses for May 3, 10, 17, 24, 31, and the Total Copper analysis for May 3 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	6	28
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reorting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	7.7	8.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	517	735	lbs/day	***	11	16	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<25	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<24	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.50	.50	lbs/day	***	.010	.010	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	5.57	6.84	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.1	.1	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	54.8	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	561	596	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<3	27	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<195	258	lbs/day	***	<4	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	6350	***	lbs/day	***	137	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8457	***	lbs/day	***	183	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	5640	***	lbs/day	***	122	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA JUN 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-07-25T09:15:59-04:00	
VFSA JUN 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-07-25T09:16:26-04:00	
VFSA RESIDUAL WASTE JUN 2017 FORM.xls	Hauled-In Residual Waste Form	2017-07-25T09:17:53-04:00	
VFSA JUN 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-07-25T09:16:52-04:00	
VFSA JUN 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-07-25T09:17:26-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for June 11, 16, 17, 18, 23, 24, the FINAL Effluent Fecal coliform analyses for June 16, 17, 18, 23, 24, 25, the TDS, Total Nitrogen, and Total Phosphorus analyses for June 7, 14, 21, 28 and the Total Copper analysis for June 1 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	7	25
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reorting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	7.7	8.1	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.9	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	450	529	lbs/day	***	11	12	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	24.9	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<25	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.50	.50	lbs/day	***	.012	.012	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.843	6.690	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	53.9	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	614	675	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	21	360	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	167	220	lbs/day	***	4	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	6033	***	lbs/day	***	139	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	7604	***	lbs/day	***	175	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	5196	***	lbs/day	***	120	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA JUL 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-08-22T10:14:18-04:00	
VFSA JUL 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-08-22T10:14:46-04:00	
VFSA JUL 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-08-22T10:15:36-04:00	
VFSA RESIDUAL WASTE JUL 2017 FORM.xls	Hauled-In Residual Waste Form	2017-08-22T10:16:00-04:00	
VFSA JUL 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-08-22T10:15:08-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for July 1, 9, 14, 15, 23, 28, 29, the FINAL Effluent Fecal coliform analyses for July 1, 2, 14, 15, 16, 28, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for July 5, 12, 19, 26 and the Total Copper analysis for July 11 were performed by ALS Environmental, PA Lab ID 22-293. Please note, due to telemetry errors there was not adequate final effluent composite sample to perform the required analyses on July 4, 5 and 14, and the final effluent analytical data for those days are based on grab samples.	Martin F. Goldberg	194283	6109351553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	8	22
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	08	01	TO	2017	08	31

Reorting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	7.7	8.0	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	347	529	lbs/day	***	9	13	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	22.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<20	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.3	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.40	.40	lbs/day	***	.011	.011	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.75	5.56	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	40	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	540	640	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	17	179	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<177	345	lbs/day	***	<4	9	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	6108	***	lbs/day	***	139	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	8289	***	lbs/day	***	187	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	5254	***	lbs/day	***	120	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA AUG 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-09-22T09:21:43-04:00	
VFSA AUG 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-09-22T09:20:51-04:00	
VFSA AUG 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-09-22T09:22:05-04:00	
VFSA AUG 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-09-22T09:21:17-04:00	
VFSA RESIDUAL WASTE AUG 2017 FORM.xls	Hauled-In Residual Waste Form	2017-09-22T09:22:58-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for August 6, 11, 12, 20, 25, 26, the FINAL Effluent Fecal coliform analyses for August 11, 12, 13, 25, 26, 27, the TDS, Total Nitrogen, and Total Phosphorus analyses for August 2, 9, 16, 23, 30 and the Total Copper analysis for August 2 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2017	9	22
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reorting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	7.3	8.0	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	401	450	lbs/day	***	10	11	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	<25.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<21	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.30	.30	lbs/day	***	.0074	.0074	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.81	5.55	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.3	.74	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	47.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	555	600	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	20	290	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	206	239	lbs/day	***	5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	7757	***	lbs/day	***	178	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	9559	***	lbs/day	***	217	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7155	***	lbs/day	***	164	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA SEP 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-10-24T09:18:56-04:00	
VFSA SEP 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-10-24T09:18:30-04:00	
VFSA SEP 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-10-24T09:19:17-04:00	
VFSA RESIDUAL WASTE SEP 2017 FORM.xls	Hauled-In Residual Waste Form	2017-10-24T09:19:44-04:00	
VFSA SEP 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-10-24T09:16:40-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for September 10, 15, 16, 17, 22, 23, 24, 29, the FINAL Effluent Fecal coliform analyses for September 15, 16, 17, 22, 23, 24, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for September 6, 13, 20, 27 and the Total Copper analysis for September 5 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

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			AREA CODE	NUMBER	2017	10	24
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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BUREAU OF CLEAN WATER
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NAME: **VALLEY FORGE SEW AUTH**
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FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	10	01	TO	2017	10	31

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	7.6	8.3	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.1	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	334	401	lbs/day	***	9	11	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	28.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<20	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.4	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.20	.20	lbs/day	***	.0066	.0066	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.610	7.52	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	57.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	613	738	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	13	867	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	164	190	lbs/day	***	4	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	8347	***	lbs/day	***	177	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	12104	***	lbs/day	***	257	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6896	***	lbs/day	***	146	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA OCT 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-11-17T14:49:12-05:00	
VFSA OCT 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-11-17T14:49:57-05:00	
VFSA RESIDUAL WASTE OCT 2017 FORM.xls	Hauled-In Residual Waste Form	2017-11-17T14:51:39-05:00	
VFSA OCT 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-11-17T14:50:33-05:00	
VFSA OCT 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-11-17T14:51:04-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for October 15, 20, 21, 22, 27, 28, the FINAL Effluent Fecal coliform analyses for October 20, 21, 22, 27, 28, 29, the TDS, Total Nitrogen, and Total Phosphorus analyses for October 4, 11, 18, 25 and the Total Copper analysis for October 10 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

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			AREA CODE	NUMBER	2017	11	17
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
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STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	11	01	TO	2017	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2017**
DMR Effective To: **11/30/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.4	8.7	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.7	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	638	770	lbs/day	***	17	22	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	29.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<29	***	lbs/day	***	<.8	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	9.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.40	.40	lbs/day	***	.011	.011	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.55	5.99	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.01	0.0	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	55.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	516	559	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	12	34	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	238	263	lbs/day	***	6	7	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	11574	***	lbs/day	***	234	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	15740	***	lbs/day	***	319	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	10816	***	lbs/day	***	219	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA NOV 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2017-12-21T14:34:37-05:00	
VFSA NOV 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2017-12-21T14:32:32-05:00	
VFSA RESIDUAL WASTE NOV 2017 FORM.xls	Hauled-In Residual Waste Form	2017-12-21T14:35:01-05:00	
VFSA NOV 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2017-12-21T14:32:56-05:00	
VFSA NOV 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2017-12-21T14:33:24-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for November 5, 10, 11, 12, 17, 18, 26, the FINAL Effluent Fecal coliform analyses for November 10, 11, 12, 17, 18, 19, the TDS, Total Nitrogen, and Total Phosphorus analyses for November 1, 8, 15, 21, 29 and the Total Copper analysis for November 9 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

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			AREA CODE	NUMBER	2017	12	21
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
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Reorting Frequency: **Monthly**
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DMR Effective To: **12/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.7	9.2	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.8	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	506	710	lbs/day	***	15	22	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	30.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<28	***	lbs/day	***	<.6	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	7.9	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.70	.70	lbs/day	***	.021	.021	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.0	4.77	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.02	.03	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	58.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	529	582	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	8	54	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	234	273	lbs/day	***	7	8	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	13371	***	lbs/day	***	272	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	17756	***	lbs/day	***	360	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	12082	***	lbs/day	***	245	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA DEC 2017 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-01-26T12:00:00-05:00	
VFSA DEC 2017 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-01-26T12:00:36-05:00	
VFSA RESIDUAL WASTE DEC 2017 FORM -2.xls	Hauled-In Residual Waste Form	2018-01-26T12:02:13-05:00	
VFSA JAN 2017 INFLUENT AND PROCESS CONTROL - REVISED 1-16-18.xls	Influent and Process Control Form	2018-01-26T12:03:20-05:00	
VFSA DEC 2017 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-01-26T12:01:03-05:00	
VFSA DEC 2017 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-01-26T12:01:41-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for December 1, 2, 10, 15, 16, 17, 22, 23, the FINAL Effluent Fecal coliform analyses for December 1, 2, 3, 15, 16, 17, 22, 23, 24, the TDS, Total Nitrogen, and Total Phosphorus analyses for December 6, 13, 20, 27 and the Total Copper analysis for December 6 were performed by ALS Environmental, PA Lab ID 22-293. Please note, due to extremely cold weather conditions, the composite sampler lines for the Raw Influent and Final Effluent samplers froze resulting in Grab samples only on Dec 26-31 for the Raw Influent and Dec 28-31 for the Final Effluent. Also, VFSA has observed that there may be irregularities in the final effluent flow data that may be suspect and should be subjected to more detailed analysis. This is in spite of regular calibrations performed by professionals on behalf of VFSA in accordance with the Treatment Plant Agreement. Accordingly, the VFSA is contracting with an independent engineering consultant to perform this detailed analysis in order to assure that the data utilized are accurate. The Authority will keep you informed as to the progress and results of this work as it becomes available. Finally, a revised Jan 2017 Influent and Process Control Report has also been attached to this eDMR report to correct errors in the Jan 2017 sludge wasted volume previously reported.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	1	26
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	12	31

Reorting Frequency: **Annually**
DMR Effective From: **01/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
PCBs Wet Weather Analysis	Sample Measurement	***	***	***	***	2120.29	***	pg/L	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
PCBs Dry Weather Analysis	Sample Measurement	***	***	***	***	1620.54	***	pg/L	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Ceriodaphnia Survival	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Pimephales Growth	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Ceriodaphnia Reproduction	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Toxicity, Chronic - Pimephales Survival	Sample Measurement	***	***	***	***	100	***	TUc	24-Hr Composite	1/year
	Permit Measurement	***	***		***	Monitor & Report Daily Max	***		24-Hr Composite	1/year
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	12	31

Reorting Frequency: **Annually**
DMR Effective From: **01/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Chemical Oxygen Demand (COD)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Suspended Solids	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Oil and Grease	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Kjeldahl Nitrogen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Total Phosphorus	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Iron, Dissolved	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	No./100 ml		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		***	***	Monitor & Report Daily Max		Grab	Upon Request
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA 2017 Stormwater Outfall Annual Inspection Form.pdf	Stormwater Annual Inspection Report	2018-01-23T16:22:54-05:00	
VFSA 2017 WET Testing PADEP Sheets.pdf	WET Test Summary Report	2018-01-23T16:25:13-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
VFSA has not received both Electronic Data Deliverable (EDD) packages to date from the laboratory which performed the Dry Weather and Wet Weather PCB analyses for 2017. VFSA will submit the complete EDD packages to PADEP and DRBC in a timely fashion once both packages are received.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	1	23
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reorting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.9	9.8	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.2	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	268	316	lbs/day	***	7	9	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	25.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<48	***	lbs/day	***	<1.3	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	8.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.40	.40	lbs/day	***	.013	.013	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	4.38	6.24	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	54.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	610	642	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<5	76	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	171	223	lbs/day	***	5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	11804	***	lbs/day	***	226	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	13881	***	lbs/day	***	264	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	11231	***	lbs/day	***	215	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA JAN 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-02-27T15:32:40-05:00	
VFSA JAN 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-02-27T16:08:31-05:00	
VFSA RESIDUAL WASTE JAN 2018 FORM.xls	Hauled-In Residual Waste Form	2018-02-27T16:09:43-05:00	
VFSA JAN 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-02-27T16:08:51-05:00	
VFSA JAN 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-02-27T16:09:20-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for January 7, 12, 13, 14, 19, 20, 28, the FINAL Effluent Fecal coliform analyses for January 12, 13, 14, 19, 20, 21, the TDS, Total Nitrogen, and Total Phosphorus analyses for January 3, 10, 17, 24, 31 and the Total Copper analysis for January 4 were performed by ALS Environmental, PA Lab ID 22-293. Please note, due to extremely cold weather conditions, the composite sampler lines for the Raw Influent and Final Effluent samplers were frozen resulting in Grab samples only on January 1-9 for the Raw Influent and January 1 for the Final Effluent.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	2	27
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	02	01	TO	2018	02	28

Reorting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.6	9.6	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	504	844	lbs/day	***	8	10	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	17.3	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<56	***	lbs/day	***	<.9	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	5.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.60	.60	lbs/day	***	.012	.012	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	7.61	10.66	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	56.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	615	753	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<4	41	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	307	423	lbs/day	***	5	5	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	13050	***	lbs/day	***	189	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	19275	***	lbs/day	***	268	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	10903	***	lbs/day	***	158	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA FEB 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-03-23T10:46:11-04:00	
VFSA FEB 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-03-23T10:46:30-04:00	
VFSA RESIDUAL WASTE FEB 2018 FORM.xls	Hauled-In Residual Waste Form	2018-03-23T10:47:31-04:00	
VFSA FEB 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-03-23T10:46:51-04:00	
VFSA FEB 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-03-23T10:47:12-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for February 2, 3, 18, 23, 24, the FINAL Effluent Fecal coliform analyses for February 2, 3, 4, 23, 24, 25, the TDS, Total Nitrogen, and Total Phosphorus analyses for February 7, 14, 21, 28 and the Total Copper analysis for February 7 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	3	23
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	03	01	TO	2018	03	31

Reorting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.8	9.4	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.9	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	1129	1744	lbs/day	***	17	28	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	14.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<114	***	lbs/day	***	<1.7	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	5.5	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	1.32	1.32	lbs/day	***	.017	.017	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	8.39	11.68	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.003	.01	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	38.3	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	579	612	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	7	99	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	445	551	lbs/day	***	6	9	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	9802	***	lbs/day	***	131	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	14361	***	lbs/day	***	193	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	8323	***	lbs/day	***	113	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA MAR 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-04-27T13:08:41-04:00	
VFSA MAR 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-04-27T13:08:11-04:00	
VFSA MAR 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-04-27T13:10:20-04:00	
VFSA MAR 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-04-27T13:09:55-04:00	
VFSA RESIDUAL WASTE MAR 2018 FORM.xls	Hauled-In Residual Waste Form	2018-04-27T14:28:41-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for March 11, 16, 17, 18, 23, 24, 25, 30, 31, the FINAL Effluent Fecal coliform analyses for March 16, 17, 18, 23, 24, 25, 30, 31, the TDS, Total Nitrogen, and Total Phosphorus analyses for March 7, 14, 21, 28 and the Total Copper analysis for March 6 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	4	27
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	04	01	TO	2018	04	30

Reorting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.9	9.3	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.4	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	339	482	lbs/day	***	5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	13.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<53	***	lbs/day	***	<.8	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	1228 Avg Mo	***		***	12.5 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	5.8	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.80	.80	lbs/day	***	.012	.012	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	7.576	8.690	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	.02	.05	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	64.6	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	532	578	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<2	31	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	261	356	lbs/day	***	4	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	11545	***	lbs/day	***	167	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	15875	***	lbs/day	***	225	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	10426	***	lbs/day	***	150	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA APR 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-05-24T14:01:47-04:00	
VFSA APR 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-05-24T14:02:10-04:00	
VFSA RESIDUAL WASTE APR 2018 FORM.xls	Hauled-In Residual Waste Form	2018-05-24T14:03:14-04:00	
VFSA APR 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-05-24T14:02:52-04:00	
VFSA APR 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-05-24T14:02:30-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for April 15, 19, 20, 21, 22, 26, 27, 28, the FINAL Effluent Fecal coliform analyses for April 20, 21, 22, 27, 28, 29, the TDS, Total Nitrogen, and Total Phosphorus analyses for April 4, 11, 18, 25 and the Total Copper analysis for April 4 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	5	24
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	05	01	TO	2018	05	31

Reorting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due **08/04/2019**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.2	8.8	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Inst Min	***	9.0 IMAX		Grab	1/day
Total Suspended Solids	Sample Measurement	350	461	lbs/day	***	5	6	mg/L	24-Hr Composite	1/day
	Permit Measurement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		24-Hr Composite	1/day
Total Nitrogen	Sample Measurement	***	***	***	***	16.1	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	<35	***	lbs/day	***	<.5	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	614 Avg Mo	***		***	6.3 Avg Mo	***		24-Hr Composite	1/day
Total Phosphorus	Sample Measurement	***	***	***	***	6	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Copper, Total	Sample Measurement	.60	.60	lbs/day	***	.0093	.0093	mg/L	24-Hr Composite	1/month
	Permit Measurement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		24-Hr Composite	1/month
Flow	Sample Measurement	8.32	11.57	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Recorded	Continuous
Total Residual Chlorine (TRC)	Sample Measurement	***	***	***	***	GG	GG	mg/L	Grab	See Permit
	Permit Measurement	***	***		***	.5 Avg Mo	1.6 IMAX		Grab	See Permit
Ultraviolet light transmittance	Sample Measurement	***	***	***	53.4	***	***	%	Measured	1/day
	Permit Measurement	***	***		Monitor & Report Min	***	***		Measured	1/day
Total Dissolved Solids	Sample Measurement	***	***	***	***	508	592	mg/L	24-Hr Composite	1/week
	Permit Measurement	***	***		***	1000 Avg Mo	2000 Daily Max		24-Hr Composite	1/week
Fecal Coliform	Sample Measurement	***	***	***	***	<2	13	No./100 ml	Grab	1/day
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	<218	292	lbs/day	***	<3	4	mg/L	24-Hr Composite	1/day
	Permit Measurement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		24-Hr Composite	1/day
Biochemical Oxygen Demand (BOD5)	Sample Measurement	9227	***	lbs/day	***	137	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	11820	***	lbs/day	***	175	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7594	***	lbs/day	***	112	***	mg/L	24-Hr Composite	1/day
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/day
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA MAY 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-06-25T16:28:01-04:00	
VFSA MAY 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-06-25T16:27:17-04:00	
VFSA MAY 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-06-25T16:28:23-04:00	
VFSA MAY 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-06-25T16:27:38-04:00	
VFSA RESIDUAL WASTE MAY 2018 FORM.xls	Hauled-In Residual Waste Form	2018-06-25T16:28:46-04:00	
VFSA SSO REPORT FORM 5-27-18.pdf	Other	2018-06-25T16:30:23-04:00	VFSA SSO REPORT FORM 5-27-18

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments
58747	05/27/2018	05/27/2018	05/27/2018 08:05:00	Sewage	630 WEST POTHOUSE RD, PHOENIXVILLE, PA, ADJACENT TO POTHOUSE PUMP STATION	10000	3.50	Caines Creek	None Observed	Hydraulic overload in sewer line	05/27/2018 10:05:00	Volume is estimated.

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for May 6, 11, 12, 13, 18, 19, 27, 28, the FINAL Effluent Fecal coliform analyses for May 11, 12, 13, 18, 19, 20, the TDS, Total Nitrogen, and Total Phosphorus analyses for May 2, 9, 16, 23, 30 and the Total Copper analysis for May 2 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			AREA CODE	NUMBER	2018	6	26
TAYLORR		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.1	8.4	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.4	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	469	610	lbs/day	***	7	11	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	16.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<52	***	lbs/day	***	<.7	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0053	.0053	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.11	16.03	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	47.8	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	505	543	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	5	614	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	281	375	lbs/day	***	4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9705	***	lbs/day	***	143	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	14252	***	lbs/day	***	208	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9063	***	lbs/day	***	136	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
VFSA JUN 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-07-26T14:57:28-04:00	
VFSA SSO REPORT FORM 6-11-18.pdf	Other	2018-07-26T15:02:56-04:00	VFSA SSO REPORT FORM 6-11-18
VFSA JUN 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-07-26T14:57:04-04:00	
VFSA JUN 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-07-26T14:57:49-04:00	
VFSA JUN 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-07-26T14:58:10-04:00	
VFSA RESIDUAL WASTE JUNE 2018 FORM.xls	Hauled-In Residual Waste Form	2018-07-26T14:58:31-04:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point	Cause Of NC	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments
68304	06/11/2018	06/11/2018	06/11/2018 03:06:00	Sewage	630 WEST POTHOUSE RD ADJACENT TO POTHOUSE PUMP STATION	10000	4	CAINES CREEK	None Observed	Hydraulic overload in sewer line	06/11/2018 09:06:00	HEAVY RAIN EVENT

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for June 11, 15, 16, 17, 22, 23, 29, 30, the FINAL Effluent Fecal coliform analyses for June 15, 16, 17, 22, 23, 24, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for June 6, 13, 20, 27 and the Total Copper analysis for June 5 were performed by ALS Environmental, PA Lab ID 22-293.	MARTIN F. GOLDBERG	194283	610-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
taylorr			(61 | 0)935-1553	2018	7	26
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.8	8.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	435	762	lbs/day	***	8	14	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	27.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<40	***	lbs/day	***	<.7	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.80	.80	lbs/day	***	.016	.016	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.931	11	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	47.3	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	473	513	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	10	91	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<262	<320	lbs/day	***	<5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9835	***	lbs/day	***	172	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	15979	***	lbs/day	***	274	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8964	***	lbs/day	***	156	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JUL 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-08-27T09:23:51-04:00	
VFSA JUL 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-08-27T09:24:42-04:00	
VFSA JUL 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-08-27T09:24:22-04:00	
VFSA JUL 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-08-27T09:25:04-04:00	
VFSA RESIDUAL WASTE JULY 2018 FORM.xls	Hauled-In Residual Waste Form	2018-08-27T09:25:23-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for July 1, 6, 7, 15, 20, 21, 22, 27, 28, the FINAL Effluent Fecal coliform analyses for July 6, 7, 8, 20, 21, 27, 28, 29, the TDS, Total Nitrogen, and Total Phosphorus analyses for July 4, 11, 18, 25 and the Total Copper analysis for July 11 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Richard Taylor	TELEPHONE		DATE		
			(610)	935-1553	2018	8	27
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.6	8.1	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.6	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	389	502	lbs/day	***	6	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	17.8	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<63	***	lbs/day	***	<.9	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.0059	.0059	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.09	12.49	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	46.9	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	439	487	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<6	200	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<285	<426	lbs/day	***	<4	<5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8037	***	lbs/day	***	122	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	11628	***	lbs/day	***	177	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7895	***	lbs/day	***	120	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA AUG 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-09-24T15:33:58-04:00	
VFSA AUG 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-09-24T15:33:30-04:00	
VFSA AUG 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-09-24T15:34:23-04:00	
VFSA RESIDUAL WASTE AUGUST 2018 FORM.xls	Hauled-In Residual Waste Form	2018-09-24T15:34:44-04:00	
VFSA AUG 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-09-24T15:33:04-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for August 12, 17, 18, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for August 17, 18, 19, 24, 25, 26, the TDS, Total Nitrogen, and Total Phosphorus analyses for August 1, 8, 15, 22, 29 and the Total Copper analysis for August 9 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2018**	**9**	**24**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2018**
DMR Effective To: **09/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.8	8.3	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	493	715	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	14.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<85	***	lbs/day	***	<1.1	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	3.0	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0073	.0073	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	9.24	13.96	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	64.0	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	507	546	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<4	1987	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<303	409	lbs/day	***	<4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2018**
DMR Effective To: **09/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9778	***	lbs/day	***	131	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	14214	***	lbs/day	***	188	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9562	***	lbs/day	***	119	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments	The Raw influent 9-30-18 sample was determined to be not representative. Raw influent sample results for 9-30-18 were not included in calculations of monthly values for this report.									

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA SEP 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-10-25T16:05:35-04:00	
VFSA RESIDUAL WASTE SEPTEMBER 2018 FORM.xls	Hauled-In Residual Waste Form	2018-10-25T16:04:15-04:00	
VFSA SEP 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-10-25T16:04:39-04:00	
VFSA SEP 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-10-25T16:05:02-04:00	
VFSA 2018 Stormwater Outfall Annual Inspection Form.pdf	Stormwater Annual Inspection Report	2018-10-25T16:02:39-04:00	
VFSA SEP 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-10-25T16:03:10-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
74315	09/01/2018	09/30/2018	Fecal Coliform	Instantaneous Maximum	1987	1000	No./100 ml	Final Effluent (001)	Unknown	See attached comments	On 9-7-18, VFSA lab staff completed the fecal coliform analysis for the sample collected Thursday, 9-6-18, reporting a value of 1,987 colonies per 100 mL. On 9-7-18 VFSA contacted Mr. David Wolfinger of PADEP by voice and email messages to inform him of the result and the actions VFSA was taking to determine the cause. VFSA lab staff scheduled ALS labs to begin performing the daily fecal coliform analysis for the samples 9-7-18 through Monday Sep 10, 2018, in order to allow VFSA lab staff to repeat the required QC/QA procedures on the fecal coliform supplies and growth media used to perform this analysis. All QC/QA retests negative, which is the preferred result, but did not help identify what may have caused the fecal coliform result from Sep 6, 2018. Concurrently, VFSA O & M staff performed a complete check of the UV system and noted the UV system appeared to be functioning correctly with no apparent problems. Again, although this is the preferred result, it did not help identify a cause. Also, on 9-7-18, after checking and confirming proper operation of the UV system, VFSA O & M staff increased the UV dosage of the ultraviolet disinfection system. The analytical results for the samples analyzed by ALS laboratories during this time follow: Friday, Sep 7, 2018 = 2 colonies/100 mL; Saturday Sep 8, 2018 = 6 colonies/100 mL; Sunday Sep 9, 2018 = 7 colonies/100 mL; Monday Sep 10, 2018 = 10 colonies/100 mL On Monday Sep 10, 2018, VFSA staff collected two fecal coliform samples within a few minutes of each other, sending one sample to ALS and keeping the other sample for analysis by the VFSA laboratory. The Monday Sep 10, 2018, sample analyzed by the VFSA laboratory had a fecal coliform result of 7 colonies/100 mL. VFSA averaged the results of the two samples analyzed by both labs and has reported a value of 9 colonies/100 mL for Monday Sep 10, 2018. VFSA updated Mr. Wolfinger by email on 9-25-18 to update him on the findings of the investigation. VFSA staff also notified the Delaware River Basin Commission by email on 9-25-18 of the exceedance and actions taken per the requirements of the Authority's DRBC docket. Since the fecal coliform result of 9-6-18, there has not been another exceedance of the fecal coliform limits. As previously noted, there is, unfortunately, no definitive reason for why this violation occurred. VFSA laboratory, operations and maintenance staff will continue to be vigilant in their QC/QA, sampling, analysis, operations and maintenance procedures in order to protect against another occurrence of this sort.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for September 9, 14, 15, 16, 21, 22, 23, 28, 29, the FINAL Effluent Fecal coliform analyses for September 7, 8, 9, 10, 14, 15, 16, 21, 22, 23, 28, 29, 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for September 5, 12, 19, 26 and the Total Copper analysis for September 5 were performed by ALS Environmental, PA Lab ID 22-293. Note, the Fecal coliform result reported for September 10 is an average of the independent fecal coliform analyses performed by ALS Environmental (result = 10 colonies/100 mL) and the VFSA treatment plant laboratory (result = 7 colonies/100 mL). Also, the Raw influent sample data for 9-30-18 was determined to be not representative of the waste stream and has not been included on the September 2018 VFSA INFLUENT AND PROCESS CONTROL supplemental report or in the calculations for the DMR	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2018**	**10**	**25**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.2	8.5	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.8	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	325	404	lbs/day	***	5	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	<19.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<33	***	lbs/day	***	<.5	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0047	.0047	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	7.75	10.13	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	50	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	464	499	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<3	116	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<243	<282	lbs/day	***	<4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10269	***	lbs/day	***	159	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	14846	***	lbs/day	***	232	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9439	***	lbs/day	***	146	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA OCT 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-11-28T11:25:08-05:00	
VFSA OCT 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-11-28T11:25:52-05:00	
VFSA OCT 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-11-28T11:26:14-05:00	
VFSA RESIDUAL WASTE OCTOBER 2018 FORM.xls	Hauled-In Residual Waste Form	2018-11-28T11:26:34-05:00	
VFSA OCT 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-11-28T11:25:30-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for October 14, 19, 20, 21, 26, 27, the FINAL Effluent Fecal coliform analyses for October 19, 20, 21, 26, 27, 28, the TDS, Total Nitrogen, and Total Phosphorus analyses for October 3, 10, 17, 24, 31 and the Total Copper analysis for October 4 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2018**	**11**	**28**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.2	8.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.8	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	579	1079	lbs/day	***	7	11	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	13.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<65	***	lbs/day	***	<.8	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	3.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0071	.0071	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	9.64	14.34	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	43.5	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	454	520	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<4	30	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<345	582	lbs/day	***	<4	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9685	***	lbs/day	***	120	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	14336	***	lbs/day	***	180	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	Raw Influent TSS samples for Nov 3, 10, 16, 17 and 30 were determined to be non-representative and were not included in the monthly data.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8968	***	lbs/day	***	112	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA NOV 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2018-12-24T11:13:54-05:00	
VFSA NOV 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2018-12-24T11:14:21-05:00	
VFSA RESIDUAL WASTE NOV 2018 FORM.xls	Hauled-In Residual Waste Form	2018-12-24T11:16:15-05:00	
VFSA NOV 2018 INFLUENT AND PROCESS CONTROL-REVISED 2-26-19.xls	Influent and Process Control Form	2019-02-26T12:21:33-05:00	This form has been revised due to a flow data reporting error for 11-25-18 from one of the tributary municipalities. This data is used for the calculation of the VFSA Raw Influent treatment plant flow.
VFSA NOV 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2018-12-24T11:14:43-05:00	
VFSA NOV 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2018-12-24T11:15:06-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**2**	**26**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.5	9.3	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.9	***	7.6	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	456	637	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	16	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<77	***	lbs/day	***	<.9	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	3.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	1.27	1.27	lbs/day	***	.017	.017	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	9.09	14.54	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	43.5	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	628	757	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<5	609	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	293	373	lbs/day	***	4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD							
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9896	***	lbs/day	***	130	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	11259	***	lbs/day	***	148	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8814	***	lbs/day	***	115	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA DEC 2018 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-01-25T13:51:50-05:00	
VFSA RESIDUAL WASTE DEC 2018 FORM.xls	Hauled-In Residual Waste Form	2019-01-25T13:52:09-05:00	
VFSA DEC 2018 Hauled In Municipal Wastes.xls	Hauled-In Municipal Waste Form	2019-01-25T13:51:07-05:00	
VFSA DEC 2018 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-01-25T13:50:44-05:00	
VFSA DEC 2018 INFLUENT AND PROCESS CONTROL.xls	Influent and Process Control Form	2019-01-25T13:51:28-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for December 2, 7, 8, 16, 21, 22, 28, 29, the FINAL Effluent Fecal coliform analyses for December 7, 8, 9, 21, 22, 23, the TDS, Total Nitrogen, and Total Phosphorus analyses for December 5, 12, 19, 26, and the Total Copper analysis for December 5 were performed by ALS Environmental, PA Lab ID 22-293. Raw Influent TSS, CBOD and BOD samples for Dec 9, 16, 18, 23 and Raw Influent TSS samples for Dec 22 and 31 were determined to be non-representative and were not included in the monthly data.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**1**	**25**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
PCBs Wet Weather Analysis (51556)	Sample Measurement	***	***	***	***	876.9	***	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
PCBs Dry Weather Analysis (51557)	Sample Measurement	***	***	***	***	670.9	***	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Survival (61426)	Sample Measurement	***	***	***	***	100	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TTD6C)	Sample Measurement	***	***	***	***	100	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TTD3B)	Sample Measurement	***	***	***	***	100	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (61428)	Sample Measurement	***	***	***	***	100	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Facility Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Chemical Oxygen Demand (COD) (00340)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Oil and Grease (00556)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Kjeldahl Nitrogen (00625)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Iron, Dissolved (01046)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	No./100 ml		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Facility Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA 2018 WETT PADEP Report Forms.pdf	WET Test Summary Report	2019-01-14T09:56:36-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
NO DISCHARGE FROM OUTFALL 002 DURING 2018	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER		SUBMITTED BY FULL NAME	TELEPHONE		DATE		
			AREA CODE	NUMBER	YEAR	MO	DAY
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	**(610)**	**935-1553**	**2019**	**1**	**14**

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.6	9.3	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.4	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	563	775	lbs/day	***	7	10	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	16.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<104	***	lbs/day	***	<1.3	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.50	.50	lbs/day	***	.0071	.0071	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	9.51	13.37	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	64.4	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	612	707	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	9	58	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<377	551	lbs/day	***	<5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	13063	***	lbs/day	***	166	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	15221	***	lbs/day	***	194	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	11167	***	lbs/day	***	148	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JAN 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-02-27T12:34:43-05:00	
VFSA JAN 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-02-27T12:34:15-05:00	
VFSA JAN 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-02-27T12:33:45-05:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM JAN 2019.xls	Influent and Process Control Form	2019-02-27T12:33:14-05:00	
VFSA JAN 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-02-27T12:32:50-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for January 4, 5, 13, 18, 19, 27, the FINAL Effluent Fecal coliform analyses for January, 4, 5, 6, 18, 19, 20, the TDS, Total Nitrogen, and Total Phosphorus analyses for January 2, 9, 16, 23, 30 and the Total Copper analysis for January 12 were performed by ALS Environmental, PA Lab ID 22-293. Raw Influent TSS, CBOD and BOD samples for January 21, 25, 26, 27, 29 and 31 were determined to be non-representative and were not included in the monthly data.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**2**	**27**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.9	9.6	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.2	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	495	590	lbs/day	***	7	9	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	19.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<76	***	lbs/day	***	<1.0	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.90	.90	lbs/day	***	.011	.011	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.71	10.44	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	57.6	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	729	1050	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<4	48	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<355	404	lbs/day	***	<5	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	11553	***	lbs/day	***	156	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	12717	***	lbs/day	***	173	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9696	***	lbs/day	***	132	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA FEB 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-03-22T09:07:23-04:00	
VFSA FEB 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-03-22T09:07:43-04:00	
VFSA FEB 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-03-22T09:08:09-04:00	
VFSA FEB 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-03-22T09:08:33-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM FEB 2019.xls	Influent and Process Control Form	2019-03-22T09:08:52-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for February 1, 2, 10, 15, 16, 17, 24, the FINAL Effluent Fecal coliform analyses for February 1, 2, 3, 15, 16, 17, 18, the TDS, Total Nitrogen, and Total Phosphorus analyses for February 6, 13, 20, 27 and the Total Copper analysis for February 14 were performed by ALS Environmental, PA Lab ID 22-293. Raw Influent TSS, CBOD and BOD samples for February 8, 9, and 22 were determined to be non-representative and were not included in the monthly data. Also, due to extremely cold weather conditions causing freezing of the composite sampler suction tubing, the Raw Influent analyses for Feb 1, 2019, and the Final Effluent analyses for Feb 1 and Feb 2 were from Grab samples.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**3**	**22**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.4	9.5	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	481	560	lbs/day	***	6	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	16.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<164	***	lbs/day	***	<1.9	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	3.8	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.70	.70	lbs/day	***	.0081	.0081	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	9.812	14.93	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	54.9	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	674	821	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	9	72	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<353	409	lbs/day	***	<4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	11264	***	lbs/day	***	141	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	The Raw influent samples for March 16, 22 and 29 were determined to be not representative and were not included in the calculations.								
Total Suspended Solids (00530)	Sample Measurement	14225	***	lbs/day	***	178	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	The Raw influent samples for March 16, 22 and 29 were determined to be not representative and were not included in the calculations.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9592	***	lbs/day	***	119	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	The Raw influent samples for March 16, 22 and 29 were determined to be not representative and were not included in the calculations.								
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA MAR 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-04-26T11:59:41-04:00	
VFSA MAR 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-04-26T12:00:59-04:00	
VFSA MAR 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-04-26T12:01:19-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM MAR 2019.xls	Influent and Process Control Form	2019-04-26T11:59:18-04:00	
VFSA MAR 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-04-26T12:01:41-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for March 1, 2, 17, 22, 23, 24, 29, 30 the FINAL Effluent Fecal coliform analyses for March 1, 2, 3, 22, 23, 24, 29, 30, 31, the TDS, Total Nitrogen, and Total Phosphorus analyses for March 6, 13, 20, 27 and the Total Copper analysis for March 14 were performed by ALS Environmental, PA Lab ID 22-293. Raw Influent TSS, CBOD and BOD samples for March 16, 22 and 29 were determined to be non-representative and were not included in the monthly data.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**4**	**26**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.6	9.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	<232	264	lbs/day	***	<4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	17.0	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<55	***	lbs/day	***	<.8	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.80	1.21	lbs/day	***	.012	.019	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	7.793	8.64	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	53.0	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	553	583	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<5	388	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	242	273	lbs/day	***	4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10171	***	lbs/day	***	158	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	13809	***	lbs/day	***	215	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9070	***	lbs/day	***	142	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA APR 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-05-28T10:56:15-04:00	
VFSA APR 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-05-28T10:56:39-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM APR 2019.xls	Influent and Process Control Form	2019-05-28T10:57:55-04:00	
VFSA APR 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-05-28T10:57:03-04:00	
VFSA APR 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-05-28T10:57:29-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for April 14, 19, 20, 21, 24, 25, 26, 27, the FINAL Effluent Fecal coliform analyses for April 19, 20, 21, 26, 27, 28, the TDS, Total Nitrogen, and Total Phosphorus analyses for April 3, 10, 17, 24 and the Total Copper analyses for April 4 and 17 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**5**	**28**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.1	8.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	382	531	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	15.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<60	***	lbs/day	***	<.8	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0054	.0054	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.818	11.319	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	51.7	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to computer problems, there was no value reported for 5-17-19.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	547	651	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<2	1987	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
	Facility Parameter Comments	After the fecal coliform results of May 24 and May 28, VFSA began sending daily fecal coliform samples to ALS (on May 29, 2019). The VFSA lab repeated all required fecal coliform QC/QA–all QC/QA checks passed. VFSA O & M staff confirmed UV system was operating correctly, but a scum buildup was found near the end of both UV channels. The scum was tested by the VFSA lab and found to have a value of > 200,000 MPN/100 ml of fecal coliform. O & M staff have been dispersing the scum daily.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<299	406	lbs/day	***	<4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8347	***	lbs/day	***	123	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	The raw influent TSS, BOD and CBOD data for May 4, 5, 13, 15 and 31 were deemed non-representative and were not included in the monthly calculations.								
Total Suspended Solids (00530)	Sample Measurement	9246	***	lbs/day	***	136	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	The raw influent TSS, BOD and CBOD data for May 4, 5, 13, 15 and 31 were deemed non-representative and were not included in the monthly calculations.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8098	***	lbs/day	***	120	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	The raw influent TSS, BOD and CBOD data for May 4, 5, 13, 15 and 31 were deemed non-representative and were not included in the monthly calculations.								
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA MAY 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-06-28T14:25:29-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM MAY 2019.xls	Influent and Process Control Form	2019-06-28T14:27:43-04:00	
VFSA MAY 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-06-28T14:28:44-04:00	
VFSA MAY 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-06-28T14:28:15-04:00	
VFSA MAY 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-06-28T14:29:18-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
90448	05/01/2019	05/31/2019	Fecal Coliform	Instantaneous Maximum	1987	1000	No./100 ml	Final Effluent (001)	Unknown	See attached comments	After the fecal coliform results of May 24 and May 28, VFSA began sending daily fecal coliform samples to ALS (on May 29, 2019). The VFSA lab repeated all required fecal coliform QC/QA–all QC/QA checks passed successfully. VFSA O & M staff confirmed the UV system was operating correctly, but a scum buildup was found near the end of both UV channels. The scum was tested by the VFSA lab and found to have a value of > 200,000 MPN/100 ml of fecal coliform. O & M staff have been dispersing the scum daily. There were no changes required to the UV system settings.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for May 3, 4, 12, 15, 16, 17, 18, 19, 26, 31, the FINAL Effluent Fecal coliform analyses for May 3, 4, 5, 16, 17, 18, 19, 20, 29, 30, 31, the TDS, Total Nitrogen, and Total Phosphorus analyses for May 1, 8, 9, 14, 22, 29 and the Total Copper analysis for May 9 were performed by ALS Environmental, PA Lab ID 22-293. Please note, due to ongoing influent structure construction, several of the raw influent samples during the time frame were grab samples. Also, the raw influent TSS, BOD and CBOD data for May 4, 5, 13, 15 and 31 were deemed non-representative and were not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Richard Taylor	TELEPHONE		DATE		
				(610)	935-1553	2019	6	28
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.8	8.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	551	710	lbs/day	***	8	9	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	15.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<75	***	lbs/day	***	<.9	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.50	.50	lbs/day	***	.0083	.0083	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.33	15.24	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	50.3	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	495	542	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	9	300	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	382	444	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9190	***	lbs/day	***	138	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	12461	***	lbs/day	***	183	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8288	***	lbs/day	***	124	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JUN 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-07-23T14:27:46-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM JUN 2019.xls	Influent and Process Control Form	2019-07-23T14:26:59-04:00	
VFSA JUN 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-07-23T14:28:30-04:00	
VFSA JUN 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-07-23T14:27:23-04:00	
VFSA JUN 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-07-23T14:28:07-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for June 1, 16, 21, 22, 23, 28, 29, the FINAL Effluent Fecal coliform analyses for June 1 through June 23, and June 27 through June 30, the TDS, Total Nitrogen, and Total Phosphorus analyses for June 5, 12, 19, 26 and the Total Copper analysis for June 5 were performed by ALS Environmental, PA Lab ID 22-293. On June 24 through June 26, the VFSA lab and ALS both performed fecal coliform analyses - the results reported are the average of the two sample results (VFSA 6-24 result = 1, ALS 6-24 result = 2; VFSA 6-25 result = 2, ALS 6-25 result = 8; VFSA 6-26 result = 58, ALS 6-25 result = 62). Also, the raw influent TSS, BOD and CBOD data for June 1, 9, 18, 19, and 27 were deemed non-representative and were not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**7**	**23**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.5	8.1	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.8	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	354	511	lbs/day	***	5	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	18.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<43	***	lbs/day	***	<.5	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.0048	.0048	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	8.039	10.96	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
	Facility Parameter Comments	Due to metering and computer problems the final effluent flows for July 19-21 were estimated.								
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	.04	.06	mg/L	See Permit	Grab
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	49.3	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to metering and computer problems there is no UVT data for July 20-21 and July 27-28.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	532	574	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<14	462	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<297	435	lbs/day	***	<4	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	1335 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	11050	***	lbs/day	***	172	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	13002	***	lbs/day	***	202	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9865	***	lbs/day	***	154	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JUL 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-08-20T12:09:10-04:00	
VFSA JUL 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-08-20T12:10:29-04:00	
VFSA JUL 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-08-20T12:07:22-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM JUL 2019.xls	Influent and Process Control Form	2019-08-20T12:08:05-04:00	
VFSA JUL 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-08-20T12:08:37-04:00	
VFSA 2019 Stormwater Inspection Form - PADEP.pdf	Stormwater Annual Inspection Report	2019-08-20T12:12:43-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for July 14, 19, 20, 21, 26, 27, the FINAL Effluent Fecal coliform analyses for July 1, 19, 20, 21, 26, 27, 28, the TDS, Total Nitrogen, and Total Phosphorus analyses for July 1, 10, 17, 25, 31 and the Total Copper analysis for July 10 were performed by ALS Environmental, PA Lab ID 22-293. On July 1, the VFSA lab and ALS both performed fecal coliform analyses - the results reported are the average of the two sample results (VFSA 7-1 result = 13, ALS 7-1 result = 33). Due to metering and computer problems, final effluent flows for July 19-21 were estimated while there is no data for UVT for July 20, 21, 27 and 28. Also, the raw influent TSS, BOD and CBOD data for July 1, 2, 3, 5, 7, 12, 16, 20, 23 and 26 were deemed non-representative and were not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**8**	**20**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.7	8.0	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	328	419	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	<22.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<30	***	lbs/day	***	<.6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.7	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.50	.50	lbs/day	***	.0091	.0091	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.41	7.25	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	68.7	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	557	571	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	6	23	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<182	<216	lbs/day	***	<3	<4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8207	***	lbs/day	***	160	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	11291	***	lbs/day	***	219	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7603	***	lbs/day	***	148	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA AUG 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-09-20T10:30:28-04:00	
VFSA AUG 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-09-20T10:30:49-04:00	
VFSA AUG 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-09-20T10:31:15-04:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM AUG 2019.xls	Influent and Process Control Form	2019-09-20T10:32:22-04:00	
VFSA AUG 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-09-20T10:31:42-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for August 11, 16, 17, 23, 24, the FINAL Effluent Fecal coliform analyses for August 16, 17, 18, 19, 23, 24, 25, 27, 28, the TDS, Total Nitrogen, and Total Phosphorus analyses for August 7, 14, 21, 28, and the Total Copper analysis for August 7 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for August 8, 14, 20, 21, 22, 28, 29, and 31 were deemed non-representative and were not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**9**	**20**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.8	8.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.4	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	255	295	lbs/day	***	6	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	<20.7	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<38	***	lbs/day	***	<.8	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	7.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.0073	.0073	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.56	6.04	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	<.02	<.02	mg/L	See Permit	Grab
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	68.1	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to computer and metering issues there is no UVT data for September 14 and 15.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	593	644	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	10	59	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	171	250	lbs/day	***	4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8694	***	lbs/day	***	183	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	9369	***	lbs/day	***	198	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8150	***	lbs/day	***	172	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM SEP 2019.xls	Influent and Process Control Form	2019-10-23T16:25:09-04:00	
VFSA SEP 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-10-23T16:25:29-04:00	
VFSA SEP 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-10-23T16:25:57-04:00	
VFSA SEP 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-10-23T16:26:20-04:00	
VFSA SEP 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-10-23T16:26:57-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for September 9, 13, 14, 15, 20, 21, 22, 27, 28, the FINAL Effluent Fecal coliform analyses for September 13, 14, 15, 20, 21, 22, 27, 28, 29, the TDS, Total Nitrogen, and Total Phosphorus analyses for September 4, 11, 18, 25, and the Total Copper analysis for September 5 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for September 3, 4, 5, 8, 12, 13, 23, 24, 25, 29, and 30 were deemed non-representative and were not included in the monthly calculations. Due to computer and metering issues, there was no value reported for UVT on September 14 and 15.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2019**	**10**	**23**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.6	8.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	8.1	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	272	371	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	< 15.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 26	***	lbs/day	***	< .6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	7.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.20	.20	lbs/day	***	.005	.005	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.36	7.51	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	55.8	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to computer malfunctions, UVT minimum values for Oct 3 and Oct 31 were not reported.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	483	538	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 5	136	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 90%SAMPLES		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 187	219	lbs/day	***	< 4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1335 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	7534	***	lbs/day	***	161	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	8001	***	lbs/day	***	172	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7077	***	lbs/day	***	150	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.1	8.7	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.7	***	7.1	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	234	253	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	<24	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for Total Nitrogen for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Ammonia-Nitrogen (00610)	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	6.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for Total Phosphorus for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.008	.0085	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
	Facility Parameter Comments	Two samples were collected and analyzed during the month.								
Flow (50050)	Sample Measurement	5.19	5.38	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	60.1	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	447	518	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for TDS for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<9	450	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	129	142	lbs/day	***	3	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.1	8.7	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.7	***	7.1	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	234	253	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	<24	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for Total Nitrogen for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Ammonia-Nitrogen (00610)	Sample Measurement	<22	***	lbs/day	***	<.5	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	6.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for Total Phosphorus for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.008	.0085	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
	Facility Parameter Comments	Two samples were collected and analyzed during the month.								
Flow (50050)	Sample Measurement	5.19	5.38	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	60.1	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	447	518	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
	Facility Parameter Comments	Due to a miscommunication with ALS labs, there was no sample analysed for TDS for the week of Nov 17-23, 2019. An additional sample was collected the week of Dec 15-21, 2019, in lieu of the missed sample.								
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<9	450	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	129	142	lbs/day	***	3	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10821	***	lbs/day	***	224	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	9543	***	lbs/day	***	198	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	10363	***	lbs/day	***	215	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA November 2019 NON-COMPLIANCE_REPORTING_FORM NOVEMBER 2019.doc	Other	2020-01-06T08:59:45-05:00	VFSA November 2019 NON-COMPLIANCE_REPORTING_FORM NOVEMBER 2019
VFSA NOV 2019 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2019-12-19T16:19:53-05:00	
VFSA INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM NOV 2019.xls	Influent and Process Control Form	2019-12-19T16:18:15-05:00	
VFSA NOV 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2019-12-19T16:18:41-05:00	
VFSA NOV 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2019-12-19T16:19:05-05:00	
VFSA NOV 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2019-12-19T16:19:30-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
102776	Sample collection less frequent than required					Due to a miscommunication with ALS labs, the weekly samples for Total Dissolved Solids, Total Phosphorus and Total Nitrogen were not collected for the week of November 17-23. An additional weekly sample for each parameter was collected for analysis during the week of December 15-21, 2019, in lieu of the missed November sample.

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for November 10, 15, 16, 17, 22, 23, the FINAL Effluent Fecal coliform analyses for November 15, 16, 17, 22, 23, 24, the TDS, Total Nitrogen, and Total Phosphorus analyses for November 6, 13, 20, 26, the Total Copper analyses for November 6, 19, the Raw Influent and Final Effluent priority pollutant analyses were performed by ALS Environmental, PA Lab ID 22-293. The Whole Effluent Toxicity Testing analyses performed the week of Nov 18-Nov 22 were subcontracted to Environmental Resource Management, Inc , PADEP lab ID 68-04227, by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for November 10, 16-20, 22, 24-26 and 28-29 were deemed non-representative and were not included in the monthly calculations. Also, due to a miscommunication with ALS labs, the weekly samples for Total Dissolved Solids, Total Phosphorus and Total Nitrogen were not collected for the week of November 17-23. An additional weekly sample for each parameter was collected for analysis during the week of December 15-21, 2019, in lieu of the missed November sample.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**1**	**6**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.2	8.8	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.8	***	7.1	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	<214	273	lbs/day	***	<4	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	19.7	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610)	Sample Measurement	<34	***	lbs/day	***	<.6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.70	.70	lbs/day	***	.0154	.0154	mg/L	1/month	24-Hr Composite
	Permit Requirement	3.43 Avg Mo	5.43 Daily Max		***	.035 Avg Mo	.055 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.254	9.6	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.5 Avg Mo	1.6 IMAX		See Permit	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	56.9	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to computer/metering issues there was no UVT value reported for December 26, 2019.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	462	572	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	<4	330	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	<263	<591	lbs/day	***	<5	<10	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10779	***	lbs/day	***	193	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	9653	***	lbs/day	***	173	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	10520	***	lbs/day	***	190	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA DEC 2019 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-01-28T10:46:51-05:00	
VFSA DEC 2019 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-01-28T10:47:48-05:00	
VFSA DEC 2019 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-01-28T10:47:20-05:00	
VFSA DEC 2019 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-01-28T10:48:42-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
PLEASE NOTE: On Jan 27, 2020, I was informed by Synagro, VFSA's biosolids hauler/applier, that the data required to complete the VFSA December 2019 Sewage Sludge/Biosolids Production and Disposal supplemental report will not be available by the due date of January 28, 2020. I will submit the VFSA December 2019 Sewage Sludge/Biosolids Production and Disposal supplemental report as soon as possible after receiving the data. The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for December 8, 13, 14, 15, 20, 21, 22, 27, 28, the FINAL Effluent Fecal coliform analyses for December 13, 14, 15, 16, 20, 21, 22, 27, 28, 29, the TDS, Total Nitrogen, and Total Phosphorus analyses for December 4, 11, 16, 18, 25, the Total Copper analysis for December 4 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for December 1 - 4, 8, 14, 20-21, and 26 were deemed non-representative and were not included in the monthly calculations. Also, due to computer/metering issues there was no minimum UVT value reported for Dec 26, 2019. Finally, as previously noted in the Nov 2019 report, an additional weekly sample for TDS, Total Phosphorus and Total Nitrogen was collected for analysis during the week of December 15-21, 2019, in lieu of the missed November weekly sample.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	**(610)**	**935-1553**	**2020**	**1**	**28**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
PCBs Wet Weather Analysis (51556)	Sample Measurement	***	***	***	***	958.3	***	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
PCBs Dry Weather Analysis (51557)	Sample Measurement	***	***	***	***	805.8	***	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Survival (61426)	Sample Measurement	***	***	***	***	1.0	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Pimephales Growth (TTD6C)	Sample Measurement	***	***	***	***	1.0	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Ceriodaphnia Reproduction (TTD3B)	Sample Measurement	***	***	***	***	3.3	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Toxicity, Chronic - Pimephales Survival (61428)	Sample Measurement	***	***	***	***	1.0	***	TUc	1/year	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Daily Max	***		1/year	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **01/31/2020**
Permit Application Due: **08/04/2019**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Chemical Oxygen Demand (COD) (00340)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Oil and Grease (00556)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Kjeldahl Nitrogen (00625)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Iron, Dissolved (01046)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	No./100 ml		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA 2019 WETT PADEP Report Data.pdf	WET Analysis Spreadsheet	2020-01-27T11:57:24-05:00	WET Analysis Spreadsheet and Summary Included

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
No discharge from Outfall 002 during 2019.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	**(610)**	**935-1553**	**2020**	**1**	**27**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **TREDYFFRIN TWP CHESTER CNTY**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.5	9.0	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	538	1209	lbs/day	***	9	18	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	19.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 55	***	lbs/day	***	< 1.0	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.7	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.0055	.0055	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.345	10.44	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	< .02	< .02	mg/L	1/day	Grab
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	33	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	511	624	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 5	390	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	300	511	lbs/day	***	5	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **TREDYFFRIN TWP CHESTER CNTY**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	12215	***	lbs/day	***	219	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	12354	***	lbs/day	***	222	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	10761	***	lbs/day	***	194	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA 2020 SUPPLEMENTAL LABORATORY ACCREDITATION FORM.pdf	Laboratory Accreditation Form	2020-02-28T13:54:01-05:00	
VFSA JAN 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-02-28T13:52:48-05:00	
VFSA JAN 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-02-28T13:52:18-05:00	
VFSA JAN 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-02-28T13:53:19-05:00	
VFSA JAN 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-02-28T13:51:51-05:00	
VFSA 1-25-2020 SSO Non-Compliance Reporting Form and Attachment.pdf	Other	2020-02-28T13:55:41-05:00	SSO Non-Compliance Reporting Form and Attachment
VFSA JAN 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-02-28T13:51:20-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments
108186	01/25/2020	01/25/2020	01/25/2020 11:01:00	Sewage	Adjacent to the Pothouse Rd PS	35000	.25	Caines Creek	None Observed	See attached comments	01/25/2020 02:01:00	On Jan 25, 2020, an SSO occurred adjacent to the VFSA Pothouse pump station. Per the requirements of VFSA's NPDES permit, PADEP and three downstream water plants were notified. I have attached a copy of the Non-Compliance Reporting Form and accompanying information, previously submitted to PADEP, to the January 2020 eDMR.

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for January 12, 17, 18, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for January 17, 18, 19, 24, 25, 26, the TDS, Total Nitrogen, Total Phosphorus analyses for January 1, 8, 15, 22, 29 and the Total Copper analysis for January 9 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for January 7 - 12, 15, 20 and 21 were deemed non-representative and were not included in the monthly calculations. PLEASE NOTE: On Jan 25, 2020, an SSO occurred adjacent to the VFSA Pothouse pump station. Per the requirements of VFSA's NPDES permit, PADEP and three downstream water plants were notified. I have attached a copy of the Non-Compliance Reporting Form and accompanying information, previously submitted to PADEP, to the January 2020 eDMR.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**02**	**28**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
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FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.4	8.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.6	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	392	526	lbs/day	***	7	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	19.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 99	***	lbs/day	***	< 1.7	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.80	1.03	lbs/day	***	.013	.018	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.89	8.32	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No Chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	63.1	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	435	612	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 2	23	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	< 239	303	lbs/day	***	< 4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
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FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10806	***	lbs/day	***	182	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	11086	***	lbs/day	***	187	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9157	***	lbs/day	***	154	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA REVISED 2020 PAGE 2 OF SUPPLEMENTAL LABORATORY ACCREDITATION FORM.pdf	Laboratory Accreditation Form	2020-03-27T15:03:09-04:00	
VFSA FEB 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-03-27T15:00:09-04:00	
VFSA FEB 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-03-27T15:00:35-04:00	
VFSA FEB 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-03-27T15:01:37-04:00	
VFSA FEB 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-03-27T14:57:34-04:00	
VFSA FEB 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-03-27T15:01:03-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for February 9, 14, 15, 16, 21, 22, 23, 28, 29, the FINAL Effluent Fecal coliform analyses for February 14, 15, 16, 21, 22, 23, 28, 29, the TDS, Total Nitrogen, Total Phosphorus analyses for February 5, 12, 19, 26, the Total Copper analysis for February 7, 19 and the Raw Influent and Final Effluent Total Suspended Solids analyses for February 14, 15, and 16 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for February 22 was deemed non-representative and was not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**03**	**27**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.0	8.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.8	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	229	305	lbs/day	***	4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	14.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 56	***	lbs/day	***	< 1.0	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.007	.007	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.65	9.06	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	63.2	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	479	532	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 2	45	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	< 204	312	lbs/day	***	< 4	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	9915	***	lbs/day	***	174	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	10092	***	lbs/day	***	176	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9101	***	lbs/day	***	159	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA 2020 Stormwater Inspection Form - PADEP.pdf	Stormwater Annual Inspection Report	2020-04-27T12:38:19-04:00	
VFSA MAR 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-04-27T12:35:08-04:00	
VFSA MAR 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-04-27T12:37:16-04:00	
VFSA MAR 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-04-27T12:37:41-04:00	
VFSA MAR 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-04-28T09:07:23-04:00	
VFSA MAR 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-04-27T12:35:34-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for March 15, 20, 21, 22, 27, 28, the FINAL Effluent Fecal coliform analyses for March 20, 21, 22, 27, 28, 29, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for March 4, 11, 18, 2 and the FINAL Effluent Total Copper analysis for March 4 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**04**	**28**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.7	8.8	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.9	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	318	463	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	15.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 45	***	lbs/day	***	< .6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.42	.42	lbs/day	***	.0072	.0072	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	7.659	12.38	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	53	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	438	528	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 2	37	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 90%SAMPLES		1/day	Grab
	Facility Parameter Comments	Per the "90% Rule", the fecal coliform analysis result of 1,733 for April 14, 2020, is not being reported as the Instantaneous Maximum (Concentration 3) value, instead, the next highest daily result of 37 has been reported.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	266	386	lbs/day	***	4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	10415	***	lbs/day	***	154	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	11893	***	lbs/day	***	174	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	9607	***	lbs/day	***	143	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA APR 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-05-27T09:17:27-04:00	
VFSA APR 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-05-27T09:16:15-04:00	
VFSA APR 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-05-27T09:16:51-04:00	
VFSA APR 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-05-27T09:16:35-04:00	
VFSA APR 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-05-27T09:17:05-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for April 12, 17, 18, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for April 17, 18, 19, 24, 25, 26, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for April 1, 8, 15, 22, 29 and the FINAL Effluent Total Copper analysis for April 8 were performed by ALS Environmental, PA Lab ID 22-293. Raw Influent BOD, CBOD and TSS samples for April 2, 3, and 17 were determined to be non-representative and were not included in the monthly data. Per the "90% Rule", the fecal coliform analysis result of 1,733 for April 14, 2020, is not being reported as the Instantaneous Maximum (Concentration 3) value, instead, the next highest daily result of 37 has been reported.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**05**	**27**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.0	8.7	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	331	432	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	19.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 33	***	lbs/day	***	< .6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.40	.40	lbs/day	***	.0057	.0057	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	7.080	9.57	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	< .02	< .02	mg/L	1/day	Grab
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	72.8	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	472	556	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (May-Sep)	Sample Measurement	***	***	***	***	< 3	305	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	282	345	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8985	***	lbs/day	***	151	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	9092	***	lbs/day	***	152	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8595	***	lbs/day	***	144	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Valley Forge Sewer Authority PADEP Non Compliance Form for June 4 2020.pdf	Other	2020-06-26T13:52:23-04:00	Non-Compliance Reporting Form for June 4, 2020.
VFSA MAY 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-06-26T13:43:43-04:00	
VFSA MAY 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-06-26T13:43:56-04:00	
VFSA MAY 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-06-26T13:44:11-04:00	
VFSA MAY 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-06-26T13:44:25-04:00	
VFSA MAY 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-06-26T13:44:41-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for May 10, 15, 16, 17, 22, 23, 25, 29, 30, the FINAL Effluent Fecal coliform analyses for May 15, 16, 17, 22, 23, 24, 29, 30, 31, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for May 6, 13, 20, 27 and the FINAL Effluent Total Copper analysis for May 6 were performed by ALS Environmental, PA Lab ID 22-293. Also, due to a miscommunication between VFSA and ALS Labs, the Raw Influent CBOD/BOD and Final Effluent CBOD sample analyses for May 25 and May 29 were started after the holding time had expired. Note, as previously reported to PADEP by voice message and email, a violation of the Instantaneous Maximum fecal coliform limit occurred on June 4, 2020. Although this Non-Compliance occurred in June 2020, the Non-Compliance Reporting Form has been included with the May eDMR reports.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**06**	**26**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.3	8.0	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.3	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
	Facility Parameter Comments	As previously reported to PADEP, there is no final effluent pH reported for June 4, 2020. This is a result of the power outage experienced June 3, 2020 - June 4, 2020, due to extreme local weather conditions June 3, 2020.								
Total Suspended Solids (00530)	Sample Measurement	541	687	lbs/day	***	10	12	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	21.1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 55	***	lbs/day	***	< 1.0	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	6.6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.90	.90	lbs/day	***	.016	.016	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.27	7.6	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
	Facility Parameter Comments	Final effluent flow for 6-3-20 has been estimated. This occurred due to the power outage experienced from June 3, 2020 - June 4, 2020 as a result of extreme local weather conditions June 3, 2020.								
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	68.5	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
	Facility Parameter Comments	There is no final effluent minimum UVT value reported for June 3, 2020. This is a result of the power outage experienced June 3, 2020 - June 4, 2020, due to extreme local weather conditions June 3, 2020.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	506	562	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (May-Sep)	Sample Measurement	***	***	***	***	> 4	> 2420	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
	Facility Parameter Comments	As previously reported to PADEP, the final effluent fecal coliform concentration on June 4, 2020, exceeded the Instantaneous Maximum . This was due to the ongoing effects of the power outage of June 3, 2020 - June 4, 2020 due to local extreme weather on June 3, 2020.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 337	467	lbs/day	***	< 6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8106	***	lbs/day	***	154	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Raw influent data from 6-19-20 has been determined to be non-representative and was not included in the calculations.								
Total Suspended Solids (00530)	Sample Measurement	8463	***	lbs/day	***	162	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	Raw influent data from 6-19-20 has been determined to be non-representative and was not included in the calculations.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7737	***	lbs/day	***	147	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	Raw influent data from 6-19-20 has been determined to be non-representative and was not included in the calculations.								
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JUN 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-07-22T07:49:03-04:00	
VFSA JUN 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-07-22T07:49:48-04:00	
VFSA JUN 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-07-22T07:50:06-04:00	
VFSA JUNE 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-07-22T07:50:26-04:00	
VFSA JUN 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-07-22T07:49:20-04:00	
Valley Forge Sewer Authority PADEP Fecal coliform Non Compliance Form for June 2020.pdf	Other	2020-07-22T07:51:51-04:00	Fecal coliform non-compliance reporting form for June 4, 2020.
VFSA June 2020 Final Effluent pH Non Compliance Report.pdf	Other	2020-07-22T07:52:48-04:00	VFSA June 2020 final effluent pH Non-Compliance Report

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
116792	06/01/2020	06/30/2020	Fecal Coliform	Instantaneous Maximum	>2420	1000	No./100 ml	Final Effluent (001)	Power outage	Other	Please see the Non-Compliance report previously submitted to PADEP.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
116794	Sample collection less frequent than required					There was no final effluent pH value reported for June 4, 2020. This was due to the ongoing effects of the power outage of June 3, 2020 - June 4, 2020 which occurred as a result of extreme local weather conditions on June 3, 2020. Please see the Non-compliance report previously submitted to PADEP.

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for June 14, 19, 20, 21, 26, 27, the FINAL Effluent Fecal coliform analyses for June 19, 20, 21, 26, 27, 28, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for June 3, 10, 17, 24, and the FINAL Effluent Total Copper analysis for June 10 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for June 19 was deemed non-representative and was not included in the monthly calculations. Note, as previously reported to PADEP, a non-compliance of the Instantaneous Maximum fecal coliform limit and the final effluent pH sample (no sample result reported) occurred on June 4, 2020. Both of these non-compliances are attributed to the effects of the total plant power outage which occurred on June 3, 2020, due to extreme local weather conditions.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Richard Taylor	TELEPHONE		DATE		
				(610)	935-1553	2020	07	22
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	6.9	7.6	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.6	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	434	551	lbs/day	***	9	12	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	17.8	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 55	***	lbs/day	***	< 1.0	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.70	1.13	lbs/day	***	.0152	.024	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.86	10.04	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	39.6	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	525	572	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (May-Sep)	Sample Measurement	***	***	***	***	< 9	462	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	297	379	lbs/day	***	6	7	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8965	***	lbs/day	***	179	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	8853	***	lbs/day	***	176	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8631	***	lbs/day	***	173	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA JUL 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-08-24T13:49:25-04:00	
VFSA JUL 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-08-24T13:49:42-04:00	
VFSA JULY 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-08-24T13:50:39-04:00	
VFSA JUL 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-08-24T13:49:59-04:00	
VFSA JUL 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-08-24T13:50:21-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for July 17, 18, 19, 24, 25, the FINAL Effluent Fecal coliform analyses for July 17, 18, 19, 24, 25, 26, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for July 1, 8, 15, 22, 29, and the FINAL Effluent Total Copper analyses for July 8 and 22 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for July 10, 11 and 18 was deemed non-representative and was not included in the monthly calculations.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**08**	**24**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	6.7	7.8	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	361	806	lbs/day	***	5	9	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	< 14.1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 54	***	lbs/day	***	< .8	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.30	.30	lbs/day	***	.0051	.0051	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	6.882	16.416	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	49.1	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	449	526	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (May-Sep)	Sample Measurement	***	***	***	***	> 10	> 2420	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 299	< 514	lbs/day	***	< 5	< 6	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	7596	***	lbs/day	***	135	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	8938	***	lbs/day	***	158	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7595	***	lbs/day	***	135	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA AUG 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-09-21T10:20:21-04:00	
VFSA AUG 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-09-21T10:18:33-04:00	
VFSA AUG 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-09-21T10:19:02-04:00	
VFSA AUG 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-09-21T10:19:54-04:00	
VFSA AUG 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-09-21T10:23:39-04:00	
VFSA Aug 2020 Non-compliance Report.pdf	Other	2020-09-21T10:30:19-04:00	VFSA Aug Noncompliance report previously submitted to PADEP and DRBC.

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
121579	08/01/2020	08/31/2020	Fecal Coliform	Instantaneous Maximum	>2420	1000	No./100 ml	Final Effluent (001)			

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments
121580	08/04/2020	08/04/2020	08/04/2020 12:08:00	Sewage	Manhole adjacent to Pothouse Pump Station	152019(Est)	6(Est)	Caines Creek	None Observed	Other	08/04/2020 01:08:00	Heavy Rain Event - Tropical Storm Isaisis (See report previously submitted).
121582	08/04/2020	08/05/2020	08/04/2020 12:08:00	Sewage	Manholes adjacent to VFSA Admin Building	77640(Est)	14.5(Est)	Tributary to Schuylkill River	None Observed	Other	08/04/2020 01:08:00	Heavy Rain Event - Tropical Storm Isaisis. See previously submitted Noncompliance report.

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for August 14, 15, 16, 21, 22, 23, 28, 29, the FINAL Effluent Fecal coliform analyses for August 14, 15, 16, 21, 22, 23, 28, 29, 30, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for August 5, 12, 19, 26, and the FINAL Effluent Total Copper analysis for August 12 were performed by ALS Environmental, PA Lab ID 22-293. Also, the raw influent TSS, BOD and CBOD data for August 1, 2 and 28 was deemed non-representative and was not included in the monthly calculations. PLEASE NOTE: As previously reported to PADEP, a non-compliance of the Instantaneous Maximum fecal coliform limit occurred on August 5, 2020. This non-compliance event is attributed to the effects of the total plant power outage which occurred on August 4-5, 2020, due to extreme weather conditions. Also, on August 4-5, 2020, two SSOs occurred, one adjacent to the VFSA Pothouse pump station (August 4 only) and one on the lane adjacent to the VFSA Admin building (August 4-5). Per the requirements of VFSA's NPDES permit, PADEP and downstream water plants were notified. A copy of the Non-Compliance Reporting Form and accompanying information was previously submitted to PADEP and DRBC.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**09**	**21**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	09	01	TO	2020	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2020**
DMR Effective To: **09/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.4	7.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.2	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	239	263	lbs/day	***	5	6	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	15.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 25	***	lbs/day	***	< .5	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	6	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.20	.20	lbs/day	***	.0036	.0036	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.51	6.29	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	62.2	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	506	566	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (May-Sep)	Sample Measurement	***	***	***	***	< 5	32	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 201	247	lbs/day	***	< 4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	09	01	TO	2020	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2020**
DMR Effective To: **09/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	7987	***	lbs/day	***	169	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	8683	***	lbs/day	***	184	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	6823	***	lbs/day	***	144	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA SEP 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-10-23T08:58:03-04:00	
VFSA SEP 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-10-23T08:58:21-04:00	
VFSA SEP 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-10-23T08:58:38-04:00	
VFSA SEP 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-10-23T08:57:43-04:00	
VFSA SEP 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-10-23T08:59:05-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for September, 6, 11, 12, 20, 25, 26, the FINAL Effluent Fecal coliform analyses for September 11, 12, 13, 25, 26, 27, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for September 9, 16, 23, and the FINAL Effluent Total Copper analysis for September 2 were performed by ALS Environmental, PA Lab ID 22-293.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**10**	**23**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.6	8.2	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	8.1	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	272	371	lbs/day	***	6	8	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	< 15.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 26	***	lbs/day	***	< .6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	614 Avg Mo	***		***	6.3 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	7.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.20	.20	lbs/day	***	.005	.005	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.36	7.51	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	55.8	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
	Facility Parameter Comments	Due to computer malfunctions, UVT minimum values for Oct 3 and Oct 31 were not reported.								
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	483	538	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 5	136	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 90%SAMPLES		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 187	219	lbs/day	***	< 4	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	1535 Avg Mo	2302 Wkly Avg		***	16 Avg Mo	24 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
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ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	7534	***	lbs/day	***	161	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	8001	***	lbs/day	***	172	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7077	***	lbs/day	***	150	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA OCT 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-11-20T12:59:39-05:00	
VFSA OCT 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-11-20T12:59:54-05:00	
VFSA OCT 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-11-20T12:59:02-05:00	
VFSA OCT 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-11-20T12:59:18-05:00	
VFSA OCT 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-11-20T13:00:12-05:00	
VFSA Missed Fecal Letter Oct 30 2020 - ALS.pdf	Other	2020-11-20T13:01:23-05:00	Explanation letter by commercial laboratory for missed final effluent fecal coliform sample on Oct 30 2020

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
125323	Sample collection less frequent than required					As previously reported to PADEP, a non-compliance for sample frequency of final effluent fecal coliform sampling occurred on October 30, 2020 when the commercial laboratory performing the analysis for that day failed to collect the sample at the treatment plant. The commercial laboratory has provided a detailed letter of explanation of the event which is being included with this eDMR report.

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for October 11, 16, 17, 18, 23, 24, 25, 30, the FINAL Effluent Fecal coliform analyses for October 16, 17, 18, 23, 24, 25, 31, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for October 1, 7, 14, 21, 28, and the FINAL Effluent Total Copper analysis for October 21 were performed by ALS Environmental, PA Lab ID 22-293. PLEASE NOTE: As previously reported to PADEP, a non-compliance for sample frequency of final effluent fecal coliform sampling occurred on October 30, 2020 when the commercial laboratory performing the analysis for that day failed to collect the sample at the treatment plant. The commercial laboratory has provided a detailed letter of explanation of the event which is being included with this eDMR report. Also, the Raw Influent CBOD/BOD and Final effluent CBOD samples and the October 25 Final effluent Fecal coliform samples were analyzed out of holding time due to a miscommunication within the commercial laboratory performing the analyses on that day. Although these samples were picked up by the commercial laboratory correctly, they were not transported to their laboratory in time to begin the analyses within the holding times. The October 24, 2020, Raw Influent CBOD/BOD and Final effluent CBOD and fecal coliform results have been qualified to note the holding time issue. Finally, the October 25, 2020, Raw Influent CBOD/BOD results have been deemed non-representative and have been excluded from the monthly report.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2020**	**11**	**20**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.0	8.5	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.1	***	7.8	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	201	202	lbs/day	***	4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	12.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 42	***	lbs/day	***	< .7	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	5.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.21	.21	lbs/day	***	.0044	.0044	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	5.84	10.71	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	43.9	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	475	570	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 4	52	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 90%SAMPLES		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	207	210	lbs/day	***	4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8064	***	lbs/day	***	155	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Data for 11-30-20 was deemed non representative and was not included in the calculations.								
Total Suspended Solids (00530)	Sample Measurement	8494	***	lbs/day	***	163	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	Data for 11-30-20 was deemed non representative and was not included in the calculations.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	7233	***	lbs/day	***	139	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
	Facility Parameter Comments	Data for 11-30-20 was deemed non representative and was not included in the calculations.								
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA NOV 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-12-28T18:25:54-05:00	
VFSA NOV 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2020-12-23T13:43:05-05:00	
VFSA NOV 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2020-12-23T13:42:18-05:00	
VFSA NOV 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2020-12-23T13:42:32-05:00	
VFSA NOV 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2020-12-23T13:42:49-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for November 1, 6, 7, 15, 20, 21, 22, 27, 28, 29, the FINAL Effluent Fecal coliform analyses for November 6, 7, 8, 20, 21, 22, 27, 28, 29, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for November 4, 11, 18, 24, the FINAL Effluent Total Copper analysis for November 8 and the 2020 Final Effluent Priority Pollutant analyses (November 9 -10) were performed by ALS Environmental, PA Lab ID 22-293. The Whole Effluent Toxicity Testing analyses performed the week of November 10 -17 were subcontracted to Environmental Resource management, Inc , PADEP Lab ID 68-04227, by ALS Environmental, PA Lab ID 22-293. Please note, the Raw Influent CBOD/BOD and TSS results for 11-30-20 have been deemed non-representative and have been excluded from the monthly report. Finally, at the time of submission of this report on 12-23-20, I did not have the data from VFSA's biosolids hauler/applier to complete the VFSA November 2020 Sewage Sludge/Biosolids Production and Disposal supplemental report. I will complete and submit this report as soon as possible upon receiving the data. Enclosed with this revision is the VFSA Nov 2020 Sewage Sludge/Biosolids Production and Disposal form.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
taylorr	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	**(610)**	**935-1553**	**2020**	**12**	**28**
SUBMITTED BY FULL NAME			AREA CODE	NUMBER	YEAR	MO	DAY

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FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

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PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.9	8.9	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Inst Min	Monitor & Report Avg Mo	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.0	***	7.8	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Inst Min	***	9.0 IMAX		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	294	358	lbs/day	***	5	5	mg/L	1/day	24-Hr Composite
	Permit Requirement	2939 Avg Mo	4410 Wkly Avg		***	30 Avg Mo	45 Wkly Avg		1/day	24-Hr Composite
Total Nitrogen (00600)	Sample Measurement	***	***	***	***	13.7	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< 45	***	lbs/day	***	< .6	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	1228 Avg Mo	***		***	12.5 Avg Mo	***		1/day	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	4.4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Copper, Total (01042)	Sample Measurement	.20	.20	lbs/day	***	.0031	.0031	mg/L	1/month	24-Hr Composite
	Permit Requirement	2.65 Avg Mo	4.21 Daily Max		***	.027 Avg Mo	.043 Daily Max		1/month	24-Hr Composite
Flow (50050)	Sample Measurement	7.828	15.940	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Recorded
Total Residual Chlorine (TRC) (50060)	Sample Measurement	***	***	***	***	GG	GG	mg/L		
	Permit Requirement	***	***		***	.42 Avg Mo	.52 IMAX		1/day	Grab
	Facility Parameter Comments	No chlorine usage during this time period.								
Ultraviolet light transmittance (51043)	Sample Measurement	***	***	***	48.5	***	***	%	1/day	Measured
	Permit Requirement	***	***		Monitor & Report Daily Min	***	***		1/day	Measured
Total Dissolved Solids (70295)	Sample Measurement	***	***	***	***	385	502	mg/L	1/week	24-Hr Composite
	Permit Requirement	***	***		***	1000 Avg Mo	2000 Daily Max		1/week	24-Hr Composite
Fecal Coliform (74055) (Oct-Apr)	Sample Measurement	***	***	***	***	< 7	210	No./100 ml	1/day	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 90%SAMPLES		1/day	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	< 236	307	lbs/day	***	< 4	4	mg/L	1/day	24-Hr Composite
	Permit Requirement	1918 Avg Mo	3069 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/day	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Raw Sewage Influent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	8646	***	lbs/day	***	126	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	9071	***	lbs/day	***	129	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	8345	***	lbs/day	***	121	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/day	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA DEC 2020 Hauled In Municipal Wastes Form.xls	Hauled-In Municipal Waste Form	2021-01-22T09:14:17-05:00	
VFSA DEC 2020 SEWAGE SLUDGE BIOSOLIDS Form.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-22T09:14:56-05:00	
VFSA DEC 2020 HAULED IN RESIDUAL WASTE FORM.xls	Hauled-In Residual Waste Form	2021-01-22T09:14:33-05:00	
VFSA DEC 2020 Daily Effluent.xlsx	Daily Effluent Monitoring Form	2021-01-22T09:14:01-05:00	
VFSA DEC 2020 INFLUENT AND PROCESS CONTROL SUPPLEMENTAL FORM.xls	Influent and Process Control Form	2021-01-22T09:13:44-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The RAW Influent CBOD and BOD and FINAL Effluent CBOD analyses for December 4, 5, 6, 11, 12, 13, 19, the FINAL Effluent Fecal coliform analyses for December 4, 5, 6, 11, 12, 13, 18, 19, 20, the FINAL Effluent TDS, Total Nitrogen, Total Phosphorus analyses for December 2, 9, 16, 22, 29 and the FINAL Effluent Total Copper analysis for December 2 were performed by ALS Environmental, PA Lab ID 22-293. Please note, the Raw Influent CBOD/BOD and TSS results for December 11 and December 27 have been deemed non-representative and have been excluded from the monthly report.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	TELEPHONE		DATE		
			(610)	**935-1553**	**2021**	**01**	**22**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
PCBs Wet Weather Analysis (51556)	Sample Measurement	***	***	***	***	***	752.338	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		1/year	24-Hr Composite
PCBs Dry Weather Analysis (51557)	Sample Measurement	***	***	***	***	***	936.34	pg/L	1/year	24-Hr Composite
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		1/year	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **VALLEY FORGE SEW AUTH**
ADDRESS: **333 PAWLING RD, PHOENIXVILLE PA, 19460-2656**
FACILITY: **VALLEY FORGE SEWER AUTHORITY WWTP**
LOCATION: **333 PAWLINGS RD, PHOENIXVILLE PA, 19460**
STAGE: **Final Effluent**

PA0043974	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	12	31

Reporting Frequency: **Annually**
DMR Effective From: **01/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **12/31/2024**
Permit Application Due: **07/04/2024**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Chemical Oxygen Demand (COD) (00340)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Oil and Grease (00556)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Kjeldahl Nitrogen (00625)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Total Phosphorus (00665)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Iron, Dissolved (01046)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	No./100 ml		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		***	***	Monitor & Report Daily Max		Upon Request	Grab
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
VFSA 2020 Stormwater Inspection Form - PADEP.pdf	Stormwater Annual Inspection Report	2021-01-22T10:45:07-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
The Final Effluent Dry and Wet Weather PCB analyses were performed by SGS North America Inc, 5500 Business Drive, Wilmington, NC 28405, PA Lab ID: 68-03675.	Martin F. Goldberg	194283	(610)-935-1553

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Richard Taylor**	**(610)**	**935-1553**	**2021**	**01**	**22**
taylorr		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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EXHIBIT N5

DISCHARGE MONITORING REPORTS
EAST GOSHEN MUNICIPAL AUTHORITY
WASTEWATER TREATMENT PLANT

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	01/01/2016-01/31/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.70	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.31	***	7.75	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	11.2	22.2	lbs/day	***	4	6	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	8.09	***	lbs/day	***	2.58	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.40	***	lbs/day	***	.12	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.391	.837	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	4	90	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	12.4	18.8	lbs/day	***	3.7	5.2	mg/L	24-Hr Composite	1/week
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	761	***	lbs/day	***	192	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	629	***	lbs/day	***	158	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP Jan 26 2016 Final Effluent DMR Data.pdf	Laboratory Analytical Report	2016-02-22T22:04:20-05:00	
Cryptographic Hash Value of File (SHA-512)	6815AB94C3EE49795367CDF6FD649C0D3D82F3A178B808C36CF7D77320869C85B3200C41D85C9CD27D9182E05DE7CB9F8C3636C1CA1241E0629D6D317CA0A227		
RCSTP Jan 26 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-02-22T22:04:46-05:00	
Cryptographic Hash Value of File (SHA-512)	85AD53D3E846CBECA1769FA82554CC1052E19C214B257E9B7A8ECAAAA9B012BD0C5BD538F92D21E75575F4AC693FB959079E11DA60C259966579F89E59E84BC3		
RCSTP Jan 28 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-02-22T22:05:14-05:00	
Cryptographic Hash Value of File (SHA-512)	7730883272CA8A756034E44E7552FFBE79D3BE492C46532A7E0A76B56E385F07C02779996D8F65C45A96499E40BECAE3719DABD8F08962A12CF73D745487B11F		
RCSTP Jan 29 2016 Influent DMR Samples.pdf	Laboratory Analytical Report	2016-02-22T22:05:46-05:00	
Cryptographic Hash Value of File (SHA-512)	AC55D49AC0DBD142880CBE46C14164998491DF9670836D4E2023BD23E69A9F624DB4144DB055F2F0E8359E7615C38A70B529906B7E158178FCD1973156F98266		
RCSTP Jan 14 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-02-22T22:02:15-05:00	
Cryptographic Hash Value of File (SHA-512)	ECD144F1F3E348A01633C29251D1689D30D54AF37076A3B242D00FA34AEB77E36C6B0BBB97353E294F8DFB4F4A66E1E215D6AC255AA5C1A47484853CBE56A231		
RCSTP Jan 12 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-02-22T22:01:16-05:00	
Cryptographic Hash Value of File (SHA-512)	D98692796F883B18266DAA6D17474F7492EA48C2C42B6011DFD08DBD7089718FFC2CC824277C5F633005D7248D18307350EB9C00F24EB7CE6B7AF80BEFFC6526		
RCSTP Jan 12 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-02-22T22:01:43-05:00	
Cryptographic Hash Value of File (SHA-512)	DD0D9A3EF3146AFC71E853184C4AFF2C8E9D4C5FE23C9D80C9D22F5635C624AFA36EAA1CF720D747FFA18E13426802816BA1148538B7F4F92B366E6F76FBB911		
RCSTP Jan 19 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-02-22T22:02:51-05:00	
Cryptographic Hash Value of File (SHA-512)	5690AD746D160A0875C8C7E638A6107BBC762DEEA3A39760427E2D6C0A926A19B2F9764E2D35A9A665C6516E5AC30E927205931EAA68C21C5DE5CC3675A18664		
RCSTP Jan 19 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-02-22T22:03:19-05:00	
Cryptographic Hash Value of File (SHA-512)	A929CA7BC6B1D141AC72C81DEBA8CC1886EB37765CE503B41034DA1E6B23FD3E5DFB6730A50190AE7338B8377EC87070BB476782AFDA719EA7C2BD3DDAE8E9C4		
RCSTP Jan 21 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-02-22T22:03:51-05:00	
Cryptographic Hash Value of File (SHA-512)	8B43361BC2C50DC64F11773984CE0AAB2B241A4F87907D34C865303F5E2D827FF04C52DE601C27842B801A717C4AFEF37DAB0C0C709C72566BFF14C66D904EAC		
Jan_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-02-22T21:57:41-05:00	
Cryptographic Hash Value of File (SHA-512)	0C454A962FA262A79C231AE567A9268A5CD0F6E66B70B768FDAE6D04C427BDA0B683D1F4B6E09E46CE84F158150E22B1FD5ADBC2B7DF464F97CB5C172B17028A		
RCSTP Jan 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-02-22T21:58:33-05:00	
Cryptographic Hash Value of File (SHA-512)	BBD4175195B1958DCE7C83452575C41E30B5E61FE3FD9300A1DD1CCAA0C7C76A225932199875763E1919929AF7BAF1D644BDDD45519BF369D4C37C9C1E656701		
RCSTP Jan 1 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-02-22T21:59:41-05:00	
Cryptographic Hash Value of File (SHA-512)	307063D0E9EAC4D5B2223F97C13BE20B60096CC6042778921559EC07BFDA332946175EA25118BE6ACD7B5B67D4828B7432C74C84B670A9B7FBD283C71373C08C		
RCSTP Jan 5 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-02-22T22:00:12-05:00	
Cryptographic Hash Value of File (SHA-512)	F2D445661416DFAD1BAC182635A72C8FD9ED4ABA229E7BCF0CF951DF389B909A46DC06D3D445F52EEBDC17ADF1545767CB71EA87F65B904FF53CE1E248CE505B		
RCSTP Jan 7 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-02-22T22:00:40-05:00	
Cryptographic Hash Value of File (SHA-512)	667D1B33C52DDDB10D38C1D65CFBBA5DD80345D8C41FC31489C6A95C8D1833C10844F9F6D38B5D7785DCE92373972161B8F2A57C360EA740D0AB1A439DE6CD53		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No permit exceedances during January 2016	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	2/22/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	02/01/2016-02/29/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.37	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.03	***	7.56	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	10.0	18.0	lbs/day	***	3	5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	16.3	***	lbs/day	***	4.18	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.65	***	lbs/day	***	.16	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.485	.699	MGD	***	***	***	***	Metered	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	9.18	11.7	lbs/day	***	2.3	2.9	mg/L	24-Hr Composite	1/week
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	996	***	lbs/day	***	202	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	1058	***	lbs/day	***	213	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP Feb 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-03-26T20:13:26-04:00	
Cryptographic Hash Value of File (SHA-512)	34A6A6E511110ED900CAD7742B964E461638C8E40C66B41B35ED2729138BBCCCFAE1FB603EC78D38404DE73E5E56ACDC434EC59C82174D81962E41ACC9FA4542		
Feb_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-03-26T20:16:17-04:00	
Cryptographic Hash Value of File (SHA-512)	EE95F1B44DA42F2CE462EDE0CD2F35C751D8C462FDC7EBF8343FA63D07B4BDF35A5ABD424CF0CE60ABFA65EF07FD273C80C3A2CE42BF67B0D896E897E44C74CC		
RCSTP Feb 25 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-03-26T20:12:52-04:00	
Cryptographic Hash Value of File (SHA-512)	CE860F9D184011C278A7CBCA1A3AA9746856961045A17AA3D0E35086067591D034C1C9771050DEA328FD04E84F9E6CBE7009E719A92C19FA78CA918D84805211		
RCSTP Feb 23 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-03-26T20:12:26-04:00	
Cryptographic Hash Value of File (SHA-512)	82E87650FED4727B605A18A35731452F5D55C13E557B77DABFCC5D8603A5820BAD1EF1B58B8595B6DA038CDF27F0C1470D4E06F31438B5025BBC81C9713B9C46		
RCSTP Feb 16 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-03-26T20:10:50-04:00	
Cryptographic Hash Value of File (SHA-512)	7F9F37A8FFE40193E5329E75FA6D2CC67527F3795F1744376EB76716AA30AE94C3917CD0AA5E4520D900BE2F52FFE5FFFE7CB736B4BE5C55235232C5ACC0B2E6		
RCSTP Feb 18 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-03-26T20:11:24-04:00	
Cryptographic Hash Value of File (SHA-512)	00C445D94CF92A4B7ABA465854DC8F167BBAD8801D813FB59BE4AC20DCFA73C896FB5A4C3EA16E300FD4560C2BEFEBB9E7DF765440A599DD1F05A7DA8AC7CE06		
RCSTP Feb 12 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-03-26T20:09:00-04:00	
Cryptographic Hash Value of File (SHA-512)	25AD8B495A701B32320427F15582798239A680B0793BD62EA8033A99B4AD235D91082A6EA466682F3A4CAED37648BDF75F2078FF61CF62746F7AAE246B2AE8CE		
RCSTP Feb 9 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-03-26T20:08:14-04:00	
Cryptographic Hash Value of File (SHA-512)	D0466AD77CEC8730DE3DAF1B8510FB0826FFAF35C368CD09E60A62565D3A0D1B29F8B47E786D9940ED5C29212BF39770FC3DC482568E87079F42BB268DF5E402		
RCSTP Feb 9 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-03-26T20:07:46-04:00	
Cryptographic Hash Value of File (SHA-512)	AC2969C0D8FB170332831840EBBA2DDC164106EA739549AAEF09D72AAC19B00B14BA084132E1CEF05155EEF8BDD2C6944D03698493C578842CD1D5BFC0218B57		
RCSTP Feb 5 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-03-26T20:07:15-04:00	
Cryptographic Hash Value of File (SHA-512)	D0E06F20D33B6335B5D6725CBC15DA977033904599FEBDE4F59D13073EE32DB6EE7231A92193CAF6FFF2CD765FE25AB70316CCD484A8244B230DF5689F5FEC52		
RCSTP Feb 2 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-03-26T20:06:44-04:00	
Cryptographic Hash Value of File (SHA-512)	9430F9943A61AB14B993BB4F91C25CB16458C952692197CD903C407FDF1C791FA1AB305254E4F7EE9FFA4D4145FBD45ABC0BA84143419F7789B39794D1CBE826		
RCSTP Feb 2 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-03-26T20:06:16-04:00	
Cryptographic Hash Value of File (SHA-512)	BBD1FF5CF127DC928F6E4EDC067F1F5C16F211E662D3E73239BE15FC8FFAFA7B4B261CD4B1ADAD222D6337888129430F2246F33B40C44650CCFFC0BC66B5CCD6		
RCSTP Feb 23 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-03-26T20:11:57-04:00	
Cryptographic Hash Value of File (SHA-512)	4CE681DEC11FCAE097A17A054C352042894A47189D0CB9C489213E0B655A8043285A7465972AFA2782CF13380F52CBAB1E79ABDA0ED6DDF2691C7FB60974D15B		
RCSTP Feb 16 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-03-26T20:10:04-04:00	
Cryptographic Hash Value of File (SHA-512)	84290539690890476DD435B19DF3E0B97188364EB2D0E3AFD5CA0605ED680823DA70362058F7F8FF1CAB0DA4222B7F24E15BB761365B6B8E93DD3EC0A49BB56E		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No exceedances of the permitted effluent discharge limitations during February 2016	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	3/26/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	03/01/2016-03/31/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.80	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.93	***	7.68	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	8.00	13.4	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	3.03	***	lbs/day	***	.92	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.71	***	lbs/day	***	.23	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.378	.519	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	8.54	10.3	lbs/day	***	2.7	3.5	mg/L	24-Hr Composite	1/week
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	637	***	lbs/day	***	157	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	881	***	lbs/day	***	215	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
Dewatered Sludge March 2016 7877 through 7886.pdf	Laboratory Analytical Report	2016-04-24T17:37:54-04:00	
Cryptographic Hash Value of File (SHA-512)	206F17F89157BA5C1F733E1D47A88D229D968CBE2A545C0BB8C17F736A9C8C25D7EE0D449BA6DE1109DA4957140783FA59339199A3D1F12E98621DA963C34454		
March_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-04-24T17:38:28-04:00	
Cryptographic Hash Value of File (SHA-512)	3CB5FA6F6DF6A7949DCFC3A5CC869089E8EFF4A80060ACC0E73F87AD1A6851794C4397935873A033A01FCC04BD95883929C2FB5987B80C93C474D7AA9BAD4138		
RCSTP March 1 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-04-24T17:38:55-04:00	
Cryptographic Hash Value of File (SHA-512)	7AFCB2AA7F49BF4E08173217E405F375B6F5D8F41F185759D8901A32DC4CBB661F0A00BFBCF111A85154EF779C9018FED18C2AE835748B4BB5F85BC909A4635C		
RCSTP March 1 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-04-24T17:39:32-04:00	
Cryptographic Hash Value of File (SHA-512)	9BA82F1A88B75CBD01B5C316E5BB9B1282166CEAF19646B9014ED374E828D04C67B984124D581506ADD17143B7474F5D130543C4710FD1806B489E6987FAEEE4		
RCSTP March 3 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-04-24T17:43:16-04:00	
Cryptographic Hash Value of File (SHA-512)	9F76604B31E9BB5AD7B90E2A149187210B76ADF84355A074375A7122B0140DF16312CD5D1E6CD22307354AB08F71D0417455076F8F8EECA61D3BD35E13F5722E		
RCSTP March 8 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-04-24T17:43:43-04:00	
Cryptographic Hash Value of File (SHA-512)	20162D27162B4ED26428ACACA828D6EDD86D09F8B97EB66EECA9E3816806CA1EA9001BB5540FF2254E7415C53F3FC74C927D6E351B288FF01D6788F2D9E415CB		
RCSTP March 10 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-04-24T17:44:11-04:00	
Cryptographic Hash Value of File (SHA-512)	B2F59D8E2AAC12717CAC9997081D6939EB28DB8322DC4ECB6C58689BF280EF97839E2EF611033E5EAE456838888D7ECB6834D932C722B29F6FFF270114C54213		
RCSTP March 15 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-04-24T17:44:41-04:00	
Cryptographic Hash Value of File (SHA-512)	D869F169BEB1FCBA1BB9EB12D6DEAA8B3F866F3E593956DCAB86E96389983C46B28B825FF19A63A4BCF7A7E89CAF0AE6B63151F3C2D8E6FC55F05F1BEF8E2230		
RCSTP March 15 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-04-24T17:45:07-04:00	
Cryptographic Hash Value of File (SHA-512)	3AC308D950A3AAA613E4C7C7B530FFE9F30BFE0E8D8E75A17E8EEBE1ECCAD33F093FC70744901E973B85445D5A546E05E5F580775980AA6AE2B0119A4C3D2449		
RCSTP March 17 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-04-24T17:45:32-04:00	
Cryptographic Hash Value of File (SHA-512)	2F2F8FC7A49C14388ADDEF6A33EA083855F90E0FF0E9FA7547B3C1A6AD38243588F9BED70D57E3CBAAE081A2E94EA555C944B2F125445668831EEEAE6DDAC6B6		
RCSTP March 22 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-04-24T17:45:58-04:00	
Cryptographic Hash Value of File (SHA-512)	90ABC071CF3245A0A4F1EAFBB67076A5D180A11174502E1377BD9E8A9530187267B5C670409BFF04AAEF15E64E43E8552B122B2337C79326416E9963909DFA6E		
RCSTP March 22 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-04-24T17:46:24-04:00	
Cryptographic Hash Value of File (SHA-512)	4A400302D8A9599FF11C2C971A9A3BADBDB3726D8EFC47C1438E1ED10F1526199B837E191C1DDDDA47AA56EA8E1B4987B2D75EA47B5EF4FD5E291F2BCCE26DF0		
RCSTP March 24 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-04-24T17:46:59-04:00	
Cryptographic Hash Value of File (SHA-512)	6B4144F785B9087FF32C769CF8742A8565DE7C0C8625162D2EC0725753E2278C76ABFD07C1EA6909BDF76F41BBE41A4A3F4E9A7D0176DEC782FFE7300126D83F		
RCSTP March 29 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-04-24T17:47:22-04:00	
Cryptographic Hash Value of File (SHA-512)	87150DB0E2F75CFB72B7491972598628796BF0FBE862FD9120F5ABEB2C9EE25C80E6695F701E6A8284A57726F46201EBCBFA62995CDF78BBE9C2EC14ECD9636A		
RCSTP March 29 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-04-24T17:47:46-04:00	
Cryptographic Hash Value of File (SHA-512)	7EB2118678FED1EE82EC7FDABE18258550E2294AF096BAA256628A4C4AD90E7859899B2D57BFB976CD649B08E0AC6AE0E34ACE5396891F5D9A09F2A8F9D8E7E3		
RCSTP March 31 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-04-24T17:48:16-04:00	
Cryptographic Hash Value of File (SHA-512)	AB77C2D62753D0964ED48430E248D5A13A7170B51F248BA55ECC39C3C96E2A5F342D27D815C251CFF46726419FDCDC423D389FA8E008E88103EEC570FE58392A		
RCSTP March 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-04-24T17:48:54-04:00	
Cryptographic Hash Value of File (SHA-512)	FFFB9360A53631CFE80E6FC74895E309233F9DAE28898520360BDA9A1239467EBC4C52D1A1757AE452F8DC41D4DB44A5EA4E3B8D66FA23924EBC4F0F8FABC82A		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
There were no exceedances of the permitted effluent limitations during March 2016	Sctt A. Towler	T0390	4844014198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	4/24/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	04/01/2016-04/30/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.30	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	6.72	***	7.62	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	10.7	18.6	lbs/day	***	4	6	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	1.47	***	lbs/day	***	.55	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.34	***	lbs/day	***	.13	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.331	.402	MGD	***	***	***	***	Metered	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	4	12	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	5.30	6.02	lbs/day	***	2.0	2.0	mg/L	24-Hr Composite	1/week
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	543	***	lbs/day	***	143	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	387	***	lbs/day	***	102	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
April_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-05-28T13:26:03-04:00	
Cryptographic Hash Value of File (SHA-512)	0956C983D01AD818A73D90F60A76800B41BEE6E8E6A685CE37804AAADAC9CA11612BD3E3F2816E20C85782FF206015DF6B04708D53C6E79794457DF85F5D59B6		
RCSTP April 5 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-05-28T13:26:33-04:00	
Cryptographic Hash Value of File (SHA-512)	C13DD5EDEF438169D5CB3B584C62EF3FC576B2404FD73BD652976F13BA76CE0E714A80BFBC44F239E905A7A33542D96C75C6C78E6FE4B05736F67AFCFE51B5D7		
RCSTP April 14 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-05-28T13:29:02-04:00	
Cryptographic Hash Value of File (SHA-512)	2626AC402C0B1D6265C9ACFC43AFBBFE230CAD47893AFA10A75D879F88280FA6D44EC62CB5CBF07FCE8EA52167E74B50929E57C4709B1D1C456524DF86DFA6F4		
RCSTP April 19 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-05-28T13:29:28-04:00	
Cryptographic Hash Value of File (SHA-512)	52E17D0FAFEDADB08C4AD1AE0D835B50C97FA31C2AE6620FA6CF69FFE8901F550BE888A6D7FB8C8910286ED78A23438F0885920DE3E4A2183D8C702A4AF2D530		
RCSTP April 5 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-05-28T13:27:09-04:00	
Cryptographic Hash Value of File (SHA-512)	D6C965FFD7BEFCAE1EE38EBF12E02970BDCC765BF78F1BEAD3B9378D4E361DD836934D77BD3A7BC5CD89D78F04F3A25F4FFDA9783AC76750084BCDD3AFE31D3F		
RCSTP April 7 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-05-28T13:27:42-04:00	
Cryptographic Hash Value of File (SHA-512)	10F00F456C76C4035E69C19DDDE5C8CC7B8204A39CF1EB0861369B30D5074423E13CF005909DD18BB6AB9FEB1A4C7A0029117AFCC0234C2165251501DE882AEA		
RCSTP April 12 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-05-28T13:28:10-04:00	
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RCSTP April 12 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-05-28T13:28:38-04:00	
Cryptographic Hash Value of File (SHA-512)	4466EB052BD5A6AF71D566DEBE14594307F62857F616670B6F4490975E14563EC96D51956BEB80FEA2976E2A613417577BB5FF2077029169474F11B39BE336D5		
RCSTP April 19 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-05-28T13:29:52-04:00	
Cryptographic Hash Value of File (SHA-512)	6635705CE052B4EF0D3B106D6D113FC4F37BA976735082211BBB1AF957A36336EC4A7E507010F50C0E7606A4ABA8BC4EB91A981609FEAD58AEBE43936862FC9B		
RCSTP April 21 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-05-28T13:30:26-04:00	
Cryptographic Hash Value of File (SHA-512)	A26EC82741030AD6209DD7CE90B00BB8E53A473F1AB3A723063021D66F93F42D1B80ACC421F4EFEE471CF9A9C2A6F9C2A986D2B9EBB0BF2FB2F56CB06CEA4EB8		
RCSTP April 26 2016 Final Effluent and Influent DMR Samples.pdf	Laboratory Analytical Report	2016-05-28T13:30:59-04:00	
Cryptographic Hash Value of File (SHA-512)	D6F78A91FAEE6F6D9B3A56793BC257A36C8528696E5915A4ED335B38DF3A50964FDB2FB9E614106CF90E5B70DF85779975E8D213FB68D91E3200F63C7C6B8388		
RCSTP April 26 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-05-28T13:32:26-04:00	
Cryptographic Hash Value of File (SHA-512)	754E72FEB93F325403669FDA647237C8B3D45C47F80E3FC28010E0649366FD3D3A3B335F88295E42F9FBDE071E8AC8FE0801E2471962068D27B6FADFC15BDCD9		
RCSTP April 28 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-05-28T13:33:10-04:00	
Cryptographic Hash Value of File (SHA-512)	BBE57D084FBDDEBB21707BBB0DCEE1741DBBBEA005739C1B7E0F15FF3E1BD09FAF78A6167E9E8755DCEB3476CE021101744B04378AA6439CC24104611C42F80E		
RCSTP April 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-05-28T13:33:48-04:00	
Cryptographic Hash Value of File (SHA-512)	4BE7967F8D4840AE5AD8B4DECC9C70AF436A5920745977E219D378382867CFC6F29EB28B7CA852B761188E856FA5D9FD17969C95C9513C9B830E7C2684405978		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
There were no exceedances of the permitted discharge limitations during the month of April 2016	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	5/28/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	05/01/2016-05/31/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	8.32	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.16	***	7.63	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	13.6	21.7	lbs/day	***	5	8	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	1.24	***	lbs/day	***	.44	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.33	***	lbs/day	***	.12	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.340	480	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	4	12	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	654	9.62	lbs/day	***	2.4	3.3	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	607	***	lbs/day	***	154	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	581	***	lbs/day	***	149	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	Y
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
May_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-06-28T19:33:56-04:00	
Cryptographic Hash Value of File (SHA-512)	E619F6600A673A61AF06A8D15558F8D1D1A8434ECD9CC33CBE9D419541E32BFF9D2C195826459A90D1CECAB34C379F00BC321E5E0694750A02C3509CA13D4245		
RCSTP May 24 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-06-27T21:42:52-04:00	
Cryptographic Hash Value of File (SHA-512)	8500E0DC516662E41F856F8780484FD081BD8B72FFDCCABC4807E34862376752BCF8832533258F4D617636BE33F0DB77FBBB4172ACECD0A9E575B960ED6DE864		
RCSTP May 31 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-06-27T21:43:30-04:00	
Cryptographic Hash Value of File (SHA-512)	2258347466FDD17B410469DDBA3221B7244C6A6973C8B3079063B572C38367299829C7C8F8D4E01C22DBA2AF6FC93FA2837D2E8F87AE61DE9BF6306F385CBF05		
RCSTP May 31 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-06-27T21:44:01-04:00	
Cryptographic Hash Value of File (SHA-512)	54B68BE164EEBF9ECDEA8FC31A527F18496216A7971B01B1DD576A042ECE53FF62DADC07AA2E53B22E83B79906705B03A6AB1AD2B22CEA6C1CAF78420799E8BC		
RCSTP May 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-06-27T21:44:34-04:00	
Cryptographic Hash Value of File (SHA-512)	2C62FE1C4CE92C22D7C0ECF69E8EA6E1D0ECED6C8CE1EFAB73D5E2B9E17C7F6EC6C54E425E3D21E5F6A3E0422C3FDDEECA98E0D7C59FB9B68862921D40D17DA1		
RCSTP May 14 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-06-27T21:38:46-04:00	
Cryptographic Hash Value of File (SHA-512)	90A4EFA26F289553D6F59FC700F0CF507192B0FF27163E2DB541DF256A64C27A5667D94A263ECBD4BCDD1F304912956096B2A9C44D991F106D7B1C9043B5646A		
RCSTP May 24 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-06-27T21:42:17-04:00	
Cryptographic Hash Value of File (SHA-512)	6EC4875E2A22C36322C04B85E026452BCC4D002F77CE6AE3F56E0959604E94B85DD6B4B5D7A1FF7AC6B222678F22201E8962C79B3868B0295320D4AFF18D85A9		
RCSTP May 3 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-06-27T21:36:09-04:00	
Cryptographic Hash Value of File (SHA-512)	7EF4A12B329BACB5E98203C9330314DD46D7BEDFF4E5267CDC88B114AAF9E1D9828FC90F4CB136EE18B72A80A780852D6C5884F250C6D61C2199C181C841313B		
RCSTP May 3 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-06-27T21:36:35-04:00	
Cryptographic Hash Value of File (SHA-512)	3F85DCF7AD33A0052365F2250AA9F39B0AAD6425E1FA6BE593597B684DDBDE8872DC15444AC46ABB5336440207BA121C35D19A3DA495BC959B77BF3C41C704D9		
RCSTP May 6 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-06-27T21:37:09-04:00	
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RCSTP May 12 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-06-27T21:37:45-04:00	
Cryptographic Hash Value of File (SHA-512)	B0EB343410EE1514A917880295391E2F32867EE455C70196DB96A75884ECFF2ED01DB13C3AEC7A3F7186EE82B08B078FEE414FADD66E01C502AD6955784F42FD		
RCSTP May 14 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-06-27T21:38:15-04:00	
Cryptographic Hash Value of File (SHA-512)	90A4EFA26F289553D6F59FC700F0CF507192B0FF27163E2DB541DF256A64C27A5667D94A263ECBD4BCDD1F304912956096B2A9C44D991F106D7B1C9043B5646A		
RCSTP May 17 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-06-27T21:40:16-04:00	
Cryptographic Hash Value of File (SHA-512)	6CD395E4438E1C3035E3F81D41303CA1441FB47114CFDE5EE15D0639DD50D32CF4A699FC55AAFA57B730B59C3CA63D24804460B690B849B608E11BFAC065BDF4		
RCSTP May 17 2016 NPDES Renewal.pdf	Laboratory Analytical Report	2016-06-27T21:41:00-04:00	
Cryptographic Hash Value of File (SHA-512)	9418D3451B026525585C541798D6EC27B926C036F11E31AE5E8843DD7C329FBB6CCB86388A51B852B0C4A708210669CCEFD4138DDBC32ADA037384AE9AEF2306		
RCSTP May 17 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-06-27T21:41:25-04:00	
Cryptographic Hash Value of File (SHA-512)	6CD395E4438E1C3035E3F81D41303CA1441FB47114CFDE5EE15D0639DD50D32CF4A699FC55AAFA57B730B59C3CA63D24804460B690B849B608E11BFAC065BDF4		
RCSTP May 19 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-06-27T21:41:51-04:00	
Cryptographic Hash Value of File (SHA-512)	78AA6633D75E9010344D19B0C6CC45447640AA6B1FEF7B0D0F5454725309B6BDFC7E5E67BF59675CB4A388D0776C7AB359E2E1B0B33D98C278F9E234EB359898		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments
31935	05/01/2016	05/31/2016	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Average Monthly	654	62	lbs/day	001			

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	7/28/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	06/01/2016-06/30/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.09	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.17	***	7.66	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	6.70	12.4	lbs/day	***	4	5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	2.33	***	lbs/day	***	1.40	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.33	***	lbs/day	***	.22	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.236	.373	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	28	290	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	4.08	6.53	lbs/day	***	4	5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	1000	***	lbs/day	***	268	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	1029	***	lbs/day	***	284	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.09	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.17	***	7.66	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	3.9	5.3	lbs/day	***	4	5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	1.92	***	lbs/day	***	1.73	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.24	***	lbs/day	***	.22	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.1206	.1536	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	112	290	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	2.4	2.8	lbs/day	***	2.2	2.5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP June 7 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-07-28T21:50:34-04:00	
Cryptographic Hash Value of File (SHA-512)	949BC3F2FEA2852F44FC8BE9E86283E766C0A965819005A8FE429E57F3CEE2528A72093C05B8D858B5E6AA8994D5CE46B6A0972DF788C7B01508180DA1EAFC92		
RCSTP June 9 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-07-28T21:51:07-04:00	
Cryptographic Hash Value of File (SHA-512)	22B12A9C352627E55B58BC864545B2792EFFBE5C5F2D97B30615B23DF40BB943BACA652861ECB3747610A60683DC3DC36BAFBAEF4FC8028F57351273331AF3DA		
RCSTP June 22 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-07-28T21:53:45-04:00	
Cryptographic Hash Value of File (SHA-512)	12B586114584A4CB6B1E8C1D9B0E838C4AEAF62854309982FB9CA2F63B886D9F43A0857E52C2A6C5E45450DB8F8F2A445BA46784392B06CC0342AA898890227D		
RCSTP June 25 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-07-28T21:54:26-04:00	
Cryptographic Hash Value of File (SHA-512)	EEFE13BF4CCE5F487A9DC08F8623D99DBE01B9DC20DC88B35E06B8719A60C279249396EA6BC8EB5DCBA6424AC313A64C18DA276214B091CC2D2025AD5796EA44		
RCSTP June 2016 Outfall 002 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-07-28T21:49:32-04:00	
Cryptographic Hash Value of File (SHA-512)	4B14079ED671B06ED15725E03BBFAEB83553DF4DB93C912398686528655FEA40590C302C0A8A40255424D2877784BF42C48810B43AED6FB69E449E6CB77DEEF2		
RCSTP June 2 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-07-28T21:50:01-04:00	
Cryptographic Hash Value of File (SHA-512)	4EFEBB197329448FC9A1BC3841D157D6E18F8EFD409FA01C0B82DEDB3158C19A0497576A03296AD816CA8D4F884F49850B392F1C949AA068CE72797B9A8D5FC1		
RCSTP June 21 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-07-28T21:52:42-04:00	
Cryptographic Hash Value of File (SHA-512)	B5D6DB62B80A360FDDEC47914BCEA9EE44F4CEAD5B44BF2C006D6B9D6E763727B716EB0E9D5776975465387E68461010A86FC91FC72CF5337D2843CE139F9893		
RCSTP June 16 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-07-28T21:52:08-04:00	
Cryptographic Hash Value of File (SHA-512)	BE5B3F2E14C0FCE23A574DC21069B6B0133F6A04D60BDCEF8E256AFD5BFEAD57D8DB5CF498ABC19DA23F79D97DF05701B3EE65DA1C0BF1AF2C3572AD1D38F3CB		
RCSTP June 14 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-07-28T21:51:35-04:00	
Cryptographic Hash Value of File (SHA-512)	A25AD9006CF296F41DE4C9B6EEE691A55BE8FFAD05E60652B8432BEF0E0A9FE855295C575538F84EC636A1ADF1BE4C5FEC0998EF52A4C9509D2C7290A5BDB12F		
RCSTP June 21 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-07-28T21:53:16-04:00	
Cryptographic Hash Value of File (SHA-512)	465F2C99604CD2059A195018FD5DBF9E52727F628EAC2847944BE19CDFB59524F850E77282A11A04AE76604E53DB9A26F2AA52B0C403E67B93A99B56C7FE49ED		
RCSTP June 28 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-07-28T21:55:06-04:00	
Cryptographic Hash Value of File (SHA-512)	B863F6696BB209FE7E5F9DE711A6080018446B3BBA3400DAAA1C19EE8F555303104373A36AA73D6DBAC143BC835B7716B7E922750D798CB0B053AE45AE15F010		
RCSTP June 28 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-07-28T21:55:43-04:00	
Cryptographic Hash Value of File (SHA-512)	C73D1E7E9D25E00C7CED6DFA213A1B7F936C51F6BC87A3B03ADE023431EC0ECF3AC497195FD199FAF345541D397E395899F30FDADFA4F056B2C8E39DDF68DF64		
June_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-07-28T21:48:23-04:00	
Cryptographic Hash Value of File (SHA-512)	B6ABD87D4E4B04A51C914DE46BE9A4F35D59722CBE93D303450D1716C667C5B865F9C7929660573ADA0D00375D5A3D8EA52DD1889DA1FF6B323BB8A190B7E09D		
RCSTP June 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-07-28T21:48:54-04:00	
Cryptographic Hash Value of File (SHA-512)	5C617A37D0407AE7FAB00DD3EDE7C12B1CCD0C20B99E0D7BCE812AB566BA7CDAA43E9378EF1477D18A267A52667769FAC78543F57D0F5D4963560FA1FB25D22A		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
The final effluent achieved compliance with the discharge permit pollutant limitations during June 2016	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	7/28/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	07/01/2016-07/31/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.61	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.30	***	7.69	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	6.3	9.3	lbs/day	***	4	6	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	.63	***	lbs/day	***	.37	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.43	***	lbs/day	***	.24	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.182	.279	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	4.0	5.1	lbs/day	***	2.3	3.1	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	709	***	lbs/day	***	126	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	974	***	lbs/day	***	232	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	7.61	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.30	***	7.69	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	3.2	6.0	lbs/day	***	4	6	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	.30	***	lbs/day	***	.37	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.18	***	lbs/day	***	.24	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.115	.134	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	1.8	3.1	lbs/day	***	2.2	3.1	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP July 2016 Outfall 002 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-08-27T15:34:41-04:00	
Cryptographic Hash Value of File (SHA-512)	3598EAC0586E7FF8D08251C4803761804753357D9D6F46ACFF6ECEB32EF36E6CC6ACFEE41CB438ABE0B85CD3F59246D4B4321FD12C27B9DFC5A8F4E8FCC24CFA		
RCSTP July 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-08-27T15:34:10-04:00	
Cryptographic Hash Value of File (SHA-512)	E832DFB3936A961B30EADC8404FFFB68E825B23863B1F3EE69B0D554B5F1BE7170857448E5B92E3EC1A990E38E2DF1CED0E0F89A06ED09AE79E48C5B3458BCB8		
July_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-08-27T15:35:20-04:00	
Cryptographic Hash Value of File (SHA-512)	BCCB4ADF007A245EE2A22AA1BDACA076FF0AECF4DD35F866888963B7A4270FF7C7CC60C071FAC9ADA1AC818ADFE7A633CDD08A2A0EFE549521D12DD33DCD9A1F		
RCSTP July 21 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-08-27T15:39:57-04:00	
Cryptographic Hash Value of File (SHA-512)	CDD6743B6F3DF3B047F92AB3EA6E0BEED59DC0F0551F885396C46C44E99B17DB16DB03DB7BC83718A5DD533E85CFCC3C66EA6315CCC9AEB90A0BF72B009E8865		
RCSTP July 5 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-08-27T15:36:24-04:00	
Cryptographic Hash Value of File (SHA-512)	BE247F4396D8E7F992460942AA0D239EEB3A136D4BCEEBD96A0CD0012A78CA4D3BD2EDE17A63F0E007C4BF4CED504EE13FD52840574C99350B322D74CDF408D9		
RCSTP July 8 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-08-27T15:36:48-04:00	
Cryptographic Hash Value of File (SHA-512)	6EDFD332FDB091FB02E4217213E55999DFC8F53A0DD786BEC4E3EF74F6244E29460E0800E8D51C02064C2925A76876CE3B85DD0C9221CEF24025F5C54F081DB3		
RCSTP July 5 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-08-27T15:35:57-04:00	
Cryptographic Hash Value of File (SHA-512)	DBB219FCFC94F90F3D32A24045FAFC4F5D6C9B6B2E48D30E7F14F95EF329A69D2DFC1DC671790D5CCF96DFB4C3E9A81440E9CF71ACF2EFCE2FB70008F02E9300		
RCSTP July 28 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-08-27T15:41:24-04:00	
Cryptographic Hash Value of File (SHA-512)	4572A61BCA4FA03B4826C4E7FB718E3AF7DC43F9CC38A3BDD5D0C9C51CD208A0A705BDB320C0EB6A9097C92BF4C262D7C6AF9F0F26230042035CA09F181A57D6		
RCSTP July 26 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-08-27T15:40:50-04:00	
Cryptographic Hash Value of File (SHA-512)	47400C45577DB49828E2A2EFD10E5CE04C3DD533264D67BF07225567D62EE31D69899B9A9104A3E507218B2C3A50F45D76A36F2DC8E51DD220E0C1CA5866DC16		
RCSTP July 26 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-08-27T15:40:21-04:00	
Cryptographic Hash Value of File (SHA-512)	80AB814BA8F4C380367D86DE6AA3920B9F5F71260A6F2D468093E040464A23CC083769C7CFFCDF381DEAE82DD0F9D31261D0FB9BDD5D12F3EFECD5C3CE8F81F5		
RCSTP July 19 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-08-27T15:38:41-04:00	
Cryptographic Hash Value of File (SHA-512)	5E451B0B35E351898F2E7AD63762E98742EDCC7DDAC11C3B02DD317656ABEC978EC55292FA63C7BAB5D815068A66DAB52CAE99998B4EA2C28D8F3D8414B70A09		
RCSTP July 12 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-08-27T15:37:43-04:00	
Cryptographic Hash Value of File (SHA-512)	146FAB236E8891DADFD975719533C7CE46FFF401768842904448DBC6ACD987187733F64AEE43C92C3BA7E830BBDFA2C26C2FE0027EEDB0DBA4CC2770C31E0A79		
RCSTP July 12 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-08-27T15:37:19-04:00	
Cryptographic Hash Value of File (SHA-512)	10A920297227A7DD0ED2D0BDEA79AC607387512EA2CBAFD1FEA680F6C08201AB9085D717E613CA4B199EFE4295BE19F42B4161CB40C1481C02091B91B3B8DF81		
RCSTP July 21 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-08-27T15:39:06-04:00	
Cryptographic Hash Value of File (SHA-512)	CDD6743B6F3DF3B047F92AB3EA6E0BEED59DC0F0551F885396C46C44E99B17DB16DB03DB7BC83718A5DD533E85CFCC3C66EA6315CCC9AEB90A0BF72B009E8865		
RCSTP July 19 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-08-27T15:38:13-04:00	
Cryptographic Hash Value of File (SHA-512)	D3CC0C7D1EC5C7F8E8782F0470C1C9B7E04426BE2839BE0FF8D77BDB604A2D7AE2EB1C0BC9BC2A23DCC24A66AB531F4026DA7A35A65464FC1C8528B0A9CA0D46		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No exceedances of the permitted discharge limitations during July 2016	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).

Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	8/27/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	08/01/2016-08/31/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	6.70	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.31	***	7.67	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	3.99	5.97	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	1.39	***	lbs/day	***	.93	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.41	***	lbs/day	***	.28	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.172	.251	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	3	11	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	3.77	5.40	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	535	***	lbs/day	***	156	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	910	***	lbs/day	***	261	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	6.70	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.31	***	7.67	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	3.0	4.5	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	1.06	***	lbs/day	***	.93	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.32	***	lbs/day	***	.28	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.1296	.1582	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	3	11	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	3.0	4.9	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP August 9 2016 Final Effluent and Influent.pdf	Daily Effluent Monitoring Form	2016-09-25T12:17:44-04:00	
Cryptographic Hash Value of File (SHA-512)	D6133C1BC846A8AFE248BDA66FA2DE772DCA765BA8E11CF41965AC1EC919A88E0259DA59A3A3DE2C0C18207F4863C7A85F4B5D2ABAFA7F360228949BEED1D92E		
RCSTP August 2016 Outfall 002 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-09-25T12:15:44-04:00	
Cryptographic Hash Value of File (SHA-512)	B36CD59414035F8B1E56768CF48DB829EA6D137FF882EA0C90EDC9D45878F8D77EB92E911C4B8AD30BDFA4E4B1A781051944B605A3BEFA588202C22108E3BFDD		
RCSTP August 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-09-25T12:15:13-04:00	
Cryptographic Hash Value of File (SHA-512)	071C0E3013369DAE8AFC18FFB20C73D676CD7F3D5EE04577B59B04492565AC7692C65CA8D044316F9A3C075366627A663FE1E6E718F039AE2DE26BEB498FF529		
August_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-09-25T12:14:27-04:00	
Cryptographic Hash Value of File (SHA-512)	0B32C9F00B4C46409B4EC5579F30E0BA243D3291D14594E2A23BB8F653760C599270F98F13C151CD0C6FBD1CDD0DDF9576E9596B03D7DF6BD90BE4647542F525		
RCSTP August 11 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-09-25T12:18:10-04:00	
Cryptographic Hash Value of File (SHA-512)	EC36155A9C79ECE79CDDFF04586953BF73C8A3D04C3EACD630631BF6D46907EDE0285E91988AB688F86294575CF13EA708C01B5CDBB3BFA28A43321385D761C3		
RCSTP August 2 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-09-25T12:16:10-04:00	
Cryptographic Hash Value of File (SHA-512)	A46D15A3C152ABA23812F731063278335F2DB2927E832A0846D418696D94C623355785D728A7F7EA8A1B766E07C348DA6F120161A82E042BD60975FC9FD8CA19		
RCSTP August 4 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-09-25T12:17:11-04:00	
Cryptographic Hash Value of File (SHA-512)	708E21A0323B1EFC20FBAC9867FA4F8E81F6FAFC3CCF71E45EB9FAC976DAE2F8D8F6B429300E68A1812014243A6D7AFE9F28698662F055E38153B07A1DEC6094		
RCSTP August 2 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-09-25T12:16:42-04:00	
Cryptographic Hash Value of File (SHA-512)	17FD246C60EDAEA609B70D88859B8F5E5E9EC439696DF012CDC99BE9F73A2B97E9697EF63942313EBF98CD52DEF7B0AC3F070EA6F2FE9559A7E4ABA4371FC224		
RCSTP August 26 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-09-25T12:21:10-04:00	
Cryptographic Hash Value of File (SHA-512)	88364971AA005B3D3D28557A71342DB32805095D2EF542107BF772D55156C967E76C8A76A1E41D3C9FD8DDD20717D37D29E4EB1E791C818C01EA4EC9967B3D09		
RCSTP August 24 2016 Influent FOG.pdf	Laboratory Analytical Report	2016-09-25T12:20:41-04:00	
Cryptographic Hash Value of File (SHA-512)	132082144E83BDE1B6A5CDA373047A300CA80417FFC76B8C4C9AC7EC99EC6E9C1295AE8E2E8777EFC1DBDFBF960D045315AEB129A1F4C85861DEB58D6A0B9EE9		
RCSTP August 24 2016 Final Effluent FOG.pdf	Laboratory Analytical Report	2016-09-25T12:20:09-04:00	
Cryptographic Hash Value of File (SHA-512)	2873FB2EC87A25BE8E2F2DE48A61757109D0B0F2E999F216754A8E37BB7DF147C37742CFD991F04820D1D1BE3B5E2D587EDE478C802345D910A82A8F8C3C56DE		
RCSTP August 23 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-09-25T12:19:42-04:00	
Cryptographic Hash Value of File (SHA-512)	1D01C21AB4758F46738D1CDEF6EAB0A53C4EA08A8CC1398519AE8414B1849C92B32B234E8882530B677852B01AE761300470F121AF0CACB1E90FC625DB0C5F81		
RCSTP August 16 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-09-25T12:19:14-04:00	
Cryptographic Hash Value of File (SHA-512)	3E9C8D13DFA2764348CC481B4D44C4F6249C17A6D7A40E7846CBD50373F92A02B52BD3677C2420422B2BCF151FE81342902053C43B96A03D1B001005389908C5		
RCSTP August 16 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-09-25T12:18:36-04:00	
Cryptographic Hash Value of File (SHA-512)	92793D0C46E794E3C31E0E993C72DE491CD203D12820C417F675608C4DE38AA9DBC6B7ED7282C306B958662009FFC5AD0009B748EBB2BCA861B5717870612BF2		
RCSTP August 30 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-09-25T12:21:43-04:00	
Cryptographic Hash Value of File (SHA-512)	8CCD76DEFD29F02C2E5E62DEF87CB24AFADB21E8021336A03997DAD07C20C93BCB5CFE94259FC487F8D25952CCD5751BBB9D8E6C0F633138E766DBFB53278669		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No exceedances of the permitted discharge limitations during August 2016.	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	9/25/2016

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

HEADER INFORMATION

Facility ID:	270290	**Facility Name:**	RIDLEY CREEK STP	**Location Address:**	1751 TOWNE DR, WEST CHESTER PA, 19380
Permit Number:	PA0050504	**Monitoring Period:**	09/01/2016-09/30/2016	**Mailing Address:**	1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107

PARAMETERS REPORTED VALUES

Sampling Point		001		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	6.8	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.21	***	7.60	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	4.35	11.1	lbs/day	***	2	5	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	2.54	***	lbs/day	***	1.77	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.16	***	lbs/day	***	.10	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.209	.476	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	<1	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7.06	15.3	lbs/day	***	3.9	6.9	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	808	***	lbs/day	***	239	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	835	***	lbs/day	***	241	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

Sampling Point		002		**Stage Code**			Final Effluent		**No Discharge Indicator**	N
Parameter	**Limit Type**	**Load 1**	**Load 2**	**Units**	**Conc 1**	**Conc 2**	**Conc 3**	**Units**	**Sample Type**	**Sample Frequency**
Dissolved Oxygen	Sample Measurement	***	***	***	6.89	***	***	mg/L	Grab	1/week
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.21	***	7.60	S.U.	Grab	1/week
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	2.6	4.9	lbs/day	***	2	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	2.6	***	lbs/day	***	2.2	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.12	***	lbs/day	***	.10	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.1290	.14822	MGD	***	***	***	***	Recorded	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	<1	<1	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	3.4	5.6	lbs/day	***	2.9	4.6	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS			
File Name	**Attachment Type**	**Uploaded Time**	**Attachment Comment**
RCSTP Sept 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-10-28T21:59:34-04:00	
Cryptographic Hash Value of File (SHA-512)	63A9F7F7EA3A613546A8C55FA1111308CEA5665022D1F03E99F2A0459CD89F82D18482227583C89F2C1A3584506C5C0557A0F643D278E4F717B92DD09936D9A0		

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISCHARGE MONITORING REPORT (DMR)

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments
36229	Final Effluent(002)	Dissolved Oxygen	Sample collection less frequent than required	
36229	Final Effluent(002)	pH	Sample collection less frequent than required	

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No violations	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

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Submitted By GreenPort User	**TOWLERSC**	**Submitted By Full Name**	**Scott Towler**
Email Address	scott_towler@comcast.net	**Document Generated**	10/28/2016

3800-FM-BPNPSM0462 3/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	**2016**	**10**	**01**	TO	**2016**	**10**	**31**

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2016**
DMR Effective To: **10/31/2016**
Permit Expires: **02/28/2017**
Permit Application Due **11/28/2016**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.03	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.18	***	7.53	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	10.9	20.2	lbs/day	***	5	8	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	.28	***	lbs/day	***	.12	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.43	***	lbs/day	***	.18	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.290	.336	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	7.05	9.60	lbs/day	***	3.0	3.8	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	334	***	lbs/day	***	97	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	526	***	lbs/day	***	152	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

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3800-FM-BPNPSM0462 3/2012

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PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD						
	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	10	01	TO	2016	10	31

Reorting Frequency: **Monthly**
DMR Effective From: **10/01/2016**
DMR Effective To: **10/31/2016**
Permit Expires: **02/28/2017**
Permit Application Due **11/28/2016**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	16 Avg Mo	***		***	2.5 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP Oct 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-11-25T13:25:49-05:00	
October 2016 RCSTP O&M Report.pdf	Laboratory Analytical Report	2016-11-25T13:27:24-05:00	
RCSTP Oct 18 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-11-25T13:32:02-05:00	
RCSTP Oct 25 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-11-25T13:33:49-05:00	
RCSTP Oct 4 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-11-25T13:28:15-05:00	
RCSTP Oct 4 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-11-25T13:28:52-05:00	
RCSTP Oct 11 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-11-25T13:30:28-05:00	
RCSTP Oct 20 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-11-25T13:32:45-05:00	
Oct_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-11-25T13:26:28-05:00	
RCSTP Oct 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-11-25T13:27:49-05:00	
RCSTP Oct 25 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-11-25T13:33:18-05:00	
RCSTP Oct 27 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-11-25T13:34:22-05:00	
RCSTP Oct 6 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-11-25T13:29:21-05:00	
RCSTP Oct 13 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-11-25T13:31:31-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No exceedances of the permitted discharge limitations	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler	TELEPHONE		DATE		
			AREA CODE	NUMBER	2016	11	25
TOWLERSC		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	11	01	TO	2016	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2016**
DMR Effective To: **11/30/2016**
Permit Expires: **02/28/2017**
Permit Application Due **12/28/2016**
No Discharge? **No**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	8.67	***	***	mg/L	Grab	1/day
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	7.25	***	7.61	S.U.	Grab	1/day
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	15.9	31.1	lbs/day	***	6	10	mg/L	24-Hr Composite	1/week
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	.26	***	lbs/day	***	.10	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	.75	***	lbs/day	***	.30	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	.309	.400	MGD	***	***	***	***	Measured	Continuous
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	Grab	1/week
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	6.88	9.92	lbs/day	***	3	4	mg/L	24-Hr Composite	1/week
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Biochemical Oxygen Demand (BOD5)	Sample Measurement	657	***	lbs/day	***	175	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Total Suspended Solids	Sample Measurement	790	***	lbs/day	***	214	***	mg/L	24-Hr Composite	1/week
	Permit Measurement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		24-Hr Composite	1/week
Facility Comments										

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NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
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LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	11	01	TO	2016	11	30

Reorting Frequency: **Monthly**
DMR Effective From: **11/01/2016**
DMR Effective To: **11/30/2016**
Permit Expires: **02/28/2017**
Permit Application Due **12/28/2016**
No Discharge? **Yes**

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLE TYPE	SAMPLE FREQUENCY
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Measurement	***	***		5.0 Min	***	***		Grab	1/day
pH	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Measurement	***	***		6.0 Min	***	9.0 Max		Grab	1/day
Total Suspended Solids	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		24-Hr Composite	1/week
Ammonia-Nitrogen	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	44 Avg Mo	***		***	7.0 Avg Mo	***		24-Hr Composite	1/week
Total Phosphorus	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	3.0 Avg Mo	***		***	.5 Avg Mo	***		24-Hr Composite	1/week
Flow	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Measurement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Measured	Continuous
Fecal Coliform	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Measurement	***	***		***	200 Geo Mean	1000 IMAX		Grab	1/week
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Measurement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		24-Hr Composite	1/week
Facility Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comment
RCSTP Nov 2016 Outfall 001 FE Supplemental Form.pdf	Daily Effluent Monitoring Form	2016-12-27T22:11:45-05:00	
Nov_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2016-12-27T22:14:29-05:00	
RCSTP Nov 29 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-12-27T22:21:55-05:00	
RCSTP Nov 24 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-12-27T22:21:18-05:00	
RCSTP Nov 22 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-12-27T22:20:49-05:00	
RCSTP Nov 22 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-12-27T22:19:52-05:00	
RCSTP Nov 17 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-12-27T22:19:23-05:00	
RCSTP Nov 15 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-12-27T22:18:53-05:00	
RCSTP Nov 15 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-12-27T22:18:13-05:00	
RCSTP Nov 10 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-12-27T22:17:42-05:00	
RCSTP Nov 8 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-12-27T22:17:09-05:00	
RCSTP Nov 29 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-12-27T22:22:29-05:00	
RCSTP Nov 08 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-12-27T22:16:38-05:00	
RCSTP Nov 03 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2016-12-27T22:16:10-05:00	
RCSTP Nov 1 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2016-12-27T22:15:41-05:00	
RCSTP nov 01 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2016-12-27T22:15:07-05:00	

PERMIT VIOLATIONS

Non Compliance ID	Event Begin Date	Event End Date	Parameter	Limit Type	Reported Value	Permitted Value	Load Units	Sampling Point ID	Cause Of NC	Corrective Action	Comments

UNAUTHORISED DISCHARGES

Non Compliance ID	Event Begin Date	Event End Date	Time Discovered	Substance Discharged	Event Location	Volume	Duration	Receiving Waters	Impact On Water	Cause Of Discharge	DEP Notified	Comments

OTHER PERMIT VIOLATIONS

Non Compliance ID	Stage Code (Sampling Point)	Reported Parameter	Non Compliance Type	Comments

COMMENTS DETAILS

Comment	Operator Name	Operator Certification Number	Operator Contact Number
No exceedances of the permitted discharge limitations during November 2016	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler	TELEPHONE		DATE		
			AREA CODE	NUMBER	2016	12	27
TOWLERSC		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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BUREAU OF CLEAN WATER
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PA0050504	001
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FROM	2016	12	01	TO	2016	12	31

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DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.97	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.92	***	7.56	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	10.9	15.0	lbs/day	***	4	5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	3.41	***	lbs/day	***	1.27	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.77	***	lbs/day	***	.27	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.359	.434	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	4	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	11.1	16.5	lbs/day	***	4	6	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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3800-FM-BCW0462 12/2016

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NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
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LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	12	01	TO	2016	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2016	12	01	TO	2016	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2016**
DMR Effective To: **12/31/2016**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	384	***	lbs/day	***	104	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	546	***	lbs/day	***	148	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Dec_2016_RCSTP_Influent and Process Control form.pdf	Influent and Process Control Form	2017-01-28T12:22:56-05:00	
RCSTP Dec 15 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:28:03-05:00	
RCSTP Dec 20 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:28:30-05:00	
RCSTP Dec 06 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:24:05-05:00	
RCSTP Dec 08 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:25:45-05:00	
RCSTP Dec 13 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:26:18-05:00	
RCSTP Dec 06 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:24:35-05:00	
RCSTP Dec 22 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:29:29-05:00	
RCSTP Dec 27 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-01-28T12:30:26-05:00	
RCSTP Dec 13 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-01-28T12:27:31-05:00	
RCSTP Dec 27 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:29:58-05:00	
Dec_2016_RCSTP_Daily Effluent Supplemental form 001.pdf	Daily Effluent Monitoring Form	2017-01-28T12:22:18-05:00	
RCSTP Dec 01 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:23:30-05:00	
RCSTP Dec 06 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-01-28T12:25:18-05:00	
RCSTP Dec 13 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-01-28T12:26:50-05:00	
RCSTP Dec 20 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-01-28T12:28:59-05:00	
RCSTP Dec 29 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:30:58-05:00	
RCSTP Dec 29 2016 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-01-28T12:31:27-05:00	
Jan 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:33:16-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.96	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.99	***	7.41	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	27.9	43.5	lbs/day	***	10	16	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
	Facility Parameter Comments	Additional samples were collected during the month.								
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	20.2	***	lbs/day	***	7.11	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	1.02	***	lbs/day	***	.35	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Additional samplers were collected during the month.								
Flow (50050)	Sample Measurement	.358	.480	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	9	210	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	20.1	36.1	lbs/day	***	6.7	11.1	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	01	01	TO	2017	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2017**
DMR Effective To: **01/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	610	***	lbs/day	***	160	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	635	***	lbs/day	***	170	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP Jan 03 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:09:38-05:00	
RCSTP Jan 03 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-02-27T21:10:07-05:00	
RCSTP Jan 10 2016 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-02-27T21:10:35-05:00	
RCSTP Jan 11 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-02-27T21:11:08-05:00	
RCSTP Jan 12 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-02-27T21:11:44-05:00	
RCSTP Jan 17 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:12:17-05:00	
RCSTP Jan 19 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-02-27T21:12:43-05:00	
RCSTP Jan 23 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:13:14-05:00	
RCSTP Jan 24 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:13:39-05:00	
RCSTP Jan 25 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:14:08-05:00	
RCSTP Jan 26 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:14:35-05:00	
RCSTP Jan 27 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:15:13-05:00	
RCSTP Jan 27 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-02-27T21:15:43-05:00	
RCSTP Jan 28 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:16:11-05:00	
RCSTP Jan 29 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:16:43-05:00	
RCSTP Jan 30 2016 Final Effluent Total Phosphorus and TSS.pdf	Laboratory Analytical Report	2017-02-27T21:17:26-05:00	
RCSTP Jan 31 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-02-27T21:17:54-05:00	
RCSTP Jan 31 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-02-27T21:18:22-05:00	
January 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-02-27T21:25:28-05:00	
January 2017 RCSTP Permit Non-Compliance Form.pdf	Letter Explaining Non-Compliance	2017-02-27T21:38:41-05:00	
Jan 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:59:48-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
39672	01/01/2017	01/31/2017	Ammonia-Nitrogen	Average Monthly	7.11	7	mg/L	Final Effluent (001)			
39673	01/01/2017	01/31/2017	Total Suspended Solids	Weekly Average	16	15	mg/L	Final Effluent (001)			

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	02	01	TO	2017	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.96	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.73	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	30.3	57.2	lbs/day	***	12	22	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	24.8	***	lbs/day	***	9.54	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.64	***	lbs/day	***	.25	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.323	.373	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	< 1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.43	11.4	lbs/day	***	3.3	4.4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	02	01	TO	2017	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	02	01	TO	2017	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2017**
DMR Effective To: **02/28/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	367	***	lbs/day	***	103	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	443	***	lbs/day	***	124	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
February 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-03-27T22:19:44-04:00	
RCSTP Feb 15 & 16 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-03-27T22:23:00-04:00	
RCSTP Feb 21 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-03-27T22:23:54-04:00	
RCSTP Feb 28 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-03-27T22:25:29-04:00	
RCSTP Feb 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-03-27T22:26:12-04:00	
February 2017 Daily Final Effluent Supplemental Form.pdf	Influent and Process Control Form	2017-03-27T22:20:10-04:00	
RCSTP Feb 07 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-03-27T22:20:44-04:00	
RCSTP Feb 08 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-03-27T22:21:40-04:00	
RCSTP Feb 07 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-03-27T22:21:16-04:00	
RCSTP Feb 10 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-03-27T22:22:08-04:00	
RCSTP Feb 21 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-03-27T22:23:26-04:00	
RCSTP Feb 23 & 23 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-03-27T22:24:23-04:00	
RCSTP Feb 28 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-03-27T22:24:50-04:00	
RCSTP Feb 13 2017 Final Effluent TSS.pdf	Laboratory Accreditation Form	2017-03-27T22:22:33-04:00	
Feb 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:36:50-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
40651	02/01/2017	02/28/2017	Ammonia-Nitrogen	Average Monthly	9.54	7	mg/L	Final Effluent (001)	Equipment malfunction/failure	Increased blower run time	The SBR blower run times were less than required. Replaced dissolved oxygen probes, decreased MLSS wasting rates, and adjusted SBR controls to increase the blower operating hours
40652	02/01/2017	02/28/2017	Total Suspended Solids	Average Monthly	12	10	mg/L	Final Effluent (001)	Equipment malfunction/failure	Increased blower run time	The SBR was experiencing filled decants, coupled with decreased nitrification rates resulted in poor settling sludge resulting in solids carryover to the past EQ basins. The TSS loading from the EQ basins into the disc filters produced high levels resulting in unfiltered effluent flowing directly to the UV channel.
40653	02/01/2017	02/28/2017	Total Suspended Solids	Weekly Average	22	15	mg/L	Final Effluent (001)	Equipment malfunction/failure	Increased blower run time	The SBR was experiencing filled decants, coupled with decreased nitrification rates resulted in poor settling sludge resulting in solids carryover to the past EQ basins. The TSS loading from the EQ basins into the disc filters produced high levels resulting in unfiltered effluent flowing directly to the UV channel.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**04**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	03	01	TO	2017	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.82	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.69	***	7.43	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	18.7	35.3	lbs/day	***	6	10	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.60	***	lbs/day	***	.193	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.75	***	lbs/day	***	.23	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.358	.642	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	7.39	10.2	lbs/day	***	2.3	2.9	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	03	01	TO	2017	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	03	01	TO	2017	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2017**
DMR Effective To: **03/31/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	475	***	lbs/day	***	118	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	491	***	lbs/day	***	122	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
March 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-04-23T18:41:13-04:00	
March 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-04-23T18:40:47-04:00	
March 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-04-23T18:41:41-04:00	
RCSTP March 07 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-04-23T18:42:08-04:00	
RCSTP March 07 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2017-04-23T18:42:48-04:00	
RCSTP March 09 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-04-23T18:43:20-04:00	
RCSTP March 16 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-04-23T18:43:51-04:00	
RCSTP March 16 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-04-23T18:44:18-04:00	
RCSTP March 17 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-04-23T18:44:47-04:00	
RCSTP March 21 2016 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-04-23T18:45:11-04:00	
RCSTP March 21 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-04-23T18:45:36-04:00	
RCSTP March 23 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-04-23T18:46:02-04:00	
RCSTP March 27 2017 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2017-04-23T18:46:27-04:00	
RCSTP March 28 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-04-23T18:46:53-04:00	
Mar 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:40:27-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	04	01	TO	2017	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.14	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.33	***	7.32	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	20.0	23.9	lbs/day	***	7	8	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.73	***	lbs/day	***	.25	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.63	***	lbs/day	***	.25	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.333	.481	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	4	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.18	13.1	lbs/day	***	3	5	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	04	01	TO	2017	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	04	01	TO	2017	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2017**
DMR Effective To: **04/30/2017**
Permit Expires: **02/28/2017**
Permit Application Due: **09/01/2016**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	358	***	lbs/day	***	88	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	314	***	lbs/day	***	78	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Apr 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:42:29-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott a Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**04**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	05	01	TO	2017	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.47	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.63	***	7.47	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13.1	17.8	lbs/day	***	5.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.39	***	lbs/day	***	.17	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.43	***	lbs/day	***	.17	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.359	.918	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
	Facility Parameter Comments	The high flow of 0.918 MGD appears to be an error as compared to the influent wastewater flow for the same day.								
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	7	982	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.14	5.94	lbs/day	***	2.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	05	01	TO	2017	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	05	01	TO	2017	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2017**
DMR Effective To: **05/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	596	***	lbs/day	***	174	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1015	***	lbs/day	***	260	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP May 18 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-06-26T20:13:51-04:00	
RCSTP May 2 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-06-26T20:09:06-04:00	
RCSTP May 9 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-06-26T20:10:15-04:00	
RCSTP May 2 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:09:35-04:00	
RCSTP May 9 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:12:32-04:00	
RCSTP May 23 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:19:08-04:00	
RCSTP May 23 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:20:04-04:00	
RCSTP May 30 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-06-26T20:20:38-04:00	
RCSTP May 30 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:21:05-04:00	
May 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-06-26T20:26:06-04:00	
May 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-06-26T20:30:04-04:00	
May 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-06-26T20:30:39-04:00	
RCSTP May 18 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-06-26T20:16:30-04:00	
May 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:44:44-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.93	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.90	***	7.69	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.22	9.26	lbs/day	***	2.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	1.03	***	lbs/day	***	.395	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.37	***	lbs/day	***	.14	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	Additional samples were collected on June 22, 23, 24 and 25								
Flow (50050)	Sample Measurement	.313	.370	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.72	61.7	lbs/day	***	2.2	2.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	06	01	TO	2017	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2017**
DMR Effective To: **06/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	767	***	lbs/day	***	224	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1291	***	lbs/day	***	371	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
June 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-07-28T17:26:15-04:00	
RCSTP June 6 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-07-28T17:27:43-04:00	
RCSTP June 09 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2017-07-28T17:28:22-04:00	
RCSTP June 15 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:28:58-04:00	
RCSTP June 15 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-07-28T17:29:25-04:00	
June 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-07-28T17:25:02-04:00	
June 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-07-28T17:25:33-04:00	
RCSTP June 6 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-07-28T17:26:54-04:00	
RCSTP June 20 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:29:59-04:00	
RCSTP June 20 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-07-28T17:30:26-04:00	
RCSTP June 22 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:30:58-04:00	
RCSTP June 23 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:31:28-04:00	
RCSTP June 24 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:31:55-04:00	
RCSTP June 25 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:32:20-04:00	
RCSTP June 26 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:32:44-04:00	
RCSTP June 26 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:33:10-04:00	
RCSTP June 27 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-07-28T17:34:15-04:00	
RCSTP June 27 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-07-28T17:33:37-04:00	
Jun 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:47:10-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484.401.4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
					(484)	**401-4198**	**2021**	**01**	**04**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.15	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.61	***	7.76	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.2	11	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.41	***	lbs/day	***	.169	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.64	***	lbs/day	***	.25	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.300	.431	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	5	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	6.4	10	lbs/day	***	2.6	3.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	07	01	TO	2017	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2017**
DMR Effective To: **07/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	582	***	lbs/day	***	205	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	754	***	lbs/day	***	266	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
July 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-08-28T20:25:01-04:00	
July 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-08-28T20:25:36-04:00	
July 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-08-28T20:26:14-04:00	
RCSTP July 6 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-08-28T20:26:47-04:00	
RCSTP July 6 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-08-28T20:27:13-04:00	
RCSTP July 11 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-08-28T20:27:41-04:00	
RCSTP July 18 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-08-28T20:29:09-04:00	
RCSTP July 25 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-08-28T20:30:05-04:00	
RCSTP July 11 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-08-28T20:28:11-04:00	
RCSTP July 18 2017 Final Effluent Total Phosphorus.PDF	Laboratory Accreditation Form	2017-08-28T20:28:40-04:00	
RCSTP July 25 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-08-28T20:29:36-04:00	
Jul 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:48:43-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		(484)	401-4198	2021	01	04
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	08	01	TO	2017	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.84	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.37	***	7.78	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.89	10.9	lbs/day	***	4.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.35	***	lbs/day	***	.16	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.80	***	lbs/day	***	.44	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.275	.795	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	3	68	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.11	9.21	lbs/day	***	2	4	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	08	01	TO	2017	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	08	01	TO	2017	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2017**
DMR Effective To: **08/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	410	***	lbs/day	***	148	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	407	***	lbs/day	***	149	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP August 01 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-09-28T21:47:46-04:00	
RCSTP August 8 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:49:10-04:00	
RCSTP August 15 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-09-28T21:50:31-04:00	
RCSTP August 08 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-09-28T21:48:45-04:00	
RCSTP August 8 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:49:40-04:00	
August 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2017-09-28T21:47:18-04:00	
RCSTP August 1 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:48:17-04:00	
RCSTP August 15 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:50:07-04:00	
RCSTP August 25 26 27 28 31 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:50:57-04:00	
RCSTP August 29 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-09-28T21:51:56-04:00	
RCSTP August Dewatered Sludge Test Results.PDF	Laboratory Analytical Report	2017-09-28T21:52:27-04:00	
August 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-09-28T21:46:26-04:00	
RCSTP August 29 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-09-28T21:51:24-04:00	
Aug 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:50:51-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER		Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		(484)	401-4198	2021	01	04
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.15	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.40	***	7.74	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	4.56	10.8	lbs/day	***	4.0	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.14	***	lbs/day	***	.11	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.44	***	lbs/day	***	.34	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.14	.235	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	4	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	3.03	3.30	lbs/day	***	2.3	2.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.15	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.40	***	7.74	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.0	12.5	lbs/day	***	4.0	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.13	***	lbs/day	***	.11	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.44	***	lbs/day	***	.34	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.150	.210	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	4	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	2.9	4.0	lbs/day	***	2.3	2.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	09	01	TO	2017	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2017**
DMR Effective To: **09/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	663	***	lbs/day	***	205	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1008	***	lbs/day	***	318	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
September 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-10-28T18:51:52-04:00	
September 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2017-10-28T18:53:29-04:00	
RCSTP Sept 12 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-10-28T18:54:06-04:00	
RCSTP Sept 19 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-10-28T18:57:47-04:00	
RCSTP Sept 26 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-10-28T18:58:23-04:00	
RCSTP Sept Dewatered Sludge.PDF	Laboratory Analytical Report	2017-10-28T18:58:58-04:00	
RCSTP September 5 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-10-28T18:59:33-04:00	
RCSTP September 12 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-10-28T19:00:29-04:00	
RCSTP September 19 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-10-28T19:02:52-04:00	
RCSTP September 26 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2017-10-28T19:03:29-04:00	
Sep 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:52:53-05:00	
Sep 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:53:53-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	10	01	TO	2017	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.83	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.37	***	7.76	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.0	8.6	lbs/day	***	4.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.19	***	lbs/day	***	.14	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.39	***	lbs/day	***	.27	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.175	.248	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	3.4	5.2	lbs/day	***	2.3	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	10	01	TO	2017	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.83	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.37	***	7.76	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.2	6.5	lbs/day	***	4.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.17	***	lbs/day	***	.14	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.33	***	lbs/day	***	.27	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.151	.180	MGD	***	***	***	***	Continuous	Recorded
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	2.9	3.9	lbs/day	***	2.3	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	10	01	TO	2017	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2017**
DMR Effective To: **10/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	754	***	lbs/day	***	214	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1132	***	lbs/day	***	320	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP Oct 03 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2017-11-28T21:42:48-05:00	
2017 Oct eDMR Form 001.xlsx	Daily Effluent Monitoring Form	2021-01-04T18:21:40-05:00	
2017 Oct eDMR Form 002.xlsx	Daily Effluent Monitoring Form	2021-01-04T18:22:03-05:00	
2017 Oct Influent Control Form.xls	Influent and Process Control Form	2021-01-04T18:22:48-05:00	
Oct 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:23:47-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	484-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.23	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.33	***	7.56	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8.61	11.7	lbs/day	***	6.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.27	***	lbs/day	***	.184	***	mg/L	1/day	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.52	***	lbs/day	***	.35	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.198	.285	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	4.26	5.70	lbs/day	***	2.8	3.4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	11	01	TO	2017	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2017**
DMR Effective To: **11/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.23	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.33	***	7.56	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.19	9.23	lbs/day	***	6.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.23	***	lbs/day	***	.184	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.45	***	lbs/day	***	.35	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1563	.1860	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	3.59	4.45	lbs/day	***	2.8	3.4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	11	01	TO	2017	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2017**
DMR Effective To: **11/30/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	609	***	lbs/day	***	182	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	294	***	lbs/day	***	89	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP November 7 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:41:47-04:00	
RCSTP November 14 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:42:07-04:00	
RCSTP November 17 2017 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-04-16T21:42:30-04:00	
RCSTP November 21 2017 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2018-04-16T21:43:02-04:00	
RCSTP November 25 2017 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-04-16T21:43:20-04:00	
RCSTP November 28 2017 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2018-04-16T21:43:41-04:00	
November 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-04-16T21:38:16-04:00	
November 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-04-16T21:38:39-04:00	
November 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-04-16T21:39:02-04:00	
RCSTP Nov 07 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2018-04-16T21:39:28-04:00	
RCSTP Nov 14 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2018-04-16T21:39:52-04:00	
RCSTP Nov 21 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2018-04-16T21:40:14-04:00	
RCSTP Nov 21 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2018-04-16T21:40:40-04:00	
RCSTP Nov 28 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2018-04-16T21:41:02-04:00	
RCSTP November 3 2017 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-04-16T21:41:24-04:00	
Nov 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:56:28-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
55731	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY
			(484)	**401-4198**	**2021**	**01**	**04**

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	12	01	TO	2017	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.67	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.18	***	7.52	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	9.26	28.4	lbs/day	***	6.0	16.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.59	***	lbs/day	***	.399	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.38	***	lbs/day	***	.24	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.243	.606	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	3	CFU/100 ml	1/2 weeks	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	11.7	26.5	lbs/day	***	7.40	16.9	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	12	01	TO	2017	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.67	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.18	***	7.52	S.U.	1/week	24-Hr Composite
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.7	17.1	lbs/day	***	6.0	16.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.49	***	lbs/day	***	.399	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.28	***	lbs/day	***	.24	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.156	.191	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	3	CFU/100 ml	1/week	Grab-Composite
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.9	20.4	lbs/day	***	7.40	16.9	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2017	12	01	TO	2017	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2017**
DMR Effective To: **12/31/2017**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	765	***	lbs/day	***	239	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	943	***	lbs/day	***	297	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
December 2017 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-01-28T17:31:59-05:00	
December 2017 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-01-28T17:33:05-05:00	
RCSTP Dec 12 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2018-01-28T17:34:01-05:00	
RCSTP December 2 2017 Final Effluent TSS dup.PDF	Laboratory Analytical Report	2018-01-28T17:35:21-05:00	
RCSTP December 2 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2018-01-28T17:35:45-05:00	
RCSTP December 5 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-01-28T17:36:10-05:00	
RCSTP December 8 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2018-01-28T17:36:38-05:00	
RCSTP December 12 2017 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2018-01-28T17:37:05-05:00	
RCSTP December 15 2017 Final Effluent TSS.pdf	Laboratory Analytical Report	2018-01-28T17:37:28-05:00	
RCSTP December 19 2017 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2018-01-28T17:37:55-05:00	
RCSTP December 28 2017 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-01-28T17:38:22-05:00	
December 2017 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-01-28T17:32:29-05:00	
RCSTP Dec 05 2017 Final Effluent and Influent.pdf	Laboratory Analytical Report	2018-01-28T17:33:34-05:00	
RCSTP Dec 19 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2018-01-28T17:34:26-05:00	
RCSTP Dec 28 2017 Final Effluent and Influent.PDF	Laboratory Analytical Report	2018-01-28T17:34:54-05:00	
Dec 2017 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T18:58:37-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
51913	12/01/2017	12/31/2017	Total Suspended Solids	Weekly Average	16	15	mg/L	Final Effluent (002)	Equipment malfunction/failure	Equipment repaired	Disc filter drive motor was offline reducing bash wash feature reducing effectiveness of the filters. Drive returned to service.
51916	12/01/2017	12/31/2017	Total Suspended Solids	Weekly Average	16	15	mg/L	Final Effluent (001)	Equipment malfunction/failure	Equipment repaired	Disc filter drive motor was offline reducing bash wash feature reducing effectiveness of the filters. Drive returned to service.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
51914	Sample type not in accordance with permit	Final Effluent (002)	Fecal Coliform	Grab-Composite	Grab	
51914	Sample type not in accordance with permit	Final Effluent (002)	pH	24-Hr Composite	Grab	
51915	Sample collection less frequent than required	Final Effluent (002)	pH	1/week	1/day	
51915	Sample collection less frequent than required	Final Effluent (001)	Fecal Coliform	1/2 weeks	1/week	

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**		**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME		AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.31	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.27	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	14.9	19.1	lbs/day	***	7.0	11.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	1.90	***	lbs/day	***	1.01	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.34	***	lbs/day	***	.17	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.226	.381	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.86	26.4	lbs/day	***	3.8	8.3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.31	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.27	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8.8	10.6	lbs/day	***	7.0	11.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	1.14	***	lbs/day	***	1.01	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.20	***	lbs/day	***	.17	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1502	.1966	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	4.6	10.5	lbs/day	***	3.8	8.3	mg/L	Continuous	Measured
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	01	01	TO	2018	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2018**
DMR Effective To: **01/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	524	***	lbs/day	***	155	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	447	***	lbs/day	***	137	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2018 Jan eDMR Form 001.xlsx	Daily Effluent Monitoring Form	2021-01-04T22:20:36-05:00	
2018 Jan eDMR Form 002.xlsx	Daily Effluent Monitoring Form	2021-01-04T22:21:45-05:00	
2018 JAN Influent Control Form.xls	Influent and Process Control Form	2021-01-04T22:22:51-05:00	
Jan 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:23:27-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
53598	Sample type not in accordance with permit	Final Effluent (002)	Carbonaceous Biochemical Oxygen Demand (CBOD5)	Measured	24-Hr Composite	

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY
			(484)	**401-4198**	**2021**	**01**	**04**

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	02	01	TO	2018	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.85	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.06	***	7.53	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	10.1	15.7	lbs/day	***	6.0	10.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.44	***	lbs/day	***	.239	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.45	***	lbs/day	***	.23	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.256	.501	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	3.85	4.30	lbs/day	***	2.1	2.3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	02	01	TO	2018	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.85	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.06	***	7.56	S.U.	1/week	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.2	18.9	lbs/day	***	5.6	10.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.31	***	lbs/day	***	.239	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.28	***	lbs/day	***	.23	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1477	.1865	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	2.7	12.9	lbs/day	***	2.1	2.3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	02	01	TO	2018	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2018**
DMR Effective To: **02/28/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	492	***	lbs/day	***	130	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	831	***	lbs/day	***	213	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2018 FEB eDMR Form 001.xlsx	Daily Effluent Monitoring Form	2021-01-04T22:27:37-05:00	
2018 FEB eDMR Form 002.xlsx	Daily Effluent Monitoring Form	2021-01-04T22:28:17-05:00	
2018 FEB Influent Control Form.xls	Influent and Process Control Form	2021-01-04T22:29:05-05:00	
FEB 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:29:44-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
55272	Sample collection less frequent than required	Final Effluent (002)	pH	1/week	1/day	
55273	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER		Scott Towler	TELEPHONE		DATE		
			(484)	401-4198	2021	01	04
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	03	01	TO	2018	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.95	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.24	***	7.51	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13.11	18.5	lbs/day	***	6.0	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	1.13	***	lbs/day	***	.517	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.58	***	lbs/day	***	.26	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.294	.517	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	5	148	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	7.50	14.1	lbs/day	***	3.3	5.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	03	01	TO	2018	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.95	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.24	***	7.51	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.51	9.25	lbs/day	***	6.0	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.59	***	lbs/day	***	.517	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.30	***	lbs/day	***	.26	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.144	.196	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	5	148	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	3.88	7.12	lbs/day	***	3.3	5.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	03	01	TO	2018	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2018**
DMR Effective To: **03/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	556	***	lbs/day	***	143	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	503	***	lbs/day	***	130	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
March 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-04-16T21:14:19-04:00	
March 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-04-16T21:14:41-04:00	
RCSTP March 06 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:15:18-04:00	
RCSTP March 6 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-04-16T21:15:40-04:00	
RCSTP March 13 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:16:02-04:00	
RCSTP March 13 2018 Influent and FE Fecal Coliform.PDF	Laboratory Analytical Report	2018-04-16T21:16:24-04:00	
RCSTP March 16 2018 FE TSS.PDF	Laboratory Analytical Report	2018-04-16T21:16:49-04:00	
RCSTP March 20 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:17:10-04:00	
RCSTP March 20 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-04-16T21:17:33-04:00	
RCSTP March 20 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-04-16T21:17:54-04:00	
RCSTP March 23 2018 FE TSS.PDF	Laboratory Analytical Report	2018-04-16T21:18:16-04:00	
RCSTP March 27 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-04-16T21:18:40-04:00	
2018 MAR Influent Control Form.xls	Influent and Process Control Form	2021-01-04T22:32:34-05:00	
Mar 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:33:12-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).			(484)	401-4198	2021	01	04
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	04	01	TO	2018	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.46	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.06	***	7.56	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	12.1	14.9	lbs/day	***	6.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.75	***	lbs/day	***	.346	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.42	***	lbs/day	***	.20	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.250	.382	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.15	10.2	lbs/day	***	3.9	5.4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	04	01	TO	2018	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.46	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.06	***	7.56	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.15	8.87	lbs/day	***	6.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.40	***	lbs/day	***	.346	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.23	***	lbs/day	***	.20	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1401	.1519	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	4.5	6.3	lbs/day	***	3.9	4.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	04	01	TO	2018	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2018**
DMR Effective To: **04/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	908	***	lbs/day	***	228	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	819	***	lbs/day	***	207	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
April 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-05-22T19:00:31-04:00	
April 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-05-22T19:00:53-04:00	
April 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-05-22T19:01:19-04:00	
RCSTP April 3 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-05-22T19:02:10-04:00	
RCSTP April 3 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-05-22T19:02:37-04:00	
RCSTP April 6 2018 FE TSS.PDF	Laboratory Analytical Report	2018-05-22T19:03:09-04:00	
RCSTP April 6 2018 FE TSS.PDF	Laboratory Analytical Report	2018-05-22T19:03:36-04:00	
RCSTP April 10 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-05-22T19:03:58-04:00	
RCSTP April 10 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-05-22T19:04:38-04:00	
RCSTP April 13 2018 FE TSS.PDF	Laboratory Analytical Report	2018-05-22T19:05:00-04:00	
RCSTP April 17 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-05-22T19:05:25-04:00	
RCSTP April 17 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-05-22T19:05:48-04:00	
RCSTP April 20 2018 FE TSS.PDF	Laboratory Analytical Report	2018-05-22T19:06:10-04:00	
RCSTP April 21 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-05-22T19:06:34-04:00	
RCSTP April 24 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-05-22T19:06:58-04:00	
RCSTP April 26 2018 FE TSS.PDF	Laboratory Analytical Report	2018-05-22T19:07:23-04:00	
Apr 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:37:21-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	05	01	TO	2018	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.29	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.17	***	7.55	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.99	12.2	lbs/day	***	4.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.28	***	lbs/day	***	.145	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.42	***	lbs/day	***	.22	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.236	.360	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	8.09	10.0	lbs/day	***	4.2	5.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	05	01	TO	2018	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.29	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.17	***	7.55	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	4.68	7.46	lbs/day	***	4.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.17	***	lbs/day	***	.145	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.26	***	lbs/day	***	.22	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1409	.1610	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.9	6.3	lbs/day	***	4.2	5.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	05	01	TO	2018	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2018**
DMR Effective To: **05/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	772	***	lbs/day	***	196	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	873	***	lbs/day	***	221	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP May 15 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:39:08-04:00	
RCSTP May 15 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:39:36-04:00	
RCSTP May 18 2018 FE TSS.PDF	Laboratory Analytical Report	2018-06-16T11:39:58-04:00	
RCSTP May 22 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-06-16T11:40:23-04:00	
RCSTP May 22 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:44:43-04:00	
RCSTP May 29 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-06-16T11:45:07-04:00	
RCSTP May 29 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:45:31-04:00	
May 2018 Daily Final Effluent 001 Supplemental Form.xlsx	Daily Effluent Monitoring Form	2018-06-16T11:35:03-04:00	
May 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-06-16T11:35:35-04:00	
May 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-06-16T11:36:01-04:00	
RCSTP May 1 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-06-16T11:36:25-04:00	
RCSTP May 1 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:36:59-04:00	
RCSTP May 4 2018 FE TSS.PDF	Laboratory Analytical Report	2018-06-16T11:37:28-04:00	
RCSTP May 8 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-06-16T11:37:55-04:00	
RCSTP May 8 2018 Influent and Final Effluent.PDF	Laboratory Analytical Report	2018-06-16T11:38:18-04:00	
RCSTP May 15 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-06-16T11:38:44-04:00	
May 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:40:42-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**04**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.73	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.38	***	7.79	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.32	7.04	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.47	***	lbs/day	***	.289	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.46	***	lbs/day	***	.28	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.201	.358	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	6.06	8.13	lbs/day	***	3.6	4.2	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.73	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.38	***	7.79	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	4.05	4.92	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.35	***	lbs/day	***	.289	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.33	***	lbs/day	***	.28	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1448	.1728	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.35	5.12	lbs/day	***	3.6	4.2	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	06	01	TO	2018	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2018**
DMR Effective To: **06/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	580	***	lbs/day	***	158	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	412	***	lbs/day	***	113	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
June 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-07-21T11:36:05-04:00	
RCSTP June 12 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-07-21T11:37:37-04:00	
RCSTP June 22 2018 FE TSS.PDF	Laboratory Analytical Report	2018-07-21T11:38:44-04:00	
RCSTP June 26 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-07-21T11:39:07-04:00	
RCSTP June 26 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-07-21T11:39:33-04:00	
RCSTP June 29 2018 FE TSS.PDF	Laboratory Analytical Report	2018-07-21T11:40:00-04:00	
June 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-07-21T11:36:29-04:00	
RCSTP June 5 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-07-21T11:37:13-04:00	
RCSTP June 5 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-07-21T11:36:53-04:00	
RCSTP June 19 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-07-21T11:38:20-04:00	
June 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-07-21T11:35:35-04:00	
RCSTP June 12 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-07-21T11:37:58-04:00	
Jun 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:44:16-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	4844014198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.00	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.25	***	7.99	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.61	15.6	lbs/day	***	3.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.83	***	lbs/day	***	.451	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.31	***	lbs/day	***	.18	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.207	.868	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.47	6.22	lbs/day	***	2.8	3.7	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.00	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.25	***	7.99	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	3.86	6.33	lbs/day	***	3.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.50	***	lbs/day	***	.451	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.21	***	lbs/day	***	.18	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1448	.2061	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	3.28	4.70	lbs/day	***	2.8	3.7	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	07	01	TO	2018	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2018**
DMR Effective To: **07/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	640	***	lbs/day	***	188	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	532	***	lbs/day	***	165	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP July 17 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-08-30T14:52:18-04:00	
RCSTP July 24 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-08-30T14:53:45-04:00	
RCSTP July 20 2018 FE TSS.PDF	Laboratory Accreditation Form	2018-08-30T14:52:43-04:00	
RCSTP July 3 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-08-30T14:40:51-04:00	
July 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-08-30T14:41:22-04:00	
July 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-08-30T14:41:50-04:00	
July 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-08-30T14:42:27-04:00	
RCSTP July 3 2018 Influent and FE.PDF	Laboratory Accreditation Form	2018-08-30T14:42:56-04:00	
RCSTP July 10 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-08-30T14:43:24-04:00	
RCSTP July 10 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-08-30T14:43:53-04:00	
RCSTP July 17 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-08-30T14:51:50-04:00	
RCSTP July 24 2018 Final Effluent Total Phosphorus.PDF	Laboratory Accreditation Form	2018-08-30T14:53:11-04:00	
RCSTP July 31 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-08-30T14:54:16-04:00	
RCSTP July 31 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-08-30T14:55:44-04:00	
2018 JUL Influent Control Form.xls	Influent and Process Control Form	2021-01-04T22:47:12-05:00	
Jul 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:48:38-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
70814	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott Alfred Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.81	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.01	***	7.57	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.30	16.3	lbs/day	***	3.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.49	***	lbs/day	***	.213	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.48	***	lbs/day	***	.22	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.249	.556	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	3	68	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	6.15	9.49	lbs/day	***	2.8	3.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
DMR Effective To: **08/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.81	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.01	***	7.57	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	3.79	7.64	lbs/day	***	3.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.27	***	lbs/day	***	.213	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.28	***	lbs/day	***	.22	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1527	.1918	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	3	68	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	3.54	4.46	lbs/day	***	2.8	3.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	08	01	TO	2018	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2018**
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Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	750	***	lbs/day	***	181	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1114	***	lbs/day	***	273	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP August 14 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-09-17T11:29:39-04:00	
RCSTP August 28 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-09-17T11:32:31-04:00	
August 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-09-17T11:20:31-04:00	
August 2018 Daily Final Effluent 001 Supplemental Form.pdf	Laboratory Analytical Report	2018-09-17T11:32:05-04:00	
RCSTP August 21 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-09-17T11:30:09-04:00	
RCSTP August 21 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-09-17T11:31:25-04:00	
August 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-09-17T11:21:26-04:00	
August 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-09-17T11:27:22-04:00	
RCSTP August 7 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-09-17T11:27:49-04:00	
RCSTP August 7 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-09-17T11:28:18-04:00	
RCSTP August 14 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-09-17T11:28:42-04:00	
RCSTP August 21 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-09-17T11:30:54-04:00	
RCSTP August 14 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-09-17T11:29:10-04:00	
Aug 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:53:04-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott Alfred Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY
				(484)	401-4198	2021	01	04

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NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2018**
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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.19	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.65	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.89	8.39	lbs/day	***	2.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	1.80	***	lbs/day	***	.883	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.43	***	lbs/day	***	.14	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.331	.557	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	< 1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	11.3	21.8	lbs/day	***	3.2	5.2	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

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FROM	2018	09	01	TO	2018	09	30

Reporting Frequency: **Monthly**
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PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.19	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.54	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	2.81	3.75	lbs/day	***	2.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	1.10	***	lbs/day	***	.883	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.18	***	lbs/day	***	.14	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1514	.164	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	< 1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.01	6.57	lbs/day	***	3.2	5.2	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

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FROM	2018	09	01	TO	2018	09	30

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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	655	***	lbs/day	***	132	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	825	***	lbs/day	***	164	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP September 25 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-10-17T13:17:32-04:00	
September 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-10-17T13:14:17-04:00	
RCSTP September 4 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-10-17T13:15:04-04:00	
RCSTP September 18 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-10-17T13:16:18-04:00	
RCSTP September 18 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-10-17T13:16:42-04:00	
August 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-10-17T13:13:25-04:00	
August 2018 Daily Final Effluent 002 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-10-17T13:13:50-04:00	
RCSTP September 4 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-10-17T13:14:42-04:00	
RCSTP September 11 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-10-17T13:15:29-04:00	
RCSTP September 11 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-10-17T13:15:54-04:00	
RCSTP September 25 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-10-17T13:17:06-04:00	
Sep 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T22:58:21-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott a Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.92	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.73	***	7.68	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.88	11.5	lbs/day	***	3.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.36	***	lbs/day	***	.111	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.61	***	lbs/day	***	.19	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.389	.497	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	9.72	12.7	lbs/day	***	3.0	4.1	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
	Facility Parameter Comments	The Final effluent CBOD5 reported values do not included the sample from 10/30/2018. As of 11/28/2018, the certified contract laboratory reported the analysis is in progress. The DMR will be updated when the sample data is available.								
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.92	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.73	***	7.68	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	2.53	2.53	lbs/day	***	2.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.14	***	lbs/day	***	.108	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.23	***	lbs/day	***	.18	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1426	.1681	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
	Facility Parameter Comments	Discharge to Outfall 002 was discontinued October 9, 2018.								
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	3.54	3.54	lbs/day	***	2.8	2.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	10	01	TO	2018	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2018**
DMR Effective To: **10/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	482	***	lbs/day	***	108	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	475	***	lbs/day	***	112	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2018 OCT eDMR Form 001.xlsx	Daily Effluent Monitoring Form	2021-01-04T23:03:14-05:00	
2018 OCT eDMR Form 002.xlsx	Daily Effluent Monitoring Form	2021-01-04T23:03:45-05:00	
2018 OCT Influent Control Form.xls	Influent and Process Control Form	2021-01-04T23:04:41-05:00	
Oct 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T23:05:42-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott a Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler		(484)	401-4198	2021	01	04
		SUBMITTED BY FULL NAME		AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.27	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.27	***	7.191	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	11.8	21.9	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.63	***	lbs/day	***	.131	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.58	***	lbs/day	***	.12	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.546	.797	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	12.2	16.2	lbs/day	***	2.6	3.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	11	01	TO	2018	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2018**
DMR Effective To: **11/30/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	875	***	lbs/day	***	156	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	506	***	lbs/day	***	89	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
November 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2018-12-28T18:52:41-05:00	
November 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2018-12-28T18:53:15-05:00	
RCSTP November 1 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-12-28T18:53:49-05:00	
RCSTP November 6 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-12-28T18:54:14-05:00	
RCSTP November 6 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-12-28T18:54:37-05:00	
RCSTP November 13 2018 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2018-12-28T18:55:02-05:00	
RCSTP November 13 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-12-28T18:55:26-05:00	
RCSTP November 20 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-12-28T18:55:56-05:00	
RCSTP November 20 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-12-28T18:56:31-05:00	
RCSTP November 23 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-12-28T18:56:59-05:00	
RCSTP November 27 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2018-12-28T18:57:21-05:00	
RCSTP November 27 2018 Influent and FE.PDF	Laboratory Analytical Report	2018-12-28T18:57:50-05:00	
RCSTP November 29 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2018-12-28T18:58:12-05:00	
Nov 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T23:09:29-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).			(484)	401-4198	2021	01	04
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.29	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.69	***	7.26	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.49	8.72	lbs/day	***	2.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	2.40	***	lbs/day	***	.55	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.62	***	lbs/day	***	.15	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.536	.756	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	9.13	10.5	lbs/day	***	2.2	2.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2018	12	01	TO	2018	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2018**
DMR Effective To: **12/31/2018**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	781	***	lbs/day	***	159	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	604	***	lbs/day	***	121	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
December 2018 Daily Final Effluent 001 Supplemental Form.pdf	Daily Effluent Monitoring Form	2019-01-28T18:43:18-05:00	
December 2018 RCSTP Influent Process Form.pdf	Influent and Process Control Form	2019-01-28T18:43:43-05:00	
RCSTP December 18 2018 Influent and FE.PDF	Laboratory Analytical Report	2019-01-28T18:48:06-05:00	
RCSTP December 18 2018 Influent and FE.PDF	Laboratory Analytical Report	2019-01-28T18:48:30-05:00	
RCSTP December 27 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-01-28T18:48:56-05:00	
RCSTP December 27 2018 Influent and FE.PDF	Laboratory Analytical Report	2019-01-28T18:49:21-05:00	
RCSTP December 27 2018 Final Effluent Fecal Coliform.PDF	Laboratory Analytical Report	2019-01-28T18:50:09-05:00	
RCSTP Dec 26 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-01-28T18:45:11-05:00	
RCSTP Dec 6 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-01-28T18:44:19-05:00	
RCSTP December 4 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-01-28T18:45:40-05:00	
RCSTP December 4 2018 Influent and FE.PDF	Laboratory Analytical Report	2019-01-28T18:46:06-05:00	
RCSTP December 11 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-01-28T18:46:56-05:00	
RCSTP Dec 13 2018 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-01-28T18:44:42-05:00	
RCSTP December 11 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-01-28T18:46:30-05:00	
RCSTP December 11 2018 Influent and FE.PDF	Laboratory Analytical Report	2019-01-28T18:47:20-05:00	
RCSTP December 18 2018 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-01-28T18:47:44-05:00	
Dec 2018 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-04T23:13:18-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**04**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.90	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.60	***	7.16	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7.24	15.3	lbs/day	***	1.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.65	***	lbs/day	***	.13	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.66	***	lbs/day	***	.15	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.562	.789	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	< 1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	14.2	28.2	lbs/day	***	2.9	4.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	01	01	TO	2019	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2019**
DMR Effective To: **01/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	796	***	lbs/day	***	149	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	744	***	lbs/day	***	138	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2019 Jan eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T08:42:23-05:00	
2019 JAN Influent Control Form.xls	Influent and Process Control Form	2021-01-05T08:42:52-05:00	
Jan 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:43:19-05:00	
2019 Jan eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T08:41:41-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.90	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.35	***	7.12	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.75	8.47	lbs/day	***	1.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.56	***	lbs/day	***	.138	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.62	***	lbs/day	***	.15	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.484	.586	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	9.47	10.1	lbs/day	***	2.4	2.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	02	01	TO	2019	02	28

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2019**
DMR Effective To: **02/28/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	810	***	lbs/day	***	156	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	717	***	lbs/day	***	135	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP February 12 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-03-28T22:03:55-04:00	
RCSTP February 19 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-03-28T22:04:45-04:00	
Feb 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-03-28T22:00:54-04:00	
RCSTP February 2019 Influent Form.pdf	Influent and Process Control Form	2019-03-28T22:01:21-04:00	
RCSTP February 2 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-03-28T22:01:49-04:00	
RCSTP February 5 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-03-28T22:02:13-04:00	
RCSTP February 7 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-03-28T22:03:04-04:00	
RCSTP February 12 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-03-28T22:03:29-04:00	
RCSTP February 14 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-03-28T22:04:20-04:00	
RCSTP February 19 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-03-28T22:05:08-04:00	
RCSTP February 22 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-03-28T22:05:32-04:00	
RCSTP February 26 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-03-28T22:06:01-04:00	
RCSTP February 26 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-03-28T22:06:28-04:00	
Feb 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:46:47-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.97	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.15	***	7.33	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.77	9.99	lbs/day	***	1.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.53	***	lbs/day	***	.13	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.77	***	lbs/day	***	.19	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.502	.646	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	9.62	12.8	lbs/day	***	2.4	3.4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	03	01	TO	2019	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2019**
DMR Effective To: **03/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	650	***	lbs/day	***	126	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	697	***	lbs/day	***	136	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP March 7 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-04-28T12:58:43-04:00	
RCSTP March 12 2019 Final Effluent Total Phosphorus.PDF	Laboratory Accreditation Form	2019-04-28T12:59:57-04:00	
RCSTP March 12 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-04-28T13:00:33-04:00	
RCSTP March 14 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-04-28T13:02:16-04:00	
RCSTP March 18 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-04-28T13:04:03-04:00	
RCSTP March 19 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-04-28T13:04:49-04:00	
RCSTP March 21 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-04-28T13:06:10-04:00	
RCSTP March 26 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-04-28T13:08:59-04:00	
RCSTP March 26 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-04-28T13:09:58-04:00	
RCSTP March 26 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-04-28T13:11:07-04:00	
RCSTP March 29 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-04-28T13:12:23-04:00	
March 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-04-28T13:13:14-04:00	
RCSTP March 2019 Influent Form.pdf	Influent and Process Control Form	2019-04-28T13:15:10-04:00	
RCSTP March 5 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-04-28T12:57:09-04:00	
Mar 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:48:57-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.01	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.23	***	7.14	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13.6	37.7	lbs/day	***	5.0	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.50	***	lbs/day	***	.16	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.61	***	lbs/day	***	.20	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.379	.438	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	2	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	7.10	9.51	lbs/day	***	2	3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	04	01	TO	2019	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2019**
DMR Effective To: **04/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	476	***	lbs/day	***	113	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	531	***	lbs/day	***	125	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP April 11 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-05-28T22:27:59-04:00	
RCSTP April 16 2019 Influent and FE.pdf	Laboratory Analytical Report	2019-05-28T22:28:30-04:00	
RCSTP April 30 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-05-28T22:38:06-04:00	
April 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-05-28T22:21:34-04:00	
RCSTP April 2019 Influent Form.pdf	Influent and Process Control Form	2019-05-28T22:23:08-04:00	
RCSTP April 2 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-05-28T22:23:50-04:00	
RCSTP April 2 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-05-28T22:26:05-04:00	
RCSTP April 4 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-05-28T22:26:32-04:00	
RCSTP April 9 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-05-28T22:27:03-04:00	
RCSTP April 9 2019 Final Effluent Total Phosphorus REVISED.PDF	Laboratory Accreditation Form	2019-05-28T22:27:31-04:00	
RCSTP April 23 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-05-28T22:31:00-04:00	
RCSTP April 23 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-05-28T22:31:31-04:00	
RCSTP April 25 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-05-28T22:33:09-04:00	
RCSTP April 25 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-05-28T22:33:43-04:00	
RCSTP April 30 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-05-28T22:34:12-04:00	
RCSTP April 30 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-05-28T22:34:42-04:00	
Apr 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:52:38-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.49	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.29	***	7.14	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	9.80	17.8	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.43	***	lbs/day	***	.118	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.68	***	lbs/day	***	.24	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.391	.632	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	3	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	8.33	12.9	lbs/day	***	2.2	2.9	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	05	01	TO	2019	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2019**
DMR Effective To: **05/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	641	***	lbs/day	***	137	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	995	***	lbs/day	***	216	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
May 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-07-22T21:40:29-04:00	
RCSTP May 2019 Influent Form.pdf	Influent and Process Control Form	2019-07-22T21:41:06-04:00	
RCSTP May 2 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-22T21:41:38-04:00	
RCSTP May 7 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-22T21:42:06-04:00	
RCSTP May 7 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-22T21:42:34-04:00	
RCSTP May 9 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-22T21:43:04-04:00	
RCSTP May 14 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-22T21:43:32-04:00	
RCSTP May 14 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-22T21:43:59-04:00	
RCSTP May 17 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-22T21:44:28-04:00	
RCSTP May 21 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-22T21:44:56-04:00	
RCSTP May 21 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-22T21:45:32-04:00	
RCSTP May 21 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-22T21:46:03-04:00	
RCSTP May 23 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-22T21:46:36-04:00	
RCSTP May 28 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-22T21:47:05-04:00	
RCSTP May 28 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-22T21:47:34-04:00	
RCSTP May 30 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-22T21:48:04-04:00	
May 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:55:49-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
91940	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
				(484)	401-4198	2021	01	05
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.04	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.25	***	7.10	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.82	9.56	lbs/day	***	2.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.58	***	lbs/day	***	.189	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.93	***	lbs/day	***	.28	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.402	.832	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	6.38	7.87	lbs/day	***	2	2	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	06	01	TO	2019	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2019**
DMR Effective To: **06/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	406	***	lbs/day	***	94	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	883	***	lbs/day	***	212	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP June 5 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-28T13:35:20-04:00	
RCSTP June 4 2019 Final Effluent Total Phosphorus.pdf	Laboratory Analytical Report	2019-07-28T13:36:58-04:00	
RCSTP JUne 11 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-28T13:37:34-04:00	
June 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-07-28T13:34:05-04:00	
RCSTP June 2019 Influent Form.pdf	Influent and Process Control Form	2019-07-28T13:34:38-04:00	
RCSTP June 28 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-07-28T13:35:48-04:00	
RCSTP JUne 04 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-28T13:36:25-04:00	
RCSTP June 11 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-28T13:38:11-04:00	
RCSTP June 18 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-28T13:38:55-04:00	
RCSTP June 18 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-28T13:39:20-04:00	
RCSTP JUne 25 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-07-28T13:39:50-04:00	
RCSTP June 25 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-07-28T13:40:25-04:00	
Jun 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T08:57:47-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(484)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
towlersc			**(484)**	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.60	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.28	***	7.05	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	11.2	19.2	lbs/day	***	4.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.38	***	lbs/day	***	.121	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.61	***	lbs/day	***	.19	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.387	.588	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	11.1	20.2	lbs/day	***	3.6	6.8	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	07	01	TO	2019	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2019**
DMR Effective To: **07/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	1079	***	lbs/day	***	254	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	942	***	lbs/day	***	217	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP July 23 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-08-28T21:08:35-04:00	
RCSTP July 30 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-08-28T21:09:32-04:00	
RCSTP July 30 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-08-28T21:10:06-04:00	
RCSTP July 9 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-08-28T21:07:11-04:00	
RCSTP July 9 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-08-28T21:05:43-04:00	
RCSTP July 22 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-08-28T21:08:06-04:00	
RCSTP July 2019 Influent Form.pdf	Influent and Process Control Form	2019-08-28T21:03:51-04:00	
RCSTP July 1 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-08-28T21:04:21-04:00	
RCSTP July 02 2019 Influent and FE.PDF	Laboratory Analytical Report	2019-08-28T21:04:47-04:00	
RCSTP July 2 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-08-28T21:05:15-04:00	
RCSTP July 9 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-08-28T21:06:10-04:00	
RCSTP July 25 26 29 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-08-28T21:09:03-04:00	
RCSTP July 16 2019 Final Effluent TSS.PDF	Laboratory Analytical Report	2019-08-28T21:07:38-04:00	
RCSTP July 30 2019 Final Effluent Total Phosphorus.PDF	Laboratory Analytical Report	2019-08-28T21:10:43-04:00	
RCSTP July 2019 Influent Form.pdf	Influent and Process Control Form	2019-08-28T21:11:12-04:00	
July 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2019-08-28T21:02:51-04:00	
Jul 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:01:29-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.31	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.20	***	7.35	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	9.33	19.8	lbs/day	***	3.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.30	***	lbs/day	***	.111	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	1.61	***	lbs/day	***	.58	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	The effluent valve/actuator assembly for SBR 2, it was determined not to fully close. As a result, the partially closed valve allowed solids to enter the effluent during the React and Fill cylces of the SBR.								
Flow (50050)	Sample Measurement	.318	.356	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.50	5.75	lbs/day	***	< 2.0	< 2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	08	01	TO	2019	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2019**
DMR Effective To: **08/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	757	***	lbs/day	***	204	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1029	***	lbs/day	***	273	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Final Effluent and Influent Sample Data 13 Aug 2019.PDF	Laboratory Analytical Report	2020-04-14T14:48:57-04:00	
Final Effluent and Influent Sample Data 20 Aug 2019.PDF	Laboratory Analytical Report	2020-04-14T14:49:35-04:00	
RCSTP August 2019 non-Compliance report.pdf	Letter Explaining Non-Compliance	2020-04-14T14:56:53-04:00	
RCSTP Final Effluent Total Phosphorus 13August2019.PDF	Laboratory Analytical Report	2020-04-14T14:52:01-04:00	
RCSTP Final Effluent Total Phosphorus 06August2019.PDF	Laboratory Analytical Report	2020-04-14T14:51:26-04:00	
August 2019 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2020-04-14T14:47:23-04:00	
Final Effluent and Influent Sample Data 06 Aug 2019.PDF	Laboratory Analytical Report	2020-04-14T14:48:08-04:00	
RCSTP Final Effluent Total Phosphorus 20August2019.PDF	Laboratory Analytical Report	2020-04-14T14:52:50-04:00	
RCSTP Final Effluent Total Phosphorus 27August2019.PDF	Laboratory Analytical Report	2020-04-14T14:53:27-04:00	
Final Effluent and Influent Sample Data 27 Aug 2019.PDF	Laboratory Analytical Report	2020-04-14T14:50:23-04:00	
RCSTP Agust 2019 Influent Form.pdf	Influent and Process Control Form	2020-04-14T14:50:53-04:00	
RCSTP Final Effluent TSS 12 August 2019.PDF	Laboratory Analytical Report	2020-04-14T14:54:08-04:00	
Non-compliance report for August and September 2019.pdf	Letter Explaining Non-Compliance	2020-04-14T15:01:06-04:00	
Aug 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:25:40-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
110544	08/01/2019	08/31/2019	Total Phosphorus	Average Monthly	.58	.5	mg/L	Final Effluent (001)			

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
110545	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
				(484)	401-4198	2021	01	05
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.57	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.68	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	12.3	21.0	lbs/day	***	7.0	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.25	***	lbs/day	***	.132	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	1.06	***	lbs/day	***	.54	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.188	.315	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	3	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.51	6.95	lbs/day	***	2.5	3.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.57	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.68	***	7.46	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	6.13	7.79	lbs/day	***	6.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.13	***	lbs/day	***	.122	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.47	***	lbs/day	***	.43	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.1318	.1593	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	2.4	3.0	lbs/day	***	2.6	3.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	09	01	TO	2019	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2019**
DMR Effective To: **09/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	963	***	lbs/day	***	258	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	765	***	lbs/day	***	205	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Sep 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:07:58-05:00	
2019 Sep eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:05:08-05:00	
2019 Sep Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:07:31-05:00	
2019 Sep eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:06:03-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
100023	09/01/2019	09/30/2019	Total Phosphorus	Average Monthly	.54	.5	mg/L	Final Effluent (001)	Equipment malfunction/failure	Equipment repaired	In review of the data, troubleshooting measures and corrective actions, SBR 2 final effluent decant was not fully closing. As a result, solids loss during influent fill and react cycles into the post final effluent EQ tank contributed for the excessive total phosphorus loading into the disc filters and final effluent. The problem has been corrected and compliance will be achieved during October. A detailed report will be provided.

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).			(484)	401-4198	2021	01	05
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	10	01	TO	2019	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2019**
DMR Effective To: **10/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.38	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.00	***	7.78	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	11.2	14.2	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.33	***	lbs/day	***	.151	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.54	***	lbs/day	***	.26	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.256	.537	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.32	5.67	lbs/day	***	2.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	10	01	TO	2019	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2019**
DMR Effective To: **10/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.38	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.00	***	7.78	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	2.83	3.85	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.08	***	lbs/day	***	.151	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.16	***	lbs/day	***	.26	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.0581	.1155	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	1.11	1.93	lbs/day	***	2.0	2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	10	01	TO	2019	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2019**
DMR Effective To: **10/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	909	***	lbs/day	***	268	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	794	***	lbs/day	***	235	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2019 Oct eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:11:50-05:00	
Oct 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:14:09-05:00	
2019 Oct Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:13:02-05:00	
2019 Oct eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:12:19-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments
103300	Late DMR Submission					

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.14	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	7.06	***	7.45	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	12.8	23.4	lbs/day	***	5.0	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.95	***	lbs/day	***	.33	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.68	***	lbs/day	***	.25	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.331	.503	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	7.59	10.7	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.14	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
pH (00400)	Sample Measurement	***	***	***	7.04	***	7.38	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Total Suspended Solids (00530)	Sample Measurement	1.1	1.1	lbs/day	***	4.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.03	***	lbs/day	***	.10	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Total Phosphorus (00665)	Sample Measurement	.07	***	lbs/day	***	.27	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Flow (50050)	Sample Measurement	.034	.042	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
	Facility Parameter Comments	The discharge was discontinued on November 6, 2019.								
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	1	1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	.81	.81	lbs/day	***	3.1	3.1	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
	Facility Parameter Comments	There was only discharge to Outfall 002 for 6 days during the month, therefore, the sample test results for the 6 day period are reported.								
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	11	01	TO	2019	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2019**
DMR Effective To: **11/30/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	626	***	lbs/day	***	177	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	561	***	lbs/day	***	160	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Nov 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:18:27-05:00	
2019 Nov eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:16:37-05:00	
2019 Nov Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:17:41-05:00	
2019 Nov eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:17:10-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler		(484)	401-4198	2021	01	05
		SUBMITTED BY FULL NAME		AREA CODE	NUMBER	YEAR	MO	DAY

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.04	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.69	***	7.74	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	21.2	60.7	lbs/day	***	6.0	16.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
	Facility Parameter Comments	Lab error for the elevated TSS sample								
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	1.19	***	lbs/day	***	.36	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.67	***	lbs/day	***	.21	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.382	.470	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	16	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	10.8	16.7	lbs/day	***	3.18	4.40	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2019**
DMR Effective To: **12/31/2019**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	998	***	lbs/day	***	281	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1012	***	lbs/day	***	286	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2019 Dec eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:21:21-05:00	
2019 Dec Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:22:18-05:00	
Dec 2019 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:22:55-05:00	
2019 Dec eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:21:53-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments
105954	12/01/2019	12/31/2019	Total Suspended Solids	Weekly Average	16	15	mg/L	Final Effluent (001)			

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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3800-FM-BCW0462 12/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.71	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.73	***	7.71	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8.75	14.4	lbs/day	***	5.0	9.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.65	***	lbs/day	***	.211	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.47	***	lbs/day	***	.15	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.359	.599	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1	< 1	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	9.11	13.9	lbs/day	***	2.9	4.1	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	01	01	TO	2020	01	31

Reporting Frequency: **Monthly**
DMR Effective From: **01/01/2020**
DMR Effective To: **01/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	554	***	lbs/day	***	180	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	608	***	lbs/day	***	196	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP Final Effluent Total Phosphorus 14 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:00:25-05:00	
RCSTP Final Effluent Total Phosphorus 21 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:01:17-05:00	
RCSTP Final Effluent Total Phosphorus 21 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:02:00-05:00	
Final Effluent and Influent Sample Data 28 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:52:39-05:00	
RCSTP Final Effluent Fecal Coliform 3 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:53:24-05:00	
RCSTP Final Effluent TSS 24 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:06:23-05:00	
RCSTP Final Effluent TSS 31 Jan and 03 Feb 2020.PDF	Laboratory Analytical Report	2020-02-28T21:07:10-05:00	
RCSTP Final Effluent Total Phosphorus 28 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:04:44-05:00	
RCSTP January 2020 Influent Form.pdf	Influent and Process Control Form	2020-02-28T20:46:46-05:00	
Jan 2020 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2020-02-28T20:47:28-05:00	
RCSTP Final Effluent Total Phosphorus 7 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:59:04-05:00	
RCSTP Final Effluent Total Phosphorus 14 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:59:46-05:00	
Final Effluent and Influent Sample Data 14 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:50:49-05:00	
Final Effluent and Influent Sample Data 21 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:51:23-05:00	
RCSTP Final Effluent TSS 17 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T21:05:41-05:00	
Final Effluent and Influent Sample Data 07 Jan 2020.PDF	Laboratory Analytical Report	2020-02-28T20:48:47-05:00	
Jan 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:29:09-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.26	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.84	***	7.55	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	15.2	22.9	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.84	***	lbs/day	***	.304	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.50	***	lbs/day	***	.18	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.354	.425	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2	5	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.30	12.8	lbs/day	***	2.9	3.9	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	02	01	TO	2020	02	29

Reporting Frequency: **Monthly**
DMR Effective From: **02/01/2020**
DMR Effective To: **02/29/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	617	***	lbs/day	***	172	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	552	***	lbs/day	***	158	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Feb 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:32:02-05:00	
RCSTP Final Effluent Total Phosphorus 11 Feb 2020.PDF	Laboratory Accreditation Form	2020-03-26T16:18:19-04:00	
Final Effluent and Influent Sample Data 18 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:14:38-04:00	
Feb 2020 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2020-03-26T16:16:23-04:00	
Final Effluent and Influent Sample Data 25 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:16:59-04:00	
RCSTP Final Effluent Total Phosphorus 4 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:17:46-04:00	
Final Effluent and Influent Sample Data 04 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:12:13-04:00	
Final Effluent and Influent Sample Data 11 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:12:51-04:00	
RCSTP Final Effluent Total Phosphorus 11 Feb 2020.PDF	Laboratory Accreditation Form	2020-03-26T16:19:10-04:00	
RCSTP Final Effluent Total Phosphorus 18 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:19:52-04:00	
RCSTP Final Effluent Total Phosphorus 25 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:20:27-04:00	
RCSTP Final Effluent TSS 11 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:21:02-04:00	
RCSTP Final Effluent TSS 26 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:22:59-04:00	
RCSTP Final Effluent TSS 31 Jan and 03 Feb 2020.PDF	Laboratory Analytical Report	2020-03-26T16:23:35-04:00	
RCSTP February 2020 Influent Form.pdf	Influent and Process Control Form	2020-03-26T16:13:43-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
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ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
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LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.58	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.67	***	7.60	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13.5	21.4	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.49	***	lbs/day	***	.163	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.52	***	lbs/day	***	.18	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.357	.40	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	3	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	8.60	11.4	lbs/day	***	2.9	3.2	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☑

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	***	***	***	mg/L		
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	***	***	***	S.U.		
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	***	***	MGD	***	***	***	***		
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	***	***	CFU/100 ml		
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	***	***	lbs/day	***	***	***	mg/L		
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	03	01	TO	2020	03	31

Reporting Frequency: **Monthly**
DMR Effective From: **03/01/2020**
DMR Effective To: **03/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	962	***	lbs/day	***	251	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	1061	***	lbs/day	***	276	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Mar 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:35:15-05:00	
Final Effluent and Influent Sample Data 31 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:28:41-04:00	
RCSTP Final Effluent Total Phosphorus 03 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:29:32-04:00	
Final Effluent and Influent Sample Data 3 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:25:40-04:00	
RCSTP Final Effluent Total Phosphorus 17 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:31:20-04:00	
RCSTP Final Effluent Total Phosphorus 24 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:32:16-04:00	
RCSTP Final Effluent Total Phosphorus 31 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:33:16-04:00	
RCSTP Final Effluent TSS 16 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:34:26-04:00	
RCSTP Final Effluent TSS 30 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:35:04-04:00	
RCSTP March 2020 Influent Form.pdf	Influent and Process Control Form	2020-04-14T14:39:15-04:00	
Final Effluent and Influent Sample Data 10 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:26:24-04:00	
Final Effluent and Influent Sample Data 17 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:26:55-04:00	
Final Effluent and Influent Sample Data 24 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:27:45-04:00	
RCSTP Final Effluent Total Phosphorus 10 March 2020.PDF	Laboratory Analytical Report	2020-04-14T14:30:15-04:00	
March 2020 RCSTP Daily Effluent Supplemental Form Outfall 001.pdf	Daily Effluent Monitoring Form	2020-04-14T14:35:49-04:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.38	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.8	***	7.64	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	19.4	25.4	lbs/day	***	6.4	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.94	***	lbs/day	***	.301	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.89	***	lbs/day	***	.29	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.368	.730	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	4	53	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	11.6	21.0	lbs/day	***	3.8	6.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.38	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.8	***	7.64	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	2.0	3.0	lbs/day	***	6.4	8.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.1	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.1	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.0436	.0597	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	4	53	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	1.0	3.0	lbs/day	***	4.0	7.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	04	01	TO	2020	04	30

Reporting Frequency: **Monthly**
DMR Effective From: **04/01/2020**
DMR Effective To: **04/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	580	***	lbs/day	***	193	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	959	***	lbs/day	***	323	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
RCSTP Final Effluent Total Phosphorus 21 April 2020.PDF	Laboratory Analytical Report	2020-05-28T09:23:36-04:00	
RCSTP Final Effluent Total Phosphorus 14 April 2020.PDF	Laboratory Analytical Report	2020-05-28T09:22:39-04:00	
RCSTP Final Effluent Total Phosphorus 07 April 2020.PDF	Laboratory Analytical Report	2020-05-28T09:19:23-04:00	
APR 2020 eDMR 001 Worksheet.xlsx	Daily Effluent Monitoring Form	2020-05-28T09:25:43-04:00	
APR 2020 eDMR 002 Worksheet.xlsx	Daily Effluent Monitoring Form	2020-05-28T09:26:16-04:00	
RCSTP Final Effluent Total Phosphorus 28 April 2020.PDF	Laboratory Analytical Report	2020-05-28T09:24:23-04:00	
2020 Apr Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:38:28-05:00	
Apr 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:38:59-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.35	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.72	***	7.47	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	15	20	lbs/day	***	5.4	7.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.5	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.9	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.334	.368	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2.0	9.0	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	10	13	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.35	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.72	***	7.47	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	15	20	lbs/day	***	5.4	7.5	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	.5	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.9	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.334	.368	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	2.0	9.0	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	10	13	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	05	01	TO	2020	05	31

Reporting Frequency: **Monthly**
DMR Effective From: **05/01/2020**
DMR Effective To: **05/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	2701	***	lbs/day	***	957	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	859	***	lbs/day	***	301	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2020 May eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:41:24-05:00	
2020 May Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:42:22-05:00	
May 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:43:25-05:00	
2020 May eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:40:57-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott Towler	T0390	(345)-401-4198

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.07	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.57	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	10	14	lbs/day	***	4.1	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.5	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.281	.391	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	4.0	11	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 5	< 5	lbs/day	***	< 2.0	< 2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.07	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.57	***	7.5	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	10	14	lbs/day	***	4.1	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.5	***	lbs/day	***	.20	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.281	.314	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	4.0	11.0	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 5	< 5	lbs/day	***	< 2.0	< 2.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	06	01	TO	2020	06	30

Reporting Frequency: **Monthly**
DMR Effective From: **06/01/2020**
DMR Effective To: **06/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	452	***	lbs/day	***	199	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	725	***	lbs/day	***	320	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2020 Jun Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:45:42-05:00	
Jun 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:47:07-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER								
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**05**
		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	6.92	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.77	***	7.48	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	12.0	20.0	lbs/day	***	6.5	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 1.0	***	lbs/day	***	< .8	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.7	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.212	.293	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	12	60	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.0	7.0	lbs/day	***	3.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	6.92	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.77	***	7.48	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	12	20	lbs/day	***	6.5	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 1.0	***	lbs/day	***	< .8	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.7	***	lbs/day	***	.3	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.212	.293	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	12	60	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	4.0	7.0	lbs/day	***	3.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	07	01	TO	2020	07	31

Reporting Frequency: **Monthly**
DMR Effective From: **07/01/2020**
DMR Effective To: **07/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	316	***	lbs/day	***	198	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	429	***	lbs/day	***	271	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
JULY 2020.xlsx	Daily Effluent Monitoring Form	2020-08-26T16:40:17-04:00	
2020 Jul Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:51:04-05:00	
2020 Jul eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:50:10-05:00	
2020 Jul eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:50:40-05:00	
Jul 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:51:30-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).			(484)	401-4198	2021	01	05
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.24	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.64	***	7.75	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13	24	lbs/day	***	4.7	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 1.0	***	lbs/day	***	< .4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.4	***	lbs/day	***	.1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.209	.712	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 4.0	10	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	9.0	19.0	lbs/day	***	3.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

Reporting Frequency: **Monthly**
DMR Effective From: **08/01/2020**
DMR Effective To: **08/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.24	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.64	***	7.75	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	13	24	lbs/day	***	4.7	9.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< 1.0	***	lbs/day	***	< .4	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.4	***	lbs/day	***	.1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.209	.712	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 4.0	10	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	9.0	19.0	lbs/day	***	3.0	3.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	08	01	TO	2020	08	31

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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	576	***	lbs/day	***	197.9	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	795	***	lbs/day	***	269	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
Aug 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:56:33-05:00	
2020 Aug Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:55:56-05:00	
2020 Aug eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:54:53-05:00	
2020 Aug eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T09:55:31-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler		(484)	401-4198	2021	01	05
		SUBMITTED BY FULL NAME		AREA CODE	NUMBER	YEAR	MO	DAY

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FROM	2020	09	01	TO	2020	09	30

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No Discharge: ☐

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PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.89	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.94	***	7.48	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8	10	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.3	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.182	.212	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	6	40	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 5.0	5	lbs/day	***	< 3	3	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	09	01	TO	2020	09	30

Reporting Frequency: **Monthly**
DMR Effective From: **09/01/2020**
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Permit Expires: **04/30/2022**
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No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.89	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.94	***	7.48	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8	10	lbs/day	***	5.0	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.3	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.182	.212	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	6.0	40	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	< 5	5	lbs/day	***	< 3	3	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	380	***	lbs/day	***	236	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	476	***	lbs/day	***	297	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
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ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
SEPTEMBER 2020.xlsx	Daily Effluent Monitoring Form	2020-10-25T09:23:00-04:00	
2020 Sep Influent Control Form.xls	Influent and Process Control Form	2021-01-05T09:59:07-05:00	
Sep 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T09:59:48-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).		**Scott Towler**	**(484)**	**401-4198**	**2021**	**01**	**05**
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.09	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.59	***	7.53	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8.0	10.0	lbs/day	***	5.2	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.3	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.201	.325	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1.0	3.0	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.0	6.0	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.09	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.59	***	7.53	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	8.0	10.0	lbs/day	***	5.2	6.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (May-Oct)	Sample Measurement	< .2	***	lbs/day	***	< .1	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	16 Avg Mo	***		***	2.5 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.3	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.201	.325	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 1.0	3.0	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (May-Oct)	Sample Measurement	5.0	6.0	lbs/day	***	3.0	4.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10 Avg Mo	15 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	10	01	TO	2020	10	31

Reporting Frequency: **Monthly**
DMR Effective From: **10/01/2020**
DMR Effective To: **10/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	403	***	lbs/day	***	259	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	485	***	lbs/day	***	310	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
3132748_20201019_1815_435028.pdf	Laboratory Analytical Report	2020-11-25T16:43:24-05:00	
3135704_20201029_1135_435028.pdf	Laboratory Analytical Report	2020-11-25T16:46:17-05:00	
3132749_20201016_1137_434628.pdf	Laboratory Analytical Report	2020-11-25T16:43:45-05:00	
3135703_20201102_1037_434628.pdf	Laboratory Analytical Report	2020-11-25T16:44:56-05:00	
3135704_20201029_1135_435028.pdf	Laboratory Analytical Report	2020-11-25T16:45:28-05:00	
3134184_20201028_1638_434628.pdf	Laboratory Analytical Report	2020-11-25T16:44:06-05:00	
3134186_20201021_1635_434628.pdf	Laboratory Analytical Report	2020-11-25T16:44:35-05:00	
3137002_20201030_2229_434628.pdf	Laboratory Analytical Report	2020-11-25T16:46:49-05:00	
3137003_20201110_1639_435028.pdf	Laboratory Analytical Report	2020-11-25T16:47:21-05:00	
October eDMR 2020 .xlsx	Daily Effluent Monitoring Form	2020-11-25T16:48:10-05:00	
2020 Oct eDMR 002.xlsx	Daily Effluent Monitoring Form	2021-01-05T10:02:41-05:00	
2020 Oct eDMR 001.xlsx	Daily Effluent Monitoring Form	2021-01-05T10:05:19-05:00	
2020 Oct Influent Control Form.xls	Influent and Process Control Form	2021-01-05T10:06:15-05:00	
Oct 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-05T10:07:54-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER			Scott Towler	TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).			(484)	401-4198	2021	01	05
			SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.66	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.97	***	7.33	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	7	11	lbs/day	***	4.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< .3	***	lbs/day	***	< .2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.3	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.241	.57	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 2	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	< 4	5	lbs/day	***	< 3	3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
DMR Effective To: **11/30/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	8.66	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.97	***	7.33	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	5.0	6.0	lbs/day	***	4.0	5.0	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	< .2	***	lbs/day	***	< .2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	.2	***	lbs/day	***	.2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.14222	.189488	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 2.0	6	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	< 3	3	lbs/day	***	< 3	3	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	11	01	TO	2020	11	30

Reporting Frequency: **Monthly**
DMR Effective From: **11/01/2020**
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Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	389	***	lbs/day	***	223	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	370	***	lbs/day	***	213	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
2020 Nov Influent Control Form.xls	Influent and Process Control Form	2020-12-27T16:35:58-05:00	
2020 Nov eDMR 001.xlsx	Daily Effluent Monitoring Form	2020-12-27T16:34:19-05:00	
Nov 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2020-12-27T16:37:05-05:00	
2020 Nov eDMR 002.xlsx	Daily Effluent Monitoring Form	2020-12-27T16:34:57-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER				TELEPHONE		DATE		
towlersc	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	Scott Towler		(484)	401-4198	2021	01	05
		SUBMITTED BY FULL NAME		AREA CODE	NUMBER	YEAR	MO	DAY

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PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

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PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.46	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.56	***	7.38	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	< 7	< 9	lbs/day	***	< 5.8	< 6.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	1.0	***	lbs/day	***	.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	< .4	***	lbs/day	***	< .2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.323	.709	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 2.0	15	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	6	11	lbs/day	***	2	4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Final Effluent**

PA0050504	002
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Dissolved Oxygen (00300)	Sample Measurement	***	***	***	7.46	***	***	mg/L	1/day	Grab
	Permit Requirement	***	***		5.0 Min	***	***		1/day	Grab
pH (00400)	Sample Measurement	***	***	***	6.56	***	7.38	S.U.	1/day	Grab
	Permit Requirement	***	***		6.0 Min	***	9.0 Max		1/day	Grab
Total Suspended Solids (00530)	Sample Measurement	< 7	9	lbs/day	***	< 5.8	< 6.6	mg/L	1/week	24-Hr Composite
	Permit Requirement	62 Avg Mo	94 Wkly Avg		***	10.0 Avg Mo	15.0 Wkly Avg		1/week	24-Hr Composite
Ammonia-Nitrogen (00610) (Nov-Apr)	Sample Measurement	.6	***	lbs/day	***	.5	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	44 Avg Mo	***		***	7.0 Avg Mo	***		1/week	24-Hr Composite
Total Phosphorus (00665)	Sample Measurement	< .2	***	lbs/day	***	< .2	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	3.0 Avg Mo	***		***	.5 Avg Mo	***		1/week	24-Hr Composite
Flow (50050)	Sample Measurement	.14578	.18290	MGD	***	***	***	***	Continuous	Measured
	Permit Requirement	Monitor & Report Avg Mo	Monitor & Report Daily Max		***	***	***		Continuous	Measured
Fecal Coliform (74055)	Sample Measurement	***	***	***	***	< 2	15	CFU/100 ml	1/week	Grab
	Permit Requirement	***	***		***	200 Geo Mean	1000 IMAX		1/week	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5) (80082) (Nov-Apr)	Sample Measurement	3	4	lbs/day	***	2	4	mg/L	1/week	24-Hr Composite
	Permit Requirement	125 Avg Mo	188 Wkly Avg		***	20 Avg Mo	30 Wkly Avg		1/week	24-Hr Composite
Facility Sampling Point Comments										

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

NAME: **EAST GOSHEN MUNI AUTH CHESTER CNTY**
ADDRESS: **1580 PAOLI PIKE, WEST CHESTER PA, 19380-6107**
FACILITY: **RIDLEY CREEK STP**
LOCATION: **1751 TOWNE DR, WEST CHESTER PA, 19380**
STAGE: **Raw Sewage Influent**

PA0050504	001
PERMIT NUMBER	OUTFALL NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2020	12	01	TO	2020	12	31

Reporting Frequency: **Monthly**
DMR Effective From: **12/01/2020**
DMR Effective To: **12/31/2020**
Permit Expires: **04/30/2022**
Permit Application Due: **11/01/2021**
No Discharge: ☐

PARAMETERS REPORTED VALUES

PARAMETER		QUANTITY OR LOADING			QUANTITY OR CONCENTRATION				SAMPLING FREQUENCY	SAMPLING TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS		
Biochemical Oxygen Demand (BOD5) (00310)	Sample Measurement	696	***	lbs/day	***	268	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Total Suspended Solids (00530)	Sample Measurement	678	***	lbs/day	***	260	***	mg/L	1/week	24-Hr Composite
	Permit Requirement	Monitor & Report Avg Mo	***		***	Monitor & Report Avg Mo	***		1/week	24-Hr Composite
Facility Sampling Point Comments										

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BUREAU OF CLEAN WATER
DISCHARGE MONITORING REPORT (DMR)

ATTACHMENT DETAILS

File Name	Attachment Type	Uploaded Time	Attachment Comments
December 001 eDMR 2020 .xlsx	Daily Effluent Monitoring Form	2021-01-27T16:15:34-05:00	
December 002 eDMR 2020 .xlsx	Daily Effluent Monitoring Form	2021-01-27T16:17:29-05:00	
2020 DEC Influent Report.xls	Influent and Process Control Form	2021-01-27T16:18:11-05:00	
DEC 2020 SSR.xls	Sewage Sludge / Biosolids Production and Disposal Form	2021-01-27T16:19:09-05:00	

PERMIT VIOLATIONS

Non-Compliance ID	Event Start Date	Event End Date	Parameter	Limit Type	Reported Value	Permit Limit	Unit	Sampling Point	Cause Of Non-Compliance	Corrective Action	Comments

UNAUTHORIZED DISCHARGES

Non-Compliance ID	Event Start Date	Event End Date	Date and Time Discovered	Substance Discharged	Event Location	Volume (gal)	Duration (hrs)	Receiving Waters	Impact On Waters	Cause Of Discharge	Date and Time DEP Notified Orally	Comments

OTHER PERMIT VIOLATIONS

Non-Compliance ID	Non-Compliance Type	Sampling Point	Parameter	Reported Value	Permit Limit	Comments

COMMENT DETAILS

Comments	Operator Name	Operator Certification Number	Operator Contact Number
	Scott A. Towler	T0390	(345)-325-3282

SUBMISSION INFORMATION

SUBMITTED BY GREENPORT USER	*Pursuant to the Pennsylvania Electronic Transactions Act - Act 69, effective January 15, 2002, you are about to engage in an electronic transaction with the Commonwealth of Pennsylvania. You are submitting official information. You certify under penalty of law that this document and all attachments were prepared under your direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on your inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of your knowledge and belief, true, accurate and complete. You are aware that any false statement may be subject to substantial civil and criminal penalties, including 18 P.S. section 4904 (relating to unsworn falsification to authorities).	**Scott Towler**	TELEPHONE		DATE		
			(484)	**401-4198**	**2021**	**01**	**27**
towlersc		SUBMITTED BY FULL NAME	AREA CODE	NUMBER	YEAR	MO	DAY

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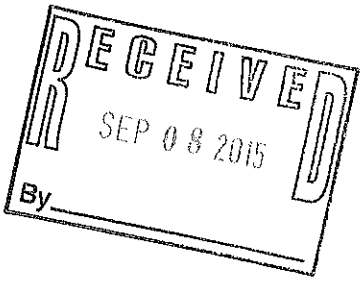
EXHIBIT O

DEP LETTER RE RELEASE FROM CORRECTIVE ACTION PLAN

Bill

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION



September 1, 2015

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Municipal Wasteload Management Program
Corrective Action Plan (CAP) & Connection Management Plan (CMP)
for Mill Lane and Sidley Road Gravity Sewer Collection and
Conveyance Systems
East Whiteland Township
Chester County

Dear Mr. Nagel:

On October 9, 2014, the Department of Environmental Protection (DEP) received a request from Mr. Kevin McAghon, P.E. of ARRO Consulting, Inc., East Whiteland Township's engineer, that East Whiteland Township's (Township) Connection Management Plan (CMP) for the Mill Lane and Sidley Road Gravity Sewer Collection and Conveyance Systems be modified.

Mr. McAghon has documented that Phases 1 and 2 of the Township's Corrective Action Plan (CAP) have been completed. Phases 1 and 2 involved the replacement and upgrade of the existing sewers in Mill Lane and Sidley Road with larger diameter pipe.

The replacement of these sewers mitigated the broken sewer interceptor along Mill Lane under Route 202 and eliminated the hydraulic restriction that existed within these sewer lines. The sewer upgrades within Mill Lane and Sidley Road have provided the Township's conveyance system with adequate capacity to meet its current and 5-year projected needs.

A review of the Township's portion of the Year 2014 Chapter 94 Report submitted for the Valley Forge Sewer Authority Treatment Plant received by DEP on April 10, 2015, also documents the elimination of the hydraulic restriction that existed within sewers along Mill Lane and Sidley Road with the completion of Phases 1 and 2 of the Township's CAP. Therefore, at this time, the Mill Lane and Sidley Road Gravity Sewer Collection and Conveyance Systems are no longer under any Chapter 94 restrictions. Please be advised that exemptions from Act 537 sewage facilities planning can now be processed for eligible projects proposed in areas tributary to this area of the Township's collection and conveyance system.

Southeast Regional Office
2 East Main Street | Norristown, PA 19401-4915 | 484.250.5970 | Fax 484.250.5971 | www.depweb.state.pa.us

Please note that while the Township's CAP is considered terminated, the Township continues to be obligated to implement their East Whiteland Township/Charlestown Township (Southside) Act 537 Special Study, approved by DEP on September 17, 2013. We note that the Township has committed to complete Phase 3 in accordance with the implementation schedule included in their Act 537 Special Study, as described in both the CAP and the approved Act 537 Special Study, to include an expansion of the Lee Boulevard Pump Station (LBPS) and associated force main.

Please note that while a CMP is no longer required to be submitted to DEP, we encourage the Township to continue to internally manage and keep track of connections into their sewerage system including those connections from Charlestown Township's Southside service area.

If you have any questions, please contact Ms. Kelly Boettlin at 484.250.5184.

Sincerely,

Steve O'Neil
Environmental Group Manager
Operations, Monitoring and TMDL
Clean Water

cc: Mr. McAghon – ARRO Engineering and Environmental Consultants
Mr. Steele – East Whiteland Township
Valley Forge Sewer Authority
Ms. Csete - Charlestown Township
Ms. Boettlin
Ms. Fields
Planning Section
Re 30 (GJE15CLW)244-4

EXHIBIT P1

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(1995 PLAN)

EAST WHITELAND TOWNSHIP

ACT 537 PLAN

Official Plan

Under the Pennsylvania Sewage Facilities Act

(P.L. 1535, No. 537)

Prepared for:

East Whiteland Township
Chester County, Pennsylvania

Prepared by:

Kohli and Associates, Inc.
Consulting Engineers, Planners & Landscape Architects
Malvern, Pennsylvania

Submitted: August 12, 1991
Last Revised: May 2, 1995
Adopted by the Township
Board of Supervisors: June 12, 1995

EAST WHITELAND TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN

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EAST WHITELAND TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN

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ACT 537 PLAN SUMMARY

Extending existing centralized sewer collection lines is considered to be appropriate for most of the Township, principally because of its accessibility and configuration of the sewage service areas as well as the possibility of degrading local streams is eliminated. Although central sewers export water from the service areas, however, an overriding issue is the fact that 72% of the Township is comprised of soils unsuitable for on-lot sewage disposal.

Public sewage collection and disposal facilities will be extended, as the need is determined, to all new development situated in Study Areas 1, 2, 3, 4, 5 and 6, as indicated on Figure 12, the Sewage Facilities Plan. Study Areas 1, 2 and 3 are to be served by public sewage collection facilities within five years. Study Area 4 is proposed to be served by 2001, while Study Area 5 is to be served by 2006. Study Areas 6 and 7 are envisioned to be served beyond 2006, although Study Area 7 could be served sooner with some alternate disposal method. Study Area 7A has also been considered by neighboring East Goshen Township for inclusion within its sewer system due to its location within the Ridley Creek Watershed. Study 7B is proposed to utilize a new treatment facility with stream discharge which must meet the recent "exceptional value" waters reclassification of the Valley Creek. Portions of Study Area 7B comprising of tracts zoned R-4 and R-1 are also being considered by neighboring West Whiteland Township for inclusion within its sewage treatment facility with disposal of effluent by spray irrigation on the property to be acquired from Church Farm School.

The major issue regarding future sewage capacity is that while the Valley Forge Sewage Treatment Plant could be expanded and the Township receive its 9.5 mgd, the sewage could not be transported to the plant based upon the existing flow capacity of the Wilson Road Pump Station in adjacent Tredyffrin Township. The Township current average daily flow capacity of the Wilson Road Pump Station is 2.3 mgd. Until the Wilson Road Pump Station is upgraded to accommodate a potential sewage plant expansion, the Township's policy to serve the Study Areas indicated in this Plan. If, and when, capacity becomes available, the small private plants that currently exist in East Whiteland will be connected to the Township's system.

I. INTRODUCTION

A. Purpose of the Official Plan

This Official Plan for sewerage systems in East Whiteland Township represents a comprehensive study of existing sewerage services and expected wastewater disposal needs. The requirement for such a study is set forth in Section 5 of the Pennsylvania Sewage Facilities Act, P.L. 1535, No. 537, as amended. (Refer to Appendix A) Regarding Official Plans, it is stated that: "Each municipality shall submit to the Department an officially adopted plan for sewage services for areas within its jurisdiction...". The need for an Official Plan is aptly expressed in the provisions for the "Administration of Sewage Facilities Program" contained in Chapter 71 of the Pennsylvania Code, Title 25. (Refer to Appendix B) In subsection 71.3, Purposes, it is stated that: "Official plans shall of necessity clearly demonstrate the municipality's approach to alleviate existing mass sewage problems, shall identify the present sewerage services now available and shall further indicate what will be done to provide the services needed in the future to cope with new development." Further, the Plan has a major aim of integrating new sewage facilities into the community in ways that will not disrupt or debase other important facilities and amenities such as recreational or important natural areas. This includes preventing the interbasin transfer of water when the watershed of origin can be clearly determined.

B. Sewage Construction to Date in the Township

Construction of the East Whiteland Municipal Authority system was begun in 1975. The initial sewer system consisted of a 27 inch trunk line along Matthews Road and a collection system serving the Down East, General Warren Village, Chester Valley Knoll as well as a portion of the Whiteland Farms sections of the Township. The initial system also provided service for the commercial developments along Route 30 as far as the One Park Place apartments west of Malin Road. These lines served predominately the eastern portion of the Township between the Amtrak railroad line and Route 202. Included was the previously installed, capped system along Oak Hill Circle south of the Amtrak line.

The initial system also included the construction of the Mill Lane Pump Station which replaced a private treatment system at the same location. The private treatment system had served the central portion of the Township north of Route 202 in the vicinity of Lee Boulevard and Sidley Road and a part of the Great Valley Corporate Center West development. The Mill Lane Pump Station enabled the elimination of an obsolete treatment plant and the connection of a previously installed, capped system along Knollbrook Circle and Mill Creek Lane.

Once the initial system became operational in 1977, development of the Great Valley Corporate Center East initiated the extension of sewers to serve the eastern portion of the Township north of Route 202. Sewer extension to this portion of the Township allowed connection to the remainder of the Great Valley Corporate Center West shortly thereafter.

Construction of the Bryn Erin development in the late 1970's predicated the extension of sanitary sewers along Route 401 west of Mill Lane and Route 202.

The Meadowview Pump Station on Swedesford Road was constructed in the early 1980's and allowed the connection of the remainder of the capped sewer system in the Whiteland Farms section of the Township as well as a remaining portion of the One Park Place apartment complex.

Development of the Pickford Road subdivision in 1984 and the Oak Hill Subdivision in 1986 brought sewer service to the remaining portion of the Sidley Road/Mill Lane area and to the western Lapp Road area. The previously installed capped sewers in Forge Drive and Dale Lane were connected to the system in 1987.

In 1988, construction of the Route 30 sewer extension was begun. The initial portion included sanitary collection lines along each side of Route 30 from the previous terminus at One Park Place Drive west to Church Road. In 1989, the remaining portion of Route 30 from Church Road to Route 202 was constructed. During this period, the extension of the Oak Hill Circle line was constructed to serve the Amy Lane Development in the south-central portion of the Township.

C. Content of the Official Plan Report

The content of this Official Plan Report provides a description of the following: the institutional framework for the planning of sewage disposal systems; a profile of the Township's physical and demographic conditions and existing and proposed land development; the characteristics of existing sewerage services and conditions; the proposed sewerage services and conditions which relate to all of the above; and an evaluation of the Official Plan's proposals. These components are explained in accordance with the requirements of the Sewage Facilities Act and Subsection 71.14, Contents of Plans, of the provisions for "Administration of Sewage Facilities Program," both of which are contained in Appendix A.

II. BACKGROUND

A. Official Act 537 Plan Context

1. Requirements of the Pennsylvania Sewage Facilities Act

Act 537 sets forth certain plan requirements and planning directives to guide in the preparation of Official Plans. (The complete text of the Act, in particular 25 PA Code, Chapter 71, is contained in Appendix A.) According to Section 5.(d)(1) of the Act, "Every official plan shall: delineate areas in which community sewage systems are now in existence, areas experiencing problems with sewage disposal including a description of said problems, areas where community sewerage systems are planned to be available within a 10 year period, areas where community sewerage systems are not planned to be available within a 10 year period, and all subdivisions existing or approved."

The Act also requires that Official Plans: "provide for the orderly extension of interceptor sewers (1); provide for adequate sewage treatment facilities (2); consider all aspects of planning, zoning, population estimates, engineering and economics (3); consider any existing State plan affecting water and other natural resources (4); establish procedures for delineating and acquiring rights-of-way or easements for community sewage systems (5); set forth a time schedule of methods for financing the construction and operation of the planned community sewage systems (6); be reviewed by appropriate official planning agencies (7); and, designate municipal responsibility for implementation of the plan (8)."

These requirements are not entirely applicable to East Whiteland Township. The following numbers (1) thru (8) correspond to the preceding paragraph:

(1) Eight inch mains throughout the sewered areas feed into the 27 inch interceptor along Matthews Road and then to Tredyffrin Township for conveyance.

(2) The East Whiteland Municipal Authority operates a collection system only. Treatment is provided by the Valley Forge Sewer Authority (VFSA).

(3) Please refer to the text for pertinent information.

(4) The 1983 State Water Plan mandates that Schuylkill River water be retained within the Schuylkill basin.

(5) Developers are to provide, and have provided, rights-of-way or easements in coordination with the Municipal Authority.

(6) Private financing is provided as development occurs. For areas already developed, the Municipal Authority floats bonds that are paid off with annual Township revenues.

(7) Agencies such as the PA Department of Environmental Resources, Chester County Planning Commission, the Chester County Health Department and the East Whiteland Municipal Authority review official plans.

(8) The East Whiteland Township Board of Supervisors is responsible for implementation of the Official Plan.

2. Past Official Plans

a. Master Sewer Plan for Chester County, Pennsylvania

A county-wide Act 537 Official Plan was prepared in 1970 by the Chester County Planning Commission, with the assistance of Roy F. Weston, Inc., Environmental Scientists and Engineers. It was adopted by the Township Board of Supervisors through a resolution. A copy of the Officially Adopted Act 537, Sewer Plan (Map) is Figure 1. It recommends that:

1. Between 1968 and 1978 -

All of the Township is to be served by public sewer except the:

a) Northeast corner of the Township (east of Morehall Road and north of what is now the Great Valley Corporate Center);

b) Southeast corner of the Township (between the Chester Valley Rail Line and U.S. Route 30); and

c) Northwest corner of the Township (north of the Chester Valley Rail Line and west of Philadelphia Memorial Park).

2. Between 1978 and 1988, service would be extended to the -

a) Northeast corner of the Township (east of Morehall Road and north of what is now the Great Valley Corporate Center); and

b) Southeast corner of the Township (between the Chester Valley Rail Line and U.S. Route 30).

3. After 1988 -

No further provision of public sewer service was anticipated.

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

BRANDYWINE BASIN

SCHUYLKILL BASIN

RIDLEY BASIN

CHARLESTOWN TWP

EAST GOSHEN TOWNSHIP

WILLISTOWN TOWNSHIP

MALVERN

EAST WHITELAND TWP
THORNBURY TWP

FIGURE 1

COUNTY WIDE ACT 537 PLAN

ADOPTED IN 1970

RECOMMENDED SERVICE AREAS

- — 1968 TO 1978
- — 1978 TO 1988
- — NOT WITHIN SERVICE AREA

DRAINAGE AREA BOUNDARY

SOURCE:

MASTER SEWER PLAN
REVISED ADDITION 1970
FOR CHESTER COUNTY, PA

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC., 1981

The first phase of sewered area expansion, 1968 to 1978, was directed primarily toward those areas which in 1968 experienced sewage disposal problems. The second phase of expansion, 1978 to 1988, was defined for areas where additional growth was expected. The County-wide Plan has continued to remain in effect pending preparation of the East Whiteland Township 537 Plan.

b. Official Plan Activity by East Whiteland Township

The Township reviews every development proposal for consistency with the East Whiteland Comprehensive Plan and the Official Act 537 Plan. Significant development has occurred since 1970 and the Official Plan is not revised for each project. Rather, the Municipal Authority updates its service area maps and notes the correlation between the particular development and the Official Act 537 Plan.

3. The Institutional Context of the Valley Forge Sewer Authority

The Valley Forge Sewer Authority (VFSA) was organized on February 6, 1969 and operates under the provisions of the Municipal Authorities Act of 1945, P.L. 382, as amended. In November of 1970, Charlestown, East Pikeland and Schuylkill, through the VFSA, entered into the Valley Forge Sewage Treatment Plan Agreement along with the Townships of East Whiteland, Tredyffrin, Willistown and Easttown and the Borough of Malvern through their respective municipal authorities. Under this agreement, the VFSA was given an allocation of 26.5 percent of the initial design capacity of the Valley Forge Wastewater Treatment Facility (2.0 MGD of 7.53 MGD). East Whiteland's initial share of the VFSA allocation was utilized when properties in the Initial Service Area were connected to the wastewater treatment system. The VFSA, who assumed responsibility for the construction, ownership, operation and financing of the treatment facility, established and collects fees for its administration, operation and maintenance. East Whiteland Township had an approximate 1.7 million gallon per day capacity assigned for use within the Design Service Area. The average daily flow used by East Whiteland in 1990 is 1.052 million gallons per day, representing approximately 62 percent of the total Township allocations. Within the framework of the VFSA, East Whiteland will continue to obtain and expand upon its municipal sewage treatment.

B. Profile of East Whiteland Township

1. General Setting

East Whiteland Township, located in Eastern Chester County, comprises approximately 6,930 acres or 10.8 square miles. East Whiteland is flanked by Tredyffrin Township to the east and West Whiteland Township to the west, within the Great Valley. Please refer to Figure 2, Regional Location.

Access

East Whiteland has many regional and interstate highway corridors located within or immediately adjacent to its boundaries. Few municipalities in Chester County are served directly by as many interstate and regional arteries. As can be seen in Figure 2, U.S. Routes 202 and 30 run east/west through the Township. Pennsylvania Routes 29, 352, and 401 provide north/south access through the Township. The Pennsylvania Turnpike (I-76) is situated just north of the Township, with two interchanges within 10 miles east or west. Although these roadways have provided easy access for commuters from East Whiteland to outlying population areas, the same highway network has brought outlying commuters into the employment centers of the Township, resulting in a change in travel patterns. East Whiteland has evolved, in recent years, into a major employment center and thus an importer of labor rather than an exporter of labor, a situation that is experienced by the majority of Chester County municipalities.

East Whiteland also has two freight lines (the Conrail Trenton cut-off and Chester Valley Line) and a high speedline (AMTRAK) traveling east/west through the Township. There are no train stations situated within the Township, but there are stations within minutes of East Whiteland located in Exton, Malvern, and Paoli which service commuters.

Employment

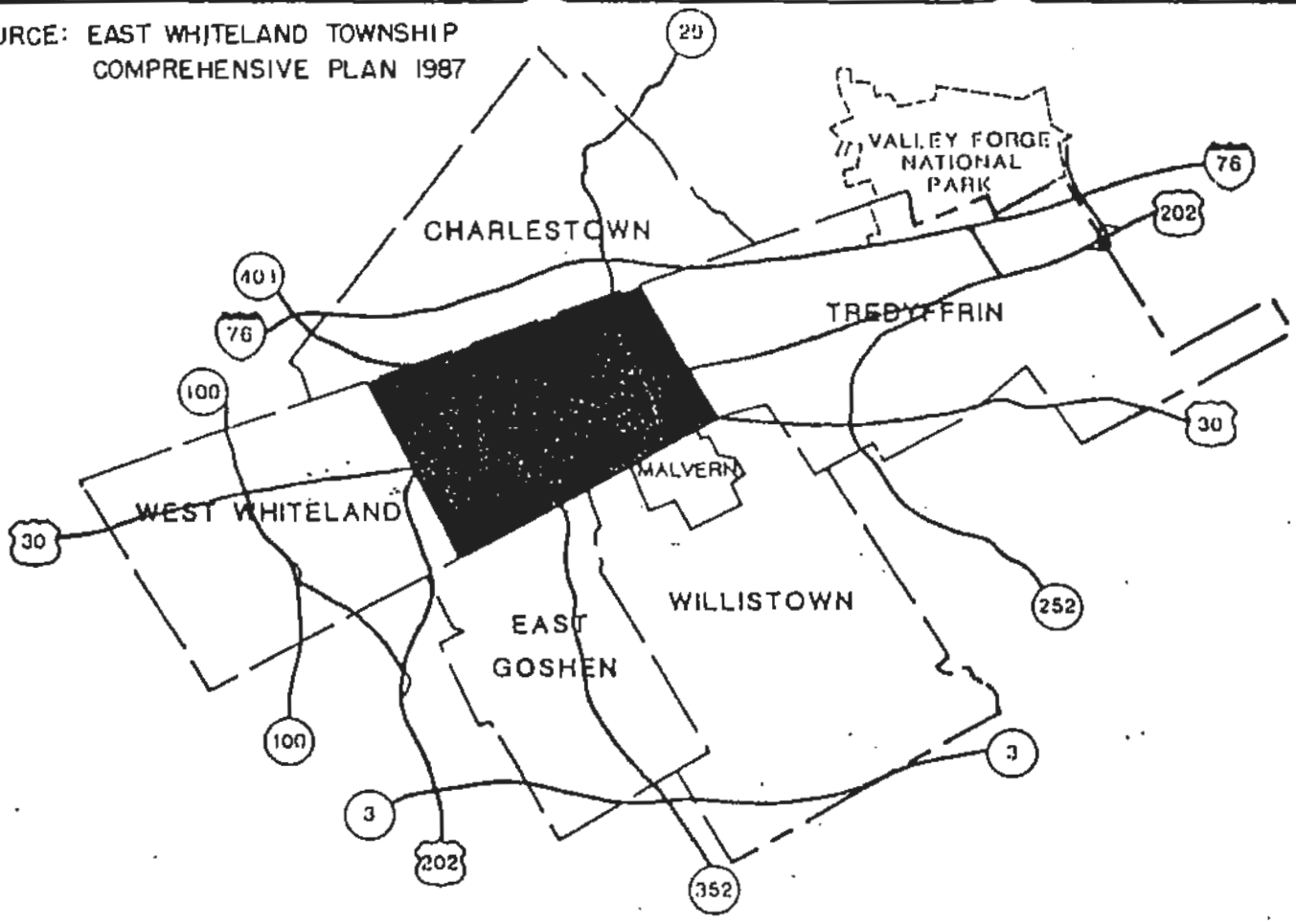
Since 1980, East Whiteland Township has become a prime location for many advanced technology and service-oriented companies in the Philadelphia Metropolitan Area. Many regional and national headquarters for major companies in these industries have located here. The hub of this industrial development is the Great Valley Corporate Center. This has resulted in East Whiteland evolving into the major industrial/office center in the County, if not the region. There were approximately 300 businesses in East Whiteland Township as of 1990.

FIGURE 2
REGIONAL LOCATION

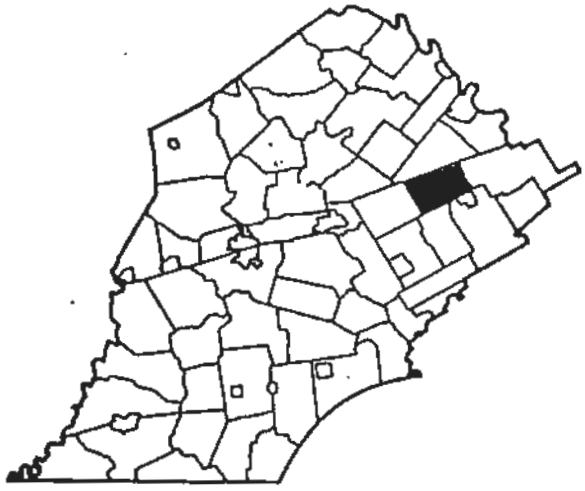
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

NORTH

SOURCE: EAST WHITELAND TOWNSHIP COMPREHENSIVE PLAN 1987



EAST WHITELAND IN CHESTER COUNTY



EAST WHITELAND IN SOUTHEASTERN PENNSYLVANIA



In 1986, 13,247 persons were employed in East Whiteland. Predominant industries included: business services (2,648);insurance (2,000); chemicals (1,630); primary metals (1,405);and miscellaneous services (1,005). The top five employers in 1986 were: National Liberty Corp.; Shared Medical Systems; Wyeth Laboratories; Systems and Computer Technology Corp.; and National Rolling Mills.

The industrial and retail sections dominate the economy of East Whiteland. These sections are expected to continue to do so. Significant increases have been experienced, however, in administrative, managerial, sales and service occupations. These increases reflect the nationwide transition towards a service economy.

The Route 30 corridor which runs through the southern portion of the Township has supplanted any town center and provides the retail and service spine for East Whiteland.

Geology and Drainage

Most of East Whiteland, that area belonging to the Chester Valley, is underlain by limestone. The Chester Valley was formed not by a major stream, but a sequence of limestones and dolomites down-dropped by a combination of folding and faulting to form a relatively narrow band of sediments lying between the igneous and metamorphic rocks on either side. Subsequent physical and chemical weathering has further reduced the general level to below that of the quartzites of the North Valley Hills and the Wissahickon albite-chlorite schist of the South Valley Hills. The Valley is therefore defined by the limestone area.

The most distinctive characteristic of these limestones is that the chemical interaction of air and water tends to form a weak carbonic acid solution which, with humic acid from vegetation decay, slowly dissolves the limestones and forms underground solution channels which frequently extend long distances. These present the danger of sink holes and foundation collapse as well as the hazard of groundwater pollution. However, they also contribute to the generally deep and well-drained characteristics and fertility of the overlying soils. Groundwater yields of the limestones and dolomite underlying East Whiteland tend to be highly variable. When a large solution channel is tapped, very large water supplies may result. Otherwise yields are small. Water quality is generally good, although the risk for contamination is great.

The southern portion of the Township is underlain by Wissahickon albite chlorite schist. The deep weathering of these rocks tends to improve the percolation characteristics of the soil but frequently presents foundation problems. Foundation conditions for heavy buildings should be carefully checked in these areas. However, because of the greater weathering, schists yield more groundwater, the amounts ranging between 10 and 30 gallons per minute to a

maximum of 70 to 100 gallons per minute. Groundwater from schists tends to be of a high quality of purity and softness.

The extreme northern portion of East Whiteland is underlain by the Chickies group of quartzite. Quartzite is a strongly metamorphosed sandstone that occurs as a hard, smooth rock. Its hardness resists erosion and weathers slowly. As a result it often forms high sharp ridges such as the North Valley Hills. Like other hard rocks, water yields are low, ranging between 5 and 15 gallons per minute.

Drainage basins are illustrated in Figure 1. Most of East Whiteland Township (6,590 acres or 86%), falls within the Valley Creek subbasin, and thus drained eventually by the Schuylkill River. A small area (540 acres or 7%) of the south-central and southwest portion of the Township is drained by the headwaters of Ridley Creek. The extreme western portion of the Township (550 acres or 7%) is drained by Valley Creek which flows into the East Branch of the Brandywine Creek.

Topography, Geology and Land Use

The general pattern of land uses in East Whiteland is traceable, in part, to the existing topography and geology of the Township. The existence of the Great Valley, the wooded slopes of the North and South Valley Hills, and the plateau area in the southern portion of the Township have shaped settlement patterns and planning policies for development related to topographic and geologic features.

The present arrangement of land uses within and adjacent to the Township continues to reflect the natural conditions and the established planning policies. Slopes are one example of natural conditions affecting development and planning policies. Please refer to Figure 3, Slopes.

Land uses that seek the advantages of accessibility or the relative ease of development according to soils type or slopes are most evident throughout the Great Valley. Commercial and industrial uses along the Routes 29, 30 and 202 corridors, and office and industrial buildings with substantial ground coverage dominate in the valley. A potential disadvantage in this area is the carbonate limestone formation which underlies most of it. As described above, this geological formation is prone to sink holes and groundwater pollution, and therefore could pose problems for extensive on-site sewage disposal, heavy construction, or the expansion of impervious surfaces. Thus far the uses in this area have generally succeeded in avoiding such consequences.



SOURCE
EAST WHITELAND COMPREHENSIVE PLAN 1987
AND U.S.G.S. QUADRANGLE, MALVERN

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC. 1991

FIGURE 3

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

As accessibility has keyed the growth of industrial, office and commercial activity to the Routes 29, 30 and 202 corridors, concentrated development within the Great Valley is expected to continue once improvements to Route 29 and the proposed Exton By-Pass are constructed. These improvements will transform the circulation and access conditions of East Whiteland into a greater locational advantage.

Residential uses in East Whiteland are concentrated in the central to southern portions of the Township. Most of this development has been single-family dwellings, although multi-family dwellings have increased in recent years. Table 1 indicates the acres in each land use within the Township. Please refer to Figure 4, Existing Land Use, for a graphic depiction of land use patterns in the Township.

Existing Township parks embrace the stream corridor. As such, stream corridors represent a major amenity to the community which merit special protection.

Adjacent Municipalities

The six municipalities which surround East Whiteland include the Townships of Charlestown, Tredyffrin, Willistown, East Goshen, West Whiteland and the Borough of Malvern. The six municipalities are characterized by a diversity of land uses and intensity of development. Figure 2 displays the relationship between East Whiteland and the surrounding municipalities. An overview of each municipality in terms of land use adjacency and planning efforts follows.

East Whiteland does not have many serious land use conflicts at its respective boundaries with adjoining municipalities. In most instances, the use in both municipalities is single-family residential development at compatible densities. The industrial development along the Charlestown boundary abuts existing and zoned industrial uses. Although the Warner Quarry extends into Tredyffrin, the low density residential areas in Tredyffrin which abut the property are impacted by it. The balance of the Tredyffrin boundary consists of compatible industrial uses and zones. The boundaries with East Goshen and Willistown are well matched with existing and zoned uses.

Development along a portion of the Malvern Borough boundary is potentially a conflict due to the developing industrial park in the Borough. However, existing woodlands serve as an adequate buffer. The border with West Whiteland is consistent, as residential and agricultural uses abut. Both Townships have industrial uses that abut areas of lesser density, and tract sizes and buffers have reduced most points of conflict. The most significant area of potential change

Table 1
LAND USE DISTRIBUTION, EAST WHITELAND TOWNSHIP, 1987

Land Use	Area	Percent
Residential	1680 Ac.	21.9
Single Family	1590 Ac.	20.7
Multi-Family	21 Ac.	0.3
Mobile Home Park	69 Ac.	0.9
Commercial	262 Ac.	3.4
Retail/Service	242 Ac.	3.1
Office/Professional	20 Ac.	0.3
Industrial	1287 Ac.	16.7
Limited/Warehouse	238 Ac.	3.1
General/Quarry	722 Ac.	9.4
Corporate	327 Ac.	4.3
Institutional	255 Ac.	3.3
Recreation	371 Ac.	4.8
Utilities/Transportation	750 Ac.	9.8
Agriculture	494 Ac.	6.4
Woodland	1229 Ac.	16.0
Vacant	1352 Ac.	17.6
TOTAL	7680 Ac.	100.0

Sources: Adapted from the East Whiteland Township Comprehensive Plan of 1987.

Land development since 1987 is depicted on Table 3 and Figure 7.

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

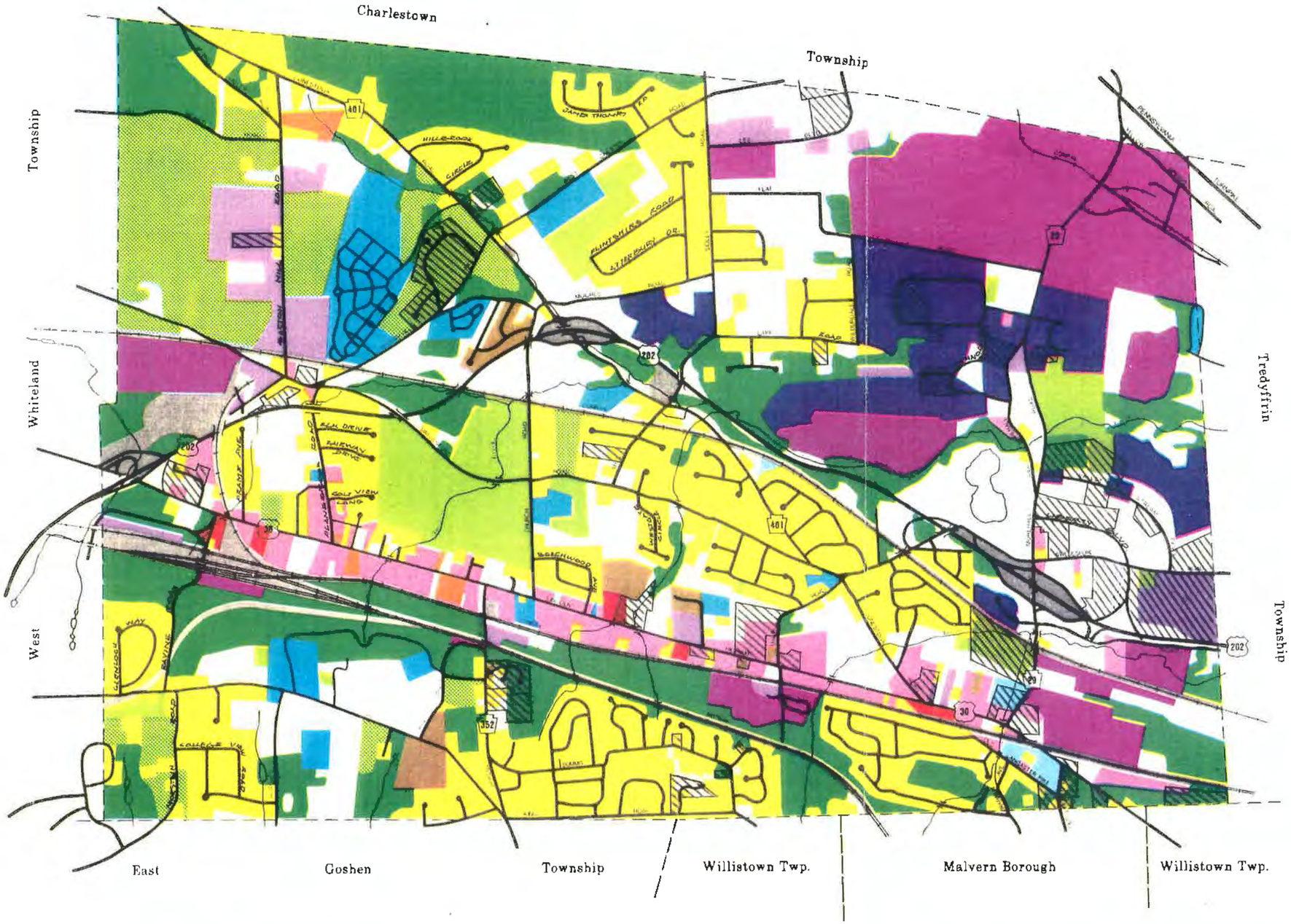
0 2000 4000

Scale (in feet)

N

FIGURE 4

EXISTING LAND USE



RESIDENTIAL

- SINGLE FAMILY
- MOBILE HOME PARK
- MULTI FAMILY

COMMERCIAL

- RETAIL/SERVICE
- OFFICE/PROFESSIONAL

INDUSTRIAL

- LIMITED/WAREHOUSE
- GENERAL/QUARRY
- CORPORATE

OTHER LAND USES

- INSTITUTIONAL
- RECREATION
- UTILITIES/TRANSPORTATION
- AGRICULTURE
- WOODLAND
- VACANT
- SUBDIVISION / LAND DEVELOPMENT ACTIVITY APPROVED SINCE 1987

SOURCE:
EAST WHITELAND COMPREHENSIVE PLAN 1987
UPDATED BY KOHLI & ASSOCIATES, 1991

along the East/West Whiteland border relates to the Church Farm School tract. Although currently in agricultural use, the proposed zoning change for a new community development known as "Churchill" was denied and a "by right" multi-family development, known as Valley Crossing has been granted preliminary approval.

Charlestown Township forms the entire northern boundary with East Whiteland. Charlestown is the most rural municipality adjoining East Whiteland with most of its land in low density residential and agricultural uses. The settlement patterns of the Township have been primarily influenced by the prevalence of environmental constraints and the lack of infrastructure, major roads and public facilities. The portion of the Township that borders East Whiteland has been planned for industrial uses adjacent to Phoenixville Pike and the Pennsylvania Turnpike, commercial uses in Devault, and residential uses of low to medium density.

Tredyffrin Township forms the entire eastern border of East Whiteland. Tredyffrin is the most populous municipality in Chester County and contains the same diversity of land uses found in East Whiteland. Tredyffrin experienced much of its development in the 1950's and 60's as suburbanization extended westward from Philadelphia. Development has accelerated due to available public sewer and water capacity as well as excellent highway access. Many key regional highways such as U.S. Routes 202, 30 and the Pennsylvania Turnpike traverse Tredyffrin. Tredyffrin is not entirely developed as implied, in fact much of the northern and western portions of the Township are low density residential development scattered amidst open, undeveloped lands. The portion of Tredyffrin that borders East Whiteland has been planned for low to medium density residential use. Stream valley preservation is planned along the Valley and Little Valley Creeks in the southern part of this border.

Willistown Township is one of the three municipalities that form the southern border of East Whiteland. The Township borders East Whiteland on either side of Malvern and each area has a different character. The eastern area contains the Paoli Memorial Hospital and office and industrial development, while the western area contains single-family development. Willistown Township can be divided into two distinct areas, the areas north and south of Paoli Pike. The northern area is comprised of medium density residential, commercial, institutional, and industrial uses. The southern area is comprised of low density residential and agricultural uses, and open undeveloped land.

Much of the land in the southern area of Willistown is under protective easement. The portion of Willistown that borders East Whiteland has been planned for low-to-medium density residential along the western portion of the border and medium to high density residential and industrial use along the eastern portion of the border.

Malvern Borough is situated along the southern border of East Whiteland and is surrounded by Willistown. Malvern is the most dense municipality of the seven

and is characterized by medium to high density residential, commercial, and industrial uses. King Street, which traverses the southern portion of East Whiteland, is the most important road in Malvern along which most of the commercial and service uses are located. The portion of Malvern that borders East Whiteland has been planned for medium density residential (4 DU/acre) and industrial use.

East Goshen Township forms over half of the southern border of East Whiteland. East Goshen is one of the most rapidly developing municipalities in the County. The Township increased 95% in population and 156% in dwelling units between 1970 and 1980. The Township is characterized by low to medium density residential development with areas of commercial, industrial and high density residential along Paoli Pike and PA Routes 3 and 352. The portion of East Goshen that borders East Whiteland has been planned for low density residential and conservation.

West Whiteland Township forms the entire western boundary of East Whiteland. West Whiteland has developed very similarly to East Whiteland in that the most intensive uses are within the Chester Valley. U.S. Route 30 is common to both East and West Whiteland. The Township also contains PA Route 100, the most important north-south route in the County. The Exton By-Pass is to be constructed within West Whiteland, connecting the Downingtown By-Pass to U.S. Route 202. West Whiteland has a diversity of land uses similar to East Whiteland and contains the largest concentrations of retail uses in Chester County. The portion of West Whiteland that borders East Whiteland has been planned by West Whiteland for low density residential and industrial/office uses adjacent to the U.S. Routes 202 and 30 interchange. However, there are proposals before both Townships for higher intensity uses, via the Churchill project.

2. Population

The total population in East Whiteland in 1980 was 8,468 according to the U.S. Bureau of the Census (refer to Appendix E). The population projections for the Township have been varied. For 1985, a range in total population of 8,750 to 8,970 was reported in the 1987 East Whiteland Township Comprehensive Plan. A range in the total population for 1990 from 9,466 to 11,088 was reported in the same Comprehensive Plan.

However, based on the U.S. Bureau of the Census, the 1990 population of the Township was 8,398. The County has projected a year 2000 population to be 9,780 (see Appendix E). In the COWAMP 208 Study, the Delaware Valley Regional Planning Commission reported a year 2000 projection of 9,300. The population for the 1990-2000 period, therefore, can be assumed to range from approximately 9,000 to 10,000.

3. Planning and Zoning Overview

a. The Comprehensive Plan

In January, 1987, the East Whiteland Township Board of Supervisors adopted the Comprehensive Plan. The Plan represents a high level of environmental analysis. It is also responsive to the development pressures which have been and will continue to be exerted on the Township and the infrastructure available to support development. The land use recommendations made in the Plan are shown in Figure 5. These various recommendations complement one another and were pertinent to a target year of 2000. In early 1987, the work program began to amend the Zoning Ordinance and implement the Comprehensive Plan.

b. The Zoning Ordinance

A brief summary of the East Whiteland Zoning Ordinance is provided in this section, along with a tabulation of the areas which remain to be developed. These undeveloped areas affect the type and amount of future sewage requirements.

The East Whiteland Township Zoning Ordinance and Map were adopted in 1975. The Ordinance and Map have subsequently been amended through 1988. Please refer to Figure 6, the Zoning Map. In 1987, a work program began to amend the Zoning Ordinance, which is still underway.

The Zoning Ordinance established 16 zoning districts including a Flood Hazard District. Included are four residential districts, four commercial districts, three professional office districts and four industrial districts.

The four residential districts comprise approximately 3,784 acres or 55% of East Whiteland.

- R-1 requires a minimum 44,000 square foot (or 1.01 acre) lot area. Uses allowed include single-family detached dwellings, agriculture, government, educational and religious activities. This zone includes about 2,253 acres and is found in the northwest, central and southwest areas of the Township.

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

0 2000 4000

Scale (in feet)

N

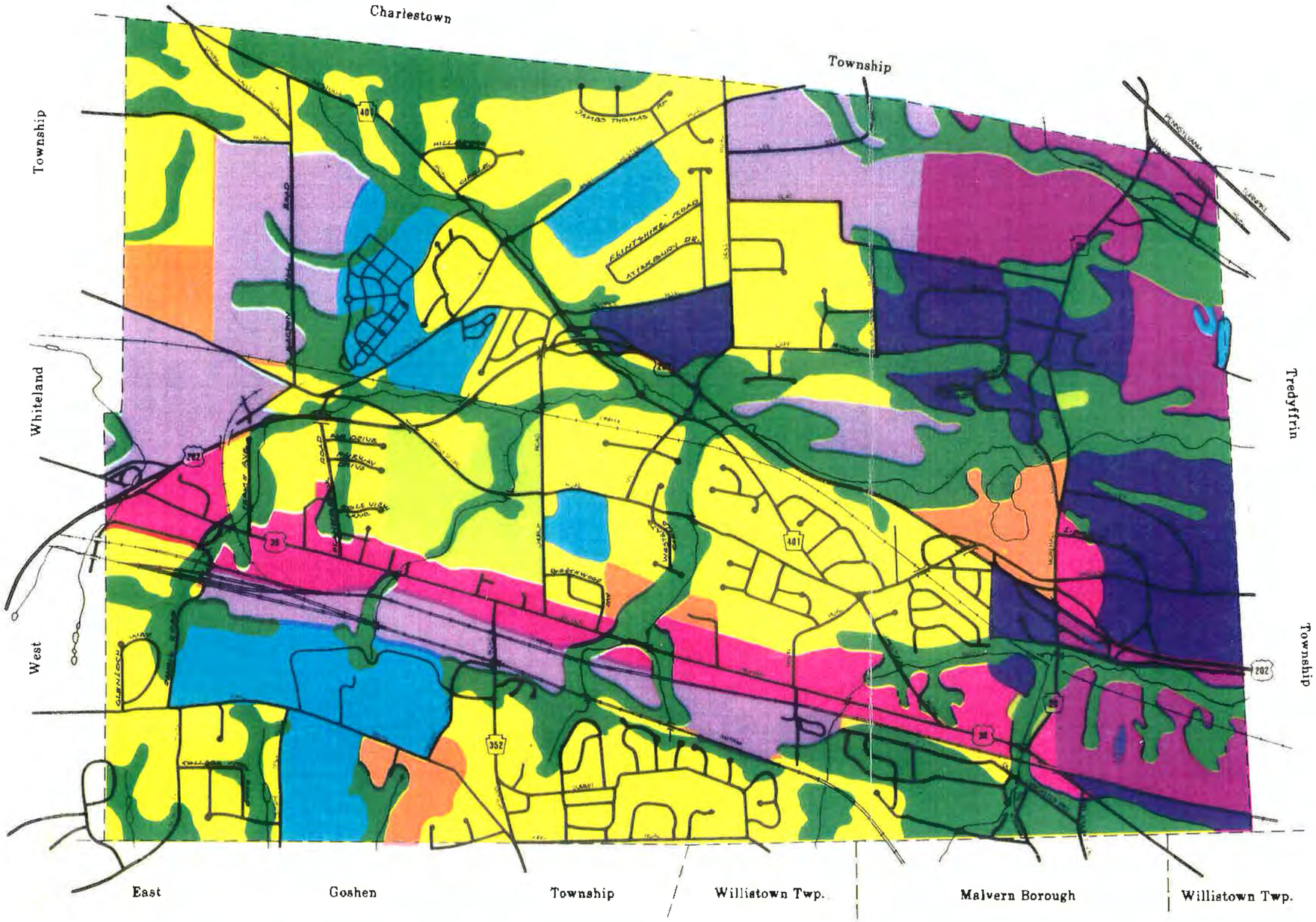


FIGURE 5

FUTURE LAND USE

- SUBURBAN RESIDENTIAL
- URBAN RESIDENTIAL
- COMMERCIAL
- LIMITED INDUSTRIAL
- GENERAL INDUSTRIAL
- CORPORATE
- INSTITUTIONAL
- RECREATION
- ENVIRONMENTAL CONSTRAINTS

Sources: East Whiteland Township and CCPC, 1986.

Base Map Prepared by the Chester County Planning Commission, 1986

UPDATED BY KOHLI & ASSOCIATES, INC. 1991

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

LEGEND

- R-1 RESIDENTIAL
- R-2 RESIDENTIAL
- R-3 RESIDENTIAL
- R-4 RESIDENTIAL
- PO-1 PROFESSIONAL & OFFICE
- PO-2 PROFESSIONAL & OFFICE
- PO-3 PROFESSIONAL & OFFICE
- C-1 COMMERCIAL
- C-2 COMMERCIAL
- C-3 COMMERCIAL
- C-4 COMMERCIAL
- LI LIMITED INDUSTRIAL
- GI GENERAL INDUSTRIAL
- RIC RESTRICTED INDUSTRIAL COMMERCIAL
- GI-M GENERAL INDUSTRIAL DISTRICT-MINING

FIGURE 6

ZONING MAP

SOURCE: EAST WHITELAND TOWNSHIP ZONING MAP
ADOPTED SEPTEMBER 2, 1975
LAST REVISED JUNE 8, 1992

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC., 1991

- The R-2 zone requires a minimum lot area of 22,000 square feet, or 0.51 acres. Permitted uses are similar to those of the R-1 zone. The R-2 zone is found in the western and south-central areas of East Whiteland. About 1,013 acres are zoned R-2.

- For R-3, the minimum lot size is 18,000 square feet, or 0.41 acres. Uses are again similar to R-1. Approximately 194 acres are zoned R-3 and are located in the southeast corner of the Township.

- R-4 is a higher density residential zone and allows various unit types ranging from mobilehomes and multi-family dwellings to single-family detached dwellings. A variety of minimum lot areas or densities are allowed, depending on the dwelling unit type. 324 acres are zoned R-4 and large areas can be found along the western, southern and eastern boundaries of the Township, plus a small area in the central portion of the Township north of U.S. Route 30.

Four commercial districts are delineated in the Zoning Ordinance. These districts total 572 acres, or 8.2% of the Township's land area.

- C-1 is a retail shopping district allowing shops, banks, restaurants and offices. A minimum 20,000 square foot lot area is required, with building coverage limited to 40%. Almost 143 acres are zoned C-1, most of which is already developed. C-1 is found north and south of Route 30.

- C-2 is a more general commercial district that, in addition to C-1 uses, can permit service and hotel/motel uses. C-2 requires a minimum one acre lot, and limits building coverage to 40%. Approximately 147 acres are zoned C-2 and are found primarily along Route 30.

- C-3 is also a general commercial district that allows C-2 uses, as well as automotive sales and repair and lumber activities. Only one area, of less than 80 acres, is zoned C-3. This is along the western part of Route 30.

- The last commercial district is C-4. All C-1 and C-2 uses are allowed, as well as distribution, assembly and office uses. The minimum lot area requirement is 12,000 square feet, and maximum building coverage is 40%. C-4 is found in a long strip of over 200 acres, south of and parallel to Route 30.

The Zoning Ordinance designates three "Professional Office Districts." These districts constitute 4.4% of the Township's land area, or 306 acres.

- PO-1 allows residential, agricultural and office uses. Educational and medical activities are also allowed. PO-1 requires a minimum 22 acre lot and caps building coverage at 15%. Approximately 210 acres are zoned PO-1 and are found at the intersection of Routes 202 and 401 and on the Township's eastern edge.

- PO-2 allows all PO-1 uses except residential. The minimum lot area is five acres. Building coverage cannot exceed 15%. About 75 acres are designated PO-2. These areas are found north and south of the Route 30 intersection with Route 29.

- The third professional office district is PO-3. All PO-2 uses are allowed, plus R-4 uses. The minimum lot area is three acres and building coverage cannot exceed 25%. Only one parcel of 21 acres is designated PO-3. This is south of Route 30, on the eastern end of the Township.

Four industrial districts are designated in the Ordinance, which account for almost 33% of the Township's land area, or 2,269 acres.

- LI is a limited industrial district. Permitted uses include agriculture, laboratories, transportation, warehousing, light manufacturing and offices. The minimum lot size is one acre. The maximum building coverage ranges from 20% for lots under three acres to 40% for lots over 10 acres. LI comprises over 1,000 acres and is found in several large areas, including those south of Route 30 and in the north-central and east-central part of the Township. A small area in the southeast is zoned LI.

- GI is a general industrial district. All LI uses are allowed, as well as manufacturing and construction equipment services. The minimum lot area is five acres. Building coverage is limited to 20 to 40%, depending on lot size. 587 acres are zoned GI and are found in two areas: the Great Valley Corporate Center and south of Route 202 on the Township's eastern boundary.

- GIM is the general industrial-mining district. All GI uses are allowed, plus surface mining. One large area in the northeast corner of the Township is zoned GIM, comprising 483 acres. The lot area minimums are the same as for GI except that surface mining requires at least 50 acres.

- The fourth industrial zone is RIC, or Restricted Industrial Commercial. Permitted uses include offices, parks, laboratories, municipal services and light manufacturing. The minimum lot size is five acres. The maximum building coverage ranges from 20% (up to a two acre lot) to 40% (lots over 10 acres). 157 acres are zoned RIC, in the eastern part of the Township along Liberty Boulevard and Matthews Road.

Sewage disposal requirements for all zoning districts are found in Section 1823 of the Zoning Ordinance. Uses are to be served "either by a municipal or privately owned sewage treatment plant or by an on-lot septic system" provided that the safety and effectiveness of the on-lot systems are approved by the appropriate public health officer.

Table 2 divides the Township land area into zoning districts. The Flood Hazard District is essentially an overlay area and not included for analytical purposes. The size of each zone is calculated by acreage and as a percentage of total Township land area. Acres served by public or private sewerage systems are listed, as are the amount of acres undeveloped. Finally, the number of residences that could be built on undeveloped land, or the square footage of potential commercial, office and/or industrial land uses are tabulated.

The table inventories two types of undeveloped land. The first type includes vacant parcels as classified by the Vacant Parcel Analysis conducted in 1986 by the Eastern Chester County Regional Planning Commission, the 1987 Township Comprehensive Plan, and field survey. The second type includes parcels currently developed but which are large enough to be subdivided and further developed. This type is primarily residential.

In summary, the Township could theoretically expect up to 3,600 new residences, over 776,000 square feet of commercial uses, 1,393,000 square feet of professional and office use, and over seven million square feet of industrial-type activities on undeveloped land.

It is important to note that the figures reported here do not reflect a detailed analysis of each tract of land in the Township. These calculations are generalized estimates and for planning purposes only. No site constraints, transportation, or other requirements were factored in. Parcels zoned non-residential were considered developed, if presently built upon. Vacant, non-residential parcels were assumed to be developed at their maximum, so these estimates are high.

Table 2

LAND AVAILABLE FOR FUTURE DEVELOPMENT IN EAST WHITELAND, BY ZONING DISTRICT

Zoning District	Potential New Acres In District	Percent of Township	Acres Sewered	Acres Undeveloped	Percent of Township	Dwelling Units/ Square Footage
R-1	2,702.8	35.2	872.5	740.6	9.6	732
R-2	1,094.6	14.3	372.0	238.4	3.1	468
R-3	196.0	2.5	165.0	11.4	0.2	26
R-4	356.4	4.6	28.6	244.3	3.2	2,405
SUBTOTAL	4,349.8	56.6	1,438.1	1,234.7	16.1	3,631
C-1	180.7	2.4	180.7	25.3	0.3	441,827
C-2	92.6	1.2	83.0	13.7	0.2	238,709
C-3	81.2	1.0	61.0	3.5	0.05	52,272
C-4	163.3	2.1	163.3	2.5	0.05	43,560
SUBTOTAL	517.8	6.7	488.0	45.0	0.6	776,368
PO-1	257.9	3.4	257.9	69.7	0.9	910,186
PO-2	84.6	1.1	84.6	36.9	0.5	482,209
PO-3	23.2	0.3	23.2	0.0	0.0	0
SUBTOTAL	365.7	4.8	365.7	106.6	1.4	1,393,395
LI	1,152.0	15.0	555.0	194.2	2.5	6,244,327
GI	578.4	7.5	320.0	49.6	0.6	773,625
GIM	544.8	7.1	0.0	0.0	0.0	0
RIC	171.5	2.3	171.5	0.0	0.0	0
SUBTOTAL	2,446.7	31.9	1,046.5	243.8	3.1	7,017,952
TOTAL	7,680.0	100.0	3,338.3	1,630.1	21.2	N/A

Sources:

1. East Whiteland Township Comprehensive Plan, 1987.
2. Chester County Assessment Office, data available thru December, 1990.
3. Kohli and Associates, Inc., Sewer Service Analysis, 1991.

Almost 75% of the land area in East Whiteland is already developed. This leaves approximately 1,630 acres either vacant or capable of being subdivided and developed. Developable sites are scattered throughout the Township. Over three-quarters of this acreage is zoned residential. About 244 acres are industrially-zoned, 107 acres are zoned professional-office, and the remaining 45 acres are zoned commercial.

Most of the developable land is zoned residential and the majority of that, or 741 acres, is zoned R-1. This acreage could support 732 dwellings. Parcels are located throughout the central, northwest and southwest areas of East Whiteland. R-2 zoned land that could be developed or subdivided totals 238 acres. This acreage could support 468 dwellings and isolated in small parcels to the west and south. Only 11 acres of R-3 land remains to be developed, in the southeast part of East Whiteland. These parcels could support 26 new residences. About 244 acres of R-4 could be developed, accommodating a theoretical maximum of 2,405 dwelling units. This acreage is primarily on the western boundary of the Township. A preliminary plan for 1,474 multi-family units has already been approved for this particular R-4 land.

All of the commercially zoned land remaining to be developed is located along Route 30, primarily in small, scattered parcels. Approximately 25 acres are zoned C-1. These parcels could support 442,000 square feet of development. Less than 14 acres of developable land is zoned C-2 and could accommodate 239,000 square feet of commercial uses. Less than four acres of C-3 land remains to be developed. About 52,000 commercial square feet could be built on these scattered parcels.

Most of the available, "Professional-Office" land, 70 acres, is zoned PO-1 and is located at the intersection of Routes 202 and 401. Approximately 910,000 square feet of "PO-1" uses could be built here. About 37 acres of PO-2 land is available in the southeast quadrant of the Township. Up to 482,000 square feet could be built here. No land zoned PO-3 remains to be developed.

Nearly 80% of the available, industrial land is zoned L-1. Over six million square feet of industrial uses could be built on these various parcel which are located throughout the Township. Almost 50 acres of GI land is available. This acreage could support 774,000 square feet of GI uses and is located in the eastern area of the Township. No GIM or RIC land remains to be developed.

4. Land Development Overview

Significant subdivision and land development activity has occurred in East Whiteland Township since the adoption of the Township Comprehensive Plan in 1987. There have been 89 of 93 projects which received final approval. These proposals include: 167 single-family dwellings; 1,588 multi-family dwellings; 571 hotel rooms; 444,184 SF of commercial; 1,428,182 SF of office; 734,991 SF of industrial; and 25 industrial lots. Table 3 further details this land development activity. Figure 7 graphically depicts where these projects are located.

III. EXISTING SEWERAGE SERVICES AND CONDITIONS

A. The Existing Sewage System

1. Areas Presently Served by the Collection System

East Whiteland Municipal Authority owns the sewage collection system and leases its operation to East Whiteland Township. The sewer system served a total of 3,574 EDU's (Estimated Dwelling Units) at the end of 1990. Flows at the end of 1990 were approximately 1.052 million gallons per day (mgd). The average daily flow of the system is 50% residential and 50% commercial and industrial. The eastern two-thirds of East Whiteland including all of Route 30 is now served by the system. Please refer to Figure 9, Existing Sewer Service.

The collection system includes a total of 10 pump stations as shown in Figure 8. Design capacities and current flows are listed on Table 4.

2. Permitted and Reserve Flow Capacities

Sewage from East Whiteland Township flows through the Valley Creek Trunk Line into Tredyffrin Township to the Wilson Road Pump Station. The Wilson Road force main transmits flows to the Valley Forge Treatment Plant. East Whiteland Township is allocated certain capacities for the Valley Creek Trunk Line, the Wilson Road Pump Station and Force Main, and the Valley Forge Treatment Plant.

Table 3

LAND DEVELOPMENT IN EAST WHITELAND TOWNSHIP FROM JANUARY 1987 TO JANUARY 1993

Plan Ref. Number		Project Name	Description
1		Westgate Plaza	Commercial Shop. Center 59,400 SF
2		Junction Plaza	Office Building 18,750 SF
3	^	Bulvermo, Inc.	Office Building 92,000 SF
4		Centocor, Inc.	Building Expansion 18,600 SF
5		Conlin Copy	Building Expansion 1,850 SF
6		Eastwood Company	Commercial Development 50,000 SF
7		1st Financial	Bank 7,300 SF
8		Harbison	2 Lot Res. Subdivision
9		Harron Corp.	Office Building 20,750 SF
10		Hill Laboratories	Building Expansion 83,150 SF
11		Sandra Jessup	3 Lot Res. Subdivision
12		Avellino Tire	Commercial Building 6,575 SF
13		Karakelian	Car Wash 3,500 SF
14		Lincoln Court	Building Expansion 83,150 SF
15		Noll and Co.	Building Expansion 4,100 SF
16		Main Line Ind. Park	Office/Industrial Bldg. 93,575 SF
17		Mobil Oil Co.	Industrial Expansion 2,876 SF
18		G.V. Shopping Ctr.	Building Expansion 7,915 SF
19		Conrad Muhley	6 Lot Res. Subdivision
20		McDonalds, Inc.	Restaurant 4,716 SF
21		McIntosh Centre	91 Room Hotel 49,600 SF Retail
22		Paterson	Single Family Dwelling
23		Phila. Memorial Park	Building Expansion 6,600 SF
24		SEPTA	Maintenance Facility 55,000 SF
25		Glen Lincoln Sheraton	157 Room Hotel & Restaurant
26	*	Sophoclese	5 Lot Res. Subdivision
27		Sorbus	Building Expansion 132,116 SF
28	@	Southridge	21 Lot Res. Subdivision
29		Terrace Properties	Office Building 27,900 SF
30		Threadgill	2 Lot Res. Subdivision
31	^	Three Tun Develop.	17 Lot Industrial Park (Subdivision)
32		Unisys	Industrial Subdivision 3 Lot
33		UTZ Foods	Warehouse Expansion 8,934 SF
34		Valley Brooke South	Office Building 234,000 SF
35		Valley Brooke Plaza	122 Room Motel/Commercial 6,300 SF
36		Vishay Corp.	Parking Expansion
37		F. Carroll White	12 Lot Res. Subdivision

Table 3 (continued)

LAND DEVELOPMENT IN EAST WHITELAND TOWNSHIP FROM JANUARY 1987 TO JANUARY 1993

Plan Ref. Number		Project Name	Description
38		Whitehorse Ind. Park	Industrial Development 70,592 SF
39	*	Whitewoods	20 Lot Res. Subdivision
40		Winthrop Corp. Park	Industrial Subdivision 5 Lot
41	@	Wyckfield	54 Lot Res. Subdivision
42		G.V. Corp. Center	Penn State Building 75,000 SF
43		G.V. Corp. Center	Office Building 118,750 SF
44		G.V. Corp. Center	Shopping Center 63,035 SF
45		G.V. Corp. Center	Office Building 126,000 SF
46		G.V. Corp. Center	Office/Warehouse Bldg. 91,952 SF
47		G.V. Corp. Center	Parking Expansion
48		G.V. Corp. Center	Office/Warehouse Bldg. 104,400 SF
49		Valleybrooke III	Office Building 124,741 SF
50		Shared Medical Sys.	Building Expansion 70,600 SF
51		Camilla Hall	Convent
52		Star Business Sys.	Building Expansion 4,960 SF
53		Bitter	Single Family Dwelling
54		Samar	Single Family Dwelling
55		G.V. Corp. Center	201 Room Hotel/Conference Center
56		Wallace	5 Lot Res. Subdivision
57		J. and L. Lumber	Parking Expansion
58		G.V. Corp. Center	Office Building 27,500 SF
59		Acme	Office Building 90,588 SF
60		G.V. Corp. Center	Office Building 59,250 SF
61		G.V. Corp. Center	Office Building 62,700 SF
62		WAWA, Inc.	Convenience Store 3,000 SF
63		Pompeii	Office Building 42,278 SF
64		David and David	Retail Development 32,000 SF
65		Smith Industries	Building Expansion 15,240 SF
66		Pioggia Enterprises	Single Family Dwelling
67		Gordon	Single Family Dwelling
68		Novelli	Building Expansion 1,910 SF
69		Wallice	Single Family Dwelling
70		DiMarcello	Building Expansion 1,680 SF
71		Kimberton Dev. Corp.	Single Family Dwelling
72		F. Carroll White	Single Family Dwelling
73		Apple Press	Commercial Building 9,500 SF
74		K & S Auto	Building Expansion 1,557 SF

Table 3 (continued)

LAND DEVELOPMENT IN EAST WHITELAND TOWNSHIP FROM JANUARY 1987 TO JANUARY 1993

Plan Ref. Number		Project Name	Description
75		C.V. Golf Course	Building Addition 3,416 SF
76		F. Carroll White	Single Family Dwelling
77		George Bullard	Single Family Dwelling
78	^	Rogers Way	20 Lot Residential Development
79	^	Wellington Woods	114 Unit Multi-Family Development
80		U-Haul	Warehouse 22,150 SF
81		Mobil Gas Station	Building 972 SF
82		Immaculata College	Library 52,281 SF
83		Mike Stoler	Single Family Dwelling
84		Peoples Light & Theatre	Addition 5,920 SF
85		Graphic Impressions	Addition 3,988 SF
86		Linda J. Reilly	Single Family Dwelling
87		Bigley	Single Family Dwelling
88	^	DiMascio	Four (4) Lot Subidivison
89	@	Celia	Warehouse Addition 10,000 SF
90	@	A-1 Security	Office & Storage Building 18,685 SF
91	^	Staats	Self-Storage Facility 73,056 SF
92	* ♦	Valley Crossing	1,474 Unit Multi-Family Development
93	*	National Liberty-Fox Co.	Office Building 192,780 SF

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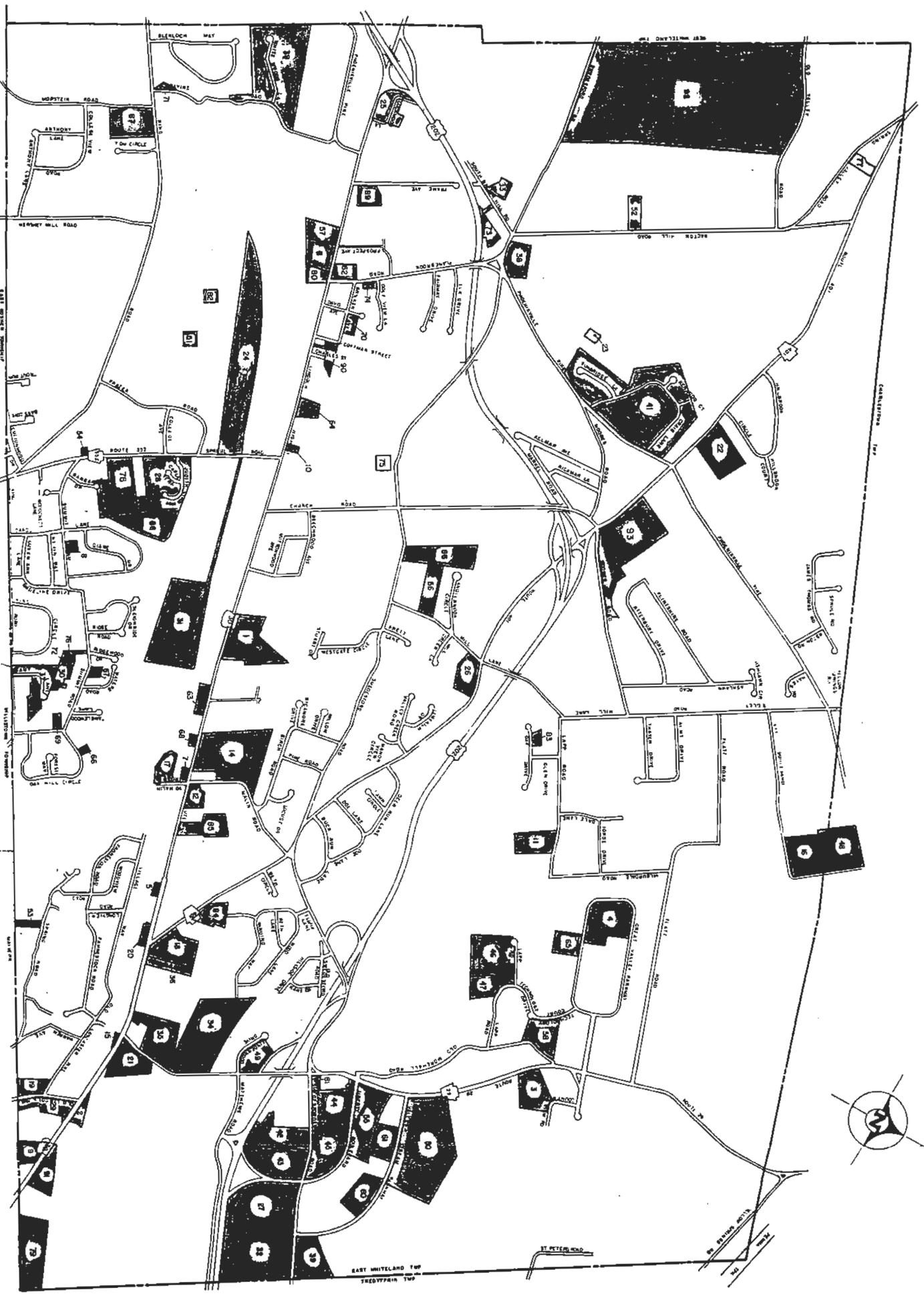
* Preliminary Plan Approval Only
^ Construction Not Started
@ Currently Under Construction
♦ Currently Hovnanian Companies are proposing to construct 464 Single Family Dwellings on the Valley Crossing site in lieu of the preliminary approved 1,474 Multi-Family Dwellings. The wastewater treatment limited to the proposed 464 Single Family Dwellings is being considered by neighboring West Whiteland Township in conjunction with the development of the Church Farm School property.

Source: Kohli and Associates, Inc., January 1993



EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

FIGURE 7
SUBDIVISION / LAND DEVELOPMENT
ACTIVITY APPROVED SINCE 1987
TO JANUARY 1993

SOURCE:
EAST WHITELAND TOWNSHIP

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC. 1986

Table 4

EAST WHITELAND TOWNSHIP SEWAGE COLLECTION SYSTEM: PUMP STATION CAPACITIES AND FLOWS

Station No.	Name	Rated Max. Daily Capacity in GPD	Current Max. Daily Flow, in GPD	Max. Daily Flow When Service Area is Fully Developed in GPD
1	Deer Run	23,450	13,250	14,700
2	Mill Lane	2,073,600	415,000	2,036,000
3	Wilberdale	623,520	162,100	600,000
4	Lee Blvd.	350,000	63,500	350,000
5	Meadowview	115,200	12,250	20,000
6	Flat Road	427,500	57,800	427,500
7	Lapp Road	472,000	51,300	412,000
8	Westgate	890,000	72,000	650,000
9	Church Rd.	700,000	56,000	700,000
10	Frame Ave.	360,000	36,000	360,000

Source: Kohli and Associates, Inc., January 1991

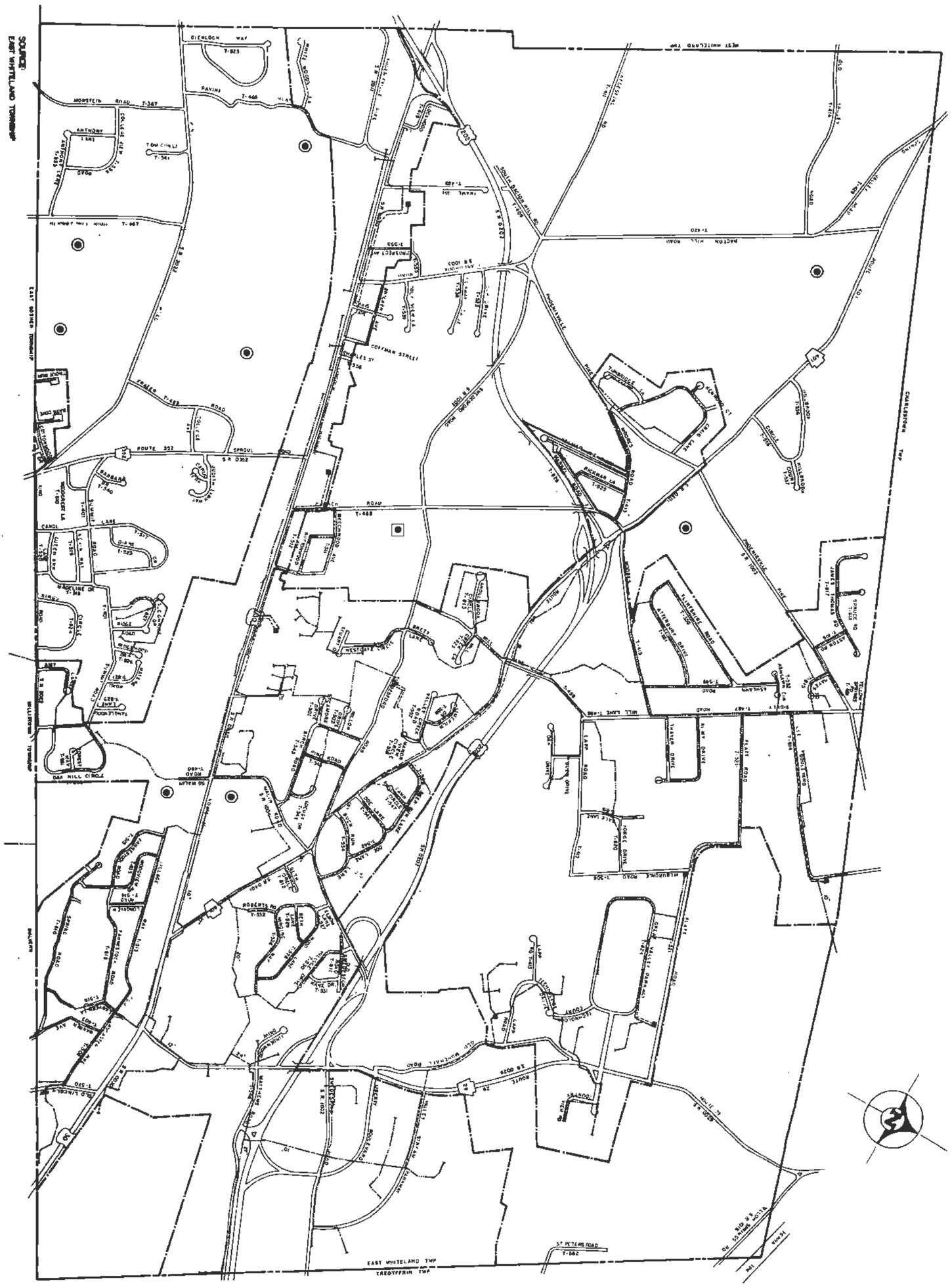


FIGURE 8

EXISTING SEWERED AREA - 1981

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

East Whiteland Township has been allocated a peak capacity of 9.5 mgd (4.0 mgd average) in the Valley Creek Trunk Line. Flows allocated to East Whiteland at the Wilson Road Pump Station, based on its current capacity, are 5.855 mgd peak and 2.34 mgd average. The Wilson Road Force Main, like the Pump Station, has a limited capacity and East Whiteland's allocation for the force main is 6.553 mgd peak and 2.62 mgd average daily flow. Based on the current plant capacity of 8 mgd, East Whiteland is allotted 1.7 mgd (average flows). East Whiteland has allowed Charlestown Township to utilize 0.3 mgd (average) of its allocation through the Valley Creek Trunk Line and the Wilson Road Pump Station and Force Main. Although the Valley Creek Trunk Line is capable of accepting the ultimate flows from East Whiteland Township, the plant capacity and the Wilson Road Pump Station and Force Main limit the actual flows possible through the system.

3. Treatment Systems

The Township collection system connects to the Valley Forge Sewer Authority plant for its sewage treatment and disposal. The sewage plant provides both primary and secondary treatment, and involves pressure filtration. The treatment system is an activated sludge method. The system was built in 1976 and is in excellent condition. The Municipal Authority plans to expand the collection system as funds become available. The expansion would accommodate infill development in western areas of the Township. No operating problems have been reported at this time. Treated effluent from the system is discharged into the Schuykill River.

4. Private Systems

Seven private package plants operate in East Whiteland Township. These treatment plants are generally located in the southern and western portions of the Township. The Bishop Tube Company operates one facility. The treatment plant has a designed operating capacity of 10,000 gallons per day. The present average daily flow is 4,000-5,000 gallons per day (gpd). There are future plans to upgrade and expand the system to a designed operating capacity of 20,000 gpd.

The second private treatment facility is an aeration system that serves the Great Valley High School. The average daily flow for the system is 9,000 gpd which is well under the designed operating capacity.

The third private package serves Immaculata College. The College has two Imhof gravity-fed treatment facilities. The combined designed operating capacity of the two facilities is 117,200 gpd. The average daily flow is 28,700-50,000 gpd. Ongoing repairs such as new flow and filtration devices are being done. Malvern Court Mobile Home Park operates the fourth private package plant in the Township. The type of treatment system is aeration with sand filter beds. The designed operating capacity is 24,000 gpd and the average daily flow is 16,000-18,000 gpd.

The fifth private package plant serves the Sun Refining and Marketing Company. No data is available on this facility other than it is a gravity separation system to insure that no oil is released into the Valley Creek.

Villa Maria House of Studies operates the sixth private treatment plant in East Whiteland. The designed operating capacity is 15,000 gpd and the average daily flow is 10,000 gpd.

The seventh private treatment plant serves the William Henry Apartments. The treatment system involves an aeration method. The designed operating capacity is 70,000 gpd and the average daily flow is 35,000 gpd. There are plans for the treatment facility to be expanded by the addition of a surging tank.

All of the private package plants, except those serving Villa Maria and William Henry Apartments, discharge into the Valley Creek, Little Valley Creek or their tributaries. The other two facilities discharge into tributaries of the Ridley Creek. The Bishop Tube Company and Sun Refining and Marketing Company are the only facilities which have industrial flow; the remaining private treatment facilities have domestic flow.

One community on-lot sewage disposal operates in the Township as of 1990. The facility serves the K.D. Markley Elementary and Intermediate School. No information is available on the type of system or design flows at the present time.

5. Operation and Maintenance

East Whiteland Township leases the operation and maintenance of the collection system from the East Whiteland Municipal Authority. The Valley Forge Sewer Authority is responsible for treatment and disposal. The private systems are operated and maintained by their respective owners.

B. The Valley Forge Wastewater Treatment Facility

The Valley Forge Wastewater Treatment Facility has been designed for a nominal 8 mgd based on a design year of 1985, although this capacity should be satisfactory through 1992-1993. The treatment plant is situated on two tracts of land totalling approximately 24 acres in Schuylkill Township on the west bank of the Schuylkill River at its confluence with Perkiomen Creek. The acreage associated with the Treatment Plant provides the capacity for expansion up to 20 mgd with conventional treatment. The treatment process selected for the facility has been designed to accomplish 95 percent total (BOD) removal during the summer months and at least 85 percent during the remainder of the year.

C. Sewage Disposal Problem Areas

Approximately one third of the East Whiteland Township land area relies on individual on-lot disposal systems. In general, existing systems have operated with few reports of malfunction. The 1987 Comprehensive reported that there were two concentrations of on-lot disposal system malfunctions in the Township reported by Chester County Health Department data. The two concentrations are: 1) the area east of PA Route 352 and north of Summit Road, and 2) the area between Swedesford Road and U.S. Route 30 from Penflex to the Township line. The malfunctions are primarily due to shallow depth to bedrock and other soil characteristics which prevent adequate percolation.

The new Rt. 30 sewer system, built over the last three years, has in large part remedied problems in the second area. Occasional failures continue to be reported along Bacton Hill Road, College View Road and Beechwood Avenue, however, these are individual lots with no concentrations of large numbers of failures. Currently the sewer design for the Beechwood and Buttonwood Avenue area is in progress.

In addition to these documented areas, much of the Township is situated on highly porous soils and rock formations, where conventional on-lot systems areas are not permitted according to DER facility standards (see next section).

D. Soils Analysis and Wetland Identification

1. Overview

Soils characteristics are important determinants for locating land use activities, and particularly on-lot sewage disposal systems. By analyzing man-made constraints such as land already developed or proposed for development as well as natural constraints such as shallow, alluvial, or wet soils, the most appropriate locations for on-site application of sewage effluent can be determined.

Wetlands are frequently found in conjunction with headwaters and ponds. Vegetation, soils and the level of water below the surface determine the location of wetlands. Wetlands can include a diversity of forms such as marshes, bogs, swamps or similar areas. These areas are essential because they support a unique array of wildlife and natural processes such as groundwater recharge. They are also important to reduce the hazards of flooding and maintain good water quality. The U.S. Army Corps of Engineers and the PADER recognize the importance of wetlands and promote regulations to protect them.

The wetlands in East Whiteland are spread throughout the Township. Many wetlands can be found within floodplain land of the Valley Creek or in areas where water tends to pond or drain slowly. One of the Township's largest wetlands is located northwest of the intersection of Old Morehall Road and

Swedesford Road, according to National Wetlands Inventory Maps. Please refer to Figures 9 and 10, Flood Plains - Wetland and Soil Limitations.

Given that much of East Whiteland is already served by public sewer and that additional service is planned or under consideration through efforts like this 537 Plan, this Soils Analysis uses existing information and is more of a summary than an exhaustive, new treatise. The analysis helps target those areas where on-lot sewage disposal, of whatever type, could be a significant problem.

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

0 2000 4000

Scale (in feet)

N

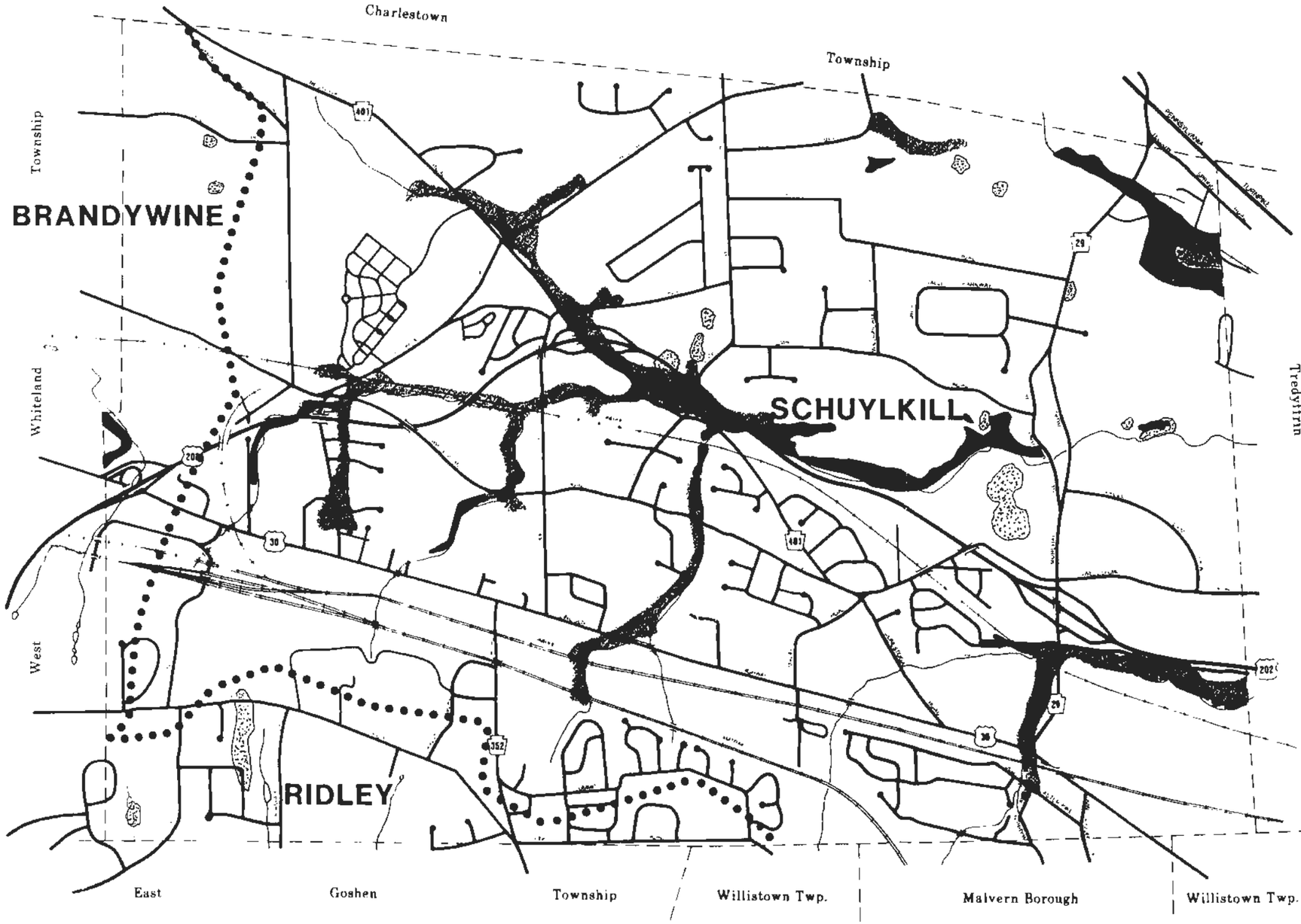


FIGURE 9

FLOOD PLAINS / WETLANDS

- ALLUVIAL SOILS
- SEASONAL HIGH WATER TABLE (0-2 ft. from surface)
- FIA 100 YR. FLOOD BOUNDARY (where ext. beyond above)
- DRAINAGE BASIN BOUNDARY
- WETLANDS

Sources Soil Survey of Chester County, U.S.D.A. 1963
Flood Hazard Boundary Map, FEMA 1983
AND EAST WHITELAND COMPREHENSIVE PLAN 1987

REVISED TITLE BY KOHLI & ASSOCIATES, INC. 1991

Base Map Prepared by the Chester County Planning Commission, 1986.

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

FIGURE 10

SOIL LIMITATION FOR SUB SURFACE DISPOSAL

LEGEND

- SOIL GROUP "A"
- SOIL GROUP "B"
- SOIL GROUP "D"
- SOIL GROUP "E"
- SOIL GROUP "F"
- MAN MADE SOIL

SOURCE:
SOIL SURVEY FOR CHESTER & DELAWARE COUNTIES, PA. USDA, 1963
TITLE 2 OF PA CODE PART I, SUB PART C, CHAPTER 73, APPENDIX A, 1989

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC. 1991.

1000 0 1000 2000 3000

2. Information Sources

This Soils Analysis describes the various soil types found in East Whiteland, locates them and discusses their general suitability for on-lot sewage disposal systems.

Information was taken from:

- Soil Survey - Chester and Delaware Counties, PA, Series 1959, No. 19 by U.S.D.A. (issued May, 1963)
- Master Sewer Plan for Chester County, PA (as revised by the Chester County Planning Commission, 1970)
- East Whiteland Township Comprehensive Plan (1987)
- Pennsylvania Sewage Facilities Act, as amended (Act of 1965, P.L. 1535, No. 537)
- Title 25 of the Pennsylvania Code, Part I, Subpart C, Article I, Chapters 71, 72, and 73 and Appendix A Soils Groups (as revised thru 1989)
- Chester County Health Department, Soil Survey Interpretation Sheets, Nos. 12 thru 52 (undated)

3. Profiles and Classifications of Soils

Soils are grouped by their ability to perform certain functions. The group hierarchy includes:

- Profiles. The sequence of natural layers, or horizons, in a soil.
- Series. Soils that have profiles almost alike. The major horizons are similar. Examples include Brandywine and Edgemont.
- Soil Types. Soils in a series that are alike except for the texture of their surface layer. Examples include Glenelg Silt Loam and Glenelg Very Stony Silt Loam.
- Soil Phases. Soils within a type that vary according to slope, degree of erosion, number and size of stones, etc. These differences are great enough that they could not be managed the same way. Such soil types are divided into soil phases.

Examples include Brandywine Loam 3 to 8 percent slopes and Brandywine Loam 8 to 15 percent slopes.

- Soil Associations. Broad categories referring to the main soil patterns of the particular area containing a few major soil groupings and several minor ones.

The 1987 East Whiteland Comprehensive Plan generally describes the two distinct Soil Associations found in the Township:

- "Hagerstown-Conestoga-Guthrie Association. That portion of the Township lying roughly north of the Lincoln Highway, Route 30. These soils are deep, silty material on limestone, characteristic of the Chester Valley physiographic region, and are generally well-suited for urban development.

- Glenelg-Manor-Chester Association. These are shallow to deep, rather silty and channery soils, on grayish-brown schist and gneiss. This association is the dominant one in Chester County as a whole, and particularly to the south of the Chester Valley. The problem of erosion connected with this association presents only moderate limitation on development."

The 1987 Plan language referring to soil types is still applicable:

"The specific soils pattern within East Whiteland itself is dominated by Hagerstown Silt Loam, to the north of Lincoln Highway, and by Manor Loam and Glenelg Channery Silt Loam in the southern portion. The central area of the Township is dominated by Conestoga Silt Loam, Lawrence Silt Loam, Lindside Silt Loam, Guthrie Silt Loam and Hollinger Silt Loam which are found along the various streams and drainage-ways. In addition, a significantly large pocket of Edgemont Channery Loam is found in the wooded slopes on the north slopes near North Valley Hills."

Other soils series are found in limited areas in the Township. Chewacla, Congaree, Wehadkee, Bedford, Glenville, Croton and Worsham are found along streams in the upland areas of East Whiteland. A small pocket of Brandywine soil is in the northwest corner of the Township.

The Pennsylvania State Department of Environmental Resources (DER) categorizes soil series into 15 groups according to the soil's ability to accommodate on-site sewage effluent. DER further organized the soil groups in ranges classified as A (very suitable) to F (unsuitable). These groups and ranges are found in Appendix A of Chapter 73, noted above. Table 5 is taken from "Appendix A" and lists those soils found in East Whiteland and their

sewage-related characteristics. Descriptions of each soil profile can be found in Appendix D of this report.

DER's correlation of Soil Groups to their sewage-effluent characteristics are:

A - Soils that do not have seasonal high water table, severe flooding hazard, extreme shallowness, or limestone bedrock; grouped according to probable percolation rates. (Includes Groups 1 thru 10)

B - Soils series that are underlain by limestone and have a high hazard of groundwater pollution through solution channels. (Group 11)

C - Well drained soils that are shallow or very shallow to bedrock. (Group 12)

D - Soil series that occur on floodplains and have a high flooding hazard. Not suitable for subsurface disposal systems. (Group 13)

E - Moderately well drained soils on upland sites. These soils have seasonal high water tables which is the major limitation on use for subsurface disposal systems. (Group 14)

F - Somewhat poorly, poorly, and very poorly drained soils on upland sites. These soils have high water tables and are unsuitable for subsurface disposal systems. (Group 15)

Appendix A further notes:

"Stoniness and Rockiness: Extremely stony phases of any soil and areas with common outcrops of bedrock and considered unsatisfactory for subsurface systems. Moderately stony areas may be used with care.

Made lands, Mine dumps, Strip mine spoils, and Sanitary landfills: These miscellaneous land types need individual, local determinations of depth, water table conditions, and soil texture as they affect percolation rates and effluent renovation in a stabilized area."

When mapped, these soil groups create a pattern across the Township of what areas would or would not be suitable for on-lot sewage disposal. Soil Group A comprises approximately 28% of the Township land area and is generally suitable for on-lot disposal systems. The majority of the Township is Soil Group B which, although the soils themselves are generally suitable for on-lot disposal, is much less suitable because of its limestone underlayment. Soil Group C is not found in the Township. Soil Groups D, E and F comprise 15% of the Township and are generally unsuitable for on-lot disposal. Man-made land, usually greatly disturbed areas like quarries, account for the last 5% of the Township acreage.

Table 5

SUITABILITY FOR SUBSURFACE DISPOSAL OF EFFLUENT OF SOIL GROUPS FOUND IN EAST WHITELAND

Soil Group	Soil Series	Symbol	Characteristics	Percent of Township*
A	Brandywine Edgemont Glenelg Manor	Br Ec Ge Mg, Mh, Mk, Mm	suitable - deep & moderately deep, well-drained soils	28%
B	Conestoga Hagerstown Hollinger	Cm Ha Ho	underlain by limestone	52%
C	(None in E. Whiteland)		shallow to very shallow & well-drained soils	0%
D	Chewacla Congaree Lindside Melvin Wehadkee	Ch Cn Ls Mn We	unsuitable - floodplain soils	4%
E	Bedford Glenville	Bd Gn	marginal - moderately well-drained soils with seasonal high water table	5%
F	Croton Guthrie Lawrence Worsham	Cr Gu La Wo	unsuitable - poorly drained soils with high water table	6%
(no letter)	Man-made land		questionable - quarries, land fills, mines, dumps, etc.	5%
			Total	100%

Note: * These percentages are estimates and for planning purposes only.

Sources:

1. East Whiteland Township Comprehensive Plan, 1987
2. Soil Survey for Chester and Delaware Counties, PA, USDA, 1963
3. Title 25 of Pennsylvania Code, Part 1, Subpart C, Chapter 73, Appendix A, 1989

The 1987 East Whiteland Comprehensive Plan generally addresses the suitability of certain soils for on-site sewage disposal. Map 3, Soil Conditions, of the Plan depicts soil conditions according to shallow depth to bedrock, stoniness, and high erosion potential. The residual areas of Map 3 generally correspond with suitability for on-site sewage disposal.

4. Conclusions

Given that much of East Whiteland is already served by public or private community sewer systems and that much of the area remaining is planned for future sewage service, the foregoing soils analysis is important primarily for those limited areas of the Township where on-lot systems are expected to be used either now or in the foreseeable future. This Section combined with other elements of this 537 Plan can help target existing and potential problems with sewage disposal systems. If an area of poor suitability for sewage disposal is targeted for development, then public or private community sewage disposal systems should be a required condition. However, any new public or private community sewage disposal system involving stream discharge shall diffuse the effluent via wetland or marsh areas.

E. Existing Centralized Water Systems

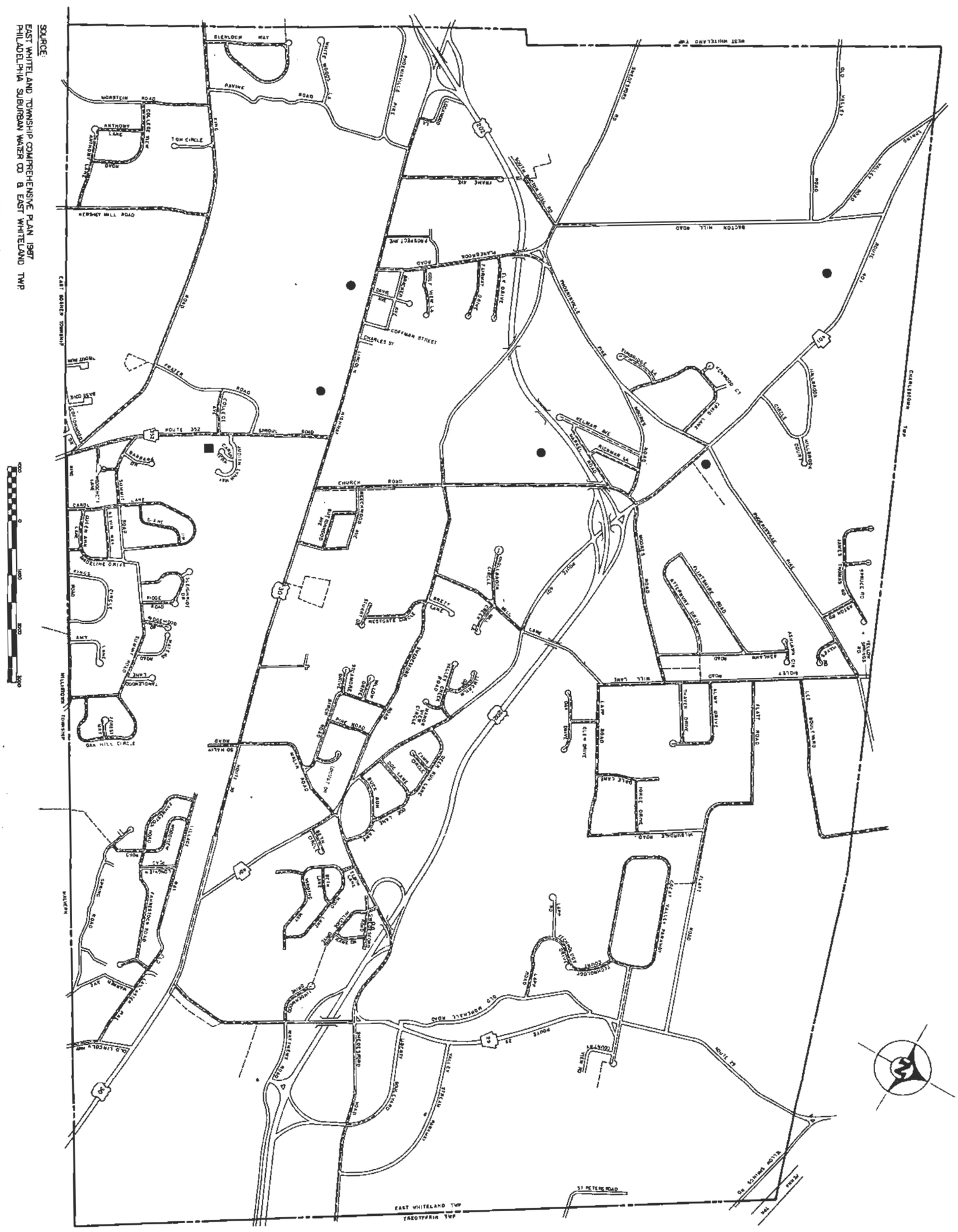
The present water service areas within the Township as shown in Figure 11.

1. Public

Public water supply is provided to East Whiteland Township by the Philadelphia Suburban Water Company. The system has been expanded to include all but the extreme northeast and northwest corners of the Township.

The Philadelphia Suburban Water Company also supplies water to parts of Charlestown, East Goshen, Easttown, Schuylkill, Tredyffrin, and Willistown Townships as well as portions of Delaware and Montgomery Counties. The Water Company has interconnections with the Great Valley Water Company in West Whiteland and the Malvern Water Company to supplement their systems for emergency use.

The Philadelphia Suburban Water Company obtains its water supply from four separate wells and the Pickering Creek. The wells have a cumulative capacity of 5.46 million gallons per day and are located in East Whiteland and Tredyffrin Townships. The actual average daily use of this water supply in 1984 was 3.47 million gallons.



SOURCE:
EAST WHITELAND TOWNSHIP COMPREHENSIVE PLAN 1987
PHILADELPHIA SUBURBAN WATER CO & EAST WHITELAND TWP

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC. 1991

FIGURE 11
EXISTING WATER SERVICE

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

EAST WHITELAND TOWNSHIP

Chester County, Pennsylvania

Township Engineer: Kohli and Associates, Inc.

FIGURE 12

SEWAGE FACILITIES PLAN

(PROPOSED SEWAGE AREA)

- 1990 VALLEY FORGE SERVICE AREA
- 1990 RIDLEY CREEK SERVICE AREA
- 1991 - 1996
- 1996 - 2001
- 2001 - 2006
- BEYOND 2006
- ALTERNATE DISPOSAL

— DRAINAGE RIDGE LINE

4000 0 1000 2000 3000

BASE MAP PREPARED BY KOHLI & ASSOCIATES, INC. 1991

The storage facilities of the Philadelphia Suburban Water Company consist of four tanks located in East Whiteland and Tredyffrin Townships. The four reservoirs have a cumulative storage capacity of 11.46 million gallons.

2. Private

The northwestern corner of the Township and a few other isolated properties rely on individual on-site wells for water supply. The Malvern Court Mobile Home Park is the largest of these individual systems, and includes two private wells.

IV. PROPOSED SEWAGE SERVICES AND CONDITIONS

A. Expected Wastewater Disposal Needs

Most of East Whiteland is within the service area of the VFSA. The current 1990 sewage flows are 1.052 MGD. Based upon the development listed on Table 3 and shown on Figure 7, projected sewage flow is 3.09 MGD. Table 6 displays the future sewage flow projections for each of the Study Areas to beyond 2006. There has been no flow allocated for the landfill and two quarries. Flows are based upon 275 gallons per equivalent dwelling unit (EDU). Resultant flows could be reduced based upon implementation of water consumption reduction devices in new construction.

B. Areas Planned to be Served and Timing of Proposed Service

The areas which are planned for sewage service are closely related to the VFSA service area. The delineation of Study Areas which follows, outlines each of the areas to be served by the VFSA within a specified time frame. These Study Areas are also discussed on Table 6.

The areas not planned for service by 2006 generally include that portion of the Township outside the Schuylkill River watershed. These areas collectively are Study Area 7 and are also not planned for service based upon their potential for providing suitable on-lot methods of wastewater disposal. In Chapter 71 (Refer to Appendix A), Subsection 71.15(a)(1), Requirements to Revise Official Plans, it is stated that "Municipalities shall review their official plans and, if necessary, revise them at least once every five years." Relative to this requirement, the Township, if necessary, can reevaluate their wastewater disposal needs in 1996 and revise this Official Plan as needed.

Table 6

EXPECTED WASTEWATER DISPOSAL NEEDS - FUTURE FLOW PROJECTIONS

1990 Service Area (Study Area 1):

Current Flows:		1.05 MGD
Anticipated Demand[1]:		0.33 MGD
Total Flow Projection:		1.38 MGD Total

1991 to 1996 Projections (Study Area 3):

Anticipated Demand:	813 EDU =	0.22 MGD
Total Year 1996 Flow Projection =		1.60 MGD

1996 to 2001 Projections (Study Area 4):

Anticipated Demand:	700 EDU =	0.19 MGD
Total Year 2001 Flow Projection =		1.79 MGD

2001 to 2006 Projections (Study Area 5):

Anticipated Demand:	1725 EDU =	0.47 MGD
Total Year 2006 Flow Projection =		2.26 MGD

Beyond 2006 Projections (Study Area 6):

Anticipated Demand:	2700 EDU =	0.74 MGD
Total System Demand[2]:	=	3.00 MGD

Alternate Disposal Projections (Study Area 7):[3]

Anticipated Demand:	2680 EDU =	0.79 MGD
Total Township Demand:	=	3.79 MGD

Notes:

1. Anticipated demand includes allowance of 1205 EDU's for all areas within the 1990 Service Area for projects which are either approved and/or under construction, no flow is allocated for the landfill. Flow based on 275 GAL./EDU. Resultant flows could be reduced based on implementation of water consumption reduction devices in new construction.

2. 1990 Service Area anticipated demand includes all areas so noted on Figure 8.

3. All other areas which are noted for alternate disposal include areas outside of drainage basin, areas suitable for on-site disposal, or areas served by private systems.

1. Delineation of Study Areas

To facilitate analysis of the viable wastewater alternative for portions of the Township, it is subdivided into "Study Areas" having similar characteristics and current methods of sewage disposal. The following parameters are utilized in the determination of Study Areas: zoning, existing land use, population growth projections, drainage basins, existing problem areas, and soil types.

The delineated Study Areas are as follows (see Figure 12):

Study Area 1 comprises the 1990 Valley Forge Sewer Authority (VFSA) Service Area within the Township and is designated a study area for that reason. This area encompasses the majority of the Township and contains some of the R-1, R-2, R-3, R-4, LI and GI Zoning Districts and all of the commercial, professional office and RIC Zoning Districts.

Study Area 2 is located along the southern Township boundary east of the King Road and PA Route 352 intersection. This area is zoned R-2 and was selected as a study area because it is within the 1990 Ridley Creek Service Area.

Study Area 3 contains four separate areas which are planned for public sewage service between 1991 and 1996. The three areas are as follows:

Study Area 3A consists of a small area north of U.S. Route 30 at the southeastern corner of the Township. This area is zoned entirely LI and is bounded by Study Area 1 which is served by the VFSA.

Study Area 3B is along Church Road just north of U.S. Route 30. This entire area is zoned R-2 and abuts Study Area 1. The area is comprised of soils which are underlain by limestone.

Study Area 3C is situated south of the Conrail and Amtrak rail lines extending along PA Route 352 to the border with East Goshen. A portion of this area extends west to Ravine Road and is north of the abandoned rail line. Portions of this area contains developments with capped sewer. The northern portion of this area is zoned LI and the balance is zoned R-2.

Study Area 3D is located south of the rail line along the Township's border with Malvern and Willistown. This area is zoned predominantly R-2 with small portions of the north zoned R-3 and LI. While this area is comprised of good soils, there is substantial steep slope prevalent.

Study Area 4 is comprised of two separate areas which are planned for public sewage service between 1996 and 2001. The two areas are as follows:

Study Area 4A is in the central portion of the Township on the north and south side of Swedesford Road east of Church Road. This area is adjacent to Study Area 1 and is zoned entirely R-1. The area consists of soils underlain by limestone.

Study Area 4B is situated in the northwestern portion of the Township along PA Route 401 from the Route 202 interchange to the boundary with Charlestown. This area is zoned almost entirely R-1; the area adjacent to Moores Road is zoned PO-1. This area also abuts Study Area 1 which is served by VFSA. The area contains substantial floodplain, poorly drained and high water table soils as well as soils underlain by limestone.

Study Area 5 consists of two district areas which are planned for public sewage service between 2001 and 2006. The two areas are as follows:

Study Area 5A is located northeast of the Routes 202 and 29 interchange as well as an area extending west along Route 202. This area is surrounded by Study Area 1 and is the site of the former quarry. Much of the soils are made and are underlain by limestone. The majority of this area is zoned R-4, however, the northern portion is zoned GI and the western appendage is zoned R-2.

Study Area 5B is in the western portion of the Township along both sides of Bacton Hill and Planebrook Roads. The southern portion of this area abuts Study Area 1 and is zoned R-2. The northern area is zoned LI. This area contains floodplain, poorly drained and high water table soils and consists predominantly of soils underlain by limestone.

Study Area 6 contains five separate areas which are envisioned to be served by public sewage beyond 2006. The five areas are as follows:

Study Area 6A is located in the northeastern corner of the Township and consists of the two large quarries and the Township's Valley Creek Park. Much of the soils in this area are made land and underlain by limestone. This area is zoned almost entirely GIM; the Township Park is zoned GI.

Study Area 6B is situated in the southern portion of the Township abutting Tredyffrin. This area is

zoned entirely GI and contains soils which are poorly drained and underlain by limestone.

Study Area 6C is along the northern Township boundary between PA Route 401 and Phoenixville Pike. This area is zoned entirely R-1. Portions of this area contains poorly drained soils underlain by limestone and the extreme northern portion is characterized by steep slope.

Study Area 6D is in the west central portion of the Township on both sides of Phoenixville Pike. This area is essentially lands of the Philadelphia Memorial Cemetery and abuts Study Area 1. The area is zoned entirely R-1 and contains poorly drained and high water table soils underlain by limestone.

Study Area 6E is located south of Route 202 west of Church Road. Portions of this area abut Study Area 1. The majority of this area is the Chester Valley Golf Course and is zoned entirely R-1. The area is almost exclusively comprised of soils underlain by limestone and contains some floodplain and high water table soils.

Study Area 7 is comprised of two distinct areas which are planned for alternate methods of sewage disposal. The Study Area is generally outside the Schuylkill River Watershed. The two areas are as follows:

Study Area 7A encompasses the southwest corner of the Township. This area contains Immaculata and Villa Maria and most of the area is within the Ridley Creek Watershed. The area is zoned essentially R-1 with exception of the William Henry Apartments which are zoned R-4. Most of this area is comprised of good soils, however, some pockets of floodplain and high water table soils exist.

Study Area 7B is along the western border of the Township with West Whiteland from Route 202 north to Charlestown. This area essentially within the Valley Creek sub basin of the Brandywine Creek Watershed and is the site of the Valley Crossing proposal. The area contains four zoning districts: R-1 in the north, R-4 in the central, and LI and GI in the south. The area south of Route 202, part of Study Area 1, is the only abutting area with public sewage service. The northern third of this area is comprised of good soils characterized by steep slope, while the remaining two thirds contains soils underlain by limestone with some poorly drained soils.

C. On-Lot Sewage Disposal Maintenance Program

An on-lot sewage disposal maintenance program is envisioned to serve as an interim measure until all areas are served by the public system. The Township could employ several municipally sponsored programs including:

- regular articles on on-lot sewage disposal system maintenance in the Township newsletter
- educational programs through the Code Enforcement Officer, Township Engineer and Township Manager via literature dispersal to applicants for building and/or occupancy permits
- educational programs through the East Whiteland Township Planning Commission including workshops on an annual basis regarding relevant topics of interest to the residents, during which sewage disposal system maintenance can be discussed
- a speakers program with officials and representatives from the County to instruct residents on problems and needs pertaining to maintenance of on-lot disposal systems

For the short term, the Township newsletter will be used as the communication vehicle on the subject, along with direct communication with applicants for building and/or occupancy permits. In addition, the Township will send a questionnaire each year to all residents who utilize on-lot sewage disposal systems to ascertain the state of maintenance for their systems. In the event of problems with malfunctioning systems, a Township representative will respond and assist the residents with the resolution of their problem.

V. EVALUATION

A. Sewage Alternatives Evaluated

The following seven sewage alternatives are those evaluated for the seven Study Areas:

Alternative 1 — The Study Area is presently sewered. No justification for modifying the present configuration of sewers has been found, therefore, only one alternative has been developed. It is envisioned that the present sewer system will accommodate the sewage needs of the Study Area for the foreseeable future, including all existing and potential development activities.

Alternative 2 — This alternative involves connection of the Study Area to the Township Municipal Authority Sewer System. Connection could occur through

the construction of a central sewer main extending through the Study Area.

Alternative 3 — The Study Area presently utilizes on-site disposal practices. This alternative proposes the continued use of on-site disposal for existing and future development in the area.

Alternative 4 — This alternative proposes a central sewer collector system with either surface or subsurface disposal. Such a configuration of sewage facilities is flexible.

Alternative 5 — Using a system of central sewers, this alternative proposed tie-in of new subdivisions in the area to one or more community lagoon and spray irrigation systems for treatment and disposal. Since the location of the prospective spray irrigation sites and the sewer collectors cannot be identified at this time, a map of the alternative is not provided.

Alternative 6 — This alternative proposes the construction of a central sewer system with tie-in to a new tertiary treatment facility with stream discharge which shall be designed based on the following criteria:

a) Sewage collection and treatment facilities will be designed to handle a minimum of one day average daily design detention capacity.

b) Sand filtration that will prohibit any untreated sewage from entering a stream.

c) A treatment process that will meet or exceed the water quality parameters of the existing stream.

d) The effluent discharge shall be drawn from below ground level from holding tanks in order to reduce its temperature.

e) The effluent discharge will be diffused via the existing an/or proposed wetlands where it will be detained within a stream corridor.

f) The effluent will be disinfected with methods other than chlorination.

Alternative 7 — This alternative proposes that the Study Area tie in to sewer system of the adjacent municipality.

B. Sewage Alternatives

Study Area 1

Alternative 1

Description: Study Area 1 is presently sewered. No justification for modifying the present configuration of sewers has been found, therefore, only one alternative has been developed. It is envisioned that the present sewer system will accommodate the sewage needs of the Study Area for the foreseeable future, including all existing and potential development activities.

Study Area 2

Alternative 1

Description: Study Area 2 is presently sewered. No justification for modifying the present configuration of sewers has been found, therefore, only one alternative has been developed. It is envisioned that the present sewer system will accommodate the sewage needs of the Study Area for the foreseeable future, including all existing and potential development activities.

Study Area 3

Alternative 2

Description: This alternative involves connection of Study Area 3 to the East Whiteland Township Municipal Authority Sewer System. Connection could occur through the construction of a central sewer main extending through the Study Area.

Rationale: The alternative is a technically feasible configuration for providing conventional sewers to the Study Area.

Environmental Impacts: The provision of public sewers to this area would result in the export of water.

Development Impacts: The extension of a sewage collector into this Study Area would promote development. The sewering of adjacent parts of Study Area 4 and 7 may also be encouraged.

Comprehensive Plan: The provision of conventional sewers to this area of the municipality is consistent with the Comprehensive Plan.

B. Sewage Alternatives - continued

Estimated Costs: The estimated capital cost of this alternative is $4,500,000.

Alternative 7

Description: This alternative proposes that Study Area 3D tie in to sewers of the Malvern Borough Municipal Authority. The tie-in would occur via a central sewer connector running along Sugartown Road.

Rationale: The alternative is technically feasible and would eliminate the possibility of on-site malfunctions.

Environmental Impacts: Construction of this configuration of sewers would lead to the export of water from the area.

Development Impacts: The extension of a sewer collection would tend to encourage development in Study Area 3D, however, this Study Area is small and bounded by the rail lines on the north.

Comprehensive Plan: The provision of public sewers to this area is inconsistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $12,400,000.

Study Area 4

Alternative 2

Description: This alternative involves connection of Study Area 4 to the East Whiteland Township Municipal Authority Sewer System. Connection could occur through the construction of a central sewer main extending through the Study Area.

Rationale: The alternative is a technically feasible configuration for providing conventional sewers to the Study Area.

Environmental Impacts: The provision of public sewers to this area would result in the export of water.

Development Impacts: The extension of a sewage collector into this Study Area would promote development. The sewering of adjacent parts of Study Area 6 and 7 may also be encouraged.

B. Sewage Alternatives - continued

Comprehensive Plan: The provision of conventional sewers to this area of the municipality is consistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $5,400,000.

Study Area 5

Alternative 2

Description: This alternative involves connection of Study Area 5 to the East Whiteland Township Municipal Authority Sewer System. Connection could occur through the construction of a central sewer main extending through the Study Area.

Rationale: The alternative is a technically feasible configuration for providing conventional sewers to the Study Area.

Environmental Impact: The provision of public sewers to this area would result in the export of water.

Development Impacts: The extension of a sewage collector into this Study Area would promote development. The sewering of adjacent parts of Study Areas 6 and 7 may also be encouraged.

Comprehensive Plan: The provision of conventional sewers to this area of the municipality is consistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $6,200,000.

Study Area 6

Alternative 2

Description: This alternative involves connection of Study Area 6 to the East Whiteland Township Municipal Authority Sewer System. Connection could occur through the construction of a central sewer main extending through the Study Area.

Rationale: The alternative is a technically feasible configuration for providing conventional sewers to the Study Area.

B. Sewage Alternatives - continued

Environmental Impact: The provision of public sewers to this area would result in the export of water.

Development Impacts: The extension of a sewage collector into this Study Area would promote development. The sewering of adjacent parts of Study Area 7 may also be encouraged.

Comprehensive Plan: The provision of conventional sewers to this area of the municipality is consistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $14,000,000.

Alternative 3

Description: Portions of Study Area 6 presently utilize on-site disposal practices. Alternative 3 proposes the use of on-site disposal for existing and future development in the area.

Rationale: On-site systems in the area have functioned effectively, and future population densities are expected to remain low. Soils are generally suited to subsurface disposal of wastewater, but Study Area 6 does contain pockets of soils which restrict conventional subsurface disposal.

Environmental Impacts: On-site systems benefit recharge of the groundwater, however, most of this Study Area is underlain by limestone.

Development Impacts: This alternative is not expected to promote development in the Study Area.

Comprehensive Plan: The alternative is consistent with the Comprehensive Plan.

Estimated Costs: There are no public costs associated with this alternative.

Study Area 7

Alternative 3

Description: Study Area 7 presently utilizes on-site disposal practices. Alternative 3 proposes the use of on-site disposal for existing and future development in the area.

B. Sewage Alternatives - continued

Additional Considerations: Lands must be obtained in order to implement this alternative. The surface or subsurface disposal areas must be properly operated and maintained in order to avoid water degradation.

Alternative 5

Description: Using a system of central sewers, this alternative proposes tie-in of new subdivisions in the area to one or more community lagoon and spray irrigation systems for treatment and disposal. Since the location of the prospective spray irrigation sites and the sewer collectors cannot be identified at this time, a map of the alternative is not provided.

Rationale: It is suggested that this alternative may be appropriate to serve neighborhoods in the Study Area where lot averaging or clustering occurs. The configuration of lots in these types of development may cause individual on-site systems to be impractical.

Environmental Impacts: Spray irrigation benefits groundwater recharge. Spray irrigation systems must be properly operated and maintained to avoid possible surface or groundwater degradation. Study Area 7B is the most difficult due to wet soil conditions which severely restrict this type of system.

Development Impacts: Implementation of this alternative may promote clusters of development in the Study Area but is not expected to influence development in other area.

Comprehensive Plan: Spray irrigation systems are consistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $9,500,000.

Additional Considerations: Land for the land application site must be obtained in order to implement this alternative.

Alternative 6

Description: This alternative proposes the construction of a central sewer system with tie-in to a new tertiary treatment facility with stream discharge which shall be designed based on the following criteria:

B. Sewage Alternatives - continued

a) Sewage collection and treatment facilities will be designed to handle a minimum of one day average daily design detention capacity.

b) Sand filtration that will prohibit any untreated sewage from entering a stream.

c) A treatment process that will meet or exceed the water quality parameters of the existing stream.

d) The effluent discharge shall be drawn from below ground level from holding tanks in order to reduce its temperature.

e) The effluent discharge will be diffused via the existing and/or proposed wetlands where it will be detained within a stream corridor.

f) The effluent will be disinfected with methods other than chlorination.

Rationale: By having Study Area 7B served by a package treatment facility development requiring public sewer can be serviced and on-site malfunctions in the Study Area would be eliminated. This will not burden the Township's collection system and will not require any additional capacity at VFSA.

Environmental Impacts: Possible surface and groundwater degradation from on-site system malfunctions would be eliminated. Such package treatment facility will provide an effluent equal or better than the existing stream quality which will help support aquatic life during drought periods.

Development Impacts: The construction of a package treatment facility will service development in the Study Area under existing Township zoning since the Township requires public sewer for multi-family developments.

Comprehensive Plan: The Comprehensive Plan is inconsistent with existing zoning and approved land development in the Study Area and has not as yet been amended to conform to existing conditions.

Estimated Costs: The estimated capital cost of this alternative is $9,200,000.

B. Sewage Alternatives - continued

Additional Considerations: Implementation of this alternative would require the appropriate discharge permits from the Department of Environmental Resources.

Alternative 7

Description: This alternative proposes that Study Area 7A tie into the East Goshen Township sewer system. The tie-in would occur via gravity or force main connections to the Ridley Creek Sewage Treatment Plant.

Rationale: The alternative is technically feasible only when the Ridley STP expansion is approved and would eliminate the possibility of on-site malfunctions. The East Goshen Township Act 537 Update of December 1992 includes the connection of Immaculata College and William Henry Apartments to the STP.

Environmental Impacts: Construction of this configuration of sewers would keep water within the Ridley Creek Watershed and prevent degradation of the headwaters of the Ridley Watershed.

Development Impacts: The extension of a sewer collection would tend to encourage development in Study Area 7A, however, this Study Area substantially developed.

Comprehensive Plan: The provision of public sewers to portions of this area is consistent with the Comprehensive Plan.

Estimated Costs: The estimated capital cost of this alternative is $4,000,000.

Alternative 7 - For Study Area 7B

Description: This alternative proposes that portion of Study Area 7B comprising of tracts zoned R-4 (Valley Crossing site limited to proposed 464 single family dwellings) and possibly R-1 may tie into the West Whiteland sewer system. The tie in would occur via gravity or force main connection to the future sewage treatment facility with disposal of effluent by spray irrigation on the adjacent Church Farm School property to be acquired by West Whiteland Township.

B. Sewage Alternatives - continued

Rationale:	The alternative is technically feasible only when the East Whiteland and West Whiteland Townships' 537 Plans, specifically addressing the service area for the proposed sewage treatment plant, is developed and the new sewage treatment with disposal of effluent by spray irrigation is approved.
Environmental Impact:	The development of the proposed sewage treatment plant with disposal of effluent by spray irrigation on the Church Farm School property would keep water within the Brandywine Basin and prevent degradation of the headwaters of the Brandywine Watershed.
Development Impact:	The sewer collection would be limited to the portion of Study Area 7B as described above in East Whiteland Township and the areas of the Church Farm School property in West Whiteland Township and thus the development of the new sewage treatment plant will not encourage development beyond the limit of the study area.
Estimated Costs:	The estimated capital cost will be developed upon updating the joint (East and West Whiteland Townships') 537 Plan which will address the service area of the new sewage treatment plant.

C. Institution Alternatives Necessary to Implement Recommended Official Plan

As the VFSA facility is expanded and upgraded, East Whiteland Township will obtain further sewage capacity.

D. Relationship of the Township's Official Plan to Other Plans

1. Federal

From a conceptual and policy planning standpoint, the COWAMP 208 Plan and this Official Plan relate well to one another. The population forecasts compare favorably as discussed earlier.

From the standpoint of sewer versus non-sewer alternatives for wastewater disposal, the two plans also compare favorably. Centralized treatment is proposed in this Official Plan, where accessible or reasonably accessible. Relative to specific sewer service area delineation, the two plans differ somewhat. In the State's Plan, existing (1978) and proposed (2000) sewer service areas were delineated. The existing sewer service areas were incorrect in that only the Initial Service Area of VFSA was shown. The proposed sewer service areas were delineated without an

understanding of the planning and zoning activities underway in the Township. The discrepancy should not pose any problem, however, the COWAMP 208 Plan Report states, "the COWAMP 208 Plan will provide a general delineation of sewer service area boundaries which will need refinement based on detailed local conditions, this, as well as the scheduling of Sewer Service Areas should be performed by the municipality in cooperation with the County Planning Agency."

An additional concern of COWAMP/208 is the implementation of public education programs and management procedures to ensure that on-lot disposal practices are made environmentally sound. East Whiteland Township has recognized the need for management practices and may implement such practices where necessary.

A final concern of COWAMP/208 as it relates to wastewater management in East Whiteland Township involves stream discharge by non-municipal sewage treatment plants. The stream discharge of the five private package plants are the only points of discharge within East Whiteland Township.

The discharge has been granted a permit by the Pennsylvania Department of Environmental Resources.

2. State

All stream discharges in Pennsylvania must meet certain quality criteria. The criteria are established in the amendments to Title 25, Rules and Regulations, Chapter 93, Water Quality Standards, and are enforced by the Department of Environmental Resources.

3. County

The Official Plan represents a slight departure from the previous 537 Plan, which was the County Master Sewer Plan of 1970. In the 1970 Plan, sewers were proposed for the entire area of the Township except the extreme northwest portion and the southeast corner between the Chester Valley rail line and U.S. Route 30. The 1970 Plan intended to provide public sewers in anticipation that significant development would occur. In general, this plan reflected the prevailing philosophy which favored centralized sewage collection and treatment facilities. This Official Plan reflects an approach favoring a centralized sewage collection system throughout the Township except those areas within the Ridley and Brandywine watersheds.

VI. RECOMMENDATIONS

A. Description

The purpose of this section is to present the selected sewage facilities plan for East Whiteland. The chapter will discuss the relationship of the selected plan to the existing and projected sewage treatment and disposal needs of the Township for the five and ten-year planning horizons.

The Township has chosen to adopt the extension of the VFSA collection lines approach to serve the needs of existing and projected development in Study Areas 1, 3, 4, 5 and 6. Existing and future development in Study Area 2 will utilize the existing public sewage facilities. Study Areas 5 and 6 may be reviewed over the next five years to evaluate the applicability of alternative disposal methods. Study Area 7A and 7B may utilize alternate disposal methods described herein involving on-lot systems and/or treatment facilities subject to further study of these areas.

The Valley Crossing Development, located within Study Area 7B will utilize a package treatment facility as described in Alternative 6 which will discharge effluent into the east branch of Valley Creek, and/or Alternative 7 which will permit the sewer tie-in with West Whiteland Township's sewage treatment plant.

The Chester County Health Department is the designated agency responsible for granting on-site disposal permits and will be retained in its enforcement role. Significant development is anticipated to continue in the Township within the five and ten-year planning horizon. East Whiteland will consider the use of community on-site systems and community lagoon and land application systems within Study Area 7 on a case-by-case basis where otherwise not previously addressed. These types of sewage treatment and disposal facilities will be dealt with as revisions to the Official Sewage Facilities Plan via planning module submission.

B. Rationale for the Selected Sewage Facilities Plan

Extending existing centralized sewer collection lines is considered to be appropriate for most of the Township, principally because of its accessibility and configuration of the sewage service areas as well as the possibility of degrading local streams is eliminated. Although central sewers export water from the service areas, however, an overriding issue is the fact that 72% of the Township is comprised of soils unsuitable for on-lot sewage disposal.

The Township places significant importance on the potential environmental impacts of the various sewage facility alternatives regarding Study Area 7. Alternatives involving the stream discharge of wastewater receive a negative assessment. First, it is Township policy not to degrade the sensitive

headwater areas of the Valley and Ridley Creeks. Second, the export of wastewater through sewage treatment plant stream discharges is perceived as a negative environmental impact, potentially contributing to water shortages.

Community lagoon and spray irrigation systems are viewed favorably in Study Area 7A, even though the development of these systems could involve the construction of central sewage collection lines. This system is appropriate for clustered development patterns and eliminates stream discharges associated with conventional sewage treatment. Groundwater recharge is also a benefit of spray irrigation systems.

The Township also views community subsurface disposal systems favorably in Study Area 7A. Community systems are considered appropriate, where available land for individual on-site disposal systems may be limited. Community systems recharge groundwater and have limited environmental and developmental impacts. Factors which negatively influence spray irrigation and community subsurface disposal systems involve ownership and maintenance responsibility and land availability. Land application and community subsurface disposal systems need to be regularly maintained. If these systems are privately owned and operated, then the Township needs to ensure that the systems are bonded, both for performance and maintenance.

The preliminary approved Valley Crossing Development Plan with 1,474 multi-family dwellings, located within Study Area 7B, if developed, may utilize a package treatment facility as described in Alternative 6 which will discharge effluent into the east branch of Valley Creek. However, if the Valley Crossing tract is developed with 464 single family dwellings, as proposed, then the wastewater from this tract is being considered to be included within the new sewage treatment facility located on the Church Farm School property in West Whiteland Township.

East Whiteland considers private on-site disposal to be an appropriate form of wastewater management for Study Area 7. In areas where on-lot systems perform effectively, it is difficult to justify any change in the configuration of sewage disposal facilities, particularly for low-density development is anticipated for the northern and southern portions of the study area.

C. Five and Ten-Year Planning Horizons

The selected 537 Sewage Facilities Plan satisfies the projected sewer needs of East Whiteland Township for the five and ten-year planning horizons. As discussed earlier, Chapter 71, or Act 208, the Pennsylvania Sewage Facilities Act, requires that the municipality must review this plan and, if necessary, revise it every five years. This mandatory review offers the Township the opportunity to alter the configuration of sewage facilities.

Public sewage collection and disposal facilities will be extended, as the need is determined, to all new development

situated in Study Areas 1, 2, 3, 4, 5 and 6, as indicated on Figure 12, the Sewage Facilities Plan. Study Areas 1, 2 and 3 are to be served by public sewage collection facilities within five years. Study Area 4 is proposed to be served by 2001, while Study Area 5 is to be served by 2006, although Study Area 7 could be served sooner with some alternate disposal method. Study Area 7A has also been considered by neighboring East Goshen Township for inclusion within its sewer system due to its location within the Ridley Creek Watershed. Study Area 7B may utilize a treatment facility as described herein subject to further study, or may be serviced by West Whiteland Township's proposed sewage treatment plant as described herein subject to further study of the area and/or may be served by the public sewage facilities draining to the Valley Forge Sewer Treatment Plant if and when the transmission and treatment facilities could be expanded to accommodate the required estimated sewage flows through year 2006. The extension of public sewers to development in this area is consistent with existing zoning, land use, the configuration of public sewer facilities now available, and population projections for the year 2000.

The major issue regarding future sewage capacity is that while the Valley Forge Sewage Treatment Plant could be expanded and the Township receive its 9.5 mgd, the sewage could not be transported to the plant based upon the existing flow capacity of the Wilson Road Pump Station in adjacent Tredyffrin Township. The current average daily flow capacity of the Wilson Road Pump Station is 2.3 mgd. Until the Wilson Road Pump Station is upgraded to accommodate a potential sewage plant expansion, the Township's policy to serve the study areas indicated in this Plan. If, and when, capacity becomes available, the small private plants that currently exist in East Whiteland will be connected to the Township's system.

On-lot disposal systems will be used to treat and dispose of wastewater in all areas of the Township not specifically referred to above. This configuration of sewage facilities is consistent with the current and projected sewer needs in the Township for the five and ten-year planning horizons. Justification for sewage collection facilities is also found in the nature of the population change in the Township. In addition, the majority of subdivision activity is occurring in the Study Areas proposed for sewage collection facilities.

D. Financing Methods Available

Capital expenditures for sewage facilities in East Whiteland Township may be financed in several different ways. Two sources of financing are: funds raised by the municipality through loans, taxes or assessments; and grants or loans from state and federal agencies. Funding arrangements may be used alone or in combination with each other. This section will explore these two sources of financing capital improvements and will also summarize the role of developers in providing sewage facilities.

EAST WHITELAND TOWNSHIP - ACT 537 PLAN

1. Municipal Funds

There are eight methods commonly employed by municipalities to fund capital improvements. These methods, which involve the use of loans, taxes, or assessments, are summarized below.

a. General Taxation

Municipalities may fund capital improvements on a `pay as you go' basis. Usually, second-class townships such as East Whiteland do not possess a large enough tax base to permit the financing of costly sewage facility capital improvements in this manner.

b. General Obligation Bonds

A municipality may use the taxation power as a pledge to pay the interest and principal to retire a debt incurred for a capital improvement. Rules and regulations specifying the legal procedures for incurring debt in this manner are contained in the Local Government Debt Act. This Act states that there are two types of debt a municipality may incur, electable and non-electable. Each type of debt has different regulations as to the amount which can be borrowed. There is no limit to the amount of debt that a municipality may incur provided a majority of eligible voters give their consent in a referendum. Non-electable debt can, on the other hand, be incurred without voter approval, but the Local Government Debt Act sets specific limits to the amount which can be borrowed. The debt limit for second-class townships such as East Whiteland is set at two hundred fifty percent of the local government borrowing base. The borrowing base is defined as the average annual municipal revenues for the three years prior to the sale of the bonds.

As a means of raising funds, General Obligation Bonds have several benefits. There are security features and standardization for market purposes which lend the General Obligation Bond readily to public sale.

c. Revenue Bonds

Municipalities commonly finance capital improvements by selling revenue bonds. Revenue bonds are financed through fees and service charges as opposed to taxes, as is the case with general obligation bonds. Revenue bonds have some advantages over general obligation bonds. There is no legal debt limit imposed on the amount which can be borrowed and voter approval is not required. Revenue bonds may also be used to finance projects extending beyond municipal boundaries such as

water supply or sewage facility projects. Revenue bonds are normally sold through a municipal authority.

A disadvantage of revenue bonds is that due to the lack of earnings record of the capital improvement, higher interest rates are required as compared to general obligation bonds. Usually, the bond market requires that net revenues exceed the debt service by 20 to 50 percent.

d. Reserve Funds

It is possible for a municipality to fund capital improvements from monies which have been accumulated in reserve funds. Reserve funds can include surplus revenues, proceeds from the sale of capital assets or funds in depreciation reserves. In second-class townships, the proceeds from reserve funds are not likely to be large enough to fund major capital improvement projects.

e. Lease-Purchase

A local government may contract with a private company or authority to construct or obtain a capital improvement. When the improvement is constructed or obtained, it is leased to the local government for a period of time, after which the title is conveyed to the municipality.

f. Special Assessments

Frequently, capital improvements will benefit only a specific area of a municipality. In this instance, a special assessment may be levied on the properties located in the area receiving the capital improvement since it would be inequitable to distribute the cost of the capital improvement among all municipal taxpayers. Unless the capital improvement is inexpensive, it is unlikely that a special assessment can be used to fund the entire cost of the improvement.

g. Assessment Bonds

Capital improvements may be partially or wholly financed through the sale of assessment bonds which are based on assessments levied on properties benefitting from a capital improvement. Assessment bonds are often combined with revenue bonds.

h. Tax Increment Financing

`Front-end funds' for capital improvements can be obtained through tax increment financing. Tax increment bonds are sold on the basis of expected additional tax revenues that will be paid by properties which will

benefit from a proposed capital improvement. Once the capital improvement has been constructed or obtained, the tax increments are placed into a fund to retire the bonds. Tax increment financing is applicable to areas where large scale redevelopment is feasible. This method of finance would not appear to be appropriate for East Whiteland Township.

2. Private Funds

Act 247, Pennsylvania Municipalities Planning Code, Article V, Section 503, grants municipalities the authority to require the provision of sewage facilities in subdivisions. The power vested in Article VII of the Act similarly applies to the provision of sewage facilities in Planned Residential Developments. In addition, the municipality may accept the dedication of open space for public use and maintenance. This would imply that the municipality could negotiate for the dedication of open space which would be used for purposes such as land application of wastewater.

Private funds can be an important consideration in funding sewage facilities. Where development of previously vacant land occurs, it is the general rule that the developer provide sewage facilities. There are instances in East Whiteland Township where developers will bear the cost of providing sewage facilities.

3. Government Subsidies

a. Federal

Environmental Protection Agency Construction Grants for Wastewater Treatment Works. As authorized under Public Law 92-500 - 33 USC, 1281(g)(1), this program of grants by the Environmental Protection Agency is a primary source of funds for the construction of sewage facilities.

Environmental Protection Agency Financing Authority. Public bodies which qualify for the EPA construction grant must still finance a maximum of 15 percent to 25 percent of the cost of the project. The Environmental Financing Authority, created under PL 92-500, 33 USC, 128, provides public bodies a source for marketing bonds in order to finance the non-federal share of wastewater treatment construction costs.

Community Development Block Grants. Block grants, funded by the Department of Housing and Urban Development, are a possible source of monies for sewage facility works. These funds are normally available only after a municipality has unsuccessfully attempted to obtain funds from other federal programs which are specifically directed at funding sewage facilities.

b. State

Department of Environmental Resources. The Department of Environmental Resources offers water pollution control grants totalling two percent of the annual operating and maintenance costs of a sewage treatment facility. This Department also provides a five percent grant to supplement the Environmental Protection Agency construction grants for wastewater treatment works.

4. Summary

The previous discussion has indicated various options available to East Whiteland Township for funding sewage facility capital improvements if desired in the future. It is evident that each option has advantages and disadvantages and that no single type of funding is appropriate for all capital improvements. In order to develop a capital improvement program which makes efficient use of municipal monies, the function of each proposed sewage facility capital improvement must be analyzed.

Sewage facilities can be developed for several different reasons, even though the ultimate objective of each facility, to protect both public health and environment, may be the same. Sewage facilities may be remedial in nature, extending sewers to areas experiencing health hazards from malfunctioning on-lot disposal systems or upgrading facilities which are outdated or are operating beyond the design capacity. Sewage facilities can, on the other hand, be provided as part of a new subdivision. Finally, sewage facilities can be extended to areas where new development would appear both imminent and consistent with municipal policies.

Once the function of the proposed sewage facility capital improvement is defined, those options for funding which appear most appropriate can be isolated. The funding options can be reduced further if the estimated cost of the capital improvement can be determined. The following table summarizes sewage facility capital improvements according to their functions and indicates the types of funding which may be most appropriate in each case.

Table 7

FUNDING ARRANGEMENTS FOR CAPITAL IMPROVEMENTS

Function of the Capital Improvement	Possible Funding Arrangement
Correcting existing problems. Upgrade existing facility. Enlarge existing facility.	Federal and state grants and loans supplemented by municipal funds.
Sewage for new subdivisions or land developments.	Private funds.
Construct sewage facilities for anticipated development. Alter the configuration of existing sewage facilities.	Municipal funds supplemented by federal and state funds.

It is noted that there are specific requirements involved in obtaining federal or state funds. These requirements should be thoroughly investigated before the Township makes any commitments for sewage facility improvements based on securing federal or state monies. Many grant and loan programs receive numerous applications for funds while having only limited resources. Application for a loan or grant does not guarantee approval.

Pennsylvania Sewage Facilities Act

SEWAGE FACILITIES PLANNING



A Guide for Preparing Act 537 Update Revisions

Publication Number 1480

November, 1992

Robert P. Casey, Governor
Commonwealth of Pennsylvania

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Department of Environmental Resources

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Bureau of Water Quality Management
Division of Municipal Planning and Finance
Harrisburg, Pennsylvania

Recycled Paper

Preface

This publication was prepared by the Department of Environmental Resources (Department), Bureau of Water Quality Management, to address the official plan update requirements of Chapter 71 of the Department Rules and Regulations promulgated under the Pennsylvania Sewage Facilities Act. It is written for local government officials, consultants and technical staff. This publication is designed to provide an overview of the sewage facilities planning process and to emphasize the importance of good communication with the Department prior to and during the development of a sewage facilities plan. Although the document is intended to assist local government officials in the development of a comprehensive official sewage facilities plan update, it also will be useful to planners, engineers and other consultants.

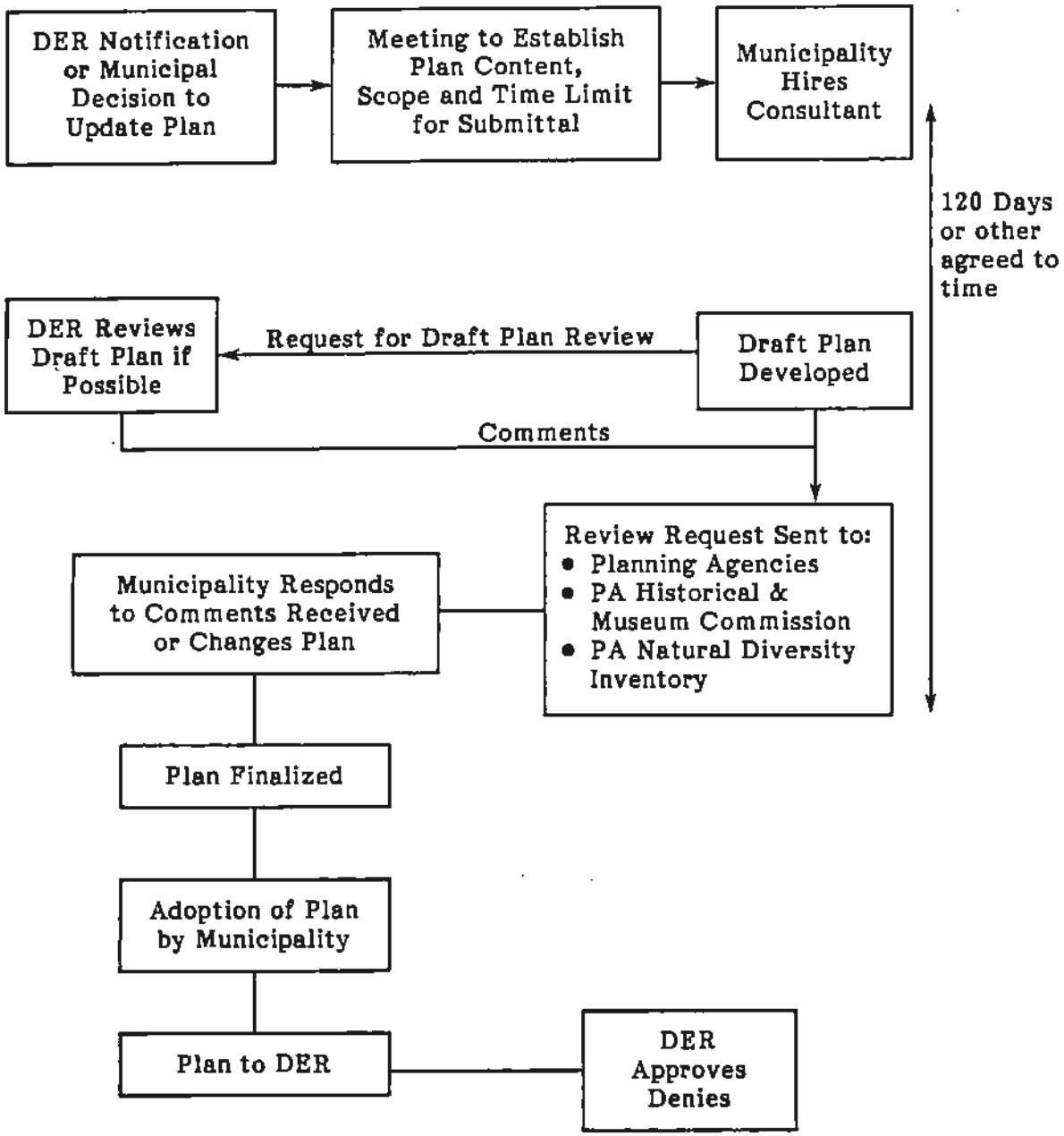
Special emphasis has been placed on several key planning elements that are the result of new environmental directives which prompted the 1989 revisions to Chapter 71 of the Department's Rules and Regulations. These elements have been highlighted by including them in some detail in the appendices of this publication.

The document is not intended to serve as a substitute for good professional judgement, and should not be used as such. Furthermore, the document is not intended to be used in place of or as an interpretation of the specific language of Act 537 or the Rules and Regulations adopted under the Act.

ACKNOWLEDGEMENTS

The Sewage Facilities Planning Program staff thanks the Sewage Advisory Committee's Subcommittee on Act 537 Plan Update Procedures, and Gary Metzger, Scott Novatnak, and Phil Zechman of the Department's field office staff for their help in developing this document.

ACT 537 PLAN UPDATE PROCESS



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A GUIDE FOR PREPARING ACT 537 UPDATE REVISIONS

The purpose of these guidelines is to provide municipal officials and their consultants with a general description of the Pennsylvania Sewage Facilities Act (Act 537) plan update process and to show how the plan can be used as a tool to resolve existing sewage disposal problems and prevent new problems from occurring. While the Department has both statutory and regulatory authority to require these plans, Act 537 plans are municipal plans which are developed by municipalities and must be implemented by municipalities. For this reason, local municipal officials must be actively involved in the plan update process.

I. Background

Act 537, enacted by the Pennsylvania Legislature in 1966, requires that every municipality in the state develop and maintain an up-to-date sewage facilities plan. The Act establishes the requirements for these plans and allows for reimbursement of up to 50% of the eligible costs incurred in preparing the plans. The first Sewage Facilities Plans prepared under Act 537 ranged in scope from countywide comprehensive sewage facilities plans to plans for specific areas experiencing sewage problems within a municipality.

Since 1966, growth patterns and sewage needs in Pennsylvania's municipalities have been constantly changing. Some municipalities have kept pace with the need for adequate sewage facilities, while others have critical needs for improved public treatment facilities. New land developments have increased pressure for new or expanded public treatment facilities, increased use of on-lot disposal systems and privately-owned treatment facilities, or have caused overloads to existing facilities.

Many municipalities have reacted to these changes by updating their Sewage Facilities Plan several times since the original plan was completed. Sewage facilities plan update revisions have resulted in new or improved wastewater facilities to meet the needs of the municipality. Municipal officials may find it necessary to update their Sewage Facilities Plan because it is out-of-date, not implementable, inconsistent with other municipal planning, or does not provide adequate solutions to resolve existing sewage problems or provide for growth.

Municipalities also may be required to update their Sewage Facilities Plan when the Department determines that the existing plan does not adequately meet the sewage disposal needs of the municipality.

II. Purpose of Sewage Facilities Plans

The main purpose of a municipality's Sewage Facilities Plan is to protect the health, safety, and welfare of the citizens living in the municipality by correcting malfunctioning on-lot septic systems, overloaded treatment plants or sewer lines, and wildcat sewers. The existence of untreated or improperly treated sewage in surface water, on the surface of the ground, or in the groundwater allows disease organisms to reach people through drinking water, through insects or other animals, and through direct contact. The most publicized recent transmissions of disease caused by sewage discharges to drinking water supplies were the numerous Giardia

outbreaks in Pennsylvania. This organism causes severe gastric and intestinal distress. Development and implementation of plans for the sanitary disposal of sewage waste can be very effective in resolving existing problems which threaten the public health in a municipality. Such planning is necessary before funding, permitting and construction of improved sewage treatment and disposal systems can begin.

A less obvious, but equally important purpose of the sewage facilities plan is to prevent future sewage disposal problems from occurring. Where sewage facilities plans are consistent with land use planning, zoning and other municipal planning, municipal officials are able to direct new land development to areas where adequate sewage disposal facilities are available or will be available. Sewer lines can be extended in a planned manner, treatment plants can be expanded as planned, and on-lot systems can be installed in soils suitable for such systems and maintained through municipal sewage management programs. Proper planning can prevent future sewage disposal problems associated with improper or poorly planned new land development and the lack of adequate planning for the long-term operation and maintenance of sewage facilities.

Another critical purpose of the Sewage Facilities Plan is to provide protection for both the groundwater and surface waters of the Commonwealth. All citizens of this Commonwealth are guaranteed clean water by the Pennsylvania Constitution. In carrying out this mandate, the Department uses the Official Sewage Planning requirements of Act 537 to prevent and eliminate pollution of the waters of the Commonwealth by coordinating planning for the sanitary disposal of sewage with a comprehensive program of water quality management.

III. Scope of Sewage Facilities Plans

Sewage Facilities Plans can be simple enough to address the repair, replacement and maintenance of malfunctioning on-lot systems in a small village using local resources, or complex enough to provide a planning basis to obtain funding for the design and construction of a multi-million dollar collection, conveyance and treatment system to serve a city. This flexibility in scope allows the Department and municipality to tailor the plan content to the specific planning needs of the municipality. It also allows expansion of the scope to cover a multi-municipal area under a single plan.

IV. Professional Assistance

It is unusual for a municipality to have the expertise to develop a sewage facilities plan update revision without assistance. It is strongly recommended that municipalities consider obtaining professional assistance, even in the early stages of planning.

Municipalities usually seek professional assistance from a municipal authority, planning agency or consulting firm to prepare an official plan update revision. While many of the planning requirements can be completed successfully by general consultants and planners, a plan being prepared to address improved or new collection, conveyance and treatment facilities requires engineering expertise.

A consulting firm with practical experience in the planning of water and sewer systems has the ability to develop and explore various sewage facilities options, and will develop an implementable sewage facilities plan. The consultant's

function is to prepare sewage facilities plans that meet local, state and federal requirements. The municipality retains, by law, the final decision regarding alternative selection and implementation of the plan.

There are a wide range of capabilities in consulting firms, so a municipality should be very careful in selecting a firm. The typical process for selecting a firm to develop an update revision is as follows:

* Establish a list of qualified consultants. This can be done by calling other municipalities that are familiar with such firms, contacting state associations, or checking with professional societies.

* Invite letters of interest and lists of references from the firms selected.

* Narrow the list to three to five qualified firms and request written proposals from these firms. Proposals should include references from municipalities with similar projects completed by the firm.

* Hold interviews during which the firm will present their qualifications, capabilities and experience so that the community can ask questions about their capabilities.

* Contact municipalities for which firms did similar work and ask if the municipalities were satisfied and had plans approved by the Department.

* Select a firm from those interviewed. Notify all others interviewed of the selection.

As with any business or profession, there is a substantial difference in the quality of consulting services among firms. The best way to investigate an individual firm is to inquire about its reputation and performance on previous projects and with other clients. It is suggested that a community check a firm's references before committing to a contract.

Some funding agencies have their own requirements on selecting a consultant. It is recommended that the municipality check with the funding agency for any specific requirements it may have in selecting a consultant.

The community may either request a proposal containing only qualifications and negotiate a fee after selecting a consultant, or it may request proposals containing fee estimates so that cost may be considered in the selection. If a community requests cost proposals, it should be very careful to compare the kind and quality of work proposed related to the cost.

V. Overview of the Sewage Facilities Planning Process

The sewage facilities planning process involves a number of distinct steps which allow for communication between the municipality and Department during the preparation of the plan.

A. Initiation of the Sewage Facilities Plan Update Process

1. Department Required Update Revision

The Department has the power, through Act 537, to require a municipality to update its Sewage Facilities Plan. The notice from the Department to the municipality includes the reasons for the required update, specific areas of the municipality to be included in the study, the time limit for submitting the proposed plan content, and the deadline for completing the plan. When the Department requires a plan update, specific legal responsibilities fall on the shoulders of municipal officials. (These are briefly discussed in Section V.I.) These responsibilities should be discussed with the Department's staff and/or the municipal solicitor.

2. Municipality-Initiated Plan Updates

Municipalities may initiate an update to their Official Sewage Facilities Plan without being required to prepare a plan update by the Department. This may be done because the municipality has determined that its plan is out of date or does not address the need for new or improved sewage facilities.

B. Meeting with the Department

In either case, before a municipality commits money to prepare a sewage facilities plan update, a meeting or other appropriate contact with the Department's regional office is required. Through this contact, the municipality establishes with the Department, the required content of the sewage facilities plan update. The "Act 537 Plan Content Checklist" in Appendix I is used to establish the specific planning elements which must be included in the plan.

This pre-planning meeting is important for several reasons:

1. Both the municipality and the Department may have specific items they want to have included in the plan. The Department makes the final determination as to minimal plan content.

2. While the municipality may include anything they want in their official sewage plan, only certain specific planning costs are eligible for reimbursement under the 50% planning grant. All of the planning elements which may be eligible for an Act 537 planning grant are listed in the "Act 537 Plan Content Checklist," Appendix I. The Department makes the final determination on the eligibility of a specific planning element for planning cost reimbursement.

3. The Department and the municipality may refine the study areas and establish the level of planning required for each study area where more than one exists.

4. Establishment of the proposed plan content of the plan update will allow the municipal officials to get several proposals for plan

preparation from different consultants. This may result in a reduction in the cost of the plan.

C. Submittal of the Proposed Plan Content with Cost Estimates

A municipality should require its consultant to submit cost estimates for completion of each of the required planning elements (see Appendix I). Because the Department may ultimately be reimbursing the municipality 50% of the cost to the municipality to prepare the sewage facilities plan, it is important (though not required) for the municipal officials to forward the cost estimates from the consultant they selected to prepare the plan update to the Department prior to beginning the plan update. A Task/Activity Report or other cost estimating document may be used for this purpose (see Appendix A).

This report allows the Department to screen out costly or unnecessary activities or planning elements already completed in a previous plan. The municipality should not begin development of the plan update until written concurrence on the proposed plan content is received from the Department.

D. Plan Development

The Department may require completion of the Official Sewage Facilities Plan Update within 120 days of the municipal officials' receipt of a notice to update. When two or more municipalities are developing a joint official plan update, the plan may be prepared by one of the municipalities, and submitted on behalf of the other participating municipalities. The plan must be adopted by resolution of the governing body of each municipality to which it relates.

Municipal officials may assign oversight of the plan development to their planning commission, an ad hoc committee or other group. The municipality also may allow a county or an authority to complete the plan. Plans which are initiated by the municipality without a Department notice to do so have no time restraints for completion of the plan unless a subsequent DER notice sets a time limit. In all of the above cases, timely completion of the plan and the content of the plan remains a municipal responsibility. Appropriate agreements or contracts should be developed prior to delegation of authority to another entity to develop or oversee a plan.

If the municipality cannot complete the plan within the 120-day time limit (if such a time limit has been established), a request for a time extension should be sent to the Department with justification of why the plan cannot be completed. The Department may, at its discretion, allow a time extension.

E. Review and Adoption of the Plan by the Municipality

1. Planning Agency Review

When a draft of the plan is completed, a copy must be sent to the municipal planning agency and area wide or county planning agency and/or county health department for comment. Comments received from any of the preceding agencies must be included with the submission to the Department along with responses to these comments from the municipality. Evidence that the official plan has been before

these agencies for 60 days without comment is sufficient to satisfy this requirement. Also, if no comments on the plan were received or made by the previously-mentioned planning agencies, a statement from the municipality reflecting this fact must accompany the official plan submitted to the Department.

The municipality must assure that all of the consistency requirements are addressed in the plan and that any required letters or documents are attached to the plan. (See Appendix B)

2. Public Notification

Public Notice is required as part of the plan update revision process. The following items must be contained in the notice.

a. Name of project.

b. Type of project (sewer line extension, collection, treatment facility, etc.).

c. User fees (PENNVEST or other federally financed projects only).

d. Location or areas of the municipality impacted.

e. Establishment of a 30-day comment and review period.

f. Where and when the plan can be seen for comment and review, preferably the municipal office.

g. Address of municipal office where comments will be accepted.

All comments, the municipal response to comments and proof of public notice must be submitted to the Department with the Sewage Facilities Plan update. If no comments on the proposed plan are received, a statement, from the municipality, reflecting this fact must accompany the official plan submitted to the Department.

The public notice must appear at least once in a newspaper of general circulation in the legal notice section. The consultant should work closely with the municipality in coordinating the comment period, and the time and location where the plan can be reviewed.

3. Department Review of Draft Plans

The Department may agree to review draft plans to provide direction to the municipality prior to the final plan adoption. This service is dependent upon the availability of staff resources. Contact the regional office to make such a request.

F. Plan Implementation

The Sewage Facilities Act requires complete and timely implementation of the activities described in Sewage Facilities Plans. An implementation schedule is developed which identifies the actions required to carry out the

plan's recommendations and when these actions will be completed. If the municipal officials determine that there are financial, legal or administrative barriers which would prevent this complete and timely implementation, they must have these barriers addressed in the plan before it is adopted. If the plan is determined to be inconsistent with other planning or natural resource protection actions or requirements, these inconsistencies must be resolved (see Appendix B).

Resolution of these inconsistencies may range from scheduling action to correct the inconsistency at some point in the project, to actually obtaining a required permit or completing a mitigation action. If plan implementation requires the passage of ordinances, regulations or the development of agreements, these may be developed as part of the planning process or listed in the implementation schedule for future development.

Completion of the plan occurs when the municipality adopts the plan by resolution (see sample resolutions in Appendix F.) Executing the resolution and adopting the plan acknowledges that the municipality assures that its plan meets the requirements of the Act and that it accepts the content of the plan and its implementation schedule.

The Department will monitor the progress of the municipality in meeting the schedule of implementation in the plan. If the municipality anticipates missing a milestone in the implementation schedule, the municipality should notify the Department and provide an explanation.

G. Review by the Department

Once the plan is adopted, it must be submitted to the Department for review and approval. A complete submittal includes those items listed in the Act 537 Plan Content checklist provided in Appendix I. The completeness and general plan checklist must be completed and submitted with the plan.

The Department normally will review and act upon a complete sewage facilities plan update within 120 days of receipt. If an extension of time is needed, the Department will notify the municipality of the need for an additional 60 days to complete its review. If the plan is disapproved, or incomplete, a letter will be sent by the Department listing the plan's deficiencies and establishing a time limit for resubmission. Major revisions to the previously submitted plan including but not limited to a change to the service area, change in the cost of the project or change in the method or location of disposal may require a new review by the planning agency, another public notice process and a new adoption of the modified plan by the municipal officials prior to resubmittal.

H. Planning Grants

When the Department approves the plan, an application for 50% reimbursement of the cost of plan preparation may be submitted to the Department. An application for requesting this reimbursement is included in Appendix G. The application will be processed and paid as soon as possible.

I. Enforcement Powers of the Department

If a municipality fails to update a Sewage Facilities Plan within the time allowed in the regulations or agreed to at the preplanning meeting with the Department or if the municipality fails to implement a Sewage Facilities Plan according to its implementation schedule, the plan may be placed in a disapproved status from the date of the Department's notice, and some restrictions begin. First, no on-lot sewage disposal system permits may be issued by the municipality in the area where the plan is in disapproved status. These limitations may apply to an entire municipality but usually are limited to a delineated planning area. Limitations on permit issuance are an automatic provision of the law.

In addition, new land development planning modules cannot be approved by the Department in the area where the plan is in a disapproved status. The Department cannot issue permits for sewage facilities which discharge to the waters of the Commonwealth in areas which do not have an approved Sewage Facilities Plan. The plan update revision must be submitted to and approved by the Department before new land development planning or permitting approvals can resume.

The Department may, by Order, restrain the municipality or planning agency from approving subdivision plans or issuing building permits in areas of the municipality for which there is no official plan or where the plan is not being implemented. Where collection, conveyance or treatment facilities are overloaded or projected to be overloaded, the Department or municipality may impose a moratorium on new construction. Finally, the municipality may be subject to legal action or fines where pollution incidents are documented.

J. Cooperation

The sewage facilities planning process works best when a cooperative effort between the Department and municipality exists. Good communication and knowledge of the process are critical to the development of a good plan. This communication begins at the preplanning meeting with the Department.

In most cases, the municipality will have a minimum of 120 days to complete and submit a plan to the Department without penalty. If the municipal officials or the consultant do not think the plan can be completed within 120 days, this should be discussed at the first meeting with the Department and a modified schedule for submittal of the plan should be justified. If, during the development of the plan, it becomes evident that an established deadline will not be met, the municipality should immediately notify the Department and submit justification for an extension of the deadline. This will lessen the potential for imposition of restrictions on development or other penalties.

In addition, the municipality should work with the Department as soon as possible to delineate the area or areas of the municipality which will be studied in the plan update. Establishing these areas will limit the imposition of restrictions on new land development to the study areas and prevent the imposition of restrictions in the entire municipality. The municipality should develop documentation supporting the establishment of delineated study

areas and present this information to the Department as soon as possible after receipt of a notification to develop an update revision.

Timely action by the municipality and Department will reduce the impact of any restrictions on new land development by reducing the time period that the plan is in a disapproved status. Timely action will also resolve public health and environmental problems more quickly, thus protecting the citizens of the municipality.

Commonwealth of Pennsylvania

Pennsylvania Code

Title 25. Environmental Resources

Department of Environmental Resources
Chapter 71. Administration of Sewage Facilities Planning Program
Chapter 72. Administration of Sewage Facilities Permitting Program
Chapter 73. Standards for Sewage Disposal Facilities



Authority

Chapter 71 issued under section 1920-A of the act of April 9, 1929 P. S. § 510-20); sections 5 and 402 of the act of June 22, 1937 P. S. §§ 691.5 and 691.402); and section 9 of the act of January 5, No. 537) (35 P. S. § 750.9), unless otherwise noted.

Source

Chapter 71 adopted August 2, 1971, effective August 3, 1971, 1 ough May 30, 1975, effective May 31, 1975, 5 Pa.B. 1402, unless

Notes of Decisions

nvolving subsurface sewage discharge, this chapter's planning and nally apply, in situations involving sewage systems discharging to g requirements of this chapter and the permit requirements of *ck Township v. Department of Environmental Resources*, 530 A.2d 987).

asonable the Board's interpretation that this chapter's permit ly to all community and individual sewage systems. *Haycock t of Environmental Resources*, 530 A.2d 514, 517 (Pa. Commw.

Cross References

25 Pa. Code § 72.1 (relating to definitions); 25 Pa. Code § 73.1 25 Pa. Code § 73.61 (relating to general); 25 Pa. Code § 91.31 ive water quality management); 25 Pa. Code § 94.1 (relating to e § 94.12 (relating to annual report); 25 Pa. Code § 94.14 (relating plans and revisions); 25 Pa. Code § 94.21 (relating to existing § 94.22 (relating to projected overload); 25 Pa. Code § 153.45 5 Pa. Code § 177.10 (relating to sewage disposal); 25 Pa. Code gible costs); 25 Pa. Code § 963.7 (relating to application procedure); 12 (relating to ineligible costs).

Subchapter A. GENERAL

e periods.

GENERAL

ns.

ords and terms, when used in this chapter, have the s, unless the context clearly indicates otherwise:

nsylvania Sewage Facilities Act (35 P. S. §§ 750.1—

Clean Streams Law—The Clean Streams Law (35 691.1001).

Clean Water Act—The Clean Water Act (33 U. 1376).

Equivalent dwelling unit—For the purpose of deter of lots in a subdivision, that part of a multiple commercial or industrial establishment with flows ec per day.

Large volume onlot sewage system—An individ onlot sewage system with a design capacity to di sewage flows which are in excess of 10,000 gallons pe

Limiting zone—A soil horizon or condition in underlying strata which includes one of the following:

(i) A seasonal high water table, whether pe determined by direct observation of the water tal soil mottling.

(ii) A rock with open joints, fracture or sol masses of loose rock fragments, including grave fine soil to fill the voids between the fragments.

(iii) A rock formation, other stratum or soil co slowly permeable that it effectively limits dow effluent.

Local agency—A municipality (or any combinatio acting cooperatively or jointly under the laws of th county, county department of health or joint cou health.

Lot—A part of a subdivision or a parcel of land site or intended to be used for building purposes, wh future, which would not be further subdivided. Wh for a multiple family dwelling or for commerci industrial purposes, the lot shall be deemed to ha into an equivalent number of single family residentia by estimated sewage flows.

Official plan—A comprehensive plan for the pro sewage systems, adopted by a municipality or muni authority or jurisdiction over the provision of submitted to, and approved by, the Department as p and this part.

Official plan revision—A change in the municipali provide for additional or newly identified or existi needs, which may include but not be limited to:

vision—A comprehensive revision to an existing ired when the Department or municipality determines or its parts is inadequate for the existing or future needs of a municipality or its residents or landown-

for new land development—A revision to a ficial plan resulting from a proposed subdivision as .

tudy—A study, survey, investigation, inquiry, re- r analysis which is directly related to an update dies provide documentation or other support neces- cific problems identified in the update revision.

vidual, association, public or private corporation for- profit, partnership, firm, trust, estate, department, gency of the United States, Commonwealth, political cipality, district, authority or another legal entity l by law as the subject of rights and duties. The term bers of an association, partnership or firm and the agency or municipal, public or private corporation or profit.

-A watertight receptacle which receives and retains gned and constructed to facilitate ultimate disposal of her site. The term includes, but is not limited to, the

toilet—A permanent or portable nonflushing toilet reatment in the retaining tank for odor control.

tank—A tank, whether permanent or temporary, to conveyed by a water carrying system.

tank designed to receive sewage where water under vailable.

ing toilet—A device capable of reducing waste materi-

ng toilet—A device for holding and processing human tchen waste employing the process of biological ough the action of microorganisms to produce a e material.

g toilet—A device in which the flushing medium is dition suitable for reuse in flushing.

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Sewage—A substance that contains the waste proc or other discharge from the bodies of human bein noxious or deleterious substances being harmful c public health, or to animal or aquatic life, or to th domestic water supply or for recreation, or which c under The Clean Streams Law.

Sewage enforcement officer—The official of the issues permits, reviews permit applications and sewage modules and conducts investigations and inspecti implement the act and the regulations thereunder.

Sewage facilities—A system of sewage collection, ment and disposal which will prevent the discharg inadequately treated sewage or other waste into water wealth or otherwise provide for the safe and sanit disposal of sewage or other waste.

(i) *Individual sewage system*—A sewage facility or privately owned, located on a single lot and serv dwelling unit and collecting, treating and dispos whole or in part into the soil or into waters of this by means of conveyance of retaining tank wastes final disposal.

(A) *Individual onlot sewage system*—An indi tem which uses a system of piping, tanks or collecting, treating and disposing of sewage absorption area or a retaining tank.

(B) *Individual sewerage system*—An individu which uses a method of sewage collection, con and disposal other than renovation in a subsurfac or retention in a retaining tank.

(ii) *Community sewage system*—A sewage faci licly or privately owned, for the collection of sew more lots, or two or more equivalent dwelling units or disposal, or both, of the sewage on one or mor another site.

(A) *Community onlot sewage system*—A c system which uses a system of piping, tanks or collecting, treating and disposing of sewage into absorption area or retaining tank.

(B) *Community sewerage system*—A commun which uses a method of sewage collection, con and disposal other than renovation in a subsurfac or retention in a retaining tank.

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nent program—A program authorized by the official
icipality for the administration, management and
isposal of sewage.

—A municipal authority, established under the Munic-
Act of 1945 (53 P. S. §§ 301—401), which provides,
operates sewage facilities.

ment facilities—An individual or community sewerage
adequately treat sewage flows not greater than 2000
r final disposal using a stream discharge or discharge
he ground.

layer of soil approximately parallel to the soil
ical and physical characteristics of which are distin-
vation or other method of analysis, from the chemical
cteristics in adjacent layers of soil.

he collection of soil horizons, including the natural
he surface.

e division or redivision of a lot, tract or other parcel
r more lots, tracts, parcels or other divisions of land,
in existing lot lines. The enumerating of lots shall
hat portion of the original tract remaining after other
divided therefrom.

Commonwealth—Rivers, streams, creeks, rivulets,
itches, water courses, storm sewers, lakes, dammed
ings and other bodies or channels of conveyance of
rground water, or of their parts, whether natural or
r on the boundaries of this Commonwealth.

Source

§ 71.1 adopted August 13, 1971, effective August 14, 1971, 1 Pa.B.
1972, effective May 15, 1972, 2 Pa.B. 753; amended September 28,
15, 1973, 3 Pa.B. 2176; amended August 30, 1974, effective
a.B. 1805; amended June 9, 1989, effective June 10, 1989, 19 Pa.B.
ding text appears at serial pages (136200) to (136202) and (129911)

Notes of Decisions

r the Department of Environmental Resources to grant a system
sewer system and label it "experimental" in order to determine
stem would work and such a label did not cause the Department of
to incur liability when the system failed. *Londonderry Township v.*
(Pa. Commw. 1988).

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§71.2. Scope and time periods.

(a) This chapter is adopted in accordance with t
upon the Department under the act and the Clean
applies to municipalities administering the planning pr
and to persons subdividing land or planning, desi
sewage facilities.

(b) This chapter governs the sewage planning requi
facilities being proposed by municipalities to resol
disposal problems, to provide for the sewage disposal
development and otherwise to provide for future sewag
a resident or landowner in a municipality.

(c) Time periods referred to in this chapter will be
Pa.C.S. § 1908 (relating to computation of time).

Source

The provisions of this § 71.2 adopted August 13, 1971, effective A
1649; amended April 28, 1972, effective May 15, 1972, 2 Pa.B. 753;
1973, effective October 15, 1973, 3 Pa.B. 2176; amended Aug
September 16, 1974, 4 Pa.B. 1805; amended January 9, 1987, effecti
Pa.B. 172; amended June 9, 1989, effective June 10, 1989, 19 P
preceding text appears at serial page (129912).

§71.3. Purposes.

This chapter is separated into five subchapters:

(1) Subchapter B (relating to official plan requir
comprehensive sewage planning mechanism to id
existing sewage disposal problems, to avoid potentia
resulting from new land development and to prov
sewage disposal needs of a municipality.

(2) Subchapter C (relating to new land developm
provides a mechanism for revising sewage facilities p
new land development.

(3) Subchapter D (relating to official plan requir
tive evaluations) provides the planning requireme
alternatives for sewage facilities.

(4) Subchapter E (relating to sewage manageme
vides the requirements for establishing sewage mana

Source

The provisions of this § 71.3 adopted August 13, 1971, effective A
1649; amended April 28, 1972, effective May 15, 1972, 2 Pa.B. 75
1974, effective September 16, 1974, 4 Pa.B. 1805; amended Jan
January 10, 1987, 17 Pa.B. 172; amended June 9, 1989, effective J
2429. Immediately preceding text appears at serial pages (129913) and

B. OFFICIAL PLAN REQUIREMENTS

GENERAL

ment.
onsibility to revise plans.
ponsibility to require official plan revisions.
to revise official plans.

FFICIAL PLAN PREPARATION

icial plans.
of official plans with Federally funded sewage facilities

OFFICIAL PLAN APPROVAL

onsibility to review, adopt and implement official plans.
sponsibility to review and act upon official plans.

PLANNING GRANTS

preparation of official plans.
r grants.
rants.
ning.

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Cross References

This subchapter cited in 25 Pa. Code § 71.3 (relating to purposes); (relating to retaining tanks); 25 Pa. Code § 71.64 (relating to small fl 25 Pa. Code § 71.65 (relating to individual and community sew Pa. Code § 71.71 (relating to general requirements).

GENERAL

§71.11. General requirement.

Municipalities are required to develop and implem official plans which provide for the resolution of existi problems, provide for the future sewage disposal n development and provide for the future sewage disp municipality. Official plans shall be developed, submit ment for approval and implemented by municipalities sections §§ 71.12—71.14, 71.21, 71.22, 71.31, 71.41—7 ters C—E.

Source

The provisions of this § 71.11 adopted August 13, 1971, effecti Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, 2 Pa.B 30, 1974, effective September 16, 1974, 4 Pa.B. 1805; amended June 10, 1989, 19 Pa.B. 2429. Immediately preceding text appears at serial

§71.12. Municipal responsibility to revise plans.

(a) Municipalities shall review and revise their offic the municipality or the Department determines that the to meet the existing or future sewage disposal needs of portion thereof.

(b) Two or more municipalities may jointly subm plan. The plan may be prepared by one of the submitted on behalf of participating municipalities if t by resolution of the governing body of each munici relates.

(c) The existence, absence or content of a mu subdivision ordinance or regulation will not relieve the duty to revise its official plan as required by the act and

(d) The proposed plan content shall be consistent ments of the act.

(e) The completed plan shall be submitted with established by the Department under § 71.13(a) (relat responsibility to require official plan revisions).

administrative action taken under this chapter, the ve the burden to establish that its official plan or nplies with the requirements of this chapter.

Source

§ 71.12 adopted August 13, 1971, effective August 14, 1971, 1 il 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended August ber 16, 1974, 4 Pa.B. 1805; amended June 9, 1989, effective June mmediately preceding text appears at serial page (129916).

Cross References

Pa. Code § 71.11 (relating to general requirement); 25 Pa. Code od of submission); and 25 Pa. Code § 71.43 (relating to approval

t responsibility to require official plan revisions.

ent will require a municipality to revise its official ines that the plan does not meet the requirements of ting to official plan requirements for alternative plan, or its parts, is inadequate to meet the sewage pality, its residents or property owners or because of ets, conditions or circumstances which make the plan plan revisions shall be submitted within 120 days of termination under this section, unless the Department time is necessary to complete the planning consistent

ent will notify the municipality in writing of:

s for requiring a plan revision.

plan content requirements as contained in § 71.21 t of official plans) and Subchapter D.

tions for plan completion, including interim deadlines hedules the Department deems necessary.

of the existing official plan.

ent may require two or more municipalities to develop a single official plan. The Department will allow the oint municipal plan if the plan is adopted by each pality.

Source

s § 71.13 adopted August 13, 1971, effective August 14, 1971, 1 April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended ective October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974, 1974, 4 Pa.B. 1805; amended June 9, 1989, effective June 10, 1989, ely preceding text appears at serial page (114763).

Cross References

This section cited in 25 Pa. Code § 71.11 (relating to general requ § 71.12 (relating to municipal responsibility to revise plans); and (relating to private request to revise official plans).

§71.14. Private request to revise official plans.

(a) A person who is a resident or property owner may request the Department to order the municipality t plan if the resident or property owner can show that t not being implemented or is inadequate to meet the resi owner's sewage disposal needs. This request may be r prior demand upon the municipality to so implement o plan and failure of the municipality to reply in either negative within 60 days or, failure of the municipality official plan within the time limits established in the p tion schedule or failure to revise its official plan with established in this chapter. The request to the Departm description of the area of the municipality in questi reasons that the plan is believed to be inadequate.

(b) Private requests to revise an official plan shall that the municipality has refused in writing to revis implementing its plan or has failed to act within established in § 71.13(a) (relating to Department respo official plan revisions) for plan updates or § 71.3 municipal administration of new land development plan for revisions) for new land developments.

(c) No private request to revise an official plan subdivision of land will be considered by the Depa subdivision has received prior approval under mu planning codes being implemented through Article VI o Municipalities Planning Code (53 P. S. §§ 10601—10619

(d) Upon receipt of a private request for revision, th notify the municipality and appropriate official planni the municipality, including a planning agency with area one exists, under the Pennsylvania Municipalities Planni §§ 10101—11202) and the existing county or joint cou health and will request written comments to be submitt The comments shall include a discussion of the co proposed subdivision with municipal or county plan implemented through the Pennsylvania Municipalities Pl

(e) In arriving at its decision, the Department w minimum, the following:

s advanced by the requesting individual in comparison
nd reasons for denial advanced by the municipality.
he proposed land use is consistent with § 71.21(a)
ıg to content of official plans).
submitted as required by subsection (d).
g official plan developed under this chapter.
nent will render its decision, and inform the person
ion and the appropriate municipality, in writing, within
er receipt of the comments required by subsection (d)
f the 60-day comment period when no comments have
he Department refuses to order a revision requested
), it will notify the person, in writing, of the reasons

Source

is § 71.14 adopted August 13, 1971, effective August 14, 1971, 1
April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended
fective October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974,
1974, 4 Pa.B. 1805; amended February 28, 1975, effective March 17,
mended June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429.
ext appears at serial pages (114763) to (114765).

Cross References

ı 25 Pa. Code § 71.11 (relating to general requirement); and 25
ing to private request to require a sewage management program).

l.

Source

his § 71.15 adopted August 13, 1971, effective August 14, 1971, 1
April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended
ffective October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974,
1974, 4 Pa.B. 1805; amended September 24, 1976, effective October
2; reserved June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429.
text appears at serial pages (114766) to (114767).

Notes of Decisions

r to use "revision" or "supplement" procedures is an administrative
Department; if the provisions of 25 Pa. Code § 71.15, 25 Pa. Code
ontents of plan), and 25 Pa. Code § 71.16 (relating to approval of
ave been complied with, Department approval of a supplement is
o require involvement of local planning agencies in site selection, and
fact that proposed buildings will be located in open space areas.
nent of Environmental Resources, 424 A.2d 993, 994 (Pa. Commw.

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§71.16. [Reserved].

Source

The provisions of this § 71.16 adopted August 13, 1971, effect
Pa.B. 1649; amended April 28, 1972, effective May 15, 1972,
September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; am
effective September 16, 1974, 4 Pa.B. 1805; amended October 3, 19
1980, 10 Pa.B. 3917; reserved June 9, 1989, effective June 10,
Immediately preceding text appears at serial pages (114768) to (11476

Notes of Decisions

Provisions of 25 Pa. Code § 71.16 (relating to approval of plan
Department of Environmental Resources v Trautner, 19 Pa. Comm
718, 720 (1975).

§71.17. [Reserved].

Source

The provisions of this § 71.17 adopted August 13, 1971, effec
Pa.B. 1649; amended April 28, 1972, effective May 15, 1972,
September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; am
effective September 16, 1974, 4 Pa.B. 1805; reserved June 9, 1989,
19 Pa.B. 2429. Immediately preceding text appears at serial pages (1

Notes of Decisions

This section does not provide an exclusive remedy to landowne
which delays or prevents issuance of a sewage permit under
Landowners must also seek direct review by the Commonwealth
Environmental Resources v. Trautner, 19 Pa. Commw. 116, 122, 3

When a property owner can be effectively denied the right to us
time as the municipality has satisfied DER that sewage disposa
conformity with a comprehensive program of water quality m
unreasonable restriction on the use of private land and a confisca
due process. *Department of Environmental Resources v. Trautne*
123, 338 A.2d 718, 722 (1975).

While subsection (c)(3) requires that applicable zoning be co
Environmental Hearing Board must be guided by a decision of
pleas court regarding zoning rights. *Borough of Sayre v. Depar*
Resources, 9 Pa. D. & C.3d 407, 418 (1979).

The Environmental Hearing Board has jurisdiction over an ap
issued under this section as to sewage related problems which are
with nonsewage related issues in a subdivision dispute in the comm
Township Supervisors v. Department of Environmental Resources
702 (1981).

It is proper for DER to order a municipality to provide sewag
subdivision under this section request while the subdivision plan is
is subject to subsequent judicial decision. *Solebury Township Supe*
Environmental Resources, 18 Pa. D. & C.3d 696, 702 (1981).

Source

s § 71.18 adopted August 13, 1971, effective August 14, 1971, 1 April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; reserved ective October 15, 1973, 3 Pa.B. 2176. Immediately preceding text 1243).

OFFICIAL PLAN PREPARATION

f official plans.

lity shall either meet with the Department prior to sk/Activity Report or, submit a Task/Activity Report te form prior to preparation of an official plan to of the planning elements listed in this section are he specific needs of that municipality. A determination a final Department action until the completed plan is municipality and acted upon by the Department. If specific planning needs of the municipality, as deter- artment, the completed plan submitted to the Depart-

nd analyze the physical and demographic characteris- ng area through the following:

ification and mapping of the planning area boundaries bdivision boundaries.

tification and mapping of the physical characteristics area, including streams, lakes, impoundments, natural nnels and drainage basins.

ey and a map and analysis of soils and geological

ng of current population information and historical a.

ntification of wetlands as defined in Chapter 105 n safety and waterway management).

cation of the source of the potable water supply available capacity of public supplies and aquifer yield er supplies.

existing sewage facilities in the planning area through

tification, mapping and description of municipal and individual and community sewerage systems in the including:

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(A) The location of treatment plants, main pumping stations and force mains, including t point of discharge and drainage basin served.

(B) A description of problems with the existi ing existing or projected overload under Chap municipal wasteload management) or violatio pollutant discharge elimination system permit, Law permit or other permit, rule or regulation

(C) A description of operation and mainte and the status of compliance with these req requirements of Subchapter E (relating to se programs).

(ii) An identification, mapping and description individual and community onlot sewage systems in including:

(A) The types of systems in use.

(B) A description of problems with the violations of local ordinances, the act, the Clean rule or regulation promulgated thereunder.

(C) A comparison of the types of onlot sewa in an area with the types of systems which are area according to soil, geologic conditions and to standards for sewage disposal facilities).

(3) Delineate and describe through a text, map an

(i) Areas with existing development or platted s

(ii) Land use designations established under Municipalities Planning Code (53 P. S. §§ 10101 residential, commercial and industrial areas.

(iii) Future growth areas and population project

(iv) Zoning; subdivision regulations; local comprehensive plans; and existing plans of a Cor relating to the development, use and protection resources.

(v) Areas where community sewage systems available within a 5-year and a 10-year period.

(4) Identify alternatives which are available to improved sewage facilities for each area of need limited to:

(i) The potential for extension of existing municipal sewage facilities to areas in need of sewage facilities.

(ii) The potential for the continued use of ex nonmunicipal sewage facilities through one or mo

Cross References

25 Pa. Code § 71.11 (relating to general requirement); and 25 g to grants for the preparation of official plans).

lanning.

will not pay grants under the act for information pleted previously or collaterally under local, State or The plan shall incorporate this information by

Source

§ 71.44 adopted August 30, 1974, effective September 16, 1974, 4 uary 9, 1987, effective January 10, 1987, 17 Pa.B. 172; amended ne 10, 1989, 19 Pa.B. 2429. Immediately preceding text appears at

Notes of Decisions

Act (35 P. S. §§ 750.1—750.16) nor this section authorized denial allowing applicant a reasonable opportunity to supply adiditonal d applicant need not have supplied information between time of time of Board of Supervisor's hearing; applicant acted properly in Agency Law (repealed). *D'Amico v. Board of Supervisors, Alsace* 481 (Pa. Commw. 1987).

Cross References

Pa. Code § 71.11 (relating to general requirement).

Source

§ 71.45 adopted August 30, 1974, effective September 16, 1974, 4 uary 9, 1987, effective January 10, 1987, 17 Pa.B. 172. Immediately serial pages (21625) and (30792).

Notes of Decisions

ponsibility indicated by this section, local agencies must be given uiring sufficient information to support grant of sewage permit. *pervisors, Alsace Township*, 526 A.2d 479, 481 (Pa. Commw. 1987).

Source

§ 71.46 adopted August 30, 1974, effective September 16, 1974, 4 ptember 24, 1976, effective October 11, 1976, 6 Pa.B. 2392; reserved ive January 10, 1987, 17 Pa.B. 172. Immediately preceding text 0792) to (30793).

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§71.47. [Reserved].

Source

The provisions of this § 71.47 adopted August 30, 1974, effecti Pa.B. 1805; amended September 24, 1976, effective October 11, 197 January 9, 1987, effective January 10, 1987, 17 Pa.B. 172. Im appears at serial page (30793).

§71.48. [Reserved].

Source

The provisions of this § 71.48 adopted August 30, 1974, effecti Pa.B. 1805; reserved January 9, 1987, effective January 10, 1987, 1 preceding text appears at serial pages (30793) and (78907).

Subchapter C. NEW LAND DEVELOP PLAN REVISIONS

Sec.
71.51. General.
71.52. Content requirements—new land development revisi
71.53. Municipal administration of new land development requirements for revisions.
71.54. Department administration of new land developmen requirements for revisions.
71.55. Exceptions to the requirement to revise the official land development.
71.56. [Reserved].
71.57. [Reserved].

Cross References

This section cited in 25 Pa. Code § 71.3 (relating to purpos (relating to general requirement); 25 Pa. Code § 71.63 (relating Pa. Code § 71.64 (relating to small flow treatment facilities); 25 P to individual and community sewage systems); and 25 Pa. Code § requirements).

§71.51. General.

A municipality shall revise its official plan when:

(1) A new subdivision is proposed, except as (relating to exceptions to the requirement to revise new land development).

(2) The official plan, or its parts, is inadequate needs of the new land development.

overed or changed facts, conditions or circumstances nadequate to meet the sewage needs of new land

s required from the Department under section 5 of the w (35 P. S. § 691.5).

Source

s § 71.51 adopted August 13, 1971, effective August 14, 1971, 1 April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended ective October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974, 974, 4 Pa.B. 1805; amended February 28, 1975, effective March 17, ended June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429. xt appears at serial pages (125967) to (125968).

Notes of Decisions

cease and desist order to restrain violation of this section is as not proved that an addition to a mobile home park and the sewage disposal system created an unsanitary condition or nuisance. , 71 Pa. D. & C.2d 203, 209 (1974).

e of holding tank which cannot be distinguished on the basis that it water and does not require the kind of authorization or servicing nks, a permit for a privy should be denied where water pressure is official municipal sewerage facilities plan that would allow a privy pplicant. *Brooks v. Upper Frederick Township*, 68 Pa. D. & C.2d

uthority in the Sewage Facilities Act to condition the granting of an n upon compliance with the provisions of 25 Pa. Code § 71.51 on use). The Clean Streams Law authorizes the adoption of n the use of holding tanks for sewage. *Shell Oil Co. v. Bucks lealth*, 73 Pa. D. & C.2d 91, 98 (1975).

septic tank system was revoked while the service station was under plicant was informed that a holding tank was the only available hat there be an official plan providing for holding tanks at the site ordinance providing for maintenance unreasonably deprives the is property. *Shell Oil Co. v. Bucks County Department of Health*, (1975).

quirements—new land development revisions.

plan revision for new land development shall be partment in the form of a completed sewage facilities ovided by the Department and shall include, but not llowing information:

of the proposal, including:

acilities to be served, density of proposed development e development is residential, commercial or industrial.

of lots including equivalent dwelling units.

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(iii) Anticipated sewage flow from the propos individual or community sewerage systems, the on gauged flows or the flows contained in the D Manual. A copy of the manual may be Department's Bureau of Water Quality Manage or community onlot sewage systems, the flows sh §§ 73.16 and 73.17 (relating to absorption are sewage flows).

(iv) Anticipated raw waste characteristics of th

(v) Type of sewage facilities proposed, inclu ment and disposal methods.

(vi) Description of required operation and r required by Subchapter E (relating to sewage ma

(vii) Designation of the person responsible maintenance activities and the legal and fin necessary for assumption of this responsibility.

(2) The relationship of the proposed developme needs, proposed sewage facilities and sewage mana an area delineated by the municipality, including id

(i) The areas included in, and adjacent to, the need of improved sewage facilities.

(ii) Existing and proposed sewage facilities f or delineated lots not included in the project.

(iii) Existing sewage facilities and sewage man the area.

(iv) Other proposed sewage facilities and programs—public and private—in the area.

(v) The method for integrating the proposal sive sewage program in the area as reflected in plan.

(3) An analysis of technically available sewage identified by the municipality and additional alter the Department, including whether each alternative:

(i) Meets the technical requirements of this pa

(ii) Is consistent with local and areawide quality management plans for the area.

(iii) Is consistent with sewage planning polic the municipality.

(iv) Is consistent with the municipalities' com plan for the area.

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ites and is consistent with the requirements of 71.31 (relating to content of official plans; and nsibility to review, adopt and implement official

f an alternative which adequately addresses both the sewage needs of the proposal, through identification

cilities.

ent facilities.

facilities.

n and maintenance activities and requirements.

f an alternative which assures the continued operation of the selected sewage facilities through evaluation and he following:

anagement program requirements.

rative capability for continued operation and mainte-

tion of whether or not it may be implemented

ts with sewer authorities, water authorities or other de services necessary for implementation of the plan.

on of the institutional arrangements necessary for of the plan.

ment may require additional information which is te review of the proposal.

Source

§ 71.52 adopted August 13, 1971, effective August 14, 1971, 1 April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended ctive October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974, 974, 4 Pa.B. 1805; amended June 9, 1989, effective June 10, 1989, ly preceding text appears at serial page (125969).

Notes of Decisions

ease and desist order to restrain violation of this section is as not proved that an addition to a mobile home park and the ewage disposal system created an unsanitary condition or nuisance. 71 Pa. D. & C.2d 203, 209 (1974).

Cross References

Code § 71.53 (relating to municipal administration of new land quirements for revisions); and 25 Pa. Code § 71.61 (relating to

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§71.53. Municipal administration of new land dev requirements for revisions.

(a) It is the responsibility of the municipality to act new land development. If the new land development private developer, the developer or his agent Department's sewage facilities planning module and municipality for action.

(b) The municipality shall review and act upon facilities planning module within 60 days of receipt.

(c) Municipal action shall take the form of adopt modifications or refusing to adopt the proposal as municipality's official plan.

(d) For the purposes of this section, no plan rev development will be considered complete unless it incl

(1) The information contained in § 71.52 (r requirements—new land development revisions) and sewage facilities planning module.

(2) Comments by appropriate official planning ag pality, including a planning agency with areawide exists, under the Pennsylvania Municipalities Plann §§ 10101—11202) and the existing county or joint co health. Evidence that the sewage facilities planning before these agencies for 60 days without comment s satisfy this paragraph.

(3) A written commitment from the owner of th nity sewerage facilities to provide service to the development and the conditions for providing the ser

(4) Documentation that the proposal is consister ments of § 71.21(a)(5) (relating to content of offi inconsistencies have been resolved under § 71.31(e) pal responsibility to review, adopt and implement off

(5) A statement from the sewage enforcement o agency having jurisdiction for individual or comm systems in the area where onlot systems are propos

(i) General site suitability for system usage.

(ii) The sewage enforcement officer shall ha receipt of a sewage facilities planning module fro to provide these comments, which shall be b verification of soils tests, general site conditions a available soils information. Evidence that the s officer has been in receipt of the sewage facilities p 20 days without commenting is sufficient to satis

ocumenting newspaper publication—which meets the 71.31(c)—of the proposed plan adoption action when ves one of the following:

ion of a sewage treatment facility.

e in the flow at a sewage treatment facility of greater .

lt in a public expenditure in excess of $100,000.

d to a major modification of the existing municipal rganization or the establishment of new administrative thin the municipal government.

ision of 50 lots or more.

change in established growth projections.

rent land use pattern than that established in the lan.

e of large volume onlot sewage systems.

on of a conflict between the proposed alternative and requirements contained in § 71.21(a)(5)(i)—(iii).

e responsibility of the municipality to implement the ial plan revisions, when reviewing a proposed plan ipality shall consider the information requested in whether the proposed plan revision is consistent with al goals and capabilities.

ty may refuse to adopt a proposed revision to their ew land development for reasons, including, but not

is not technically or administratively able to be

d future sewage disposal needs of the area, remaining ted lots are not adequately addressed.

is not consistent with municipal land use plans and ivision ordinances or other ordinances or plans for se or development.

is not consistent with the comprehensive sewage unicipality as contained in the official plan.

does not meet the consistency requirements of (iii).

municipality refuses to adopt a proposed revision to shall state the reasons for the refusal and forward a ent to the person making the submission, and to the

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(h) A municipality may not adopt a proposed revi plan, conditionally or otherwise, until it determines complies with applicable municipal zoning, land use comprehensive plans. If changes to the proposed revisio plan, regulation or ordinance are necessary, the completed prior to adoption of the revision by the mun

(i) Upon adoption of the proposed revision to the municipality shall forward the proposed revision to th the information required in § 71.52 and subsectio Adoption of the proposed revision to the official resolution of the municipality.

Source

The provisions of this § 71.53 adopted August 13, 1971, effect Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; re effective September 16, 1974, 4 Pa.B. 1805; amended June 9, 1989, 19 Pa.B. 2429. Immediately preceding text appears at serial page (12

Cross References

This section cited in 25 Pa. Code § 71.14 (relating to private r plans); 25 Pa. Code § 71.54 (relating to Department administratio ment requirements for revisions); and 25 Pa. Code § 71.55 (relati requirement to revise the official plan for new land development).

§71.54. Department administration of new land de requirements for revisions.

(a) No proposed plan revision for new land d approved by the Department unless it contains th supporting documentation required by the act, the and regulations promulgated thereunder.

(b) No proposed plan revision for new land d considered for approval unless accompanied by the i in § 71.53(d) (relating to municipal administration of ment planning requirements for revisions).

(c) When a municipality does not have an approv fails to revise or implement an official plan when requi

(1) Section 71.32(f) (relating to Department resp and act upon official plans) applies.

(2) The exceptions to the requirements to revise new land development in § 71.55 (relating to requirement to revise the official plan for new land apply.

ys after receipt of a complete proposed plan revision the Department will approve or disapprove the n.

partment's failure to act upon a proposed plan days of its submission, the proposed plan revision have been approved, unless the Department informs r to the end of the 120-day period that an extension to complete review. The additional time will not

or disapproving an official plan or revision, the ider the requirements of § 71.32(d).

ficial plan revision for new land development is Department, written notice will be given to each in the plan revision, with a statement of reasons for

Source

§ 71.54 adopted August 13, 1971, effective August 14, 1971, 1 pril 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended ctive October 15, 1973, 3 Pa.B. 2176; reserved August 30, 1974, 974, 4 Pa.B. 1805; amended June 9, 1989, effective June 10, 1989, ly preceding text appears at serial page (12832).

to the requirement to revise the official plan for new pment.

y does not have to revise its official plan when the es that the proposal is for the use of individual onlot ving detached single family dwelling units in a ts or less and the following apply:

al, in addition to the existing or proposed subdivision rt, will not exceed ten lots.

ision has been determined to have soils and site are generally suitable for onlot sewage disposal 71.62 (relating to individual and community onlot

poses of determining whether a proposal qualifies for er this section, the enumeration of lots shall include fter May 15, 1972.

sal is consistent with the requirements of § 71.21(a) g to content of official plans).

on supporting a request for exception under this bmitted to the Department using the Department's nning module and shall include:

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(1) A statement by the governing body of the mu edging that they and an existing municipal planning or both, have reviewed the proposal and found it to the municipality's official plan.

(2) Evidence of review by the municipality's se officer.

(c) Municipalities shall comply with § 71.53(a) an municipal administration of new land development plan for revisions) when reviewing the proposals.

(d) Proposals qualifying under this section shall b quate if the Department does not respond within Department's receipt of the properly completed and nents of the Department's sewage facilities planning r proper written documentation and the sewage facility meets the requirements of this chapter.

Source

The provisions of this § 71.55 adopted August 13, 1971, effecti Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, 2 September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; rese effective September 16, 1974, 4 Pa.B. 1805; amended June 9, 1989, e 19 Pa.B. 2429. Immediately preceding text appears at serial page (128

Cross References

This section cited in 25 Pa. Code § 71.51 (relating to general); an (relating to Department administration of new land development pla revisions).

§71.56. [Reserved].

Source

The provisions of this § 71.56 adopted August 13, 1971, effecti Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, 2 September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; rese effective September 16, 1974, 4 Pa.B. 1805. Immediately preceding page (12833).

§71.57. [Reserved].

Source

The provisions of this § 71.23 adopted August 13, 1971, effecti Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, 2 September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; rese effective September 16, 1974, 4 Pa.B. 1805. Immediately preceding page (12835).

OFFICIAL PLAN REQUIREMENTS FOR LTERNATIVE EVALUATIONS

ommunity onlot sewage systems.

ment facilities.
community sewerage systems.

Cross References

25 Pa. Code § 71.3 (relating to purposes); 25 Pa. Code § 71.11 ment); 25 Pa. Code § 71.13 (relating to Department responsibility visions); and 25 Pa. Code § 71.21 (relating to content of official

and revisions to official plans shall evaluate alterna- ovide for adequate sewage facilities as required in (a)(3) (relating to contents of official plans; and —new land development revisions). The Department on of additional technically available alternatives.

ive for the provision of adequate sewage facilities or compliance with the technical and administrative s of the act and regulations promulgated thereunder.

lan or revision shall select one alternative which is nentation as described in § 71.21(a)(4)—(6) which rm sanitary collection, treatment and disposal of

fficial plans and revisions shall be based on:

al feasibility of the selected alternative in relation to ons and standards.

ity for implementation of the selected alternative in le administrative and institutional requirements.

Source

§ 71.61 adopted August 13, 1971, effective August 14, 1971, 1 pril 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended ctive October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974, 974, 4 Pa.B. 1805; reserved January 9, 1987, effective January 10, nended June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429. t appears at serial page (125969).

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§71.62. Individual and community onlot sewage system

(a) Official plans and official plan revisions proposi community onlot sewage systems shall evaluate general establish their use as a feasible alternative, as specified

(b) When an official plan or revision proposes t sewage effluent by means of a subsurface absorption a shall be provided:

(1) Anticipated raw waste characteristics of th industrial wastes as defined in the Clean Streams La be present in the raw sewage, § 72.25(f)(2) (relati permits) applies.

(2) Documentation that the soils and geology of are generally suitable for the installation of the system

(i) Soils mapping as per the United States Service mapping or the equivalent.

(ii) Contour lines as per the United States Topographic mapping or site determined contour lin

(iii) Soil profiles as described in Chapter 73 (rel for sewage disposal facilities) shall be performed adequate area with suitable soils is available in proposed system. These profiles shall be appr distributed among the various soils mapped in t purpose of this section, each change of slope or characteristic specified as part of the soil classifica United States Soil Conservation Service will be equi in soil type.

(iv) A sufficient number of percolation tests to general percolation rate for each soil type in the a are to be installed is within acceptable limits as de 73. For the purpose of this section, each change of erosion characteristic specified as part of the soil cl of the United States Soil Conservation Service will change in soil type.

(c) This chapter does not preclude the use of indivi nity onlot sewage systems using subsurface soil absorp less than 1 acre in size or the use of large volume onl Because of the potential for the creation of a public pollution of the waters of this Commonwealth from improper system siting or inadequate maintenance community onlot systems, particular attention shall b plans and revisions to the technical and institutional the systems.

permeability testing is required when an official plan
s the use of a large volume onlot sewage system or a
ystem with a sewage flow of 10,000 gallons per day
e required for other onlot system proposals where the
rea is greater than 5,000 square feet or where soil
reveal slowly permeable conditions below the depth
lation test was performed. Sufficient testing shall be

the permeability of an identified restrictive soil,
ulic layer.
the vertical rate and the horizontal rate of flow in
rictive layers in inches per hour.
e the application rate required as derived from the
tained in subparagraphs (i) and (ii). When this
is more stringent than that derived from percolation
ined in Chapter 73, the more stringent rate shall be
ystem.
e the impact of the system on groundwater mound-

ry hydrogeologic evaluation is required when the use
bsorption areas is proposed and one of the following

lume onlot sewage system will be used.
sion of more than 50 equivalent dwelling units with a
than one lot including equivalent dwelling units per

artment has documented that the quality of water
1/4 mile of the proposed site exceed five parts per
rate-nitrogen.
artment has determined that known geological condi-
roposed site may contribute to the potential for
ution from the systems.
ry hydrogeologic evaluation shall include as a mini-
narrative report form:
raphic location of the proposed systems in relation to
urface water flow, or both.
wastewater dispersion plume.
tion and location of existing and potential groundwa-
timated area of impacted groundwater.
drogeologic studies may be required by the Depart-
liminary hydrogeologic evaluation identifies a poten-
between the proposal and existing or potential future
er in the area. Detailed hydrogeologic studies shall

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identify constituents of the sewage which may pollut
shall evaluate methods for preventing the pollution o
Commonwealth. A detailed hydrogeologic study
using the Department's sewage facilities planning mo

(d) Municipalities shall evaluate and implement op
ing an institutional framework to assure the pro
maintenance of these systems under the act and this pa

Source

The provisions of this § 71.62 adopted August 13, 1971, effect
Pa.B. 1649; amended April 28, 1972, effective May 15, 1972,
September 28, 1973, effective October 15, 1973, 3 Pa.B. 2176; am
effective September 16, 1974, 4 Pa.B. 1805; amended February 28, 1
1975, 5 Pa.B. 374; reserved January 9, 1987, effective January 1
amended June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429. Im
appears at serial page (125969).

Cross References

This section cited in 25 Pa. Code § 71.55 (relating to exception
revise the official plan for new land development).

§71.63. Retaining tanks.

(a) Retaining tanks are designed and constructed t
disposal of the sewage at another site. This requi
retaining tanks through specific restrictions on their use

(b) General requirements for retaining tank use are

(1) The official plan or revision shall meet th
Subchapters B and C (relating to official plan requ
land development plan revisions).

(2) Proposed disposal sites, the method of dispos
tank cleaner for retaining tank waste shall be
Department in a manner consistent with the Solid
Act (35 P. S. §§ 6018.101—6018.1003) prior to appr
plan or revision allowing the use of retaining tanks.

(3) A municipality, sewer authority or sewage r
may delegate or contract for the collection and dispo
tanks' contents except that the ultimate responsibi
collection and disposal of the contents shall remain
ity, authority or agency.

(4) Whenever the local agency issues permits for
municipality or local agency may impose other c
necessary for operation and maintenance of the
nuisance or a public health hazard.

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ts require regular service and maintenance to prevent
d overflow and shall be used in lieu of other methods
nly when the following additional conditions are met:
ble official plan or revision thereto indicates the use
or that lot and provides for replacement by adequate
in accordance with a schedule approved by the

able official plan or revision includes municipal
es of the replacement project's implementation, such
, bonding or other security of sufficient present value
tion or other assurances either singularly or in
he Department deems necessary.
pality, sewer authority or other Department approved
ction or responsibility over the site has by suitable
tion or restriction assumed full responsibility for
g and new holding tanks. The ordinances shall, as a
:
ion of the administrative entity to receive, review and
receipts from permitted holding tanks.
l inspection of holding tanks within the municipality
and retention of a written inspection report.
es and penalties for correction of malfunctions or
zards from holding tanks.
ns in subsections (c)(1)—(3) do not apply to holding
l agency, municipality or the Department determines
sary to abate a nuisance or public health hazard.
ns in subsections (c)(1) and (2) do not apply to
n the use is for an institutional, recreational or
nment with a sewage flow of 400 gallons per day or

emical toilet is designed to receive sewage where there
ressure and no piped wastewater. Privies shall be used
ethods of sewage disposal only when the following

able official plan or the revision thereto indicates the
that lot and documents that soil and site suitability
under §§ 73.11—73.16 has been conducted, and the
uirements for the ultimate sewage disposal by one of
bed under §§ 73.51—73.55 (relating to construction of
to assure that adequate sewage facilities will be
under pressure or piped water becomes available to
ure.

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(2) The municipality, sewer authority or other l
entity with jurisdiction or responsibility over the
ordinance, regulation or restriction assumed re
removal of a privy and the installation of an ap
disposal system when water under pressure or piped
the lot.

(g) The restrictions in subsection (f) do not apply:

(1) To a privy or chemical toilet when prop
isolated lot which is 1 acre or larger not served
served in the future by water under pressure or pip

(2) To temporary use of portable retention
chemical toilets when their use is proposed at const
site of public gathering and entertainments.

Source

The provisions of this § 71.63 adopted August 30, 1974, effec
Pa.B. 1805; amended February 28, 1975, effective March 17, 19
January 9, 1987, effective January 10, 1987, 17 Pa.B. 172; amen
June 10, 1989, 19 Pa.B. 2429. Immediately preceding text appea

§71.64. Small flow treatment facilities.

(a) Small flow treatment facilities require ade
maintenance to prevent the creation of environment
health hazards associated with improperly treated s
the control of small flow treatment facilities throug
on their use.

(b) Small flow treatment facilities are restricted to
or repair system which the Department determines is
existing nuisance or public health hazard or as
residential dwellings.

(c) When an official plan or update revision prop
flow treatment facilities, the official plan or revision
contain the following, in addition to the requireme
and C (relating to official plan requirements; and n
plan revisions):

(1) Documentation that soils are not suitable
of individual or community onlot sewage dis
§§ 73.11—73.16.

(2) Documentation that the proposed system
waters classified as High Quality in §§ 93.6 and 93
water quality criteria; and designated water use

classified as Exceptional Value in § 93.9 unless the to be used as a replacement or repair system which te an existing nuisance or public health hazard and uirements for the discharge are met.

ry hydrogeologic evaluation when the small flow will use land disposal or a dry stream channel lisposal. This evaluation shall include:

recent 71/2' United States Geologic Survey Topo- the discharge accurately plotted.

rge rate and quality, including seasonal variations.

fication on the topographic map of existing ground- 200 feet in width on each side of the channel n the discharge from the system until perennial are reached.

on, using the information developed in subsection ms that existing or proposed drinking water uses will at effluent will not create a public health hazard or a

ion that the proposed use of these small flow does not conflict with comprehensive sewage plan-

on that establishes specific responsibilities for operance of the proposed system which may include the ubchapter E (relating to sewage management pro- all flow treatment facilities are proposed as an e an established needs area, the requirements of be met.

on of the density of development and the number and milar systems in the watershed. As a result of that partment may impose additional conditions or limit operation of small flow treatment facilities.

on of the alternatives available to provide sewage uments that the use of small flow treatment facilities nentally acceptable alternative.

eatment facilities and their appurtenances shall meet stallation, operation and other standards established nent facilities by the Department under sections 202 Streams Law (35 P. S. §§ 691.202 and 691.207) and Streams Law permit and if there is a discharge to ional pollutant discharge elimination system permit, and operation.

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(e) Plans and specifications shall be prepared by sional engineer in compliance with Chapter 91 (provisions).

(f) The Department may require independent over installation.

Source

The provisions of this § 71.64 adopted June 9, 1989, effective 2429.

Cross References

This section cited in 25 Pa. Code § 71.65 (relating to individual systems).

§71.65. Individual and community sewerage systems.

(a) When an official plan or revision proposes the privately owned individual or community sewerage plan or revision shall contain the following, in addi ments of Subchapters B and C (relating to the official and new land development plan revisions):

(1) An evaluation of alternatives available to pr ties and proof that the proposed sewage facilities are long-term, environmentally acceptable alternative.

(2) An evaluation that establishes specific respon tion and maintenance of the proposed system u (relating to sewage management programs).

(b) When the proposed discharge from the indivi sewerage system is to a dry stream channel or lan information as required in § 71.64(c)(3) and (4) (rel treatment facilities) shall be included with the offici

(c) Individual and community sewerage systems nances shall meet applicable design and other standard Department under sections 202 and 207 of the Clea P. S. §§ 691.202 and 691.207) and shall obtain a permit and if there is a discharge to surface water, a discharge elimination system permit, prior to construc

Source

The provisions of this § 71.65 adopted June 9, 1989, effective 2429.

Subchapter E. SEWAGE MANAGEMENT PR

Sec.

71.71. General requirements.
71.72. Sewage management programs for Department permi facilities.

ıg.
d operation and maintenance.
pplicable actions that will resolve or abate the
ems.
for new community sewage systems.
for a sewage management program to assure the
and maintenance of existing and proposed sewage

h alternative listed in response to paragraph (4),
mited to:
between the proposed alternative and the objectives

ble plans developed and approved under sections 4
lean Streams Law (35 P. S. §§ 691.4 and 691.5) or
he Clean Water Act (33 U.S.C.A. § 1288).
al wasteload management plans developed under

eveloped under Title II of the Clean Water Act (33
281—1299) or Titles II and VI of the Water Quality
U.S.C.A. §§ 1251—1376).
hensive plans developed under the Pennsylvania
Planning Code.
radation requirements as contained in Chapters 93,
relating to water quality standards; waste water
irements; and erosion control) and the Clean Water

ater plans developed under the Water Resources
42 U.S.C.A. §§ 1962—1962d-18).
of the *Pennsylvania Code*, Chapter 7, Subchapter W
ne agricultural land policy).
dopted by the county and approved by the Depart-
Storm Water Management Act (32 P. S. §§ 680.1—

protection under Chapter 105 (relating to dam
erway management).
on of rare, endangered or threatened plant and
as identified by Pennsylvania Natural Diversity

507 of Title 37 of *Pennsylvania Consolidated*
ing to cooperation by public officials with the

ution of inconsistencies identified in this section.

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(iii) Applicable water quality standards, effluen
other technical requirements contained in Subchapte
official plan requirements for alternative evaluations

(iv) Cost estimates for construction, financing, c
tration, operation and maintenance.

(v) Subject to the limitations of subsections (b)
methods available to finance all aspects of each
alternatives, establishment of the financial alternative
contingency financial plan to be used if the prefe
financing is not able to be implemented.

(vi) Ability to implement, including:

(A) Activities necessary to abate critical publi
pending completion of sewage facilities or sew
programs.

(B) Phased development of the facilities or sew
program.

(C) Time schedules for implementing each phase

(D) Administrative organization and legal au
for plan implementation.

(6) Select one alternative to solve the need for se
each area studied and support this choice with doc
shows that it is the best alternative technically, envi
administratively.

(7) Include a summary of the plan which identifies:

(i) Major problems evaluated in the plan.

(ii) Alternatives chosen to solve these problems.

(iii) Municipal commitments necessary to impleme

(iv) A schedule for implementation.

(8) When the information required as part of an
revision has been developed separately, incorporate th
reference.

(b) Feasibility evaluations required by subsection (a)(5
be limited to areas identified in the plan as needing
facilities within a 5-year period from the date of plan
which are scheduled for completion of sewage facilities
less.

(c) Dates for the future initiation of feasibility evalua
subsection (a)(5)(iv) and (v) shall be included in the
schedule for areas proposing completion of sewage facili
excess of 5 years.

(138735) No. 180 Nov. 89

nanagement programs for sewage facilities permitted
agencies.
ent responsibilities to require sewage management programs.
equest to require a sewage management program.
d].

Cross References

cited in 25 Pa. Code § 71.3 (relating to purposes); 25 Pa. Code § 71.11
requirement); 25 Pa. Code § 71.21 (relating to content of official plans);
52 (relating to content requirements—new land development revisions); 25
(relating to small flow treatment facilities); and 25 Pa. Code § 71.65
nal and community sewage systems).

ral requirements.

s are required to assure the proper operation and mainte-
ge facilities within their borders. Proper operation and
sewage facilities is essential to the provision of adequate
ent and disposal over the functional life of a sewage
m. Municipalities shall, therefore, address long-term opera-
tenance in official plans and revisions to official plans.
and C (relating to official plan requirements; and new land
lan revisions) and this subchapter provide the planning
o identify, evaluate and implement the operation and
eeds of existing and proposed sewage facilities within a
he establishment of a sewage management program as part
plan or revision to an official plan provides a method of
r operation and maintenance of sewage facilities. The
l implementation of operation and maintenance needs
vage management program shall be consistent with the
his subchapter.

Source

of this § 71.71 adopted August 13, 1971, effective August 14, 1971, 1
ded April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; amended
3, effective October 15, 1973, 3 Pa.B. 2176; amended August 30, 1974,
r 16, 1974, 4 Pa.B. 1805; amended February 28, 1975, effective March 17,
; amended September 24, 1976, effective October 11, 1976, 6 Pa.B. 2392;
, 1987, effective January 10, 1987, 17 Pa.B. 172; amended June 9, 1989,
1989, 19 Pa.B. 2429. Immediately preceding text appears at serial page

**ge management programs for Department permitted sewage
ies.**

ficial plan or revision to an official plan for existing needs
and development proposes the construction of Department
nunicipal sewage facilities, the official plan or revision shall

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evaluate the options available to assure the long-term
and maintenance of the proposed sewage facilities. The n
to adoption of that official plan or revision, shall requi
the following:

(1) A bond or other security sufficient to co
improvements which may be required, either pri
approval or thereafter under section 509 of the Pennsy
ities Planning Code (53 P. S. § 10509).

(2) A bond or escrow account sufficient to cover t
operation and maintenance of the sewage facilities
nances.

(3) Establishment of a properly chartered associati
private legal entity to assure long-term administratio
and maintenance program.

(4) Municipal ownership of the sewage facilities

(5) Establishment of, or inclusion of, the sewage
management agency through existing municipal codes,
limited to, municipal authorities, sanitary boards and

(6) Establishment of, or inclusion of, the sewage
management agency through the adoption of local
municipal codes.

(7) One or a combination of the requirements in p
or other actions permitted by and consistent with the
Streams Law found necessary by the Department
installation, maintenance and operation of the propo
ties.

Source

The provisions of this § 71.72 adopted August 13, 1971, effectiv
Pa.B. 1649; amended April 28, 1972, effective May 15, 1972, 2
February 28, 1975, effective March 17, 1975, 5 Pa.B. 374; amended M
May 31, 1975, 5 Pa.B. 1402; reserved January 9, 1987, effective Janu
172; amended June 9, 1989, effective June 10, 1989, 19 Pa.B. 2429.
text appears at serial page (125970).

**§71.73. Sewage management programs for sewage facil
local agencies.**

(a) When sewage facilities are permitted by loc
municipality is responsible for taking actions necessary
ued compliance of these sewage facilities with the act, t
Law and regulations promulgated thereunder.

(b) When an official plan or official plan revisio
Department determines, that existing sewage facilities
local agency need periodic inspection, operation or

proper operation, or are not properly functioning
ate operation and maintenance, the municipality shall
lan to establish a sewage management program for
ies. The update revision shall include the following as

on of the specific legal authority to be used by
s and their designated employes to enter lands and
of onlot sewage facilities. The policy concerning a
ctions and methods of notification of landowners of
e included.
consistent with section 8(b)(9) of the act (35 P. S.
operation, maintenance, repair replacement of sewage
clude:
of septage or other solids from treatment tanks once
whenever an inspection program reveals the treatment
with solids in excess of 1/3 the liquid depth of the
m in excess of 1/3 the liquid depth of the tank.
ance of surface contouring and other measures, consis-
oter 73 (relating to standards for sewage disposal
ert storm water away from the treatment facilities and
s and protection of the absorption areas from physical

ments for the use of water conservation devices to
c loading to the sewage system.
ments for the operation and maintenance of electrical,
chemical components of the sewage facilities; collec-
e piping, pressure lines and manholes; alarm and flow
s; pumps; disinfection equipment and related safety

nents for septage pumpers/haulers which are consistent
Waste Management Act (35 P. S. §§ 6018.101—

ments for holding tank maintenance.
on of the specific requirements of the sewage manage-
d administrative or legal functions needed to carry out

ent of a fee schedule for the cost of municipal services
menting the provision of the sewage management

ion of the authority to be used to enforce the
he sewage management program or restrain violations

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(6) Identification of penalty provisions for violations
requirements.

(7) Draft ordinances, regulations or policies whic
sewage management program.

(8) Other requirements consistent with the act and th
Law.

Source

The provisions of this § 71.73 adopted August 2, 1971, effective Aug
1649; amended April 28, 1972, effective May 15, 1972, 2 Pa.B. 753; am
1975, effective March 17, 1975, 5 Pa.B. 374; reserved January 9, 1987, e
1987, 17 Pa.B. 172; amended June 9, 1989, effective June 10, 198
Immediately preceding text appears at serial page (125970).

§71.74. Department responsibilities to require sewag programs.

(a) The Department will require municipalities to revi
plan to evaluate the feasibility of establishing a sewag
program or the inclusion of sewage facilities in an e
management program whenever the Department determin
the following exists:

(1) Existing sewage facilities within the municipality
properly operated and maintained under this part.

(2) A revision for new land development is submitted
adequately address the administrative, technical or l
needed to carry out operation and maintenance of
facilities.

(3) The official plan or revision shows that existing
facilities need periodic inspection, operation or maintena
long-term proper operation.

(b) The Department may provide technical and administ
to local municipalities to assist them in the developme
management programs for existing needs areas and new lan
proposals.

Source

The provisions of this § 71.74 adopted August 2, 1971, effective August
1649; amended August 30, 1974, effective September 16, 1974, 4 Pa.
January 9, 1987, effective January 10, 1987, 17 Pa.B. 172; amended June
June 10, 1989, 19 Pa.B. 2429. Immediately preceding text appears at seri

uest to require a sewage management program.

a resident or property owner in a municipality may
ient to order that municipality to revise its official
§ 71.14 (relating to private request to revise official
esident or property owner can show one of the

ng sewage facilities within the municipality are not
erated and maintained under this part.
ision for new land development does not adequately
istrative, technical or legal functions needed to carry
maintenance of the proposed facilities.

Source

§ 71.75 adopted August 2, 1971, effective August 3, 1971, 1 Pa.B.
30, 1974, effective September 16, 1974, 4 Pa.B. 1805; reserved
e January 10, 1987, 17 Pa.B. 172; amended June 9, 1989, effective
2429. Immediately preceding text appears at serial page (125970).

Source

§ 71.76 adopted August 2, 1971, effective August 3, 1971, 1 Pa.B.
30, 1974, effective September 16, 1974, 4 Pa.B. 1805; reserved
ive January 10, 1987, 17 Pa.B. 172. Immediately preceding text
8913).

[Next page is 72-1.]

CHAPTER 72. ADMINISTRATION OF SEWAGE FAC PERMITTING PROGRAM

Subchap.
A. GENERAL .....
B. PERMIT REQUIREMENTS .....
C. ADMINISTRATION OF PERMITTING REQUIREMENTS
D. CERTIFICATION OF SEWAGE ENFORCEMENT OFFICE

Authority

The provisions of this Chapter 72 issued under section 9 of the act of Ja
(P. L. 1535, No. 537) (35 P. S. § 750.9); sections 5 and 402 of the act of
(P. L. 1987, No. 394) (35 P. S. §§ 691.5 and 691.402); and section 1920-A
April 9, 1929 (P. L. 177, No. 175) (71 P. S. § 510-20), unless otherwise noted

Source

The provisions of this Chapter 72 adopted January 9, 1987, effective Janua
Pa.B. 172, unless otherwise noted.

Subchapter A. GENERAL

Sec.
72.1. Definitions.
72.2. Scope.
72.3. Purposes.

Cross References

This subchapter cited in 25 Pa. Code § 72.2 (relating to scope); and 25 P
(relating to purposes).

§72.1. Definitions.

The following words and terms, when used in this chapt
following meanings, unless the context clearly indicates otherw

Act—The Pennsylvania Sewage Facilities Act (35 P. S.
750.20).

Alternate sewage system—A system employing the use
strated technology in a manner not specifically recognized

Certification Board—The administrative board within the
created by section 11 of the act (35 P. S. § 750.11).

Days—Calendar days as specified in 1 Pa.C.S. § 1908
computation of time). If a period time is referred to in this
period shall be computed to exclude the first and include th
the period. If the last day of the period falls on a Saturday
or a day made a legal holiday by the statutes of the Comm
of the United States, the day shall be omitted from the c

request to require a sewage management program.

is a resident or property owner in a municipality may
artment to order that municipality to revise its official
er § 71.14 (relating to private request to revise official
resident or property owner can show one of the

isting sewage facilities within the municipality are not
operated and maintained under this part.

revision for new land development does not adequately
ministrative, technical or legal functions needed to carry
nd maintenance of the proposed facilities.

Source

his § 71.75 adopted August 2, 1971, effective August 3, 1971, 1 Pa.B.
ust 30, 1974, effective September 16, 1974, 4 Pa.B. 1805; reserved
ctive January 10, 1987, 17 Pa.B. 172; amended June 9, 1989, effective
a.B. 2429. Immediately preceding text appears at serial page (125970).

ed].

Source

his § 71.76 adopted August 2, 1971, effective August 3, 1971, 1 Pa.B.
ust 30, 1974, effective September 16, 1974, 4 Pa.B. 1805; reserved
fective January 10, 1987, 17 Pa.B. 172. Immediately preceding text
(78913).

[Next page is 72-1.]

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Appendix B

Correspondence

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA. 19355 (215)644-5591

SURENDER S. KOHLI, P.E.
PRESIDENT

CONSULTING ENGINEERS
PLANNERS
LANDSCAPE ARCHITECTS

January 26, 1990

Department of Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Attn: Glen Stinson

Re: East Whiteland Township
Sewage Facilities Plan

Dear Mr. Stinson:

On behalf of East Whiteland Township, we are enclosing herein, an proposed outline for preparing the Act 537 Sewage Facilities Plan for your review and approval.

Based on the work included within the outline, we estimate the cost of the 537 Plan to be $32,750.00.

I would appreciate your earliest response so we can proceed with the project.

Thank you in advance for your cooperation.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Township

SSK:ca
Enclosure

cc: J. Donald Reimenschneider, Manager

EAST WHITELAND TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN

Outline of the Proposed Plan

I. Introduction

- A. Purpose of the Official Act 537 Plan
- B. Content of the Official Act 537 Plan (Summary)
  - 1. Final Plan Recommendations
    - a. Alternatives of Choice
    - b. Service Areas
    - c. Institutional Arrangements
  - 2. Implementation
    - a. Costs
    - b. Funding
    - c. Schedule

II. Background Information

- A. Official Act 537 Plan Context
  - 1. Requirements of the Pennsylvania Sewage Facilities Act.
  - 2. Past Official Plans (including the identification of wastewater planning that has been previously undertaken or is anticipated).
    - a. Master Sewage Plan for Chester County, PA.
    - b. Official Plan Revision by East Whiteland Township.
  - 3. The Institutional Context of the Valley Forge Sewer Authority.

Re: Draft
East Whiteland Township
Act 537 Sewage Facilities Plan

B. Profile of East Whiteland Township

1. General Setting (including all municipal boundaries, sewer authority boundaries, and drainage basins)

2. Population (both existing and projections)

3. Planning and Zoning Overview (involving a comparison and analysis of proposed land used and growth areas with existing sewage facilities and facility planning)

a. Comprehensive Plan of 1987

b. Zoning Ordinance of 1965, as amended

4. Land Development Overview (involving regulations that establish lot sizes predicated on sewage disposal, all approved subdivision/land developments and approximate number of undeveloped lots/units approved within each identified Subdivision/land developments)

III. Existing Sewage Services and Conditions

A. Existing Sewage System

1. Areas presently served (including all components of the system)

2. Permitted capacity (as specified by NPDES or Clean Steams Law Permit)

3. Reserve Capacity (and any agreed allocation of or policy on use of this capacity)

4. Information on the Operation and Maintenance of the Sewage System Components

B. Valley Forge Wastewater Treatment Facility

C. Sewage Disposal Problem Areas

D. Soils Analysis

E. Existing Centralized Water System

Re: Draft
East Whiteland Township
Act 537 Sewage Facilities Plan

IV. Proposed Sewage Services and Conditions

A. Expected Wastewater Disposal Needs (based on population projected and approved subdivision/land development)

B. Areas Planned to be Served

C. Phases of the Proposed Sewage System

V. Evaluation

A. Identify and Analyze Alternatives

1. Collection, conveyance and treatment (including identified service areas and regional wastewater treatment concepts)

B. Evaluation of Each Alternative, based on:

1. Cost of Construction

2. Cost of Financing

3. Cost of On-going Administration

4. Cost of Operation and Maintenance

5. User fees for each Service Area

C. Identify and describe Institutional Alternatives necessary to implement the recommended official plan

VI. Recommendations

A. Designate the Institutional and Technical alternatives of choice that best meets the wastewater treatment needs, based on:

1. Sewage Needs

2. Technical and Administrative Needs

3. Management and Administrative system available

4. Financing Methods Available

5. 5 Year Plan and Growth Areas

6. 10 Year Plan and Growth Areas

Re: Draft
East Whiteland Township
Act 537 Sewage Facilities Plan

VII. Implementation Schedule

VIII. Appendices

Pennsylvania Sewage Facilities Act

Correspondence

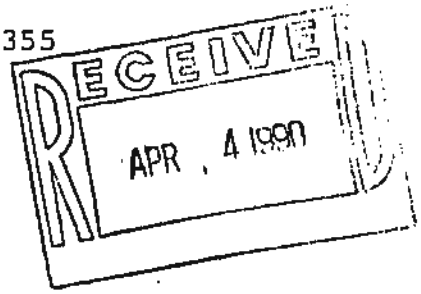
Applications for Planning Grants
Planning Agency Comments and Township Response
Public Comments and Township Response

Resolution for Township Adoption

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, Pa. 19401
215 270-1975

April 2, 1990

Surender S. Kohli, P.E.
Kohli and Associates, Inc.
42 Lloyd Ave.
Malvern, Pa. 19355



Re: 537 Plan Update
East Whiteland
Chester County

Dear Mr. Kohli:

The Task/Activity Report, dated January 26, 1990, has been reviewed. The following additional information is needed.

The revisions to Chapter 71, Administration of Sewage Facilities Planning Program, which went into effect June 10, 1989, impact on minimum plan content. Changes include:

1. Wetlands must be identified. This is a conceptual planning task not to be confused with wetlands delineation, a more detailed permitting task.

2. Information about the source of potable water supplies is required. This will identify potential conflicts between sewage facilities planning and water allocation planning.

3. Operation and maintenance of all public and private sewage facilities must be addressed via an evaluation of alternatives. This prior requirement has been expanded so as to provide for the long-term operation and maintenance through sewage management agencies.

4. The consistency section of the regulations was expanded to require that each alternative be evaluated for consistency with the objectives and policies of additional programs such as wetlands protection.

Surender S. Kohli
April 2, 1990

5. Feasibility evaluations in the alternatives analysis phase of plan preparation are required for facilities scheduled within 5 years or less. Dates for future initiation of feasibility evaluations need to be to be included in the implementation schedule for areas proposing completion of sewage facilities for periods in excess of 5 years.

6. Listing of both the primary and contingency funding sources with documentation that the project sponsor meets eligibility requirements, is needed.

Other areas of the Task/Activity Report which lack certain specificity include:

1. the scale of figures will need to be large enough to allow for easy use.

2. Facility alternatives to evaluate must include land application of effluent generated from the various treatment alternatives, both community and individual type facilities.

3. Alternatives to be considered also need to include the use of non-structural land use planning alternatives.

4. The schedule of implementation will need to be specific in regards to milestone dates for design/construction and funding commitments for each area of need.

5. The delineation of community and individual water supplies is essential relative to concentrated areas of on-lot sewage systems. Given the close proximity of wells and on-lot systems, nitrate nitrogen well water analysis from a representative sampling is required.

Surender S. Kohli
April 2, 1990

Coordination of planning for the western portion of the Township affected by the Churchill subdivision with West Whiteland Township is essential.

If you have any questions please do not hesitate to call.

Very truly yours,

Lee Gemmill

Lee Gemmill
Sanitarian Sewage Specialist

cc: East Whiteland Township
Chester County Planning Commission
Chester County Health Department
Mr. Rehm
re, 30 days

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA. 19355 (215)644-5591

SURENDER S. KOHLI, P.E.
PRESIDENT

CONSULTING ENGINEERS
PLANNERS
LANDSCAPE ARCHITECTS

April 26, 1990

Mr. Lee Gemmill
Sanitarian Sewage Specialist
PA Department of Environmental Resources
1875 New Hope Street
Norristown, PA 19401

Re: 537 Plan Update
East Whiteland Township
Chester County
Job #88050

Dear Mr. Gemmill:

In response to your letter of April 2, 1990, we have revised our task/activity report for the East Whiteland Township Sewage Facilities Plan. Enclosed for your information is a copy of the revised outline which incorporates the six changes outlined in your letter.

We have noted your concern about the need for specific information in the plan update. Please be assured that the 5 areas noted in your letter will be addressed in our report. Coordination of planning for the area of the Township affected by the proposed Churchill development will be an essential part of our report.

We are proceeding with the project based on the revised outline. Please let us know if you have any other comments as soon as possible. Thank you for your assistance.

Very truly yours,

David R. Fibrello, P.E.
Project Engineer

DRF:ca

EAST WHITELAND TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN

Outline of the Proposed Plan

I. Introduction

A. Purpose of the Official Act 537 Plan

B. Content of the Official Act 537 Plan (Summary)

1. Final Plan Recommendations

a. Alternatives of Choice

b. Service Areas

c. Institutional Arrangements

2. Implementation

a. Costs

b. Funding

c. Schedule

II. Background Information

A. Official Act 537 Plan Context

1. Requirements of the Pennsylvania Sewage Facilities Act.

2. Past Official Plans (including the identification of wastewater planning that has been previously undertaken or is anticipated).

a. Master Sewage Plan for Chester County, PA.

b. Official Plan Revision by East Whiteland Township.

3. The Institutional Context of the Valley Forge Sewer Authority.

B. Profile of East Whiteland Township

1. General Setting (including all municipal boundaries, sewer authority boundaries, and drainage basins)

2. Population (both existing and projections)

3. Planning and Zoning Overview (involving a comparison and analysis of proposed land used and growth areas with existing sewage facilities and facility planning)

   a. Comprehensive Plan of 1987

   b. Zoning Ordinance of 1965, as amended

4. Land Development Overview (involving regulations that establish lot sizes predicated on sewage disposal, all approved subdivision/land developments and approximate number of undeveloped lots/units approved within each identified Subdivision/land developments)

III. Existing Sewage Services and Conditions

A. Existing Sewage System

1. Areas presently served (including all components of the system)

2. Permitted capacity (as specified by NPDES or Clean Steams Law Permit)

3. Reserve Capacity (and any agreed allocation of or policy on use of this capacity)

4. Information on the Operation and Maintenance of the Sewage System Components

B. Valley Forge Wastewater Treatment Facility

C. Sewage Disposal Problem Areas

D. Soils Analysis and Wetland Identification

E. Existing Water System

1. Public Water Supply
2. Private Systems

IV. Proposed Sewage Services and Conditions

A. Expected Wastewater Disposal Needs (based on population projected and approved subdivision/land development)

B. Areas Planned to be Served

C. Phases of the Proposed Sewage System

V. Evaluation

A. Identify and Analyze Alternatives

1. Collection, conveyance and treatment (including identified service areas and regional wastewater treatment concepts)

B. Evaluation of Each Alternative, based on:

1. Cost of Construction

2. Cost of Financing

3. Cost ot On-going Administration

4. Cost of Operation and Maintenance

5. User fees for each Service Area

6. Consistency with objectives and policies of other programs

C. Identify and describe Institutional Alternatives necessary to implement the recommended official plan

1. Short Term, less than 5 years

2. Long Term, greater than 5 years

VI. Recommendations

A. Designate the Institutional and Technical alternatives of choice that best meets the wastewater treatment needs, based on:

1. Sewage Needs

2. Technical and Administrative Needs

3. Management and Administrative system available

4. Financing Methods Available (both Primary and Contingency Services)

5. 5 Year Plan and Growth Areas

6. 10 Year Plan and Growth Areas

VII. Implementation Schedule

VIII. Appendices

Pennsylvania Sewage Facilities Act

Correspondence

Applications for Planning Grants
Planning Agency Comments and Township Response
Public Comments and Township Response

Resolution for Township Adoption

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

1875 New Hope Street
Norristown, PA 19401
215 270-1975

May 30, 1990

Mr. David R. Fiorello, P.E.
Kohli & Associates, Inc
42 Lloyd Ave.
Malvern, PA. 19355

RE: Act 537 Plan
East Whiteland Township
Chester County

Dear Mr. Fiorello:

The Task/Activity Report submitted 1/26/90 & 4/26/90 on behalf of the East Whiteland Township Board of Supervisors has been reviewed and approved.

During plan preparation you are encouraged to consult with this office, especially upon screening of readily available needs documentation and preliminary screening of alternatives.

Enclosed is a checklist which needs to be completed during plan preparation. Please include a copy with the plan submission.

Proof of payment has been added as part of the Act 537 planning grant application requirements. When convenient please supply your estimate of Act 537 plan preparation cost. This dollar estimate is used by Harrisburg to manage the available funds.

Any questions please call.

Very truly yours,

Lee Gemmill
Sanitarian Sewage Specialist

cc: East Whiteland Township
Chester County Health Dept.
Chester County Planning Comm.
C.Rehm

Recycled Paper

Board of Supervisors
JOHN J. FINN, Chairman
FLORENCE D. HUNT, Vice-Chairman
GLENN H. COCKERHAM
Public Safety Commissioner
J. DONALD REIMENSCHNEIDER
Township Manager
GARY R. LONG
Building Official &
Fire Marshal

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
VIRGINIA FENNIMORE
Assistant Manager
(Administration)

File 537 - file

KOHLI & ASSOC., INC.
JAN 2 1991
RECEIVED

DATE: December 27, 1990

TO: John J. Finn
Florence D. Hunt
Glenn H. Cockerham

FROM: J. Donald Reimenschneider
Township Manager

Enclosed is a copy of the Draft 537 Plan, prepared by Surender Kohli.

Please submit to me any comments, questions or suggestions you might have.

JDR/jm
Encl.

cc: file
Surender Kohli

TOWNSHIP OFFICE: (215) 648-0600 FAX NO.: (215) 251-0901 TAX OFFICE: (215) 644-2985

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (215) 644-5591

SURENDER S. KOHLI, P.E.
PRESIDENT

CONSULTING ENGINEERS
PLANNERS
LANDSCAPE ARCHITECTS

september 5, 1991

J. Donald Reimenschneider, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: 537 PLAN - Final Draft

Dear Don,

Enclosed herein, please find eight (8) copies of 537 PLAN for your review and distribution. Please forward one copy each to Board members, Planning commision, Municipal authority, DER, and Chester county Planning commision for their review and comments.

If you have any furter question, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer -
East Whiteland Township

Board of Supervisors
OHN J. FINN, Chairman
)L.ENCE D. HUNT, Vice-Chairman
GLENN H. COCKERHAM
Public Safety Commissioner
NALD REIMENSCHNEIDER
Township Manager
GARY R. LONG
Building Official &
Fire Marshal

East Whiteland Township
209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
VIRGINIA FENNIMORE
Assistant Manager
(Administration)

DATE: September 6, 1991

TO: John J. Finn
Florence D. Hunt
Glenn H. Cockerham
Richard Orlow, Township Planning Commission
James Carr, Township Municipal Authority
Lee Gemmill, Department of Environmental Resources
George Fasic, County Planning Commission

FROM: J. Donald Reimenschneider
Township Manager

Enclosed is a copy of the Township 537 Plan for your review and comments.

SEP 09 1991
RECEIVED

JDR/jm
Encl.

cc: file
Surender Kohli

TOWNSHIP OFFICE: (215) 648-0600 FAX NO.: (215) 251-0901 TAX OFFICE: (215) 644-2985

Ea[illegible] Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

PLANNING COMMISSION

Surender Kohli
Township Engineer

J. Donald Reimenschneider
Township Manager

Richard D. Orlow, Chairman
W. Russell Smith, Vice Chairman
Robert D. Morgan
Walter Reimann
Peter Hughes
Paula Kocher
Ronald A. Knabb

PUBLIC WORK SESSION

12 September 1991

In Attendance: Chairman, Richard Orlow; Vice Chairman, Russell Smith
Members, Walter Reimann, Paula Kocher, Ronald Knabb
Also, Surender Kohli, Township Engineer
Don Reimenschneider, Township Manager

The following items were discussed in the Public Work Session:

1. Graphic Impressions - Alternative Plans for a Loading Dock
2. Immaculata College - Proposed Library
3. Rubino Estate - Proposed Zoning Amendment (Information was not available; the Applicant will make a presentation at the Public Meeting.)
4. Liberty Square Condominium Owners - Proposed Zoning Amendment
5. Great Valley School District - Lighting at Football Stadium
6. James F. Clark/Linda Reilly - Proposed Residential Subdivision Plan
7. The Commons at Great Valley - Final Subdivision Plan
8. Proposed 537 Plan
9. Proposed Historic Preservation Regulations and Proposed Amendment to Historical Commission Ordinance
10. Other - The Planning Commission discussed the possibility of changing the meeting dates back to Monday nights.

Comments from the Public Work Session meetings will appear in the Minutes of the Public Meeting.

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

Surender Kohli
Township Engineer

Donald Reimenschneider
Township Manager

PLANNING COMMISSION

Richard D. Orlow, Chairman
W. Russell Smith, Vice Chairman
Robert D. Morgan
Walter Reimann
Peter Hughes
Paula Kocher
Ronald A. Knabb

PUBLIC MEETING

17 September 1991

In Attendance: Vice Chairman, Russell Smith
Members, Walt Reimann, Paula Kocher, Ronald Knabb
Also, Surender Kohli, Township Engineer
Don Reimenschneider, Township Manager
Floss Hunt, Township Supervisor

ANNOUNCEMENTS:

The Vice Chairman, Mr. Smith called the meeting to order in the absence of the Chairman. No announcements were made.

AGENDA:

1. Graphic Impressions - Alternative Plans for a Loading Dock
2. Immaculata College - Proposed Library
3. Rubino Estate - Proposed Zoning Amendment
4. Liberty Square Condominium Owners - Proposed Zoning Amendment
5. Great Valley School District - Lighting at Football Stadium
6. James F. Clark/Linda Reilly - Proposed Residential Subdivision
7. The Commons at Great Valley - Final Subdivision Plan
8. Malvern Meeting House
9. Proposed 537 Plan
10. Proposed Historic Preservation Regulations & Proposed Amendment to Historical Commission Ordinance
11. Other

1. GRAPHIC IMPRESSIONS - ALTERNATIVE PLANS FOR A LOADING DOCK

COMMENTS:

Plan SK-1 shows no change from previously rejected plan. Unloading trucks will block right of way.

Plan SK-2 shows enlargement of the building and encroachment into the front yard beyond what is allowed.

Suggestion was made to move truck dock inside building or along North side to avoid encroachment and obstruction.

ENGINEERING COMMENTS.

ACTION:

The Applicant will review Planning Commission comments and resubmit the application.

2. IMMACULATA COLLEGE - PROPOSED LIBRARY

N/Side of Campus, Zoned R-1

COMMENTS:

The Applicant is withdrawing the application which included the West entrance.

Ordinance #1700 B4 requires one parking space per 50 sq. ft. of visitor space. The parking plan needs justification. The following points were made regarding parking requirements:

a. There will be an increase of 100 seats over those in the existing library. Proposed plan will add only 34 additional parking spaces.

b. Existing library facility would be transformed into administrative office.

c. Computer access capability of the library could create additional traffic to the library by the general public, and by high school students, in particular.

d. Expected student use at night cannot be anticipated.

e. Stabilized enrollment is projected by Immaculata - between 1,000 and 1,200 in the Fall semester and into the forseeable future.

f. The major concern is the possibility of overflow parking onto non-parking areas.

The plan will not be considered as a Preliminary/Final Plan unless all criteria are met and zoning issues addressed.

Lighting may not be sufficient. Illumination information that has been furnished by the Applicant on the photometric indicates areas of unacceptable darkness.

a. The primary concern is for safety. Insufficient lighting exists along pathways and in parking areas.

b. Necessary and corrected light level should be indicated on the plan.

The circulation area should be widened to from 22-24 feet in the parking lot.

The Applicant has been granted a Special Exception by the Zoning Hearing Board regarding the height of the building (44½ ft.) This information must be indicated on the plan.

Overall Circulation - Improvements in traffic circulation are necessary. Proposed routing of traffic through the parking lot as indicated represents a clear threat to public safety. Additional King Road access is indicated.

Planning Modules were submitted; copies will be submitted to the Planning Commission. D.E.R. noted a sewage capacity issue. Sewer feasibility is required for approval.

ENGINEERING COMMENTS.

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (215) 644-5591

SURENDER S. KOHLI, P.E.
PRESIDENT

CONSULTING ENGINEERS
PLANNERS
LANDSCAPE ARCHITECTS

October 13, 1992

J.D. Reimenschneider
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: **537 Plan**

Dear Don:

Enclosed herein, please find the revised pages (1, 15, 42, 53 and 59) for the above referenced project. Enclosed also is a copy of your transmittal letter dated 9/6/91 indicating to whom you have sent the 537 Plan for review. Please forward the revisions to all the parties as noted in your 9/6/91 letter for their review and records.

If you have any questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Township

SSK/amg

cc: Thomas Kelly, Esq.

Board of Supervisors
CHARLES C. DISIPIO, Chairman
GLENN H. COCKERHAM, Vice-Chairman
FLORENCE D. HUNT, Member
J. DONALD REIMENSCHNEIDER
Township Manager
GARY R. LONG
Building Official &
Fire Marshal

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
VIRGINIA FENNIMORE
Assistant Manager
(Administration)

TO: Mr. Lee Gemmill
Department of Environmental Resources
Lee Park Complex
555 N. Lane
Conshohocken, PA 19428

Mr. George Fasic
Chester County Planning Commission
235 W. Market Street
West Chester, PA 19380

FROM: J. Donald Reimenschneider
Township Manager

RE: Township 537 Plan

DATE: October 22, 1992

Enclosed is a copy of revisions to the proposed Township 537 Plan for your review and comments.

JDR:mgp
Encl.

cc: file
Board of Supervisors
Surender Kohli, P.E. ✓
Thomas L. Kelly, Esquire
James Carr, Municipal Authority
Richard Orlow, Planning Commission

NOV 2 3 1992

DUANE, MORRIS & HECKSCHER

ATTORNEYS AT LAW

ONE LIBERTY PLACE
PHILADELPHIA, PA 19103
(215) 979-1000

FAX
(215) 979-1020

HARRISBURG, PA | WAYNE, PA
ALLENTOWN, PA | WILMINGTON, DE
MARLTON, NJ | BETHLEHEM, PA

COUNSEL

MORRIS DUANE
JOHN B. MARTIN
THOMAS R. REVAN
JOHN E. FELTON

MAURICE HECKSCHER
HAROLD W. EWOPE
HENRY T. REATH
JOHN A. CLARK

THOMAS M. HYNDMAN, JR.
JAMES J. McCABE
MARTIN A. HECKSCHER
REEDER R. FOX
SEYMOUR C. WAGNER
VINCENT F. GARBITY, JR.
FREDERICK W. GREENE
RONALD P. KIDD
JOHN B. REVAN
JANE LESLIE DALTON
DONALD R. AUTEN
MARC D. GOODMAN
JOHN S. HAYES
EDWARD H. FEEGE
STEPHEN D. TEAFORD
HUGH M. EMORY
EDWARD GRIFFITH
DAVID B. RIPSOM*
DAVID M. FLYNN
MICHAEL M. MUSTOKOFF
WILLIAM E. MANNING*
ANDREW J. RUCK
RALPH A. MARIANI
KATHLEEN M. SHAY
GEORGE E. PIERCE, JR.
ROBERT E. KELLY, JR.
BARBARA ADAMS
BEATRICE O'DONNELL
FRANK A. LUCHAK
CECELIA L. PANELLI
J. SCOTT KRAMER
MARSHALL A. FLEISHER
SCOTT C. PENWELL
DAVID E. LODER
ELISE T. SINGER
ARTHUR R. HOFFMAN
PETER S. CLARK
MARGERY H. REED
CLAUDIA Z. SPRINGER
NOLAN W. ATKINSON, JR.
KENNETH L. BABLE
THOMAS J. KARL

A. JOHN MAY
ROLAND MORRIS
SHELDON M. BONOVITZ
FRANCIS L. WHITE, JR.
ROBERT W. DENIGUS
DAVID C. TOOMEY
DAVID T. EYKER
ROBERT L. PRAETER
JAY J. LAMBERT
FRANK G. COOPER
DONALD A. TOATORICE
DAVID E. SWAYZE*
MAXWELL E. DAVISON
ROBERT F. STEWART, JR.
PAUL J. SCHNEIDER
MARJORIE O. RENDELL
THOMAS P. PRESTON
GENE E. K. PRAETER
JOHN F. HORSTMANN
JOHN A. TERRILL
FREDERICK A. LEVY
DANIEL F. LINDLEY*
JAMES E. BRENGLE
JOHN J. SOROKO
STEVEN K. KUDATZKY
RICHARD C. UNGER, JR.
THOMAS W. OSTRANDER
LEWIS R. GLENN
DAVID I. MAAS
BRUCE J. EASTEN
JACK M. MUMFORD
RUDOLPH J. DIMASSA, JR.
PATRICIA L. FREGMON
ALLEN C. WARSHAW
JUDITH NICHOLS RENZULLI
ANTHONY J. SILOTTI
STEVEN M. JANOVE
JAMES E. GREIM
JOSEPH D. MANCANO
ROBERT L. ARCHIE, JR.
GORDON W. STEWART

LISE LUBORSKEY
KEVIN S. GORMAN
AMY B. WILKINSON
THOMAS E. K. RINGE, III
STEVEN P. BERMAN
ELTN V.H.H. COOLEY
JOSEPH A. FILLIP, JR.
JOHN B. KING
MARC W. WITZIG
MARY KAY KEANLON
TERESA N. CAVENAGH
DEAN C. WALDT
MARK E. GEORGE
DAVID C. WEISS
JOHN W. KAUFFMAN
ADRIENNE VERDONE
FRANK E. HOYES II
DIANNE A. MEYER
WALLACE B. ELDRIDGE III
WAYNE J. MANTONELLI
JOEL T. BRIGHTON
JOSEPH A. DOUGHERTY
ELIZABETH C. MARLING
MICHAEL O'HAYER
THOMAS G. KENYOHIDIG
ATHENA SKALERIS
MARY B. TIMPANT
DEBORAH I. HOLLANDER
ANDREW E. ROSS
DAVID L. FRANK
WENDY R. HUGHES
KATHLEEN P. LOUGHHEAD
LORI ANN MILLS
GERALD J. PAPPERT
RICHARD W. RILEY
JOSHUA BARNER
DIANE G. WIENER
MICHAEL J. WILLNER
JEFFREY M. ZIMBAIND
LISA W. CLARK
LEONARD W. CRUMB
ARTHUR D. GOLDMAN
JAMES J. HOLMAN
JAMES M. KEATING, JR.
CHRIS R. MIKANURA
MARK E. STEINDA
PAULA BAIMAN
KAREN S. FEUCHTENBERGER
WILLIAM R. KANE
JOHN G. McCORMICK
BARBARA A. McNEIL
JOANNE M. MURRAY
DAVID B. SMITH
BONNIE L. WOLFGANG
ESTHER L. HORNIK
ALLISON M. BERGER
BRENT M. HATZIS-SCHOCH*
JOHN L. ARIS
DAVID K. BROD
TIMOTHY M. CRAMER
CLETUS C. KEES
STEVEN W. MORRIS
DEBORAH TATE PECCI
CHRISTINA J. SAVERDA
CHRISTOPHER W. WASSON

THOMAS G. THOMPSON
BRIAN J. SIEGEL
THOMAS L. HEIMBACH
GERALD F. McCORMICK
JAMES L. ALLISON
TERESA FICKEN SACHS
W. MARK MULLINEAUX
JOHN L. OLSEN*
EDWARD G. BIESTER, III
MARK J. PACKEL
THOMAS G. SPENCER
MARGARET E. W. EAGER
DAVID M. SPITKO
JAMES J. FERRELLI
WAYNE A. MACE, JR.
SHAUN R. EISENHAUER
DIANE E. VUOCOLO
LISA WOLFF
MARK LIPOWICZ
CHRISTOPHER J. PIPPETT
J. SHANE CREAMER, JR.
MICHAEL P. DOING
SUSAN I. McCLUSKEY
MARY PATRICIA PATTERSON
MARK B. SHEPPARD
MATTHEW CHABAL, III
CHRISTINA O. TERZHAKOVEC
LISA M. BATASTINI
RICHARD A. FORSTEN
JEFFREY S. HENDERSON
MARTHA L. LHAMON
DANIEL P. MAZO
PAUL A. NOLL
KATHLEEN M. PINTO
PAULA G. SANDERS
CRAIG P. TURET
GARY A. DEUFEICH
DAVID R. AUGUSTIN
ROBERT M. DALE
NANCY EDMAN
JOHN C. FLEMING
SCOTT C. HACKMAN
ANDREW N. HOWE
IRENE LAMBROU
MARK B. SCHOELLER
SEAN D. SMITH
TOBEY M. DALUZ
ERICA M. GIDDIENS
PATRICK J. LOFTUS
MELISSA McKEE
SANDRA L. MORRIS
ANTHONY J. NESTICO
THOMAS J. WEBER
FRANK P. TUPLIN
COLETTE A. PETE
KEVIN W. GOLDSTEIN
WILLIAM B. MALARKEY
ROBERT J. BONNER
BARBARA J. BUSHARIS
JODY A. GONZALEZ
SUZANNE M. MITCHELL
PETER E. OCHNOCH
DANIEL B. RATH
PETER J. SMITH

ALL LAWYERS ARE ADMITTED IN PENNSYLVANIA UNLESS OTHERWISE INDICATED
*ADMITTED IN DELAWARE ONLY

November 19, 1992

DIRECT DIAL: 979-1840

Mr. Glen Stinson
Water Quality Specialist Supervisor
Pennsylvania Department of Environmental Resources
Lee Park, Suite 6010
Conshohocken, PA 19428

RE: East Whiteland Township - Act 537 Plan Revision

Dear Mr. Stinson:

Pursuant to the Pennsylvania Sewage Facilities Act, 35 P.S. § 750.5(b) and 25 Pa. Code § 71.14, Immaculata College ("College") petitions the Pennsylvania Department of Environmental Resources ("Department") to order East Whiteland Township ("Township") to revise its official sewage plan since the plan is inadequate to meet the sewage disposal needs of the College.

The College avers that it occupies approximately 55 acres of property in the Valley Creek drainage basin in the southwest corner of East Whiteland Township, Chester County, which it leases from The Sisters, Servants of the Immaculate Heart of Mary. The College is located to the north of King Road, east of Ravine Road and west of Route 352. The adjacent properties are mostly residential with the exception of a densely wooded area located to the north of the campus.

At the present time, the Township's official sewage plan makes clear that the Township does not plan on servicing the southwest part of the Township including the College. Moreover, the public sewers do not extend into the immediate area of the College. The College presently treats its wastewater by means of a small sewage treatment plant ("STP") constructed in 1930 which discharges into an unnamed tributary of Valley Creek. Due to the advanced age of the STP and the stringent discharge standards required by NPDES Permit Number PA0050555, there have been compliance problems from time to time in the past. Although it is currently exploring modifications to the existing plant and alternative methods for handling its sewage, the College has established an ultimate goal of eliminating its effluent discharge into Valley Creek altogether and connecting to a public system.

On September 11, 1992, the College, by means of a Sewage Facilities Planning Module prepared by Roy R. Weston, Inc., requested that the Township revise its official plan. The College proposed to the Township that the STP be shut down and that: 1) a pipeline approximately 1,750 feet long be constructed to convey raw wastewater from the College to the nearest public sewer along Route 30 west of the intersection of Route 352 ("Alternative 1"); or 2) the public sewer system be extended so that a pipeline could be constructed to convey raw wastewater to the public sewer at the intersection of Frazer Road and Route 352 ("Alternative 2"). The College is committed to contributing reasonable financial resources to facilitate the construction of sewer lines to the public sewer system. By either Alternative 1 or 2, the wastewater would ultimately be treated at the Valley Forge Treatment Plant. In a letter dated October 23, 1992, James Carr, Chairman of the Township Municipal Authority, denied the College's request, stating that the Township's available capacity at the Valley Forge Treatment Plant had already been expended.

Copies of the College's September 11, 1992 Sewage Facilities Planning Module and the Township's October 23, 1992 response are enclosed. Also enclosed is a copy of NPDES Permit Number PA0050555. As indicated below, a copy of this Petition and its enclosures is being served today upon the Township by regular mail. A courtesy copy is also being sent to its solicitor, Mr. Kelly.

Please contact me if there is any other information that the Department requires on behalf of the College.

Sincerely yours,

David C. Toomey
for DUANE, MORRIS & HECKSCHER

WP3:[ADM.ADX8.DMMACULA]STINSON.LTR;1
DCT:mc
Enclosure
cc: East Whiteland Township c/o James S. Carr, Chairman, East Whiteland Municipal Authority w/ enc.
Thomas L. Kelly, Esq., Solicitor to East Whiteland Township w/ enc.
Michelle Coleman, Esq. w/ enc.
Timothy Jolly w/ enc.

Board of Supervisors
CHARLES C. DISIPIO, Chairman
GLENN H. COCKERHAM, Vice-Chairman
FLORENCE D. HUNT, Member
J. DONALD REIMENSCHNEIDER
Township Manager
GARY R. LONG
Building Official &
Fire Marshal

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
VIRGINIA FENNIMORE
Assistant Manager
(Administration)

KOHLI & ASSOC., INC.
DEC 16 19[illegible]
RECEIVED

December 14, 1992

Mr. Lee Gemmill
Department of Environmental Resources
Lee Park Complex
555 N. Lane
Conshohocken, PA 19428

RE: Township 537 Plan

Dear Mr. Gemmill:

To date, the Township has not received any comments from DER relative to our proposed 537 Plan Update. The document was submitted to your department last year, and revisions to the proposal were sent to you on October 22, 1992.

A status report will be appreciated.

Very truly yours,

J. Donald Reimenschneider
Township Manager

JDR:mgp

cc: file
Supervisors
Surender Kohli, P.E.
Thomas L. Kelly, Esquire

THE COUNTY OF CHESTER

PLANNING COMMISSION
235 West Market Street
West Chester, PA 19382
(215) 344-6285

COMMISSIONERS
Joseph J. Kenna, Chairman
Karen L. Martynick
Andrew E. Dinniman

December 22, 1992

KCI TECHNOLOGIES, INC.
JAN 04 1993
RECEIVED

J. Donald Reimenschneider, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Proposed revisions to the Act 537
Sewage Facilities Base Plan

Dear Mr. Reimenschneider:

The Chester County Planning Commission has completed its review of the above referenced revisions to the Official Sewage Facilities Plan of the township, as required by Act 537, the Pennsylvania Sewage Facilities Act.

It is the understanding of the Commission that the intent of the proposed changes is to protect the recreation facilities and important natural areas in the township from possible sources of water pollution and the negative environmental effects associated with the interbasin transfer of water. The Commission feels that this is an important goal for all of the municipalities in the County, and support your efforts to that end.

This review by Commission consists of two parts. The first part concerns technical issues associated with the proposed revisions which were submitted for review. The second part of the review contains comments relative to other parts of the Official Act 547 Plan of the Township. While these comments are not related to the specific revisions you are proposing, we believe that the submission of policy revisions to the municipal Act 537 plan other than new land development (Subchapter C) opens the entire Plan for comment.

Part 1. Comments on Proposed Revisions to Official Plan

Addition #1 to page 1: This appears to be a statement of policy to protect water quality. For clarification, the word debased (meaning to reduce in quality or value) could be added to the sentence to enhance the overall intent of the revision.

Example: Further, the plan has a major aim of integrating new sewage facilities into the community in ways that will not disrupt or debase other important facilities and amenities such as recreational or important natural areas.

Addition #2 on page 15: This appears to be a statement of policy regarding stream corridors and water quality. It may be more appropriate to place this statement under Purpose of the Official Plan rather than under Background Information. In either place, the wording could be changed slightly to read as a policy statement:

Example: Existing township parks embrace the stream corridors. As such,

stream corridors represent a major amenity to the community which merit special protection.

Addition #3 on page 42: The first sentence of the proposed revision basically outlaws direct stream discharges. Would indirect stream discharges, such as discharge to a wetland or marsh-pond-meadow system be acceptable? In addition, if the intent of the proposed revision is to protect and enhance water quality, then the Official Plan should also address the use of direct stream discharges from package plants serving a single residential dwelling.

The intent of the second sentence of the proposed revision concerning the watershed of origin needs to be made clearer. If the intent is to prevent interbasin transfer of water, then it should be stated that way.

Since much of East Whiteland is served by Philadelphia Suburban Water Company (PSWC), the issue of the watershed of origin becomes very complex. PSWC has multiple sources of water, many of which are outside of the township and the Valley Creek watershed. The watershed of origin would be more obvious if the proposed source of water is something other than the PSWC system.

The Commission believes it to be more appropriate to add a statement, similar to the one which follows, to the Purpose of the Official Plan in the INTRODUCTION along with the other proposed addition:

Example: ...amenities such as recreational or important natural areas. This includes preventing the interbasin transfer of water when the watershed of origin can be clearly determined.

Addition #4 on page 53: What is the definition of a "natural" treatment system? All treatment systems involve some type of "natural" biological processes using different types of bacteria. Do you mean "non-mechanical"? Even systems utilizing settling and aeration ponds usually have some mechanically driven compressors to pump air and oxygen into them. A description of what is meant by a natural treatment system is would help clarify this proposed revision.

Addition #5 on page 59: This part of the Official Plan describes the alternative treatment and disposal approach and the Environmental Impacts of choosing Alternative 6. The proposed revision calls for the construction of a central sewer system with tie-in to a new tertiary treatment facility with no direct stream discharge. As we previously mentioned, water could possibly be exported from the area, depending on its source. The rest of the sentence is not written as a possible impact. A possible rewording of the sentence we suggest is:

Example: Water may possibly be exported from the area, and the direct discharge with chlorination disinfection may adversely impact the Valley Creek or the Ridley Creek headwaters.

Part 2. Comments on East Whiteland Township Act 537 Base Plan

The Commission feels that the township should consider these additional amendments to its Official Sewage Facilities Plan before the proposed revisions are sent to PA DER for their review and action:

Population.

Page 18 of the Sewage Facilities Plan states that the County has projected a year 2000 population of 10,300. With the receipt of the 1990 Census figures, the Commission has re-evaluated the population projection developed during the 1980's. Based on the latest data, we now project the population of the township to be 9,780 by the year 2000. A copy of our Planning Bulletin #45 is enclosed for your reference.

On-Lot Sewage Disposal Maintenance Program.
The Commission continues to believe that an on-lot sewage management program with active municipal participation is an essential component of a sewage facilities plan. Education programs can be an important element in the overall Program, but a Program which requires proof of maintenance is the best way to extend the useful life of the system and help prevent public health hazards from malfunctioning systems. Our Planning Bulletin #42 is enclosed for your reference and consideration.

Study Areas.
Figure 12 which is affixed to the Official Sewage Facilities Plan shows the township divided into 7 different study or sewage areas. Of particular concern to the Commission are the areas designated as study area #7. This study area is divided into two sub-areas, one of which encompasses the western edge of the township (area 7B), and another encompassing the southwest corner of the township (area 7A). While these areas are not contiguous, the analysis of alternatives contained in the Plan evaluates these areas together as a single entity. It is the opinion of the Commission that these two areas should be considered separately and analyzed as separate study areas for the following reasons:

a)There is a geographical separation of these two sub-areas by an area shown to be in the current Valley Forge Service Area.

b)The sub-areas lie in different watersheds.

c)There are different land use and sewage facility issues in the two sub-areas which should be addressed and alternative sewage facilities options should be examined for all existing and proposed land developments within the sub-areas.

d)The potential for interbasin transfer of water to which the township has indicated its opposition.

In light of the fact that the Valley Creek is now being considered for special protection under the "Exceptional Value" status, there is the potential that PA DER would not issue a permit for a direct stream discharge from a new wastewater treatment plant in the watershed. It remains the responsibility of the townahip to continue to assess the sewage facilities needs of all current and future citizens and to identify and examine possible alternatives. The process of identifying, evaluating and selecting the best alternative for these areas would be accomplished more readily if the two sub-groups in Study Area #7 are separated into individual study areas.

If you have any questions regarding this review, please call me at 344-6285.

Very truly yours,

George W. Fasic
Director

GWF/RI/yzg
cc: Maria Goman, Health Department
Glen Stinson, PA DER
Charles C. DiSipio, Chairman, Board of Supervisors
Kohli and Associates, Inc.

Board of Supervisors
CHARLES C. DiSIPIO, Chairman
GLENN H. COCKERHAM, Vice-Chairman
FLORENCE D. HUNT, Member
J. DONALD REIMENSCHNEIDER
Township Manager
VIRGINIA FENNIMORE
Assistant Township Manager
(Administration)

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
KENNETH N. BATTIN
Building Official &
Fire Marshal
DAVID O. MEACHEN
Township Secretary

CERTIFIED MAIL

TO: Mr. Lee Gemmill
Department of Environmental Resources
Lee Park Complex
555 N. Lane
Conshohocken, PA 19428

Mr. George Fasic
Chester County Planning Commission
235 W. Market Street
West Chester, PA 19380

FROM: J. Donald Reimenschneider
Township Manager

RE: Township 537 Plan

DATE: February 12, 1993

Enclosed is a copy of the revisions to the proposed Township 537 Plan, dated January 25, 1993, for your review and comments.

JDR:mgp
Encl.

cc: file
Board of Supervisors
Surender Kohli, P.E.
Thomas L. Kelly, Esquire

537 Plan

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☒ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. George Fasic
Chester Cty Planning Comm
235 W. Market St.
West Chester, PA 19380

4a. Article Number
P 122 810 589

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
2-16-93

5. Signature (Addressee)
Joan B. Miller

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

537 Plan

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☒ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Lee Gemmill
Dept of Environmental Res
Lee Park Complex
555 N. Lane
Conshohocken, PA 19428

4a. Article Number
P 122 810 590

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
CONSHOHOCKEN
15

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

88050

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

FIELD OPERATIONS - WATER QUALITY MANAGEMENT
Suite 6010, Lee Park
555 North Lane
Conshohocken, PA 19428
215 832-6130

KOHLI & ASSOC., INC.

MAR 2 4 1993

MAR 25 1993

RECEIVED

J. Donald Reimenschneider, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 Plan Update - Draft Act 537
Request for Review
East Whiteland Township
Chester County

Dear Mr. Reimenschneider:

On September 16, 1991, October 26, 1992, and February 16, 1993 this office received your draft Official Sewage Facilities Plan Update of East Whiteland Township, Chester County, entitled Official Plan under the Pennsylvania Sewage Facilities Act (P.L. 1535, No. 537), as prepared by Kohli and Associates, Inc., dated August 12, 1991 and revised October 22, 1992. This plan is being submitted to this Department in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program.

A preliminary review has indicated that the draft plan update is not in accordance with the provisions set forth in Chapter 71 for the following reasons:

First, you are hereby advised that this review is consultative only and not official. Also, this review is not a final action by the Department.

Second, there are several "paper items" which are missing from the submission. These items, listed below, must be provided when the "official" document is submitted to the Department.

The missing items include:

1. East Whiteland Township Planning Commission comments;

2. Chester County Health Department comments;

3. Proof of publication in a local newspaper;

8. On page 46, reference is made to Chapter 71 as being found in Appendix B. Appendix B is missing, however, an unofficial copy of Chapter 71 was found in Appendix A. Enclosed is an official copy of Chapter 71.

9. On page 47, Table 6, uses footnotes to clarify items in the table; however, notes 1 and 4 do not have a corresponding table item. Please clarify.

10. On page 48, the subsection "Delineation of Study Areas" references Figure 14; however, Figure 14 is missing. The "List of Figures" found in the Table of Contents ends with Figure 12. These items must be addressed.

11. On pages 53 thru 59, under the sub-heading "Sewage Alternatives", the criteria used in the evaluation are not the same criteria outlined in the original plan-of-study;

12. On page 53, the sub-heading "Sewage Alternatives" is missing a letter designation. It appears that it should be designated "B" when comparing it to the original plan-of-study outline.

13. On page 60, the sub-heading "Institutional Alternatives Necessary to Implement the Recommended Official Plan" should be designated "C", because of comment No. 1 above;

14. On page 60, the sub-heading "Relationship of the Township's Official Plan to Other Plans" should be designated "D" because of comments No. 1 and No. 2 above;

15. In between pages 61 and 62 are portions of pages numbered A-6 thru A-13 which appear to belong to Appendix A, which is an out-of-date copy of the Pennsylvania Sewage Facilities Act. Enclosed is the most recent version of Act 537 for your use;

16. The sub-headings "Description" on page 61 and "Rationale for the Selected Sewage Facilities Plan" on page 62 are not the same sub-headings used in the original plan-of-study;

17. The sub-headings found under the "Recommendations" section use letters A thru C, whereas the original plan-of-study used numbers in designating the sub-headings;

MAR 2 3 1983

If you have any questions concerning this advisory review, please feel free to contact me.

Very truly yours,

JOHN M. VENEZIALE
Water Quality Sanitarian

ENCLOSURE

cc: Chester County Planning Commission
Chester County Health Department
Kohli and Associates, Inc.
Planning Section
Re 30 (GJC)43.12/.1

THE COUNTY OF CHESTER

PLANNING COMMISSION
Government Services Center • Suite 270
601 Westtown Road
West Chester, PA 19382-4537

COMMISSIONERS
Karen L. Martynick, Chairman
Joseph J. Kenna
Andrew E. Dinniman

George W. Fasic, Executive Director

April 1, 1993

(215) 344-6285 • FAX: (215) 344-6515

John Veneziale, Water Quality Sanitarian
PA Department of Environmental Resources
555 North Lane
Lee Park, Suite 6010
Conshohocken, PA 19428

Re: Private Request to Revise Official Sewage Facilities Plan Immaculata College
East Whiteland Township
Chester County

Dear Mr. Veneziale:

Per your letter dated January 19, 1993, and as required by Chapter 71, Section 71.14(d), the Chester County Planning Commission is submitting the following comments concerning the above captioned Private Request.

Upon review of the information supplied to you by the College, it is our understanding that East Whiteland Township has denied the request from Immaculata College to revise the Official Sewage Facilities Plan (Official Plan) of the Township to provide public sewage facilities to the College. The proposed plan revision would allow the College to connect to these facilities for the purposes of eliminating its own outdated wastewater treatment plant and associated discharge to an unnamed tributary of the Valley Creek.

We believe that it would be in the best interest of all of the people who work and live in East Whiteland if the Township and the College were to work together to choose the best course of action that will provide for the long term sewerage needs of the College. By working together to revise the Official Plan, alternative methods can be examined, and the most environmentally and financially responsible plan can be selected.

The Planning Commission supports the Private Request of Immaculata College to have the Township help them provide for their sewage facilities needs by revising the Official Plan of the Township.

If you have any questions, please feel free to contact me.

Very truly yours,

George W. Fasic
Secretary

GWF/RI/krp
cc: Immaculata College, East Whiteland Township

THE COUNTY OF CHESTER

PLANNING COMMISSION
Government Services Center • Suite 270
601 Westtown Road
West Chester, PA 19382-4537

COMMISSIONERS
Karen L. Martynick, Chairman
Joseph J. Kenna
Andrew E. Dinniman

George W. Fasic, Executive Director

(215) 344-6285 • FAX: (215) 344-6515

April 2, 1993

J. Donald Reimenschneider
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Proposed Revisions to the Act 537
Official Sewage Facilities Plan

Dear Mr. Reimenschneider:

The Chester County Planning Commission has completed its review of the above referenced revisions to the Official Sewage Facilities Plan (Official Plan) of the Township, as required by Act 537, the Pennsylvania Sewage Facilities Act.

The changes you have made blend into the current version of the document very well. Table 3, now entitled LAND DEVELOPMENT IN EAST WHITELAND TOWNSHIP SINCE 1987 TO JANUARY 1991, could be updated to include all land development projects proposed or under construction through January of 1993.

Our review of materials recently submitted by the Department of Environmental Resources concerning Immaculata College finds that the current version of the Official Plan does not adequately address the past, present and future status of non-municipal sewage treatment and disposal systems in the Township. There is mention of the five privately owned package plants that currently exist in the Township, but these systems are not indicated on any of the maps contained in the Official Plan, and discussion is inadequate as to how these systems relate to, or could be integrated with, the sewerage needs of all who work and live in the Township. These relationships should be explored through the consideration of various institutional alternatives necessary to implement recommendations in the Official Plan (paragraph B. on page 60). The Official Plan should provide for institutional and management arrangements in which the Township becomes involved in the design, construction and operation of privately owned sewage facilities. An individual on-lot sewage disposal management program is one possible institutional arrangement. As a reference, we are enclosing the chapter on Wastewater System Management from the West Vincent Township official plan.

The Commission feels that by incorporating similar new management provisions in its Official Plan, the Township will be more responsive to the sewage facility needs of everyone in the community.

If you have any questions regarding this review, please call me at 344-6285.

Very truly yours,

George W. Fasic
Secretary

GWF/RI/krp
cc: Maria Goman, Health Department
Glenn Stinson, PA DER
Charles C. DiSipio, Chairman, Board of Supervisors
Kohli and Associates, Inc.

KOHLI & ASSOC., INC.
APR 07 1993
RECEIVED

Board of Supervisors
CHARLES C. DiSIPIO, Chairman
GLENN H. COCKERHAM, Vice-Chairman
FLORENCE D. HUNT, Member
J. DONALD REIMENSCHNEIDER
Township Manager
VIRGINIA FENNIMORE
Assistant Township Manager
(Administration)

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

EDWARD W. GALANTE
Tax Collector &
Public Works Director
G. ERIC REED
Codes Compliance Officer
KENNETH N. BATTIN
Building Official &
Fire Marshal
DAVID O. MEACHEN
Township Secretary

KOHLI & ASSOC., INC.
JUL 01 1993
RECEIVED

June 30, 1993

Mr. Glenn K. Stinson
Sewage Facilities Consultant
Department of Environmental Resources
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

RE: Act 537 Plan Update

Dear Mr. Stinson:

By letter dated March 24, 1993, John Veneziale provided comments concerning the Township's Act 537 Plan Update.

Mr. Veneziale advised us that the review was consultative only and not official.

Surender Kohli, Township Engineer, is including the revisions suggested by your department in the Plan Update.

Should the revised document be sent to you for official review before or after it is adopted by the Board of Supervisors?

Your advice will be appreciated.

Very truly yours,

J. Donald Reimenschneider
Township Manager

JDR:mgp
cc: file
Surender Kohli, P.E.
Thomas Kelly, Township Solicitor

EAST WHITELAND TOWNSHIP PLANNING COMMISSION

209 Conestoga Road

Frazer, PA 19355

Ronald A. Knabb, Chairman
Paula Kocher, Vice Chairman

Walter Reimann
Richard D. Orlow
Anne Brown
Erik Hetzel

PUBLIC MEETING

March 23, 1994

In Attendance: Chairman, Ronald A. Knabb, Vice Chairman, Paula Kocher
Members: Walter Reimann; Erik Hetzel, Richard D. Orlow
Township Engineer: Surender Kohli

Agenda:

1. Reorganization of Planning Commission
2. McCoy Cockerham
3. Hudson Oil Company Property
4. Parcel XXXVIII G.V.C.C. West
5. Other Business
   A. Proposed Parking Regulations
   B. Schedule Meeting and Interview Applicants
   C. Miscellaneous

1. McCoy Cockerham

Description:
Located on the west side of Planebrook Road., near Route 202 & Frame Avenue. Zoned C & R2, Residential District. Sketch Plan.

Proposed:
Reconfigured 3 lot subdivision and proposed construction of a building within the commercial district. Several variances would be required as a result of the proposed (self imposed).

Comments:
The Planning Commission advised that it could not support this variance requests. The applicant will resubmit to subdivide into two parcels with north parcel having access to Planebrook Road.

Action:
Applicant will withdraw application and resubmit later.

2. Hudson Oil Company

Description:
Route 30, next to laundromat, Zoned C2

Proposed:
Proposed one story bank building

Comments:
Nonconforming lot. Applicant meets set-back requirements and layout, except proposal indicates paving within 1/2 of the front yard set-back. Need attention to detail of traffic flow, and frontage along Route 30. Suggested revision to circulation patterns moving building to west, drive-up to west end, parking to east end.

Action:
Suggested revision to plan and resubmit as sketch. Submit drawing to show Route 30 frontage from shopping center to laundromat.

3. Parcel XXXVII G.V.C.C. West

Description:
Technology Drive, Lapp Road, north east corner

Proposed:
Plans for 2 story research office facility, 28,000 sq. ft. per floor.

3. Parcel XXXVIII G.V.C.C. West Continued

Proposed:
1-8 tenants, multi tenant lab building. Bio med, bio tech. Access grade level, to south, access upper level, to north.

Comments:
Advised that zoning does not permit parking in front yard. Planning Commission feels that building can be sited to the south along Lapp Road, with the parking to the north, accessing the upper floor. The Planning Commission cannot support the variance but suggested that relief may be received from the Zoning Board. Further the applicant was advised that, to date, the original road bed of Lapp Road has not been legally abandoned.

Action:
Applicant is to resubmit a redesign if he wishes to pursue the plans.

4. Reorganization of Planning Commission

Ronald A. Knabb was elected Chairman and
Paula Kocher Vice Chairman

5. A. Proposed Parking Regulations

Richard Orlow submitted an updated draft. Planning Commission reviewed and commented on regulations, up to Landscaping and will resume at next workshop meeting.

5. B. Schedule Meeting and Interview Applicants

Four applicantions have been received and interviews will be scheduled for March 31, 1994.

1. Alice Maloney
2. Dean McGowan
3. Gary Samms
4. Charles Bernhardt III

5. C. Miscellaneous

537 Plan
The Planning Commission reviewed the updated 537 Plan as proposed by the township engineer. It was noted that the plan contained comments by the Chester County Planning Commission and the D.E.R. Accordingly, the Planning Commission recommended approval of the updated 537 Plan as dated February 16, 1994.

5. C. Miscellaneous Continued

Charleston Oaks
Planning Commission recommended approval and directed the chairman to sign the proposed planning module, illustrating the extension of a 50' sewer line into East Whiteland Township.

Ms. Kocher abstained from participation in the discussion.

Meeting Adjourned at 9:45

Respectfully Submitted,

Ronald A. Knabb, Chairman

RAK:ew

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

April 8, 1996

Southeast Regional Office

610-832-6130
Fax 610-832-6259

KOHLI & ASSOC., INC.

APR 15 1996

RECEIVED

J. Donald Reimenscheider, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 Plan Update
East Whiteland Township
Chester County

Dear Mr. Reimenscheider:

We have completed our review of your municipality's updated official sewage facilities plan entitled "East Whiteland Township Act 537 Plan" as prepared by Kohli and Associates, Inc., last revised May 2, 1995. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the Plan is hereby granted.

The Plan provides for the:

1. Expansion of the sewer service area tributary to the Valley Forge Sewer Authority Wastewater Treatment Facility. As shown on Figure 12 of the plan, Study Areas 1-1990 Valley Forge Sewer Authority Service Area, 3-1991-1996 Valley Forge Sewer Authority Service Area, 4-1996-2001 Valley Forge Sewer Authority Service Area, 5-2001-2006 Valley Forge Sewer Authority Service Area, and 6-Beyond 2006 Valley Forge Sewer Authority Service Area are designated as the sewer service area tributary to Valley Forge Sewer Authority Wastewater Treatment Plant. The sewer service area expansion will require an additional 1.96 MGD average annual capacity for a total of 3.01 MGD average annual capacity at the Valley Forge Sewer Authority Wastewater Treatment Plant. To provide for the anticipated future needs of the sewer service area tributary to the Valley Forge Sewer Authority Wastewater Treatment Facility, further planning is required to acquire additional capacity in the Wilson Road Pump station and Force Main.

2. Continued service of Study Area 2-1990 Ridley Creek Service Area, as shown on Figure 12, by the East Goshen Township Ridley Creek Wastewater Treatment Plant.

3. Future evaluation of Study Areas 5 and 6 for applicability of alternative disposal methods.

4. Study area 7a may utilize alternate disposal methods involving on-lot systems and/or treatment facilities subject to further study of the area.

5. Study area 7b may be serviced by West Whiteland Township's proposed Spray Irrigation sewage treatment plant subject to further planning by West Whiteland and East Whiteland Township. If Study Area 7B can not be served by the proposed West Whiteland system, then the alternatives available to service the area including construction of a new treatment facility and service by Valley Forge Sewer Authority Wastewater Treatment Facility will be further studied.

6. An on-lot sewage management maintenance program of public education through the township newsletter.

If you have any questions regarding this matter, please feel free to contact me at the above number.

Sincerely,

Joseph A. Feola
Regional Manager
Water Management

cc: Chester County Health Department
Chester County Planning Commission
Ms. Ulan
Kohli & Associates, Inc.
Planning Section
Ms. Moore
Division of Municipal Facilities and Grants
Re 30 (RN)71-20

Appendix C

Resolution for Township Adoption

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

RESOLUTION NO. 19-95

A RESOLUTION ADOPTING THE "OFFICIAL PLAN UNDER THE PENNSYLVANIA SEWAGE FACILITIES ACT" (ACT 537 PLAN)

WHEREAS, East Whiteland Township is a member of the Valley Forge Sewer Authority, and

WHEREAS, East Whiteland Township entered into certain Sewage Facility Grant Agreements with the U. S. Environmental Protection Agency (EPA), and agreed to prepare a local sewer plan for the Township as required by Section 5 of the Pennsylvania Sewage Facilities Act, 35 P.S. Section 750.5, and

WHEREAS, the Pennsylvania Department of Environmental Resources, the Chester County Health Department, and the Chester County Planning Commission have reviewed and commented on the Act 537 Plan, and

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of East Whiteland Township adopt the "Official Plan Under the Pennsylvania Facilities Act" (Act 537 Plan) as amended.

BE IT FURTHER RESOLVED that said local sewer plan be implemented by East Whiteland Township to control future sewage disposal systems in the Township in conjunction with the Pennsylvania Department of Environmental Resources, the Valley Forge Sewer Authority, the Chester County Health Department, and the East Whiteland Township Municipal Authority.

ADOPTED this 12th day of June, 1995.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

Glenn H. Cockerham, Chairman

ATTEST:

Charles C. DiSipio

Township Secretary

Stuart Levin

APPENDIX D

SOILS PROFILES

Soil Group A

BRANDYWINE - The Brandywine soils are well-drained soils which have developed over gneiss and pegmatite. The topsoil is grayish-brown while the subsoil is yellow to brown. The Brandywine soils tend to be dry and are characterized by their extremely thin B horizon. Generally, these soils are suitable for on-lot sewage disposal.

EDGEMONT - The Edgemont soils are moderately deep well-drained soils of the upland. These soils have developed mainly over quartz schist and quartzite. The topsoil is a dark grayish brown loam while the subsoil is a yellowish brown or strong brown loam to silty clay loam. The Edgemont soils have been found on occasion by the Department to be mottled but are generally suitable for standard subsurface sewage disposal systems.

GLENELG CHANNERY SILT LOAM - This soil is a moderately deep well-drained soil of the upland. The soils have developed over granite, gneiss and mica schist and have a brown topsoil and strong brown subsoil. The Glenelgs generally are suitable for standard subsurface sewage systems.

MANOR LOAM - The Manor Loam soils are shallow well-drained soils of the upland. The Manor Loams have developed primarily over mica, schist and gneiss. They have a dark brown surface layer while the subsoil is yellowish-red to yellowish-brown. Quite often the Manor Loams have a greasy feel due to the abundance of mica in the soil. Except in areas where the subsoil is extremely stony, the Manor Loams are generally suitable for conventional on-lot sewage disposal systems.

Soil Group B

CONESTOGA - The Conestoga series consists of deep well-drained soils of the uplands. The soils develop from calciferous schist, micaceous limestone or marble. The surface layer is dark brown silty loam. The subsoil is dark yellowish-brown or yellowish-brown silty clay loam. The Conestoga series have been found on occasion by this Department to be unsuitable for standard subsurface sewage disposal systems due to high hazard of groundwater pollution through limestone solution channels.

HAGERSTOWN - The Hagerstown series consists of deep well-drained soils that are underlain by limestone. The surface layer is dark brown silt loam. The subsoil, a strong brown silty clay loam, has limestone fragments scattered through it. The subsoil is blocky and prismatic in structure. The soil is underlain by yellowish-red silty clay loam that contains partially weathered fragments of quartz and limestone. The Hagerstown series have been found on occasion by this Department to be unsuitable for standard subsurface sewage disposal system due to high hazard of groundwater pollution through limestone solution channels.

HOLLINGER SILT LOAM - This is a deep well-drained soil of uplands. It is very similar to the Hagerstown soil but is somewhat shallowed to bedrock. In some places, it is underlain by dolomitic limestone instead of calcareous schist.

Soil Group D

CHEWACLA - The Chewacla soils are deep, moderately well-drained soils of the flood plains. These soils consist of alluvial deposits washed from upland soils. The parent materials were mainly gneiss, schist, quartzite, anorthosite and quartz monzonite. Being flood plain soils, these soils are unsuitable for on-lot sewage disposal.

CONGAREE - The Congaree Silt Loam is a deep, well-drained soil of flood plains. It is generally located along streams and is subject to occasional flooding. It is unsuitable for on-lot sewage disposal.

LINDSIDE - The Lindside series consists of deep, moderately well-drained soils on flood plains. The soils formed in sediments washed from areas underlain by limestone. The surface layer of these soils is very dark grayish brown. The subsurface is brown or yellow red and is mottled with light brown or gray. Due to a high flooding hazard, this soil is not suitable for any subsurface disposal.

MELVIN - The Melvin series consists of deep poorly-drained soils of flood plains. Their surface layers are dark gray while their subsoils are light brownish gray to dark yellowish gray mottled silty clay loams. The Melvin soils are found near streams that drain areas of Hagerstown and Conestoga soils. As flood plain soils, the Melvin series is unsuitable for subsurface sewage disposal.

WEHADKEE - The Wehadkee series consists of deep poorly drained soils on flood plains. The soils generally have formed from material washed from upland soils underlain by schist, gneiss, quartite, anorthosite, quartz, monzonite and granite. Being flood plain soils, these soils are unsuitable for any on-lot disposal.

Soil Group E

BEDFORD - The Bedford series consists of deep, moderately well-drained soils. The soils are underlain by marble and other lime-bearing rock. The surface layer is grayish brown silt loam, and the subsoil is yellowish brown, light silty clay loam. Faint mottling is generally found at a depth of 28 to 32 inches. Due to shallow depth to water table, the Bedford soils are generally suitable for only elevated sand mounds.

GLENVILLE - The Glenville soils are deep moderately well-drained to somewhat poorly drained soils of the upland. These soils have developed mainly over granite, schist and gneiss. The topsoil is a very dark brown to dark grayish brown silt loam, while the subsoils are yellowish-brown to strong brown mottled silty clay loam to heavy silt loam. Due to the shallow depth of the water tables, the Glenville soils are generally suitable for only elevated sand mounds.

Soil Group F

CROTON - The Croton series consists of poorly drained soils of the uplands. The soils are underlain by triassic red and gray shale and sandstone. These soils have a surface layer of dark brown silt loam that is mottled with gray. The subsoil is a mottled yellow brown and red brown silty clay loam. The claypan occurs generally at a depth between 15 and 22 inches. This claypan keeps the subsoil waterlogged much of the time. Due to this high water table, this soil series is unsuitable for any subsurface disposal systems.

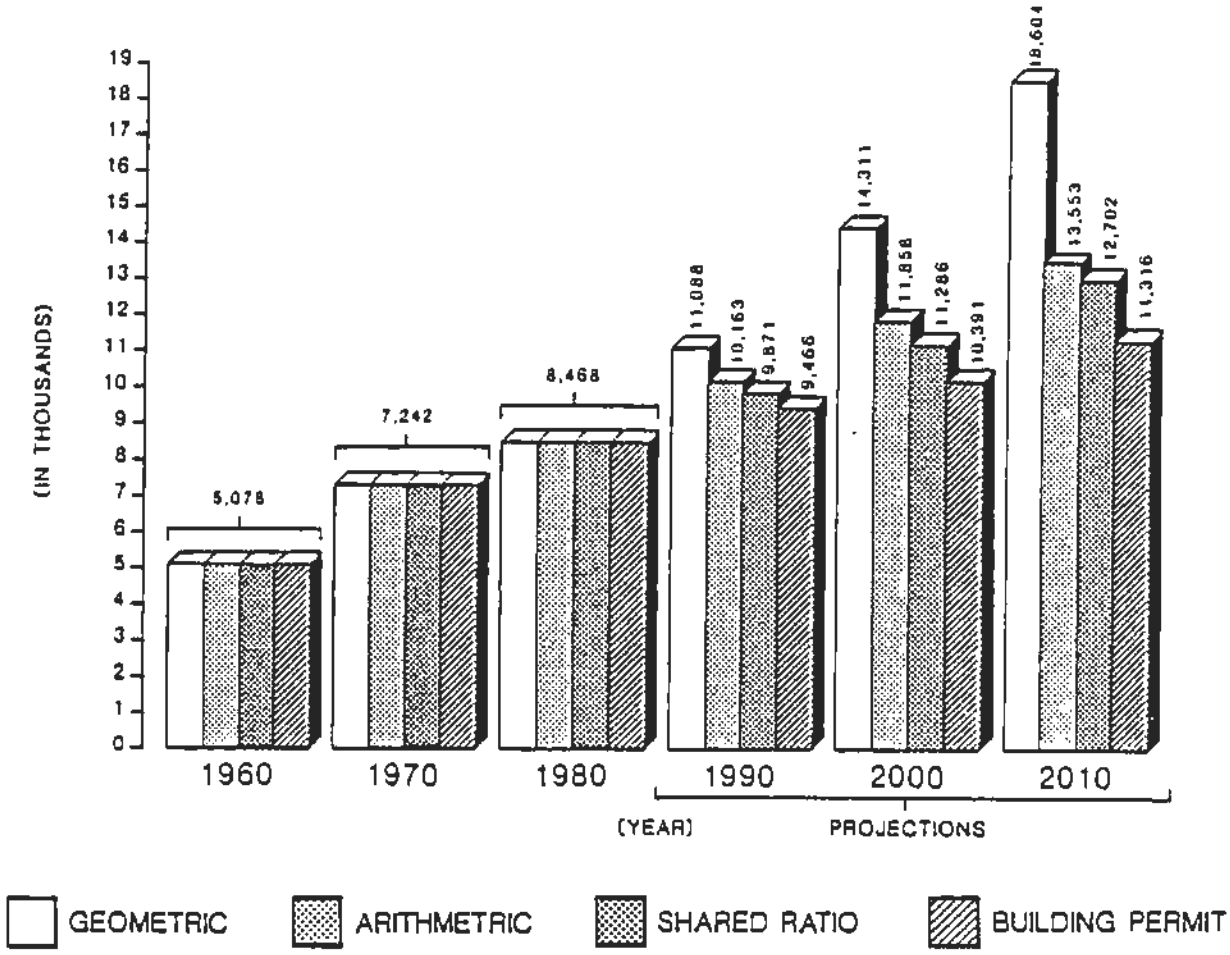
GUTHRIE - The Guthrie series consists of deep, poorly drained soils on limestone or calcareous schist. The surface layer is very dark gray silt loam, and the subsoil is mottled with light brownish gray, greenish gray and brown. Mottling, beginning in the surface layer, becomes more prominent with increasing depth. The water table is high during most of the year. Due to high water tables, this series is unsuitable for subsurface sewage disposal.

LAWRENCE - The Lawrence soils are deep somewhat poorly drained soils of the uplands which have developed over dolonite and limestone. The topsoil is a dark grayish-brown silt loam. The subsoil is a yellow-brown silty clay loam that is mottled at 14 inches below the ground surface. The depth to the bedrock is often four to six feet below the surface. Generally, the Lawrence soils are unsuitable for any type of on-site subsurface sewage disposal system.

WORSHAM - The Worsham series consists of deep poorly-drained soils of the uplands. Their surface layer is dark grayish brown or black silt loam while the subsoil is a brownish-yellow a strong-brown clay loam that is mottled with pale gray or yellow mottles. Worsham soils develop primarily over granite, quartz, schist, gneiss and gabbro. Generally, they are waterlogged most of the year which makes them unsuitable for on-site sewage disposal.

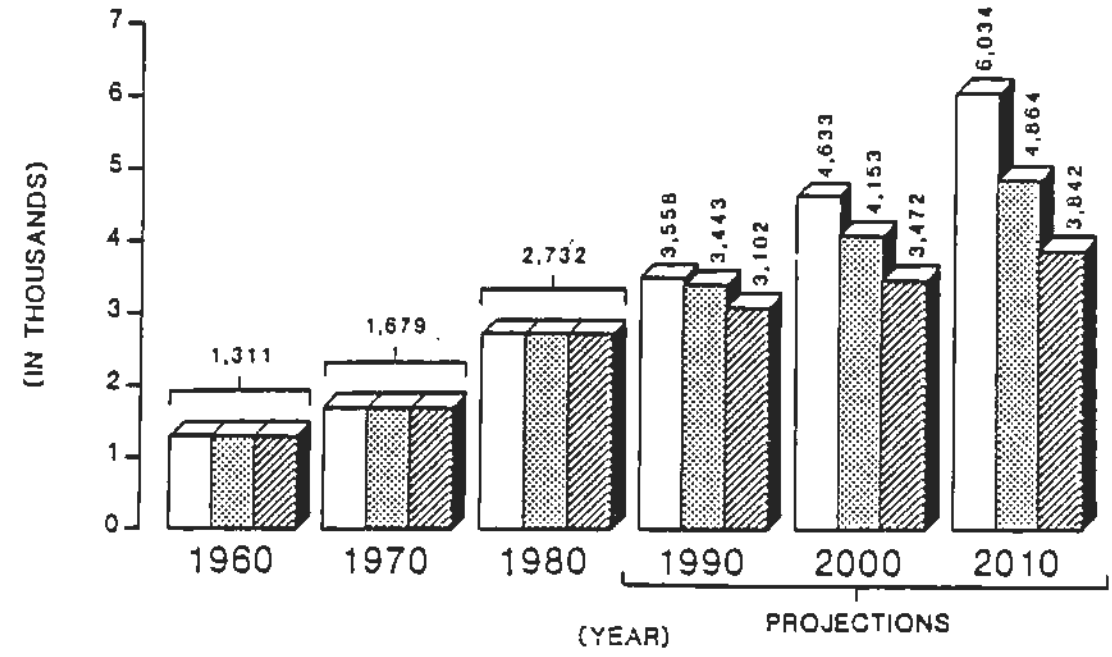
MADE LAND - consists of fill material composed mostly of B and C horizon material. In this location, the material consists primarily of soil which develops from Wissahickon Schist and adjacent rock units.

FIGURE 4-2: POPULATION PROJECTIONS 1960-2010



Source: CCPC, 1986.

FIGURE 4-3: HOUSING UNIT PROJECTION 1960-2010



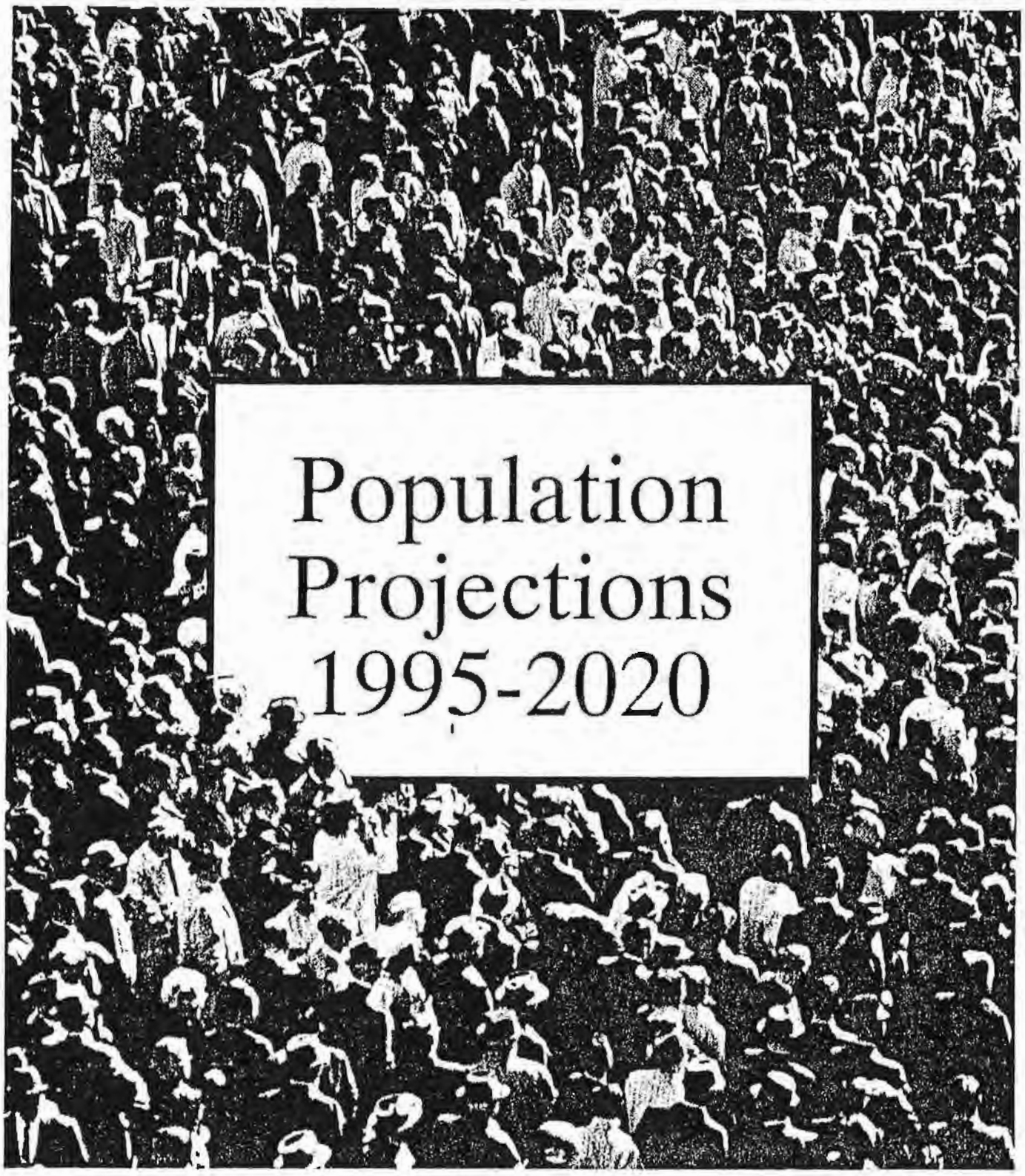
Source: CCPC, 1986.

CCPC BULLETIN

PLANNING BULLETIN #45

CHESTER COUNTY PLANNING COMMISSION

JULY 1992



Population Projections 1995-2020

County Level Projections, 1995-2020

Background:

The staff of the Chester County Planning Commission has prepared population projections to the year 2020. As part of the preparation a review of the 1980 population projection activity by Chester County was made. In the 1980s, projections were developed for the County and its 73 municipalities to the year 2010. With the release of 1990 U.S. Census data, it was necessary update and advance the projections based upon the new data. Similar efforts are underway in neighboring counties and at the Delaware Valley Regional Planning Commission.

The Chester County projections in the 1980s included consideration of separate efforts from a population research group at Pennsylvania State University and the planning staff of the Delaware Valley Regional Planning Commission (DVRPC). The Chester County Planning Commission staff monitored the population work of both organizations. After careful review of the projects in relation to the Commissions own efforts, CCPC accepted the work of the Penn State research team. The methodology and the assumptions set by this team were judged to be comprehensive and thorough; all measures of population change (fertility, mortality and migration) were thoroughly explained. Although Chester County staff also used the cohort component methodology, we accepted the Penn State calculations because their data base was more refined than that available to our staff. Although Penn State's team and DVRPC's team each used the cohort-component methodology, the Penn State researchers benefitted because they had access to the most recent detailed information on birth, death, and migration trends. Since Penn State only provided projections to 2000, DVRPC provided the County projections to 2010.

A comparison of the projections for 1990 prepared during the 1980s reveals that those projections are generally in an acceptable range when examined against the census of 1990. The 1990 projection total was 359,057 compared to the actual census count of 376,396; a numerical under projection of 17,339, only a 4.8 percent error.

A population projection is not a prediction, a forecast, or a target. It is a measurement of a future population that would exist if particular fertility, mortality and migration conditions prevail in the future. Valid projections carry no value judgments, and are not the result of policy decisions or directed goals. Projections by the Chester County Planning Commission are based upon expected trends in fertility, mortality and migration.

Methodology:

In developing projections to 2020, the Chester County Planning Commission again made use of the cohort-component method. The cohort-component method uses the three elements of population change (births, deaths, and net migration) to project separately 5 year age cohorts for both males and females. The method employs general fertility rates, Census survival rates, and migration rates for each age cohort to carry the population forward every 5 years.

The fertility component of this method utilized the general fertility rate (GFR). The GFR is the annual expected number of live births per 1,000 women aged 15-44. The GFR for these projections was set as 55.0. This figure was decided on by examining past birth rate trends in Chester County and recent national fertility trends.

Once the number of births are projected the sex ratio is calculated. Using an average of past trends in Chester County, the number of males born for each projected year was calculated at 0.513 of all births, with females being the difference, at 0.487 of all births.

For estimating mortality, these projections used the most recent five-year Census survival rates that were published by the U.S. Bureau of the Census in 1984. The rates were projected for each age cohort for both males and females. The Census survival rate is calculated by taking the number of persons in an age cohort and "surviving" them five years

later into the next cohort. For example, if there are 100 persons in the age cohort 5-9, and the the Census survival rate is .98, the number of persons five years later (which would be the cohort 10-15) would be 98. It should be noted that Census survival rates decrease with age.

Net migration is calculated by using survival rates and base populations. Using the example above, if the survived population is 98, but the base population is 110, then it can be assumed that there was a net migration of 12 persons (110 minus 98). The migration rate is then calculated by dividing the number of migrants by the survived population. In this case the result would be .1224.

For these projections, migration rates were averaged for the years 1970-1975, 1975-1980, 1980-1985, and 1985-1990. Because five year rates are used the total population in 1975 and 1985 had to be estimated. The population for these years were calculated by examining residential building permits during each respective decade. For instance, approximately 49 percent of the building permits issued between 1970 and 1980 were issued between 1970 and 1975. Therefore, the population in 1975 was assumed at 49 percent of the total increase between 1970 and 1980 plus the 1970 population. The 1985 population was calculated the same way. In this case the mid-decade population was approximately 33 percent of the total change plus the 1980 population. See Table 1 for age-cohort five year projections countywide.

Table 1
Chester County Population Projections, 1995-2020

Males

Age	1990	1995	2000	2005	2010	2015	2020
0-4	14,401	13,670	13,620	13,960	13,720	13,850	13,650
5-9	13,737	15,590	14,890	14,760	15,020	14,860	14,700
10-14	12,576	14,500	16,700	15,720	15,580	15,860	15,690
15-19	13,179	12,200	14,440	16,210	15,260	15,130	15,390
20-24	12,917	12,500	11,650	13,710	15,400	14,500	14,370
25-29	14,890	13,480	12,940	12,160	14,320	16,080	15,130
30-34	16,941	16,590	15,150	14,430	13,560	15,960	17,920
35-39	16,251	18,560	18,490	16,610	15,820	14,870	17,510
40-44	15,040	16,910	19,660	19,260	17,310	16,500	15,510
45-49	12,186	14,970	17,170	19,620	19,220	17,280	16,460
50-54	9,323	11,860	14,840	16,770	19,180	18,790	16,900
55-59	8,313	8,740	11,410	14,010	15,840	18,120	17,760
60-64	7,781	7,440	8,000	10,300	12,670	14,340	16,410
65-69	6,647	6,680	6,510	6,940	8,980	11,060	12,530
70-74	4,684	5,430	5,580	5,390	5,790	7,500	9,270
75-79	2,907	3,590	4,230	4,350	4,240	4,570	5,950
80-84	1,622	1,950	2,470	2,920	3,030	2,970	3,220
85+	1,107	1,260	1,610	2,080	2,610	2,990	3,220
Total	**184,412**	**195,900**	**209,400**	**219,200**	**227,600**	**235,000**	**241,600**

Table 1 (Continued)
Chester County Population Projections, 1995-2020

Females

Age	1990	1995	2000	2005	2010	2015	2020
0-4	13,571	12,770	12,750	12,950	12,820	12,680	12,750
5-9	13,157	14,590	13,860	13,710	13,930	13,790	13,640
10-14	11,757	14,050	15,750	14,800	14,640	14,870	14,720
15-19	12,876	11,810	14,450	15,820	14,870	14,710	14,950
20-24	13,570	12,520	11,650	14,070	14,500	14,480	14,320
25-29	15,055	14,040	12,900	12,050	14,560	15,940	14,980
30-34	17,550	16,530	15,570	14,160	13,240	15,990	17,510
35-39	16,771	18,910	18,170	16,790	15,270	14,270	17,240
40-44	15,487	17,170	19,780	18,620	17,200	15,650	14,630
45-49	12,325	15,330	17,300	19,610	18,460	17,060	15,520
50-54	9,186	11,980	15,130	16,850	19,100	17,980	16,620
55-59	8,271	8,740	11,610	14,430	16,070	18,220	17,150
60-64	8,308	7,760	8,300	10,930	13,600	15,150	17,180
65-69	7,657	7,720	7,300	7,760	10,230	12,730	14,180
70-74	5,893	6,950	7,120	6,670	7,110	9,380	11,670
75-79	4,489	5,140	6,220	6,200	5,920	6,310	8,320
80-84	3,175	3,790	4,460	5,380	5,490	5,160	5,500
85+	2,886	3,250	4,080	4,810	5,590	6,360	6,840
Total	**191,984**	**203,100**	**216,400**	**225,600**	**232,600**	**240,700**	**247,700**
County Total	**376,396**	**399,000**	**425,800**	**444,800**	**460,200**	**475,700**	**489,300**

Note: Projections are rounded to the nearest tenth for each age cohort and to the nearest hundredth for the total population.

Municipal Level Projections, 2000-2020

Methodology:

Projecting population for municipalities involved a separate process than projecting the County population. Since the cohort-component method of projecting population involved a number of variables not available on the municipal level and since most municipalities do not have a large population base to work with, a different approach to municipal projections was carried out.

Determining projections for municipalities in Chester County was a two-step process. The first step involved the calculation of unadjusted figures through use of the Bureau of the Census ratio-shared method. This method involved computing the average ratio of a municipality's population to the total County population in previous Census years. Further, a 1990 population for each municipality was calculated using the average ratio-shared method from 1960, 1970 and 1980. These numbers were then compared with actual 1990 Census figures and a percent difference between these two was calculated. For projections, the numbers calculated using the average ratio-shared method were multiplied by the percent difference in order to determine the unadjusted population projections for each municipality.

The second step of this process involved adjustment to these projections by looking at a number of variables for each municipality. These variables included past population trends, existing land use, known development proposals, transportation access, and other factors that could affect population change. Unlike the previous step this one does not contain calculations but includes general determinations about a municipality's future.

For instance, older, well-established, suburban municipalities are expected to gain fewer residents than those which are not as built-up and under development pressure. Further, the boroughs and the City of Coatesville in Chester County will likely experience limited increases in population due the built-out nature of these communities. Though some residential uses could be built through in-fill development or conversions, any substantial population increases could be offset by a decreasing household size. An exception to this would be the Borough of Elverson where large parcels of vacant land are being proposed for residential development. Increases in population through these developments would substantially change an already small population base.

Large percentage gains in population are projected for those municipalities where major development is expected. These include municipalities in south-central Chester County which have experienced growth pressure from the Wilmington metropolitan area and western municipalities where continuted westward movement of development along with the anticipated completion of the Exton Bypass could considerably increase development pressure.

Small population projections are anticipated for areas of limited potential growth. Factors affecting these municipalities include minimal highway access, environmental restrictions, low density zoning, and restricted land such as an agricultural easment. The results of this process are demonstrated in Table 2.

Table 2
Chester County Municipal Population Projections, 2000-2020

	Census			*Projections*	
	1980	*1990*	*2000*	*2010*	*2020*
Chester County	**316,660**	**376,396**	**425,800**	**460,200**	**489,300**
Atglen	669	825	960	990	1,010
Avondale	891	954	980	1,010	1,030
Birmingham	1,584	2,636	3,120	3,390	3,640
Caln	9,639	11,997	12,950	13,320	13,610
Charlestown	2,770	2,754	2,990	3,190	3,410
Coatesville	10,698	11,038	11,310	11,350	11,390
Downingtown	7,650	7,749	7,980	8,020	8,060
East Bradford	3,219	6,440	9,670	11,770	12,850
East Brandywine	4,690	5,179	6,830	8,310	9,560
East Caln	2,187	2,619	3,190	3,540	3,680
East Coventry	4,085	4,450	4,980	5,560	6,030
East Fallowfield	3,962	4,433	4,990	5,510	5,850
East Goshen	10,021	15,138	16,390	16,710	16,950
East Marlborough	3,953	4,781	5,410	6,260	6,830
East Nantmeal	1,222	1,448	1,750	2,190	2,850
East Nottingham	3,111	3,841	4,270	5,140	5,910
East Pikeland	4,410	5,825	6,070	6,520	6,910
Easttown	9,064	9,570	9,760	9,860	9,960
East Vincent	4,739	4,161	4,850	5,980	6,860
East Whiteland	8,468	8,398	9,780	10,180	10,490
Elk	750	1,129	1,450	1,820	2,150
Elverson	530	470	820	990	1,110
Franklin	1,920	2,779	3,850	4,370	5,020
Highland	1,244	1,199	1,290	1,360	1,440
Honey Brook Boro.	1,164	1,184	1,220	1,270	1,290
Honey Brook Twp.	4,182	5,449	6,570	7,180	7,570
Kennett	4,201	4,624	5,050	5,540	6,030
Kennett Square	4,715	5,218	5,410	5,520	5,650
London Britain	1,546	2,671	3,870	5,340	6,650
Londonderry	1,293	1,243	1,380	1,510	1,640
London Grove	3,531	3,922	5,860	7,240	8,090
Lower Oxford	2,836	3,264	3,790	4,310	4,920
Malvern	2,999	2,944	3,020	3,040	3,070
Modena	672	563	580	590	610
New Garden	4,790	5,430	6,550	7,650	8,730
Newlin	725	1,092	1,210	1,390	1,570

Table 2 (Continued)
Chester County Municipal Population Projections, 2000-2020

	Census		*Projections*		
	1980	*1990*	*2000*	*2010*	*2020*
New London	1,312	2,721	3,840	5,490	6,910
North Coventry	7,164	7,506	8,190	8,650	8,950
Oxford	3,633	3,769	3,890	3,940	3,980
Parkesburg	2,578	2,981	3,090	3,110	3,150
Penn	1,888	2,257	3,180	3,950	4,360
Pennsbury	2,604	3,326	3,850	4,190	4,350
Phoenixville	14,165	15,066	15,570	15,870	16,170
Pocopson	2,331	3,266	3,930	4,280	4,570
Sadsbury	2,398	2,510	3,040	3,760	4,760
Schuylkill	5,993	5,538	5,710	5,870	5,990
South Coatesville	1,359	1,026	1,210	1,250	1,280
South Coventry	1,556	1,682	1,820	1,880	1,950
Spring City	3,389	3,433	3,470	3,490	3,510
Thornbury	1,323	1,131	1,280	1,410	1,580
Tredyffrin	23,019	28,028	28,950	29,370	29,750
Upper Oxford	1,332	1,615	1,890	2,210	2,530
Upper Uwchlan	1,805	4,396	6,010	6,720	7,350
Uwchlan	8,364	12,999	15,780	16,210	16,470
Valley	3,598	4,007	4,660	5,170	5,640
Wallace	1,881	2,541	2,830	3,140	3,510
Warwick	2,350	2,575	2,960	3,380	3,970
West Bradford	7,343	10,406	13,140	14,390	14,960
West Brandywine	4,068	5,984	7,550	8,730	9,970
West Caln	4,958	6,143	7,420	8,210	8,970
West Chester	17,435	18,041	18,120	18,270	18,340
West Fallowfield	2,122	2,342	2,730	3,150	3,660
West Goshen	16,164	18,082	19,350	19,450	19,550
West Grove	1,820	2,128	2,230	2,280	2,330
West Marlborough	941	874	910	980	1,060
West Nantmeal	1,766	1,958	2,290	2,730	3,330
West Nottingham	2,030	2,183	2,420	2,760	3,120
West Pikeland	1,536	2,323	2,890	3,240	3,510
West Sadsbury	1,728	2,160	2,670	3,220	3,960
Westtown	6,774	9,937	10,610	11,230	11,840
West Vincent	1,992	2,262	3,110	3,750	4,340
West Whiteland	9,581	12,403	15,270	16,580	17,060
Willistown	8,284	9,380	9,790	9,970	10,150

PLANNING BULLETINS

Previous Issues

1. HIGHWAY PRIORITIES (June 1976)
2. TRAFFIC OPERATION PROGRAM TO INCREASE CAPACITY AND SAFETY (July 1976)
3. HOMEOWNERS ASSOCIATIONS (January 1979)
4. POPULATION PROJECTIONS 1980-2000 (August 1980)
5. CURRENT HOUSING ISSUES (January 1981)
6. SUBDIVISION ACTIVITY - 1980 (May 1981)
7. CENSUS OF POPULATION AND HOUSING - 1980 (December 1981)
8. SUBDIVISION ACTIVITY - 1981 (March 1982)
9. STORMWATER MANAGEMENT PRACTICES (September 1982)
10. ZERO LOT LINE HOUSING (September 1982)
11. CENSUS HIGHLIGHTS (January 1983)
12. ACT 247 ACTIVITY - 1982 (February 1983)
13. CENSUS - SEX AND AGE CHARACTERISTICS - 1980 (April 1983)
14. CENSUS - HOUSING HIGHLIGHTS - TENURE, RENT, VACANCY - 1980 (April 1983)
15. CENSUS - MINORITIES - 1980 (September 1983)
16. CENSUS - INCOME PROFILE - 1980 (September 1983)
17. CENSUS - TRANSPORTATION TO WORK AND PLACE OF WORK (March 1984)
18. SCHOOL CLOSINGS AND BUILDING RE-USE (August 1984)
19. CENSUS - OCCUPATION AND INDUSTRY (April 1984)
20. ACT 247 ACTIVITY - 1983 (March 1984)
21. CENSUS - EDUCATION PROFILE (December 1984)
22. ACCESSORY APARTMENTS IN SINGLE FAMILY HOMES: ISSUES AND REGULATIONS (May 1984)
23. HOUSING OPPORTUNITIES FOR THE ELDERLY (July 1984)
24. HOUSING AFFORDABILITY - CHESTER COUNTY 1983 (July 1984)
25. MIXED USE ZONING (October 1984)
26. HOUSING SUPPLY CHANGE 1970-80 (January 1985)
27. COMMUNITY LIVING ARRANGEMENTS (April 1985)
28. POPULATION PROJECTIONS 1990-2000 (December 1985)
29. SLIDING SCALE ZONING (January 1986)
30. BANNERS AND TEMPORARY SIGNS (January 1986)
31. CENSUS OF POPULATION - SINGLE PARENT AND SINGLE PERSON HOUSEHOLD - 1970-1980 TRENDS (November 1986)
32. ELDERLY - CHARACTERISTICS AND TRENDS (August 1987)
33. WETLANDS (August 1987)
34. MICROWAVE ANTENNAS (December 1987)
35. POPULATION PROJECTIONS - 1990-2010 (May 1988)
36. HOUSING TRENDS (December 1988)
37. (Revised) STREAM WATER QUALITY CLASSIFICATIONS (July 1991)
38. MPC ACT 170 AMENDMENTS, 1990 (March 1990)
39. HOUSING COSTS (September 1990)
40. SPRAY IRRIGATION (November 1990)
41. PLANNED RESIDENTIAL DEVELOPMENT (December 1990)
42. ON-LOT SEWAGE MANAGEMENT PROGRAMS (October 1991)
43. AN INTRODUCTION TO WELLHEAD PROTECTION FOR CHESTER COUNTY MUNICIPALITIES (November 1991)
44. HOUSING ALTERNATIVES FOR SPECIAL NEEDS GROUPS (January 1992)

IMMACULATA COLLEGE (CONTINUED)

Note from Mr. Reimenschneider - The Applicant can agree with a condition that at a future date they will conform to the entrance requirements.

ACTION:

The Applicant will grant an extension to the Planning Commission so that they can consider the modifications.

The Applicant expressed concern regarding delaying the plan because of the PennDOT approval to the West entrance. The Planning Commission requested Mr. Reimenschneider to send the plan for the proposed West entrance to PennDOT for approval.

The Applicant will include the proposal of a West entrance for a conditional decision, pending PennDOT approval.

3. RUBINO ESTATE - PROPOSED ZONING AMENDMENT

COMMENTS:

No information was available during the Public Work Session. A presentation was made during the public meeting by Mr. James McErlane during the Public Meeting.

See Addendum for partial transcript of presentation and Q & A session.

ACTION:

The Planning Commission will take no action at this time. This presentation is for information only.

4. LIBERTY SQUARE CONDOMINIUM OWNERS - PROPOSED ZONING AMENDMENT

COMMENTS:

This was tabled at the request of the Applicant.

5. GREAT VALLEY SCHOOL DISTRICT - LIGHTING AT FOOTBALL STADIUM

COMMENTS: (From Public Work Session)

Pole height proposed is 90 feet.

Impact on surrounding property.

Applicant is required to file for Special Exception through Zoning Hearing Board.

ENGINEERING COMMENTS.

GREAT VALLEY SCHOOL DISTRICT (CONTINUED)

Attached Addendum is a partial transcript of a Q & A session in which audience participation is included.

ACTION:

The Applicant will apply to the Zoning Hearing Board for Special Exception.

6. JAMES F. CLARK/LINDA REILLY - PROPOSED RESIDENTIAL SUBDIVISION PLAN

Swedesford Rd., across from K.D. Markley School

COMMENTS:

If access road crosses over a flood hazard area, the Applicant will have to apply to the Zoning Hearing Board.

Application has been made to PennDOT regarding the access road.

A Planning Module will have to be submitted. Perc feasibility has to be demonstrated.

ENGINEERING COMMENTS.
Suggest a realignment of access to avoid flood hazard area.

ACTION:

The Applicant will review the Planning Commission comments and resubmit.

7. THE COMMONS AT GREAT VALLEY - FINAL SUBDIVISION PLAN

COMMENTS:

Property is primarily located in Charlestown Township. Six acres of the property are located in East Whiteland Township.

Special Exception was granted by the Zoning Hearing Board so the Applicant could comply with Charlestown Township setback requirements.

The traffic light escrow will have to be made in East Whiteland Township. East Whiteland is required to get the permit.

ENGINEERING COMMENTS.

ACTION:

The Planning Commission voted unanimously to approve the Final Subdivision Plan, subject to Engineering Comments.

8. MALVERN MEETING HOUSE - LAND DEVELOPMENT SKETCH PLAN

Zoned C-4

COMMENTS:

Applicant plans to construct office/storage shed.

Parking requirements have not been defined to include requirements for the office, in addition to existing parking requirements. Applicant needs to demonstrate parking conformity of entire lot with zoning requirements.

ACTION:

The Applicant will review Planning Commission comments and resubmit the Preliminary Plan.

9. PROPOSED 537 PLAN

COMMENTS:

ENGINEERING COMMENTS.

ACTION:

The Planning Commission is in receipt of a draft of the Proposed 537 Plan. It is under consideration and review by the Planning Commission.

A copy will be available in the Township building. Public comments can be received at the Planning Commission meetings, as well as the Supervisors meetings.

10. PROPOSED HISTORIC PRESERVATION REGULATIONS AND PROPOSED AMENDMENT TO HISTORICAL COMMISSION ORDINANCE

COMMENTS:

In the Public Work Session, along with two members of the Historical Commission, the proposed ordinance was reviewed at great length, and numerous revisions were noted.

Time consideration issues may have to be discussed with Ron Nagle.

ACTION:

The proposed amendment to the Historical Commission Ordinance is undergoing further revisions. It should be available in the near future.

The meeting was adjourned at 10:50 P.M.

THE COUNTY OF CHESTER

PLANNING COMMISSION
235 West Market Street
West Chester, PA 19382
(215) 344-6285

COMMISSIONERS
Joseph J. Kenna, Chairman
D.T. Marrone
Patricia M. Baldwin

October 28, 1991

KCI TECH. & ASSOC., INC.
OCT 29 1991
RECEIVED

John J. Finn, Chairman
East Whiteland Township
Board of Supervisors
9 Woodcrest Lane
Frazer, PA 19355

Re: Act 537 Plan Update

Dear Mr. Finn:

The Chester County Planning Commission has completed its review of the above referenced revision to the Official Sewage Facilities Plan, as required by the Pennsylvania Sewage Facilities Act.

The Commission offers the following comments on the proposed plan update:

1. The Commission believes the relationship between soil suitability over carbonate formations and on-lot systems needs further exploration. To our knowledge DER does not consider soils over carbonate formations completely unsuitable for on-lot disposal systems. Soil descriptions for Conestoga and Hagerstown soils in Appendix D indicate that these soils have been found "on occasion" to be unsuitable. There may be additional siting requirements, but on-lot systems are not completely restricted from these areas. Thus, the statement in Section B on page 62 that, "...72% of the Township is comprised of soils unsuitable for on-lot sewage disposal", may be misleading. There may also be opportunities for surface land application on these areas that could be explored.

2. The Commission promotes clear relationships between zoning, soils, and sewage disposal methods. Study area 7A shows this relationship between suitable soils, R-1 zoning and the use of on-lot disposal system. The large area of R-1 zoning in the central and northwestern part of the Township falls within study areas 4A, 4B, 5B, 6C, 6D, and 6E. All of these study areas are slated for public sewer extension. Considering comment #1 above, the Commission believes these areas could also use on-lot disposal or other land application methodology.

3. The Commission believes that an analysis of alternatives is important for environmental protection. It is reasonable that study areas #1 and #2 do not require an alternatives evaluation because they are existing service areas. However, only in study area #7 does the plan address several alternatives for evaluation. Study areas #3, 4, 5, and 6 should include an evaluation of alternatives. It seems inappropriate to us to require Valley Forge Sewer Authority to provide this analysis later.

4. The Commission believes that an on-lot sewage management program is an essential component of a sewage facilities plan. On-lot systems can last indefinitely if they are adequately maintained, meaning routine pumping and inspection. This can only occur through a Township program that requires, at least proof of maintenance. Education material, while important, cannot ensure that all systems will receive the required maintenance. It is likely that many on-lot system problems can be prevented if systems are pumped every three years. The Commission believes that a management program as is described in Section 71.73 of Title 25 PA Code Chapter 71, DER Rules and Regulations should be included in the plan.

5. Given the Valley Crossing development, which has been granted preliminary approval for a portion of study area 7B, how will the selected alternative, land application, be implemented based on the plans for the site? Although we strongly support this method of disposal, its implementation is not clear, especially since newspaper articles are reporting a different form of disposal for the development. The Commission believes that the Act 537 revision for the Valley Crossing development should be integrated into this Township plan update rather than have each, the plan update and the revision for new development, presented to DER for separate review. This is particularly important since the plan update and the proposed facility for Valley Crossing are significantly different in approach to sewage disposal.

These comments are offered prior to formal action by the Planning Commission. If the Commission should have additional comments on the proposed revision, they will be forwarded to you.

If you have any questions regarding this review, please call me at 344-6285.

Very truly yours,

George W. Fasic
Secretary

GWF/MLS/krp
cc: Maria Goman, CCHD
Glenn Stinson, PADER
J. Donald Reimenschneider
Kohll and Associates, Inc.

1991

United States Department of the Interior

NATIONAL PARK SERVICE

VALLEY FORGE NATIONAL HISTORICAL PARK
P. O. Box 953
VALLEY FORGE, PA 19481-0953

N REPLY REFER TO:

L76

October 29, 1991

Mr. John J. Finn
Chairman, Board of Supervisors
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Dear Mr. Finn:

The National Park Service (NPS) supports East Whiteland Township in its efforts to provide environmentally sound sewage disposal systems. Most of the Township is already serviced by the Valley Forge Sewer Authority (VFSA). East Whiteland's new 537 plan recommends that sewer service be extended to most areas in the Township where development has been proposed. We believe this is an acceptable way to manage wastewater as the VFSA has provided excellent service to surrounding townships while having minimum impact on the Schuylkill River, in which it discharges. This system is preferable to a proliferation of onsite sewage package plants constructed by private landowners and operated by a number of contractors.

The new 537 Plan excludes a large piece of the Township, designated as Area 7, from sewer service. Area 7 is really two tracts, 7A and 7B. Tract 7A in the southwest section of the Township is mostly in the Ridley Creek watershed, tract 7B in the northwest corner is chiefly in the Brandywine watershed. Wastewater management alternatives proposed for 7A and 7B include both on-land disposal and stream discharge. It is our view that on-land disposal systems, such as spray irrigation, are far less threatening to the environment than stream discharge.

One of the alternatives (No. 6) listed for tract 7B calls for the construction of an onsite sewage package plant with discharge into Valley Creek of 500,000 gallons per day of tertiary treated effluent. Valley Creek's confluence with the Schuylkill River is in Valley Forge National Historical Park. Anything that affects Valley Creek eventually makes its way downstream and impacts the park's riparian and aquatic resources. Valley Forge NHP is the largest landowner on Valley Creek, encompassing about four miles of streambank. Approximately four million people visit Valley Forge each year. Many are attracted to Valley Creek, one of the park's prime natural resources. It is a Class A coldwater fishery, a superb trout stream. We believe that no further degradation of Valley Creek should be permitted. We hope that East Whiteland Township will consider the concerns of the National Park Service when it revises its 537 plan for Area 7B.

On-land disposal systems are recommended in the new 537 Plan and seem to be given first priority where it is not feasible to tie in with VFSA. We agree with this approach. A major drawback to this type of facility is the amount of land required. It is safe to predict that most builders would tend to avoid a disposal system which might inhibit development of the greatest amount of land. However, we think the Township could negotiate with developers to set aside sufficient acreage for efficient on-land sewage disposal facilities to service new subdivisions.

Generally, the National Park Service supports the Township's new 537 Plan which recommends the extension of VFSA's sewer service and the use of on-land disposal systems. NPS believes that no further degradation of Valley Creek should occur. The stream is a wonderful regional resource shared by two counties, four townships, and a national park. It ought to be viewed as an aquatic treasure to be protected from developmental pressure. If we manage the stream corridor well, it will remain an important asset for our community, but, if we are so shortsighted that we sacrifice the creek to short term gains, then the public will be poorly served. The National Park Service urges all of us who use Valley Creek to implement management strategies which will protect and enhance the creek's natural resources.

Sincerely,

Warren D. Beach

Warren D. Beach
Superintendent

cc: Ms. Hunt
Mr. Cockerham
Mr. Fasic
Mr. Charles Rehm
Ms. Maria Goman

RESOLUTION NO. 21-92

EAST WHITELAND TOWNSHIP

A RESOLUTION AUTHORIZING
THE VALLEY FORGE SEWER AUTHORITY
TO PREPARE A REGIONAL ACT 537 PLAN

WHEREAS, the General Assembly by its Act 537 of January 24 1966, (P.L. 1535, 35 P.S. 750.5 et. seq.), requires each municipality to submit to the Department of Environmental Resources an officially adopted plan for sewage, and revise it periodically, and

WHEREAS, the Board of Supervisors of East Whiteland Township has initiated an individual Act 537 Plan update to determine the Township's sewerage needs and to delineate future sewer service areas,

NOW THEN THEREFORE BE IT RESOLVED, that the Board of Supervisors of East Whiteland Township does hereby authorize the Valley Forge Sewer Authority (VFSA) to proceed with the preparation and submission of a Regional Act 537 Plan. Said Regional Act 537 Plan will summarize projected public sewer needs, as documented in the individual approved Act 537 Plan updates prepared by each of the constituent municipalities. Alternatives for collection/conveyance and wastewater treatment facilities will be analyzed and a recommended plan prepared.

By this Resolution, the Valley Forge Sewer Authority is hereby appointed as the lead agency for the purposes of applying for and receiving any grant monies applicable to the cost of preparation of said Regional Act 537 Plan.

ADOPTED this 13th day of July 1992.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

Charles C. DiSipio, Chairman

Glenn H. Cockerham

Florence D. Hunt

ATTEST:

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (215) 644-5591

SURENDER S. KOHLI, P.E.
PRESIDENT

CONSULTING ENGINEERS
PLANNERS
LANDSCAPE ARCHITECTS

July 23, 1992

Mr. J. Donald Reimenschneider
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Thomas L. Kelly, Esq.
17 E. Front Street
P.O. Box 1048
Media, PA 19063-0848

Re: 537 Plan Revision

In Accordance with our meeting of July 17, 1992 enclosed herein please find revised page numbers 1, 15, 42, 53 and 59 for the East Whiteland Township 537 Plan. If the above revisions are satisfactory, please advise and I will transmit the copies to the East Whiteland Township Board of Supervisors, the Chester County Planning Commission, the Chester County Health Department and the Department of Environmental Resources for their records. Please note that these revisions will be incorporated when we revise the total document which will take place upon receiving the comments on the current draft document from all of the appropriate agencies.

If you have any questions, please contact me.

Very truly yours,

Surender S. Kohli

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Engineer

SSK/amg

EXHIBIT P2

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(SPECIAL STUDY 2011)

"SPECIAL STUDY"

AS AN AMENDMENT TO

ACT 537

Prepared For:



East Whiteland Township

Living. Working. Learning - Together.



Prepared by:

ADVANCED GeoServices™

Engineering for the Environment. Planning for People.

1055 Andrew Drive, Suite A
West Chester, PA 19380

Revised September 2011
AGC Project No.: 2009-2412

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4 Projected Flows for East Whiteland Township up to Year 2035
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7 Location of Trunk LV and Potential Capacity for Tredyffrin Township
8 DEP Response Letter 1
9 DEP Response Letter 2
10 Resolution No 11-2002

ACRONYMS

AGC	Advanced GeoServices Corp.
EDU	Equivalent Dwelling Units
EWT	East Whiteland Township
GPD	Gallons Per Day
K&A	Kohli & Associates, Inc.
MGD	Million Gallons Day
PADEP	Pennsylvania Department of Environmental Protection
P.S.	Pump Station
TAR	Task Activity Report
VFSA	Valley Forge Sewer Authority

1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

A meeting was held on March 15, 2010 at the Pennsylvania Department of Environmental Protection's (PADEP's) regional office in Norristown. Personnel from Kohli & Associates, Inc. (K&A), East Whiteland Township (EWT) and Advanced GeoServices Corp. (AGC) were in attendance at the meeting, with several key PADEP representatives. Guidance was provided by the PADEP regarding a "Special Study" that is necessary to prepare an update to East Whiteland Township's existing Act 537 Plan. This effort focuses on the study areas related to the replacement and upgrade of the Mill Lane Pump Station. The study is required by PADEP and is intended to be completed prior to finalizing the design and permitting for the Mill Lane Pump Station replacement project.

The "Special Study" is necessary to address the needs of the existing sanitary collection and conveyance system, in order to accommodate the upgrade of the Mill Lane Pump Station. This will require the Township to cross-reference the final planning recommendations developed during the study, with Tredyffrin Township's Act 537 Plan Revision for Valley Creek Trunk Sewer projected sanitary flows thru year 2035. The study will focus on the collection and conveyance system upstream and downstream of the Mill Lane Pump Station, and will provide information pertaining to new sanitary sewer service connections and potential flow constrictions. A copy of the Authorization Letter (POS) from PADEP for this Plan of Study and Task Activity Report (TAR) is included in Exhibit 1.

This report intends to outline five specific service areas; which are to be provided with sanitary sewers to serve residential and commercial units totaling 1,644 equivalent dwelling units (EDU's). These areas were outlined in the original 537 Plan report prepared in 1995 approved by the EWT Board of Supervisors in 1996. The areas were expected to be connected in the early 2000's. The majority of the areas are currently served by on-lot sewage disposal systems; and several of the areas represent new development. Many of these on-lot systems are beyond their useful life and repair or replacement is not feasible.

This study is being conducted as a "Special Study" in accordance with Title 25 Chapter 71 of the Pennsylvania Code. Specifically, Chapter 71.1(iii) states that a special study is a study, survey, investigation, inquiry, research, report or analysis which is directly related to an update revision. The studies provide documentation or other support necessary to solve specific problems identified in the update revisions. As a result of this study, all developed areas and projected sanitary sewage flows within the Township will have been accounted for and factored into the 537 Plan. Therefore, the sewer infrastructure planning within this special study report will encompass and account for all remaining unsewered areas within the Township.

1.2 CURRENT EAST WHITELAND TOWNSHIP ACT 537 PLAN SUMMARY

The current Act 537 "Official Plan", prepared for East Whiteland Township, Chester County, was last revised by a "Special Study" in May 2000 and was adopted by the East Whiteland Township Board of Supervisors. The noted "Special Study" report was prepared by K&A to support Tredyffrin's Revision for the Valley Creek Trunk Sewer Project and in accordance with Chapter 71 of Title 25 of the Pennsylvania Code.

The EWT Sewage Facilities Plan map, included as Exhibit 2, illustrates the proposed sewage areas reviewed in this study. This map shows that five areas that were proposed to be served by public sewage collection facilities before 2006; and another two were envisioned to be served beyond 2006. From the original 537 Plan report submitted in 1995, the noted major issues regarding future sewage capacity was the capacity limitation of the Wilson Road Pump Station and the Valley Forge Sewage Treatment Plant; which are both located downstream of EWT's sewage collection system. The report notes that, until the Wilson Road Pump Station is upgraded to accommodate a potential Valley Forge Sewage Plant expansion, EWT may NOT adhere to their policy to serve the proposed areas indicated in their Act 537 Plan by making these connections into their public sewer system. However at this time, Tredyffrin Township has completed an update to their Act 537 Plan for Valley Creek Trunk Sewer to include an upgrade of the Wilson Road Pump Station. The Tredyffrin project is currently in design, and Tredyffrin's

Act 537 Plan update outlines the proposed future flows that the new Wilson Road Pump Station can accommodate. EWT's future projected flows, including the expansion of the Mill Lane Pump Station, are included in this planning.

The sewer service connections included in this "Special Study" are expected to be connected within the timeframes as noted in Table 1.1. These connections will provide sewer capacity to serve future service areas that were not included in the original Act 537 Plan from 1995. These new areas are Malvern Hunt, Whiteland Village and William Henry Apartments. The Whiteland Village area has undergone planning and design; construction is currently in progress, however the completion has been stalled due to funding constraints. In developing a summary of the future flow projections, it was found that a section of the gravity collection system downstream of the Mill Lane Pump station will need to be replaced to handle future sanitary flows. This gravity sewer section is identified within this report.

The original Act 537 Plan from 1995 contains a figure that illustrates all of the areas discussed within this report, with exception of the new areas Malvern Hunt, Whiteland Village and William Henry Apartments. These areas were on the sewer map, but were not highlighted as part of EWT's system. These areas are expected to be added to the Township's collection system, and have been included in the future flow projections. The referenced figure is included as Exhibit 2 to this "Special Study". Also included is Exhibit 3 which denotes the specific previously planned five (5) Service Areas to be connected, and labels the new Service Areas noted above (Malvern Hunt, Whiteland Village and William Henry Apartments). The five (5) previously planned project Service Areas that will be addressed in this "Special Study" are:

Area 1: Areas along Route 401 Corridor
Area 2: Bacton Hill and Swedesford Road Areas
Area 3: Planebrook Road Area
Area 4: Church Road Extension to eliminate the Church Road Pump Station (P.S. #. 9)
Area 5: Immaculata University Area

Exhibit 3 provides a color-coded outline of these areas, and also labels the future areas to be added to the EWT's collection system.

Table 1-1 Anticipated Connection Timeline

Area	Location	When to be serviced
1	Along Rt. 401	2010 - 2015
2	Bacton Hill and Swedesford Road	2010 - 2015
3	Planebrook Area	2010 - 2015
4	Church Road Extension	2015 - 2020
5	Immaculata University	2015 - 2020

Note that the new future areas to be serviced by EWT (Malvern Hunt and William Henry Apartments) are anticipated to be connected between 2020 and 2030 and have been identified in this study for future planning purposes. As noted, Whiteland Village has been approved and is currently in construction. New 8-inch and 10-inch sanitary sewer trunk lines are currently being constructed from Whiteland Village to the Mill Lane Pump Station. Final connections are expected to be completed within the 2011 calendar year. As previously noted, at the time when these areas are connected to the sewers, this will encompass the total Township sanitary sewer service area.

1.3 EAST WHITELAND TOWNSHIP CHAPTER 94 REVIEW

East Whiteland Township has been allocated to contribute a peak capacity of 9.5 million gallons per day (MGD) (3.8 MGD average) to the Valley Creek Trunk Sewer (as noted in the EWT 1995 Act 537 Plan Report). This total flow includes a 300,000 GPD allocation from Charlestown Township, which is conveyed to EWT. From the revised projected average flow at year 2035 for East Whiteland Township (see Exhibit 4), the projected average flow for the Township will be ~3.6 MGD. This is within the allocation of the average flow of 3.8 MGD.

2.0 WORK TO BE COMPLETED FOR NEW SERVICE AREAS TRIBUTARY TO THE MILL LANE PUMPING STATION

2.1 PROJECT SERVICE AREAS

2.1.1 Area 1 - Areas along Route 401 Corridor (2010 – 2015)

The area along Route 401 includes existing and projected flows from 147 EDUs and an allocated flow of 24,000 gallons per day (GPD) for the Malvern Courts mobile home park. This area is proposed to be served by public sewer between the years 2010 and 2015. A sanitary sewer line was extended from Charlestown Meadows (Charlestown Township Development, located at Rt. 401 and Newcomen Road) along Route 401 to the Hillbrook Pump Station (P.S. # 11). This sanitary sewer line will serve all development (existing and proposed) in this area. Eventually, it is anticipated that this sewer extension will permit the connection of Malvern Court, which is one of the new Service areas. Malvern Court is currently served by an onsite privately owned and operated wastewater treatment facility. Therefore, the connection of these sewers within this service area will facilitate the decommissioning and removal of the existing privately owned treatment facility. These sanitary sewer flows will be conveyed to the Mill Lane Pump Station.

2.1.2 Area 2 - Bacton Hill and Swedesford Road Areas (2010 – 2015)

Sanitary sewers will be extended along Bacton Hill Road and along South Bacton Hill Road to eliminate existing on-lot sewer systems. This area also includes the Swedesford Road area which conveys projected flows from 300 EDUs and is proposed to be connected to the public sewer system between 2010 and 2015. These sanitary sewer flows will be conveyed to the Mill Lane Pump Station.

2.1.3 Area 3 – Planebrook Area (2010 – 2015)

The Planebrook area includes existing and projected flows from 195 EDUs, and a majority of the existing residential dwellings are served by 30 – 35 year old on-lot sewer systems. The sanitary sewer extension from Whiteland Village (currently planned and partially constructed) will facilitate connection to the Planebrook Area located on the south side of Rt. 202 and will also provide access to the properties located on the north side of Swedesford Road and will extend to Bacton Hill Road area.

2.1.4 Area 4 - Church Road Extension - To Eliminate Church Road Pump Station (2015 – 2020)

Presently, the Church Road Pump Station (P.S. # 9) flow is ~168,500 GPD. Additionally, there are 5 projected EDUs that will be connected to the Church Road Pump Station. The Church Road Pump Station pumps the sanitary sewage to a manhole located at the intersection of Church Road and Rt. 30. The sewage then continues via a gravity sewer along Rt. 30 to the Westgate Pump Station (P.S. # 8). The Westgate Pump Station pumps the sanitary sewage to another gravity sewer line, which flows to Tredyffrin Township. Currently, this flow is not tributary to the Mill Lane Pump Station.

With the planned gravity sewer extension from Swedesford Road; it is anticipated that the Church Road Pump Station can be eliminated and the sewage will be collected by the gravity sewer to the Mill Lane Pump Station. This gravity sewer will also collect the sewage from the Church Road area.

2.1.5 Area 5 - Immaculata University Area (2015 – 2020)

The Immaculata University and surrounding area is located in the southwestern portion of the Township. Immaculata University has been allocated 250,000 GPD of sanitary sewage flow. Once Immaculata is connected, the William Henry apartments may also be connected; this will

add approximately 75,000 GPD. This area is anticipated to be connected between 2015 and 2020; which will provide time for the Wilson Road Pump Station and Valley Forge Treatment Plant to be upgraded.

Since the Whiteland Village sewer has been extended to Swedesford Road; the connection of the Immaculata University service area is dependent upon the extension of the gravity sewer from Swedesford Road to the Church Road Pump Station (P.S. # 9). The sanitary sewer flows from the Immaculata University service area can them be extended to this sewer line and will be conveyed to the Mill Lane Pump Station.

2.2 REVIEW OF ALTERNATIVES

With exception to the Church Road area, the other four proposed service areas under consideration in this "Special Study" are serviced by on-lot sewage disposal systems. Since sewer infrastructure will be within a reasonable distance from each of these service areas at the proposed times indicated as part of the Implementation Schedule, the most feasible alternative will be to connect these service areas to the public sewer system and eliminate the on-lot sewage disposal systems.

The Church Road area sewer configuration currently requires the sewage flow to be pumps from Pump Station #9 (Church Road PS) to a gravity sewer that flows to Pump Station #8 (Westgate PS). The sanitary sewage is pumped twice in this current configuration. Therefore, the most feasible alternative for this service area is to eliminate the redundant pumping, connect the remaining customers with on-lot sewage disposal systems and tie this area into the Mill Lane Pump Station collection system.

2.3 IMPLEMENTATION

2.3.1 Cost

The estimated probable construction costs to expand the sanitary sewer conveyance system to accomplish the outlined work are as follows:

Area 1 - Areas along Route 401 Corridor

The estimated construction cost of this project is approximately $920,000; which excludes the road surfacing cost.

Area 2 – Bacton Hill and Swedesford Road Area

The estimated construction cost of this project is approximately $975,000; which excludes the road surfacing costs.

Area 3 - Planebrook Road Area

The estimated construction cost of this project is approximately $270,000; which excludes the road surfacing costs.

Area 4 - Church Road Extension

The estimated construction cost of this project is approximately $300,000; which excludes the road surfacing cost.

Area 5 - Immaculata University Area

The estimated construction cost of this project is approximately $1,125,000; which excludes the road surfacing cost.

2.3.2 Funding

Financing of these projects will be accomplished through the Board of Supervisors of East Whiteland Township. Refer to Exhibit 8 for additional information.

2.3.3 Schedule

It is anticipated that each individual project and the work associated with these projects will generally be completed within an 8 to 12 months once authorization to proceed is received by EWT. Refer to Section6.0 for additional information pertaining to the Implementation Schedule.

2.3.4 Operation and Maintenance

All sanitary sewer facilities to be constructed under this "Special Study" will be owned and operated by East Whiteland Township. The sanitary sewer lines and manholes will be constructed within the Township owned rights of way or easements obtained prior to the start of any construction. In the event that new pump stations and force mains are deemed necessary, additional planning will be provided to PADEP for review and approval, permit applications will be submitted and all local communities and agencies will be notified appropriately. These facilities will also be constructed within the Township owned rights of way or easements obtained prior to the start of any construction.

New facilities will fall under the Maintenance Plan currently in place by East Whiteland Township. This Plan includes the periodic cleaning and flushing of sewer lines and manholes,



inspections of pump stations, as well as, the maintenance associated with pump station operations.

It is clear that EWT, as owner of these new facilities, will be responsible for the care and maintenance of all gravity sewers, manholes, force mains and proposed pump stations.

2.4 CONCLUSIONS

Based upon the information provided above, it is concluded that all of the units within the five proposed Study Areas will be best served by providing extensions of the existing sanitary sewer facilities to connect these areas. These sewer extensions will also provide the ability for the Township to connect all proposed "new" service areas as outlined herein.

Also, the previously agreed upon sanitary sewer flow allocations from EWT to Tredyffrin Township (as outlined in Tredyffrin's Revision for the Valley Creek Trunk Sewer Project) are adequate and coincide with the projected flows of EWT at year 2035, which includes the five proposed Study Areas and new Service Areas. At a point in the future, the five proposed Study Areas will be within a reasonable distance of gravity collection system sewers. It is our opinion and best judgment that the suitable alternative is to provide these areas with public sewage and eliminate on-lot sewer systems and privately owned treatment facilities.

3.0 SUMMARY OF ALL OTHER SERVICE AREAS TRIBUTARY TO THE MILL LANE PUMPING STATION

As illustrated on the attached drawing (See Exhibit 3), "Drainage areas and projected flows: East Whiteland Township" updated July 2008, the flows from areas in Point "A" (outlined in yellow) will be conveyed to Mill Lane Pump Station (P.S. # 2). The exception is with the flow from the area that serves the Deer Run Pump Station (P.S. # 1), since this is separate and is not tributary to Mill Lane Pump Station. Below is the summary of Mill Lane Pump Station projected flows, including the projected flows from the five (5) proposed project Study Areas and the new Service areas outlined in this "Special Study".

Table 3-1 Mill Lane Pump Station Projected Flows with Charlestown (Average & Peak)

Year	Current and Projected Average Daily Flows		DEP Peaking Factor*	Current and Projected Peak Flows	TDH
	(GPD)	(GPM)		(GPM)	(FEET)
2010	**817,600**	568	3.13	**1,777**	**150**
2015	**1,380,455**	959	2.94	**2,816**	**183**
2025	**2,126,055**	1,476	2.81	**4,152**	**142****
2035	**2,304,805**	1,601	2.78	**4,454**	**151****

* Peaking Factors were extracted from PADEP Domestic Wastewater Facilities Manual.

** Assumes that the force main from the Mill Lane PS will be replaced prior to 2025 (from a 14-inch to a 20-inch)

For year 2035, the projected peak hourly flow of Mill Lane Pump Station will be 4,454 GPM (~6.4 MGD).

4.0 REVIEW OF SANITARY SEWER COLLECTION SYSTEM DOWNSTREAM OF MILL LANE PUMPING STATION

4.1 GRAVITY TRUNK SEWERS WITHIN EAST WHITELAND TOWNSHIP

The gravity trunk sewers within EWT downstream of the Mill Lane Pump Station start from Manhole 2-6 (18"), which is the discharge manhole for the pump station, to Manhole 21-5 (36"). Below in Table 4-1 are the critical capacities of each major section of the sewer trunk line.

Table 4-1: Critical Sewer Capacities Downstream of Mill Lane Pump Station

Segment	Critical Capacity (MGD)*	Estimated Peak Flow (MGD) 2019	Estimated Peak Flow (MGD) 2029
MH 2-6 to MH 8-2(18")	7.06	6.00	6.03
MH 8-2 to MH 8-12(20")	7.81	6.00	6.03
MH 8-12 to MH 18-2(20")	6.21	6.55**	6.95**
MH 18-2 to MH 18-14(20")	5.98	6.90**	7.30**
MH 18-14 to MH 19-4(20")	6.21	7.25**	7.43**
MH 19-4 to MH 20-3(24")	11.05	9.00	9.35
MH 20-3 to MH 20-8(27")	11.79	9.00	9.35
MH 20-8 to MH 21-4(27")	12.64	9.00	10.68
MH 21-4 to MH 21-5(36")	17.95	9.00	10.68

* Data from Exhibit 5 of East Whiteland Township Sanitary Sewer System Evaluation, prepared by Kohli and Associates, Inc on June 22, 2005.

** Sewer Section Capacity exceeded starting 2019

From the results of the evaluation which includes the review of the historic projected flow data, it is noted that the future projected flows will exceed the capacities of three of the sewer trunk line segments; (1) MH 8-12 to MH 18-2 (20"), (2) MH 18-2 to MH 18-14 (20"), and (3) MH 18-14 to MH 19-4 (20"). As noted, these three sewer trunk line segments will need to be replaced before year 2019 with 24-inch piping. Refer to Exhibit 5 for a map of these segments.

Since the projected flows that include the five proposed Study Areas and the new Service Areas will be implemented by 2020; we are recommending that these sewer segments be replaced in a similar timeframe. This will assure that the existing Sewer capacities will not be exceeded. Refer to Section 6.0 for the Implementation Schedule.

4.2 REVIEW OF COLLECTION SYSTEM WITHIN TREDYFFRIN TOWNSHIP IN MOST RECENT ACT 537 PLAN UPDATE

The majority of EWT's flow is discharged to manhole No. LV77A located at the Tredyffrin - East Whiteland boundary. The flow is metered by the Matthews Road meter chamber. A small portion of EWT's flow, which is also metered, discharges to the Willistown Sewer System.

4.2.1 Gravity Trunk Line Tributary to Wilson Road Pumping Station

East Whiteland Township's flow will be transferred to the Wilson Road Pump Station via the trunk sewer line labeled as LV. The LV trunk sewer generally extends in an east to west direction from the Tredyffrin – East Whiteland boundary to the Wilson Road Pump Station, which is located near the point where Valley Creek crosses under the Pennsylvania Turnpike. The capacity evaluation (Table 7 from the Act 537 Plan Revision for Valley Creek Trunk Sewer) indicates that all except one segment of LV trunk sewer line has adequate capacity to convey the projected wastewater flows through the year 2035. Several pages from Table 7 are included as Exhibit 6 to this "Special Study" for reference. Additional capacity modeling completed after the initial capacity evaluation of this trunk sewer segment suggests that there is adequate capacity to convey the projected sanitary flows. Prior to proposing improvements to add sanitary sewage flows to the EWT's collection system; the Township will notify VFSA and Tredyffrin Township of the intent and confirm that capacity is available.

The limited capacity sewer trunk line segment is projected to occur within Manhole LV 58 to LV 57 by the year 2018 (based on projected flows). This segment of sewer is situated where the Valley Creek Trunk Sewer crosses under U.S. Route 202. The location is shown on Exhibit 7 of this "Special Study" (Also on Figure 3 and Figure 10 in the ACT 537 Plan Revision for Valley Creek Trunk Sewer). The pipe capacity is noted to be approximately 12.7 MGD. This capacity has been projected to be exceeded at year 2018; however as noted additional modeling has indicated that the capacity is available to convey the 2035 projected flows. Three alternatives are provided in the above mentioned Act 537 Plan; (1) enlarge existing sewer; (2) install parallel sewer; and (3) no action. In this Tredyffrin Act 537 the alternative recommended is installation of a parallel sewer. For details, please reference Chapter 6.1.2 and Chapter 6.2.2 of Tredyffrin Township Act 537 Plan Revision for Valley Creek Trunk Sewer. As noted, the sewer system capacities will be confirmed prior to adding additional sanitary sewer flows to the collection system.

The projected flows for EWT within the study period between 2010 and 2015 will not affect this capacity limit situation. However, as noted, the flow capacities will be confirmed for sewer collection system connection projects beyond 2015 to avoid capacity problems as a result of the projected flows for EWT.

4.2.3 Wilson Road Pumping Station Capacity

Currently, the Wilson road Pumping Station has the capacity for a peak flow of 16.27 MGD, and an average daily flow of 7.07 MGD. An ACT 537 Plan update was completed for the Wilson Road Pumping Station in 2008. The 537 Plan Revision was adopted by the affected municipalities in March of 2008, and was approved by PADEP on February 13, 2009. The Act 537 Plan recommended, and PADEP approved, a Phase 1 capacity increase to a peak flow of 20.16 MGD, and an average daily flow of 8.77 MGD. The Phase 1 capacity increase matches the capacity of the Wilson Road Pumping Station force main. Design of the Phase 1 was completed in 2009. Construction is expected to occur during the years 2010 and 2011.

The Phase 1 capacity increase, in consideration of the municipal wastewater flow projections set forth in Tredyffrin ACT 537 Plan Revision for Valley Creek Trunk Sewer, is expected to be adequate until the year 2025. In order to meet the projected capacity needs from 2025 through 2035, the capacity of the Wilson Road Pumping Station will need to be increased to a peak flow of 22.71 MGD (or an average daily flow of 9.87 MGD) by 2025.

The projected flows for EWT within this study period will not affect this capacity limit situation within the Wilson Road Pump Station.

4.2.4 Wilson Road Force Main to the Valley Forge Sewer Authority

The Wilson Road Pumping Station force main is approximately 19,300 feet long, 30-inches in diameter and extends from the Wilson Road Pumping Station to the Valley Forge Sewer Authority (VFSA) Wastewater Treatment Plant in Schuylkill Township, Chester County. Approximately two-thirds of the entire force main length is situated within Valley Forge Park.

The force main capacity is adequate for the current rated capacity of the Wilson Road Pumping station of 16.27 MGD (peak flow) and for the anticipated Phase 1 capacity increase to 20.16 MGD (peak flow). Therefore, based on current wastewater flow projections contained in the Act 537 Plan Revision for Valley Creek Trunk Sewer, the force main capacity should be adequate until year 2025. In order to meet the projected capacity needs from 2025 through 2035, the capacity of the Wilson Road Pumping Station force main (in conjunction with a commensurate capacity increase of the Wilson Road Pumping Station) will need to be increased to a peak flow of 22.71 MGD (9.87 MGD average daily flow) by 2025.

The projected flows for EWT within this study period will not affect this capacity limit situation within the Wilson Road Pump Station force main.

5.0 CONCLUSIONS

The average daily flow projected at year 2035 for East Whiteland Township (~3.6 MGD) will not be changed as a result of the projects outlined in this "Special Study". Therefore, the proposed new Study Areas and Service Areas outlined herein will simply provide the potential to eliminate on-lot sewage systems and privately owned treatment facilities. It is our opinion and best judgment that the suitable alternative is to provide these areas with public sewerage provided that the following actions occur in the timeframes noted within the Implementation Schedule in Section 6.0:

1. Replace the 14-inch force main from the MLPS with a 20-inch force main. The sanitary sewer flows to and from the MLPS will be monitored via flow metering equipment as new connections are added to the collection system. EWT will provide additional planning when it is determined that the force main capacity must be increased. It is estimated that this will occur prior to year 2025; however the actual timeframe will be dependent on funding availability to connect the service areas outlined.

2. Enlarge the pipe size to 24-inch for the sewer sections between (1) MH 8/12 to MH 18-2, (2) MH 18-2 to MH 18-14 and (3) MH 18-14 to MH 19-4 within the EWT collection system before year 2019.

3. Improve the capacity of gravity sewer trunk line from MH LV58 to MHLV57 in Tredyffrin Township before year 2018. The recommended alternative in Tredyffrin Township's Act 537 Plan revision for Valley Creek Trunk Sewer is to install a parallel sewer in order to improve capacity.

4. Refer to Exhibits 8 and 9 for additional clarification in response to PADEP comments.

6.0 IMPLEMENTATION SCHEDULE

TASK	DATE
Act 537 Plan Special Study adoptions	January 31, 2010
Act 537 Plan Special Study submitted to PADEP	September 30, 2010
Complete Design of Pump Station	February 25, 2011
Submit WQM Part II Permit Application	June 17, 2011
Submit Joint Permit Application	June 17, 2011
Obtain WQM Part II Permit	August 2011
Obtain Joint Permit	August 2011
Advertise for construction bids	September 2011
Receive Bids	September 2011
Award Construction Contract	October 2011
Issue Notice to Proceed	October 2011
Complete Construction	May 2012
New pump station online	June 2012
Provide Planning/Easement Information to PADEP for Area 1	August 2012
Complete Design, Permitting for Area 1	December 2012
Complete Bidding and Construction for Area 1	July 2013
Provide Planning/Easement Information to PADEP for Area 2	August 2013
Complete Design, Permitting for Area 2	December 2013
Complete Bidding and Construction for Area 2	July 2014
Provide Planning/Easement Information to PADEP for Area 3	August 2014
Complete Design, Permitting for Area 3	December 2014
Complete Bidding and Construction for Area 3	August 2015
Provide Planning Information to PADEP for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	December 2016
Complete Design, Permitting for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	July 2017

Complete Bidding and Construction for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	July 2018
Provide Planning/Easement Information to PADEP for Area 4	October 2018
Complete Design, Permitting for Area 4	February 2018
Complete Bidding and Construction for Area 4	September 2018
Provide Planning/Easement Information to PADEP for Area 5	December 2018
Complete Design, Permitting for Area 5	June 2019
Complete Bidding and Construction for Area 5	March 2020
Provide Planning Information to PADEP for New MLPS Force Main	August 2020
Complete Design, Permitting for New MLPS Force Main	February 2021
Complete Bidding and Construction for New MLPS Force Main	February 2022

*Note: This schedule is a general estimate of timeframes for implementation of the noted projects based on projected sanitary sewage flows outlined in EWT's sanitary sewer needs analysis. EWT will continue to closely monitor the sanitary sewage flow volumes and will initiate these improvements as the flows meet trigger points as noted in the Special Study.

EXHIBIT 1

Special Study Act 537 Plan Update –
Plan of Study Authorization Letter
And
Scope of Work Letter

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

July 23, 2010

Ms. Terry H. Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 – Special Study Act 537 Plan Update – Plan of Study
Mill Lane Pumping Station
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed Plan of Study (POS), as prepared by Mr. Jack Polce, P.E., of Advanced GeoServices dated May 3, 2010, and a proposed Task Activity Report (TAR) dated July 8, 2010.

The proposed Special Study will evaluate the hydraulic flows for areas within East Whiteland Township's (Township) sanitary collection and conveyance system tributary to the Mill Lane Pumping Station (MLPS). In addition, the proposed Special Study will provide planning for the upgrade and replacement of the MLPS to accommodate flows coming from the service area of the MLPS, including flows from existing development, new development, new sanitary connections from neighboring communities, and from communities or subdivisions previously using on-site sewage disposal systems or privately owned treatment facilities.

The hydraulic capacities of the downstream collection and conveyance systems, including Tredyffrin Township's Valley Creek Trunk Sewer and Wilson Road Pumping Station and the Valley Forge Sewer Authority's sanitary system, will be summarized to verify that these systems can accommodate the future projected sanitary sewer flows from the Township. Please ensure that documentation from the downstream receiving authorities is included in the plan. This documentation must confirm that capacity exists within these downstream conveyance and treatment facilities for the increased flow coming from the upgraded MLPS.

Approval of this proposed POS and TAR is hereby granted. The estimated cost of the plan is $42,487.

Please note, however, that this POS approval does not constitute a final action by the Department of Environmental Protection (Department). When a completed plan is submitted to us, we will act upon it consistent with Pa. Code Title 25, Chapter 71.

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (610) 644-5591 FAX (610) 647-9212

CONSULTING ENGINEERS

SURENDER S. KOHLI, P.E.
PRESIDENT

May 3, 2010

Mr. Keith Dudley
PA Department of Environmental Protection
Southeast Regional Office
2 E. Main St.
Norristown, PA 19401

RE: **Scope of Work Outline for "Special Study" Act 537 Plan Amendment**
East Whiteland Township / Mill Lane Pumping Station

Dear Mr. Dudley:

At our meeting held on March 15, 2010 at your offices in Norristown; guidance was provided regarding the need for a "Special Study" that is necessary to develop an update to East Whiteland Township's existing Act 537 Plan. This study effort will focus on the hydraulic flows for the areas within the Township's sanitary collection and conveyance system related to the upgrade and replacement of the Mill Lane Pumping Station. Also, downstream of the Mill Lane Pumping Station, the Township's sanitary sewer is collected via a gravity trunk sewer line that crosses over into Tredyffrin Township and continues to the Wilson Road Pumping Station. The Wilson Road Pumping Station then pumps the sanitary sewage to the Valley Forge Wastewater Treatment Plant located in Schuylkill Township. The study will provide a review of Tredyffrin Township's most recent Act 537 Plan and will summarize the hydraulic capacities of the downstream collection and conveyance system tributary to the Wilson Road Pumping Station and the Valley Forge Sewer Authority to verify that these systems can accommodate the future projected sanitary sewer flows from East Whiteland Township.

The Mill Lane Pumping Station is being upgraded and replaced for two reasons; 1) the pumping station is over 30 years old, and 2) the station does not have space availability to expand operations and accommodate future projected sanitary sewer flows. The increase in capacity is to accommodate new development, new sanitary connections from neighboring communities and from communities or subdivisions previously using septic (or onsite sewage disposal) systems or privately owned treatment facilities. This study will identify these specific areas as an amendment to the Township's current Act 537 Plan and will quantify the projected increase in sanitary sewer flows for the collection and conveyance system tributary to the Mill Lane Pumping Station.

Very truly yours,

Surender S. Kohli, P.E.
Project Manager

SSK:jlp:cpw

cc: Terry H. Woodman, East Whiteland Township
William H. Steele, East Whiteland Township

EXHIBIT 2

EWT Sewage Facilities Plan

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

RECEIVED
NOV 02 2011
BY:

OCT 31 2011

Ms. Terry Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Act 537 Special Study
Mill Lane Pumping Station
Status: ISSUED
APS ID 38912, AUTH ID 854870
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed Official Sewage Facilities Plan Special Study for the Mill Lane Pumping Station in East Whiteland Township (Township), Chester County, entitled Special Study as an amendment to East Whiteland Township Act 537 for the Mill Lane Pumping Station Upgrade (Special Study), as prepared by Kohli & Associates, Inc., dated September 2010. This Special Study is being submitted to the Department of Environmental Protection (Department) in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program. Additional information was received by the Department of Environmental Protection (Department) on July 11, 2011. The review was conducted in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program.

Approval of the Special Study is hereby granted. This approval provides for the following:

1. The establishment of project service areas that make up the sewer service area of the Township. These areas are delineated on the plan labeled East Whiteland Township, which was prepared by Kohli and Associates, Inc., and last revised April 2004. The delineations for this Special Study were added to this plan in 2011. These areas include:

Area	Location	When Implemented
1	Along Route 401	2010–2015
2	Planebrook and Bacton Hill Road	2010–2015
3	Swedeford Road	2010–2015
4	Church Road Extension	2015–2020
5	Immaculata University	2015–2020
New Area 1	Malvern Hunt	2020–2030
New Area 2	Whiteland Village	2010–2015
New Area 3	William Henry Apartments	2020–2030

a. Area 1 – the extension of sanitary sewers along Route 401 to serve existing and proposed development in this area, including the connection of the Malvern Courts mobile home park, which is currently served by a privately owned and operated wastewater treatment facility.

b. Areas 2 and 3 – sanitary sewer extensions along Bacton Hill Road, Swedesford Road, and the Planebrook area of the Township to serve existing and proposed development in these areas.

c. Area 4 – the extension of sanitary sewers from Swedesford Road along Church Road to serve existing and proposed development in the Church Road area and which will allow for the abandonment and decommissioning of the Church Road Pump Station (PS 9).

d. Area 5 – extension of the proposed sanitary sewer main along Church Road (Area 4) to serve Immaculata University.

e. New Area 1 – commitment to initiate additional sewage facilities planning to connect the existing Malvern Hunt development to public sewer.

f. New Area 2 – sanitary sewer extension from the Whiteland Village development that is currently under construction to the existing sanitary sewer in Swedesford Road.

g. New Area 3 – commitment to initiate additional sewage facilities planning to connect the existing William Henry Apartments to public sewer. Connection to public sewer for this area will be dependent on the extension of public sewers to Immaculata University.

2. The expansion of the Mill Lane Pumping Station (MLPS) to accommodate total average annual flows of 2,304,805 gallons of sewage per day (gpd), which accounts for the existing flows to the pump station and the projected flows to the year 2035 for the service area tributary to the pump station.

3. The replacement of existing 20-inch sanitary sewer mains with 24-inch sanitary sewer mains from Manholes 8-12 to 18-2, 18-2 to 18-14, and 18-14 to 19-4. The permitting and construction of these sanitary sewer replacement sections shall be completed no later than the dates listed in the implementation schedule for these steps.

4. The replacement of the existing 14-inch MLPS force main from the MLPS to Manhole 2-6 with a 20-inch force main. The permitting and construction of these sanitary sewer replacement sections shall be completed no later than the dates listed in the implementation schedule for these steps.

Please note that additional sewage facilities planning may not be required for some of the projects listed in your implementation schedule. Please contact the Department prior to initiating planning for proposed sewage facilities not shown on the submitted sewer service map. The Department will determine if planning is needed for specific projects upon receipt of additional documentation.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by the Department.

East Whiteland Township must secure Clean Streams Law permits from the Department for the construction and operation of their proposed sewerage facilities.

We acknowledge that the Township will initiate a study to evaluate options to connect the Malvern Courts Mobile Home Park to public sewers once the MLPS expansion is complete and operational.

Documentation has been submitted that indicates that new dynamic flow modeling of Tredyffrin Township's Valley Creek Trunk Sewer from Section LV57 to LV58 shows that sufficient capacity exists in this sewer section to serve the Township's projected 2035 flows. However, field verification of the actual capacity of this sewer section has not been performed. The Valley Creek Trunk Sewer 537 Plan currently being reviewed by the Department has proposed engineering investigations to determine the actual capacity of the existing sanitary sewer. Please note that the outcome of these engineering investigations may affect the implementation of your plan. The Township should contact the Department with an amended implementation schedule regarding Areas 4 and 5 and New Areas 1 and 3, should this investigation result in there not being sufficient capacity within this sewer for the Township's projected flows.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE; HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Ms. Kelly Boettlin of this office at the phone number located in the first page footer.

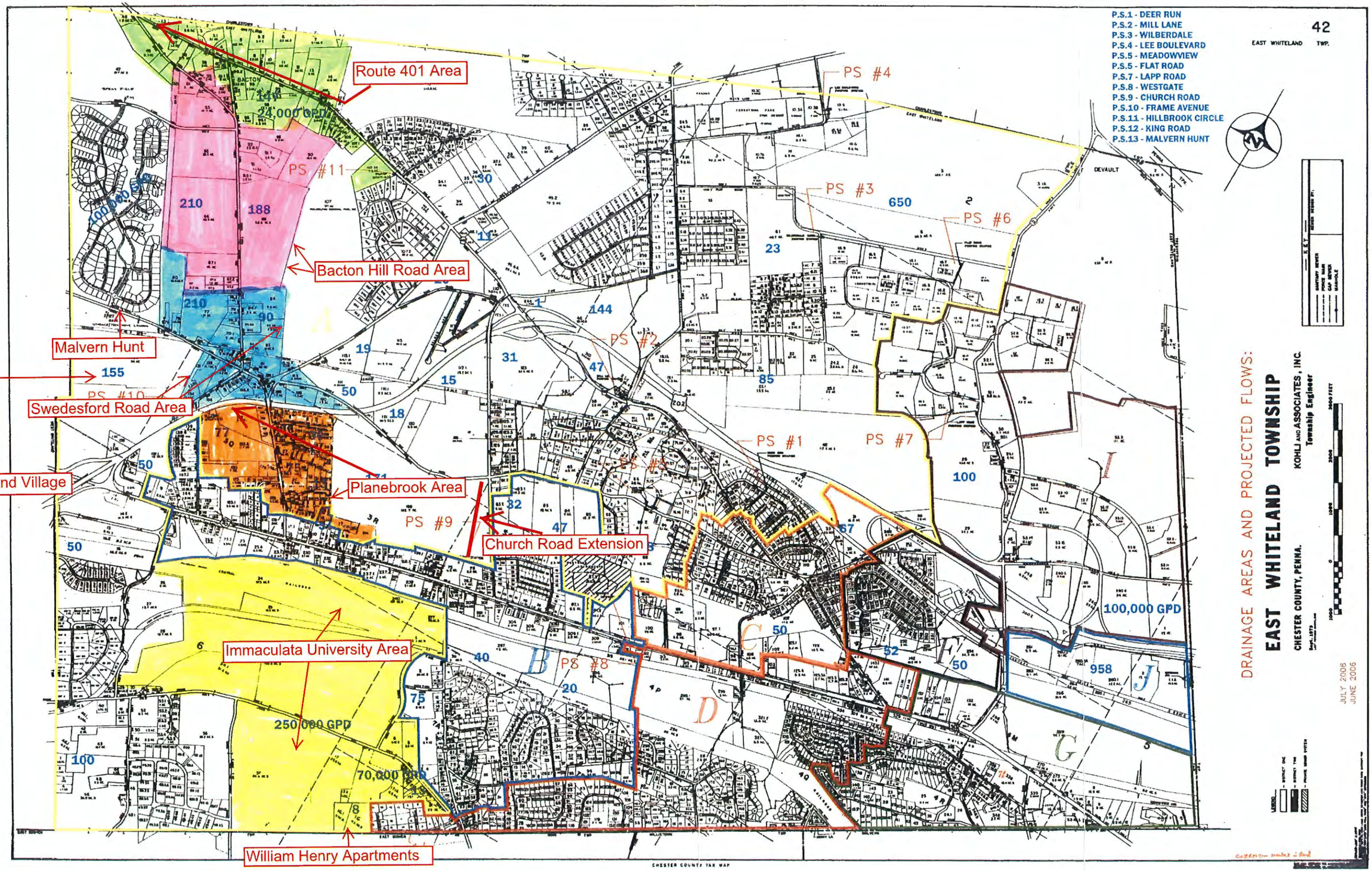
Sincerely,

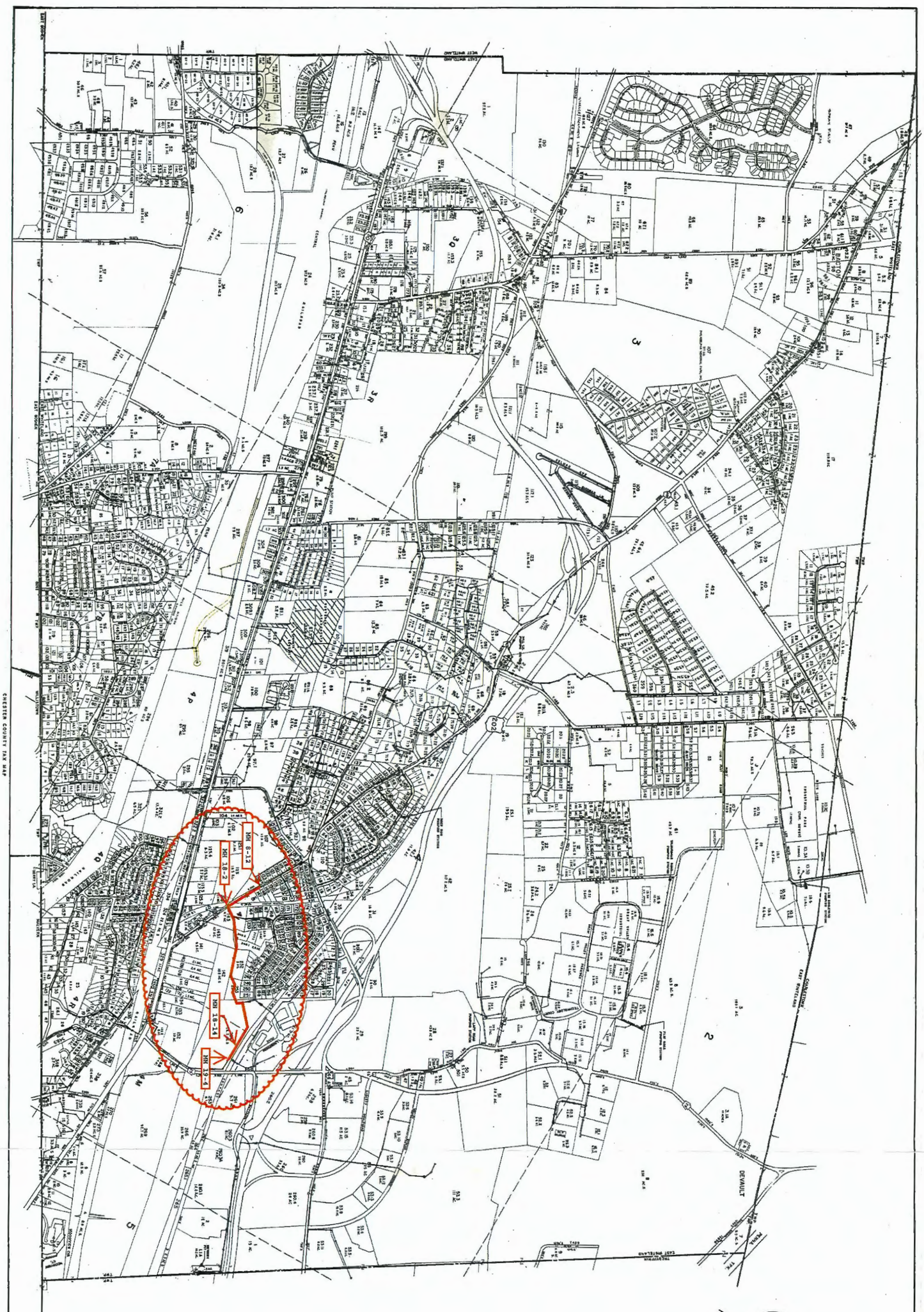
Jenifer Fields, P.E.
Regional Manager
Water Management

cc: Chester County Planning Commission
Chester County Health Department
Chester County Conservation District
Mr. Steele – East Whiteland Township
Tredyffrin Township
Valley Forge Sewer Authority
Mr. Kohli – Kohli & Associates, Inc.
Mr. Polce – Advanced GeoServices Corporation
Mr. O'Neil
Mr. Wolfinger
Planning Section
Re 30 (GJE11WQ)258

EXHIBIT 3

EWT Sewage Facilities Plan – Five New Service Areas


Route 401 Area
Bacton Hill Road Area
Malvern Hunt
Swedesford Road Area
Whiteland Village
Planebrook Area
Church Road Extension
Immaculata University Area
William Henry Apartments
PS #1
PS #2
PS #3
PS #4
PS #6
PS #7
PS #8
PS #9
PS #10
PS #11
144,000 GPD
100,000 GPD
250,000 GPD
70,000 GPD
100,000 GPD
P.S.1 - DEER RUN
P.S.2 - MILL LANE
P.S.3 - WILBERDALE
P.S.4 - LEE BOULEVARD
P.S.5 - MEADOWVIEW
P.S.5 - FLAT ROAD
P.S.7 - LAPP ROAD
P.S.8 - WESTGATE
P.S.9 - CHURCH ROAD
P.S.10 - FRAME AVENUE
P.S.11 - HILLBROOK CIRCLE
P.S.12 - KING ROAD
P.S.13 - MALVERN HUNT
42
EAST WHITELAND TWP.
DEVAULT
DRAINAGE AREAS AND PROJECTED FLOWS:
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNA.
KOHLI AND ASSOCIATES, INC.
Township Engineer
JULY 2008
JUNE 2006
CHESTER COUNTY TAX MAP



EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PENNA.

Sept. 1973

KOHLI AND ASSOCIATES, INC.
Township Engineer

LEGEND
- DISTRICT ONE
- DISTRICT TWO
- PRIVATE SEWER SYSTEM

1000 0 1000 2000 3000 FEET

KEY

	SEWER DESIGN BY:
SANITARY SEWER	
FORCE MAIN	
CAP SEWER	
MANHOLE	

Revised April 2004

CHESTER COUNTY TAX MAP

EAST WHITELAND TWP. 42

EXHIBIT 4

Projected Flows for East Whiteland Township

up to Year 2035

Table 1. Mill Lane Pump Station Projected Flows(Average)* 7/19/2010 rev 7/22/10

(Revised 7/22/10 according to Surrender's guides)

	Total EDUs Scheduled to Connected to Date	Projected Flows(Avg.)	Unit
Year 2010			
Includes the following flows:			
P.S. #2 (Current)		817,600	GPD
Current flow at 2010		**817,600**	GPD
Year 2015			
Includes the following flows:			
P.S. #2 (Current)		817,600	GPD
Charlestown (Projected)		83,000	GPD
Plane Brook Area(Projected)	195	53,625	GPD
Property along Rt.401(Projected) I	147	40,425	GPD
Property along Rt.401(Projected) II		24,000	GPD
Bacton Hill	398	109,450	GPD
Swedesford Road Area	300	82,500	GPD
Church Road Pump Station(Current)		168,480	GPD
Church Road Pump Station(Projected)	5	1,375	GPD
Projected Average Flow		**1,380,455**	GPD
Year 2025			
Includes the following flows:			
2015 Projected Avg. Flow		1,380,455	GPD
Malvern Hunt(Projected)		100,000	GPD
Immaculata University(Projected)		250,000	GPD
William Henry Apartments(Projected)		70,000	GPD
Other EDUs I	1184	325,600	GPD
Projected Average Flow		**2,126,055**	GPD

Year 2035

Includes the following flows:

2025 Projected Avg. Flow		2,126,055	GPD
Other EDUs II	650	178,750	GPD
Projected Average Flow		**2,304,805**	GPD

* These projected flows are prepared according to Kohli's guidance on 7/21/2010

Exhibit "2" revision 8/22/2010

Charlestown is not included; 650 EDUs at Point "A" only

	Total EDUs Scheduled to Connected to Date	Projected Flows(Avg.)	Unit
Point "A"			
Includes the following flows:			
P.S. #1 (Current)		14700	GPD
P.S. #2 (projected 2035)		2,221,805	GPD
Projected flow at 2035		**2,236,505**	GPD
Point "B"			
Includes the following flows:			
P.S. #8 (Current)		272,300	GPD
other flow	287	78,925	GPD
Projected Average Flow		**351,225**	GPD
Point "C"			
Includes the following flows:			
Point "A"		2,236,505	GPD
Point "B"		351,225	GPD
other flow	469	128,975	GPD
Projected Average Flow		**2,716,705**	GPD
Point "D"			
Includes the following flows:			
Pump #12 (current)		50,850	GPD
other flow	356	97,900	GPD
Projected Average Flow		**148,750**	GPD
Point "E"			

Includes the following flows:

Point "C"		2,716,705	GPD
Point "D"		148,750	GPD
Projected Average Flow		**2,865,455**	GPD

Point "F"

Includes the following flows:

Point "E"		2,865,455	GPD
other flow	239	65,725	GPD
Projected Average Flow		**2,931,180**	GPD

Point "G"

Includes the following flows:

other flow	594	163,350	GPD
Projected Average Flow		**163,350**	GPD

Point "H"

Includes the following flows:

Point "F"		2,931,180	GPD
Point "G"		163,350	GPD
Projected Average Flow		**3,094,530**	GPD

Point "I"

Includes the following flows:

Point "H"		3,094,530	GPD
P.S.#7 (current)		157,500	GPD
(west) industrial park area(projected)		37,500	GPD
(east) industrial park area(projected)		100,000	GPD
other flow	100	27,500	GPD
Projected Average Flow		**3,417,030**	GPD

Point "J"

Includes the following flows:			
Point "I"		3,417,030	GPD
other flow	958	263,450	GPD
Projected Average Flow	(650 EDU in point "A")	**3,680,480**	GPD

EXHIBIT 5

Valley Creek Trunk Sewer – Sewer Capacity Evaluation

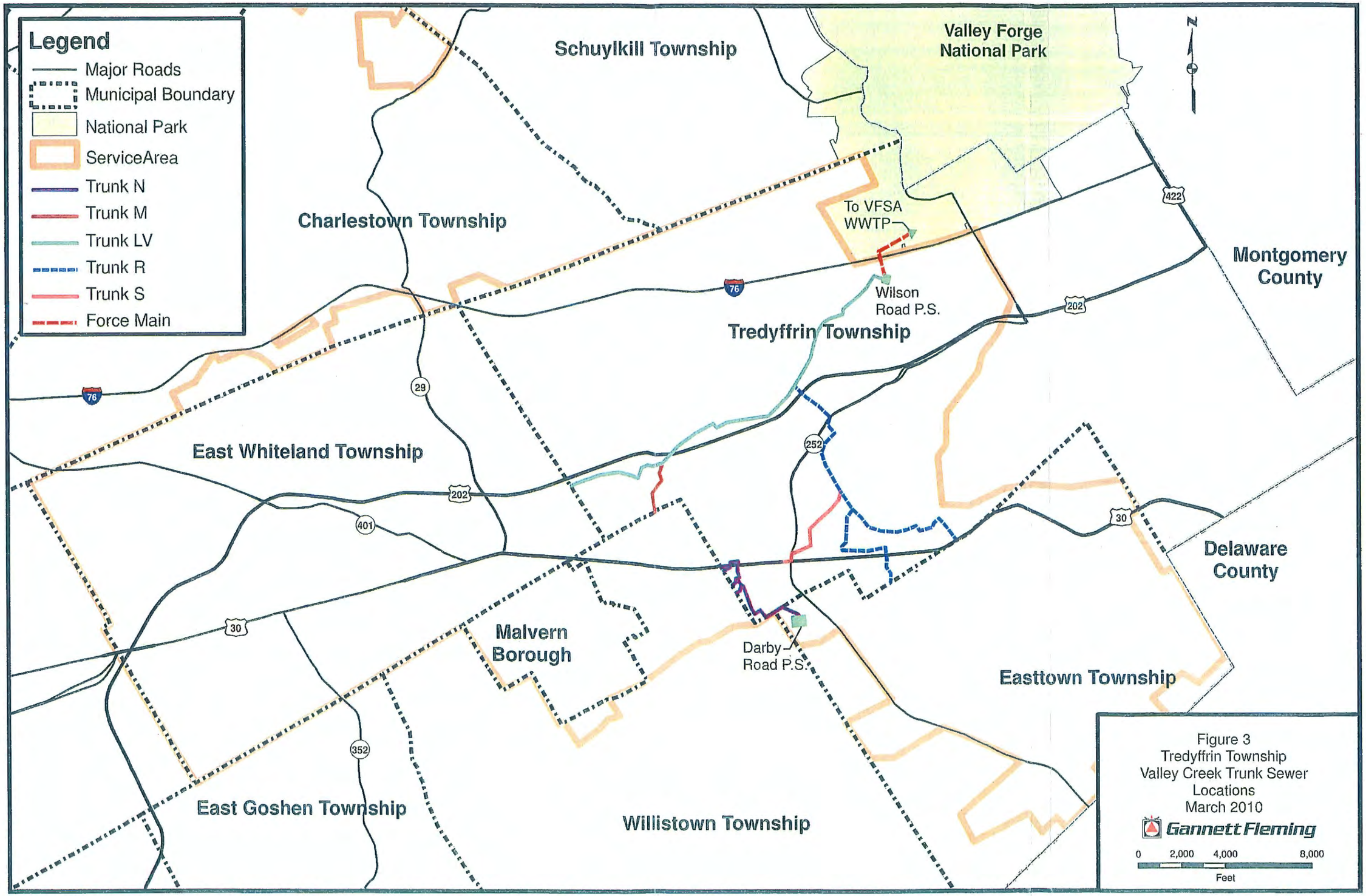

Legend
Major Roads
Municipal Boundary
National Park
ServiceArea
Trunk N
Trunk M
Trunk LV
Trunk R
Trunk S
Force Main
Schuylkill Township
Valley Forge National Park
Charlestown Township
To VFSA WWTP
Wilson Road P.S.
Tredyffrin Township
Montgomery County
East Whiteland Township
Malvern Borough
Darby Road P.S.
Easttown Township
Delaware County
Willistown Township
East Goshen Township
N
76
29
202
422
252
401
30
352
Figure 3
Tredyffrin Township
Valley Creek Trunk Sewer
Locations
March 2010
Gannett Fleming
0 2,000 4,000 8,000
Feet

EXHIBIT 6

Trunk Sewer Segments to be Replaced Downstream of Mill Lane PS

EXHIBIT 6

e 7
y Creek Trunk Sewer
er Capacity Evaluation
yffrin Township, Chester County

Replacement Pipe Information								90% Capacity Evaluation				
Downstream Manhole	Pipe Diameter in	Pipe Material	Pipe Length ft	Pipe Slope ft/ft	Full Flow Pipe Area sf	Full Flow Hydraulic Radius ft	Manning's Coefficient	Full Flow Pipe Capacity MGD	2010 Projected Peak Daily Flow MGD	2015 Projected Peak Daily Flow MGD	2025 Projected Peak Daily Flow MGD	2035 Projected Peak Daily Flow MGD	Excess Capacity
R2A	18		199.9	0.0509	1.767	0.376	0.013	15.343	7.396	7.317	7.787	8.046	PASS
R2	18		70.3	0.0569	1.767	0.376	0.013	16.222	7.396	7.317	7.787	8.046	PASS
R1	18		272.2	0.0060	1.767	0.376	0.013	5.268	7.396	7.317	7.787	8.046	
R1A	27		301.9	0.0216	3.975	0.563	0.013	29.427	7.396	7.317	7.787	8.046	PASS
LV32	27		318.9	0.0115	3.975	0.563	0.013	21.472	7.396	7.317	7.787	8.046	PASS
SECTION 5													
M47	18		280.7	0.0140	1.767	0.376	0.013	8.046	2.975	3.170	3.230	3.258	PASS
M46	18		119.6	0.0337	1.767	0.376	0.013	12.484	2.975	3.170	3.230	3.258	PASS
M45	15		12.0	0.1467	1.227	0.313	0.013	16.005	2.975	3.170	3.230	3.258	PASS
M44	15		179.0	0.0950	1.227	0.313	0.013	12.880	2.975	3.170	3.230	3.258	PASS
M43	15		378.9	0.0297	1.227	0.313	0.013	7.202	2.975	3.170	3.230	3.258	PASS
M42A	15		181.8	0.0258	1.227	0.313	0.013	6.712	2.975	3.170	3.230	3.258	PASS
M42A	15		112.2	0.0250	1.227	0.313	0.013	6.607	2.975	3.170	3.230	3.258	PASS
M41	15		276.7	0.0637	1.227	0.313	0.013	10.547	2.975	3.170	3.230	3.258	PASS
M40	15		136.3	0.0637	1.227	0.313	0.013	10.547	2.975	3.170	3.230	3.258	PASS
M1D	15		312.4	0.0150	1.227	0.313	0.013	5.118	2.975	3.170	3.230	3.258	PASS
M1C	15		280.9	0.0214	1.227	0.313	0.013	6.113	2.975	3.170	3.230	3.258	PASS
M1B	15		203.4	0.0247	1.227	0.313	0.013	6.567	2.975	3.170	3.230	3.258	PASS
M1A	16		132.4	0.0150	1.396	0.334	0.013	6.080	2.975	3.170	3.230	3.258	PASS
M1	15		218.5	0.0271	1.227	0.313	0.013	6.879	2.975	3.170	3.230	3.258	PASS
LV59	15		120.5	0.0276	1.227	0.313	0.013	6.942	2.975	3.170	3.230	3.258	PASS
SECTION 6													
LV77	27		273.0	0.0049	3.975	0.563	0.013	14.016	6.203	7.367	8.837	10.557	PASS
LV76A	27		269.0	0.0049	3.975	0.563	0.013	14.016	6.203	7.367	8.837	10.557	PASS
LV76	27		214.8	0.0049	3.975	0.563	0.013	14.016	6.203	7.367	8.837	10.557	PASS
LV75	27		405.4	0.0049	3.975	0.563	0.013	14.016	6.203	7.367	8.837	10.557	PASS
LV74	27		190.8	0.0278	3.975	0.563	0.013	33.384	6.203	7.367	8.837	10.557	PASS

Table 7
Valley Creek Trunk Sewer
Sewer Capacity Evaluation
Tredyffrin Township, Chester County

LV74	LV73A	27	300.0	0.0076	3.975	0.563	0.013	17.455	6.203	7.367	8.837	10.557
LV73A	LV73	27	199.0	0.0076	3.975	0.563	0.013	17.455	6.353	7.742	9.428	11.245
LV73	LV72	27	137.0	0.0070	3.975	0.563	0.013	16.752	6.353	7.742	9.428	11.245
LV72	LV71	27	205.0	0.0072	3.975	0.563	0.013	16.990	6.353	7.742	9.428	11.245
LV71	LV70	27	121.0	0.0072	3.975	0.563	0.013	16.990	6.353	7.742	9.428	11.245
LV70	LV69	27	387.0	0.0103	3.975	0.563	0.013	20.321	6.353	7.742	9.428	11.245
LV69	LV68	27	155.0	0.0083	3.975	0.563	0.013	18.241	6.353	7.742	9.428	11.245
LV68	LV67	27	190.0	0.0083	3.975	0.563	0.013	18.241	6.353	7.742	9.428	11.245
LV67	LV66	27	180.0	0.0083	3.975	0.563	0.013	18.241	6.353	7.742	9.428	11.245
LV66	LV65	27	180.7	0.0081	3.975	0.563	0.013	18.020	6.353	7.742	9.428	11.245
LV65	LV64	27	233.6	0.0083	3.975	0.563	0.013	18.241	6.353	7.742	9.428	11.245
LV64	LV63	27	246.0	0.0050	3.975	0.563	0.013	14.158	6.353	7.742	9.428	11.245
LV63	LV62	27	93.0	0.0050	3.975	0.563	0.013	14.158	6.353	7.742	9.428	11.245
LV62	LV61	27	212.0	0.0080	3.975	0.563	0.013	17.909	6.353	7.742	9.428	11.245
LV61	LV60	27	138.0	0.0080	3.975	0.563	0.013	17.909	6.353	7.742	9.428	11.245
LV60	LV59	27	250.0	0.0080	3.975	0.563	0.013	17.909	6.353	7.742	9.428	11.245
LV59	LV58	30	287.1	0.0083	4.907	0.626	0.013	24.168	9.218	10.851	12.648	14.527
LV57	LV56	30	112.1	0.0095	4.907	0.626	0.013	25.857	9.218	10.851	12.648	14.527
LV56	LV55	30	435.0	0.0091	4.907	0.626	0.013	25.306	9.304	10.927	12.726	14.612
LV55	LV54	30	441.0	0.0091	4.907	0.626	0.013	25.306	9.304	10.927	12.726	14.612
LV54	LV53	33	369.5	0.0030	5.937	0.688	0.013	18.722	9.304	10.927	12.726	14.612
LV53	LV52	33	275.1	0.0030	5.937	0.688	0.013	18.722	9.304	10.927	12.726	14.612
LV52	LV51	33	421.7	0.0148	5.937	0.688	0.013	41.585	9.304	10.927	12.726	14.612
LV51	LV50	33	152.0	0.0030	5.937	0.688	0.013	18.722	9.304	10.927	12.726	14.612
LV50	LV49	33	81.2	0.0031	5.937	0.688	0.013	19.032	9.304	10.927	12.726	14.612
LV49	LV47	33	689.7	0.0064	5.937	0.688	0.013	27.346	9.589	11.208	13.048	14.991
LV47	LV46	33	121.3	0.0085	5.937	0.688	0.013	31.515	9.589	11.208	13.048	14.991
LV46	LV45	33	365.0	0.0055	5.937	0.688	0.013	25.350	9.589	11.208	13.048	14.991

Table 7
Valley Creek Trunk Sewer
Sewer Capacity Evaluation
Tredyffrin Township, Chester County

LV45	LV44	33	185.0	0.0035	5.937	0.688	0.013	20.223	9.589	11.208	13.048	14.991	PAS
LV44	LV43	33	399.0	0.0035	5.937	0.688	0.013	20.223	9.589	11.208	13.048	14.991	PAS
LV43	LV42	33	156.0	0.0030	5.937	0.688	0.013	18.722	9.589	11.208	13.048	14.991	PAS
LV42	LV41	33	139.0	0.0030	5.937	0.688	0.013	18.722	9.589	11.208	13.048	14.991	PAS
LV41	LV40	33	331.0	0.0030	5.937	0.688	0.013	18.722	9.888	11.470	13.319	15.284	PAS
LV40	LV39	33	292.2	0.0058	5.937	0.688	0.013	26.033	9.888	11.470	13.319	15.284	PAS
LV39	LV38	33	298.6	0.0058	5.937	0.688	0.013	26.033	9.888	11.470	13.319	15.284	PAS
LV38	LV37	33	113.0	0.0058	5.937	0.688	0.013	26.033	9.888	11.470	13.319	15.284	PAS
LV37	LV36	33	183.5	0.0058	5.937	0.688	0.013	26.033	9.888	11.470	13.319	15.284	PAS
LV36	LV35	33	277.5	0.0058	5.937	0.688	0.013	26.033	9.888	11.470	13.319	15.284	PAS
LV35	LV34	33	276.9	0.0060	5.937	0.688	0.013	26.478	9.888	11.470	13.319	15.284	PAS
LV34	LV33	33	146.5	0.0102	5.937	0.688	0.013	34.523	9.888	11.470	13.319	15.284	PAS
LV33	LV32	33	271.6	0.0084	5.937	0.688	0.013	31.329	9.888	11.470	13.319	15.284	PAS
LV32	LV31	33	118.7	0.0400	5.937	0.688	0.013	68.365	14.407	16.086	18.441	20.928	PAS
LV31	LV30	33	174.7	0.0050	5.937	0.688	0.013	24.171	14.407	16.086	18.441	20.928	PAS
LV30	LV29	33	258.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV29	LV28	33	357.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV28	LV27	33	356.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV27	LV26	33	190.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV26	LV25	33	173.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV25	LV24	33	197.0	0.0050	5.937	0.688	0.013	24.171	14.476	16.155	18.513	21.004	PAS
LV24	LV23	33	210.0	0.0166	5.937	0.688	0.013	44.041	14.476	16.155	18.513	21.004	PAS
LV23	LV22	48	140.0	0.0119	12.56	1.000	0.013	101.221	14.476	16.155	18.513	21.004	PAS
LV22	LV21	48	430.0	0.0048	12.56	1.000	0.013	64.287	14.603	16.424	18.846	21.388	PAS
LV21	LV20	48	270.0	0.0048	12.56	1.000	0.013	64.287	14.603	16.424	18.846	21.388	PAS
LV20	LV19	48	415.0	0.0120	12.56	1.000	0.013	101.646	14.603	16.424	18.846	21.388	PAS
LV19	LV18	48	410.0	0.0029	12.56	1.000	0.013	49.969	14.603	16.424	18.846	21.388	PAS
LV18	LV17	48	259.0	0.0030	12.56	1.000	0.013	50.823	14.603	16.424	18.846	21.388	PAS
LV17	LV16	48	330.0	0.0076	12.56	1.000	0.013	80.892	14.603	16.424	18.846	21.388	PAS

Table 7
Valley Creek Trunk Sewer
Sewer Capacity Evaluation
Tredyffrin Township, Chester County

LV16	LV15B	48	162.1	0.0010	12.56	1.000	0.013	29.343	14.603	16.424	18.846	21.388
LV15B	LV15A	48	90.5	0.0010	12.56	1.000	0.013	29.343	14.784	16.615	19.046	21.604
LV15A	LV15	48	192.8	0.0010	12.56	1.000	0.013	29.343	14.784	16.615	19.046	21.604
LV15	LV14	48	400.0	0.0010	12.56	1.000	0.013	29.343	14.784	16.615	19.046	21.604
LV14	LV13	48	400.0	0.0010	12.56	1.000	0.013	29.343	14.847	16.680	19.113	21.675
LV13	LV12	48	450.0	0.0010	12.56	1.000	0.013	29.343	15.010	16.825	19.263	21.836
LV12	LV11	48	450.0	0.0010	12.56	1.000	0.013	29.343	15.173	16.969	19.412	21.997
LV11	LV10	48	500.0	0.0050	12.56	1.000	0.013	65.612	15.173	16.969	19.412	21.997
LV10	LV9	48	284.4	0.0050	12.56	1.000	0.013	65.612	15.173	16.969	19.412	21.997
LV9	LV8	48	149.4	0.0010	12.56	1.000	0.013	29.343	15.336	17.114	19.562	22.158
LV8	P.S.	48	48.0	0.0010	12.56	1.000	0.013	29.343	15.902	17.609	20.074	22.713

EXHIBIT 7

Location of Trunk LV and Potential Capacity for Tredyffrin Township

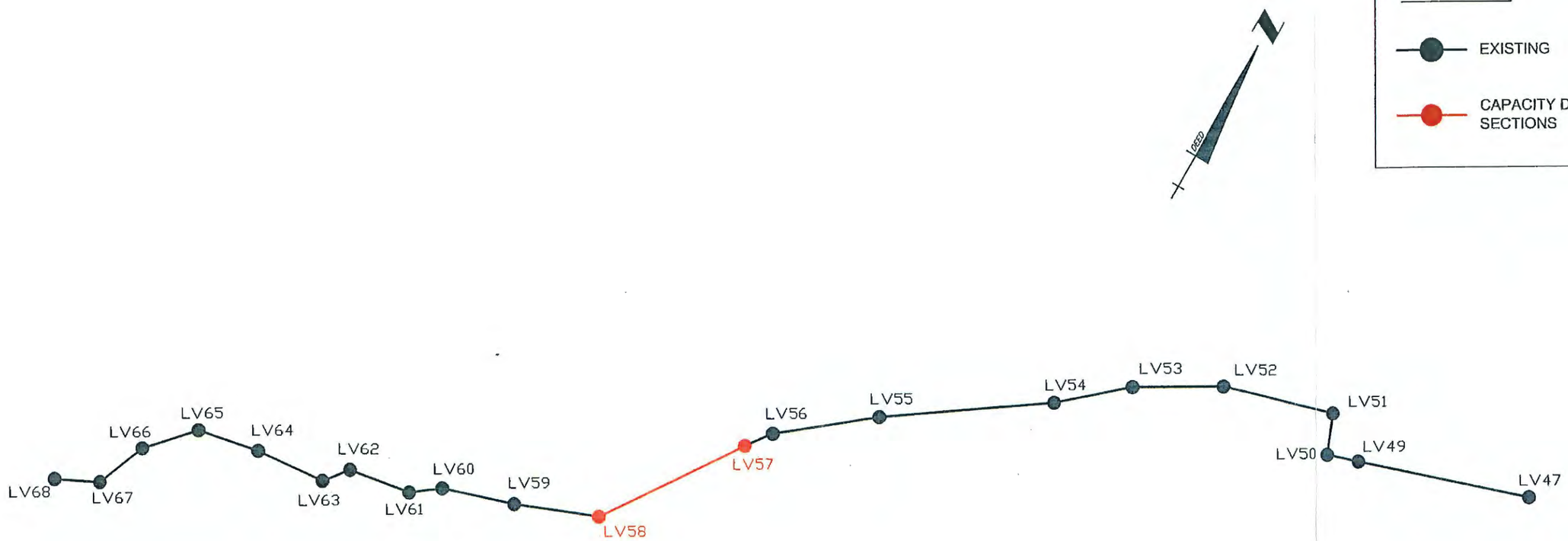


Figure 10
Tredyffrin Township
Valley Creek Trunk Sewer
Trunk LV
Capacity Deficit Sections
September 2009

Gannett Fleming

Scale: 1" = 400'

EXHIBIT 8

DEP Response Letter 1

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (610) 644-5591 FAX (610) 647-9212

CONSULTING ENGINEERS

SURENDER S. KOHLI, P.E.
PRESIDENT

March 15, 2011 2009-2412

Ms. Kelly Boettlin
Department of Environmental Protection
Southeast Regional Office
2 E. Main St.
Norristown, PA 19401

RE: "Special Study" Act 537 Plan Amendment – Response to PADEP Comments
East Whiteland Township / Mill Lane Pumping Station Replacement Project

Dear Ms. Boettlin:

The department's initial preliminary review has indicated that the plan update is incomplete and not in accordance with the provisions set forth in Chapter 71. The intent of the responses herein is to provide the requested information noted in the Departments letter dated November 12, 2010 and to insure that this information meets the provisions of Chapter 71 regarding the 537 planning process and warrants an approval of the plan amendment by the Department.

The following is a summary of each of the questions; followed by corresponding answers and a description of additional attached documentation, where appropriate:

1. Section 3.0 in the submitted Special Study provides projected flows for the Mill Lane Pump Station (MLPS). However, there appears to be no information provided on what will be involved in the replacement and upgrade of the MLPS. Please provide the following with regard to the MLPS:

   a. The current permitted average annual flows for MLPS.

      The pump station was originally rated for 1,400 GPM (~2.0 MGD). Currently the pump station is averaging approximately 820,000 GPD (~0.8 MGD). The purpose of the new pump station is two-fold, 1) to meet the future anticipated average and peak flows based on projected service area connections (these service areas were included as part of the original 537 Plan Report completed and approved in 1996 and last revised in May of 2000); and 2) to replace the existing station which is 30-years old and nearing its service life.

b. The proposed average annual flows for the expanded MLPS.

Below is Table 3.1 from the Special Study; which outlines the proposed average annual flow projections for the expanded MLPS. The replacement of the MLPS is the first step towards preparing for the sewer connections associated with the five (5) proposed project Study Areas described in the Special Study; which are to be connected to the sewer collection system tributary to the MLPS within the next 10 years.

Table 3-1 - Mill Lane Pump Station Projected Flows with Charlestown (Average & Peak)

Year	Current and Projected Average Daily Flows		DEP Peaking Factor*	Current and Projected Peak Flows	TDH
	(GPD)	(GPM)		(GPM)	(FEET)
2010	**817,600**	568	3.13	**1,777**	**150**
2015	**1,380,455**	959	2.94	**2,816**	**183**
2025	**2,126,055**	1,476	2.81	**4,152**	**142****
2035	**2,304,805**	1,601	2.78	**4,454**	**151****

* Peaking Factors were extracted from PADEP Domestic Wastewater Facilities Manual.

** Assumes that the force main from the Mill Lane PS will be replaced prior to 2025 (from a 14-inch to a 20-inch)

c. How is the MLPS proposed to be upgraded? Will the pumps be replaced with larger pumps?

A new pump station will be built adjacent to the existing pump station in a new larger building and will be equipped with larger pumps. Initially, the pump station will be equipped with three pumps (2 duty, 1 standby) and each pump will be designed to pump 1,600 GPM (~2.3 MGD) at ~200' of total dynamic head. Also, in order to handle future projected flows; East Whiteland Township will have the option to expand the pump station by adding a fourth pump, if necessary. The new pump station will add pump capacity to handle future projected sanitary sewer flows, pumping redundancy and pumping flexibility for the Township.

d. A note on Table 3-1 indicates that the force main from the MLPS will be replaced prior to 2025 from a 14-inch to a 20-inch. Please clarify if this refers to the force main from the pump station to where the gravity sewers begin at Manhole 2-6. Will the force main be replaced as part of this upgrade? At what point will the Township initiate the replacement of this force main?

To clarify, the note on Table 3-1 refers to the force main from the existing MLPS to Manhole 2-6 where the gravity sewers begin. The force main will NOT be replaced as part of this pump station replacement project. Based on future projected flows for the pump station, it is recommended that the force main from the MLPS to Manhole 2-6 be replaced prior to year 2025 in order to keep the total hydraulic head requirements within an optimal range. This force main replacement will be dependent on the accuracy of the future projected flows.

e. At what point will the Township initiate the upgrade of the MLPS?

Currently, the Township has authorized the design of the new proposed MLPS. The design is approximately 95% complete and it is anticipated that the design will be submitted to the Department for permitting in February or March of 2011. Construction is anticipated to start in late Spring or early Summer of 2011.

f. What are the estimated costs associated with the upgrade to the MLPS, and how does the Township propose to fund these improvements?

The estimated costs associated with the upgrade of the MLPS are anticipated to be approximately $2.0 to $2.5 MM. The Township will fund this project through a combination of monies from the Township's Sewer Reserve Fund, monies from a bond issuance and/or grant funds.

2. Please confirm that flows from other pump stations within the Township are not tributary to the MLPS.

Exhibit 1 for this response letter attached illustrates the pump stations that are tributary to the MLPS, and provides the current rated capacity of each pump station. The future projected flows for the MLPS include the projected flows from all pump stations tributary to the MLPS.

3. Please confirm that the flow from the MLPS will not be tributary to other pump stations within the Township.

The MLPS discharges at Manhole 2-6; and then the sanitary sewage flows via gravity to Tredyffrin Township. The MLPS is not tributary to any other pump stations within East Whiteland Township. See Exhibit 2 attached.

4. Section 2.3.4 indicates that all sanitary sewer facilities to be constructed under this Special Study will be owned and operated by the Township. The submitted Special Study also discusses enlarging certain sewer sections downstream of the MLPS by 2019. However, it is unclear what exactly will be constructed upon implementation of this Special Study. Please clarify what actions are proposed to be completed upon approval of this Special Study.

It is the intent of the Township for this Special Study to serve as the final planning module for sewer improvements as outlined in the original Act 537 Plan approved by the Department in 1996 and last updated or amended in 2000. Therefore, the sewer improvements and connections outlined in this study will encompass and account for all remaining sewage planning areas within the Township. Additional information is included in the Special Study report to reflect the force main replacement (from 14" to 20") and for the enlargement of the sanitary sewer sections downstream of the MLPS.

5. In addition, please provide a detailed implementation schedule for the implementation of this Special Study. This implementation schedule should include milestones for the permitting, construction, and completion of the proposed sanitary sewer facilities mentioned in Item 4 above. Dates can be time dependent on prior milestones.

   An implementation schedule is provided in the "Special Study" report illustrating projected milestone dates for completing the permitting, construction and completion of the planned improvements noted in Item 4 above.

6. Section 2.3.4 also states that the sanitary sewer lines and manholes will be constructed within the Township-owned rights-of-way or easements obtained prior to the start of any construction. Please clarify if any easements will be required for the sanitary sewer facilities proposed as part of this Special Study, and if easements will be necessary, does the Township foresee any issues obtaining the necessary easements.

   For Area's 1, 2 and 3 of the "Special Study"; which are areas that were previously included in the approved Act 537 Plan, there will not be a need to obtain additional easements. For Area 4 (Church Road Extension), it is anticipated that an existing easement will need to be extended through Chester Valley Golf Club to complete this work; however EWT does not foresee any issues with obtaining this easement extension. For Area 5 (Immaculata University Area), a new easement will likely be necessary to connect to the public sewer; however EWT does not foresee any issues with obtaining this easement, since sewer connection has been an ongoing discussion with the University. For the "new" development areas not included as part of the approved Act 537 Plan (Malvern Hunt, Whiteland Village and William Henry Apartments); easements will be necessary to extend sewer infrastructure to these areas, however EWT does not foresee any issues with obtaining these easements. These "new" areas will be connected to new sewers that will be constructed in the next 10 years. Finally, for several of these sewer improvement projects, a PennDOT road crossing permit will be necessary. EWT has obtained these permits on numerous occasions previously; therefore it is not anticipated that these road crossings will create any issues. The work will be coordinated with PennDOT and standard PennDOT construction practices will be used.

7. Section 2.3.4 also states that in the event that new pump stations and force mains are deemed necessary, they will also be constructed within the Township-owned rights-of-way or easements obtained prior to the start of any construction. Please note that additional sewage facilities planning will be required prior to the construction of any new pump stations and force mains.

   It is acknowledged that additional sewage facilities planning will be provided for any new pump station and force mains. At this time, the only potential planned force main project is to replace the MLPS force main within the next 5 to 10 years.

8. Section 2.3.2 states that the financing of these projects will be accomplished through the Board of Supervisors of the Township. Please elaborate. Does the Township have the funds available to be able to implement the construction of the new sewers? If the Township does not have funds available, how does the Township propose to raise the necessary funds? Also, please note that your plan must identify a contingency financing method in the event that the primary method identified is not available.

   EWT will fund these projects through a combination of monies from the Township's Sewer Reserve Fund, monies from a bond issuance and/or grant funds. Contingency methods will be from one of these three sources depending on the timing of the sewer improvement projects.

9. Section 2.3.3 indicates that these projects will generally be completed within 8 to 12 months once authorization to proceed is received by the Township. Please clarify what conditions would cause the Township to not authorize construction of the new sewers.

   EWT currently has ordinances containing sewer connection criteria for existing development. Many of these existing developments contain aging on-lot sewer systems. Therefore, EWT intends to complete these projects in order to assure that the infrastructure is available to make these connections and eliminate these aging on-lot sewer systems; therefore it is anticipated that authorization will be provided.

10. Please provide map(s) showing the proposed conceptual extensions in each area as well as the path from the MLPS to Manhole LV77A on the LV trunk sewer. These map(s) should be at a scale large enough to distinguish the detail shown and should also include a map legend.

    Refer to attached Exhibit 2; which illustrates the items requested above and all planned improvements per the "Special Study".

11. We note that the section of the Valley Creek Trunk Sewer (VCTS) from Manholes LV58 to LV57 is projected to exceed capacity from flows coming from the Township by 2018. Section 4.2.1 refers to a parallel sewer being proposed within the VCTS 537 Plan being prepared by Tredyffrin Township as a way to increase capacity within the section of the

VCTS from Manholes LV58 to LV57. However, in May 2010, the Department had discussions with Gannett Fleming, Inc., Tredyffrin Township's engineer that is working on the VCTS 537 Plan, in which they indicated that the planning for this sewer section will not be included in the current version of the VCTS Plan proposed to be submitted to the Department.

Section 5.0 states that the suitable alternative is to provide the areas identified in the Special Study with public sewerage provided that the capacity of the gravity sewer trunk line from MHLV58 to MHLV57 in Tredyffrin Township is improved before the year 2018. Since it appears that the planning for increasing capacity within this sewer section is likely being postponed, the Township will be restricted by the current hydraulic capacity of this sewer section and will therefore be unable to provide capacity for all of the proposed sewer service areas identified in the Special Study. Please identify with text and mapping which areas are proposed to be able to connect to public: sewer prior to capacity being increased within the VCTS from MHLV58 to MHLV57.

The proposed repair to section LV58 – LV57 of the Valley Creek Truck Sewer has been deferred from the current VCTS 537 Plan due to a disagreement over who is responsible for paying for the repairs needed to restore the design capacity to this section of the trunk line. EWT asked that this section be removed from the current VCTS Plan so that the Plan can go through the approval process to allow other member municipalities to start capacity improvements that are needed now to protect public health and safety. EWT will continue to have dialogue with Tredyffrin Township and if necessary, will enter into arbitration in order to settle our argument over the assignment of cost for this pipeline repair.

12. Please clarify how the Township will manage connections and ensure that the sewage flow coming from the planned service area will not exceed the hydraulic capacity of the sewer section from MHLV 58 to MHLV57.

    Per EWT's Act 537 "Special Study" report; there are several areas of sewer improvements that are noted to be completed by the year 2015. Currently, the preliminary hydraulic analyses that have been completed are focused specifically on the infrastructure needs within EWT as they related to the future projected sanitary sewage flows. Prior to adding additional flow to the sanitary sewer network as part of these planned projects; EWT will participate in informational meetings with VCTS and Tredyffrin Twp to update them regarding the intent and to verify sewer capacities.

13. The submitted Special Study indicates that the 2035 projected flows for the Township are available in the flow already allocated to the Township from both Tredyffrin Township and the VFSA. Please provide correspondence from both Tredyffrin Township and VFSA confirming this statement.

    Attached as Exhibit 3 is a table and figure from Tredyffrin's recent Act 537 Plan Revision for Valley Creek Trunk Sewer dated April of 2010. This correspondence documents the

projected flows for EWT as it pertains to Tredyffrin's the VCTS project improvements. These projected flows coincide with what has been summarized in EWT's Act 537 Plan "Special Study" report.

14. Section 1-3 of the Special Study states that the Township's capacity allocation to the VCTS is 4.0 MGD annual average flow. However, the March 2009 Act 537 sewage facilities planning done in support of the VFSA wastewater treatment facility expansion states that the Township's allocated capacity is only 3.63 MGD annual average flow. Please clarify this discrepancy.

    Attached as Exhibit 4 is an excerpt from EWT's original Act 537 Plan revised and completed in 1995. On page 32 of this plan, it states that the Township had been allocated a peak capacity for the Valley Creek Trunk Line of 9.5 MGD (4.0 MGD average). This capacity allocation information was summarized in Section 1-3 of the "Special Study". It must be noted that this flow of 4.0 MGD includes sanitary flows from Charlestown Township; since Charlestown is under Agreement with EWT to discharge 0.3 MGD to the Township in lieu of sending their sanitary flow directly to the VFSA. Therefore, EWT's total flow is 3.63 MGD + 0.3 MGD from Charlestown.

    However, attached is a letter dated October 15, 2008, which was a response to Buchart Horn, Inc. (the engineer of record for VFSA) regarding their request to separate the Charlestown flow from EWT's projected flow numbers. Therefore, the resulting total projected flows for EWT were documented to be 3.63 MGD average daily flow; which coincides with what was summarized in the March 2009 Act 537 planning completed in support of the VFSA wastewater treatment facility expansion. This letter is also included in Exhibit 4.

Very truly yours,

KOHLI AND ASSOCIATES

Surender S. Kohli, P.E.
Project Manager

Enclosures

cc: William H. Steele, EWT
Terry H. Woodman, EWT
Jack Polce, AGC
Steve Woodward, AGC

EXHIBIT 1

ITEM 6A - NUMBER OF PUMPING STATIONS IN THE SYSTEM: 12

PUMP STATION	Rated Max. Daily Capacity (GPD)	Current Max. Daily Flows (GPD)	Max. Daily Flow[1] (GPD)	Two-Year Max. Daily Flow (GPD)	Current Average Daily Flow (GPD)	Peak Instantaneous Flow[2] (GPD)
P.S. 1 - Deer Run	23,450	10,710	14,700	11,835	10,350	
P.S. 2 - Mill Lane	2,073,600	817,600	2,036,000	863,800	683,200	
P.S. 3 - Wilberdale	623,5020	278,260	600,000	290,000	231,660	
P.S. 4 - Lee Boulevard	350,000	52,920	350,000	58,120	47,250	
P.S. 5 - Meadowview	115,200	13,840	20,000	14,360	12,400	
P.S. 6 - Flat Road	427,500	91,053	427,500	100,680	61,212	
P.S. 7 - Lapp Road	472,000	154,980	412,000	152,460	124,110	
P.S. 8 - Westgate	890,000	182,700	850,000	170,450	166,600	
P.S. 9 - Church Road	700,000	168,480	700,000	164,430	151,200	
P.S. 10 - Frame Avenue	360,000	102,750	360,000	102,625	96,250	
P.S. 11 - Hillbrook Circle	250,000	20,757	250,000	18,426	13,875	
P.S. 12 - King Road	250,000	47,472	250,000	52,000	43,860	
P.S. 13 – Malvern Hunt	Flow goes to on-site treatment facilities.					

[1] When area served by Pumping Station is Fully Developed

[2] Depending on rain event flows will be similar to Rated Max. Daily Capacity or Two-Year Max. Daily Flow

EXHIBIT 2

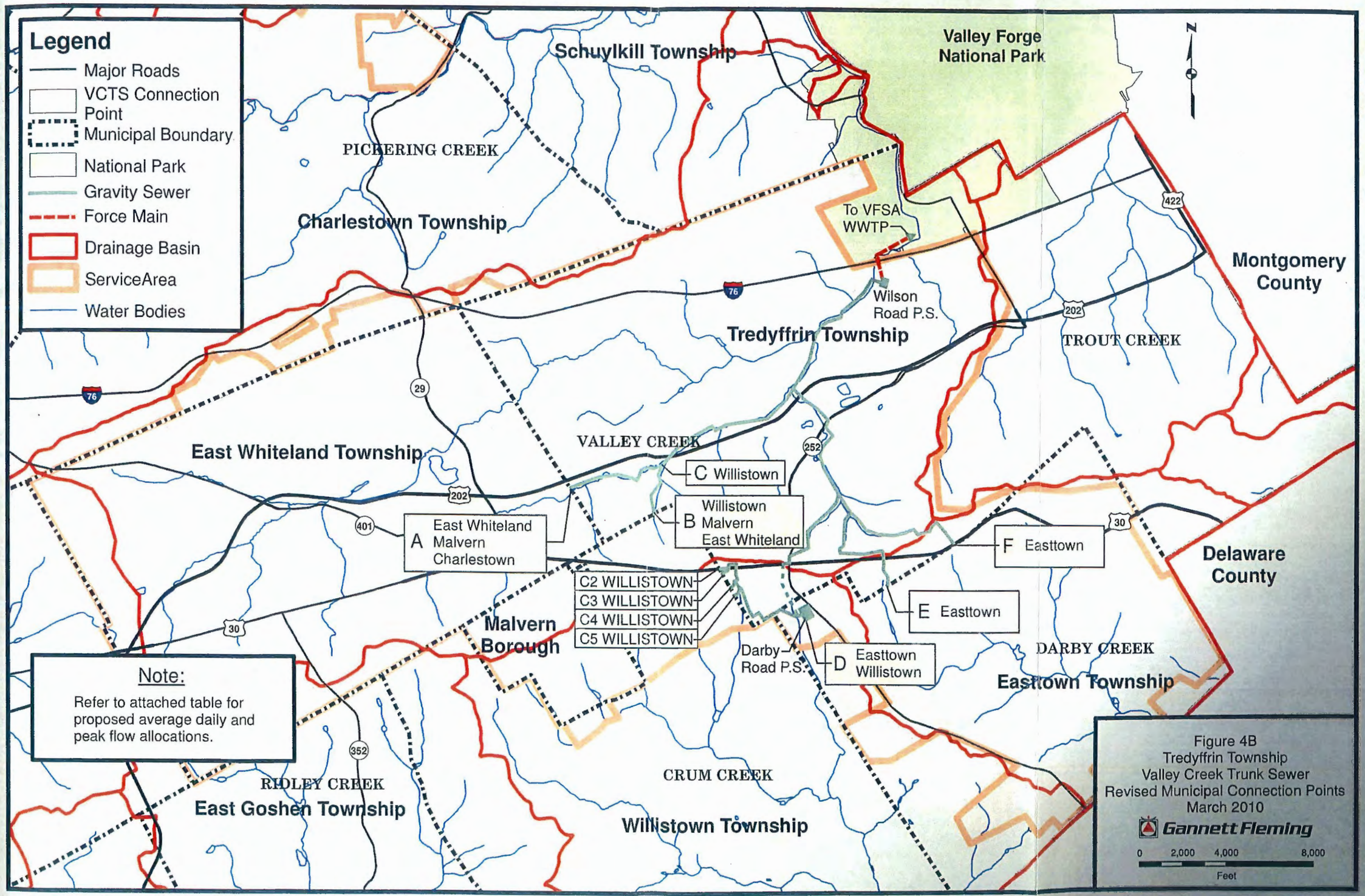


Figure 4B
Tredyffrin Township
Valley Creek Trunk Sewer
Revised Municipal Connection Points
March 2010

Gannett Fleming

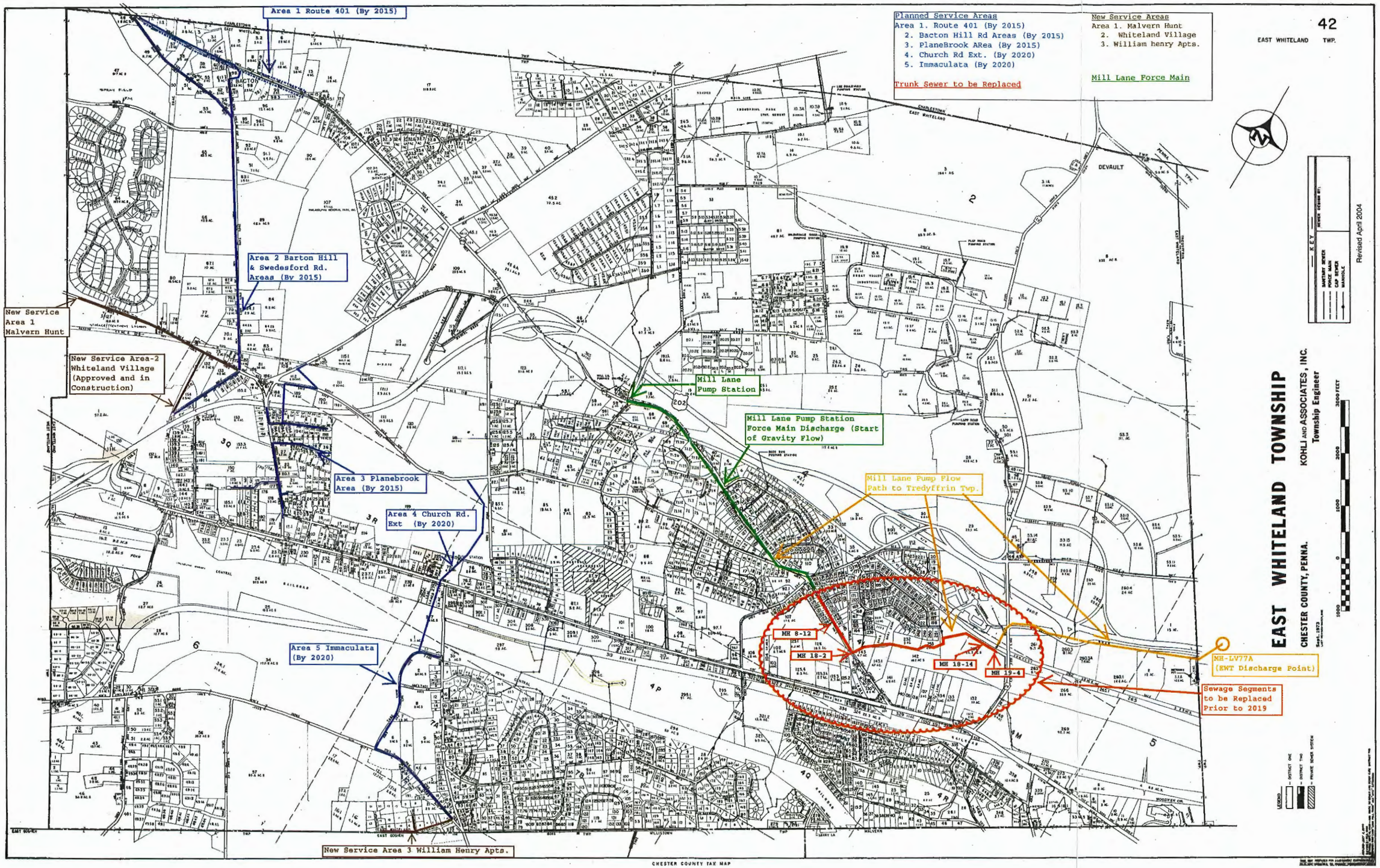

Area 1 Route 401 (By 2015)
Area 2 Barton Hill & Swedesford Rd. Areas (By 2015)
New Service Area 1 Malvern Hunt
New Service Area-2 Whiteland Village (Approved and in Construction)
Area 3 Planebrook Area (By 2015)
Area 4 Church Rd. Ext (By 2020)
Area 5 Immaculata (By 2020)
New Service Area 3 William Henry Apts.
Mill Lane Pump Station
Mill Lane Pump Station Force Main Discharge (Start of Gravity Flow)
Mill Lane Pump Flow Path to Tredyffrin Twp.
MH 8-12
MH 18-2
MH 18-14
MH 19-4
MH-LV77A (EWT Discharge Point)
Sewage Segments to be Replaced Prior to 2019
Planned Service Areas
Area 1. Route 401 (By 2015)
2. Bacton Hill Rd Areas (By 2015)
3. PlaneBrook AReA (By 2015)
4. Church Rd Ext. (By 2020)
5. Immaculata (By 2020)
Trunk Sewer to be Replaced
New Service Areas
Area 1. Malvern Hunt
2. Whiteland Village
3. William henry Apts.
Mill Lane Force Main
42
EAST WHITELAND TWP.
DEVAULT
KEY
SANITARY SEWER
FORCE MAIN
GAP SEWER
MANHOLE
Revised April 2004
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNA.
KOHLI AND ASSOCIATES, INC.
Township Engineer
3000 FEET
2000
1000
0
1000
LEGEND
DISTRICT ONE
DISTRICT TWO
PRIVATE SEWER SYSTEM
CHESTER COUNTY TAX MAP

EXHIBIT 3

FIGURE 4B TABLE
REVISED MUNICIPAL CONNECTION POINTS
PROJECTED FLOWS

Connect. Point [1]	Manhole No.	Municipality/Description	Average Daily Flow (MGD)	Peak Flow Rate (MGD)
A	LV77A	East Whiteland (excludes Woodview)	3.621	9.053
		Charlestown (VFSA)	0.417	1.043
		Malvern (excludes Tidewater)	0.519	1.298
B	M48	Willistown (Cedar Hollow)	1.270	3.175
		Malvern (Tidewater)	0.024	0.060
		East Whiteland (Woodview)	0.009	0.023
C1	LV59	Willistown (unmetered)	0.002	0.005
C2	N68	Willistown (unmetered)	0.004	0.010
C3	N88	Willistown (unmetered)	0.004	0.010
C4	N79	Willistown (unmetered)	0.010	0.025
C5	N83	Willistown (unmetered)	0.003	0.008
D	P3	Easttown (unmetered)	0.146	0.545
		Willistown (unmetered)	0.055	0.138
E	R239	Easttown (Daylesford P.S.)	0.300	1.050
F	R56	Easttown (Saybrook P.S.)	0.104	0.396
		Easttown (Berwyn P.S.)	0.973	2.937

(1) Refer to Figure 4B for locations.

EXHIBIT 4

East Whiteland Township has been allocated a peak capacity of 9.5 mgd (4.0 mgd average) in the Valley Creek Trunk Line. Flows allocated to East Whiteland at the Wilson Road Pump Station, based on its current capacity, are 5.855 mgd peak and 2.34 mgd average. The Wilson Road Force Main, like the Pump Station, has a limited capacity and East Whiteland's allocation for the force main is 6.553 mgd peak and 2.62 mgd average daily flow. Based on the current plant capacity of 8 mgd, East Whiteland is allotted 1.7 mgd (average flows). East Whiteland has allowed Charlestown Township to utilize 0.3 mgd (average) of its allocation through the Valley Creek Trunk Line and the Wilson Road Pump Station and Force Main. Although the Valley Creek Trunk Line is capable of accepting the ultimate flows from East Whiteland Township, the plant capacity and the Wilson Road Pump Station and Force Main limit the actual flows possible through the system.

3. Treatment Systems

The Township collection system connects to the Valley Forge Sewer Authority plant for its sewage treatment and disposal. The sewage plant provides both primary and secondary treatment, and involves pressure filtration. The treatment system is an activated sludge method. The system was built in 1976 and is in excellent condition. The Municipal Authority plans to expand the collection system as funds become available. The expansion would accommodate infill development in western areas of the Township. No operating problems have been reported at this time. Treated effluent from the system is discharged into the Schuykill River.

4. Private Systems

Seven private package plants operate in East Whiteland Township. These treatment plants are generally located in the southern and western portions of the Township. The Bishop Tube Company operates one facility. The treatment plant has a designed operating capacity of 10,000 gallons per day. The present average daily flow is 4,000-5,000 gallons per day (gpd). There are future plans to upgrade and expand the system to a designed operating capacity of 20,000 gpd.

The second private treatment facility is an aeration system that serves the Great Valley High School. The average daily flow for the system is 9,000 gpd which is well under the designed operating capacity.

The third private package serves Immaculata College. The College has two Imhof gravity-fed treatment facilities. The combined designed operating capacity of the two facilities is 117,200 gpd. The average daily flow is 28,700-50,000 gpd. Ongoing repairs such as new flow and filtration devices are being done. Malvern Court Mobile Home Park operates the fourth private package plant in the Township. The type of treatment system is aeration with sand filter beds. The designed operating capacity is 24,000 gpd and the average daily flow is 16,000-18,000 gpd.

EXHIBIT 4A

File

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (610) 644-5591 FAX (610) 647-9912

CONSULTING ENGINEERS

SURENDER S. KOHLI, P.E.
PRESIDENT

Post-it® Fax Note 7671	Date 03/07/11	# of pages ▶ 5
To STEVE WOODWARD of VALLEY FORGE	From SURENDER K.	
Co./Dept. AGC	Co. KOHLI	
Phone #	Phone #	
Fax #	Fax #	

October 15, 2008

Diane C. Vesely, P.E.
BUCHART HORN, INC.
P. O. Box 15040
York, PA 17405-7040

Re: **East Whiteland Township**
Regional Act 537 Response

Dear Diane:

In response to your faxed letter dated October 8, 2008, enclosed herein please find "Exhibit 2" Sewage Flow Calculations which have been revised by removing the Charlestown Flows (as you requested) from Point "A", the previously mistyped flows for P.S. #2 were corrected, and "other flow" EDU additions were changed from 1,873 EDUs to 1,963 EDUs; thus providing the total flows at Point "A" to be 2,007,525 GPD. Please note that the William Henry Apartments (projected flows) as noted in your spread sheet as 710,000 GPD is incorrect and should be 70,000 GPD.

The total projected flows to Valley Forge Sewer Authority, as noted on Sheet 4 of 4, now shall be 3,630,250 GPD.

Enclosed herein also find the projected flows Map (submitted with the previous submission as Exhibit "1") showing the EDU numbers in blue which shall correlate with the other flows.

If you have any further questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Township

SSK:cpw

cc: Terry H. Woodman, Township Manager

Revised 10/14/08

Exhibit "2"

EAST WHITELAND TOWNSHIP
Regional Act 537 – Response

Sewage Flow Calculations

POINT "A"

Includes flows from P.S. #1 and #2 (which include flows from P.S. #3, #4, #5, #6, and #11), Charlestown flows, Malvern Hunt, Brownfields, Malvern, Court, Immaculata College, and William Henry Apartments and project flow from areas primarily in the northern and western parts of the Township.

P.S. #1 (current) = 14,700 gpd
P.S. #2 (current) = 854,000 gpd
Malvern Hunt (projected) = 100,000 gpd
Brownfields (projected) = 155,000 gpd
Malvern Court (projected) = 24,000 gpd
Immaculata University (projected) = 250,000 gpd
William Henry Apartments (projected) = 70,000 gpd
Other flow = 539,825 gpd (see below)

Projected flow (see Projected Flow Plan):
147, 188, 75, 30, 47, 85, 52, 15, 31, 90, 210, 210, 19, 144, 10, 50, 50, 30, 75, 13, 77, 5, 171, 18, 100, 13, 8 = 1,963 EDU @ 275 gpd/EDU = 539,825 gpd

TOTAL FLOW at "A" = 2,007,525 gpd

POINT "B"

Includes flows from P.S. #8 (which include flows from P.S. #9 and #10) and some projected flows from areas off of the Route 30 corridor.

P.S. #8 (current) = 272,300 gpd
Other flow = 78,925 gpd (see below)

Projected flow (see Projected Flow Plan):
32, 47, 68, 5, 75, 40, 20 = 287 EDU @ 275 gpd/EDU = 78,925 gpd

TOTAL FLOW at "B" = 351,225 gpd

East Whiteland Township Regional Act 537 Response
Exhibit "2"
Revised - 10/14/08

POINT "C"

Includes flows from Points "A" and "B" and flows from areas off of Route 401.

"A" = 2,007,525 gpd
"B" = 351,225 gpd
Other flow = 128,975 gpd (see below)

Projected flow (see Projected Flow Plan): 67, 50 = 117 EDU
Current estimated flow: 90, 19, 41, 10, 42, 150 = 352 EDU

(117 + 352) EDU = 469 EDU @ 275 gpd/EDU = 128,975 gpd

TOTAL FLOW at "C" = 2,487,725 gpd

POINT "D"

Includes flows along Route 30 and below (including P.S. #12)

P.S. #12 (current) = 50,850 gpd
Other flow = 97,900 gpd (see below)

Projected flow (see Projected Flow Plan): 1 EDU
Current estimated flow: 24, 7, 26, 7, 37, 12, 120, 30, 54, 37 = 355 EDU

(1 + 355) EDU = 356 EDU @ 275 gpd/EDU = 97,900 gpd

TOTAL FLOW at "D" = 148,750 gpd

POINT "E"

"E" = "C" + "D"

"C" = 2,487,725 gpd
"D" = 148,750 gpd

TOTAL FLOW at "E" = 2,636,475 gpd

East Whiteland Township Regional Act 537 Response
Exhibit "2"
Revised – 10/14/08

POINT "F"

Flows from "E" and some area north of the trunk line.

"E" = 2,636,475 gpd
Other flow = 65,725 gpd (see below)

Projected flow (see Projected Flow Plan): 52 EDU + 50 EDU = 102 EDU
Projected flow (see Projected Flow Plan): 20, 87, 30 = 137 EDU

(102 + 137) EDU = 189 EDU @ 239 gpd/EDU = 65,725 gpd

TOTAL FLOW at "F" = 2,702,200 gpd

POINT "G"

Projected flow (see Projected Flow Plan): 59, 72 = 131 EDU
Current estimated flow: 50, 69, 82, 40, 20, 6, 50, 126, 20 = 463 EDU

(131 + 463) EDU = 594 EDU @ 275 gpd/EDU = 163,350 gpd

TOTAL FLOW at "G" = 163,350 gpd

POINT "H"

"H" = "F" + "G"

"F" = 2,702,200 gpd
"G" = 163,350 gpd

TOTAL FLOW at "H" = 2,865,550 gpd

East Whiteland Township Regional Act 537 Response
Exhibit "2"
Revised – 10/14/08

POINT "I"

Flows from "H," P. S. #7, and the industrial park.

"H" = 2,865,550 gpd
P.S. #7 (current) = 157,500 gpd
(West) Industrial park area (projected) = 37,500 gpd
(East) Industrial park area (projected) = 100,000 gpd
Other flow = 27,500 gpd

Projected flow (see Projected Flow Plan): 100 EDU @ 275 gpd/EDU = 27,500 gpd

TOTAL FLOW at "I" = 3,188,050 gpd

POINT "J"

Flows from "I"

"I" = 3,188,050 gpd
Other flow = 442,200 gpd

Projected flow (see Projected Flow Plan):
Worthington = 958 EDU + Glasgow Quarry = 650 EDU

958 + 650 EDU = 1,608 EDU @ 275 gpd/EDU = 442,200 gpd

TOTAL FLOW at "J" = 3,630,250 gpd

TOTAL PROJECTED FLOW
TO VALLEY FORGE SEWER AUTHORITY
= 3,630,250 GPD

EXHIBIT 9

DEP Response Letter 2

ADVANCED GeoServices
Engineering for the Environment, Planning for People
1055 Andrew Drive, Suite A, West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

July 8, 2011 2009-2412

Ms. Kelly Boettlin
Department of Environmental Protection
Southeast Regional Office
2 E. Main St.
Norristown, PA 19401

RE: Act 537 Special Study Amendment – Response #2
East Whiteland Township, Chester County
Mill Lane Pump Station Replacement Project

Dear Ms. Boettlin:

The following letter is being submitted on behalf of East Whiteland Township (EWT) and in response to the Department of Environmental Protection's (Department) letter dated May 27, 2011 regarding the Official Sewage Facilities Plan Special Study for the Mill Lane Pump Station Replacement (MLPS). The Department's letter states that the special study continues to not be in accordance with the provisions of Chapter 71. The intent of the responses herein is to provide additional answers and information for the special study to insure that the Special Study documentation meets the provisions of Chapter 71 regarding the 537 planning process and warrants an approval of the plan amendment by PADEP.

The following is a summary of each of the questions; followed by corresponding answers and a description of additional attached documentation, where appropriate:

1. The Township had confirmed during the April 13, 2011, meeting that the MLPS is currently permitted for 2.0 million gallons of sewage per day (MGD). Projected flows to the pump station have been listed; however, as noted below, the Township will be unable to get planning approval for the entire projected flows. Since permit limits are based on approved planning flows, please clarify the proposed permitted flow for the MLPS.

   Please refer to Attachment 1 of this letter. This information was developed by Valley Forge Sewer Authority regarding the sewage flow capacity of the portion of Tredyffrin Township's interceptor between LV58 and LV57. The calculations to determine the flow capacity of this section of sewer were confirmed using dynamic modeling, as noted. The updated calculations (using the same site conditions as previously used) suggest that the flow capacity of this sewer section is 15.8 MGD, which is considerably greater than the 2035 projected

capacity noted in Tredyffrin's 537 Plan (14.5 MGD). This information suggests that EWT's flow thru the MLPS may not need to be restricted; thus a Phased approach for the MLPS replacement project and related unsewered area connections (Areas 1 thru 5 noted in the 537 Plan Special Study) is likely not necessary.

As noted in the Special Study, the 2035 projected average daily flow is approximately 2.3 MGD with a peaking factor of approximately 6.4 MGD for the MLPS. Also, as previously noted, the MLPS replacement is necessary initially because the existing MLPS is over 30 years old and the existing pumps are beyond their useful life.

In summary, the total 2035 projected sewage flows of approximately 15.6 MGD (as noted in Tredyffrin Township's Act 537 Plan Revision for Valley Creek Trunk Sewer) are below the capacity threshold of 15.8 MGD for the LV58 to LV57 trunk sewer. However, for consistency purposes with the VCTS Act 537 Plan; EWT will continue to monitor connected flows and provide a future amendment to the Act 537 Plan if further modeling results suggest that insufficient capacity exists in the LV58 to LV57 trunk sewer to handle future connected sanitary flows.

2. The implementation schedule provided in the March 17, 2011, resubmission is inadequate. As indicated in the Department's November 12, 2010, review letter, this implementation schedule should include milestones for the permitting, construction, and completion of the proposed sanitary sewer facilities. The schedule can be time dependent on prior milestones and may be based on flow triggers where applicable.

   Refer to Attachment 2 enclosed in this letter for implementation schedule information as it pertains to the permitting construction and completion of the MLPS, new connected areas outlined in the Special Study (Areas 1 thru 5), force main replacement and downstream sewer enlargement (from MH 8-12 to 18-2, MH 18-2 to 18-14 and MH 18-14 to 19-4) within EWT.

3. If flow triggers are to be included in your implementation schedule, please describe how the Township will monitor flows to see if the flow trigger points are reached.

   As previously noted, EWT will monitor flows via installed flow metering equipment at the MLPS. Also, EWT will provide additional planning and flow projection information for each of the new areas to be connected to the public sewer collection system at the time that the improvements are proposed. The latest calculated flow information for the LV58 to LV57 section of Tredyffrin's trunk sewer shows that there is adequate capacity to handle future projected flows. However, EWT will provide advanced notice to both Tredyffrin and

VFSA for any planned improvements and connections to the sewer system within EWT as a means of keeping all parties well informed.

4. A milestone for the replacement of the MLPS force main must be included in the required implementation schedule indicating what will trigger this force main replacement. Please note that additional sewage facilities planning may be required prior to replacement of this force main. The implementation schedule should reflect planning and permitting actions for the force main replacement.

   Please refer to Attachment 2 for the implementation schedule. EWT would like to include the planning for the force main replacement as part of this Act 537 Plan Special Study. At the time of the force main replacement project, EWT will submit the required permit application information and will notify both Tredyffrin and VFSA of this replacement.

5. Milestones and triggers must also be included in the implementation schedule for the enlargement of the downstream sewer sections noted within the Special Study.

   Please refer to Attachment 2 for the implementation schedule. EWT would like to include the planning for the sewer enlargement as part of this Act 537 Plan Special Study. At the time of the sewer enlargement project, EWT will submit the required permit application information and will notify both Tredyffrin and VFSA of this sewer enlargement.

6. Please clarify if all construction of sewage facilities proposed within the Special Study will take place within existing easements.

   The force main replacement and the downstream sewer enlargement will be constructed within existing PennDOT right-of-way and generally in parallel to the existing infrastructure.

   EWT will provide additional planning information to the Department and will obtain easements (if necessary) for Areas 1 thru 5 of the Special Study when these areas are to be connected to the sewer collection system. As part of this planning effort, EWT will also notify all parties involved, including Tredyffrin Township and VFSA.

7. As requested in the Department's November 12, 2010, review letter, please identify with text and mapping which areas are proposed to be able to connect to public sewer prior to capacity being increased within the Valley Creek Trunk Sewer (VCTS) from Manholes (MRs) LV58 to LV57.

Please refer to the response in Item #1 above. Based on this information, EWT concludes that the capacity increase within the VCTS from MH LV58 to LV57 should not create a bottleneck for the replacement of the MLPS. Therefore, EWT's proposed public sewer connections will be made as the projects are budgeted; and additional planning and design information will be provided to the Department for review and final approval.

8. As discussed in the April 13, 2011, meeting, the Township will be unable to determine when replacement of the gravity sewer trunk line from MH LV58 to MH LV57 in Tredyffrin Township will be taking place. Since flows coming from the Township are projected to exceed capacity of the VCTS from MH LV58 to MH LV57 by 2018, the Department will be unable to approve planning for any projected flows beyond the capacity of this sewer section. The Township may wish to split the submitted planning into 2 phases. Phase 1 will include all construction able to take place prior to capacity being increased within the VCTS from MH LV58 to MH LV57 as well as the sewer service area description requested in Item 7 above. Phase 2 will describe the actions and areas to be served after capacity is increased within this VCTS section.

   Please note that if the Township decides to split this planning into phases, the following will need to be included in the new Phase 1 submission:

   a. A new Resolution of Adoption.
   b. Evidence that this project has been republished.
   c. Documentation that shows that the Township Planning Commission, county planning commission, and the county health department have had a chance to review the changes to this planning document.
   d. An implementation schedule showing milestones and triggers pertaining to both phases.

   EWT does not wish to split the submitted planning into 2 phases and does not believe that this is necessary considering the information outlined in Item 1 above pertaining to the capacity of the VCTS trunk sewer between LV58 and LV57. The attached implementation schedule shows the proposed improvements to be implemented as part of the proposed Act 537 Plan Special Study. The additional sewer connections outlined in the Act 537 Plan Special Study will be planned and designed at the time the connections are to be made. This information will be submitted to the Department for final review and approval.

9. The March 17, 2011, resubmission included a copy of a portion of the draft VCTS Act 537 Plan to document that the 2035 projected flows for the Township are available in the flow already allocated to the Township from both Tredyffrin Township and the Valley Forge Sewer Authority (VFSA). This documentation is inadequate. Please submit separate correspondence from both Tredyffrin Township and VFSA confirming this statement.

   Please refer to Attachment 3 of this letter for correspondence from both Tredyffrin Township and VFSA confirming the 2035 projected flows for EWT.

10. The Special Study indicated that the connection of the existing Malvern Courts Mobile Home Park (MHP) located in Service Area I of the Township will take place between now and 2015. However, the Department's Operations Section has noted significant operational concerns with the private sewerage facilities serving the MHP.

    During the April 13, 2011 meeting, the Township had indicated that the connection of the MHP cannot occur until other sewerage facilities are installed closer to the development. Please clarify in detail what actions need to take place in order to connect this development to public sewer as well as the projected time needed for each action. In addition, please evaluate the feasibility of an expedited schedule of sewer construction which will allow for the near-term connection of the MHP.

    If an expedited connection schedule for the MHP is not feasible, interim corrective measures are required in order to address the significant operational problems with the private sewerage facilities serving the MHP. Section 71.71 of the Pennsylvania Code states that "Municipalities are required to assure the proper operation and maintenance of sewage facilities within their borders." Therefore, please clarify how the Township intends to address the problems associated with the sewerage facilities serving this mobile home park. Specifically, please evaluate a municipal takeover of the MHP's wastewater treatment plant.

    It is EWT's opinion that the status of the Malvern Courts MHP is a separate issue and is not related to the MLPS replacement project. However, the MLPS replacement has been designed and has been submitted to the Department for permitting. The MLPS must be replaced prior to any new connections to the collection system being implemented.

    In relation to the Malvern Courts MHP, discussions have previously occurred regarding the connection of the MHP to EWT's public sewer. Once the MLPS project is constructed and the new pump station is operational, EWT will resume discussions with the Owner of the MHP and will contact the Department to set up a meeting to discuss the issues surrounding this situation. At that time, EWT will propose a study be conducted by the property owner to evaluate options for eliminating the onsite wastewater treatment plant and for connecting the MHP to EWT's sanitary sewer collection system.

If you have any questions, comments or need additional clarification regarding the information contained within this letter, please contact me at (610) 840-9116.

Very Truly Yours,

ADVANCED GEOSERVICES CORP

Jack L. Police, P.E.
Senior Project Engineer

Enclosures

JLP:kk

cc: Terry H. Woodman, EWT
William H. Steele, EWT
Surender S. Kohli, AGC
Stephen B. Woodward, AGC
Tredyffrin Township
Marty Goldberg, VFSA

ATTACHMENT 1

Terry Woodman

From: Martin Goldberg [mgoldberg@vfsa.com]
Sent: Friday, January 21, 2011 12:39 PM
To: Mimi Gleason; Terry Woodman
Cc: Len Pinchok; Steve Norcini; 'rphillips@GFNET.com'; Lutter, Larry
Subject: RE: VCTS 537 Plan - Line LV 57-58
Attachments: VCTS LV Interceptor RT 202 Crossing

Ladies/Gentlemen,

As I discussed with Steve Norcini this morning, I asked Buchart-Horn to evaluate the VCTS system using a dynamic hydraulic model in order to evaluate in further detail the hydraulic characteristics around the LV 57-58 section of the VCTS. We are also doing this for some sections of the VFSA gravity sewer system where static modeling has identified sections which may be of concern; yet field conditions have shown these sections of pipe to be in a "far-from-full" condition during very heavy rain events.

The results of the dynamic model analysis (see attachments) indicate that at the projected maximum flow rate, the pipe would not be entirely full. According to the dynamic analysis, the "full pipe condition" results at a flow rate of 15.8 million gallons per day (mgd) which is much greater than 2035 projected capacity requirement of 14.5 mgd condition in the Plan. The dynamic analysis included the same site condition parameters that were used in the latest version of the Act 537 Plan.

Of course as stated in the Plan, field study should also be implemented to confirm model results. However, for the purpose of the Act 537 Plan, given the significant cost involved with , we would suggest utilizing the most detailed (dynamic) model regarding this section of sewer.

With the LV 57-58 repair removed, the staff would recommend approving a resolution adopting the Plan.

Marty

From: Mimi Gleason [mailto:mgleason@tredyffrin.org]
Sent: Monday, January 17, 2011 1:07 PM
To: Martin Goldberg; 'twoodman@eastwhiteland.org'
Cc: Len Pinchok; Steve Norcini; 'rphillips@GFNET.com'
Subject: Re: VCTS 537 Plan discussion

Thanks, Marty. How about if we go with 3 pm on Mon, Jan 24? If that still works, see everybody then.

Mimi

From: Martin Goldberg <mgoldberg@vfsa.com>
To: Terry Woodman <twoodman@eastwhiteland.org>; Mimi Gleason
Cc: Len Pinchok <lpinchok@vfsa.com>; Steve Norcini; Phillips, Roger A. <rphillips@GFNET.com>
Sent: Mon Jan 17 10:12:00 2011
Subject: RE: VCTS 537 Plan discussion

That works for me also.

MG

Terry Woodman

From: Lutter, Larry [LLutter@BH-BA.com]
Sent: Friday, January 21, 2011 11:27 AM
To: Martin Goldberg
Subject: VCTS LV Interceptor RT 202 Crossing
Attachments: VFSA LV 58 Analysis.pdf

Marty,

As requested by the VFSA, BH evaluated the capacity of the LV Interceptor at the RT 202 crossing specifically manhole section LV 57 to LV58. We used a dynamic model. The model is described and the results summarized below. The model results graphic for this manhole section is attached.

Bentley® SewerGEMS® Sanitary V8i was used to create this sewer model. SewerGEMS is a fully-dynamic, multi-platform, sanitary modeling solution. The model calculates the depth of flow in the interceptor and considers the depth of flow in downstream manhole sections while calculating the depth of flow for each manhole section. The interceptor from manhole LV59 to manhole V55 was set into the model using the pipe size, length, and slope listed in the October 2010 version of the VCTS Act 537 Plan. To establish invert elevation, the invert of manhole LV58 was set in the model at the elevation identified on the sewer plan and profile drawing. All other inverts were set using the pipe length and slope data listed in the 537 Plan. The "Manning's 'n'" value of 0.013 was used, the same as the used for the 537 Plan. The model results are as follows:

- @ 14.527 MGD, the peak flow rate identified in the Act 537 Plan: The Model indicates no surcharge at MH LV58
- @ 15.8 MGD the Model indicates full pipe at MH LV58

As with any model, the model results should be field verified for any manhole section where capacity is a concern. The field verification can be obtained by the use of a flow meter with a pressure sensor to verify flow rate and depth of flow. Field verification of the manhole conditions would be needed to confirm the manhole is suitable for a flow meter installation.

Please let me know if you have any questions.

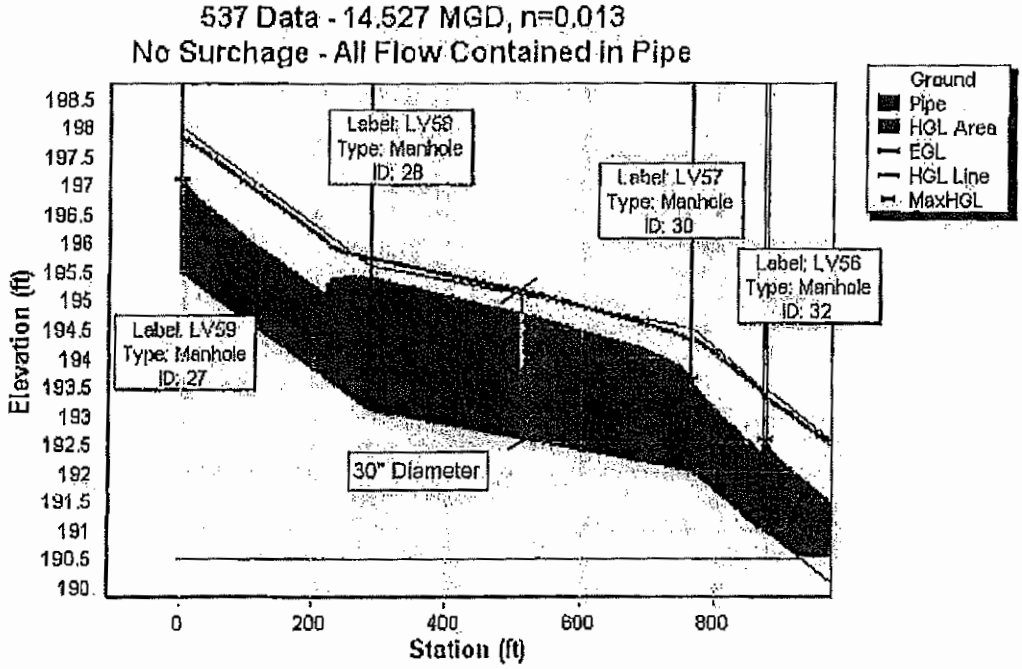
Thanks.

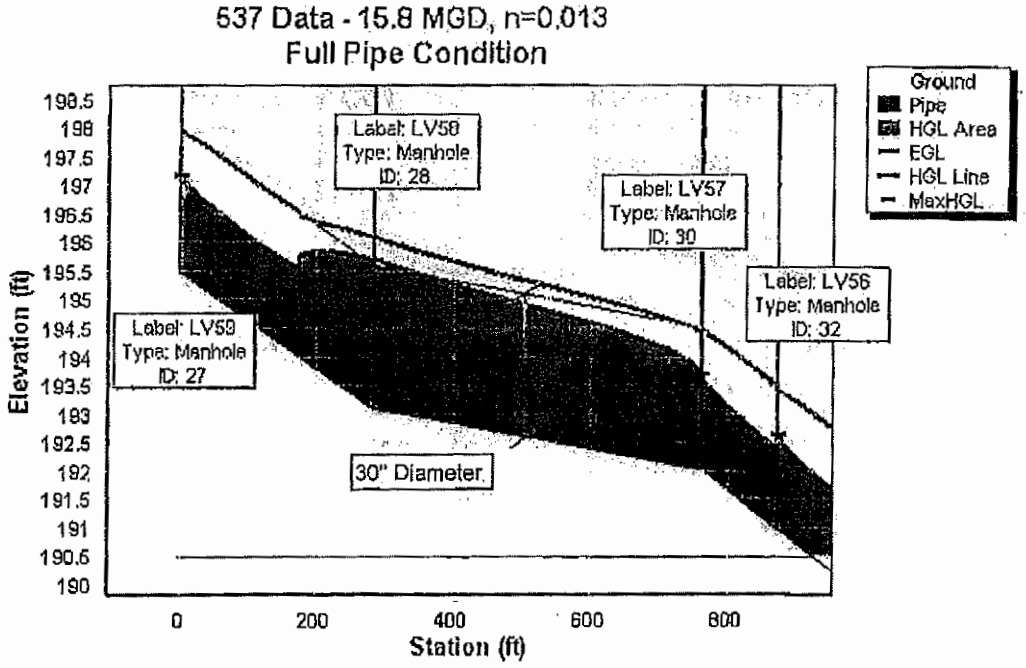
Larry

Lawrence A. Lutter, P.E.

Buchart Horn, Inc.

The Russell E. Horn Building
445 West Philadelphia Street, York
PO Box 15040, York, PA 17405-7040
T: (717) 852-1483 || C: (443) 838-8012 || F: (717) 852-1613
llutter@bh-ba.com || www.bh-ba.com





Note: LV58 Drawing invert of 193.10' was used for the model. All other inverts were adjusted based on slopes and lengths indicated in the October 2010 Act 537 Plan Revision. Ground elevation (top of manhole) at LV58 = 202.55' (therefore LV58 depth is 9.45').

Gannett Fleming

GANNETT FLEMING, INC.
P.O. Box 80794
Valley Forge, PA 19484-0794
Location:
Valley Forge Corporate Center
1010 Adams Avenue
Audubon, PA 19403-2402
Office: (610) 650-8101
Fax: (610) 650-8190
www.gannettfleming.com

June 23, 2011

RECEIVED
JUN 27 2011
KOHLI & ASSOC., INC.

Surender Kohli, P.E
Kohli and Associates, Inc.
42 Lloyd Avenue
Malvern, PA 19355

Re: Tredyffrin Township
Valley Creek Trunk Sewer
Act 537 Plan – East Whiteland Capacity Certification

Dear Surrender:

With regard to the projected flows for East Whiteland Township in the Valley Creek Trunk Sewer Act 537 Plan, I have attached Table 6 of the Act 537 Plan indicating the projected flows from the member municipalities for your reference. East Whiteland Township has been allocated 3.63 mgd average daily flow, as previously requested, and as included in the Valley Forge Sewer Authority's Act 537 Plan. Utilizing a peaking factor of 2.30, this corresponds to a peak flow of 8.349 mgd. The wasteload projections in the Act 537 plan indicate a potential capacity shortfall in the LV pipeline in year 2018. The VCTS Act 537 Plan is deferring the final selected alternative for this section of pipeline until further engineering investigations can be undertaken closer to the year 2018, as indicated on page 45 of the plan.

The plan indicates the following to take place prior to determining the need for an increase in capacity:

- Flow metering during wet-weather periods.
- Visual observation of the flow through the run during wet-weather/high flows.
- Field verification of the condition of the pipe.
- Re-assessment of the pipe friction factor for use in determining pipe capacity.
- Determine actual capacity of existing sanitary sewer
- The use of dynamic flow modeling to reassess the adequacy of pipe capacity for present and projected peak wastewater flows through planning year 2035.
- Confirmation that additional capacity is required and in what time frame.

Gannett Fleming

If the results indicate that insufficient capacity exists, the findings will be addressed in a future amendment to the Act 537. I would recommend that similar language be included in the Act 537 Plan being prepared for East Whiteland Township in order to ensure consistency between the plans.

If you have any questions or require any additional information, please contact me.

Very truly yours,
GANNETT FLEMING, INC.

Patti Kamp for

Roger A. Phillips, P.E.
Senior Project Manager

cc: Mimi Gleason
Terry Woodman

Table 6
Wastewater Flow Projections

Municipality	2005 (Actual)	2006 (Actual)	2010	2015	2025	2035
Annual Average Daily Flow (mgd) [1]						
Charlestown Township	0.128	0.122	0.212	0.311	0.404	0.417
Easttown Township	1.357	1.343	1.245	1.300	1.412	1.523
East Whiteland Township	1.963	1.914	2.136	2.469	3.003	3.630
Malvern Borough	0.329	0.291	0.344	0.424	0.436	0.543
Tredyffrin Township	1.128	1.360	1.753 [2]	1.850	2.149	2.413
Willistown Township	1.221	1.180	1.225	1.301	1.324	1.348
Total	6.126	6.210	6.915	7.655	8.728	9.874
Instantaneous Peak Flow Rate (mgd) [3]	14.09	14.28	15.90	17.61	20.07	22.71

Footnotes:

[1] Projections for years 2010, 2015, 2025, and 2035 obtained from Regional Act 537 Plan for Valley Forge Sewer Authority, November 2006 and December 2008 Needs Analysis.

[2] Base flow increased by 200,000 gpd in 2008 due to corrections made to Willistown's unmetered flows starting in 2008.

[3] Instantaneous peak flow rate estimated at 2.3 times average daily flow. It represents peak flow rate for total system flows at inlet to the Wilson Road Pumping Station.

ATTACHMENT 2

APPENDICES

Special Study Act 537 Plan – East Whiteland Township

Implementation Schedule*

TASK	DATE
Act 537 Plan Special Study adoptions	January 31, 2010
Act 537 Plan Special Study submitted to PADEP	September 30, 2010
Complete Design of Pump Station	February 25, 2011
Submit WQM Part II Permit Application	June 17, 2011
Submit Joint Permit Application	June 17, 2011
Obtain WQM Part II Permit	August 2011
Obtain Joint Permit	August 2011
Advertise for construction bids	September 2011
Receive Bids	September 2011
Award Construction Contract	October 2011
Issue Notice to Proceed	October 2011
Complete Construction	May 2012
New pump station online	June 2012
Provide Planning/Easement Information to PADEP for Area 1	August 2012
Complete Design, Permitting for Area 1	December 2012
Complete Bidding and Construction for Area 1	July 2013
Provide Planning/Easement Information to PADEP for Area 2	August 2013
Complete Design, Permitting for Area 2	December 2013
Complete Bidding and Construction for Area 2	July 2014
Provide Planning/Easement Information to PADEP for Area 3	August 2014
Complete Design, Permitting for Area 3	December 2014
Complete Bidding and Construction for Area 3	August 2015
Provide Planning Information to PADEP for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	December 2016
Complete Design, Permitting for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	July 2017

Complete Bidding and Construction for Sewers Downstream of MLPS (MH 8-12 to MH 19-4)	July 2018
Provide Planning/Easement Information to PADEP for Area 4	October 2018
Complete Design, Permitting for Area 4	February 2018
Complete Bidding and Construction for Area 4	September 2018
Provide Planning/Easement Information to PADEP for Area 5	December 2018
Complete Design, Permitting for Area 5	June 2019
Complete Bidding and Construction for Area 5	March 2020
Provide Planning Information to PADEP for New MLPS Force Main	August 2020
Complete Design, Permitting for New MLPS Force Main	February 2021
Complete Bidding and Construction for New MLPS Force Main	February 2022

*Note: This schedule is a general estimate of timeframes for implementation of the noted projects based on projected sanitary sewage flows outlined in EWT's sanitary sewer needs analysis. EWT will continue to closely monitor the sanitary sewage flow volumes and will initiate these improvements as the flows meet trigger points as noted in the Special Study.

ATTACHMENT 3

ADVANCED GeoServices
Engineering for the Environment. Planning for People.
1055 Andrew Drive, Suite A
West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

May 13, 2011

2009-2412

Mr. Stephen F. Norcini, P.E.
Public Works Director–Tredyffrin Township
1100 Duportail Road
Berwyn, PA19312-1079

RE: East Whiteland Township
Confirmation of Allocated Wastewater Flow

Dear Mr. Norcini:

Advanced GeoServices is currently working with Surender Kohli on a project to replace on the East Whiteland Township's (EWT) major wastewater pumping stations. As part of this project, EWT is required to update their Act 537 Plan to include projected sewer connections and flows through the year 2035. The Act 537 Plan revision has been submitted to the Pennsylvania Department of Environmental Protection (PADEP) for review and approval. As a requirement of PADEP's approval process, they have requested that EWT provide written confirmation from Tredyffrin Township of the allocated wastewater flows.

Attached to this correspondence is a letter dated October 15, 2008 confirming with Buchart Horn, Inc. that the total projected average daily flow to Valley Forge Sewer Authority (VFSA) is 3.63 MGD. Also, attached is a table from Tredyffrin's recent Act 537 Plan Revision for Valley Creek Trunk Sewer dated April of 2010. The table notes the average daily flow for EWT to be 3.621 MGD plus 0.009 MGD for Woodview, which equals a total average daily flow of 3.63 MGD. If you are in agreement with the noted information regarding the average daily flow allocation for EWT, please kindly sign on the line below as confirmation.

Upon signing this letter please either fax or mail the letter to my attention at (610) 840-9199 or to the address noted in the letterhead. Thank you for your anticipated timely response on this matter. If you have any questions, please contact Jack Polce at (610) 840-9116 or Surender Kohli at (610) 644-5591.

Very truly yours,

ADVANCED GEOSERVICES CORPORATION

Jack L. Polce, P.E.
Project Manager

Enclosures

JLP:kk

cc: Surender Kohli, AGC
Steve Woodward, AGC

NAME: Stephen F. Norcini (Print Name) TITLE: Director of Public Works

DATE: 5/26/2011 SIGNATURE:

F:\OFFICE\AGC\PROJECTS\Files\2009-2412\Communications\Letter to Tredyffrin_EWT Flow Allocation Confirmation.docx

Steve Norcini

From: Phillips, Roger A. [rphillips@GFNET.com]
Sent: Thursday, May 26, 2011 8:28 AM
To: Steve Norcini
Subject: RE: Regarding East Whiteland Township Allocated Wastewater Flow Letter

The flows allocated to East Whiteland in the Act 537 plan for 2035 are 3.63 mgd, as also indicated in the letter from Advanced Geoservices. The initial evaluation of the LV line indicated that the projected flows would exceed the capacity of the line. Upon the discussions with VFSA and East Whiteland, it was decided to modify the language in the plan to reevaluate the LV portion of the VCTS in five years to determine if in fact sufficient capacity exists, and if there is a need for replacement.

The letter is requesting that you certify that the 3.63 MGD is allocated to East Whiteland for 2035, which it is. Any potential upgrades to the LV trunk will be determined in the future as stated in the VCTS 537 Plan.

I say that you can sign it since the flow is allocated to East Whiteland. Just wanted to call your attention to the fact that it is unknown if in fact the capacity exists for that allocation.

From: Steve Norcini [mailto:snorcini@tredyffrin.org]
Sent: Thursday, May 26, 2011 8:11 AM
To: Phillips, Roger A.
Subject: RE: Regarding East Whiteland Township Allocated Wastewater Flow Letter

Roger,

Please clarify the comment regarding the future evaluation of the LV. thanks

Stephen F. Norcini, P.E.
Director of Public Works
Tredyffrin Township
snorcini@tredyffrin.org
610.408.3623

FOLLOW TREDYFFRIN TOWNSHIP ON FACEBOOK AND TWITTER!

From: Phillips, Roger A. [mailto:rphillips@GFNET.com]
Sent: Wednesday, May 25, 2011 4:20 PM
To: Steve Norcini
Subject: RE: Regarding East Whiteland Township Allocated Wastewater Flow Letter

The letter is Ok to sign, as long as the Township is comfortable with the future evaluation of the LV trunk. The numbers indicated in the letter match the future flow allocations for East Whiteland as indicated in the VCTS 537 plan for year 2035.

From: Steve Norcini [mailto:snorcini@tredyffrin.org]
Sent: Wednesday, May 25, 2011 4:04 PM
To: Phillips, Roger A.
Subject: FW: Regarding East Whiteland Township Allocated Wastewater Flow Letter

Roger,

Where do you stand on this?

Stephen F. Norcini, P.E.
Director of Public Works
Tredyffrin Township
snorcini@tredyffrin.org
610.408.3623

FOLLOW TREDYFFRIN TOWNSHIP ON FACEBOOK AND TWITTER!

From: Steve Norcini
Sent: Wednesday, May 25, 2011 4:01 PM
To: 'Kimberly Keenan'
Subject: RE: Regarding East Whiteland Township Allocated Wastewater Flow Letter

Ms. Keenan,

This letter is in the hands of our sewer engineer, Gannett Fleming. I will call them and see where it stands.

Thank you

Stephen F. Norcini, P.E.
Director of Public Works
Tredyffrin Township
snorcini@tredyffrin.org
610.408.3623

FOLLOW TREDYFFRIN TOWNSHIP ON FACEBOOK AND TWITTER!

From: Kimberly Keenan [mailto:kkeenan@advancedgeoservices.com]
Sent: Wednesday, May 25, 2011 10:49 AM
To: Steve Norcini
Subject: Regarding East Whiteland Township Allocated Wastewater Flow Letter

Good morning Mr. Norcini,

Advanced GeoServices on behalf of Kohll & Associates sent you a letter a few weeks back dated May 13, 2011 regarding the confirmation of allocated wastewater flow for East Whiteland Township.

Could you give me an update on where you are with reviewing this letter and sending us a confirmation letter as requested by PADEP on the allocated wastewater flows. We are in need of this letter to go with our submittal package to PADEP.

I would appreciate any indication of when you would get a chance to review this information and send us a confirmation letter. Thank you very much for your time.

Have a nice day.

Kim Keenan
ADVANCED GEOSERVICES
1055 Andrew Drive, Ste. A

West Chester, PA 19380
Direct - 610-840-9183
Fax - 610-840-9199
Email: kkeenan@advancedgeoservices.com
Web Site: www.advancedgeoservices.com

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ADVANCED GeoServices
Engineering for the Environment. Planning for People.
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West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

June 15, 2011

2009-2412

Mr. Martin F. Goldberg, P.E.
Operations Manager – Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

RE: East Whiteland Township
Confirmation of Allocated Wastewater Flow

Dear Mr. Goldberg:

Advanced GeoServices is currently working with Surender Kohli on a project to replace one of East Whiteland Township's (EWT) major wastewater pumping stations. As part of this project, EWT is required to update their Act 537 Plan to include projected sewer connections and flows through the year 2035. The Act 537 Plan revision has been submitted to the Pennsylvania Department of Environmental Protection (PADEP) for review and approval. As a requirement of PADEP's approval process, they have requested that EWT provide written confirmation from Tredyffrin Township and Valley Forge Sewer Authority (VFSA) of the allocated wastewater flows. At this time, we have confirmation from Steve Norcini at Tredyffrin.

Attached to this correspondence is a letter dated October 15, 2008 confirming with Buchart Horn, Inc. that the total projected average daily flow to Valley Forge Sewer Authority (VFSA) is 3.63 MGD. Also, attached is a table from Tredyffrin's recent Act 537 Plan Revision for Valley Creek Trunk Sewer dated April of 2010. The table notes the average daily flow for EWT to be 3.621 MGD plus 0.009 MGD for Woodview, which equals a total average daily flow of 3.63 MGD. If you are in agreement with the noted information regarding the average daily flow allocation for EWT, please kindly sign on the line below as confirmation.

Upon signing this letter please either fax or mail the letter to my attention at (610) 840-9199 or to the address noted in the letterhead. Thank you for your anticipated timely response on this matter. If you have any questions, please contact Jack Polce at (610) 840-9116 or Surender Kohli at (610) 644-5591.

Very truly yours,

ADVANCED GEOSERVICES CORPORATION

Jack L. Polce, P.E.
Senior Project Engineer

Enclosures

JLP:kk

Cc: Surender Kohli, AGC
Steve Woodward, AGC

NAME: Martin F. Goldberg (Print Name) TITLE: Operations Manager

DATE: 6/21/11 SIGNATURE: Martin F Goldberg

EXHIBIT 10

Resolution No 11-2002

RESOLUTION NO. 11-2002
EAST WHITELAND TOWNSHIP

RESOLUTION FOR PLAN REVISION

RESOLUTION OF THE SUPERVISORS OF EAST WHITELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereunder "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvania Code,** requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, East Whiteland Township has prepared a minor amendment to Special Study – Act 537which provides for a sewage facilities in a portion of existing residential area bounded by Sproul Road to the west, Amtrak Railroad to the north, Oakhill Circle to the east and west King Road to the south in East Whiteland Township, and

The alternative choice to be implemented is to provide a public sewer system. The key implementation activities/date include the project is currently under design and projected to be completed by November of 2002.

WHEREAS, East Whiteland Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of East Whiteland hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Maureen G. Perri, Secretary of East Whiteland Township Board of Supervisors hereby certify that the foregoing is a true copy of the Township's Resolution No. 13-2002, adopted this 23rd day of April, 2002.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

Virginia McMichael, Chair

Michele Vaughn

Joseph Corrigan

ATTEST:

Township Secretary

EXHIBIT P3

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(SPECIAL STUDY 2013)

East Whiteland Township/
Charlestown Township (Southside)
Act 537 Special Study

August 2013

Engineer's Project No. 10310.02

Prepared By:

ARRO Consulting, Inc.
649 North Lewis Road, Suite 100
Limerick, PA 19468

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EXECUTIVE SUMMARY

This Act 537 Special Study (Special Study) was prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This Special Study addresses the requirements necessary to upgrade components of the Township's conveyance system in order to continue to accommodate approximately 113,234 gallons per day of existing Charlestown Township flow, approximately 296,330 gallons per day of additional flow from Charlestown Township, and existing and future East Whiteland Township flows. The facilities are located in the located in the north-central portion of the Township.

The Plan is comprised of the following components addressed in the Plan of Study:

I. Previous Wastewater Planning

II. Physical and Demographic Analysis

III. Existing Sewage Facilities in the Planning Area

IV. Future Growth and Development

V. Alternatives to provide for new or improved wastewater disposal facilities

VI. Evaluation of Alternatives

VII. Institutional Evaluation

VIII. Selected Wastewater Treatment and Institutional Alternative

The primary focus of the Plan is to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the north central portion of the Township as well the south-central portion of Charlestown Township. The means of collection and conveying the projected wastewater flow were examined.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives in three separate phases.

Phase I: This phase of the improvements has been set up to include the sanitary sewer improvements from Valley Creek north to Sidley Road approximately 220' north of the intersection of Sidley Road and Lapp Road. Construction of the Phase 1 improvements will eliminate the structural issues related to the pipe leakage into Valley Creek as detailed in Section A.III of the Corrective Action/Connection Management Plan. Construction of the Phase 1 improvements will also increase the capacity of the system to allow for the increased capacity for the improvements of the Phase 2 - Sidley Road Improvements.

Phase II: This phase of the improvements has been set up to include the sanitary sewer improvements from the end of Phase 1 in Sidley Road north in Sidley Road to the intersection with Lee Boulevard. Construction of the Phase 2 improvements will include the upgrading of sewer lines which will eliminate capacity issues related to the undersized pipe in Sidley Road as detailed in Corrective Action/Connection Management Plan. Construction of the Phase 2 improvements will also increase the capacity of the system to allow for the increased flow projected from Southside.

Phase III: Upgrade the Lee Boulevard Pump Station to meet the 5 to 10 year needs through the replacement of the existing pumps with new pumps. In addition, replace the existing constant speed controls with variable frequency drive controls.

Phase IV: This phase is dependent on future development in the planning area associated with Liberty Properties located in the Great Valley Industrial Park. At this time this future development is planned in accordance with the projections found in Tables 1 through 4 found in Section IV. Phase II upgrades to the gravity sewer in Sidley Road will be sized to accommodate the potential for future growth. A planning module will need to be prepared by Liberty Properties at the time of their development and this module will be more-able to detail collection and conveyance system upgrades necessary to meet the needs specific to the proposed development.

Currently the Mill Lane Pump Station, located at the base of the planning area, is being upgraded. This pump station has a peak permitted capacity of 2.07 MGD. The upgraded station will have two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD. This station should be online by the end of August. The station will undergo a 30-day test period. After the 30-day test period, if no problems are encountered, the old station will be decommissioned. Construction costs for the station (based on contractor's bid) total nearly $2,950,000. Engineering costs total nearly $478,320. Cost sharing for the project will be further established and discussed as the intermunicipal agreement amendment is finalized.

The engineer's opinions of probable construction cost (planning level costs) for the alternatives established within the primary phases are:

Total Costs -

Phase I: $717,000

Phase II: $1,357,000

Phase III: $111,000

Cost Sharing Estimates:

Phase I: East Whiteland Township - $397,972

Valley Forge Sewer Authority - $319,028

Phase II: East Whiteland Township - $579,186

Valley Forge Sewer Authority - $777,814

Phase III: East Whiteland Township - $6,600

Valley Forge Sewer Authority - $104,400

These alternatives will be paid for and financed through bond funding mechanisms and sharing of costs between the municipalities via the amended intermunicipal agreement structure. The amended agreement will have an exhibit attached to it that will reflect the final cost sharing structure as agreed by all parties. A draft of this agreement amendment is found in Appendix R of this Special Study.

The following is a schedule for implementing the proposed alternative:

	Description	Months from DEP Approval of Plan
1.	Phase I – Regulatory Approvals	0
2.	Phase I – Complete Cost Sharing/Financing Considerations	0
3.	Phase I – Construct Improvements	0
4.	Phase I – Complete Construction of Phase I Improvements	0
5.	Phase II – Submit Part II Water Quality Management Permit Application for Sidley Road Gravity Main Construction	Concurrent with Special Study Submission.

6.	Finalize Intermunicipal Agreement amendment between VFSA and EWT	Concurrent with DEP * Review of the Special Study.
7.	Phase II – Receive Part II Water Quality Management Permit	Concurrent with Special Study Approval from DEP.
8.	Phase II – Begin construction of Improvements; Sidley Road Gravity Main	3
9.	Phase II – Complete Construction; Sidley Road Gravity Main	9
10.	Televise and Repair Gravity Sewer through the AEGON property	20
10.	Phase III – Initiate Lee Blvd. Pump Station Upgrade Design	72
11.	Phase III – Submit Part II WQM Permit Application	78
12.	Phase III – Receive Part II WQM Permit Application Approval	81
13.	Phase III – Initiate Construction of Lee Blvd. PS Upgrades	82
14.	Phase III – Complete Construction of Lee Blvd. PS Upgrades	88
15.	Phase IV – Wilburdale PS Modifications	Dependent Upon GVCC Development

* It is anticipated that the Intermunicipal Agreement Amendment will be finalized and executed within the next one to two months. Letters of commitment from the Valley Forge Sewer Authority and East Whiteland Township are found in Appendix J.

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Discuss Existing Wastewater Planning

1. Previous Act 537 Planning

An Act 537 Sewage Facilities Plan, dated May 2, 1995, was prepared for East Whiteland Township. This was a 'township-wide' plan. The primary purpose of the Plan was to consider the extension of the existing public collection and conveyance system to most of the Township as need was determined.

An Act 537 Plan amendment "Special Study" was prepared. It was last revised in September 2011. The purpose of this study was to focus on the wastewater needs to address the replacement and upgrade of the Mill Lane Pump Station. This Special Study was approved by PA DEP in 2011/2012.

2. Planning Not Done in Accordance with an Approved Implementation Schedule

There has been no planning by the Township that has not been completed in accordance with an approved implementation schedule.

3. Additional Planning

At this time, there is no additional Planning that is anticipated by the Township above and beyond the planning associated with this Act 537 Special Study.

4. Planning Via Planning Modules or Addenda.

One revision was made to the Township-wide 537 Plan. This was the Special Study for the Mill Lane Pump Station that was last revised in September 2011.

B. Identification of Municipal and County Planning Documents

1. *Identify Land Use Plans and Zoning Maps*

The Chester County Comprehensive Plan entitled "Landscapes" establishes guidelines for the following land use categories.

- Growth Management
- National Resource Protection and Open Space
- Agricultural and Farmland Protection

The categories are used to provide the municipalities with "planning strategies to assist them in implementing their growth boundaries."

The Township has four municipal planning documents that govern Land Use and Zoning.

- The East Whiteland Township Comprehensive Plan
- The East Whiteland Township Zoning Ordinance.

A zoning map showing the designated zoning districts is found in Appendix A.

2. *Identify Zoning Regulations That Establish Lot Sizes*

The Zoning Ordinance adopted by the Township establishes the criteria for lot sizes for the following zoning districts in the planning area.

Zoning District		Minimum Lot Area
R1	Low Density Residential District	40,000 Sq. Feet
O/BP	Office/Business Park	80,000 Sq. Feet

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping

This Act 537 Special Study is being prepared to address the sewage facilities needs of existing and proposed development in the north-central portion of the Township. Refer to the Plan in Appendix B that shows the boundary for the planning area addressed in this Special Study.

The plan in Appendix B also represents a municipal plan/map showing the municipal boundaries of the entire Township. The area to be served by proposed sanitary sewer facilities falls with the planning area of this Special Study.

B. Identify the Physical Characteristics of the Planning Area

East Whiteland Township is located in Chester County, due east of Exton, PA. The topography of the planning area varies from a low elevation of 300 ft. near Sidley Road and Rt. 202 to an elevation of 360 ft. near the intersection of Sidley Road and Flat Road. A topographical map of the area is presented in Appendix D.

In addition, the wetlands per the National Wetlands Inventory Map are detailed on the map found in Appendix E.

C. Soils Analysis

This Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

D. Geological Features of the Planning Area

As with Section C. above, this Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

E. Topography

As referenced in Section II.B. of this Plan, the topography of the planning area varies from a low elevation of 300 ft. near Sidley Road at Rt. 202 to an elevation of 360 ft. near the intersection of Sidley Road and Flat Road. A topographical map of the area is presented in Appendix D.

F. Potable Water Supply Information

Since this is strictly a special study to address collection/conveyance issues within the planning area, potable water supply information is not applicable to this Special Study.

G. Wetlands

There are a number of wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the US Fish and Wildlife Service. The wetlands are found generally northeast of Mill Lane, just north of Route 202.

III. EXISTING FACILITIES IN THE PLANNING AREA

A. Identify and Describe Municipal Sewage Systems in the Planning Area

1. Location, Size, and Ownership of Facilities

Currently, there are collection and conveyance facilities in the planning area. The sanitary sewer mains that currently make up the collection and conveyance system range in size from 8 inches to 12 inches.

There are two wastewater pump stations in the planning area. The Lee Boulevard Pump Station is located along Lee Boulevard just south of the East Whiteland/Charlestown Township border. This pump station has a capacity of 0.828 MGD. Wastewater is pumped through an existing 8-inch force main to the gravity sewer main located in Sidley Road.

The other station is the Wilburdale Pump Station which is located near the intersection of Wilburdale Road and Flat Road. The Wilburdale station has a capacity of 1.15 MGD. Wastewater is pumped through an existing 6-inch force main to the gravity sewer located in Flat Road just east of Sidley Road.

2. Narrative and Schematic Diagram of the Basic Treatment Process

Since the focus of this Special Study is to address the needs associated with the collection and conveyance system in the planning area, a narrative and schematic diagram of the basic treatment process is not applicable.

3. Description of Problems with the Existing Facilities

Currently there is a wastewater surcharging concern that has persisted when both the Lee Boulevard Pump Station force main and the Wilburdale Pump Station force main discharge to the Sidley Road gravity sewer simultaneously.

In addition to the surcharging concern of the Sidley Road interceptor, wastewater from the interceptor under Route 202 was leaking into an unknown 8-inch drainage pipe.

The existing sanitary sewer main through the Aegon property shows signs of inflow and infiltration. A 46-day flow-monitoring program was conducted to determine the extent of the I/I.

Upon review of the flow monitoring data obtained during the flow monitoring program, the data showed an average daily infiltration of 50,080 gpd

In addition, inclusion of future flows in a desktop analysis shows that there will be several sanitary sewer segments that will be overloaded. Due to the location of structures on the property, direct sewer main replacement will be very difficult.

4. *On-Going Upgrades or Expansion of Facilities*

Currently the Mill Lane Pump Station, located at the base of the planning area, is being upgraded. This pump station has a peak permitted capacity of 2.07 MGD. The upgraded station will have two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD. The station should be online by the end of August. The station will undergo a 30-day test period. After the 30-day test period, if no problems are encountered,

the old station will be decommissioned. The station design will have the capacity to pump the projected flows from Charlestown Township and East Whiteland Township. Ultimate projected flows are 2,521, 433 gpd ADF. This includes existing flow plus projected flows for both Charlestown Township and East Whiteland Township. Applying a peaking factor of 2.78, established in the original basis of design report in concert with DEP guidance, the projected peak flow is 7.01 MGD. The ultimate pump station capacity is 7.2 MGD. Consequently the pump station will have the capability of meeting capacity needs of the planning area.

5. Operations and Maintenance Requirements and the Status of Past and Present Compliance

The Township is the facility permitee and the owner. They perform routine maintenance on the collection and conveyance system to keep the facilities operating satisfactorily.

B. Individual and Community On-Lot Disposal Systems

Since this Special Study is to address public sewers upgrades to the planning area, identification of individual on-lot disposal will not be addressed.

C. Wastewater Sludge and Septage Generation

Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. Description of Future Growth and Development

1. Areas with Existing Development and Plotted Subdivisions

The Plans included in Appendix C show the location of proposed and existing residential development within the planning area. Existing subdivisions are described as follows (based on the streets within the subdivisions):

- James Thomas/Aston
- Flintshire/Ashlawn/Atterbury
- Almy/Thayer
- Fetters Mill/Forge/Oak Glen

2. Land Use Designations

Land use in East Whiteland Township is governed by the Township's Zoning Ordinance. Land use is given the following designations per the zoning ordinance.

R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Commercial Mixed-Use
VMX	Village Mixed-Use

FC	Frontage Commercial
ROC	Regionally Oriented Commercial
ROC/R	Regionally Oriented Commercial/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space

In the planning area, the zoning designations include:

- R-1 Low Density Residential
- O/BP Office Business Park
- OS Open Space

3. *Future Growth Areas and Projections*

For the planning area identified for this Special Study, there are areas that have existing development and areas that are planned for growth. The planned growth is detailed in Table 1 found at the end of Section IV.

4. *Subdivision Regulations as they Pertain to Planned Developments*

East Whiteland Township has established guidelines for development, use, and protection of land. The guidelines are established in the Township's Zoning Ordinance.

The Zoning Ordinance regulates:

- Building height, area, and location on the lot;
- Flood plains and uses within the flood plains;
- Where certain land uses make occur in the Township ;
- Quality, location, or size of signs;
- Minimum lot areas for various uses. Table 1

5. *Required Sewage Planning*

Sections V and VI of this Special Study will examine the technical alternatives necessary to meet the sewage facilities needs of the planning area. Projected wastewater flows for the planning area are classified by origin.

Table 1

Existing Flow Needs Summary

Source/Property	EDUs	Population***	Avg. Daily Flows (gpd)**
East Whiteland Township/Lee Blvd. Area	122	381	33,665
Charlestown Township/Lee Blvd. Area	277	756	78,544
East Whiteland Township/Aston – Hayes Road Area	52	163	14,300
Charlestown Township/Aston – Hayes Road Area (Charlestown Oaks)	135	369	38,354
East Whiteland Township/Ashlawn Road	16	50	4,400
East Whiteland Township/Atterbury Drive	62	194	17,050
East Whiteland Township/Alma-Thayer-Sidley	97	303	26,675
East Whiteland Township/Industrial - Moores	68	213	18,700
East Whiteland/Fetters-McCoy-Oak Glen	69	216	18,975
East Whiteland/Great Valley Industrial (to Wilburdale PS)	----------	----------	240,660
TOTAL			**491,323**
**** 275 gpd/EDU** ***** 3.13 People Per Household (East Whiteland);** *****2.73 Persons Per Household (Charlestown)**			

The means for serving the future needs of the planning area will be in the form of upgrades to the conveyance system extending from the Lee Boulevard Pump Station to a point just upstream from the Mill Lane Pump Station.

Table 2

Flow Projection Summary (Near Term Future Wastewater Needs; 0 to 5 y ears)

Source/Property	EDUs	Population	Avg. Daily Flows (gpd)
Charlestown Township/Spring Oak (to Lee Blvd. PS)	185	505	50,875
East Whiteland Township/Glasgow Tract (to Wilburdale PS)	23	72	6,325
Charlestown Township/Holy Ascension Church (to Lee Blvd. PS)	6.6	----------	1,815
Charlestown Township/Devault Foods (to Lee Blvd. PS)	135	----------	37,000
Charlestown Township/Tyler Griffin (to Lee Blvd. PS)	78	213	21,450
Charlestown Township/Charlestown School (to Lee Blvd. PS)	6.7	----------	1,845
Charlestown Township/Warner Lane (to Lee Blvd. PS)			4,650
Charlestown Township/The Office Restaurant (to Lee Blvd. PS)	13	---------	3,600
TOTAL			**127,560**

Table 3

Flow Projection Summary (Long Term Future Wastewater Needs; 5 to 10 years)

Source/Property	EDUs	Population	Avg. Daily Flows (gpd)
East Whiteland Township/Liberty Properties (to Wilburdale PS)	229	----------	62,975
Charlestown Township/Volpi (to Sidley Rd.)	85	232	23,500
Source/Property	**EDUs**	**Population**	**Avg. Daily Flows (gpd)**
Charlestown Township/Cellucci (to Lee Blvd. PS)	16	44	4,450
Charlestown Township/Laurabrooke (to Lee Blvd. PS)	17	46	4,740
Charlestown Township/"Late Spring" (to Lee Blvd. PS)	8	22	2,130
Charlestown Township/Adjacent to Laurabrook (to Lee Blvd. PS)	38	104	10,560
Charlestown Township/Fillippo Tract (to Lee Blvd. PS)	72	196	19,800
Charlestown Township/Across from Spring Oak Park (to Lee Blvd. PS)	9	25	2,475
Charlestown Township/Yellow Springs Road (to Lee Blvd. PS)	10	27	2,750
Charlestown Township/Rt. 29 and Charlestown Rd. (to Lee Blvd. PS)	50	136	13,750
Charlestown Township/Northside of School (to Lee Blvd. PS)	7	19	1,925
Charlestown Township/Farm Residence (to Lee Blvd. PS)	1	3	275
Charlestown Township/Commons at Great Valley (to Lee Blvd. PS)	40	----------	11,000
TOTAL			**160,330**

Table 4

Flow Projection Summary (Long Term Future Wastewater Needs; 10 to 25 years)

Source/Property	EDUs	Population	Avg. Daily Flows (gpd)
Charlestown Township/Remaining Tracts in I/O Zone (to Lee Blvd. PS)	137	----------	37,650
Charlestown Township/Remaining Tracts in B-1/FR/LI-B/RC Zones (to Lee Blvd. PS)	146	----------	40,090
TOTAL			**77,740**

Summarizing Pump Station Needs:

Lee Boulevard Pump Station:

0 to 5 years – 233, 444 gpd (includes existing ADF)

(Peak Flow to PS 2.17* x ADF = 0.507 MGD)

5 to 10 years – 307,299 gpd

(Peak Flow to PS 2.17 x ADF = 0.667 MGD)

10 to 25 years – 385,039 gpd

(Peak flow to PS 2.17 x ADF = 0.835 MGD)

Existing Pump Station Capacity – 0.619 MGD

Upgrade to Station = 0.956 MGD

Upgrade during 5 to 10 year time. Will meet ultimate flow needs

*Peaking Factor based on Table 6 of 2012 Chapter 94 Report

Wilburdale Pump Station:

0 to 5 years – 246,985 gpd (includes existing ADF)

(Peak Flow to PS 1.45* x ADF = 0.358 MGD)

5to 10 years – 309,960 gpd

(Peak Flow to PS 1.45 x ADF = 0.449 MGD)

10 to 25 years – 309,960 gpd

(Peak Flow to PS 1.45 x ADF = 0.449 MGD)

Existing Pump Station Capacity = 0.576 MGD

Able to meet current and projected needs; but this will depend on future development or use in the Great Valley Corporate Center.

* Peaking Factor based on Table 6 of the 2012 Chapter 94 Report.

Flat Road Pump Station:

The Flat Road Pump Station is a small public submersible pump station that serves two or three properties immediately adjacent to it in the Great Valley Corporate Center. It has an existing capacity of 396,000 gpd. Currently (per the 2012 Chapter 94 Report) the peak flow is 72,000 gpd. It is adequately sized for existing flows. Sizing for future flows will depend on the extent to which the corporate campus develops. This development will need to be addressed via planning modules. These modules shall address the needs to upgrade this pump station.

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

A. Identify Alternatives

1. Regional Wastewater Treatment Concepts

Wastewater from East Whiteland Township is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant

2. Extension of Existing Municipal Sewage Facilities to Areas in Need

Currently, there are public collection and conveyance facilities that serve the north-central portion of East Whiteland Township and the southern portion of Charlestown Township. As discussed in Part A.1. of this section, wastewater collected in these facilities is conveyed to the Valley Forge Sewer Authority for treatment. Currently there is no plan to extend these facilities beyond the current reach. Refer to the plan found in Appendix B that shows the existing collection and conveyance system.

3. Continued Use of Existing Community Treatment Facilities

Currently, there are no community systems in the planning area. This is not applicable to this Special Study.

4. New Community Sewage Systems and Treatment

Since this Plan is examining the public sewer needs and the impact on existing conveyance system components, the implementation of new community sewage systems is not applicable to this Special Study.

5. *Repair and Replacement of Existing Collection and Conveyance System Components*

As stated in Part A.2. of this section, there are wastewater collection and conveyance facilities that serve the southern portion of Charlestown Township and the north-central portion of East Whiteland Township. The planning area is served by gravity sewers and pump stations that collect and convey the wastewater to the Mill Lane Pump Station. One of the pump stations in the planning area is the Lee Boulevard Pump Station. It receives flow from the northeastern portion of the planning area along with flows from Charlestown Township. This pump station's force main discharges to the existing gravity sewer main at Sidley Road. The Wilburdale Pump Station, located in the eastern portion of the planning area, receives flow from the Great Valley Industrial Park and pumps wastewater through a force main to the gravity sewer main located in Flat Road.

Operationally, the gravity sewer main in Sidley Road takes all flow from the above referenced pump stations along with flow from the adjacent subdivisions. Refer to the plan sheet in Appendix F.

There are areas of concern that need to be addressed to meet existing and future wastewater needs.

- The southern reach of the Sidley Road gravity main (under Route 202) has a leak that needs to be repaired.
- The primary portion of the Sidley Road gravity main is at capacity and the discharges from the Lee Boulevard force main and Wilburdale force main need to be accommodated.
- The sanitary sewer main that extends through the Aegon property has shown signs of I/I and requires repair.

A Corrective Action Plan/Connection Management Plan has been prepared to address these concerns. This document has been reviewed by the PA DEP and has been approved. A copy of this document is found in Appendix Q.

Potential alternatives to achieve these goals:

- Replace the existing gravity sewer with new gravity sewer from MH 67-1AA to MH ML8.
- Replace the existing gravity sewer main in Sidley Road to accommodate existing and future flows.
- Upgrade the Lee Boulevard Pump Station to meet future wastewater needs.
- Televise the gravity main through the Aegon property and, based on findings, grout and seal leaking portions of the main.

Upon reviewing these options, a Phased approach to the above referenced alternatives has been considered. Refer to the Plan and Table in Appendix F showing those phases and the Executive Summary for specific details.

It should be noted that a portion of the interceptor/trunk sewer, downstream from the Mill Lane Pump Station, and the 14 inch force main will require future upgrades. Upgrades to these portions of the infrastructure will require future planning in that they are dependent not only on impact/needs from the special study area but impacts/needs associated with other portions of the Township outside of the immediate Special Study planning area. The future planning effort will be triggered through the monitoring of average daily flows at the Mill Lane Pump Station. Knowing the flow contributions from adjacent drainage areas (via metered flow) along with flow contributions from the Mill Lane Pump Station, a base flow can be established. With the assumption that most significant growth in the Township will occur in the drainage area tributary to the Mill Lane Pump Station, the monitoring of average daily flows at the Mill

Lane station appears to be a reasonable approach. At this time, the Township has developed approximate "flow threshold values", that, when observed at the station will trigger the need for planning to upgrade the trunk sewer and force main. This planning will take into account all drainage areas tributary to the pump station and trunk sewer.

Phase I: This phase of the improvements has been set up to include the sanitary sewer improvements from Valley Creek north to Sidley Road approximately 220' north of the intersection of Sidley Road and Lapp Road. Construction of the Phase 1 improvements will eliminate the structural issues related to the pipe leakage into Valley Creek as detailed in Section A.III of the Corrective Action/Connection Management Plan. Construction of the Phase 1 improvements will also increase the capacity of the system to allow for the increased capacity for the improvements of the Phase 2 - Sidley Road Improvements.

Phase II: This phase of the improvements has been set up to include the sanitary sewer improvements from the end of Phase 1 in Sidley Road north in Sidley Road to the intersection with Lee Boulevard. Construction of the Phase 2 improvements will include the upgrading of sewer lines which will eliminate capacity issues related to the undersized pipe in Sidley Road as detailed in Corrective Action/Connection Management Plan. Construction of the Phase 2 improvements will also increase the capacity of the system to allow for the increased flow projected from Charlestown Township's southside. Through implementing this phase, the majority of wastewater flow can be redirected away from the sanitary sewer main through the Aegon property. This will allow East Whiteland Township to more easily televise and repair this main.

Phase III: Upgrade the Lee Boulevard Pump Station to meet the 5 to 10 year needs through the replacement of the existing pumps with new pumps. In addition, replace the existing constant speed controls with variable frequency drive controls.

The Corrective Action Plan/Connection Management Plan provides further detail concerning these phases.

Phase IV: This phase is dependent on future development in the planning area associated with Liberty Properties located in the Great Valley Industrial Park. At this time this future development is planned in accordance with the projections found in Tables 1 through 4 found in Section IV. Phase II upgrades to the gravity sewer in Sidley Road will be sized to accommodate the potential for future growth. A planning module will need to be prepared by Liberty Properties at the time of their development and this module will be more-able to detail collection and conveyance system upgrades necessary to meet the needs specific to the proposed development.

Alternatives to direct projected wastewater flow to other areas or in other directions were examined previously, outside the scope of this Special Study, and it was determined that these alternatives would not be cost effective. In addition, topography in the area of southern Charlestown Township, adjacent to or near the East Whiteland Township border, is conducive to utilizing a network of gravity sewers to convey flow to the existing collection and conveyance infrastructure in East Whiteland Township. As a result, the alternative methods for collection and conveyance of future flows, as shown above, and the associated phasing appear to be the most reasonable means for providing public sewer service to the planning area. In addition, an intermunicipal agreement is already in place (see description in Section VII). An amendment to the agreement is in the process of being drafted that will facilitate the conveyance of future flows through the respective municipalities,

through the Valley Creek Trunk Sewer, and to the Valley Forge Sewer Authority's WWTP (See Appendix R).

6. Alternative Methods of Collection and Conveyance to Serve Areas in Need

Given that this Special Study addresses the needs associated the upgrade of existing facilities to serve future flows, alternative methods of collection and conveyance to serve areas in need is not applicable to this Special Study.

B. Use of Individual Disposal Systems

The use of individual on-lot disposal systems will not be considered for this Special Study.

C. Small Flow Sewage Treatment Facilities

Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Community Land Disposal

Assessment of alternatives based on the use of community land disposal is not applicable to this Special Study.

E. Retaining Tank

The use of retaining tanks will not be evaluated as part of this Special Study.

F. Septage Management

A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study.

G. Non-Structural Comprehensive Planning Alternatives

It is not anticipated that there will be any modifications to the Township Comprehensive Plan. Non-structural comprehensive planning alternatives shall not be addressed as part of this Special Study.

H. No Action Alternative

1. Water Quality and Public Health

If wastewater collection and conveyance system upgrades are not implemented, water quality and public health would be impacted. Upgrades planned under Phase I address the need to upgrade and repair the existing gravity sewer main located under Route 202 and will eliminate the leaking wastewater to the Valley Creek. This portion of the existing sewer main has been compromised and is leaking to the Valley Creek. Repairs and upgrades are necessary to eliminate this condition.

2. Growth Potential

The potential for growth in the planning area would be impacted by a no-action alternative. Proposed development would not go forward if wastewater conveyance system upgrades were not completed.

3. Community and Economic Conditions

With no-action to provide means for upgraded conveyance of wastewater, development may not go forward. Consequently, future connections would be limited, thus restricting growth that would supplement the Township tax base.

4. Recreational Opportunities

A no-action alternative for this Special Study would not have an impact on recreational opportunities.

5. *Drinking Water Sources*

If the proposed conveyance system upgrade, as identified under Phase I, is not constructed, there may be indirect impacts on drinking water sources.

6. *Other Environmental Issues*

If the proposed conveyance system upgrades are not implemented under Phase I, there may be impact on the wildlife of the Valley Creek.

VI. EVALUATION OF ALTERNATIVES

A. Consistency Determination

1. Clean Stream Law

The construction of an upgraded sanitary sewer conveyance and treatment system for the Planning area does not conflict with the Clean Stream Law. Flow generated by the planning area will ultimately be treated at Valley Forge Sewer Authority's wastewater treatment plant or the community wastewater treatment plant located at the Swinehart property and disposed of in accordance with requirements and limits set forth by PADEP.

2. Chapter 94 Report

The East Whiteland Township 2011 Chapter 94 Report indicates that the review of the planning module for the proposed Spring Oak development (located in Charlestown Township) revealed some existing and future hydraulic restrictions within the East Whiteland trunk sewer. These hydraulic restrictions and associated issues are consistent with the purpose behind this development of this Act 537 Special Study.

Currently the Mill Lane Pump Station, located at the base of the planning area, is being upgraded. This pump station has a peak permitted capacity of 2.07 MGD. The upgraded station will have two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD.

3. *Clean Water Act (Title II)*

This Act and the Federal Water Quality Act establish specific planning requirements for wastewater facilities planning. These requirements only apply to municipalities intending to apply for financial assistance from the Federal Government for the construction of sewage facilities. Since the funding of the construction of the alternatives would be through financial contributions by municipal users, and potentially State agencies, this analysis is not applicable.

4. *Comprehensive Plans*

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes2," was adopted in July of 2009. The alternatives to upgrade public sanitary sewer service to accommodate proposed development in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes2 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted a Comprehensive Plan in 2001 that identifies Township policies on future preservation and development.

In September 2002, Chester County adopted a water resources management plan, titled **'Watersheds'**. This is an element of the County's Comprehensive Plan. In Part 4 of the Plan (Goals and Objectives – Achieving the Vision), Goal 7 describes the need to integrate utility and municipal planning to meet future water supply and wastewater needs. It further discusses the need to delineate municipal planned public water/wastewater service areas and evaluate infrastructure alternatives. This Special Study is consistent with the objectives set forth in Watersheds.

5. ***Antidegradation Requirements Contained in Chapters 93, 95 and 102 of the Clean Water Act***

Implementation of any of the alternatives for this Special Study will not impact the antidegradation requirements contained in Chapters 93, 95, 102 of the Clean Water Act.

6. ***State Water Plans***

There are no anticipated conflicts with the State Water Plan for this submission.

7. ***Pennsylvania's Prime Agricultural Land Policy***

East Whiteland Township is committed to protecting prime agricultural land within the Township's boundaries.

For the planning area in this Special Study, the Township's Zoning Ordinance and Comprehensive Plan give the land area a residential, office/business park, and professional office designation. The development of this land is consistent with its land use designation.

It should be noted that the Chester County Planning Commission's agricultural conservation easement plan indicates that there are no agricultural conservation easements in East Whiteland Township. This plan was developed by the Chester County Department of Open Space Preservation utilizing information from the County Agricultural Preservation Board and the Chester County Bureau of Land Records.

8. ***County Stormwater Management Plan***

PA Act 167 Stormwater Management Plans (SWMP) have been completed and approved for portions of Chester County. The Valley Creek Watershed (East) is one of those plans that have been approved. PA DEP approved it February 2011. This SWMP is incorporated via reference into the County-wide Act 167 SWMP that is nearing the point of formal resolution of adoption. From a

consistency perspective, it appears that the concept to provide sewer service to potential development is consistent with the SWMP. This special study planning area falls within the Valley Creek Watershed and the prescribed system improvements not only accommodate future flows but provide for minimizing inflow and infiltration of stormwater into the sanitary sewer system.

9. Wetlands Protection

As referenced in Section II.G. of this Plan, There are a number of wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the US Fish and Wildlife Service. The wetlands are found generally northeast of Mill Lane, just north of Route 202. It is anticipated that development within the planning area or collection/conveyance routing will not negatively impact these wetlands.

10. Protection of Threatened, Rare, and Endangered Plant and Animal species (PNDI)

A Pennsylvania National Diversity Inventory (PNDI) search was completed for each area within the various phases. See Appendix H. For Phase I, a conflict was identified with the U.S. Fish and Wildlife Service. This conflict was resolved. Please refer to the June 6, 2012 correspondence with the Fish and Wildlife Service found in Appendix H. For Phase IIA and IIB, an avoidance measure was requested by the US Fish and Wildlife Service and a Conservation Measure was requested by DCNR. These conflicts have been resolved as well.

11. Historic and Archaeological Resource Protection

The Pennsylvania Historic and Museum Commission (PHMC) have been contacted to determine if there are any potential conflicts within the proposed Phases. PHMC reviews for the proposed sewerage facilities have been completed. The results of the PHMC's review for the proposed sewerage

facilities can be found in Appendix I. It has been determined that the projects will have no impact on historic resources.

B. Resolution of Inconsistencies

Upon review of the constraints discussed in items 1 through 11, there are no apparent inconsistencies with applicable planning requirements.

C. Alternative Evaluation with Respect to Applicable Water Quality Standards and Effluent Limitations

The planned alternatives to provide a sanitary sewer collection and conveyance system for this proposed development will not impact water quality standards or effluent limitation. Wastewater will be discharged to either the existing public collection and conveyance system or the proposed community collection, conveyance, and treatment system. Ultimately, wastewater will be treated at the Valley Forge Sewer Authority's WWTP.

D. Preliminary Cost Opinions

Preliminary cost opinions were developed for the primary alternatives discussed in Section V. These cost opinions reflect the following:

1. Immediate Needs Alternative

Construct Phase I (refer to detail in Section V) to serve immediate and near term wastewater needs. Wastewater through Phase I would be conveyed to the Mill Lane Pump Station and ultimately to the Valley Forge Sewer Authority's WWTP.

Planning Level - Construction Cost Opinion Total		$717,000
Cost Sharing:	East Whiteland Township -	$397,972
	Valley Forge Sewer Authority -	$319,028

Near Term Alternative

Construct Phase II (refer to detail in Section V) to serve 0 to 5 year wastewater needs. Wastewater through Phases I and II would be conveyed to the Mill Lane Pump Station and ultimately to the Valley Forge Sewer Authority's WWTP.

Planning Level - Construction Cost Opinion		(II)	$1,357,000
Cost Sharing -	East Whiteland Township -		$579,186
	Valley Forge Sewer Authority -		$777,814

Long Term Alternative

Construct Phase III (refer to detail in Section V) to serve 5 to 10 year wastewater needs. Wastewater through Phase III would be conveyed to the Mill Lane Pump Station and ultimately to the Valley Forge Sewer Authority's WWTP.

Planning Level - Construction Cost Opinion		$111,000
Cost Sharing -	East Whiteland Township -	$6,600
	Valley Forge Sewer Authority -	$104,400

E. Analysis of Available Funding Methods

This section of the Plan addresses methods available to finance the proposed alternative. Three financing alternatives exist for this particular project.

1. Municipal Bond Issue

a. General

There are several types of bonds; some are taxable and some are tax-exempt. However, the general classification of municipal bonds usually

refers to tax-exempt bonds. There are three types of municipal bonds generally used in financing public works.

- *General Obligation Bonds* are tax-free bonds that are secured by the pledge of the full faith, credit, and taxing owner of the issuing agency. This means that this type of bond is backed by all of the taxes on real estates and personal property within the jurisdiction of the issuing agency. It involves minimum risk to the investor and therefore requires a lower rate of interest than other types of bonds.

- *Dedicated Tax Bonds* are payable only from the proceeds from a special tax and are not guaranteed by the full faith, credit and taxing power of the issuing agency. Examples of special dedicated taxes are the special assessments against property which is adjacent to and the principal beneficiary of the improvement, and gasoline taxes used to finance highway construction.

- *Revenue Bonds* are payable from revenues derived from the use of the improvement such as tools, sewer bills, or rents paid by the users of the improvement and do not otherwise represent an obligation of the issuing agency. Revenue bonds are not ordinarily subject to statutory or constitutional debt limitations. They are often issued by commissions, authorities, and other public agencies created for the specific purpose of financing, constructing, and operating essential public projects.

Typically, municipal bonds are sold to an investment-banking firm, which then resells the bonds to individual investors. The advantage of municipal bonds to the investor is their tax-free status. A bond discount (a percentage of the total bond issue) serves as the investment banker's

commission. Before bonds are sold, they must be rated on the basis of risk to the investor by a rating agency such as Standard and Poor's or Moody's. The higher the rating, the lower the risk to the investor and, consequently, the lower the interest rate paid on the bond.

The legal instrument, which sets the rules that must be observed by the issuing agency, is the Trust Indenture. The Trust Indenture is prepared by the Bond Counsel and must be printed along with the bonds. Due to specific requirements as to the denominations of the bonds and methods and materials for printing, printing costs can be substantial. A Trustee is required to administer the bond issue and insure the terms of the Trust Indenture are observed. This results in an Annual Trustee Fee. Investment bankers indicate that it does not pay to extend the term beyond 25 years because the interest rate increases dramatically.

b. Advantages of Municipal Bond Issue Funding

- ► This program affords long-term fixed rate financing.
- ► Tax-exempt municipal bonds are in high demand.
- ► There is local investment opportunity.
- ► Municipal credit is established.
- ► It retains flexibility for future borrowing.

c. Disadvantages of Municipal Bond Issue Funding

- ► A cover may be required.
- ► A Debt Service Reserve Fund is generally required.
- ► There are trustee fees and costs of preparing a Trust Indenture.

2. *Bank Loan*

Another financing option for the implementation of this project is the bank loan. There are four basic categories of bank loans. These are:

- Real Estate Loans (Mortgage)
- Participation and Interbank Loans
- Installment Loans (Personal)
- Commercial and Industrial Loans

Of the four types, a commercial and industrial loan would be the most applicable to this project.

Commercial and industrial loans may be made on a demand or time basis. A demand basis loan allows the bank to call for repayment at any time, or the borrower can repay when convenient. A time basis loan provides for a specific loan maturity date.

Most commercial and industrial loans are unsecured. The credit is extended on the basis of an analysis of all available information pertaining to the customer and the bank's confidence in that customer's ability and willingness to repay.

For this planned project, it appears that it would be prudent to seek a time basis loan. An interest rate offering would be established, and an amortization schedule set. Interest rates may range from 5% to 10%.

<u>Advantages of the Bank Loan Financing</u>

- Ability to shop around for a loan structure that best fits the customer's needs.
- Flexibility in establishing repayment schedules.

- Working with and through a local financial institution.
- Municipal credit is established.
- Ability to obtain fixed rate financing.

Disadvantages of Bank Loan Financing

- Interest rates are charged for loan repayment.
- Processing fees may be required.
- Processing and issuances fees may be expensive.

3. *Direct Funding by Developers*

A third financing option for the implementation of this project is direct funding by those who are developing the property in the planning area. This would involve capital expenditures by the developer from his own capital funds.

Advantages of Direct Funding by Developer

- Avoid any third party involvement. Payment for services can be made directly to the manufacture or contractor by the Developer.
- There are no interest rate charges.
- Bank processing and issuance fees are avoided.
- Removes the financial burden from the Township.

Disadvantages of Direct Funding

- There are no disadvantages to this method of financing.

4. *Funding Through Contributions from Intermunicipal Partners*

Via the amended intermunicipal agreement, funding for proposed upgrades to the conveyance system will be shared between East Whiteland Township and

the Valley Forge Sewer Authority. It should be noted that an updated/amended intermunicipal agreement is currently being prepared and negotiated. This agreement will have an exhibit that will show the finalized cost sharing structure. A draft of this agreement is found in Appendix R.

F. Immediate or Phased Implementation

It is planned to implement the collection and conveyance system improvements in phases. These include:

Phase I: This phase of the improvements has been set up to include the sanitary sewer improvements from Valley Creek north to Sidley Road approximately 220' north of the intersection of Sidley Road and Lapp Road. Construction of the Phase 1 improvements will eliminate the structural issues related to the pipe leakage into Valley Creek as detailed in Section A.III of the Corrective Action/Connection Management Plan. Construction of the Phase 1 improvements will also increase the capacity of the system to allow for the increased capacity for the improvements of the Phase 2 - Sidley Road Improvements.

Phase II: This phase of the improvements has been set up to include the sanitary sewer improvements from the end of Phase 1 in Sidley Road north in Sidley Road to the intersection with Lee Boulevard. Construction of the Phase 2 improvements will include the upgrading of sewer lines which will eliminate capacity issues related to the undersized pipe in Sidley Road as detailed in Corrective Action/Connection Management Plan. Construction of the Phase 2 improvements will also increase the capacity of the system to allow for the increased flow projected from Charlestown Township's southside. Through implementing this phase, the majority of wastewater flow can be redirected away from the sanitary sewer main through the Aegon property. This will allow East Whiteland Township to more easily televise and repair this main.

Phase III: Upgrade the Lee Boulevard Pump Station to meet the 5 to 10 year needs through the replacement of the existing pumps with new pumps. In addition, replace the existing constant speed controls with variable frequency drive controls.

Phase IV: This phase is dependent on future development in the planning area associated with Liberty Properties located in the Great Valley Industrial Park. At this time this future development is planned in accordance with the projections found in Tables 1 through 4 found in Section IV. Phase II upgrades to the gravity sewer in Sidley Road will be sized to accommodate the potential for future growth. A planning module will need to be prepared by Liberty Properties at the time of their development and this module will be more-able to detail collection and conveyance system upgrades necessary to meet the needs specific to the proposed development.

G. Ability of the Township to Implement the Alternative

The Township is well established and has the ability to implement the technical alternatives presented in this Plan.

VII. INSTITUTIONAL EVALUATION

A. Analysis of the Township, Past Actions, and Present Performance

1. Financial and Debt Status

The Township is a well-established entity that will be able to oversee the implementation of the proposed technical alternative. Financially, through the funding mechanisms identified above and the shared costs established through the intermunicipal agreement structure between East Whiteland Township and the Valley Forge Sewer Authority, the construction of the necessary collection and conveyance facilities can be accomplished. Ultimately, the Township will take dedication of these facilities and will be required to operate and maintain them. The funds for facility O&M may originate from the Township's Sewer Fund.

2. Available Staff and Administrative Resources

The Township is governed by a three-member Board of Supervisors elected at-large, who each serve six-year terms that include executive and legislative responsibilities. Others associated with the Township are:

- Township Manager
- Director of Public Works
- Solicitor
- Consulting Engineer

The Township has the necessary staff and administrative resources already in place. No further evaluation of staffing and resources is necessary at this time.

3. *Existing Legal Authority*

As provided for under Pennsylvania Law, the Township has the necessary legal authority to oversee the implementation of the technical alternatives presented in this Special Study.

B. Institutional Alternatives Necessary to Implement the Technical Alternative

1. *Need for a New Authority*

East Whiteland Township does not have an Authority in place at this time. It is not deemed necessary that a new Authority be established to meet the needs of the alternatives identified in this Special Study. The Township and public works personnel are capable of implementing the identified alternatives.

2. *Function of the Authority*

This is not applicable given that the there is no sewer authority in place at this time.

3. *Cost of Administration*

This is not applicable given that the there is no sewer authority in place at this time.

C. Administrative and Legal Activities to be Completed and Adopted to Ensure the Implementation of the Technical Alternative

1. *Legal Authorities of Incorporation*

No new wastewater Authorities of Incorporation are necessary and there will be no changes to the Township's structure to implement this project.

2. *Required Ordinances, Standards, Regulations, and Intermunicipal Agreements*

In 1971, an Intermunicipal Agreement was signed by East Whiteland Township, the former East Whiteland Municipal Authority, Malvern Municipal Authority, Malvern Borough, and the Valley Forge Sewer Authority for conveyance of

wastewater through the Valley Creek Trunk Sewer to the Valley Forge Sewer Authority's WWTP for treatment and disposal. In December 1979, an amendment was issued to the existing 1971 intermunicipal agreement between East Whiteland Municipal Authority, East Whiteland Township, Malvern Municipal Authority, Borough of Malvern, and the Valley Forge Sewer Authority. This amendment facilitates the transmission of wastewater from an area in Charlestown Township adjacent to East Whiteland Township through the East Whiteland Township Trunk Line and the Valley Creek Trunk Line Both agreements can be found in Appendix K of this Special Study.

This intermunicipal agreement is currently undergoing an amendment to reflect the latest flow and cost sharing conditions. This effort to amend the agreement is taking place in accordance with the timing set forth in the implementation schedule found in the Executive Summary. The draft agreement is found in Appendix R.

3. *Provisions of Rights-of-Way, Easements, and Land Transfers*

The wastewater collection and conveyance system that will serve potential development will extend along Township or State Roads and easements. Modifications to the proposed pump stations will not require the acquisition of rights-of-way and easements at their respective locations.

4. *Other Sewage Facilities Plan Adoptions*

It is not anticipated that other sewage facilities plans will need to be adopted as part of this planning process.

5. *Legal Documents*

It is anticipated that legal documentation, in the form of an amended intermunicipal agreement will need to be completed as part of the implementation of the Special Study. Refer to the draft found in Appendix R.

6. Dates and Timeframes of 1 Through 5 Above

The dates and timeframes for the items in this section are found in the implementation schedule in the Executive Summary of this Plan.

D. Selected Institutional Alternative

No changes are needed to the existing municipal structure. An amendment to the existing intermunicipal agreement is currently being drafted and will be implemented per the implementation schedule found in the Executive Summary.

VIII. SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVE

A. Identify the Chosen Technical Alternative

The selected alternative which best meets the wastewater treatment needs of the proposed development in the planning area is:

Phase I: This phase of the improvements has been set up to include the sanitary sewer improvements from Valley Creek north to Sidley Road approximately 220' north of the intersection of Sidley Road and Lapp Road. Construction of the Phase 1 improvements will eliminate the structural issues related to the pipe leakage into Valley Creek as detailed in Section A.III of the Corrective Action/Connection Management Plan. Construction of the Phase 1 improvements will also increase the capacity of the system to allow for the increased capacity for the improvements of the Phase 2 - Sidley Road Improvements.

Phase II: This phase of the improvements has been set up to include the sanitary sewer improvements from the end of Phase 1 in Sidley Road north in Sidley Road to the intersection with Lee Boulevard. Construction of the Phase 2 improvements will include the upgrading of sewer lines which will eliminate capacity issues related to the undersized pipe in Sidley Road as detailed in Corrective Action/Connection Management Plan. Construction of the Phase 2 improvements will also increase the capacity of the system to allow for the increased flow projected from Southside.

Phase III: Upgrade the Lee Boulevard Pump Station to meet the 5 to 10 year needs through the replacement of the existing pumps with new pumps. In addition, replace the existing constant speed controls with variable frequency drive controls.

Phase IV: This phase is dependent on future development in the planning area associated with Liberty Properties located in the Great Valley Industrial Park. At this time this future development is planned in accordance with the projections found in Tables 1 through 4 found in Section IV. Phase II upgrades to the gravity sewer in Sidley Road will be sized to accommodate the potential for future growth. A planning module will need to be prepared by Liberty Properties at the time of their development and this module will be more-able to detail collection and conveyance system upgrades necessary to meet the needs specific to the proposed development.

The phasing of alternative is recommended based on the following:

1. ***Existing Wastewater Disposal Needs***

   Within the planning area, wastewater disposal needs are met through the use of a network of gravity sewer mains, pump stations, and force mains. These facilities can continue to meet the existing disposal needs of the planning area.

2. ***Future Wastewater Treatment Needs***

   Future wastewater disposal needs, identified in Section IV of this Plan show existing, near term, and long-term wastewater needs for East Whiteland Township and Charlestown Township. Under the Phase I Alternative, existing wastewater needs can be met. Under Phase II and III alternatives for 0 to 5 and 5 to 10 year wastewater needs can be met. Implementation of the Phase IV Alternative will be strictly dependent on the timing of development in the Great Valley Industrial Park.

3. ***Operations and Maintenance Considerations***

   The proposed wastewater facilities will be owned and operated by East Whiteland Township upon completion. Operations and maintenance of the

new facilities will be the responsibility of the Township which currently operates and maintains existing wastewater facilities within the Township.

4. Cost Effectiveness

In accordance with the cost opinions for the alternatives presented in Section VI of this study, the phasing of the Alternatives is the most cost effective approach. This will allow for both East Whiteland Township and the Valley Forge Sewer Authority (Charlestown Township) to take a measured approach to upgrades to the existing conveyance system to meet the future needs.

5. Available Management and Administrative Systems

The Township has the management and administrative staff in place to implement the selected alternative. The intermunicipal agreements are in place to facilitate the sharing of costs associated with the upgrades to existing infrastructure. A copy of the agreement can be found in Appendix K of this Special Study.

6. Available Financing Methods

Of the financing methods discussed in Section VI, each method can provide the necessary funding for the selected alternative. Refer to Section VIII.B. for the selected capital financing plan.

7. Environmental Soundness

Environmentally, the Valley Forge Sewer Authority's WWTP can adequately treat the average and peak flows within the permitted concentration limits.

B. Selected Capital Financing Plan

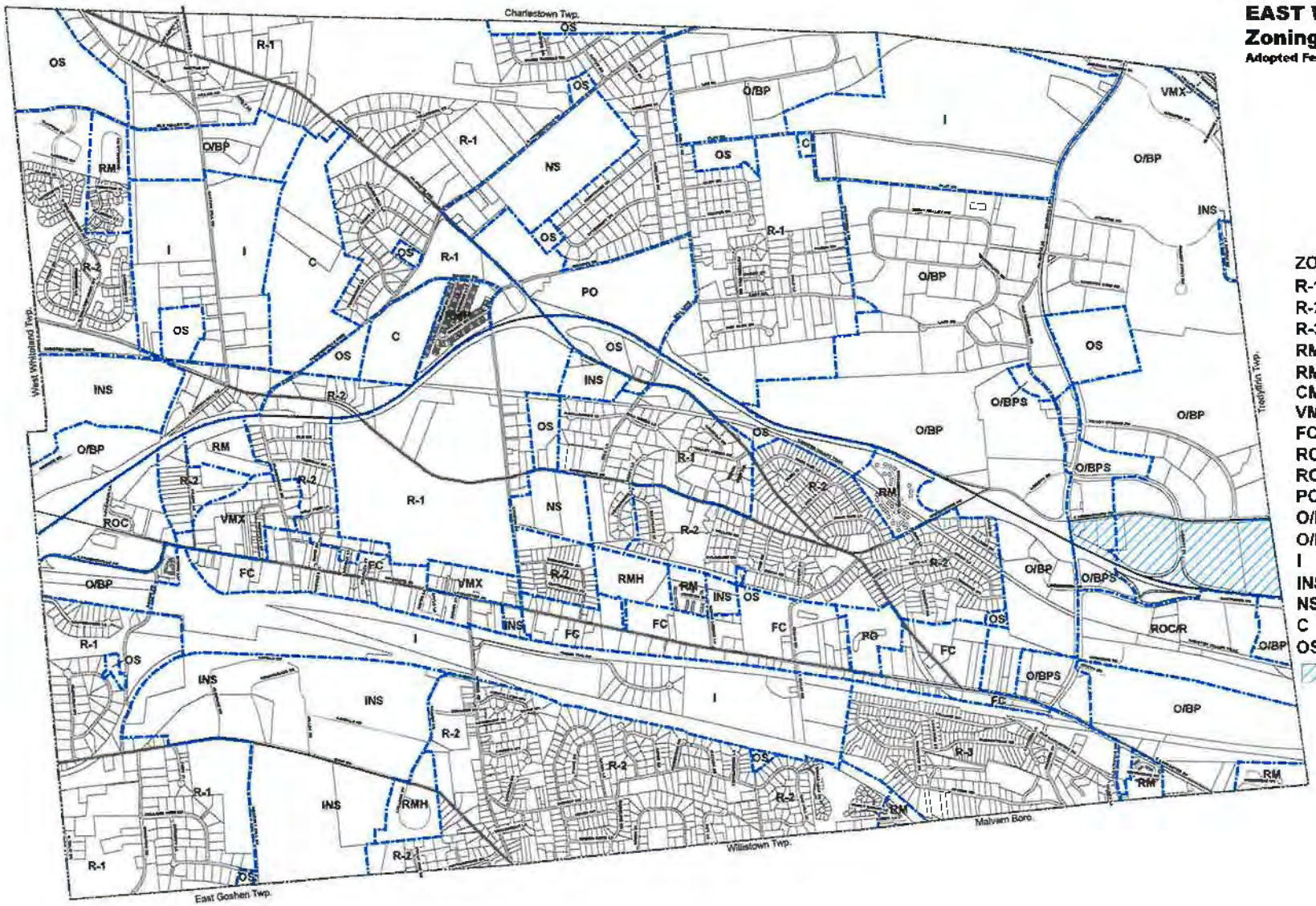
The selected technical alternative will be paid for and financed through bond funding mechanisms and sharing of costs between the municipalities via the current intermunicipal agreement structure. East Whiteland Township and the Valley Forge Sewer Authority (Charlestown Township) have been in communication regarding cost-sharing matters. The planning-level cost sharing structure is shown in Section VI.

APPENDICES

APPENDIX A

Zoning Map

EAST WHITELAND TOWNSHIP
Zoning Map
Adopted February 21, 2007



ZONING DISTRICTS

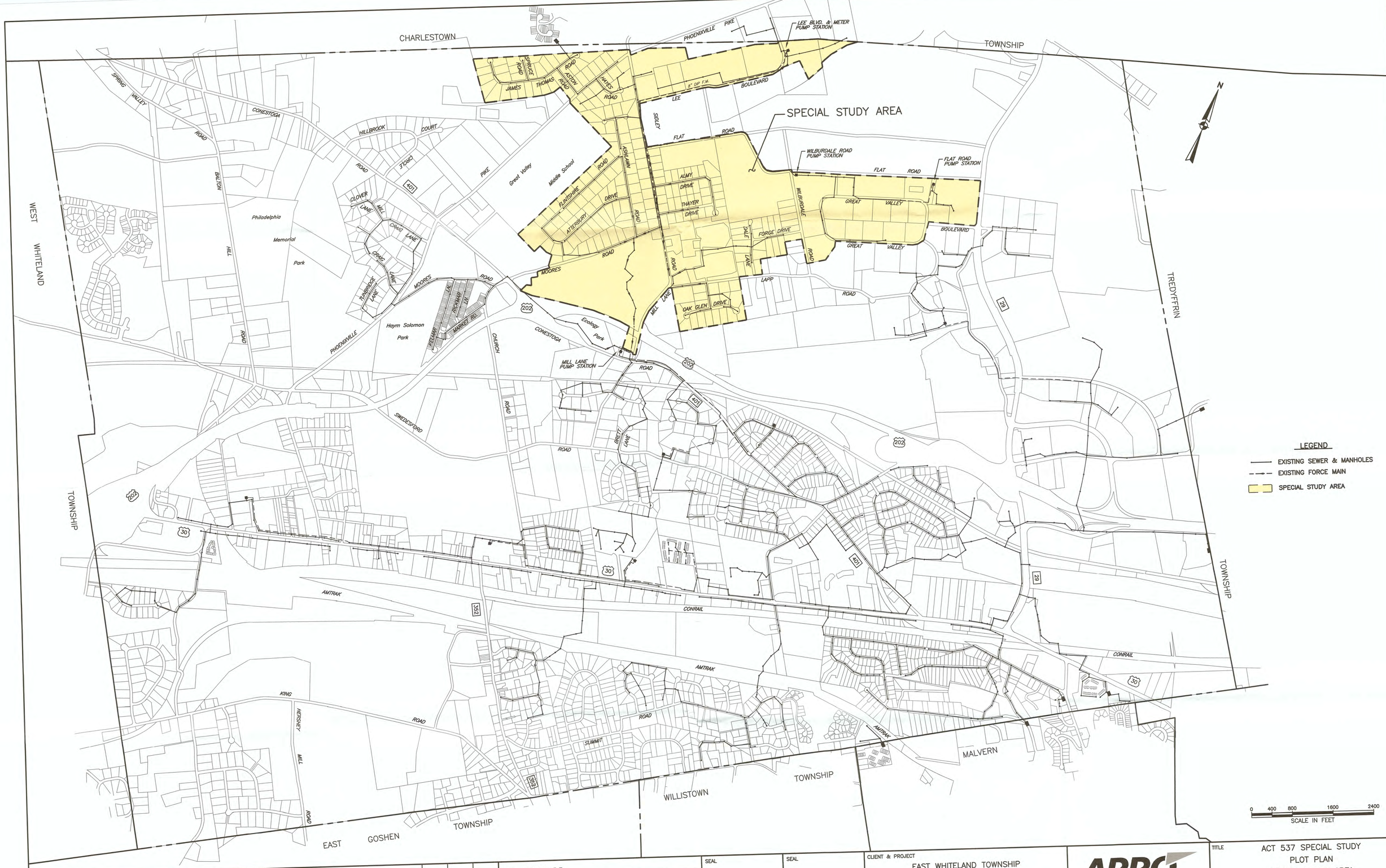
R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Community Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally-Oriented Commercial
ROC/R	Regionally-Oriented Comm/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space
	Corporate Gateway Overlay

N

0 1,200 2,400 Feet

APPENDIX B

Planning Area



NO	REVISION	DATE	BY	APP.
A				

NO	REVISION	DATE	BY	APP.

W.L. BOHNER, P.E.
RELEASED BY

DESIGN W.L. BOHNER, P.E.	CHECKED
DRAWN BLATT	CHECKED
DATE 6/14/12	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SEWER SYSTEM
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE
ACT 537 SPECIAL STUDY
PLOT PLAN
SPECIAL STUDY AREA

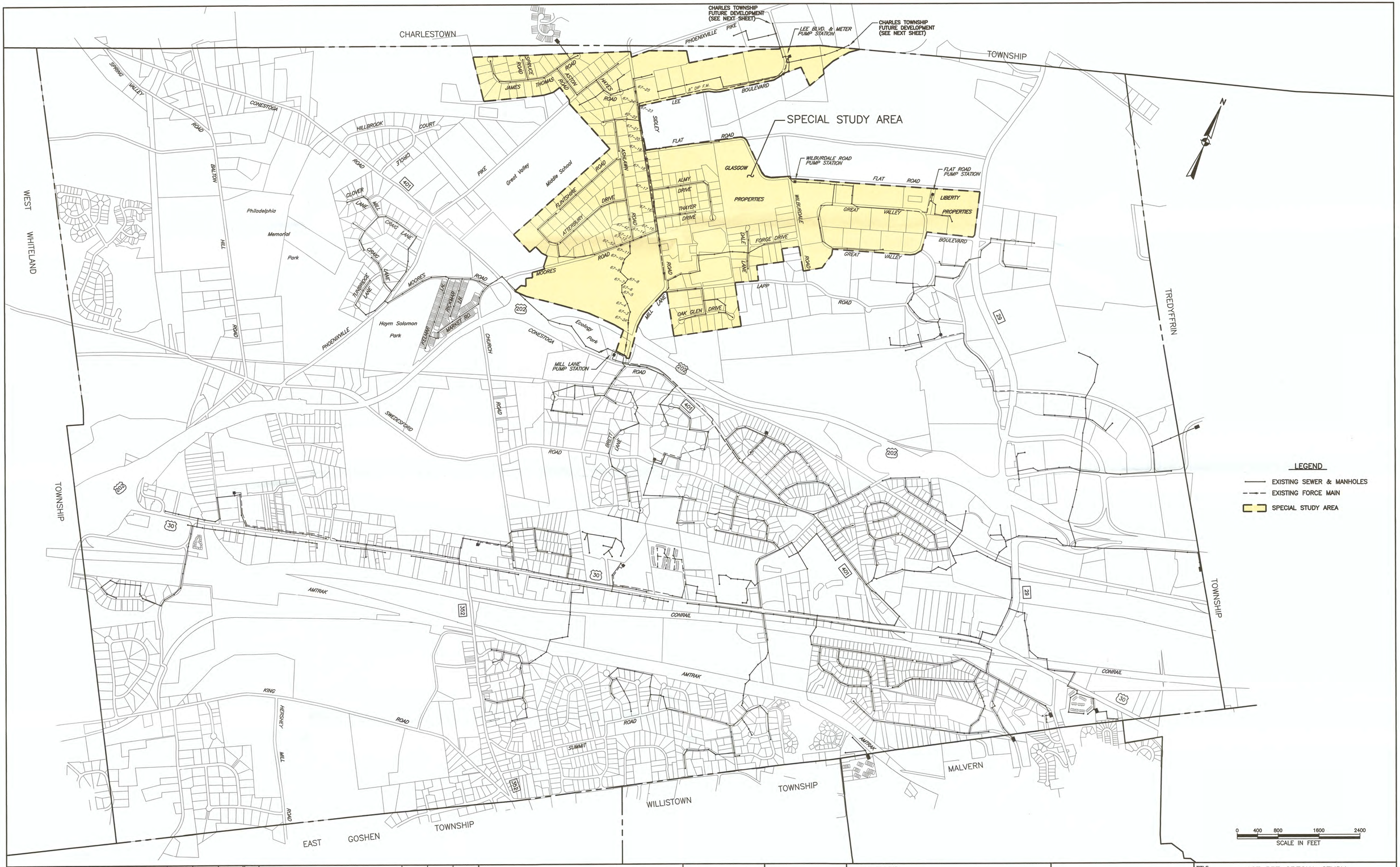
SCALE	DWG. NO.
AS NOTED	C1

PROJECT NO.	SHEET NO.	REV.
10310.02	1 OF 3	A

Dwg. Name: 103100 2C1_C2 537_STUDY.DWG Plotted: 3/6/2013 7:37 AM

APPENDIX C

Future Development



NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.
A				

W.L. BOHNER, P.E.
RELEASED BY

DESIGN: W.L. BOHNER, P.E.	CHECKED
DRAWN: BLATT	CHECKED
DATE: 6/14/12	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SEWER SYSTEM
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

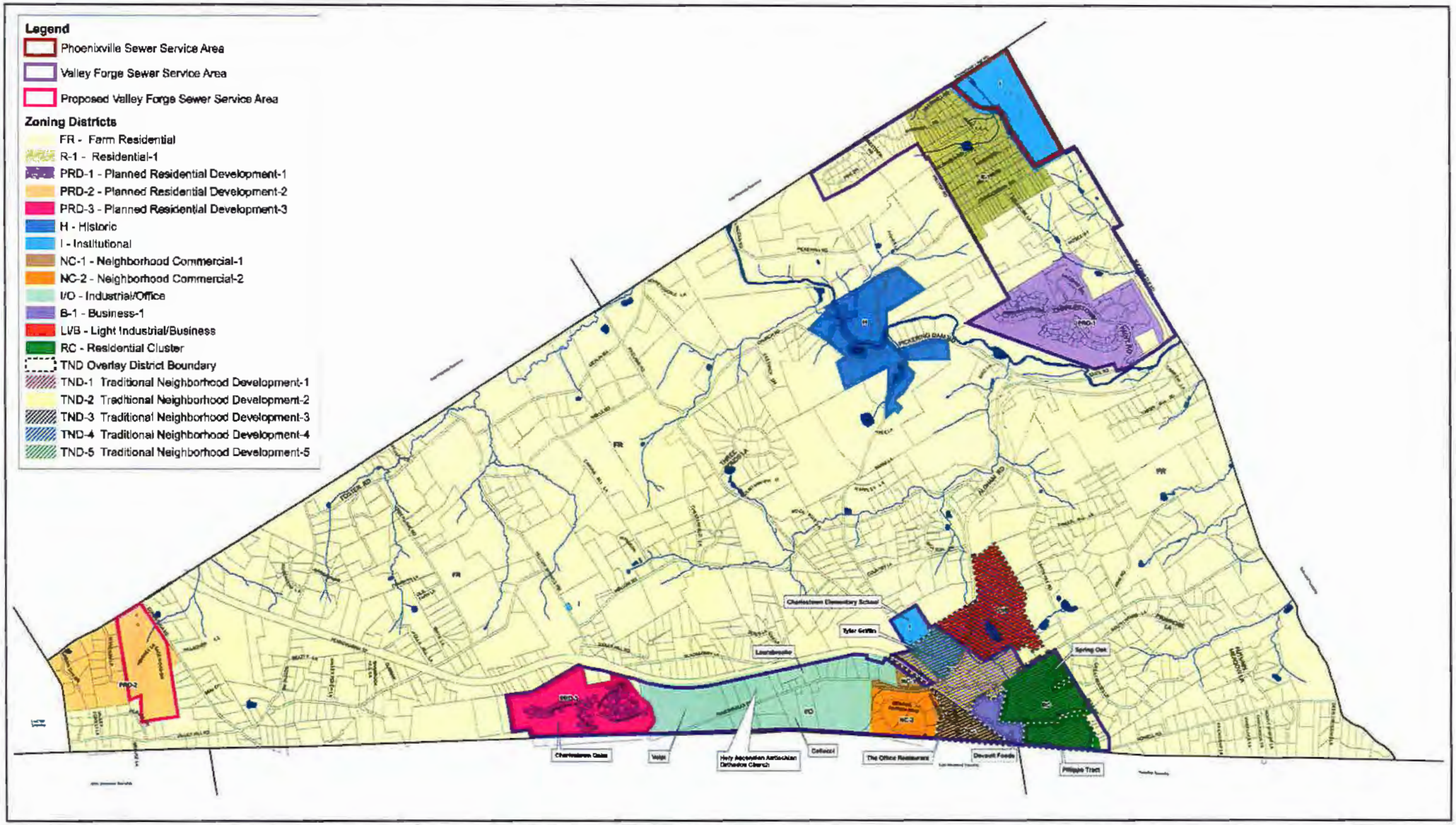
ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE
ACT 537 SPECIAL STUDY
PLOT PLAN
FUTURE DEVELOPMENT

SCALE	DWG. NO.
AS NOTED	C2

PROJECT NO.	SHEET NO.	REV.
10310.02	2 OF 3	A

Dwg. Name: 1031002C1_C2 537_STUDY.DWG Plotted: 3/6/2013 7:38 AM



Zoning Map & Sewer Service Areas

CHARLESTOWN TOWNSHIP
Chester County, Pennsylvania

Revised: October 8, 2012
Date: August 15, 2008; September 15, 2010

Data Sources:

Base Features: Chester County
GIS Department, February 2005

Prepared By:
Thomas Comitta Associates, Inc.
Town Planners & Landscape Architects
18 West Chestnut Street
West Chester, Pennsylvania 19380

APPENDIX D

Topography

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MALVERN QUADRANGLE
PENNSYLVANIA–CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1951. Field checked 1955

Polyconic projection. 10,000-foot grid ticks based on Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters west as shown by dashed corner ticks

There may be private inholdings within the boundaries of the National or State reservations shown on this map

UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Revisions shown in purple and woodland compiled from aerial photographs taken 1981 and other sources. This information not field checked. Map edited 1983
Purple tint indicates extensions of urban areas

SCALE 1:24000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

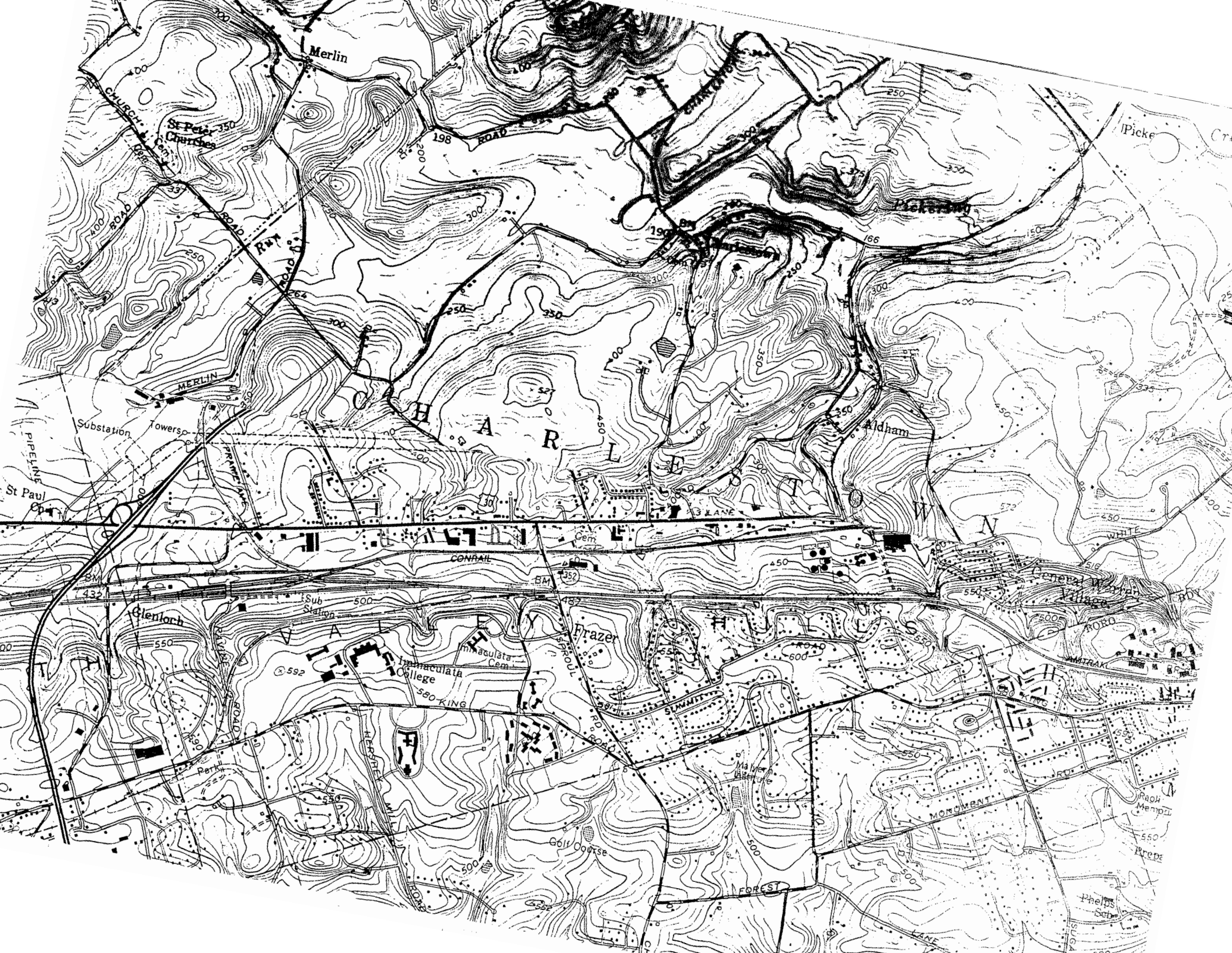
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U. S. Route — State Route

PENNSYLVANIA
QUADRANGLE LOCATION

YOAS SERVICES, INC.
509 W. 4th St.
Williamsport, PA 17701
1-800-222-2548

MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5864 II SE–SERIES V831



Merlin
St Peter Churches
CHURCH
ROAD
198
Pickering
Picke
MERLIN
Substation
Towers
PIPELINE
St Paul
CHARLESTOWN
Aldham
CONRAIL
Glenloch
Sub Station
Frazer
Immaculata College
Immaculata Cem
KING
SPROUL
RD
ROAD
HERSHEY
Golf Course
FOREST
LANE
MONUMENT
RD
General Warren Village
WHITE
AMTRAK
Phelps Sch

APPENDIX E

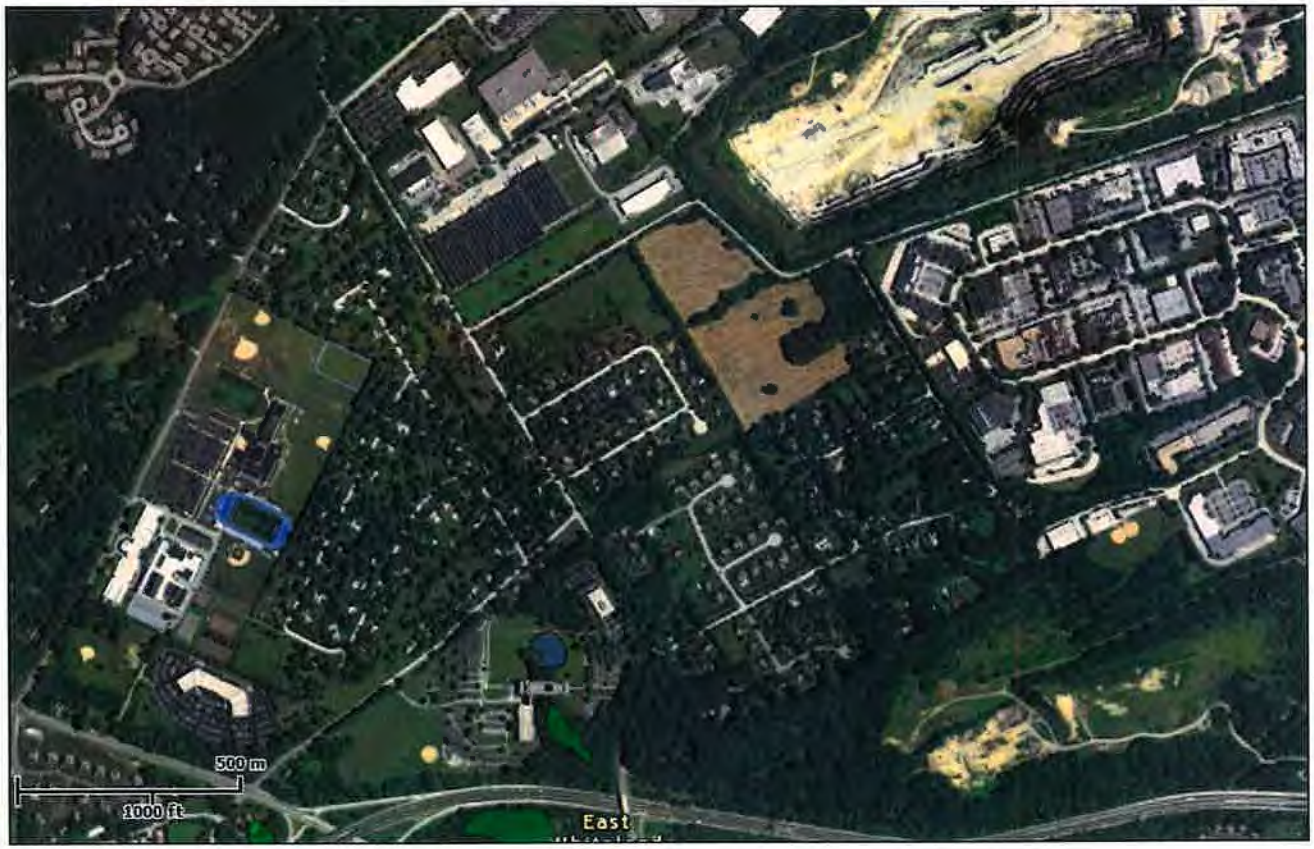
Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Sidley Road/Lee Blvd.

May 9, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

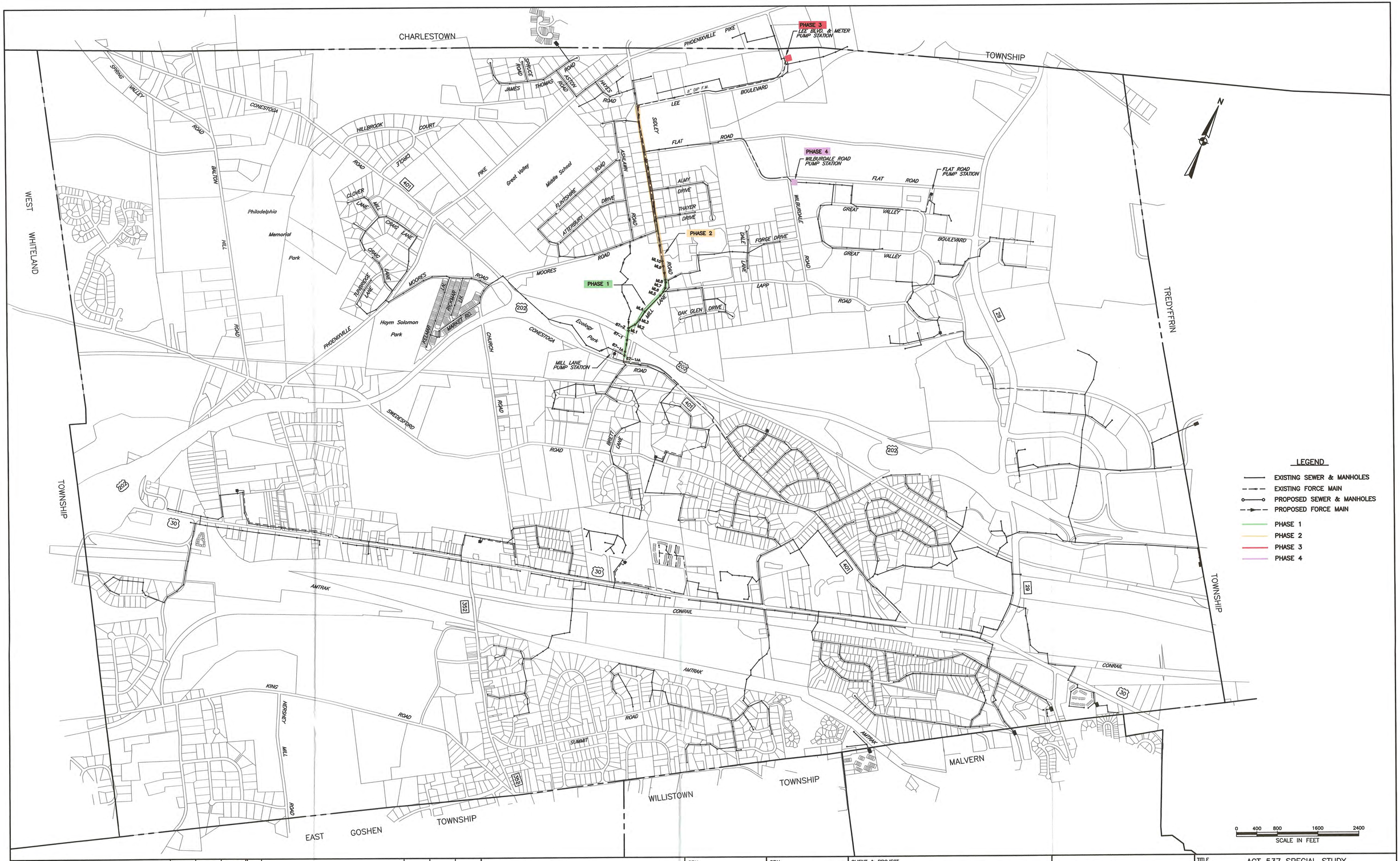
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Act 537 Special Study

APPENDIX F

Collection/Conveyance System; Upgrades (Phasing Plan)



NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.
A				

W.L. BOHNER, P.E.
RELEASED BY

DESIGN: W.L. BOHNER, P.E.	CHECKED:
DRAWN: BLATT	CHECKED:
DATE: 6/14/12	SURVEY DATE:
	FIELD BOOK:

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SEWER SYSTEM
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE
ACT 537 SPECIAL STUDY
PLOT PLAN
PHASE 1, 2, 3, & 4

SCALE	DWG. NO.
AS NOTED	C3

PROJECT NO.	SHEET NO.	REV.
10310.02	3 OF 3	A

Dwg. Name: 1031002C1_C2 537_STUDY.DWG Plotted: 3/6/2013 7:39 AM

East Whiteland Township
Planned Phase I and Phase II Improvements

Phase	Location	Location Description	Description	Length (ft.)	Pipe Size (in.)	Comments
I	Mill Lane	MHs ML-8 to 67-1AA	Install New Sanitary Sewer Main to convey flows to the Mill Lane Pump Station.	1761	18	This will facilitate diverting a large portion of wastewater from the Sidley Road area to around the existing sanitary sewer in the Aegon property.
II	Sidley Road	MHs SL-10 to SL7 (15 inch) MHs SL-7 to ML-8 (18 inch)	Install new sanitary sewer main that will receive the majority of the proposed flow from the planning area and Charlestown Township	912 2559	15 18	This will provide additional capacity for the planned future flows and will remove flow from the existing Sidley Road sewer main that is currently hydraulically overloaded in some locations.

APPENDIX G

Flow Projection Summary Table (Charlestown Township)

Flow Needs
Charlestown Township (southside)
{Source: Sept. 11, 2008 Letter to Valley Forge Sewer Authority; Refined Per Information from Township March 2013 and PA DEP Comments Aug. 2013}

Existing/Projected	Zone	Description	Flows go to.....	Current	0 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	20 to 25 Years	Flow (gpd)
Existing	----------	Charlestown Oaks	Sidley Road	38,354.0						38,354.0
Existing	----------	Charlestown Twp.	Lee Blvd.	78,544.0						78,544.0
Projected	I/O	Volpi	Sidley Road			23,500.0				23,500.0
Projected		Cellucci	Lee Blvd.			4,450.0				4,450.0
Projected		Laurabrooke	Lee Blvd.			4,740.0				4,740.0
Projected		"Late Spring"	Lee Blvd.			2,130.0				2,130.0
Projected		Adjacent to Laurabrooke	Lee Blvd.			10,560.0				10,560.0
Projected		Holy Ascention Church	Lee Blvd.		1,815.0					1,815.0
Projected		Remainder	Lee Blvd.				12,550.0			12,550.0
Projected		Remainder	Lee Blvd.					12,550.0		12,550.0
Projected		Remainder	Lee Blvd.						12,550.0	12,550.0
Projected	B-1/FR/LI-B/RC	Devault Foods	Lee Blvd.		37,000.0					37,000.0
Projected		Spring Oak Business Park	Lee Blvd.		50,875.0					50,875.0
Projected		Tyler Griffin	Lee Blvd.		21,450.0					21,450.0
Projected		Charlestown School	Lee Blvd.		1,845.0					1,845.0
Projected		Fillippo Tract	Lee Blvd.			19,800.0				19,800.0
Projected		Across From Spring Oak Park	Lee Blvd.			2,475.0				2,475.0
Projected		Yellow Springs Road	Lee Blvd.			2,750.0				2,750.0
Projected		Rt. 29 and Charlestown Rd.	Lee Blvd.			13,750.0				13,750.0
Projected		Northside of School	Lee Blvd.			1,925.0				1,925.0
Projected		Farm Residence	Lee Blvd.			275.0				275.0
Projected		Remainder	Lee Blvd.				13,363.0			13,363.0
Projected		Remainder	Lee Blvd.					13,363.0		13,363.0
Projected		Remainder	Lee Blvd.						13,364.0	13,364.0
Projected	NC-1 and NC-2	Warner Lane	Lee Blvd.		4,650.0					4,650.0
		The Office Restaurant	Lee Blvd.		3,600.0					3,600.0
		Commons at Great Valley	Lee Blvd.			11,000.0				11,000.0
TOTALS				**116,898.0**	**121,235.0**	**97,355.0**	**25,913.0**	**25,913.0**	**25,914.0**	**413,228.0**
Cumulative Totals				**116,898.0**	**238,133.0**	**335,488.0**	**361,401.0**	**387,314.0**	**413,228.0**	
Lee Blvd Cumulative Totals				**78,544.0**	**199,779.0**	**273,634.0**	**299,547.0**	**325,460.0**	**351,374.0**	

APPENDIX H

PNDI Response

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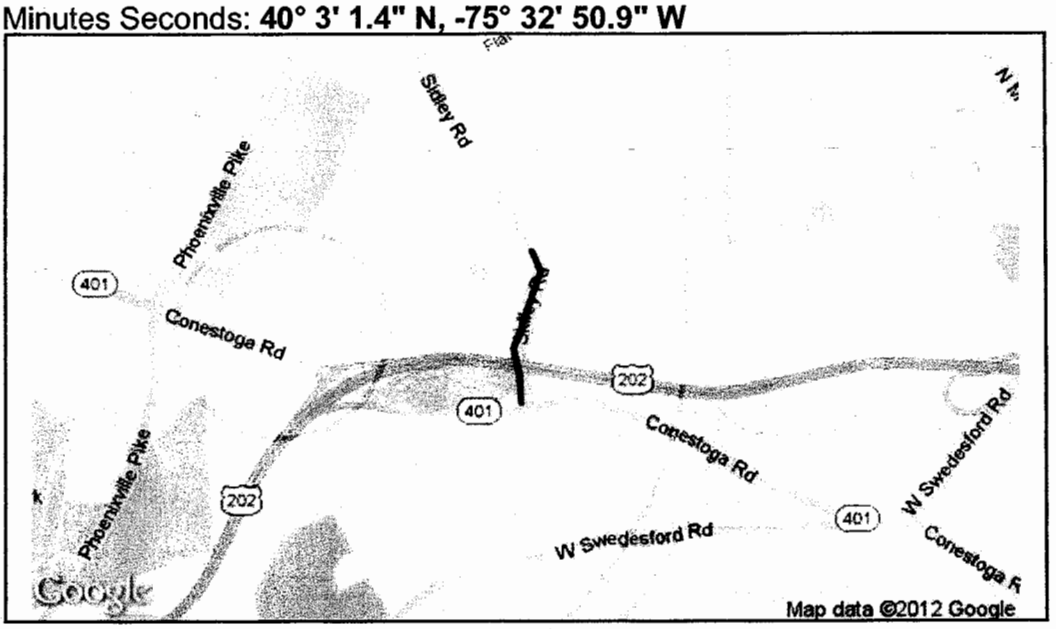
PNDI Project Environmental Review Receipt Project Search ID: 20120418350428

1. PROJECT INFORMATION

Project Name: **Mill Lane Sewer Replacement**
Date of review: **4/18/2012 4:38:47 PM**
Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewer line maintainence-repair, replacement of existing line**
Project Length: **1945.2** feet
County: **Chester** Township/Municipality: **East Whiteland**
Quadrangle Name: **MALVERN** ~ ZIP Code: **19355**
Decimal Degrees: **40.050383 N, -75.547485 W**
Degrees Minutes Seconds: **40° 3' 1.4" N, -75° 32' 50.9" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

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Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?
Your answer is: **1. Yes**

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: **3. Someone qualified to identify and delineate wetlands has investigated the site, and determined that NO wetlands are located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern

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species and resources.

U.S. Fish and Wildlife Service

RESPONSE: Avoidance Measure: Avoid in-stream impacts by spanning the waterway or going under it (e.g., via horizontal boring or directional drilling). If in-stream impacts cannot be avoided, carry out instream work -- including installation of permanent structures (e.g., pipelines, livestock crossings, riprap), or installation, use, and removal of temporary structures (e.g., temporary road crossings) -- between October 1 and March 31.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:

_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum* Materials to be submitted:

____**SIGNED** copy of this Project Environmental Review Receipt
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____Project location information (name of USGS Quadrangle, Township/Municipality, and County)
____USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
____A basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the

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appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

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5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: KEVIN McAGHON
Company/Business Name: ARRO CONSULTING, INC.
Address: 649 NORTH LEWIS ROAD, SUITE 100
City, State, Zip: LIMERICK, PA. 19468
Phone:(610) 495. 2115 Fax:(610) 495. 5855
Email: KEVIN.MCAGHON@THEARROGROUP.COM

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Kevin McAghon — applicant/project proponent signature

8.10.12 — date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

June 6, 2012

RECEIVED
JUN 11 2012
ARRO
16310.02

Kevin McAghon
ARRO
649 North Lewis Road
Suite 100
Limerick, PA 19468

RE: USFWS Project #2012-0746
PNDI Review #20120418350428

Dear Mr. McAghon:

This responds to your letter of April 20, 2012, which provided the Fish and Wildlife Service with information regarding the proposed Mill Lane sewer replacement project located in East Whiteland Township, Chester County, Pennsylvania. The proposed project is within the known range of the bog turtle (*Clemmys muhlenbergii*), a species that is federally listed as threatened. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

To evaluate the potential effects of this project on the bog turtle, a wetland investigation was conducted by your office on February 1, 2012. According to the information submitted, wetlands do not exist in the project area. Therefore, we conclude that implementation of the proposed project will not affect the bog turtle. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. Also, if the wetland investigation did not include all areas that will be directly or indirectly affected by the proposed project and project-associated features, the scope of the wetland investigation should be expanded to include these areas. If any wetlands are located, submit the results of the expanded wetland investigation to this office for review.

This response relates only to endangered and threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

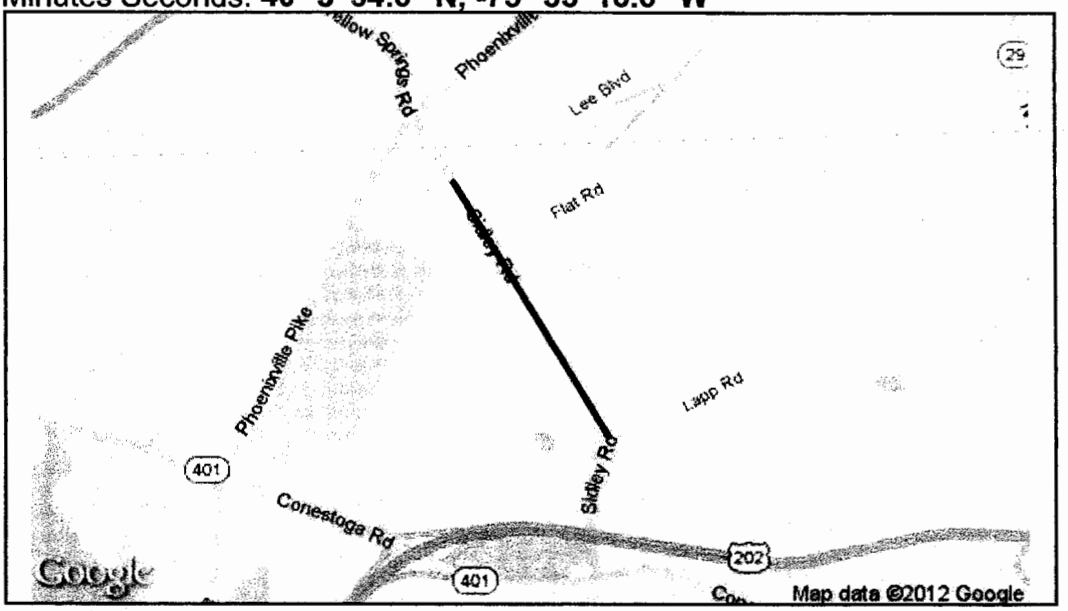
Please contact Bonnie Dershem of my staff at 814-234-4090 if you have any questions or require further assistance regarding this matter.

Sincerely,

Clinton Riley
Field Office Supervisor

1. PROJECT INFORMATION

Project Name: **Sidley Road Sewer Replacement**
Date of review: **8/10/2012 8:32:55 AM**
Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewer line (new - construction in new location)**
Project Length: **3592.9** feet
County: **Chester** Township/Municipality: **East Whiteland**
Quadrangle Name: **MALVERN** ~ ZIP Code: **19355**
Decimal Degrees: **40.059614 N, -75.555167 W**
Degrees Minutes Seconds: **40° 3' 34.6" N, -75° 33' 18.6" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	**Conservation Measure**	**No Further Review Required, See Agency Comments**
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: "Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. ""Project"" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur ."
Your answer is: **"1. The entire project and associated discharge, plus a 300 feet buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, or crop agriculture field."**

Q2: "Will the entire project area (including any discharge), plus a 300 feet buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, maintained (periodically mown) lawn, crop agriculture field or maintained orchard?"
Your answer is: **1. Yes**

Q3: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: **1. The entire project will occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, or railroad bed.**

Q4: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?
Your answer is: **2. No**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species

listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Conservation Measure: Please avoid the introduction of invasive species in order to protect the integrity of nearby plant species of special concern. Voluntary cleaning of equipment/vehicles, using clean fill and mulch, and avoiding planting invasive species (http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm) will help to conserve sensitive plant habitats.

Conservation Measure: Please avoid the introduction of invasive species in order to protect the integrity of nearby plant species of special concern. Voluntary cleaning of equipment/vehicles, using clean fill and mulch, and avoiding planting invasive species (http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm) will help to conserve sensitive plant habitats.

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)
Scientific Name: Dichanthelium lucidum
Common Name: Shining Panic-grass
Current Status: Special Concern Species*
Proposed Status: Endangered

Scientific Name: Viburnum nudum
Common Name: Possum-haw
Current Status: Endangered
Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: Avoidance Measure: Do not conduct this project/activity within 50 feet of any streams, rivers, creeks, or tributaries. This includes both perennial and intermittent waterways.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:

_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictinal agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum* Materials to be submitted:

____**SIGNED** copy of this Project Environmental Review Receipt
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____Project location information (name of USGS Quadrangle, Township/Municipality, and County)
____USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
____A basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: KEVIN McAGHON
Company/Business Name: ANNO CONSULTING, INC.
Address: 699 NORTH LEWIS ROAD, SUITE 100
City, State, Zip: LIMERICK, PA. 19468
Phone:(610) 495-2115 Fax:(610) 495-5855
Email: KEVIN.MCAGHON@THEANNOGROUP.COM

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Kevin McAghon 8-10-12

applicant/project proponent signature date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

September 14, 2012

SEE UPDATED EMAIL LETTER DATED 9.18.12

Kevin McAghon
ARRO
649 North Lewis Road
Suite 100
Limerick, PA 19468

SEP 17 2012
ARRO
10310.02

RE: USFWS Project #2012-1219

Dear Mr. McAghon:

This responds to your letter of August 16, 2012, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed Sidley Road Sewer Replacement project located in East Whiteland Township, Chester County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

Given the proximity of the project to known bog turtle occurrences in the watershed, wetlands and streams are likely to be used as a dispersal/travel corridor. Accordingly, we recommend that project construction take place between October 1 and March 31, when bog turtles are closer to their hibernation areas, to avoid harming any turtles moving through the area. If this time-of-year restriction cannot be implemented, we further recommend you conduct a bog turtle survey in accordance with the following conditions, which only apply if project construction is proposed to occur between April 1 and September 30, during which time bog turtles are active:

1. Prior to performing any construction work in wetlands, streams, or uplands within 300 feet of the potential bog turtle habitat, all areas of expected disturbance must be surveyed by a qualified surveyor for the presence of bog turtles immediately prior to construction commencement.

2. Prior to the survey, herbaceous vegetation should be cut to a height of 4 to 6 inches using a hand-held trimmer/weed-cutter, and then carefully raked away from the area to be searched. A qualified bog turtle surveyor should be present when this vegetation clearing occurs.

3. Immediately following the survey, silt-fencing should be placed between the wetland and the proposed construction zone while the bog turtle surveyor is present to ensure

that the fencing is properly installed in the correct location. The silt-fencing should be removed immediately following construction.

4. If any bog turtles are located during these searches, the Service and Pennsylvania Fish and Boat Commission should be contacted immediately, and construction should not proceed until further consultation occurs. Survey results should be submitted to the Service and PFBC.

With the implementation of either the time-of-year restriction or pre-construction survey, this project is not likely to adversely affect the bog turtle, or any other federally listed or proposed species. If you are unable to implement the time-of-year restriction or pre-construction survey, or project plans change, further consultation with the Service will be required, pursuant to the Endangered Species Act.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Pamela Shellenberger of my staff at 814-234-4090.

Sincerely,

Clinton Riley
Field Office Supervisor

McAghon, Kevin

From: Pamela_Shellenberger@fws.gov
Sent: Tuesday, September 18, 2012 11:47 AM
To: McAghon, Kevin
Subject: Fw: Sidley Road Sewer Replacement; USFWS #2012-1185

Kevin,

Correction, the USFWS # is 2012-1219.

Thanks,

Pamela Shellenberger
U.S. Fish and Wildlife Service
315 South Allen Street
State College, PA 16803
814-234-4090 x241
814-234-0748 (f)
http://fws.gov/northeast/pafo/index.html

----- Forwarded by Pamela Shellenberger/R5/FWS/DOI on 09/18/2012 11:46 AM -----

Pamela Shellenberger/R5/FWS/DOI
09/18/2012 08:53 AM

To KEVIN.MCAGHON@THEARROGROUP.C
cc
Subject Sidley Road Sewer Replacement; USFWS #2(1185

Kevin,

This email is regarding the above-mentioned project and our phone conversation of September 18, 2012. After further discussions with you and further review of the project information, which determined that the project is located within the roadway and no streams will be impacted, we have determined that the effects of the project on the bog turtle are insignificant or discountable. This email supersedes our letter of September 14, 2012. Please accept this email as our official response.

Thank you,

Pamela Shellenberger
U.S. Fish and Wildlife Service
315 South Allen Street
State College, PA 16803
814-234-4090 x241
814-234-0748 (f)
http://fws.gov/northeast/pafo/index.html

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

September 18, 2012

CERTIFIED MAIL #7008 0150 0000 7716 9421
RETURN RECEIPT REQUESTED

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
Ecological Services Section
400 Market Street
P.O. Box 8552
Harrisburg, PA 17105-8552

RE: East Whiteland Township (Chester County);
Act 537 Planning – Special Study; Lee Blvd. Force Main;
PA DCNR Review
ARRO # 10310.02

Dear PA Department of Conservation and Natural Resources:

On behalf of East Whiteland Township, we are assisting with the preparation of an Act 537 Sewage Facilities Special Study to update the Township's Act 537 Plan. This Special Study is to reflect the improvements necessary to meet the future wastewater needs of the north-central portion of East Whiteland Township and the bordering southern portion of Charlestown Township. One phase of the improvements may require the replacement of the sanitary sewer force main from the Lee Boulevard Pump Station, extending along Lee Boulevard to a point of connection at the intersection with Sidely Road.

Enclosed, for your review, is the Cultural Resource Notification form and the Malvern 7.5 Minute Quadrangle identifying the location of the proposed project. Photos are also enclosed identifying the specific location associated with the proposed forcemain replacement. The total area to be disturbed for the purposes of installing the proposed force main replacement is approximately 0.3 acres. No structures are planned to be disturbed as a result of implementing the planned alternatives. The proposed force main is primarily in the street with a small portion traversing an open field area just south of the pump station.

Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions, please do not hesitate to call me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Attachments

Corporate Headquarters • 108 West Airport Road • Litiz, PA 17543
T 717.569.7021 • F 717.560.0577 • www.thearrogroup.com

OUT IN FRONT

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	$ 1.30
Certified Fee	2.9[illegible]
Return Receipt Fee (Endorsement Required)	[illegible]
Restricted Delivery Fee (Endorsement Required)	
Total	6.60

9-18-12

Postmark Here

WJ

7008 0150 0000 7716 9421

Sent To: Pennsylvania DCNR
Street, or PO: Bureau of Forestry
City, S: Ecological Services Section
400 Market Street, P.O. Box 8552
Harrisburg, PA 17105-8552

PS Form [illegible] See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Pennsylvania DCNR
Bureau of Forestry
Ecological Services Section
400 Market Street, P.O. Box 8552
Harrisburg, PA 17105-8552

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) C. Date of Delivery
SEP 2 1 2012

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

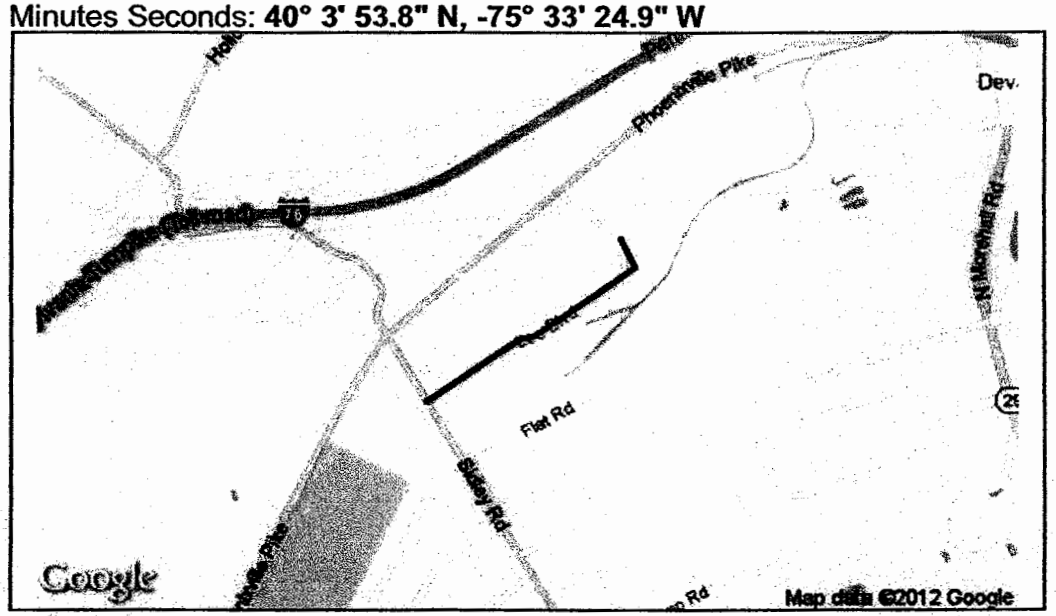
4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from service label*) 7008 0150 0000 7716 9421

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

1. PROJECT INFORMATION

Project Name: **Lee Blvd PS Force Main to Sidely Road (Replacement)**
Date of review: **9/13/2012 11:04:01 AM**
Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewage module/Act 537 plan**
Project Length: **3462.5** feet
County: **Chester** Township/Municipality: **East Whiteland**
Quadrangle Name: **MALVERN** ~ ZIP Code: **19355**
Decimal Degrees: **40.064935 N, -75.556926 W**
Degrees Minutes Seconds: **40° 3' 53.8" N, -75° 33' 24.9" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)
Scientific Name: Dichanthelium lucidum
Common Name: Shining Panic-grass
Current Status: Special Concern Species*
Proposed Status: Endangered

Scientific Name: Viburnum nudum
Common Name: Possum-haw
Current Status: Endangered
Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictinal agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

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Check-list of *Minimum* Materials to be submitted:

____**SIGNED** copy of this Project Environmental Review Receipt
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____Project location information (name of USGS Quadrangle, Township/Municipality, and County)
____USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
____A basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the

appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

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For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

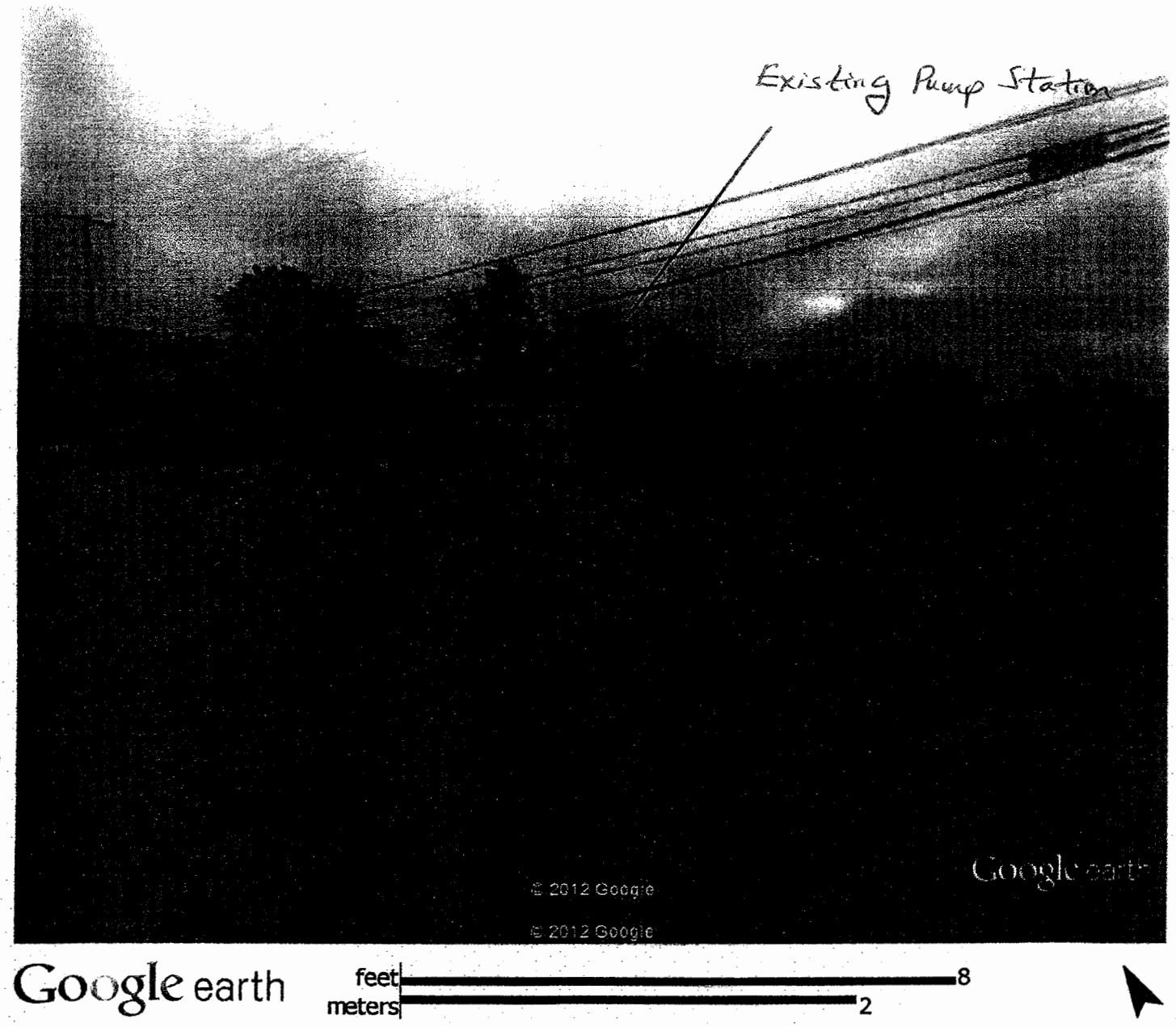
7. PROJECT CONTACT INFORMATION

Name: William L. Bohner, Jr.
Company/Business Name: ARRO Consulting, Inc.
Address: 649 N. Lewis Road, Suite 100
City, State, Zip: Limerick PA 19468
Phone:(610) 495-2102 Fax:(610) 495-5855
Email: bill.bohner@thearrogroup.com.

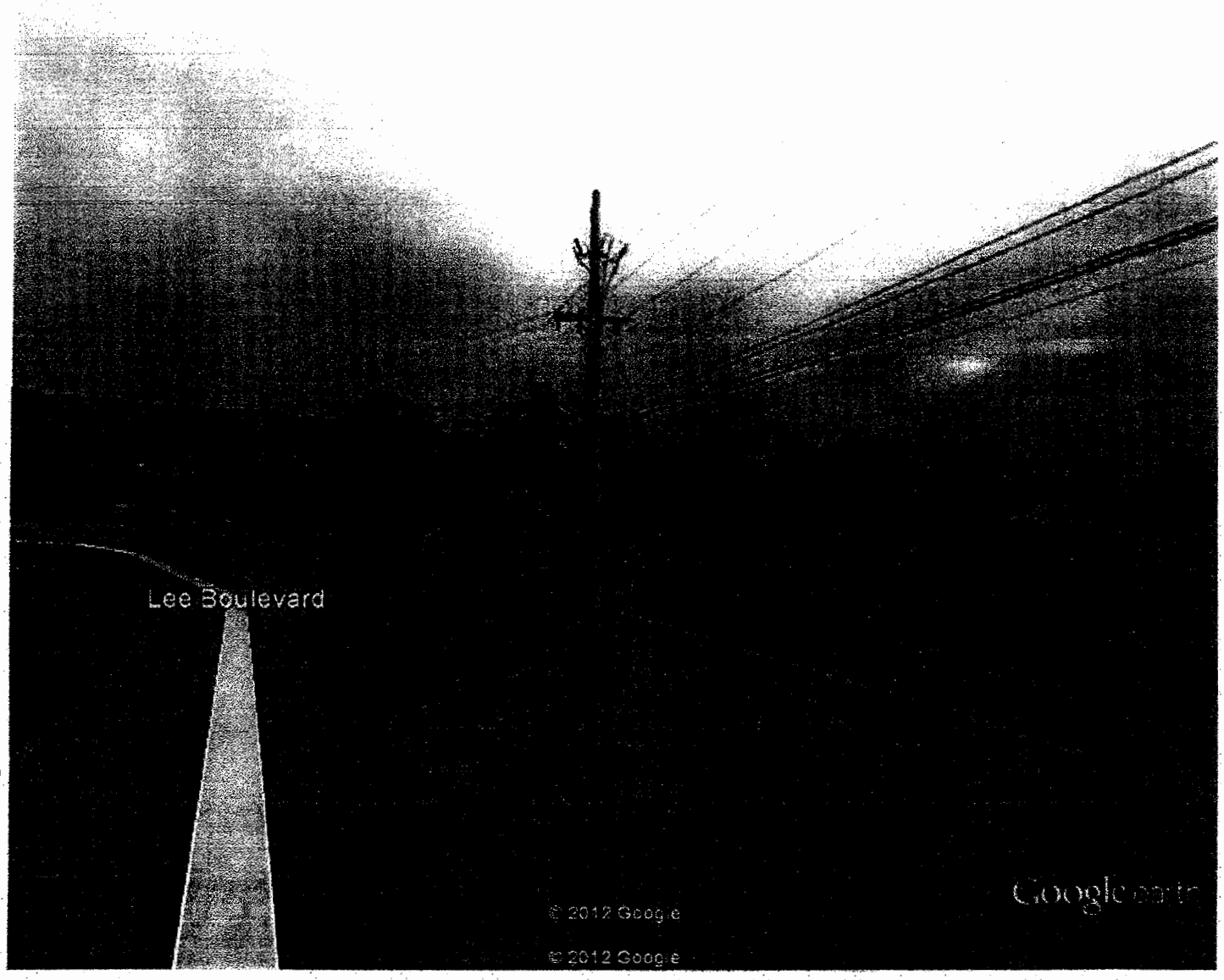
8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

William L. Bohner Jr. 9/13/12
applicant/project proponent signature date

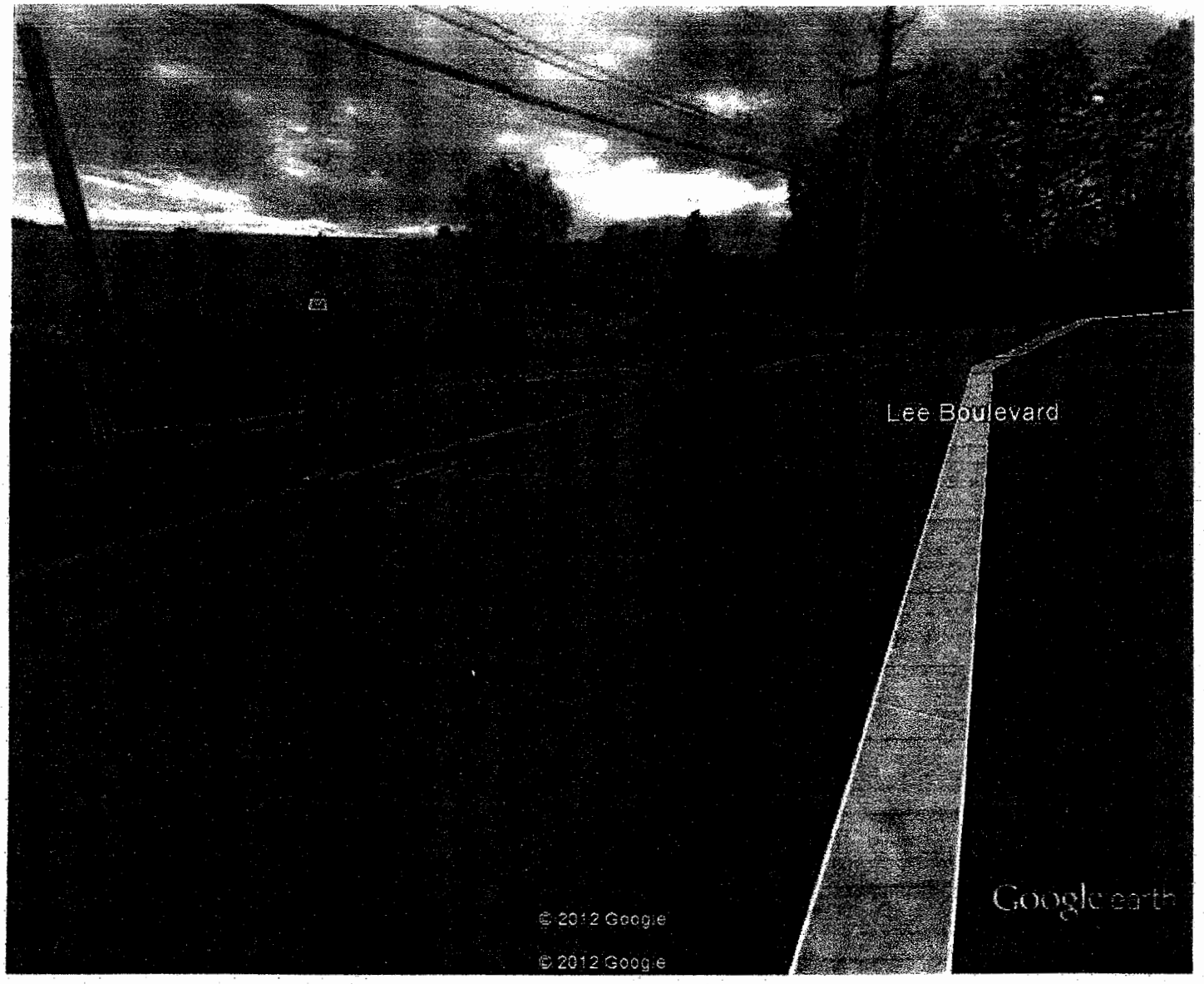


Red line and arrow show the approximate location of the force main. It continues on page 2 and page 3. On page 3, the force main proceeds into the street (Lee Blvd.) and continues in Lee Blvd. to the intersection with Sidley Rd. This would be the limit of the proposed work. See page 4 for an aerial view.



Google earth

feet 10
meters 3



Google earth

feet
meters
6
1

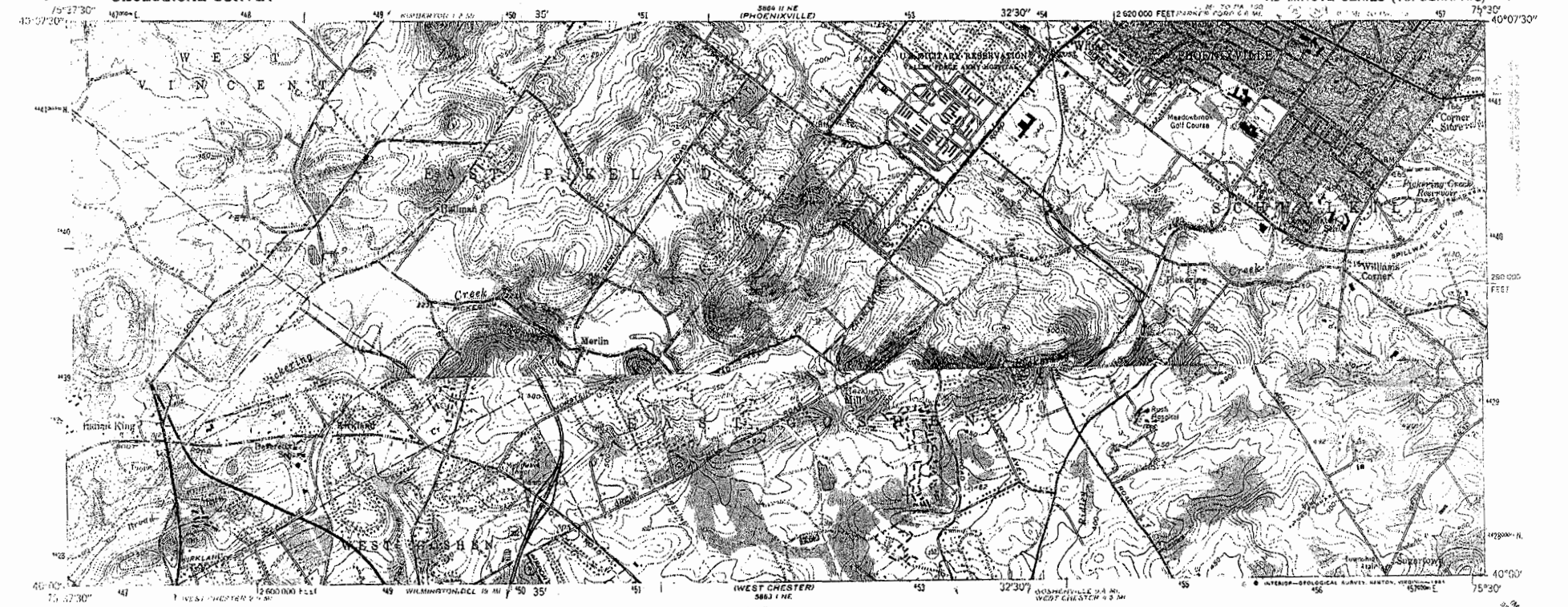


Google earth feet 1000 meters 400

Existing Pump Station

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MALVERN QUADRANGLE
PENNSYLVANIA–CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1951. Field checked 1955

Polyconic projection. 10,000-foot grid ticks based on Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters west as shown by dashed corner ticks

Red tint indicates areas in which only landmark buildings are shown

There may be private inholdings within the boundaries of the National or State reservations shown on this map

UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Revisions shown in purple and woodland compiled from aerial photographs taken 1981 and other sources. This information not field checked. Map edited 1983

Purple tint indicates extensions of urban areas

SCALE 1:24000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

PENNSYLVANIA
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U. S. Route — State Route

MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5864 II SE–SERIES V831

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

September 27, 2012 **PNDI Number: 20120913372241**

William L. Bohner, Jr.
ARRO Consulting, Inc.
649 N. Lewis Road, Suite 100
Limerick, PA 19468
Email: bill.bohner@thearrogroup.com (Hard copy not to follow)

Re: Lee Blvd PS Force Main to Sidely Road (Replacement)
East Whiteland Township, Chester County, PA

Dear Mr. Bohner,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **20120913372241** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

Conservation Measure—Voluntary Action

The following plant species of concern is known to occur in the area but is not expected to be present within the project disturbance area and therefore, it is not a target for a survey; However, habitat exists in the area: A conservation measure is suggested to be mindful of the potential presence of the following species that may utilize open dry or moist fields:

- *Andropogon gyrans* (Elliott's beardgrass)–habitat is dry or moist fields, or open woods-

This response represents the most up-to-date review of the PNDI data files and is valid for **two years** only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. For PNDI project updates, please see the PNHP website at www.naturalheritage.state.pa.us for guidance. As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review. Should you have any questions or concerns, please don't hesitate to contact me at 717.705.2819 or c-frsechle@pa.gov.

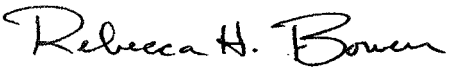
pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

Sincerely,



Frederick C. Sechler, Jr, Ecological Information Specialist
Pennsylvania Natural Heritage Program
Bureau of Forestry, Ecological Services Section



Rebecca H. Bowen, Section Chief
Pennsylvania Natural Heritage Program
Bureau of Forestry, Ecological Services Section

APPENDIX I

PHMC Response

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

May 2, 2012

CERTIFIED MAIL #7008 0150 0000 7716 9322
RETURN RECEIPT REQUESTED

Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street
Second Floor
Harrisburg, PA 17120-0093

RE: East Whiteland Township;
Phase 1 Mill Lane and Phase 2 Sidley Road Sewer Main Replacements
PHMC Review
ARRO # 10310.02

Dear Historical and Museum Commission:

On behalf of East Whiteland Township, we are preparing a design to replace the existing sanitary sewers in and along Mill Lane and Sidley Road.

Enclosed, for your review, is the Cultural Resource Notification form and a portion of the USGS Malvern, PA 7.5 Minute Quadrangle identifying the location of the project. The enclosed Plot Plan sheet C1 shows the extent of the phases. The enclosed sheets PP1 and PP2 show the extent of the Phase 1 improvements, which are located outside the existing roadways. All other portions of Phase 1 and Phase 2 are located within existing cartways. The projected Phase 1 and Phase 2 total area to be disturbed for the purposes of replacing the sewer lines is approximately 1.4 acres.

Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions or comments regarding this matter please contact me at 610-495-2115.

Sincerely,

Kevin McAghon

Kevin McAghon, P.E.
Project Engineer

KMcA: car

Enclosures

c: William H. Steele, w/enclosures

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

RECEIVED
JUN 18 2012
ARRO

#10310.02

June 4, 2012

Kevin McAghon, P.E.
ARRO Engineering & Environmental Consultants
649 North Lewis Road, Suite 100
Limerick, PA 19468

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: File No. ER 2012-1657-029-A
DEP Act 537 Sewage Facilities Planning:
Mill Lane & Sidley Road Sewer
Replacement Projects, East Whiteland
Twp., Chester Co.

Dear Mr. McAghon:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Archaeology

There is a high probability that archaeological resources are located in this project area. In our opinion, the activity described in your proposal should have no effect on such resources. Should the scope of the project be amended to include additional ground disturbing activity this office should be contacted immediately and a Phase I Archaeological Survey may be necessary to locate all potentially significant archaeological resources.

Historic Structures

In our opinion no historic buildings, structures, districts, or objects will be affected by this project.

If you need further information in this matter please consult Mark Shaffer at (717) 783-9900.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology &
Protection

cc: DEP, Southeast Regional Office

DCM/tmw

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

RECEIVED
JUN 18 2012
ARRO

June 4, 2012

Kevin McAghon, P.E.
ARRO Engineering & Environmental Consultants
649 North Lewis Road, Suite 100
Limerick, PA 19468

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

Re: File No. ER 2012-1657-029-A
DEP Act 537 Sewage Facilities Planning:
Mill Lane & Sidley Road Sewer
Replacement Projects, East Whiteland
Twp., Chester Co.

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Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology &
Protection

cc: DEP, Southeast Regional Office

DCM/tmw

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

September 18, 2012

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

CERTIFIED MAIL#7008 0150 0000 7716 8929
RETURN RECEIPT REQUESTED

Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street
Second Floor
Harrisburg, PA 17120-0093

RE: East Whiteland Township (Chester County);
Act 537 Planning – Special Study; Lee Blvd. Force Main;
PHMC Review
ARRO # 10310.02

Dear Historical and Museum Commission:

On behalf of East Whiteland Township, we are assisting with the preparation of an Act 537 Sewage Facilities Special Study to update the Township's Act 537 Plan. This Special Study is to reflect the improvements necessary to meet the future wastewater needs of the north-central portion of East Whiteland Township and the bordering southern portion of Charlestown Township. One phase of the improvements may require the replacement of the sanitary sewer force main from the Lee Boulevard Pump Station, extending along Lee Boulevard to a point of connection at the intersection with Sidely Road.

Enclosed, for your review, is the Cultural Resource Notification form and the Malvern 7.5 Minute Quadrangle identifying the location of the proposed project. Photos are also enclosed identifying the specific location associated with the proposed forcemain replacement. The total area to be disturbed for the purposes of installing the proposed force main replacement is approximately 0.3 acres. No structures are planned to be disturbed as a result of implementing the planned alternatives. The proposed force main is primarily in the street with a small portion traversing an open field area just south of the pump station.

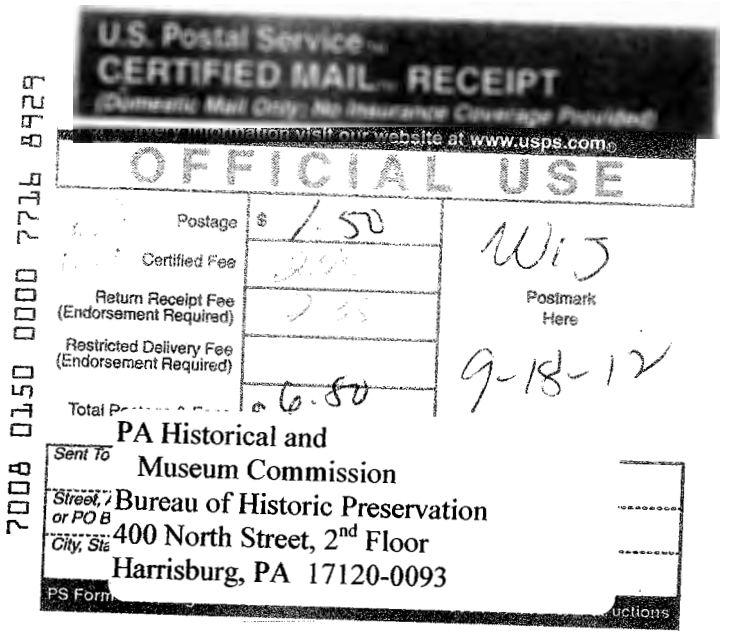
Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions, please do not hesitate to call me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Attachments



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CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com®
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7008 0150 0000 7716 8929

Postage	$ 1.50
Certified Fee	2.80
Return Receipt Fee (Endorsement Required)	2.30
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.60

Postmark Here: WJS 9-18-12

Sent To: PA Historical and Museum Commission
Street, Apt. No., or PO Box: Bureau of Historic Preservation
City, State, ZIP+4: 400 North Street, 2nd Floor Harrisburg, PA 17120-0093

PS Form ... uctions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

PA Historical and Museum Commission
Bureau of Historic Preservation
400 North Street, 2nd floor
Harrisburg, PA 17102-0093

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery
SEP 20 2012

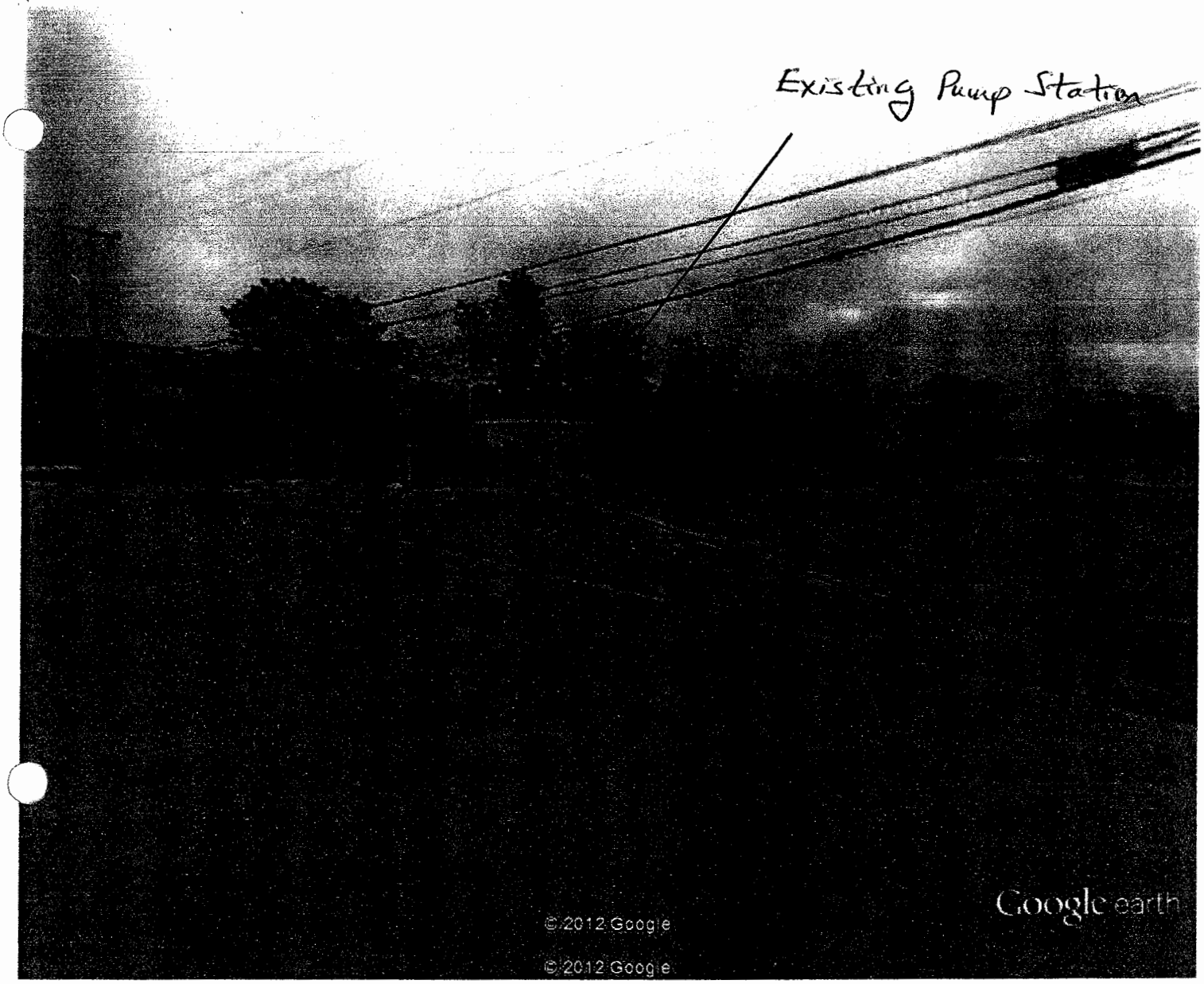
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7008 0150 0000 7716 8929

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



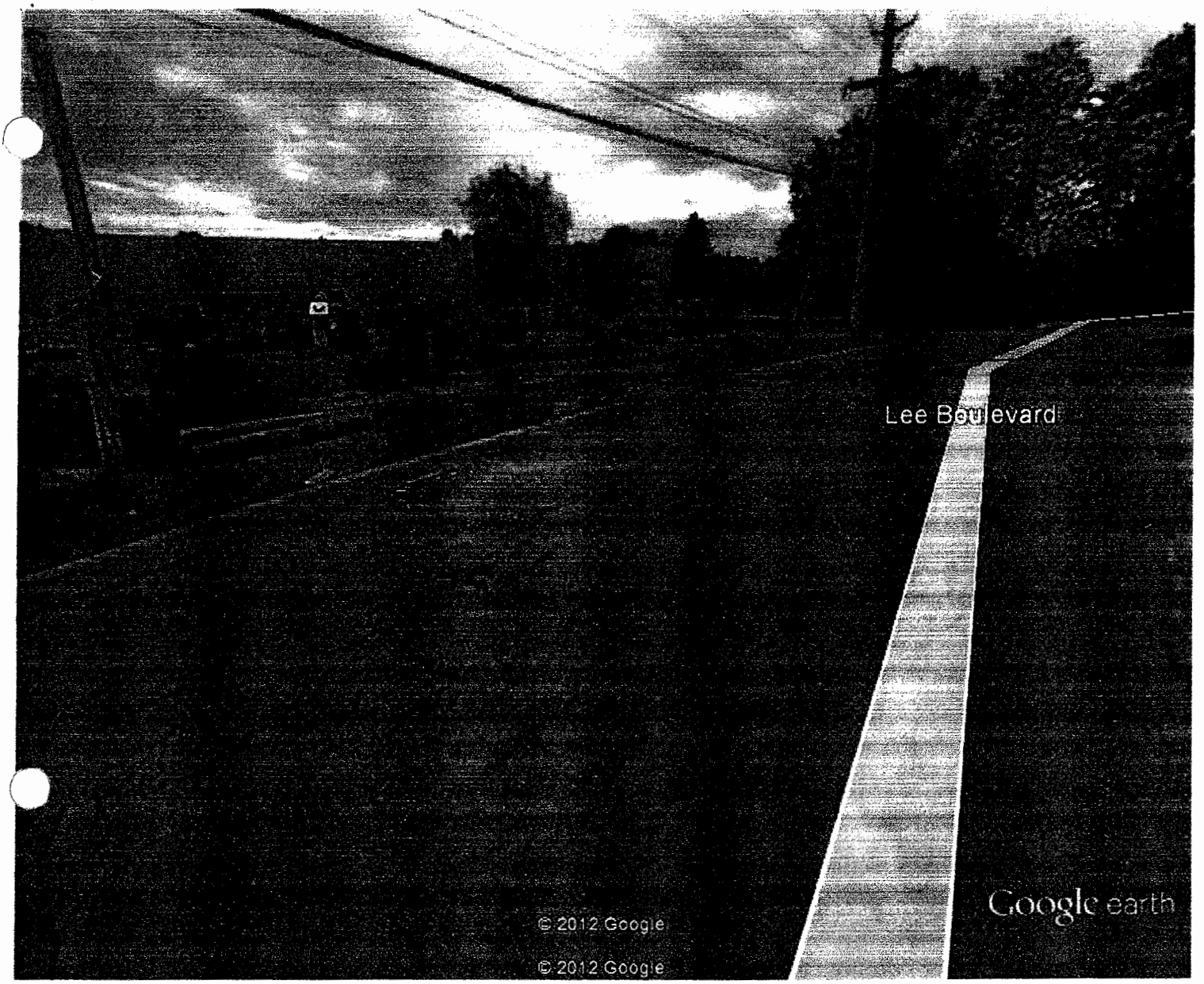
Google earth feet 8 meters 2

Red line and arrow show the approximate location of the force main. It continues on page 2 and page 3. On page 3, the force main proceeds into the street (Lee Blvd.) and continues in Lee Blvd. to the intersection with Sidley Rd. This would be the limit of the proposed work. See page 4 for an aerial view.



Google earth

feet 10
meters 3



Google earth

feet 6
meters 1



Google earth feet 1000 meters 400

Existing Pump Station

0120-PM-PY0003 Rev. 5/2006
NOTICE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY
Date Received

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name	East Whiteland Township				
Street Address	209 Conestoga Road				
City	Frazer	State	PA	Zip	19355
Telephone Number	610.648.0600				
Project Title	Act 537 Special Study; East Whiteland Township				

SECTION B. LOCATION OF PROJECT

Municipality: East Whiteland Township | County Name: Chester | DEP County Code: 15

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537 Approval

Anticipated federal permits:

- ☐ Surface Mining
- ☐ Army Corps of Engineers
- ☐ 401 Water Quality Certification
- ☐ 404 Water Quality Permit
- ☐ Federal Energy Regulatory Commission
- ☒ Other: None

SECTION D. GOVERNMENT FUNDING SOURCES

- ☐ State: (Name) _____
- ☒ Local: (Name) Township Funding
- ☐ Federal: (Name) _____
- ☒ Other: (Name) Bond Funding

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☒ Southeast Regional Office (Norristown)
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Southcentral Regional Office (Harrisburg)
- ☐ Northcentral Regional Office (Williamsport)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ Northwest Regional Office (Meadville)
- ☐ District Mining Office: _____
- ☐ Oil & Gas Office: _____

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District	Telephone Number, if known
Chester County Conservation District	610.925.4920

SECTION G. CONSULTANT

Consultant, if applicable	ARRO Consulting, Inc. (c/o William L. Bohner, Jr. PE)				
Street Address	649 N. Lewis Road, Suite 100				
City	Limerick	State	PA	Zip	19468
Telephone Number	610.495.2102				

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

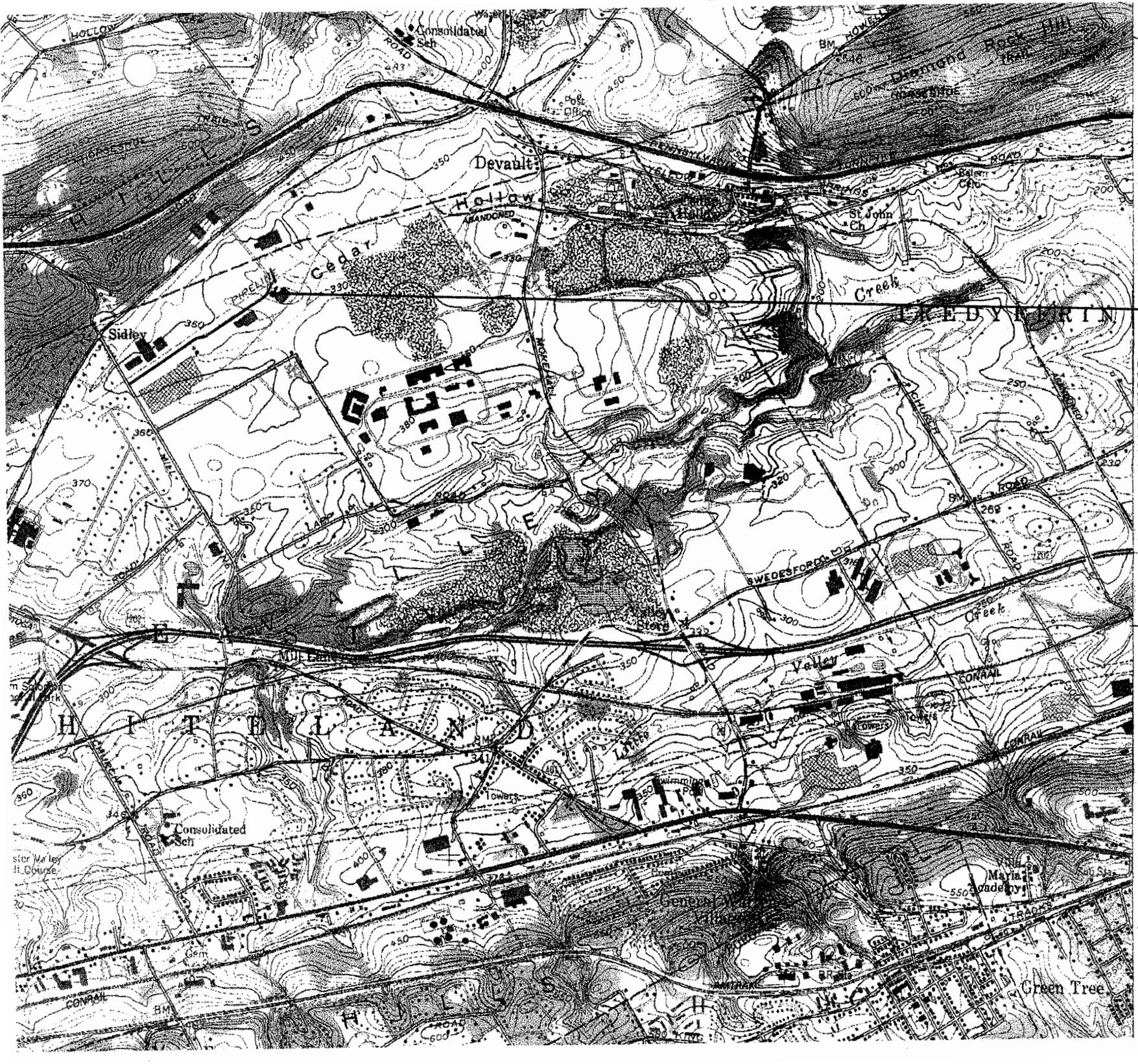
REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

Applicant's Signature	Date of Submission of Notice to PHMC
William L. Bell Jr.	9/14/12



Project Area

RECEIVED
SEP 20 '12
BUREAU FOR
HISTORIC PRESERVATION

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

September 18, 2012

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

CERTIFIED MAIL#7008 0150 0000 7716 8929
RETURN RECEIPT REQUESTED

Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street
Second Floor
Harrisburg, PA 17120-0093

SEP 27 2012
ARRO

RE: East Whiteland Township (Chester County);
Act 537 Planning – Special Study; Lee Blvd. Force Main;
PHMC Review
ARRO # 10310.02

Dear Historical and Museum Commission:

On behalf of East Whiteland Township, we are assisting with the preparation of an Act 537 Sewage Facilities Special Study to update the Township's Act 537 Plan. This Special Study is to reflect the improvements necessary to meet the future wastewater needs of the north-central portion of East Whiteland Township and the bordering southern portion of Charlestown Township. One phase of the improvements may require the replacement of the sanitary sewer force main from the Lee Boulevard Pump Station, extending along Lee Boulevard to a point of connection at the intersection with Sidely Road.

Enclosed, for your review, is the Cultural Resource Notification form and the Malvern 7.5 Minute Quadrangle identifying the location of the proposed project. Photos are also enclosed identifying the specific location associated with the proposed forcemain replacement. The total area to be disturbed for the purposes of installing the proposed force main replacement is approximately 0.3 acres. No structures are planned to be disturbed as a result of implementing the planned alternatives. The proposed force main is primarily in the street with a small portion traversing an open field area just south of the pump station.

Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions, please do not hesitate to call me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Attachments

ER No. 12-2614-02-A
The project will have
NO EFFECT
on historic properties
Date 9/21/12 Reviewer Mark Shaffer

APPENDIX J

Intermunicipal Agreements

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • VIRGINIA MCMICHAEL • JOHN MOTT

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
GEORGE LOKKEN, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

August 27, 2013

Kelly Boettlin
Sewage Planning Specialist 2
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Re: East Whiteland Township Act 537 Special Study

Dear Ms. Boettlin:

This letter is to memorialize East Whiteland Township's commitment to finalizing the intermunicipal agreement amendment between the Township and the Valley Forge Sewer Authority.

We are aware that this amendment is part of the Special Study process and will endeavor to provide you with an executed amended Agreement in a timely manner.

Very truly yours,

Terry Woodman

Terry H. Woodman
Township Manager

Valley Forge Sewer Authority

333 Pawling Road
Phoenixville, Pennsylvania 19460
610-935-1553
Fax 610-983-9684

Environmental Protection by Caring Professionals

MUNICIPALITIES
Charlestown
Easttown
East Pikeland
East Whiteland
Malvern
Schuylkill
Tredyffrin
Willistown

August 28, 2013

Kelly Boettlin
Sewage Planning Specialist 2
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Re: East Whiteland Township Act 537 Special Study

Dear Ms. Boettlin:

This letter is to memorialize the Valley Forge Sewer Authority's (VFSA) commitment to finalizing the inter-municipal agreement amendment between East Whiteland the VFSA. We are aware that this amendment is part of the Special Study process and will endeavor to provide you with an amended Agreement in a timely manner, once the details are worked out and the amendment is executed. We and East Whiteland have both reviewed draft agreement amendments and are in basic agreement as to the major terms, namely that after completion of the Mill Lane and upstream sewer projects in East Whiteland, VFSA's reserve capacity in the East Whiteland system will be 432,302 gallons per day. This capacity is consistent with the Municipal Needs Assessment that supports the VFSA's Regional Act 537 Plan. In accordance with the inter-municipal agreements, these projects will be funded by each municipality according their respective reserve capacities.

Very truly yours,

Martin Goldberg

Martin Goldberg, Operations Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
(610) 935-1553 ext. 226

Rev.
2/10/71

copy for Dr. Weinstock
to keep

EAST WHITELAND TRUNK LINE AGREEMENT

THIS AGREEMENT, dated as of the first day of February, 1971, by and between EAST WHITELAND MUNICIPAL AUTHORITY (East Whiteland Authority), a municipal authority organized by the Township of East Whiteland and operating under the provisions of the Municipality Authorities Act of 1945, the Act of May 2, 1945, P.L. 382, its supplements and amendments, and the TOWNSHIP OF EAST WHITELAND (East Whiteland Township), a second class township, parties of the first part, and MALVERN MUNICIPAL AUTHORITY (Malvern Authority) and the BOROUGH OF MALVERN (Malvern), parties of the second part, and VALLEY FORGE SEWER AUTHORITY, party of the third part, all of said parties being municipal authorities or political subdivisions within the County of Chester, Commonwealth of Pennsylvania.

W I T N E S S E T H :

WHEREAS, the parties hereto have constructed or provided for or are about to construct or provide for sanitary sewer collection systems; and

WHEREAS, the parties desire to dispose of sewage described hereinafter by a treatment plant (hereinafter called the "Valley Forge Treatment Plant") to be located on the Schuylkill River in Schuylkill Township, Chester County, Pennsylvania, which treatment plant is to be constructed and operated by Valley Forge Sewer Authority (a municipality authority formed by Schuylkill, East Pikeland and Charlestown Townships); and

WHEREAS, a substantial portion of the sewage emanating from within the municipalities which is to be disposed of by the aforesaid treatment plant is to be discharged into and conveyed to the aforesaid treatment plant by interceptors or trunk sewers to be constructed by Tredyffrin Township Municipal Authority (Tredyffrin Authority), which interceptors or trunk sewers, including pumping stations and appurtenances are hereinafter called, collectively, the "Valley Creek Trunk Sewer", are to be leased by Tredyffrin Authority to the Township of Tredyffrin, which will operate said Valley Creek Trunk Sewer; and

WHEREAS, all of the sewage emanating from Malvern, which is to be disposed of by the Valley Forge Treatment Plant must pass through East Whiteland to reach the Valley Creek Trunk Sewer; and

WHEREAS, East Whiteland Authority has agreed to construct an interceptor or trunk sewer which will be called the East Whiteland Trunk Line, and Malvern Authority and Malvern have indicated they will utilize said Trunk Line and share in the cost of its construction and operation for the mutual benefit of the parties.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS HEREIN CONTAINED, the parties hereto, intending to be legally bound hereby, covenant and agree as follows:

ARTICLE I

CONSTRUCTION OF EAST WHITELAND TRUNK LINE

1.01 Engineering Services.

Each party hereby approves the contract dated June 20, 1966, between East Whiteland Authority and Roy F. Weston, Inc. (hereinafter called the "Consulting Engineers"), for engineering

services in respect of the construction of sewerage facilities to serve the East Whiteland Township and interceptors or trunk sewers, and appurtenances, to be located as set forth on the attached Exhibit "A" - the East Whiteland Trunk Line. A copy of said contract having been delivered to each party, the municipalities and municipality authority set forth in Exhibit "B" (hereinafter referred in this Article I as the "municipalities") agree to share the cost of such engineering design in accordance with the percentages applicable to each section or reach of said trunk line set forth in Exhibit "B" attached hereto. The parties hereto likewise agree to share the cost of surveys and test borings incident to the aforesaid design in accordance with said percentages. When payments for such engineering design, surveys and test borings fall due from time to time, each such municipality upon receipt of a copy of an invoice from the Consulting Engineers, shall promptly pay or cause to be paid to East Whiteland Authority for delivery to the Consulting Engineers (or, upon request of East Whiteland Authority, directly to the Consulting Engineers) that percentage of such invoice as is set forth in said Exhibit. Nothing herein contained shall be construed so as to make any party hereto (other than East Whiteland Authority) a party to said contract between East Whiteland Authority and the Consulting Engineers. If any payment required of a party hereto under this Section 1.01 is not made within thirty (30) days of the receipt of the aforesaid copy of invoice, interest shall accrue at the rate of six per cent (6%) per annum from such date.

1.02 Design Capacity; Construction of East Whiteland Trunk Line.

For each such municipality listed in Exhibit B, said East Whiteland Trunk Line shall provide the design capacity (reserved capacity) for each secion or reach of the respective interceptor or trunk sewers as set forth after the name of each such municipality in said Exhibit. East Whiteland Authority, in accordance with said contract with the Consulting Engineers shall cause plans and specifications for the East Whiteland Trunk Line to be completed with all reasonable dispatch. East Whiteland Authority, upon receipt of capital contributions as provided in Article II hereof shall award construction contracts and cause the East Whiteland Trunk Line to be constructed with reasonable dispatch, all in accordance with said plans and specifications and sound engineering principles.

1.03 Review and Inspection.

Throughout the term of this Agreement, East Whiteland Authority shall cause the Consulting Engineers to make available at reasonable times and places any information concerning the design, construction and operation of the East Whiteland Trunk Line reasonably requested by Malvern Authority or Malvern. Members of the governing body of Malvern and the consulting engineers, employees and representatives of Malvern shall have the right at all reasonable times during construction and thereafter to inspect the construction and operation of the East Whiteland Trunk Line and all records of East Whiteland Authority and East Whiteland Township in respect thereof. East Whiteland Authority and East Whiteland Township, at reasonable times, shall receive and consider the opinions, comments and suggestions of Malvern or Malvern Authority and of the

consulting engineer of Malvern and Malvern Authority.

1.04 Date of completion of East Whiteland Trunk Line.

East Whiteland Authority shall make every reasonable effort to cause the East Whiteland Trunk Line to be completed with reasonable dispatch.

ARTICLE II

CAPITAL CONTRIBUTIONS

2.01 Percentages.

Subject to limitations hereinafter provided, each of the municipalities and municipality authorities listed in Exhibit B attached hereto (hereinafter referred to in this Article II as the "municipalities") shall bear the percentage of the total project cost of constructing the several sections or reaches of the respective interceptor or trunk sewers of the East Whiteland Trunk Line as set forth after its name in said Exhibit B, which lists the reserved capacity requirements of each party in each such section or reach of sewer, and are referred to hereinafter as "said percentages". The total estimated project cost of constructing the East Whiteland Trunk Line and of each section or reach thereof to be constructed as part of said Trunk Line is set forth in Exhibit B. The total project cost of constructing the East Whiteland Trunk Line shall include construction contract payments, land costs, engineering, surveying, boring and construction representation fees and expenses (other than those paid for under Section 1.01 hereof), legal fees incident to the construction (including preparation and review of

documents needed before construction can commence), a reasonable contingency fund and all other charges, costs and expenses incident to such construction and which are properly chargeable thereto under sound accounting practice but excluding (i) financing costs and (ii) all costs and expenses properly chargeable to East Whiteland Authority for construction of the balance of its own sewage collection system under sound accounting practice. Allocation of costs and expenses between the cost of constructing the East Whiteland Trunk Line and the cost of constructing of the balance of said collection system of East Whiteland Authority shall be subject to adjustment upon audit as provided for hereinafter.

2.02 Payment of Capital Contributions.

No capital contribution in respect of construction shall be due hereunder unless prior to the date of payment plans and specifications for the East Whiteland Trunk Line and revisions thereof, if any, have been approved by the municipalities. Disapprovals may be based only on sound engineering reasons. Within sixty (60) days of the date on which construction bids are received by East Whiteland Authority (or, in the event of increased costs requiring approval pursuant to Section 2.03 hereof, within sixty (60) days of approval pursuant thereto) time being of the essence of this Agreement, each of said municipalities listed in Exhibit B shall pay to East Whiteland Authority the total of (1) the share of the estimated total project cost of constructing the East Whiteland Trunk Line set forth in dollars after its name in Exhibit B, (2) said percentage of the amount by which the total project cost as stated by the Consulting Engineers after

the receipt of construction bids exceeds the estimates set forth in Exhibit B, up to an increase of 15% of said estimates, and (3) such amount as may be due pursuant to the next succeeding Section hereof.

2.03 Change in Project Cost.

In the event, after the receipt of construction bids, the total project cost (before deducting any federal or state grants) of constructing the East Whiteland Trunk Line is increased by more than 15% of the estimate set forth in Exhibit B, and such a revision is approved by Malvern Authority, each municipality listed in Exhibit B shall pay said percentage of said increase to East Whiteland Authority by the time set forth in the preceding section. In the event, after receipt of construction bids, the total project cost of constructing the East Whiteland Trunk Line is less than the estimate set forth in Exhibit B, the total payment to be made by each such municipality under Sections 2.01 and 2.02 hereof shall be proportionately reduced and refunds of payments made under Section 1.01 shall be made proportionately.

2.04 Grants.

Each party authorizes and directs East Whiteland Authority on behalf of each such muncipality or municipality authority from time to time to apply for and accept all available grants in aid towards any East Whiteland Trunk Line construction costs and any East Whiteland Trunk Line operating costs of any nature to be used in accordance with this Agreement. All Federal and State grants received by any such municipality properly

allocable to and to be applied to the project cost of constructing the East Whiteland Trunk Line shall be paid to East Whiteland Authority and the total payment to be made by each municipality under Sections 2.01 and 2.02 hereof shall be reduced proportionately by such grant or grants.

All Federal and State grants received by East Whiteland Authority which are properly allocable to the project cost of constructing the East Whiteland Trunk Line shall be applied by East Whiteland Authority to the payment of such project cost or in reimbursement of expenditures so made and the total payment to be made by each municipality under Sections 1.01, 2.01 and 2.02 hereof shall be reduced accordingly. If any such Federal or State grants shall have been awarded to East Whiteland Authority and an agreement with the appropriate Federal or State agency executed on or before the date capital contributions are to be made under Section 2.02, then such total payment to be made by each municipality shall be reduced appropriately. If any such Federal or State grant is awarded or the agreement with the appropriate Federal or State agency executed by East Whiteland Authority after the aforesaid payments have been made by the municipalities under Section 2.02, such grants shall be applied in the computation of any surplus or deficiency of capital contribution pursuant to Section 2.08 hereof.

Federal and State grants which are allocable to the project cost of constructing the East Whiteland Trunk Line and other portions of the sewer system constructed by East Whiteland Authority and used as collector sewers to serve East Whiteland Township shall be apportioned by the Consulting Engineers between the project cost of constructing the East Whiteland Trunk Line and such other portions of said sewer system and the portion of such grants thus determined to be allocable to the project cost

of constructing the East Whiteland Trunk Line shall be applied to the payment of the project cost of the East Whiteland Trunk Line or in reimbursement of expenditures so made.

All Federal and State contributions or grants in aid received by any of said municipalities properly allocable to and to be applied towards any cost of operation, maintenance, repair, replacement, or other expenses relating to the East Whiteland Trunk Line shall be paid over to East Whiteland Township and shall be deducted in determining actual annual operating expenses of the East Whiteland Trunk Line in accordance with Section 4.07 hereof.

2.05 Construction Fund.

East Whiteland Authority shall deposit all amounts delivered by all parties to it pursuant to this Article, together with East Whiteland Authority's share and all amounts received in payment of Federal and State grants allocable to the project cost of constructing the East Whiteland Trunk Line, in a special East Whiteland Trunk Line Construction Fund (hereinafter called "Construction Fund"). Such Construction Fund moneys shall be held and invested by a Trustee selected by East Whiteland Authority and to the extent not insured by the Federal Deposit Insurance Corporation or other Federal agency, or invested as hereinafter provided shall be continuously secured by the pledge of direct obligations of the United States of America or the Commonwealth of Pennsylvania having an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys. Such moneys may be wholly or partially invested by said Trustee only in direct obligations of the United States of America and certificates of deposit which

shall mature or shall be subject to redemption at the option of the holder not later than one year from the date of such investment. Any securities so purchased shall be a part of the Construction Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added or charged to the Construction Fund and such interest, income, profit or loss shall be considered in the computation of any surplus or deficiency as provided in Section 2.08. Moneys paid to the East Whiteland Authority pursuant to this Agreement shall at all times be segregated in books of account from moneys received by East Whiteland Authority for any other purpose.

2.06 Construction Fund Requisitions.

East Whiteland Authority agrees that payments from the East Whiteland Trunk Line Construction Fund shall be made only upon requisitions, copies of which shall be available to any of said municipalities, duly executed by authorized representatives of East Whiteland Authority stating: (a) the amount requested; (b) the obligation for or the account for which the requisition is made, showing separately the total obligation, the amount already paid, if any, and the balance remaining to be paid; (c) the person to whom the payment shall be made and his address; (d) that the item for which requisition has been made has not been paid and (e) with respect to such item there are no vendors', mechanics' or other liens or secured transactions which will not be discharged by such payment.

In case of payments under construction contracts, such requisitions shall also contain a certificate of the Consulting

Engineers certifying approval of the requisition and further certifying that such obligation has been properly incurred and is then due and unpaid and that insofar as such obligation was incurred for work, materials, supplies or equipment, such work was actually performed or such materials, supplies or equipment were actually installed in or about the construction of the East Whiteland Trunk Line, or delivered at the site of the work for that purpose, or delivered for fabrication at the place approved by the Consulting Engineers; and that all work done and materials, supplies or equipment for which such obligation was incurred are, in the Consulting Engineers' opinion, in accordance with the plans and specifications.

2.07 Change Orders.

East Whiteland Authority agrees to notify each of said municipalities of all changes or alterations in the East Whiteland Trunk Line plans and specifications. No change order concerning said plans and specifications in excess of $25,000. shall be approved by East Whiteland Authority unless it has previously been approved by Malvern Authority; provided, however, that if written notification of disapproval is not received by the East Whiteland Authority within ten (10) days of the date requested for approval of any change order is delivered to an officer of Malvern Authority, such change order shall be deemed to have been approved by such municipality. East Whiteland Authority further agrees that, without the prior approval of Malvern Authority, no change or alteration will be made in any of the plans and specifications of the Consulting Engineers, in respect to the

East Whiteland Trunk Line, which will cause the cost of construction to exceed the amount available in the East Whiteland Trunk Line Construction Fund.

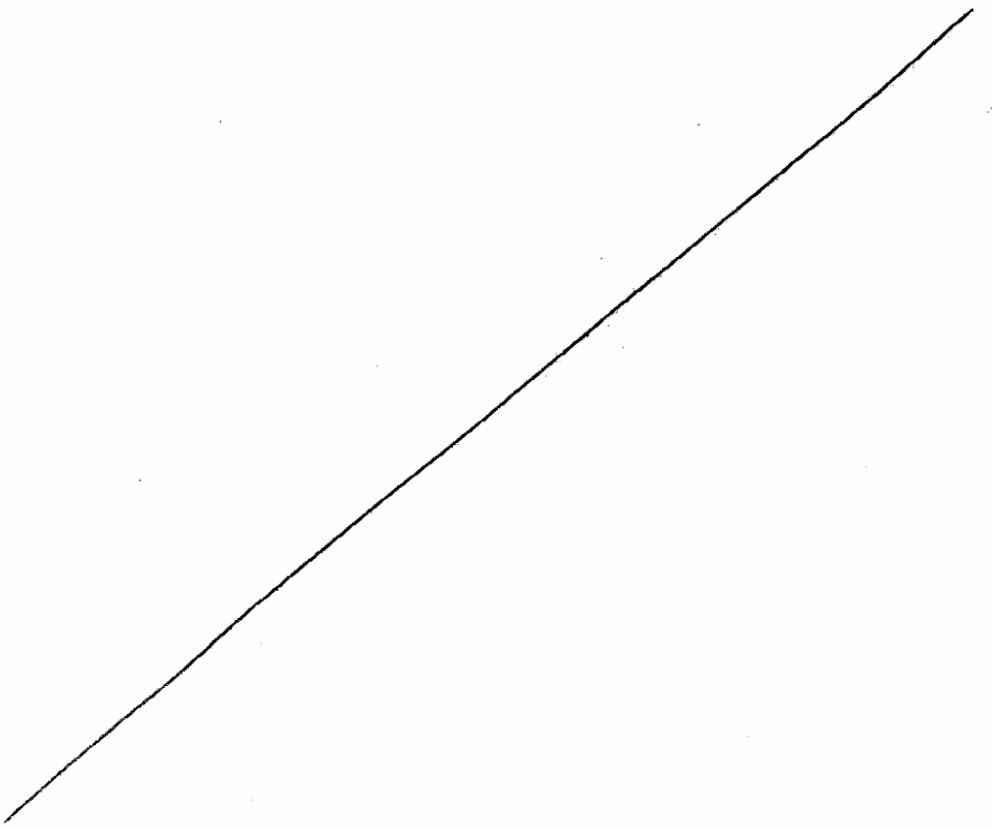
2.08 Distribution of Construction Fund.

Upon completion of the construction of the East Whiteland Trunk Line, East Whiteland Authority shall deliver to each party a certificate of the Consulting Engineers stating (a) the fact of such completion and (b) in reasonably itemized form, the actual project cost of constructing the East Whiteland Trunk Line (i) after deducting therefrom the unexpended contingency fund, if any, and the amount of any applicable Federal or State grants paid into Construction Fund and not previously used to reduce payments in accordance with Section 2.04 and (ii) after making appropriate adjustments in respect of net income, gain or loss from investments. If any municipality's share of the actual cost of constructing the East Whiteland Trunk Line after adjustments (i) and (ii) is less than the total amount deposited by it as required by this Agreement, the excess of such deposits shall forthwith be refunded to such municipality if no municipality, within sixty (60) days of receipt of said certificate, has requested a readjustment or audit and, in the event of such a request, shall be refunded promptly after the matter is resolved. A deficiency, if any, incurred in accordance with this Agreement shall be charged to and paid by each such municipality in said percentages and shall be due within thirty (30) days of notice to pay, and if not then paid, shall be subject to interest at the rate of six per cent (6%) per annum until paid. Prior to

completion of the East Whiteland Trunk Line, East Whiteland Authority may make one or more interim distributions on the basis of information then available, which distributions shall be subject to adjustment at the time of final distribution.

2.09 Audit of Project Cost.

The said certificate of the Consulting Engineers as to the actual project cost of constructing the East Whiteland Trunk Line and the records from which it is compiled shall be audited by a certified public accountant selected by East Whiteland Authority and the expense of such audit shall constitute part of the project cost.



ARTICLE III

DELIVERY AND ACCEPTANCE OF SEWAGE

3.01 Delivery.

Malvern Authority, at its own expense, shall during the term of this Agreement cause all sewage emanating from The Borough of Malvern to be discharged into East Whiteland Trunk Line. Except as permitted pursuant to Article VII hereof, Malvern Authority shall not exceed the capacity reserved by it.

3.02 Acceptance.

Malvern shall commence delivering its sewage to the East Whiteland Trunk Line as soon as practicable after (a) the East Whiteland Trunk Line is sufficiently complete to provide service (as certified by the Consulting Engineers engaged by East Whiteland Authority) and (b) the Valley Creek Trunk Sewer is sufficiently complete to provide service (as certified by the Consulting Engineers engaged by Treddyffrin Authority) and (c) the treatment plant to be constructed by Valley Forge Sewer Authority to receive and treat the aforesaid sewage is sufficiently complete to provide service (as certified by the consulting engineers engaged by Valley Forge Sewer Authority in respect of the design and construction of said treatment plant). East Whiteland Authority, as soon as practicable after the East Whiteland Trunk Line and the Valley Creek Trunk Sewer and the aforesaid treatment plant are sufficiently complete to provide service as so certified, shall permit connections at the locations that East Whiteland Authority may agree to, which agreement may not be unreasonably withheld and shall accept sewage for conveyance to the aforesaid treatment plant subject to the terms and conditions herein set forth.

ARTICLE IV

OPERATING EXPENSES OF THE EAST WHITELAND TRUNK LINE

4.01 Proportion.

The Borough of Malvern and the Township of East Whiteland (which Borough and Township in this Article IV are referred to as "said municipalities") shall share the operating expenses of the East Whiteland Trunk Line (as defined in Section 4.06) as follows: The proportion that the volume of sewage (determined as hereinafter provided and by other agreement of the parties) emanating from each such municipality and discharged into the several sections or reaches of the interceptor or trunk sewer, constituting the East Whiteland Trunk Line bears to the total volume of sewage discharged by both of said municipalities into such sections or reaches shall be used in calculating the amount that each such municipality shall pay for sewage conveyance services. Operating expenses of the East Whiteland Trunk Line for the first two years of operation shall be paid as set forth in Section 4.13 hereof.

4.02 Estimates of Volume of Sewage.

In order to provide East Whiteland Township with working capital for payment of operating expenses of the East Whiteland Trunk Line, at least one hundred twenty (120) days prior to the end of the first two years of operation of the East Whiteland Trunk Line each said municipality shall supply or cause to be supplied to East Whiteland Authority an estimate of the volume of sewage to be discharged from its sewage collection system into the East Whiteland Trunk Line during the next succeeding calendar Year (or portion of a calendar year remaining after the end of the first two years of operation).

4.03 Estimated East Whiteland Trunk Line Operating Expenses.

Within sixty (60) days after receipt of the estimates provided under the preceding section, East Whiteland Township shall prepare, subject to the

approval of its consulting engineers, and furnish to Malvern, a budget setting forth (a) the estimated annual operating expenses of the several sections or reaches (including at least ten percent (10%) for contingencies) and (b) the share of each said municipality of such operating expenses (the share of each said municipality being an amount which is in the same ratio to the total of such expenses as the estimated volume of sewage from such municipality discharged in the several sections or reaches of the East Whiteland Trunk Line is to the total estimated volume of sewage from both of the said municipalities so discharged or served). If at any time it appears on the basis of past or current meter readings that the estimate of Malvern is substantially inaccurate, East Whiteland Township may revise said estimate based on such past or current meter readings and Malvern shall promptly make payments in accordance with the revised estimate.

In the event of an unusual contingency, an upward revision of the budget may be made by East Whiteland Township with the approval of Malvern, which approval shall not be unreasonably withheld; provided, however, that the budget may be exceeded without such prior approval in an emergency directly affecting the operation of the East Whiteland Trunk Line and certified by the consulting engineers engaged by East Whiteland Authority or East Whiteland Township to require immediate action. Each such municipality shall make payments in accordance with the revised budget within sixty (60) days of receipt of notice thereof. In the event a municipality is not able legally to obtain funds with which to pay all of its share of the budget increase, any unpaid amount shall be paid by it in the following year together with interest at the rate of six percent (6%) per annum until paid.

4.04 Payments on account of Estimated Operating Expenses.

On or before each January 1, April 1, July 1 and October 1 during the term of this Agreement, Malvern shall pay to East Whiteland Township (out of legally available current revenues and from sewer rentals) one quarter (1/4) of its share of the estimated annual operating expenses of the East Whiteland Trunk Line as determined in accordance with the preceding section (prorated if the two-year period referred to in Section 4.01 ends during rather than at the start of a quarter). Amounts not paid when due shall be subject to interest in the amount of six percent (6%) per annum of the amount due. Said interest shall be due from time to time upon the receipt of invoices from East Whiteland Township. In the event of a default in payment under this Section, East Whiteland Township may borrow all or part of the amount of such payment due hereunder and may use such interest to pay, or reimburse itself for paying, interest on such borrowed funds. Interest not so used shall be treated as a deduction under Section 4.07 hereo in determining actual annual operating expenses of the East Whiteland Trunk Line.

East Whiteland Township shall deposit all moneys delivered by all parties to it pursuant to this Article, together with the East Whiteland Township's share and all amounts received in payment of Federal and State contributions or grants in aid to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the East Whiteland Trunk Line, in a special East Whiteland Trunk Line Operating Fund (hereinafter called "Operating Fund"). Such Operating Fund moneys shall be invested by East Whiteland Township and to the extent not insured by the Federal Deposit Insurance Corporation or other Federal Agencies, or invested as hereinafter provided shall be continuously secured by the pledge of direct obligations of the United States of America or the Commonwealth of Pennsylvania having an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys.

Such moneys may be wholly or partially invested by said Township subject to the same limitations set forth in Section 2.05. Any securities so purchased shall be a part of the Operating Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added to or charged to the Operating Fund and such interest, income, profit or loss shall be considered in determining the actual annual operating expenses of the East Whiteland Trunk Line pursuant to Section 4.06 hereof.

4.05 Annual Statement.

Within one-hundred twenty (120) days of the close of each calendar year, East Whiteland Township shall cause to be prepared and submitted to each of said municipalities a detailed statement, certified by a certified public accountant engaged by East Whiteland Township, showing the actual annual operating expenses of the East Whiteland Trunk Line (as defined in the next succeeding Section) and the apportionment of the cost among the said municipalities on the basis of Section 4.01.

4.06 Actual Annual Operating Expenses of the East Whiteland Trunk Line.

"Actual annual operating expenses of the East Whiteland Trunk Line" shall mean the sum of the costs referred to in subsections (a) through (f) hereof minus the deductions referred to in Section 4.07 hereof:

(a) All the actual reasonable expenses and costs of the adequate proper operation, maintenance and repair of the East Whiteland Trunk Line as the same may be constituted from time to time, determined in accordance with sound accounting practices and shall include, without limiting the generality of the foregoing, salaries and wages of operating, supervisory and administrative personnel directly charged to the operation, maintenance and repair of the East Whiteland Trunk Line (but in the event such personnel are also engaged in other activities of a municipality, shall include only that proportion of such salaries

and wages as is properly allocable to such operation, maintenance and repair on the basis of time spent or services performed); pensions, social security or unemployment taxes; chemicals; power; taxes (if any); insurance; administrative expenses; materials and supplies; maintenance; and repairs, improvements and betterments (including ordinary or routine repairs and replacements but not extraordinary replacements or additions of a capital nature which latter shall be treated in the manner provided for expansion in Section 7.02, except to the extent that Article VIII shall apply);

(b) The fees and expenses of the Consulting Engineers employed by East Whiteland Township concerning the operation, maintenance and repair of the East Whiteland Trunk Line and in preparing reports and determinations required by this Agreement;

(c) The fees and expenses of the certified public accountant engaged by East Whiteland Township to prepare the annual statement;

(d) Interest paid by East Whiteland Township pursuant to Section 4.04 hereof;

(e) The cost of that portion of the bond of the Treasurer and other officers or employees of East Whiteland Township attributable to his or their duties in connection with East Whiteland Trunk Line, under sound accounting practices; and

(f) Reasonable expenses of East Whiteland Township in providing service pursuant to this Agreement and attributable to the East Whiteland Trunk Line under sound accounting practices.

4.07 Deductions.

Any Federal or State contributions or grants in aid received by any party which is to be applied towards any cost of operation, maintenance, repair, replacement or other expenses relating to the East Whiteland Trunk Line shall be

paid to East Whiteland Township and shall be deducted in determining actual annual operating expenses of the East Whiteland Trunk Line. Interest properly allocable thereto pursuant to Section 4.04 and interest earned by East Whiteland Township on funds deposited in the Operating Expense Fund pursuant to Section 4.03 or Section 4.13 shall be deducted in determining such actual operating expenses.

4.08 Refunds of Additional Payments.

If any such municipality's share of the actual annual operating expenses of the East Whiteland Trunk Line is less than (or more than) the total amount paid by it under this Article in such calendar year, the excess shall forwith be refunded to such municipality (or the deficiency shall forthwith be paid by it) if no municipality within sixty (60) days of receipt of an annual statement has requested arbitration in accordance with Article IX and in the event of such a request, any excess (or deficiency) shall be refunded (or paid) within thirty (30) days after the matter is resolved. Amounts not paid when due shall be subject to interest at the rate of six percent (6%) per annum of the amount due and shall be subject to the provisions concerning interest of Section 4.04 hereof.

4.09 Use of Funds.

East Whiteland Township agrees that payments made by the said municipalities to East Whiteland Township on account of its share of operating expenses of the East Whiteland Trunk Line shall be applied only for the payment of actual operating expenses as defined in Section 4.06, subject to Section 4.07, and that such payments shall not be applied toward the payment of any other obligations or East Whiteland Township.

4.10 Books of Account.

In order that expenses of East Whiteland Township which are not properly allocable to the construction or operation of the East Whiteland Trunk Line shall

not be charged thereto, East Whiteland Township shall keep separate books of account for the operation of its collection system and for the East Whiteland Trunk Line or such books of account and other records which would readily permit such allocation. Said books and records shall be available for inspection by the municipalities at all times.

4.11 Sewer Rentals.

To insure the availability of current revenues adequate to meet its obligations under this Agreement, each said municipality shall impose and collect annual sewer rentals in an aggregate amount sufficient, together with other legally available funds, to equal (a) all sums payable by it to East Whiteland Township during the then current calendar year under this Agreement and (b) all sums payable by it to any other person, firm, corporation, municipality or municipality authority during the then current calendar year for or in respect to sewer purposes.

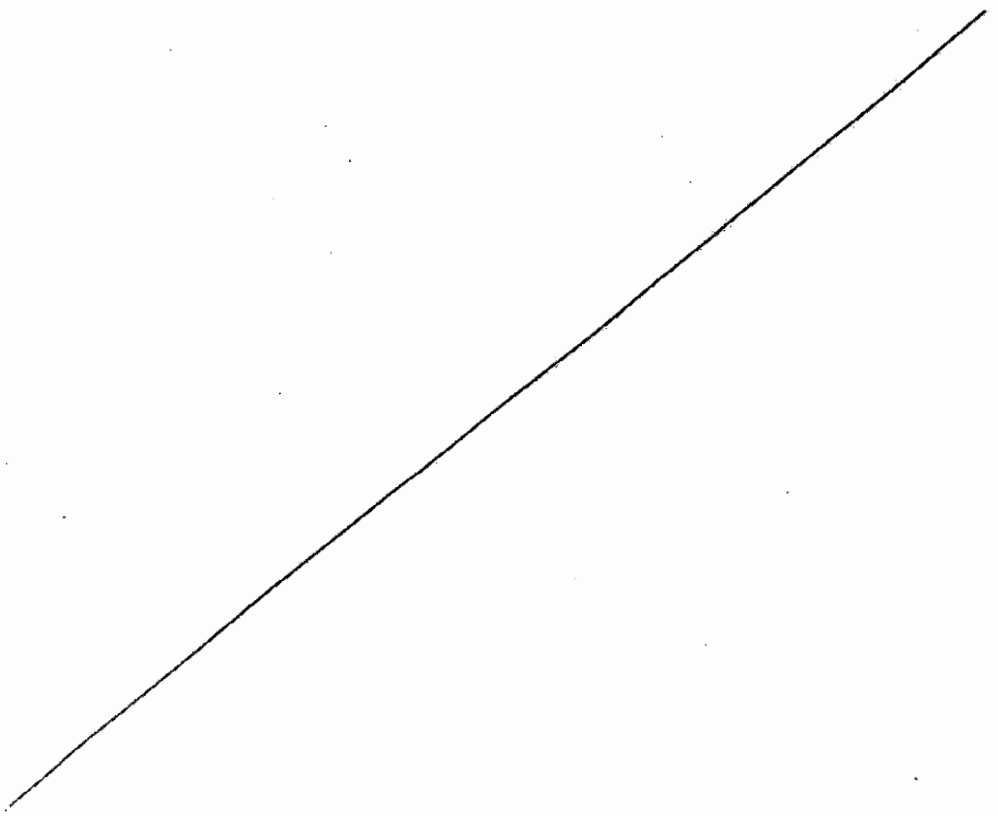
4.12 Commencement of Discharge into East Whiteland Trunk Line.

Each party shall make every reasonable effort to be ready to begin to discharge sewage into the East Whiteland Trunk Line by the time it and the Valley Creek Trunk Sewer are ready to receive sewage, and the aforesaid Valley Forge Treatment Plant is ready to treat and dispose of sewage.

4.13. Operating Expenses for the First Two Years.

Each such municipality set forth in Exhibit B shall pay to East Whiteland Township its share of the estimated operating expenses of the East Whiteland Trunk Line for the first two years of operation set forth after its name in Exhibit B (on the basis of reserved capacity) within thirty (30) days of receipt of the Certificates of the Consulting Engineers engaged by East Whiteland Authority, Tredyffrin Authority and Valley Forge Sewer Authority provided in Section 3.02. Said operating expense moneys for the first two years of operation shall be deposited in an Operating Expense Fund in the name of East Whiteland

Township separate and apart from any other fund of such Township. Investment of such moneys by East Whiteland Township shall be made subject to the same limitations set forth in Section 2.05 hereof. Within one hundred twenty (120) days of the close of said first two years of operation, East Whiteland Township shall cause a certified public accountant to prepare and submit to each participating municipality a detailed statement showing the actual annual operating expenses of the East Whiteland Trunk Line (as defined in Sections 4.06 and 4.07 hereof) and the apportionment of the cost among the said municipalities on the basis of reserved capacities as set forth in Exhibit B hereof. If at the end of the second year of operation the amount deposited hereunder by any municipality differs from the amount due, refunds or additional payments shall be made pursuant to Section 4.08 hereof.



ARTICLE V

QUALITY OF SEWAGE

5.01 General.

The sewage discharged directly or indirectly into the East Whiteland Trunk Line by any municipality or municipality authority shall be within the maximum limits presented below or pretreated to within the limits of Section 5.04.

5.02 Acceptability Standards.

After consultation with Valley Forge Sewer Authority, East Whiteland Township shall from time to time establish acceptability standards for sewage and industrial waste entering the collection system of any municipality or municipality authority and discharging directly or indirectly into the East Whiteland Trunk Line for the purpose of prohibiting materials or characteristics which would be deleterious to the East Whiteland Trunk Line, Valley Creek Trunk Sewer or to the Valley Forge Treatment Plant or the treatment process, which standards shall be reasonable and similar to standards imposed with regard to similar facilities and shall not be higher or more restrictive than those imposed by Valley Forge Sewer Authority. No municipality or municipality authority shall permit discharge directly or indirectly into the East Whiteland Trunk Line of any sewage or waste so certified to be deleterious, but such certification shall not preclude the municipality or municipality authority from contesting the reasonableness of such determination.

Subject to the foregoing, all municipalities and municipality authorities agree to enact or adopt or cause to be enacted or adopted uniform ordinances, resolutions, rules or regulations to prohibit users of the respective collection systems serving such municipalities and municipality authorities from discharging substances failing to meet such acceptability standards and to require all pre-treatment of sewage or other waste necessary to require the same to conform to the

acceptability standards and agree to take all necessary steps in the design and construction of the collection systems and in the subsequent maintenance and operation thereof (including the exercise of appropriate inspection of and control over building connections) to prevent infiltration of storm water and other improper substances into the collection systems.

5.03 Sampling Manholes.

For the purpose of determining the characteristics of sewage or wastes, each munioipality or munioipality authority shall install or cause to be installed a sampling manhole at the point of discharge at the property of any user which the consulting engineer of such municipality or municipality authority considers capable of discharging sewage or wastes not meeting any of such acceptability standards.

5.04 Industrial Wastes.

In order to control admission of industrial wastes, no party to this Agreement shall permit any industrial user to connect to or discharge into its collection system any waters or wastes other than sanitary waste without the prior review and approval of the consulting engineers and the consulting engineers of Valley Forge Sewer Authority. The consulting engineers' review (until such time as the following acceptability standards are amended in accordance with Section 5.02 hereof) shall be based on, but not limited to, the following standards:

Waste Characteristics to be Considered

Characteristics of the industrial waste shall not be in general in excess of those listed below:

(1) The 5-day 20 deg. centigrade B.O.D. (bio-chemical oxygen demand) shall not exceed 250 ppm.

(2) The suspended solids content shall not exceed 300 ppm.

(3) The total solids content shall not exceed 1,100 ppm.

(4) The PH shall not be less than 6.0 nor shall it exceed 9.0.

(5) The temperature shall not exceed 150° F.

(6) The color shall not be such as to require special treatment to render the effluent acceptable for discharge into the Schuylkill River.

(7) The waste shall not contain greases and oils, inflammable material, non-biodegradable materials or any oxygen scavengers, sufficient in quantity to be injurious to the treatment plant or interfere with any treatment process or to constitute a hazard to human or animal life.

(8) The waste shall not contain any solid or viscous material capable of causing obstruction to the flow in the sewers, or at the Valley Forge Treatment Plant or any material capable of causing interference with the proper operation of the East Whiteland Trunk Line, The Valley Creek Trunk Sewer or the Valley Forge Treatment Plant.

Where required, in the opinion of the consulting engineers, the user shall provide at his expense such preliminary treatment or handling as may be necessary to modify the objectionable characteristics or control the quantities and rates of discharge of such water or wastes as necessary.

Plans, specifications, and any other pertinent information relating to proposed preliminary treatment or handling facilities shall be submitted for review to Valley Forge Sewer Authority and no construction of such facilities shall be commenced until a permit for the connection is obtained in writing from Valley Forge Sewer Authority. A copy of each such permit shall be furnished to East Whiteland Township.

In order to insure quality compliance and to reduce the possibility of accidental discharges of wastes not conforming, each municipality and municipality authority shall sample, test or otherwise examine industrial wastes as often as reasonably necessary to insure quality compliance.

5.05 Combined Sewage and Industrial Wastes.

In order to control the sewage entering, Valley Forge Sewer Authority will sample the discharge from each municipality or municipality authority period-

ically to insure that no characteristic is evident which would be deleterious to the East Whiteland Trunk Line, the Valley Creek Trunk Sewer or the Valley Forge Treatment Plant or the treatment process.

The characteristic of each combined sewage and industrial waste discharge shall not be in excess of those listed under Section 5.04 except that the temperature of the combined discharge shall not exceed 100° F. Each municipality or municipality authority shall provide facilities to prevent the occurrence of septic conditions in the East Whiteland Trunk Line.

Should Valley Forge Sewer Authority find either the BOD or suspended solids characteristics exceeded as determined in the tests on the periodically obtained samples, the potentially offending municipality or municipality authority shall be notified of the findings and requested to examine the conditions. If at the end of a quarter Valley Forge Sewer Authority determines that the discharge from the municipality or municipality authority is in excess of the characteristics as determined by average test results by periodic sampling, the suspected offender shall be given written notice that its discharge is in excess and that a comprehensive sampling and testing program will be undertaken by Valley Forge Sewer Authority to verify the non-compliance and to notify that steps should be taken to rectify the problem.

If, at the end of the quarterly comprehensive test program the problem has not been rectified, a penalty charge as provided in Section 5.06 will be added to that quarter's billing and until the situation is shown to be corrected.

Should Valley Forge Sewer Authority find any of the additional characteristics to be in excess or to find the presence of any other untested deleterious material in the course of periodic sampling and testing the potential offending municipality or municipality authority shall be given notice to take immediate steps to rectify the problem.

ARTICLE VI

DETERMINATION OP QUANTITY OF SEWAGE DISCHARGED INTO THE EAST WHITELAND TRUNK LINE

6.01 Meters or Measuring Devices.

In order to measure in gallons the quantity of sewage emanating from the Borough of Malvern and the Township of East Whiteland, which is discharged into the various sections or reaches of the interceptor or trunk sewers of the East Whiteland Trank Line, each of said municipalities shall each, at its expense, construct or cause to be constructed, where feasible, a sewage meter or sewage flow measuring device at each point necessary to determine the volume of sewage emanating from the Borough of Malvern and the Township of East Whiteland, discharged into the East Whiteland Trunk Line. The above sewage meters and related equipment such as recorders and charts shall be as mutually agreed upon by the Consulting Engineers and the consulting engineers of Valley Forg Sewer Authority and of said municipalities. All metering stations shal provide facilities for sampling the sewage.

6.02 Calibration and Readings.

All meters or measuring devices constructed or installed by Valley Forge Sewer Authority, the Borough of Malvern and the Township of East Whiteland, shall be calibrated by Valley Forge Sewer Authority at least once each year and, if requested by East Whiteland Township, shall be checked at other times as a cost of operating the Valley Forge Treatment Plant. All readings of each such municipality or municipality authority's meter or measuring device shall be performed by a representative of said municipality, of Valley Froge Sewer Authority and of East Whiteland Township. Meters or measuring devices shall be read or examined on the date each municipality or municipality authority first connects and on the first day of each quarter of each year during the term of this Agreement

to determine the quantity of sewage emanating from each municipality or area served by a municipality authority for the previous quarterly period or portion thereof. Copies of meter readings or measuring device examinations shall forthwith be delivered to each municipality and to Valley Forge Sewer Authority and to East Whiteland Township.

6.03 Maintenance and Operation.

All meters and measuring devices used for the purpose of determining flows into the Valley Creek Trunk Sewer and used for billing purposes will be routinely serviced and inspected by Valley Forge Sewer Authority as a part of the treatment plant operating expense. Valley Forge Sewer Authority shall undertake to have an inoperative or inaccurate meter or measuring device repaired as soon as practicable with the cost of such repair being charged back to the owner. Valley Forge Sewer Authority shall not be obligated to provide service to any devices other than the primary metering element, recorders, transmitters and other instruments. Each municipality or municipality authority shall, at its own expense, be responsible for all other maintenance and operation of its sewage metering facilities.

6.04 Missing or Inaccurate Flow Records; Use of Equivalent Dwelling Units as Measurement of Flow.

In the case of missing flow records due to faulty meter registration or otherwise, an estimate of flows shall be made by the Consulting Engineers for the purpose of determining volume of sewage discharges. This estimate will be based on a valuation of past flow records as applied to the then existing conditions and as reviewed and approved by the Consulting Engineer of the respective municipality or municipality authority.

In the absence of meter readings during the early period of low flows, when the sewage recording meters may not register the flow, or where meters

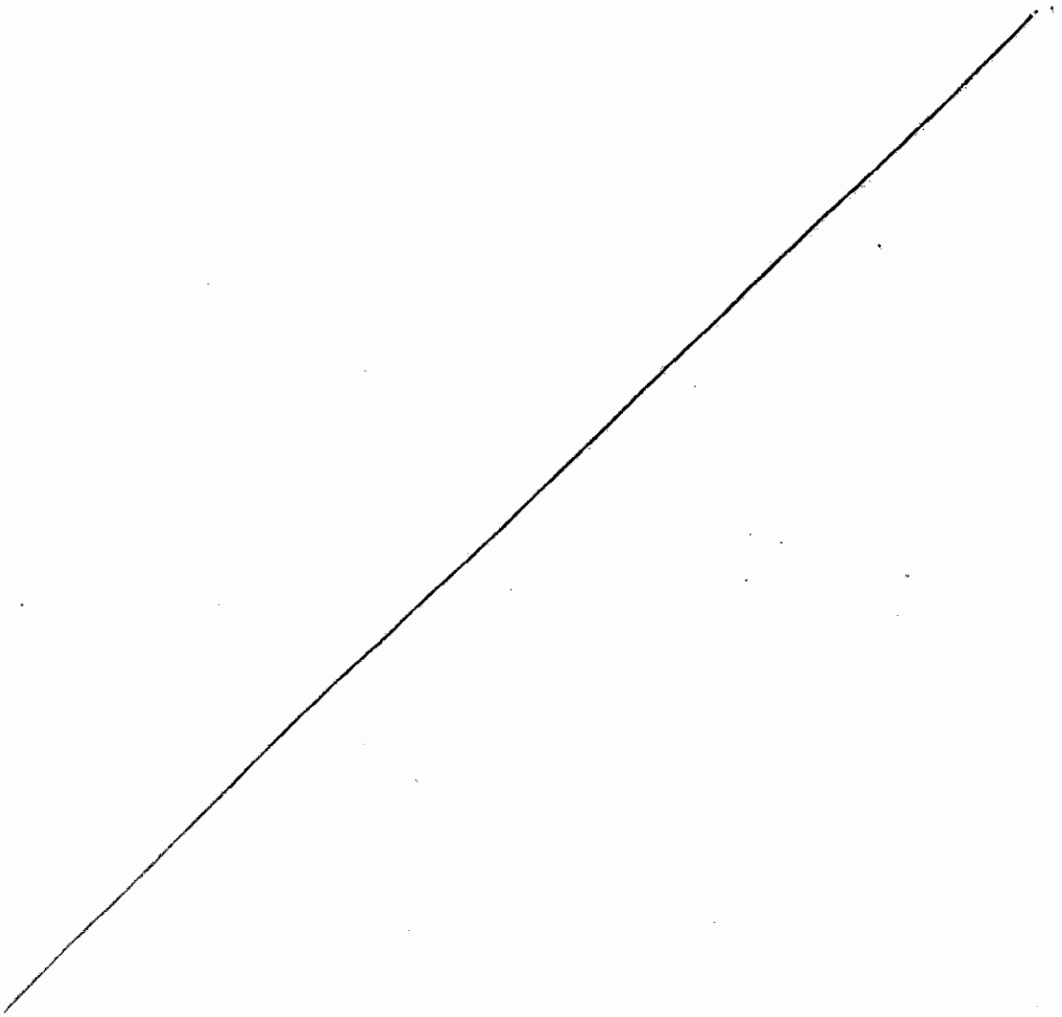
cannot practically be installed, flow quantities shall be determined on the basis of the average number of Equivalent Dwelling Units (upon the basis of a discharge rate of 275 gallons per Equivalent Dwelling Unit per day). The number of Equivalent Dwelling Units shall be determined at the beginning and end of each calendar quarter during the term of this Agreement based upon a certification by a responsible officer of the municipality or municipality authority as to the number of such Equivalent Dwelling Units so connected by the municipality or municipality authority at the beginning and end of each quarter and shall be averaged on the basis of the number of units so connected at the beginning and end of each such quarter. Where the initial connection of the collection system of any municipality or municipality authority is made to the East Whiteland Trunk Line after the first day of a calendar quarter, the quantity of sewage so discharged shall be based on the number of Equivalent Dwelling Units so connected at the end of such quarter prorated on the basis of the number of days in such calendar quarter that any sewage is so discharged from such municipality or municipality authority. For the purpose of determining the number of Equivalent Dwelling Units represented by schools, churches or municipal buildings, commeroial or industrial establishments, etc., the factors set forth in Exhibit C shall be applied. The officials and representatives of East Whiteland Township may inspect the records of any connecting municipality or municipality authority for the purpose of determining the accuracy of the number of Equivalent Dwelling Units certified by such municipality or municipality authority.

6.05 Proportion of Flows.

The quantity of sewage discharged into the several sections or reaches of the East Whiteland Trunk Line shall be determined, with respect to each such municipality or municipality authority in the ratio that the quantity of sewage emanating from each such municipality or municipality authority (determined as

above) shall bear to the total quantity of sewage discharged into such sections or reaches of the East Whiteland Trunk Line from all municipalities and any municipality authority.

Valley Forge Sewer Authority shall undertake to prepare a complete distribution of the total volume of sewage received and metered at the sewage treatment plant during each calendar quarter and during each calendar year, with respect to each such municipality or municipality authority which discharges sewage that is treated in the Valley Forge Sewer Authority sewage treatment plant, such distribution to include all metered and unmetered sewage flows of each municipality or municipality authority.



ARTICLE VII

RENTING UNUSED CAPACITY; EXTRAORDINARY REPAIRS, RENEWALS OR REPLACEMENTS OF INTERCEPTOR OR TRUNK SEWERS; ENLARGEMENTS OR ADDITIONAL INTERCEPTOR OR TRUNK SEWERS.

7.01 Renting Unused Capacity.

Each municipality discharging from its sewage collection system into the East Whiteland Trunk Line during a calendar year a volume of sewage less than its reserved capacity, as set forth in Exhibit B shall be deemed to have been placed its unused capacity in a rental pool. Any municipality (each of which is herein called "lessee municipality") discharging sewage into the East Whiteland Trunk Line in any calendar year in excess of its reserved capacity, as set forth in Exhibit B, shall rent from the pool for the entire calendar year capacity equal to the volume by which it exceeds its reserved capacity (with the total volume discharged by it being reduced to gallons per day by dividing the total gallons discharged by it in such calendar year by 365). The annual rental fee to be paid by the lessee municipality shall be the representative annual "debt service" (calculated at equal annual payments to amortize the debt, including seven per cent (7%) interest per annum for a 25-year term) for the amount obtained by multiplying the fraction of the rated capacity of the East Whiteland Trunk Line or of any section or reach thereof rented for the current calendar year by the total of capital contributions made by all parties hereto toward the cost of providing the East Whiteland Trunk Line or such section or reach thereof as then being used. The capacity thus rented by the lessee municipality shall be rented annually by it until the next expansion of the East Whiteland Trunk Line, at which time the lessee municipality

shall surrender the capacity rented by it and shall, at its expense, replace the capacity rented by it (in each such section or reach or pumping station) so that each lessor municipality will receive back its reserved capacity placed in the pool. In no event, shall any contribution of capacity to the rental pool be construed to decrease the reserved capacity in the East Whiteland Trunk Line or any section or reach thereof of any lessor municipality.

The rental fees shall be distributed to the contributors to the rental pool in proportion to their contributions (the contribution as to each being the difference between its actual flow during the current calendar year [reduced to gallons per day] and its reserved capacity) the rental fee owed by each lessee municipality, together with the proposed distribution thereof to the lessor municipalities, shall be shown as separate items in the annual statement furnished pursuant to Section 4.05 hereof. Rental fees owed shall be paid by each municipality to East Whiteland Township within sixty (60) days of receipt of said annual statement unless arbitration has then been requested, and in such event shall be paid within thirty (30) days of the date the matter is resolved pursuant to the procedure set forth in Section 9.01. Distribution of the rental fees shall be made by East Whiteland Township promptly thereafter as provided herein.

Although rental payments shall be paid and distributed hereunder on the basis of actual flows, the total estimates of sewage to be discharged into the East Whiteland Trunk Line in a calendar year pursuant to Section 4.02 hereof, shall be used to avoid exceeding the rated capacity of the East Whiteland Trunk Line or any section or reach thereof. In the event that the total of said estimates, pursuant to Section 4.02, exceeds 90% of the rated capacity of any

section or reach of the East Whiteland Trunk Line (with the remaining 10% being used as a safeguard against underestimation), the Consulting Engineers of East Whiteland Township shall allocate the capacity in the pool (as estimated) among the municipalities estimating discharge in excess of their reserved capacities in proportion to their flows during the preceding calendar year; provided, however, that any municipality may continue to rent the number of gallons of capacity previously rented by it. No municipality shall permit any new connection to be made to its collection system or permit increased flow from any existing connection (due to construction and connection to the system of additional facilities) if so permitting might cause its volume of sewage discharged into the East Whiteland Trunk Line at peak flows during such calendar year to exceed the total of its reserved capacity and the capacity in the pool allocated to it by the Consulting Engineers of East Whiteland Township for such year.

7.02 Extraordinary Repairs, Renewals or Replacements of Interceptor or Trunk Sewers and Pumping Stations; Enlargements or Additional Interceptor or Trunk Sewers.

If, during the term of this Agreement, any interceptor or trunk sewer (or any section or reach thereof) of the East Whiteland Trunk Line used in whole or in part for the conveyance of sewage emanating from any of the municipalities (in addition to sewage emanating from East Whiteland Township) to the Valley Forge Treatment Plant shall require extraordinary repairs, renewals or replacements, each municipality and municipality authority named in Exhibit B agrees to pay or to cause to pay to the East Whiteland Authority (but only from legally available current revenues, sewer rentals available and funds which can be legally borrowed) its proportionate share of the project cost of such repairs, renewals or replacements.

The necessity for and the extent of such extraordinary repairs, renewals or replacements of any such section or reach of an interceptor or trunk sewer (with a breakdown by municipality or municipality authority) shall be determined by the Consulting Engineers engaged by East Whiteland Authority subject to the approval of the municipalities affected (which approval may be withheld only for sound engineering reasons), after consultation with the consulting engineers of each of the said municipalities and municipality authorities affected and written notice of such determination together with the Consulting Engineers' estimate of the cost thereof (with a breakdown by municipality or municipality authority) shall be given to each such municipality and municipality authority affected.

Each such municipality and municipality authority affected shall pay or cause to be paid to East Whiteland Authority the proportion of the project cost of such repairs, renewals or replacements in the proportion that the reserved capacity of such municipality or municipality authority in such section or reach of interceptor or trunk sewer shall bear to the total of the reserved capacities of all such municipality or municipality authority in such sections or reaches.

At such times as (a) eighty per cent (80%) of the rated capacity of the East Whiteland Trunk Line or any section or reach thereof is used or (b) estimates of volume under Section 4.02 exceed ninety per cent (90%) of said rated capacity or (c) in the event (i) enlargement of any interceptor or trunk sewer (or any section or reach thereof) or the construction of an additional interceptor or trunk sewer within East Whiteland Township or partly within and partly without East Whiteland Township or (iii) the enlargement of

any pumping station or the construction of an additional pumping station within East Whiteland Township is required to meet the requirements or standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction. East Whiteland Authority shall construct such enlargement or additional sewer or pumping station; and each municipality and municipality authority named in Exhibit B agrees to pay East Whiteland Authority (but only from legally available current revenues, sewer rentals available and funds which can be legally borrowed) its proper proportionate share of the project cost of enlargement or additional sewer or pumping station. The necessity for the extent of such enlargement or additional sewer or pumping station (with a breakdown by municipality or municipality authority) shall be determined by the Consulting Engineers engaged by East Whiteland Authority subject to the approval of such municipalities or municipality authorities (which approval may be withheld only for sound engineering reasons), after consultation with the Consulting Engineers of each municipality or municipality authority and written notice of such determination together with the Consulting Engineers' estimate of the cost thereof (with a breakdown by municipality and municipality authority) shall be given to each municipality and municipality authority affected.

Each such municipality or municipality authority affected shall pay or cause to be paid to East Whiteland Authority the proportion of the project cost of such enlargement of or additional interceptor or trunk sewer or enlargement of or additional pumping station on the basis of the proposed increases in design capacities to be reserved for each municipality or municipality authority in such

enlarged or additional reach or section of interceptor or trunk sewer or in such enlargement of or additional pumping station. The reserved capacities shall be as set forth in Exhibit B subject to any changes in such reserved capacities as may be requested by any municipality or municipality authority. Adjustment shall be made so that each lessee municipality or municipality authority pursuant to Section 7.01 hereof bears the expense of replacing the capacity rented by it and each lessor municipality receives back its reserved capacity placed in the pool.

The project cost of the aforesaid extraordinary repairs, renewals or replacements, enlargements or additions shall be determined as hereinabove provided with respect to the construction of the several sections or reaches of the respective interceptor or trunk sewers and the pumping stations of the East Whiteland Trunk Line set forth in Article II hereof and shall be paid and accounted for in the same manner as that provided in Article II hereof. Each party authorizes and directs East Whiteland Authority on behalf of each municipality and municipality authority from time to time to apply for and accept any one or more grants in aid towards the aforesaid extraordinary repairs, renewals or replacements, enlargements or additions.

7.03 Construction Fund.

Moneys paid pursuant to Section 7.02 of this Article shall be deposited, held and disbursed pursuant to the Construction Fund provisions set forth in Article II hereof.

ARTICLE VIII

INSURANCE AND DAMAGE OR DESTRUCTION

8.01 Insurance on East Whiteland Trunk Line.

East Whiteland Authority agrees that during the construction of East Whiteland Trunk Line it will at all times cause to be kept in force builder's risk insurance (or equivalent coverage) upon any work done or materials furnished under construction contracts (except foundations and any other structures not customarily covered by such insurance) said policies to be written in completed value form for 100% of the insurable value of the contracts. East Whiteland Township agrees that upon completion of such construction it will at all times as an East Whiteland Trunk Line operating expense cause the East Whiteland Trunk Line to be insured against loss or damage by fire or other casualty in such amount and against such risks as are usually carried with respect to like properties, provided that the amount of such insurance shall be sufficient to prevent the insured from becoming a co-insurer thereunder by reason of any co-insurance clause in the policies. All such insurance policies shall (a) be written by responsible insurance companies authorized and qualified to do business in Pennsylvania, (b) be non-assessable and (c) name as the insureds East Whiteland Authority, East Whiteland Township and the Trustee of the Trust Indenture executed by East Whiteland Authority to secure its bonds issued to provide for the construction in whole or in part of the East Whiteland Trunk Line and, in addition, during any period of repair or construction the contractors engaged in such repair or construction, and to the extent procurable shall not be cancellable for at least fifteen (15) days prior written notice to such named insureds. All payments made under such policies on account of loss shall be paid to the aforesaid Trustee. East Whiteland Township agrees to furnish to each municipality before commencing operation of the East Whiteland Trunk Line

and before the start of each year during the term of this Agreement a certificate of the Consulting Engineers stating the amount and kind of such insurance in effect for the ensuing year and that the same is, in the opinion of the Consulting Engineers, in compliance with the requirements of this section.

8.02 Repair or Reconstruction with Insurance Proceeds.

In the event any damage to the facilities covered by such insurance, East White Authority, upon receipt of the necessary funds as provided for herein, shall promptly repair or replace the damaged property unless the Consulting Engineers certify that it would not be practical and advantageous to do so. It is agreed that in the absence of such a certification the proceeds of all insurance coverage to the extent necessary shall be applied to such repair or reconstruction.

8.03 Repair or Replacement not covered by Insurance Proceeds.

In the event that it shall become necessary, in order to convey sewage to the Valley Forge Treatment Plant in accordance with the purport and intent of this Agreement, to make an extraordinary repair or replacement of any section or reach of any interceptor or trunk sewer or of any pumping station constituting a part of the East Whiteland Trunk Line because of damage or destruction by casualty or otherwise, and there are insufficient funds available from insurance proceeds to pay the costs and expenses thereof, East Whiteland Authority and Malvern Authority shall forthwith pay over to East Whiteland Authority (but only from legally available current revenues, sewer rentals and borrowed funds) for deposit in a special construction fund such amount as is required for the purpose, in the same proportions and in the

the same manner as that hereinabove provided under Section 7.02.

8.04 Providing Conveyance Capacity by a means other than Repair or Reconstruction of the East Whiteland Trunk Line.

In the event that proceeds of insurance resulting from damage to the East Whiteland Trunk Line are not applied to the repair or the replacement of the damaged property because the same is determined to be impractical and not advantageous (pursuant to Section 8.02 hereof) such proceeds shall be applied towards the provision of conveyance capacity pursuant to Section 7.02 hereof. In such event credit for funds so applied shall be given to the municipalities in the same proportions as capital contributions towards the project cost of the East Whiteland Trunk Line were made by each.

ARTICLE IX

ARBITRATION

9.01 Arbitration as the Charges provided in Articles II and IV.

In the event any disagreement shall arise concerning the charges provided in Articles II and IV and the parties cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party requests arbitration to a certified public accountant appointed by method agreed upon by the parties. In the event of failure to agree upon such an arbitrator within ten (10) days, an arbitrator shall be appointed by the Senior Judge of the Court of Common Pleas of Chester County available at the time when the Authority or any of the parties request appointment of an arbitrator. The decision of the accountant or arbitrator so chosen shall be binding and rendered within twenty (20) days. Any request for arbitration shall be made within sixty (60) days after receiving a certificate under Section 2.08 or a statement under Section 2.10,

Section 4.05 or Section 4.13, and if no such request is made the certificate or statement shall be considered correct and not subject to future questions. The fee of such certified public accountant or arbitrator shall be an operating expense of the East Whiteland Trunk Line.

9.02 Arbitration by Board of Arbitrators.

In the event any disagreement shall arise as to the interpretation of any provisions hereof or the rights and obligations of the parties hereunder (other than disagreements provided for in Section 9.01) and the parties cannot otherwise promptly resolve the same, such disagreement shall be submitted within ten (10) days of the time any party request arbitration to a Board of Arbitrators whose decision shall be binding and shall be rendered within twenty (20) days. Such Board shall consist of the Consulting Engineers appointed by East Whiteland Authority, a firm of consulting engineers selected by the other parties to this Agreement and a third professional engineer licensed in Pennsylvania selected by the Consulting Engineers appointed by East Whiteland Authority and by said other parties; provided, however, that East Whiteland Authority and the other parties to this Agreement may agree to select arbitrators other than engineers or may agree to submit the matter to a single arbitrator. In the event of failure of said engineers to agree upon a third engineer or arbitrator, the same shall be appointed in the manner set forth in Section 9.01 hereof. The fees of all arbitrators shall be an operating expense of the East Whiteland Trunk Line.

ARTICLE X

MISCELLANEOUS PROVISIONS

10.01 Operation of East Whiteland Trunk Line.

East Whiteland Township agrees that it will, for and during the term of this Agreement by use of funds provided hereunder, operate and maintain the East Whiteland Trunk Line and that it will keep the same in good order and repair, save where prevented from doing so by act of God or riot, rebellion, sabotage, act of the public enemy or public calamity in which event East Whiteland Township may suspend operation of the East Whiteland Trunk Line until the cause of such suspension shall no longer exist and for such reasonable time thereafter as may be required to effect a resumption of operations. Neither East Whiteland Authority nor East Whiteland Township shall at any time or under any circumstances be liable to any party for damages in case of failure or inadequacies of the East Whiteland Trunk Line or the Valley Creek Trunk Sewer, or the Valley Forge Treatment Plant to receive, convey, treat or dispose of sewage.

10.02 Operation of Collection Systems.

Each party agrees that during such time as it operates a sewage collection system it will continuously operate and keep and maintain its collection system at all time in first-class repair, order and efficient operating condition and will meet the standards prescribed by the Sanitary Water Board of the Pennsylvania Department of Health or any other governmental authority having jurisdiction. Each party agrees to pay the cost of any damage to the East Whiteland Trunk Line or fine imposed upon East Whiteland Authority or East Whiteland Township resulting from discharge of improper sewage from such party's collection system in violation of this Agreement or

from improper operation or maintenance of such party's collection system. Each party agrees to indemnify and save harmless all of the other parties against all costs, losses or damage on account of any injury to persons or property occurring in the performance of this Agreement due to the negligence of such party or its servants, agents or employees.

10.03 Leases.

In the event that any municipality authority shall at any time lease its collection system to a municipality, any right or obligation of such authority under this Agreement may be exercised and shall be performed, as the case may be, by the municipality instead of the municipality authority to the extent that it may legally do so. When, by reason of the termination of any collection system lease, or for any other reason, any municipality authority shall be in possession of its collection system, then without any further act or agreement such municipality authority shall succeed to and become vested with all of the rights, powers, duties and obligations under this Agreement granted to or imposed upon the municipalities which created such authority.

10.04 Public Utility Law.

In the event that the Commonwealth of Pennsylvania should subsequently lawfully confer jurisdiction of the subject matter of this Agreement upon the Pennsylvania Public Utility Commission in whole or in part, the parties shall, if requested so to do, proceed forthwith to obtain all necessary power, right and authority from the said Public Utility Commission or such other proper agency of such Commonwealth in order to carry out the terms, provisions and intendment hereof.

10.05 Permits.

In the event that it may be necessary for the proper performance of this Agreement on the part of the East Whiteland Authority or East Whiteland Township to apply to any governmental or other agency for any permit or license to do or perform any act or thing contemplated hereby, and if such application must be made by a municipality rather than by the East Whiteland Authority or East Whiteland Township, the municipality affected agrees that it will execute the required application upon request by the East Whiteland Authority or East Whiteland Township, it being understood that in executing such application the municipality shall not assume any obligations both those for which it would have been responsible had East Whiteland Authority or East Whiteland Township made the said application.

10.06 No Joint Liability.

With the exception of a municipality and a municipality authority organized by such municipality, no party shall be held to be jointly liable in the event of failure of any party to perform and discharge its obligations under this Agreement, it being the intent hereof that this shall constitute the separate agreement of each of the parties named herein and default by any party in the discharge of any obligation resting upon it hereunder, shall not relieve any party from full performance of and compliance with the terms hereof.

10.07 Connections.

Prior to the completion of construction of the Valley Forge Treatment Plant, the Valley Creek Trunk Sewer and the East Whiteland Trunk Line, the Borough and each Township which is a party

hereunder will (to the extent it has not done so prior thereto) take all action which may be legal and necessary to compel all properties located within its territorial limits and then capable or thereafter becoming capable of being served by the municipality's collection system to be connected therewith.

10.08 Records.

Each party agrees to make available at all reasonable times to the parties to this Agreement and their employees, agents and representatives, access to all records relating to matters covered in this Agreement and access to the physical facilities of each party in order to assure compliance with the terms and conditions of this Agreement. A copy of all ordinances, resolutions, rules and regulations adopted by each party from time to time, pursuant to this Agreement, shall be furnished to East Whiteland Authority within thirty (30) days after enactment.

10.09 Severability.

Should any one or more of the provisions of this Agreement for any reason be held illegal or invalid, such illegality or invalidity shall not affect any other provision of this Agreement; and this Agreement shall, in such circumstances, be construed and enforced as if such illegal or invalid provision had not been contained herein.

10.10 Term.

This Agreement shall become effective upon its execution and delivery by all the parties hereto and shall remain in effect for forty years and thereafter shall be terminated only by mutual agreement of all parties.

10.11 Definitions.

The following terms and phrases shall have the meanings hereinafter set forth whenever such terms and phrases are used herein:

(a) "Consulting Engineers" means Roy F. Weston, Inc., and in the event said firm ceases to serve as the Consulting Engineers for East Whiteland Authority, an engineering firm or professional engineer having a favorable repute for skill and experience in the construction and operation of sewage treatment plants, registered in Pennsylvania and chosen by East Whiteland Authority.

(b) "Equivalent Dwelling Unit" shall mean any room, group of rooms, house trailer or other enclosure occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by persons living alone.

(c) "Industrial Uses" means any improved property used, in whole or in part, for manufacturing, processing, cleaning, laundering or assembling any product, commodity or article or from which any process waste, as distinct from sanitary sewage, is discharged.

(d) "Industrial Wastes" means any and all wastes discharged from an industrial establishment or by an industrial user, other than sanitary sewage.

(e) "Sewage", "Wastewater", "Sanitary Sewage" and "Sanitary Waste" means normal water-carried household and toilet wastes from any improved property and is limited to sewage permitted by Article V hereof and industrial wastes to the

extent permitted by Article V.

(f) "Improved Property" means any property upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human being or animals and from which structure sanitary sewage and/or industrial wastes shall be or may be discharged.

(g) "pH" means the logarithm of the reciprocal of the concentration of hydrogen ions, expressed in grams per liter of solution, indicating the degree of acidity or alkalinity of a substance.

(h) "B.O.D." means biochemical oxygen demand.

10.13 Execution.

This Agreement may be executed in any number of counterparts each of which may be deemed an original.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed and attested by its proper officers, pursuant to the proper action of its governing body, as of the day and year first above written.

EAST WHITELAND MUNICIPAL AUTHORITY

(Authority Seal)
Attest:
By: _____
Secretary

BY: _____
Chairman

TOWNSHIP OF EAST WHITELAND

(Township Seal)

Attest:

BY: _____
Chairman, Board of Supervisors

By: _____
Secretary

MALVERN MUNICIPAL AUTHORITY

(Authority Seal)
Attest:
By: _____
Secretary

BY: _____
Chairman

BOROUGH OF MALVERN

(Borough Seal)
Attest:
By: _____
Secretary

BY: _____
President of Borough Council

VALLEY FORGE SEWER AUTHORITY

(Authority Seal)

Attest:

By: _____
Secretary

BY: _____
Chairman

FACTORS FOR DETERMINATION OF EQUIVALENT DWELLING UNITS

Classification	Number of E.D.U.
A. Each private dwelling or living unit	1
B. Each fire house or municipal building	1
C. Each church	1
D. Each public or private day school . . . . . Elementary, junior or senior high school Based on the daily average number of pupils enrolled on days when the school was in session during the quarter immediately preceding the date for determination of the number of connections, divided by the factor of 20. Teachers and employees shall be classified as pupils. Average enrollment shall be redetermined annually.	
E. Each retail gas station without car washing facilities	2
F. Each retail gas station with car washing facilities	3
G. Each commercial establishment, hospital, convalescent home, or institution . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment. Where no meter has been installed by the supplier or no other meter or measuring device has been installed, the number of Equivalent Dwelling Units shall be estimated.	
H. Each motel, hotel, or rooming house . . . . . Each unit or room shall be evaluated as one-half an Equivalent Dwelling Unit. Where a restaurant or bar room is conducted in conjunction with any motel or hotel, a separate determination for such restaurant or bar room shall be made in accordance with paragraph "G" above.	
I. Industrial Establishments . . . . . The quantity of water used shall be evidenced by meter readings of water meters installed by water suppliers for the purpose of measuring	

water purchased from said water supplier and such other meters or measuring devices as may be installed. The quantity of water used during the quarter immediately preceding the date for determination of the number of connections divided by 24,750 gallons shall represent the number of Equivalent Dwelling Units determined in respect of such establishment.

Where no meter has been installed by the supplier or no other meter or measuring device has been installed, the number of Equivalent Dwelling Units shall be estimated.

J. Multiple Use. In case of a combination of one or more dwelling or living units with a similar unit or units or with one or more commercial establishments in the same or connected building with each thereof having the use of the Valley Creek Trunk Sewer (directly or indirectly) through one sewer connection, then each such private dwelling or living unit and each such commercial establishment shall be evaluated on the basis of the applicable factors for each use thereof as if such use were conducted in a separate structure and as if each such use had a direct and separate connection to the Valley Creek Trunk Sewer . . . . . .

SUPPLEMENT TO EXHIBIT B

EAST WHITELAND TRUNK LINE

ALTERNATIVES TO EXHIBIT B FOR VARYING P.L. 660 GRANTS

	ALTERNATIVES			
	1	2	3	4
Federal Grant	30%	30%	30%	40%
State Grant	0	17	30	30
Federal Grant for Regional	3	3	3	4
TOTAL	33%	50%	63%	74%
Estimated Project Cost (1)	$601,960	$601,960	$601,960	$601,960
Eligible Cost	587,960	587,960	587,960	587,960
Grants	194,027	293,980	370,415	435,090
Estimated Project Cost to be Distributed	407,933	307,980	231,545	166,870

		ALTERNATIVES			
Distribution	% of Total Project Cost	1	2	3	4
East Whiteland Municipal Authority	59.45	$283,309	$213,892	$160,808	$115,891
Malvern Municipal Authority	30.55	$124,624	$ 94,088	$ 70,737	$ 50,979
TOTALS	100.00	$407,933	$307,980	$231,545	$166,870

(1) See Sheet 1 of Exhibit B for Breakdown

EXHIBIT B

EAST WHITELAND TRUNK LINE

ENGINEERING COST DISTRIBUTION
FOR DESIGN SERVICES

Engineering Design Fees $25,600

Name of Party	Total Estimated Construction Cost	% Share of Construction Cost	Engineers Cost
East Whiteland Municipal Authority	$328,557	69.45	$17,779
Malvern Municipal Authority	$144,503	30.55	$ 7,821
TOTALS	$473,060	100.00	$25,600

EXHIBIT B

EAST WHITELAND TRUNK LINE

FIRST TWO YEAR OPERATING AND ADMINISTRATIVE EXPENSES

I. Estimated First Two Year Operating Expenses

Salaries and Wages	$ 3,000	
Maintenance and Repairs	1,000	
Miscellaneous	400	
Total I		$ 4,400

II. Estimated First Two Year Administrative Expenses

Salaries and Wages	$ 3,000	
Office Supplies	200	
Insurance and Bonds	1,000	
Engineering	1,000	
Legal	1,000	
Auditing	2,000	
Miscellaneous	1,000	
Total II		$ 9,200
Total I and II		$13,600

EXHIBIT B

EAST WHITELAND TRUNK LINE

DISTRIBUTION OF FIRST TWO YEAR OPERATING AND ADMINISTRATIVE EXPENSES

	ALTERNATIVES			
	1	2	3	4
Total Expenses from Sheet 3	$13,600	$13,600	$13,600	$13,600
Construction Cost Eligible for State Subsidy (1)	$24,727	$24,727	$24,727	$24,727
Project Cost Eligible for Subsidy	$32,200	$32,200	$32,200	$32,200
State - Federal Grant on Eligible Project Cost	$10,626	$16,100	$20,286	$23,828
Net Eligible Cost for State Subsidy	$21,574	$16,100	$11,914	$ 8,372
State Subsidy (2)	$ 431	$ 322	$ 238	$ 167
Net First Two Year Operating and Administrative Expenses	$21,143	$15,778	$11,676	$ 8,205

		ALTERNATIVES			
Distribution	% of Total Project Cost	1	2	3	4
East Whiteland Municipal Authority	69.45	$14,684	$10,958	$ 8,109	$ 5,698
Malvern Municipal Authority	30.55	$ 6,459	$ 4,820	$ 3,567	$ 2,507
TOTAL	100.00	$21,143	$15,778	$11,676	$ 8,205

(1) From MH 21-6 to MH 21-4
(2) State subsidy assumed to be received during second year of operation

EXHIBIT B - EAST WHITELAND TRUNK LINE

SECTION OF SEWER FROM MH TO MH	TOTAL ESTIMATED COST	EAST WHITELAND TOWNSHIP			MALVERN BOROUGH		
		DESIGN CAPACITY - MGD	ESTIMATED SHARE %	ESTIMATED COST	DESIGN CAPACITY - MGD	ESTIMATED SHARE %	ESTIMATED COST
WARREN AVENUE							
Twp line to MH 17-11	$ 21,390	0	0	$ 0	2.14	100.0	$ 21,390
MH 17-11 to MH 17-4	4,028	1.1	47.6	1,917	2.14	52.4	2,111
LINCOLN HIGHWAY							
Twp line to MH 18A-1	5,077	0	0	0	0.28	100.0	5,077
ROW and LANCASTER PIKE							
Twp line to MH 18A-1	24,824	0	0	0	0.08	100.0	24,824
MH 18A-1 to MH 17-1	15,495	0	0	0	0.36	100.0	15,495
MH 17-1 to MH 17-4	21,612	1.0	100.0	21,612	0.36	0.0	0
MH 17-4 to MH 12-4	45,310	1.0	47.6	21,568	2.50	52.4	23,742
MH 12-4 to MH 12-5	15,865	1.0	47.6	7,552	2.50	52.4	8,313
MOREHALL ROAD							
MH 12-5 to MH 19-4	47,495	1.0	47.6	22,608	2.50	52.4	24,887
MH 19-4 to MH 20-2	42,805	10.5	100.0	42,805	2.50	0.0	0
MATTHEWS ROAD and ROW							
MH 20-2 to MH 20-8	69,644	10.5	100.0	69,644	2.50	0.0	0
MH 20-8 to MH 21-3	123,271	10.5	88.3	108,848	2.50	11.7	14,423
MH 21-3 to MH 21-6	36,244	10.5	88.3	32,003	2.50	11.7	4,241
TOTAL CONSTRUCTION COST	473,060			328,557			144,503
ENGINEERING, SURVEYING AND INSPECTION	62,000			43,059			18,941

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment, dated as of the 12th day of December, 1979, to the East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974 (hereinafter referred to as "the Agreement"), is entered into between EAST WHITELAND MUNICIPAL AUTHORITY (East Whiteland Authority), the TOWNSHIP OF EAST WHITELAND (East Whiteland Township), parties of the first part, and the BOROUGH OF MALVERN (Malvern), and MALVERN MUNICIPAL AUTHORITY (Malvern Authority), parties of the second part, and VALLEY FORGE SEWER AUTHORITY, party of the third part.

WHEREAS, subsequent to the execution of the Agreement, Valley Forge Sewer Authority decided to seek the opportunity to transmit sewage from an area of Charlestown Township adjacent to East Whiteland Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Treatment Plant; and

WHEREAS, East Whiteland Authority and East Whiteland Township, at the request of Valley Forge Sewer Authority are willing to reserve for the Valley Forge Sewer Authority, the reserved capacity provided herein of the East Whiteland Trunk Line and the Mill Lane pumping station; and

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby, agree as follows:

1. Valley Forge Sewer Authority shall have no rights or liabilities with respect to Section 1.01 of the Agreement.

2. Within thirty (30) days of the date of this Amendment, Valley Forge Sewer Authority shall pay to East Whiteland Authority the sum of one hundred fifteen thousand nine hundred seventy-five

dollars ($115,975). Of that sum, $114,189 shall be allocated to Valley Forge Sewer Authority's capital contribution pursuant to Sections 2.01 and 2.02 of the Agreement and $1,786 to operating expenses for the first two (2) years pursuant to Section 4.13 of the Agreement. The calculation of the above figure takes into consideration all currently applicable grants. Exhibit B of the Agreement is hereby amended in part as set forth in Exhibit A attached hereto. All references in the Agreement to Exhibit B thereof shall be deemed to refer to Exhibit B as amended by Exhibit A attached hereto.

3. Valley Forge Sewer Authority hereby is granted rights, and assumes liabilities as if it were one of the parties referred to in the Agreement as a "Municipality" which rights and liabilities are defined in the Agreement.

4. Valley Forge Sewer Authority, at its own expense or at the expense of its users, may, during the term of the Agreement, cause sewage emanating from Charlestown Township to be discharged into sewer lines of East Whiteland Township which have been acquired from Great Valley Wastewater Company ("the Great Valley Line"). The East Whiteland Trunk Line shall thus be extended to the boundary of Charlestown Township.

5. Valley Forge Sewer Authority shall commence delivering sewage to the Great Valley Line as soon as practicable after the execution of this Agreement. East Whiteland Authority, as soon as practicable thereafter, shall permit connection at the locations that East Whiteland Authority may agree to, which agreement may not be unreasonably withheld, and shall accept sewage for conveyance to the treatment plant subject to the terms and conditions herein set forth. Valley Forge Sewer Authority may make subsequent connections at locations agreed to by East

Whiteland Authority, which shall not unreasonably withhold its agreement. Except as permitted pursuant to Article VII of the Agreement, Valley Forge Sewer Authority shall not exceed its reserved capacity as set forth in Exhibit B, as amended by this Agreement.

6. Section 4.01 of the Agreement is hereby amended to read as follows:

"The Borough of Malvern, the township of East Whiteland and Valley Forge Sewer Authority (all of which are referred to in this article IV and elsewhere in this agreement as 'said municipalities') shall share the operating expenses of the East Whiteland Trunk Line and its extension to Charlestown Township, as defined in Section 4.06, as follows: the proportion that the volume of sewage (determined as hereinafter provided and by other agreement of the parties) emanating from each such municipality and discharged into the several sections or reaches of the interceptor or trunk sewer, constituting the East Whiteland Trunk Line and its extention to Charlestown Township bears to the total volume of sewage discharged by said municipalities into such sections or reaches shall be used in calculating the amount that each such municipality shall pay for sewage conveyance services. Operating expenses of the East Whiteland Trunk Line for the first two years of operation shall be paid as set forth in Section 4.13 hereof."

All references in Article 4 of the Agreement to East Whiteland Trunk Line shall be deemed also to refer to the Great Valley Line.

7. Any sewage discharged by Valley Forge Sewer Authority into the East Whiteland Trunk Line or Great Valley Line shall conform to the standards for quality of sewage set forth in Article V of the Agreement.

3. Pursuant to an Agreement entitled "Valley Creek Trunk Sewer Agreement" dated November 1, 1970, as amended, East Whiteland Authority has made payments to Tredyffrin Township for operating expenses of the Valley Creek Trunk Line during its first two years of operation, and will, during subsequent years, continue to be obligated to make payments on account of operating expenses. Valley Forge Sewer Authority agrees hereby to, within thirty days from the execution of this Agreement, reimburse East Whiteland Authority for 7.89% of the amount paid on account of operating expenses during the first two years by East Whiteland Authority to Tredyffrin Township. Valley Forge Sewer Authority further agrees to reimburse East Whiteland Authority for Valley Forge Sewer Authority's share of any payments East Whiteland must make to Tredyffrin Township pursuant to Article 4 of the Valley Creek Trunk Sewer Agreement for operating costs during years subsequent to the first two years of operation and for payments for capital contributions paid subsequent to the date hereof. Valley Forge Sewer Authority's share of the said operating costs and additional capital contributions will be its pro-rata share, based on the proportion that the volume of sewage emanating from Charlestown Township into the East Whiteland Trunk Line and Great Valley Line bears to the total sewage emanating from East Whiteland Township into the Valley Creek Trunk Sewer Line. The payments by Valley Forge Sewer Authority shall not exceed those that would be made if said Authority had made its payments directly to the Tredyffrin Township Municipal Authority.

9. At such time as East Whiteland Authority must pay funds to the Tredyffrin Township Municipal Authority resulting from an enlargement of an intercepter or trunk sewer (or any section or reach thereof) or the construction of an additional interceptor

or trunk sewer or the enlargement of a pumping station or the construction of an additional pumping station pursuant to the Valley Creek Trunk Sewer Agreement, then Valley Forge Sewer Authority shall reimburse East Whiteland Township for its pro-rata share of said funds calculated on the basis of its pro-rata share of reserved capacity, as such reserved capacity shall be determined by Valley Forge Sewer Authority, in such section or reach of interceptor or trunk sewer. In the alternative, Valley Forge Sewer Authority may reserve capacity pursuant to Section 7.02 of the Valley Creek Trunk Sewer Agreement.

10. Valley Forge Sewer Authority hereby agrees that all sewage from Charlestown Township shall be deemed to be sewage of Valley Forge Sewer Authorty for purpose of an Agreement dated as of November 1, 1970, as amended, known as "the Valley Forge Sewage Treatment Plan Agreement".

11. Valley Forge Sewer Authority shall, at its expense, construct or cause to be constructed a sewage meter or sewage flow measuring device to determine the volume of sewage emanating from Charlestown Township to East Whiteland Township.

12. All references in Sections 4.03, 7.03 and 8.03 of the Agreement to "Malvern" shall be deemed to refer to Malvern and Valley Forge Sewer Authority. Valley Forge Sewer Authority shall make payments pursuant to Section 4.04 of the Agreement at the same time as Malvern is required to make payments. All other sections of the Agreement refer to parties or municipalities defined in Section 4.01, as amended by Paragraph 6 of this Agreement, unless otherwise stated herein.

13. Pursuant to Paragraph 7.01 of the Valley Creek Trunk Sewer Agreement, Valley Forge Sewer Authority hereby is granted the right to rent a capacity of up to 300,000 gallons per day average flow (750,000 gallons per day peak flow) in the Valley

Creek Trunk Sewer from East Whiteland Authority, with all rental fees therefore being paid to East Whiteland Authority, as provided therein.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed and attested by its proper officers pursuant to the proper action of its governing body as of the day and year first above written.

BY: _____
Valley Forge Sewer Authority

ATTEST: _____
TOWNSHIP SECRETARY

EAST WHITELAND TOWNSHIP
BOARD OF SUPERVISORS
209 CONESTOGA ROAD
FRAZER PA. 19355

BY: _____
East Whiteland Municipal Authority

ATTEST: _____

BY: _____
Township of East Whiteland

ATTEST: _____

BY: _____
Borough of Malvern

ATTEST: _____

BY: _____
Malvern Municipal Authority

ATTEST: _____

EXHIBIT "A"

Exhibit "B" of the East Whiteland Trunk Line Agreement is amended in part to provide that if any expansion, repair, enlargement or construction to the Great Valley Line shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement or construction on the basis of its reserved capacity in the expanded or repaired Great Valley Line to the total reserved capacity therein. Notwithstanding the foregoing, 300,000 gallons per day of capacity shall be reserved in the Great Valley Line for Valley Forge Sewer Authority.

EXHIBIT "B"

THIS AGREEMENT made this 27th day of December 1978, by and between EAST WHITELAND MUNICIPAL AUTHORITY and VALLEY FORGE SEWER AUTHORITY

W I T N E S S E T H:

Valley Forge Sewer Authority and East Whiteland Municipal Authority have agreed to share cost for the Sidley Road Trunk Line repairs as indicated in Schedule A presented by East Whiteland Municipal Authority (Schedule A attached hereto). Items Nos. 1, 3, 4, and 6 of the Schedule A, which are line replacements, will be deferred until additional flows coming from Charlestown Township make ~~repairs~~ Replacements if necessary as determined by East Whiteland Municipal Authority's consulting engineers. Item No. 14 of Schedule A will be adjusted on the basis of proposed additional repairs to be required in lieu of replacement of earlier mentioned lines.

NOW THEREFORE, the parties hereto, agree that the mutual promises herein contained and previous arrangements will allow the parties to finalize the agreement to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line.

VALLEY FORGE SEWER AUTHORITY

EAST WHITELAND MUNICIPAL AUTHORITY

SCHEDULE A

EAST WHITELAND/CHARLESTON SHARED COSTS

	Manhole Runs	Total Est Repair Cost	East Whiteland Twp. Capacity MGD	% Share	Share of Cost Est.	Charlestown Twp. Capacity MGD	% Share	Share of Cost Est.	Total Capaci
(1)	67-25 to 23	$12,000	.038	29	0	0.75	71	$ 12,000	0.8
(2)	24 to 23		.038	29	0	0.75	71		
(3)*	23 to 19	7,000	0.25	25	1500	0.75 (1)	75	7,000	1.0
		3,000 (2)			750			1500 2,250	
(4)*	19 to 15	30,000	0.16	44	0	0.75	56	30,000	1.3
		3,000 (2)			1,500			1,500	
(5)	15 to 13	1,300	0.635	46	650	0.75	54	650	1.3
(6)	13 to 12	4,000	0.75	50		0.75	50/100	4,000	1.5
(7)	12 to 6	600	0.75	50	300	0.75	50	300	1.5
(8)	6 to 2	300	0.80	52	150	0.75	48	150	1.5
(9)	2 to 59-4		0.85	53		0.75	47		1.6
(10)	59-4 to Pump Sta.		0.95	56		0.75	44		1.7
		$61,200			400 $5,900			$57,100	
(11)	Surveying	1,804		50	902			902	
(12)	TV & Cleaning	4,344		50	2,172			2,172	
(13)	TV Engr/Insp.	3,060		50	1,533			1,533	
(14)*	Line Replacement	12,000 (3)		0	0			12,000	
	Engr./Insp./Legal								
	TOTAL	$82,210			$10,507			$73,707	
					1,907			77,907	

* To be postponed until additional flow limits from Charlestown
(1) To be required as transmit is constructed
(2) To be required as transmit is constructed
(3) To be required as transmit is constructed

THIS AGREEMENT made this 27th day of December 1978, by and between EAST WHITELAND MUNICIPAL AUTHORITY and VALLEY FORGE SEWER AUTHORITY

W I T N E S S E T H:

Valley Forge Sewer Authority and East Whiteland Municipal Authority have agreed to share cost for the Sidley Road Trunk Line repairs as indicated in Schedule A presented by East Whiteland Municipal Authority (Schedule A attached hereto). Items Nos. 1, 3, 4, and 6 of the Schedule A, which are line replacements, will be deferred until additional flows coming from Charlestown Township make ~~repairs~~ replacements necessary as determined by East Whiteland Municipal Authority's consulting engineers. Item No. 14 of Schedule A will be adjusted on the basis of proposed additional repairs to be required in lieu of replacement of earlier mentioned lines.

NOW THEREFORE, the parties hereto, agree that the mutual promises herein contained and previous arrangements will allow the parties to finalize the agreement to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line.

VALLEY FORGE SEWER AUTHORITY

EAST WHITELAND MUNICIPAL AUTHORITY

SCHEDULE A

EAST WHITELAND/CHARLESTON SHARED COSTS

	Manhole Runs	Total Est. Repair Cost	East Whiteland Twp. Capacity MGD	% Share	Share of Cost Est.	Charlestown Twp. Capacity MGD	% Share	Share of Cost Est.	Total Capacity MGD
(1)*	~~67-25 to 23~~	$12,000	.038	29	0	0.75	71	$ 12,000	0.8
(2)	24 to 23		.038	29	0	0.75	71		
(3)*	23 to 19	7,000	0.25	25	1500	0.75 (1)	75	7,000	1.0
		3,000(2)			~~750~~			1500 ~~2,250~~	
(4)*	19 to 15	30,000	0.6	44	0	0.75	56	30,000	1.35
		3,000(2)			1,500			1,500	
(5)	15 to 13	1,300	0.635	46	650	0.75	54	650	1.39
(6)*	13 to 12	4,000	0.75	~~50~~		0.75	~~50~~ 100	4,000	1.5
(7)	12 to 6	600	0.75	50	300	0.75	50	300	1.5
(8)	6 to 2	300	0.80	52	150	0.75	48	150	1.55
(9)	2 to 59-4		0.85	53		0.75	47		1.6
(10)	59-4 to Pump Sta.		0.95	56		0.75	44		1.7
					4100				
		$61,200			~~$5,900~~			$57,100	
(11)	Surveying	1,804		50	902			902	
(12)	TV & Cleaning	4,344		50	2,172			2,172	
(13)	TV Engr/Insp.	3,060		50	1,533			1,533	
(14)**	Line Replacement	12,000 (3)		0	0			12,000	
	Engr./Insp./Legal								
	TOTAL	$82,210			$10,507			$73,707	
					# 8707			# 77,807	

* TO BE POSTPONED UNTIL ADDITIONAL FLOW CIMES FROM CHARLESTOWN
** TO BE ADJUSTED ON BASIS OF POSTPONED WORK

(1) Assume 750,000 MGD Includes Ferguson & Warehouses

(2) Estimated cost for line repairs assume benefit equal to each township

APPENDIX K

Municipal Comments and Responses

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

October 10, 2012

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

VIA UPS GROUND

East Whiteland Township Planning Commission
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: East Whiteland Township Act 537 Plan Special Study for Planning Commission Review.
ARRO #10310.02 ✓

Dear Planning Commission Members:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the north central portion of the Township as well the south-central portion of Charlestown Township.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. In addition, please share this document with Terry Woodman and Bill Steele so that they may review it and offer comments as well.

Thank you for your assistance with the review of this Plan. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: Terry Woodman, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Brady Flaharty, P.E. – ARRO (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

ENGINEERING & ENVIRONMENTAL CONSULTANTS

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

October 10, 2012

VIA UPS GROUND

Charlestown Township Planning Commission
Charlestown Township
4030 Whitehorse Road
Malvern, PA 19355

RE: East Whiteland Township Act 537 Plan Special Study for Planning Commission Review.
ARRO #10310.02

Dear Planning Commission Members:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the north central portion of the Township as well the south-central portion of Charlestown Township.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. Thank you for your assistance with the review of this Plan. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: Terry Woodman, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Brady Flaharty, P.E. – ARRO (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • VIRGINIA MCMICHAEL • JOHN MOTT

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
GEORGE LORKEN, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 6, 2013

FEB - 8 2013
ARRO

William L. Bohner, Jr., P.E.
The ARRO Group
649 North Lewis Road, Suite 100
Limerick, PA 19468

Re: Act 537 Special Study (Sidley Road drainage area)

Dear Bill:

Be aware that the East Whiteland Township Planning Commission at their meeting on November 28, 2012, did review the referenced Study and following their examination, offered no comments or criticisms of the proposed project.

Let me know if you need any additional information about the presentation of this Act 537 Special Study.

Sincerely,

Terry H. Woodman
Township Manager

ADVANCED GeoServices
Engineering for the Environment. Planning for People.℠
1055 Andrew Drive, Suite A
West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

FEB - 5 2013

ARRO

January 30, 2013

Mr. William L. Bonner, Jr., P.E.
THE ARRO GROUP
950 West Valley Road, Suite 3104
Wayne, PA 19087

Re: **East Whiteland Township Act 537 Plan**
Special Study for Planning Commission Review
ARRO # 10310.02

Dear Mr. Bonner:

At the November 13, 2012 Charlestown Township Planning Commission meeting I described the East Whiteland Township Act 537 Plan Special Study in general. I also described, in more detail, the anticipated flows from the southside of Charlestown Township to the East Whiteland Study Area.

There was discussion about some of the descriptions of certain areas shown on Tables 1 through 3 and a requested clarification on the flows that would be generated if development was done under the new TND overlay zoning district.

After the meeting we reviewed the flows that could be generated by areas developed using the TND overlay and have determined that there should be no increase to flows presented in Tables 1 through 3.

No other questions or concerns were raised by the Planning Commission.

Very truly yours,

Daniel T. Wright, P.E.
Township Engineer
Charlestown Township

DTW:cpw

cc: Linda M. Csete, Charlestown Township Manager
Surender S. Kohli, P.E.
Terry H. Woodman, East Whiteland Township Manager

Board of Supervisors

Frank A. Piliero, Chair · Michael J. Rodgers, Vice Chair
Kevin R. Kuhn · Charles A. Philips · Hugh D. Willig

March 13, 2013

RECEIVED
MAR 15 2013

Martin F. Goldberg
Operations Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Re: Official Update of Charlestown South Side Sewerage Flow Projections

Dear Mr. Goldberg,

In accordance with the requirement of the Pennsylvania Department of Environmental Protection (PADEP) that all of the Valley Forge Sewer Authority's (VFSA) customers provide Municipal Needs Assessment Updates in order to complete its Regional Act 537 Plan, Charlestown Township provided the VFSA with its Needs Analysis prepared by Surender Kohli, P.E. and approved by its Board of Supervisors back in September of 2008.

The 2008 Needs Analysis indicates a projected total average flow from the south side of Charlestown Township at 417,060 gpd. This, along with the other community flow projects, was part of the basis for the PADEP-approved Act 437 Plan for the VFSA treatment plant.

Charlestown Township is hereby updating the 2008 Needs Analysis. This is included as Appendix A, which has been compiled by Charlestown's consulting engineer and approved by the Charlestown Township Board of Supervisors at their meeting on March 4, 2013.

Very truly yours,

Linda M. Csete
Township Manager

Cc: Board of Supervisors
Dan Wright, P.E.

4030 Whitehorse Rd. • P.O. Box 507 • Devault, PA 19432-0507
610.240.0326 • Fax 610.240.0328 • admin1@charlestown.pa.us

Appendix A

East Whiteland Projects										
				Development Projected to Occur						
Description (modify as appropriate)	Total Flows (gpd)	Future Flows (gpd)	Current Flows (gpd)	0 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	20 to 25 Year	0 to 5 Years % of Future	0 to 10 Years % of Future
Existing Flows										
Charlestown Meadows	19,074		19,074							
Charlestown Oaks Existing Flows	38,354		38,354							
Charlestown Twp. Existing Flows	78,544		78,544							
Future Flows (Sidley, Not Lee Bvd. PS)										
Volpi	23,500	23,500			23,500					
Future Flows to Lee Bvd. and Sidley)										
Cellucci	4,450	4,450			4,450					
Laurabrook	4,740	4,740			4,740					
"Late Spring"	2,130	2,130			2,130					
Adjacent to Laurabrook	10,560	10,560			10,560					
Holy Ascention Ch.	1,815	1,815		1,815						
Remainder	12,550	12,550				12,550				
Remainder	12,550	12,550					12,550			
Remainder	12,550	12,550						12,550		
Devault Foods	37,000	37,000		37,000						
Spring Oak Bus. Park	50,875	50,875		50,875						
Tyler Griffin	21,450	21,450		21,450						
Charlestown Elem.	1,845	1,845		1,845						
Fillippo Tract	19,800	19,800			19,800					
Across from Spring Oak	2,475	2,475			2,475					
Yellow Springs Road	2,750	2,750			2,750					
Rt. 29 and Charlestown Rd.	13,750	13,750			13,750					
Northside of School	1,925	1,925			1,925					
Farm Residence	275	275			275					
Remainder	13,363	13,363				13,363				
Remainder	13,363	13,363					13,363			
Remainder	13,364	13,364						13,364		
Warner Lane	4,650	4,650		4,650						
The Office Restaurant	3,600	3,600			3,600					
Commons at Great Valley	11,000	11,000			11,000					
(Others)										

Present Flows Highlighted in Yellow	135,972
Future Flows Less than 10 years out highlighted in white	218,590
Flows Greater than 10 years out highlighted in blue	77,740
Total	432,302

APPENDIX L

County Comments and Responses

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

October 10, 2012

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

VIA UPS GROUND

Mr. Ronald T. Bailey
Executive Director
Chester County Planning Commission
Government Services Center
Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special Study for Planning Commission Review.
ARRO #10310.02

Dear Mr. Bailey:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the north central portion of the Township as well the south-central portion of Charlestown Township.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. Thank you for your assistance with the review of this Plan. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: Terry Woodman, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Brady Flaharty, P.E. – ARRO (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

THE COUNTY OF CHESTER

COMMISSIONERS
Terence Farrell
Kathi Cozzone
Ryan A. Costello

Ronald T. Bailey, AICP
Executive Director

PLANNING COMMISSION
Government Services Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, Pa 19380-0990
(610)344-6285 Fax: (610) 344-6515

December 11, 2012

DEC 12 2012

Virginia McMichael, Chairperson
Board of Supervisors
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: East Whiteland Township Official Sewage Facilities Plan Special Study

Dear Ms. McMichael:

The Chester County Planning Commission (CCPC) has reviewed the Draft 537 Plan Special Study dated October 2012 as required by Section 71.53(a)(2) of the Pennsylvania Sewage Facilities Act (Act 537). The Plan was prepared by ARRO. The Plan was received on October 11, 2012.

This Plan was prepared to assess the needs for wastewater collection and treatment, evaluate alternatives to meet future demands, and to identify and implement improvements in the north-central portion of the Township. The CCPC recommends the Plan be adopted after addressing comments in this letter.

The following comments are offered based on review of the document:

A. Consistency with the County Comprehensive Plan – *Landscapes2*:

1. The Study Area for East Whiteland Township, generally located immediately south of Charlestown Township, in the north-central portion of the Township, is primarily defined as the Suburban Landscape, with portions of the Township located in the Natural Features Overlay. The Act 537 Plan is consistent with the policies of *Landscapes2,* as they relate to the Suburban Landscape, including *Landscapes2* Policy UI 2.5 which states: "Maintain, upgrade, or expand existing public sewer and water facilities to support redevelopment and new development in designated growth areas, where consistent with local land use planning, while discouraging the extension of those facilities in the rural, agricultural and natural landscapes." The Plan indicates that East Whiteland Township is planning to upgrade components of the Township's conveyance system in order to continue to accommodate flow from Charlestown Township and existing and future East Whiteland Township flows. The Plan, as proposed is consistent with the goals and policies of *Landscapes2.*

2. *Watersheds*, the water resources element of the County comprehensive plan, identifies Objective 7.2 of Goal 7, "concentrate planned utility service areas to support designated growth areas," to be achieved through key strategies such as the extension of wastewater facilities in Suburban Landscapes. As such, East Whiteland Township, through its Act 537 Plan Update, intends to upgrade components of their public sewer system to accommodate existing and future planned growth. Therefore the goals for wastewater in East Whiteland Township are consistent with those of *Watersheds*.

B. Selection of Alternative:

1. The selected alternative for East Whiteland Township is to address the requirements necessary to upgrade components to the municipal conveyance system to accommodate existing and future flows from both Charlestown Township and East Whiteland Township. The proposed alternative is supported by *Landscapes2* Sewer and Water Policy UI 2.2, "Support infrastructure expansion and improvements that are consistent with *Landscapes2* and adopted regional and local plans that support projected future demands, avoid capacity shortfalls, protect natural resources, and provide safe and reliable utility services." As proposed, this alternative is consistent with the goals and policies of *Landscapes2*.

C. General Comments

1. Page10. On-going Upgrades or Expansion of Facilities. This Plan is consistent with the ongoing upgrades to the Mill Lane Pump Station which is also in this planning area.

2. Page 25. Consistency Determination. East Whiteland Township should include consistency information regarding *Watersheds*, the Chester County comprehensive plan's water resources element.

3. Page 27. County Stormwater Management Plan. Dependent upon the timing of this plan's adoption and construction of expanded/upgraded facilities, the Township may want to consider including information from the forthcoming Chester County Act 167 Stormwater Management Plan.

Thank you for the opportunity to offer comments on this plan. We trust that these comments will be of assistance to you as you prepare the final document for submission to PA DEP. The CCPC recommends approval of the Plan after all comments have been addressed. If you have any questions, please contact Carrie Conwell at 610-344-6285.

Sincerely,

Ronald T. Bailey, AICP
Executive Director

RTB/CC/yg
cc: Elizabeth Mahoney, PaDEP
Ralph DeFazio, Chester County Health Department
Terry Woodman, Manager, East Whiteland Township
William Bohner, Jr., PE, ARRO

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • VIRGINIA MCMICHAEL • JOHN MOTT

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
GEORGE LOKKEN, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 7, 2013

FEB 11 2013
ARRO

Mr. Ronald T. Bailey
Executive Director
Chester County Planning Commission
Government Services Center
Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special Study for Planning Commission Review; Response to Comments.

Dear Mr. Bailey:

We would like to take this opportunity to respond to the Planning Commission's general comments offered in the Commission's December 11, 2012 review letter of the above referenced Special Study.

General Comment C.1.

Page 10. On-going upgrades or Expansion of Facilities. This Plan is consistent with the ongoing upgrades to the Mill Lane Pump Station which is also in the planning area.

Response:

Acknowledged

General Comment C.2.

Page 25. Consistency Determination. East Whiteland Township should include consistency information regarding Watersheds, the Chester County comprehensive plan's water resources element.

Response:

The 'Consistency Determination' section of the Special Study has been revised to include this information concerning Watersheds.

General Comment C.3.

Page 27. County Stormwater Management Plan. Dependent upon the timing of this plan's adoption and construction of expanded/upgraded facilities, the Township may want to consider including information from the forthcoming Chester County Act 167 Stormwater Management Plan.

Response:

Acknowledged. A general discussion has been added to the Special Study's text.

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

Terry H. Woodman

Terry H. Woodman
Township Manager

cc: William L. Bohner, Jr., P.E. - ARRO

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

February 6, 2013

Margaret C. Rivello
County Health Director
Chester County Health Department
Government Services Center
Suite 290
601 Westtown Road
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special Study for Health Department Review.
ARRO# 10310.02

Dear Ms. Rivello:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the north central portion of the Township as well the south-central portion of Charlestown Township.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. Thank you for your assistance with the review of this Plan. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: Terry Woodman, Township Manager – East Whiteland Township
William Steele, Director of Public Works – East Whiteland Township
Brady Flaharty, P.E. – ARRO
Kevin McAghon, P.E. – ARRO

THE COUNTY OF CHESTER

COMMISSIONERS
Ryan A. Costello
Kathi Cozzone
Terence Farrell

MARGARET C. RIVELLO, M.B.A.
County Health Director

CHESTER COUNTY HEALTH DEPARTMENT
Chester County Government Services Center
601 Westtown Road, Suite 290
West Chester, PA 19380-0990
610-344-6225 FAX: 610-344-6727
www.chesco.org/health

RECEIVED
MAR 20 2013
ARRO

March 18, 2013

Board of Supervisors
East Whiteland Township
209 Conestoga Rd.
Frazer, PA 19355-1699

RE: East Whiteland Township
Act 537 Plan – Special Study

Dear Supervisors:

The Chester County Health Department received a draft copy of the Act 537 Plan – Special Study, dated October, 2012, on February 6, 2013. The Plan was prepared by Arro Engineering and Environmental Consultants. This Plan was reviewed in accordance with the requirements of Title 25, Environmental Protection, Chapter 71, Administration of Sewage Facilities Planning Program, § 71.31.(b). This draft Plan proposes the upgrading of sewage facilities collection system components and pumping stations. We offer the following comments:

The stated purpose of the plan is to provide upgrades to existing collection mains in order to provide additional capacity to accommodate fill-in development in the area of the municipality that is already serviced by public sewerage facilities. Based on the existing and future development projections provided for the study area these upgrades appear to be appropriate and will serve the needs of the municipality for potentially the next 25 years, depending on the rate of future development.

Replacing the gravity interceptor line upstream from the Mill Lane Pumping Station will also correct the currently leaking 12" line. We agree that this will be environmentally beneficial and potentially protect water supplies.

The phasing approach as proposed makes very good sense, especially since any of the Phase II or Phase 3 components can be put off if development does not take place at the rate anticipated.

It is the opinion of the Chester County Health Department that this draft Act 537 Plan – Special Study appropriately addresses the future needs of the study area and may be approved once it has been reviewed by all of the agencies with jurisdiction in the area.

Additionally, once this plan has been reviewed and approved by PA DEP, please submit to us a copy of that approved version of the plan. It can be submitted in electronic format.

Thank you for the opportunity to review and comment on this draft Act 537 Plan – Special Study.

Sincerely,

Ralph E. DeFazio
Environmental Health Supervisor
Chester County Health Department

CC: PA DEP
William Bohner, Jr., P.E.
CCPC
file

APPENDIX M

Proof of Publication

Proof of Publication of Notice in the Daily Local News

Under Newspaper Advertising Act No. 587, Approved May 16, 1929

State of Pennsylvania
County of Chester {ss: {No. Term, 2013

Patricia Sigda, Legal Representative of the Daily Local News Company, a corporation, of the County and State aforesaid, being duly affirmed, deposes and says that the Daily Local News, a newspaper of general circulation, published at 250 N. Bradford, Ave., West Chester, PA, County and State aforesaid, was established November 19, 1872, and Incorporated December 11, 1911, since which date the Daily Local News has been regularly issued in said county, and that the printed notice or publication attached hereto is exactly the same as in the regular editions and issues of the said Daily Local News on the following dates viz:

PUBLIC NOTICE

March 12 A.D. 2013

s that he/she is the proper person duly authorized by the Daily Local News Company, a
s of said Daily Local News, a newspaper of general circulation, to verify the foregoing
n, and that affiant is not interested in the subject matter of the aforesaid notice or
at all allegations in the foregoing statements as to time, place and character of publication

An Act 537 Plan Special Study has been prepared for East Whiteland Township, Chester County, Pennsylvania. The Special Study addresses the planning requirements necessary to provide for public sanitary conveyance improvements to existing portions of the Township's system. These improvements would provide the capacity for planned development in the north-central portion of East Whiteland Township and the south-central portion of Charlestown Township.

Wastewater from the planning area identified in this document would be conveyed via upgraded wastewater conveyance system infrastructure located along Sidley Road to the Mill Lane Pump Station located at the southern end of the planning area along Conestoga Road in East Whiteland Township. The Mill Lane pump station discharges through a force main and gravity sewer through East Whiteland Township and Tredyffrin Township to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives in three primary phases.

For Phase I, it is proposed that the existing 12" gravity interceptor on Mill Lane, from the intersection of Sidley Road and Lapp Road to a point just upstream from the Mill Lane Pump Station, be replaced with 1820 +/- feet of new 18" pipe. The improved sewer line will provide capacity for the existing and projected future flows. An additional benefit is that the Phase I improvements will eliminate the leak in the existing gravity sewer under Route 202. PA DEP has already approved Phase I for construction due to the environmental concerns.

For Phase II, the intent is to make sanitary sewer improvements from the end of Phase I in Sidley Road north to the intersection Sidley Road and Lee Boulevard. Construction of the Phase II improvements will include the upgrading of the gravity sewer main which will eliminate capacity issues related to the undersized pipe in Sidley Road.

CE OR PUBLICATION

For Phase III, the intent is to upgrade the Lee Boulevard Pump Station through the replacement of the existing pumps with new pumps to meet the 5 to 10 year needs. In addition, replacement of the existing constant speed controls with variable frequency drive controls is planned.

The engineer's opinions of probable construction cost for these alternatives and the respective phases are:

Phase I: $723,000
Phase II: $1,279,000
Phase III: $111,000

These alternatives will be paid for and financed through bond funding mechanisms and the sharing of costs between the municipalities via the current intermunicipal agreement structure. Costs shall be recouped through established tapping fee and user rate structures.

In accordance with Chapter 71.3(c) of the Pennsylvania Code, the Township is providing a 30-day public comment period. The plan is available, for review, at the Township's offices, 209 Conestoga Road, Frazer, PA 19355 from 9:00 AM to 3:30 PM, Monday through Friday. Comments may be addressed to Ms. Terry Woodman, Township Manager, and are due no later than thirty (30) days from the date of this advertisement.

Patricia Sigda

affirmed to and subscribed before me this 12

day of March 2013

Notary Public
STATE OF PENNSYLVANIA
Notarial Seal
Beverly A. Wolfe, Notary Public
East Bradford Twp., Chester County
My Commission Expires June 4th, 2013
Member, Pennsylvania Association of Notaries

My Commission Expires:

William L. Bohner, Jr., P.E.

ARRO Consulting, Inc.

649 N. Lewis Road, Suite 100

Limerick, PA 19468

To DAILY LOCAL NEWS COMPANY, Dr.
For publishing the notice or publication attached

hereto on the above stated dates .....$

Probating same .....$

Total .....$

Publisher's Receipt for Advertising Costs

s Company, a corporation, publishers of the Daily Local News, a newspaper of general
wledges receipt of the aforesaid notice and publication costs and certifies that the same has been duly paid.
Corporation, Publishers of the DAILY LOCAL NEWS, a newspaper of General Circulation.

APPENDIX N

Public Comments and Responses

BUCHART HORN, INC.
Strengthening Communities

MEMORANDUM

Date: March 26, 2013
To: Martin Goldberg
From: Larry Lutter

Subject: East Whiteland Township/Charlestown Township (Southside)
Act 537 Special Study Dated February 2013

On behalf of the VFSA, I have reviewed the referenced study advertised by EWT for public comment and offer the following:

1. Executive Summary:

   a. Is the construction cost estimate for Phase 2 provided in the Study updated based on depth to rock information recently obtained?
   b. The East Whiteland Township (EWT) and the Valley Forge Sewer Authority (VFSA) cost sharing of each phase of the project is not listed or mentioned as to where that information is found in the document. What are the municipalities' shares of costs for Phase I, II, and III considering the updated 3/13/13 flow projections from Charlestown Township (CT) of 432,302 gpd?
   c. We assume VFSA does not have any cost share in the pending Phase IV. Is this correct?
   d. The future sewer service being discussed in this Special Study is directly related to the sewer service being provided by the Mill Lane Pump Station project. The same municipal entities are involved with the need for capacity and cost sharing. To assist the involved municipalities and the PADEP review and understanding of the complete picture, there should be some discussion in this Study related to the Mill Lane Pump Station project. Discussion of how it addresses the need for capacity, its current status, its time table and its cost and cost sharing would be very helpful. Including the Mill Lane Pump Station Special Study as an appendix to this Study would also help support any discussion added to this Study related to that project.
   e. Are there any other future projects associated with CT's Southside flow that are not discussed in this Special Study or in the Mill Lane Pump Station Basis of Design Report? If there are any other projects, what are they and what is the timing and estimated cost and cost sharing of these projects?

2. III. Existing Facilities in the Planning Area

   a. Paragraph 3.A.3: This section of the Study does not mention or describe problems with the existing sewer segment installed on the Aegon property. The BH dynamic model indicated sufficient capacity in this section of sewer for the future CT and EWT flows. Recent flow

metering results indicate possible excessive infiltration. This section of the report should include a discussion on the condition of the sewer through Aegon to support the selective alternative of routing most of the flow around this section of sewer.

b. Regarding the flow metering results from January 14, 2013 to February 28, 2013:
   1) What is the estimated average daily flow from the office building connected to the sewer system between manholes 67-12 and 67-2?
   2) What does the flow metering results show the typical diurnal flow curve to be? Is there a significant reduction in flow during the nighttime hours and for how long?
   3) What is the inflow estimate for rain events during the flow metering period?

3. IV. Future Growth and Land Development

   a. Tables 2, 3, and 4 along with the summaries for pump station and interceptors should be updated using the CT flow projections dated 3/13/13.

4. V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

   a. Paragraph 5: The list of areas of concern should include a discussion on the condition of the existing sewer through the Aegon property.
   b. What if any planned improvements are being considered for the sewer though the Aegon property and what is the estimated cost and timing for the work? If any work is planned is should be described in this Study.

5. IV. Evaluation of Alternatives

   a. Paragraph A.2: This paragraph notes a "portion of Charlestown Township's projected flows (by specific reference) are included" in the Mill Lane Pump Station May 2011 Basis of Design report. The discussion goes on to state "other EDUs" are to be shared by EWT and CT. Does the Mill Lane Pump Station design include provisions for all of CT's future flow projection of 432,302 gpd?
   b. Paragraph E: Analysis of Available Funding Methods does not mention funding that would come from other involved municipalities under the terms of the Intermunicipal Agreement such as the VFSA.

6. VII. Institutional Evaluation
   a. Paragraph A.1 does not mention shared funding from the VFSA and as written appears to indicate that EWT will provide all funding.

b. Paragraph C.2 does not indicate the need to further amend the existing Intermunicipal Agreement between EWT and the VFSA. Also, this section does not include any discussion about the need to have VFSA's and CT's approval of the Study. An agreement amendment and other municipal approval are necessary.
c. Paragraph C.5 indicates that no further legal documentation is necessary to implement the selective alternative. Refer to comment to Paragraph C.2 above regarding the need for an agreement amendment.

7. VIII. Selected Wastewater Treatment and Institutional Alternative

a. Paragraph A.4: The Study notes the upgrade of the conveyance system in CT as a Township responsibility when it will be a VFSA responsibility.
b. Paragraph B: The Study notes the discussion for cost sharing is between EWT and CT. The Study should note this cost sharing discussion to be between EWT and the VFSA. The Study should include a cost sharing table for each phase of work. The cost used should be total project cost including engineering, construction and other associated project costs so all parties know the total magnitude of their financial responsibility.

8. Appendix G, Flow Projection Summary Table (Charlestown Township): The table should be updated using the 3/13/13 information provided by the CT.

9. Appendix K, Municipal Comments and Responses: VFSA's comments and the associated responses should be added to this document before it is submitted to PADEP.

10. Appendix O, Adoption Resolution: VFSA's and CT's adoptions of the Study should be added before the Study is submitted to PADEP.

11. Appendix Q, Corrective Action Plan (CAP)/Connection Management Plan (CMP):
    a. CAP Page 1 paragraph 2 Last 2 sentences should read: "Data on Charlestown Southside flows were provided by Charlestown Township. It is noted that VFSA is responsible for the sewer system in Charlestown Township."
    b. CAP 4th Paragraph page 1 under A.I: There should be a clarification that CT's sewage needs were originally provided in the Regional Act 537 Plan December 2008 Municipal Needs Assessment. The information provided in 2011 would have been an update of the original information. The CAP should also mention the recent March 2013 update of the CT flow projections.
    c. CAP Section VI Corrective Actions:

1) The first sentence of paragraph 2 notes the corrective actions are due "largely" to the additional flow from CT. Would not the cause of the corrective actions be a joint responsibility due to the additional flow from CT but also due to additional flow for EWT and the discharge from the Wilburdale Pump Station which causes surcharging in the Sidley Road sewers when discharging simultaneously with Lee Boulevard Pump Station?
2) Please clarify that the VFSA will share in the cost of the selected and approved work and not CT as CT is a member of the VFSA and will not pay separately for the work from Township funds.

d. CAP Section VII Milestones, page 8 Item C notes the cost share to be resolved by March 2013 with CT. The final cost sharing is to be resolved with the VFSA. The final cost share has not yet been provided for review and acceptance by EWT and VFSA.
e. The Exhibits for the CAP/CMP are not included in the copy of the Special Study BH received.

June 7, 2013

Martin Goldberg, P.E.
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Limerick Office
649 Route 113, Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Re: East Whiteland Township/Charlestown Township (Southside)
Act 537 Special Study Dated February 2013;
Response to VFSA Comments
ARRO #10310.02

Dear Mr. Goldberg:

We have reviewed the comments provided by your consultant, Buchart-Horn, as part of the public-comment and review of the above referenced Special Study. On behalf of East Whiteland Township, we offer the following responses to those comments:

Executive Summary:

Comment 1.a.: Is the construction cost estimate for Phase 2 provided in the Study updated based on depth to rock information recently obtained?

Response: The construction cost opinion for Phase 2 has been updated to reflect the 'depth to rock' information recently obtained.

Comment 1.b.: The East Whiteland Township (EWT) and the Valley Forge Sewer Authority (VFSA) cost sharing of each phase of the project is not listed or mentioned as to where that information is found in the document. What are the municipalities' shares of costs for Phase I, II, and III considering the updated 3/13/13 flow projections from Charlestown Township (CT) of 432,302 gpd?

Response: The Executive Summary and Section VI of the Special Study have been adjusted to reflect the cost sharing associated with Phases I, II, and III.

Comment 1.c.: We assume VFSA does not have any cost share in the pending Phase IV. Is this correct?

Response: Yes. That is correct.

Comment 1.d.: The future sewer service being discussed in this Special Study is directly related to the sewer service being provided by the Mill Lane Pump Station project. The same municipal entities are involved with the need for capacity and cost sharing. To assist the involved municipalities and the PADEP review and understanding of the complete picture, there should be some discussion in this Study related to the Mill Lane Pump Station project. Discussion of how it addresses the need for capacity, its current status, its time table and its cost and cost sharing would be very helpful. Including the Mill Lane Pump Station Special Study as an appendix to this Study would also help support any discussion added to this Study related to that project.

Response: A discussion has been added to the Plan text relative to the Mill Lane Pump Station and the capacity of the station. The station is currently under construction with the potential to be

operational by late 2013 or early 2014. Construction costs for the station (based on the low bid for the project) total nearly $2,950,000. Engineering costs total nearly 478,320. Cost sharing for this project will be further established and discussed as the intermunicipal agreement amendment is finalized.

Comment 1.e.: Are there any other future projects associated with CT's Southside flow that are not discussed in this Special Study or in the Mill Lane Pump Station Basis of Design Report? If there are any other projects, what are they and what is the timing and estimated cost and cost sharing of these projects?

Response: A portion of the interceptor/trunk sewer downstream from the Mill Lane PS force main discharge and the 14" Mill Lane PS force main will require future upgrades. Upgrades to these portions of the infrastructure will require future planning in that they are dependent not only on impacts/needs from the special study area but impacts/needs associated with other portions of the Township outside of the immediate Special Study planning area.

Existing Facilities in the Planning Area

Comment 2.a.: Paragraph 3.A.3: This section of the Study does not mention or describe problems with the existing sewer segment installed on the Aegon property. The BH dynamic model indicated sufficient capacity in this section of sewer for the future CT and EWT flows. Recent flow metering results indicate possible excessive infiltration. This section of the report should include a discussion on the condition of the sewer through Aegon to support the selective alternative of routing most of the flow around this section of sewer.

Response: A discussion has been added to the text that provides further information concerning problems with the existing sewer segments on the Aegon property.

Comment 2.b.: Regarding the flow metering results from January 14, 2013 to February 28, 2013:

1) What is the estimated average daily flow from the office building connected to the sewer system between manholes 67-12 and 67-2?

Response: The estimated average daily flow from this office building is based on EDUs and is calculated to be 5,225 gpd.

Comment 2.b.:

2) What does the flow metering results show the typical diurnal flow curve to be? Is there a significant reduction in flow during the nighttime hours and for how long?

Response: The flow metering results show a flow pattern per the attached graph. Flow does decrease at night, but not by a significant amount.

Comment 2.b.:

3) What is the inflow estimate for rain events during the flow metering period?

Response: The inflow/infiltration estimate is 50,080 gpd (average daily estimate).

Future Growth and Land Development

Comment 3.a.: Tables 2, 3, and 4 along with the summaries for pump station and interceptors should be updated using the CT flow projections dated 3/13/13.

Response: These tables have been updated accordingly.

Alternatives to Provide New or Improved Wastewater Disposal Facilities

Comment 4.a.: Paragraph 5: The list of areas of concern should include a discussion on the condition of the existing sewer through the Aegon property.

Response: This discussion has been included.

Comment 4.b.: What if any planned improvements are being considered for the sewer though the Aegon property and what is the estimated cost and timing for the work? If any work is planned is should be described in this Study.

Response: This description has been added to the Study. The estimated costs and timing for this work is an unknown at this time. The extent of improvements will be more fully known after the sanitary sewer line is televised. The televising of the sewer main has been made a part of the Special Study's implementation schedule and will need to occur after the completion of Phase II.

Evaluation of Alternatives

Comment 5.a.: Paragraph A.2: This paragraph notes a "portion of Charlestown Township's projected flows (by specific reference) are included" in the Mill Lane Pump Station May 2011 Basis of Design report. The discussion goes on to state "other EDUs" are to be shared by EWT and CT. Does the Mill Lane Pump Station design include provisions for all of CT's future flow projection of 432,302 gpd?

Response: This paragraph has been revised to more fully explain the capacity of the Mill Lane Pump Station based on the proposed pump and piping modifications.

Comment 5.b.: Paragraph E: Analysis of Available Funding Methods does not mention funding that would come from other involved municipalities under the terms of the Intermunicipal Agreement such as the VFSA.

Response: Paragraph E. has been revised to reflect funding that would come from other involved municipal entities.

Institutional Evaluation

Comment 6.a.: Paragraph A.1 does not mention shared funding from the VFSA and as written appears to indicate that EWT will provide all funding.

Response: This paragraph has been modified to reflect shared funding among all parties.

Comment 6.b.: Paragraph C.2 does not indicate the need to further amend the existing Intermunicipal Agreement between EWT and the VFSA. Also, this section does not include any discussion about the need to have VFSA's and CT's approval of the Study. An agreement amendment and other municipal approval are necessary.

Response: Paragraph C.2. has been modified to include a discussion regarding an amendment to the existing Intermunicipal Agreement between EWT and VFSA.

Comment 6.c.: Paragraph C.5 indicates that no further legal documentation is necessary to implement the selective alternative. Refer to comment to Paragraph C.2 above regarding the need for an agreement amendment.

Response: Paragraph C.5. has been modified to indicate that an amendment to the respective intermunicipal agreement is in process.

Selected Wastewater Treatment and Institutional Alternative

Comment 7.a.: Paragraph A.4: The Study notes the upgrade of the conveyance system in CT as a Township responsibility when it will be a VFSA responsibility.

Response: Paragraph A.4. has been revised to reflect that upgrades to the Charlestown Township conveyance system will be the responsibility of VFSA.

Comment 7.b.: Paragraph B: The Study notes the discussion for cost sharing is between EWT and CT. The Study should note this cost sharing discussion to be between EWT and the VFSA. The Study should include a cost sharing table for each phase of work. The cost used should be total project cost including engineering, construction and other associated project costs so all parties know the total magnitude of their financial responsibility.

Response: The text of the Plan has been revised to note cost sharing is between East Whiteland Township and the VFSA. A cost sharing table has been provided.

Comment 8.: Appendix G, Flow Projection Summary Table (Charlestown Township): The table should be updated using the 3/13/13 information provided by the CT.

Response: The table in Appendix G has been updated accordingly.

Comment 9.: Appendix K, Municipal Comments and Responses: VFSA's comments and the associated responses should be added to this document before it is submitted to PADEP.

Response: VFSA's comments and these responses have been added to Appendix K accordingly.

Comment 10.: Appendix O, Adoption Resolution: VFSA's and CT's adoptions of the Study should be added before the Study is submitted to PADEP.

Response: Discussion with PA DEP indicated that the Plan is a municipal document that requires municipal resolutions only. As a result, a resolution of adoption from East Whiteland Township is included in Appendix O. Resolution of adoption from Charlestown is not necessary given the verification of their support of the projected flows per the formal letter from their Board of Supervisors found in Appendix K. As a follow up to this, given that a formal amendment to the Intermunicipal Agreement is being prepared (draft found in Appendix R), VFSA and East Whiteland will provide formal agreement upon signing of this amended document. As a requirement of this Special Study, the finalizing of the intermunicipal agreement amendment is included in the implementation schedule found in the Executive Summary.

It should be noted that the formal cost sharing structure will be finalized as an exhibit to this amended agreement. The cost sharing structure and project costs reflected in the plan are planning level amounts.

Comment 11: Appendix Q, Corrective Action Plan (CAP)/Connection Management Plan (CMP):

a. **Comment:** CAP Page 1 paragraph 2 Last 2 sentences should read: "Data on Charlestown Southside flows were provided by Charlestown Township. It is noted that VFSA is responsible for the sewer system in Charlestown Township."

Response: PA DEP has approved the CAP in its current form. DEP is requiring semi-annual updates to this document. Adjustments will be made at this time.

b. **Comment**: CAP 4th Paragraph page 1 under A.I: There should be a clarification that CT's sewage needs were originally provided in the Regional Act 537 Plan December 2008 Municipal Needs Assessment. The information provided in 2011 would have been an update of the original information. The CAP should also mention the recent March 2013 update of the CT flow projections.

Response: PA DEP has approved the CAP in its current form. DEP is requiring semi-annual updates to this document. Adjustments will be made at this time.

c. **Comment:** CAP Section VI Corrective Actions:

1) The first sentence of paragraph 2 notes the corrective actions are due "largely" to the additional flow from CT. Would not the cause of the corrective actions be a joint responsibility due to the additional flow from CT but also due to additional flow for EWT and the discharge from the Wilburdale Pump Station which causes surcharging in the Sidley Road sewers when discharging simultaneously with Lee Boulevard Pump Station?

2) Please clarify that the VFSA will share in the cost of the selected and approved work and not CT as CT is a member of the VFSA and will not pay separately for the work from Township funds.

Response: PA DEP has approved the CAP in its current form. DEP is requiring semi-annual updates to this document. Adjustments will be made at this time.

d. **Comment:** CAP Section VII Milestones, page 8 Item C notes the cost share to be resolved by March 2013 with CT. The final cost sharing is to be resolved with the VFSA. The final cost share has not yet been provided for review and acceptance by EWT and VFSA.

Response: PA DEP has approved the CAP in its current form. DEP is requiring semi-annual updates to this document. Adjustments will be made at this time.

e. **Comment:** The Exhibits for the CAP/CMP are not included in the copy of the Special Study BH received.

Response: It was not the intent to provide those as part of the Special Study submission. They were provided to PA DEP with their submission for review. These documents have been approved as part of the CAP/CMP.

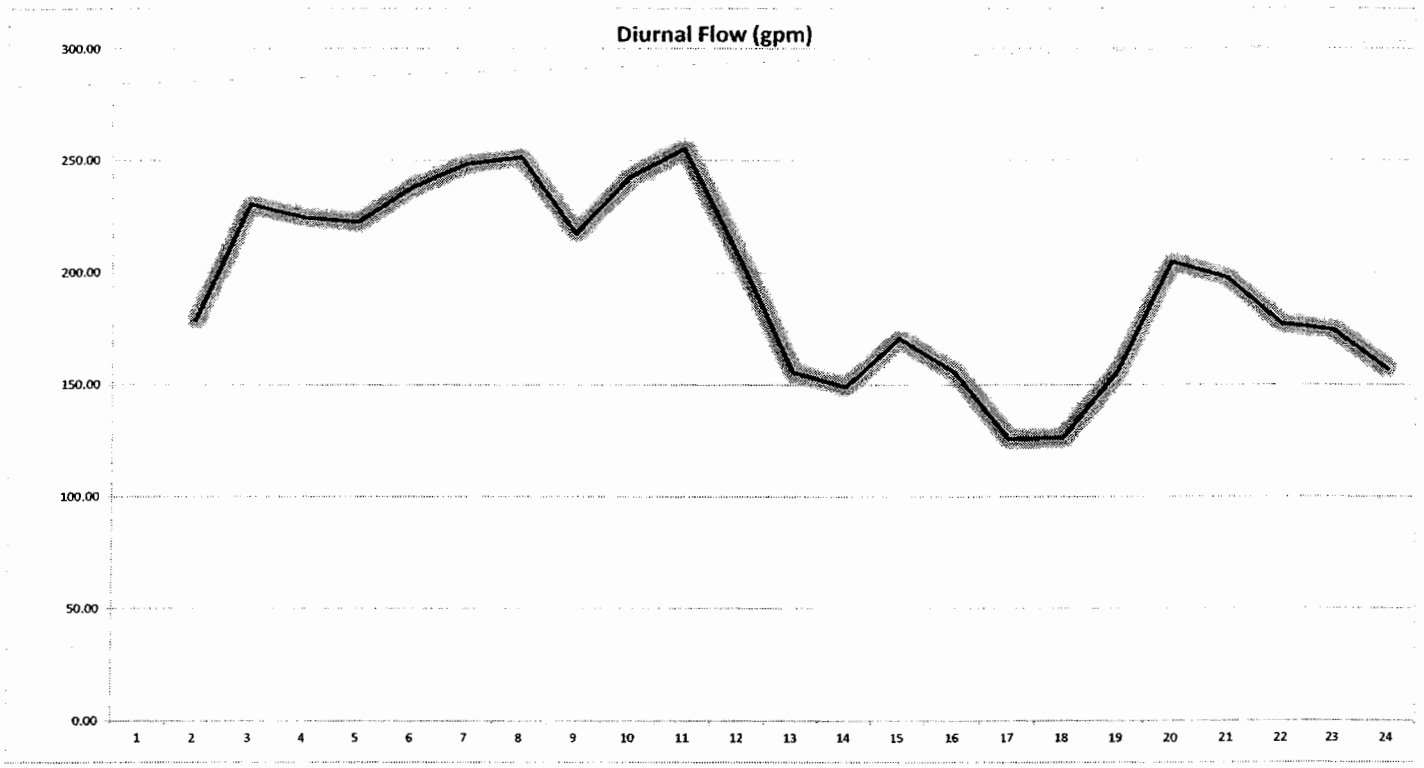
Thank you for your attention to this Special Study and for providing your comments. As discussed above, these comments and responses will become a part of the Special Study (Appendix K) for PA DEP's review and consideration.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

c: Terry Woodman, Township Manager – East Whiteland Township
Kevin McAghon, P.E. – ARRO


Diurnal Flow (gpm)
300.00
250.00
200.00
150.00
100.00
50.00
0.00
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APPENDIX O

Adopted Resolution

EAST WHITELAND TOWNSHIP

RESOLUTION NO. 11-2013

RESOLUTION FOR PLAN REVISION

WHEREAS, A RESOLUTION OF THE BOARD OF SUPERVISORS OF EAST WHITELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537 known as the "Pennsylvania Sewage Facilities Act", as Amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection (PADEP) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the Township to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said Plan whenever it is necessary to meet the sewage disposal needs of the Township's service area.

NOW, THEREFORE, BE IT RESOLVED, that East Whiteland Township Board of Supervisors hereby adopts and submits to the Pennsylvania Department of Environmental Protection for its approval, as a revision to the "Official Plan" of the Township, this Act 537 Special Study.

East Whiteland Township hereby approves and adopts the Act 537 Special Study which establishes the planning requirements necessary to provide public sanitary sewer infrastructure improvements located in the north central part of the Township resulting from wastewater needs within the Township as well as wastewater needs originating in south central Charlestown Township. Selected alternatives for infrastructure improvements include upgrades to the gravity sewer system in Sidley Road and improvements to the Lee Boulevard Pump Station. The Township is committed to implementing the recommendations of this Special Study in accordance with the Study's implementation schedule.

The Township finds that the Act 537 Special Study described above conforms to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

ADOPTED this 12th day of June, 2013.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

Virginia McMichael, Chairman

John A. Mott

William Holmes

Attest:

Township Secretary

APPENDIX P

Approved Plan of Study and Task Activity Report

June 11, 2012

Ms. Terry H. Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 - Plan of Study
Sidley Road Trunk Sewer Special Study
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed plan of study (POS), as prepared by Mr. William L. Bohner, Jr., P.E., of ARRO Engineering and Environmental Consultants dated May 15, 2012, and a proposed Task Activity Report (TAR) dated May 2, 2012.

The proposed Special Study will provide planning for the upgrades to the East Whiteland Township (Township) wastewater conveyance system at and near Lee Boulevard and Sidley Road in order to accommodate flows coming from the service area of the Sidley Road Trunk Sewer. The service area includes flows from an existing development, a new development, new and existing sanitary connections from neighboring Charlestown Township, and from communities or subdivisions currently using on-site sewage disposal systems or privately-owned treatment facilities.

An analysis of the hydraulic capacity of the Township's recently upgraded Mill Lane Pump Station must be included in the Special Study to ensure that the pump station can accommodate the flows from the upgraded upstream conveyance system that will include the existing and projected flows from Charlestown Township.

Approval of this proposed POS is hereby granted. The estimated cost of the plan is $18,900. Please be advised, the approval of this scope of work is not a guarantee of eligibility of planning costs for reimbursement by the Commonwealth pursuant to Section 6(a) of Act 537 and 25 Pa. Code Chapter 71 of the Department of Environmental Protection's (Department) regulations.

This POS approval does not constitute a final action by the Department. When a completed plan is submitted to us, we will act upon it consistent with Pa. Code Title 25, Chapter 71.

The completed Special Study is scheduled to be submitted to the Department in November 2012.

Please consider the following comments as your municipality prepares its Act 537 Official Plan Update:

> Your municipality's Act 537 Official Plan Update is to be formatted as suggested in "A Guide for Preparing Act 537 Update Revisions," including the necessary items listed in the "Act 537 Plan Content and Environmental Assessment Checklist." All necessary items must be included, and a copy of the completed checklist must be included with your Act 537 Plan. This form is available on our website at:
>
> http://www.dep.state.pa.us/dep/deputate/watermgt/wqp/Forms/Act537/Forms_537Plan.htm

Also, please be advised that the Department will not pay grants under the act for planning costs incurred prior to the date of this POS approval or for information that has been completed previously under local, state, or federal funding programs. In addition, approval of this POS/TAR does not guarantee that all tasks listed will be eligible for reimbursement.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2) until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by the Department.

This plan may affect municipalities other than East Whiteland Township. We urge you to coordinate with these municipalities early in the planning process in order to facilitate the review of your plan.

If you have any questions, please contact me at 484.250.5184.

Sincerely,

Kelly Boettlin
Sewage Planning Specialist 2
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Mr. Bohner - ARRO Engineering and Environmental Consultants
Ms. Csete - Charlestown Township
Ms. Vollero - RCSOB, 11th Floor, Sewage Facilities Planning Section
Re 30 (joh12clw)163-2

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

May 15, 2012

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Certified Mail #7008 0150 0000 7716 8899
Return Receipt Requested

Ms. Elizabeth Mahoney
Water Management Program
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

RE: East Whiteland Township; Chester County;
Act 537 Special Study – Plan of Study and Task Activity Report
ARRO #10310.02 ✓

Dear Ms. Mahoney:

On behalf of East Whiteland Township (Township), ARRO has prepared a Plan of Study (POS) and Task Activity Report (TAR) for the preparation of an Act 537 Sewage Facilities Plan (Special Study). This Special Study is to address the planning requirements necessary to address planned upgrades for the East Whiteland Township wastewater conveyance system at and near Lee Boulevard and Sidley Road.

Please give your consideration for approval of this POS and TAR. If you have any questions about these documents, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Enclosure

c: Terry Woodman, Township Manager – East Whiteland Township (w/enclosure)
Brady L. Flaharty, P.E. – ARRO (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

EAST WHITELAND TOWNSHIP
SIDLEY ROAD TRUNK SEWER ACT 537 SPECIAL STUDY

In accordance with Title 25, Chapter 71, Administration of the Sewage Facilities Planning Program, of the Pennsylvania Code, a Plan of Study has been developed, for the preparation of a revision to the East Whiteland Township (Township) Act 537 Sewage Facilities Plan (Plan). This is being prepared to establish the planning elements that are necessary to meet the requirements of the Pennsylvania Department of Environmental Protection (PADEP) as they relate to the preparation of an Act 537 Plan Special Study (Special Study). This Special Study is to address the planning requirements necessary to address planned upgrades for the East Whiteland Township wastewater conveyance system at and near Lee Boulevard. This portion of the Township, as delineated on the location plan, will be the planning area for this Special Study. The Special Study shall become an amendment to the current Township-wide Act 537 Plan. Based on the PADEP Act 537 Plan Content and Environmental Assessment Checklist, the following addresses the planning requirements necessary to complete the study:

Executive Summary

1. Prepare a table of contents for the document.

2. Prepare a plan summary (Executive Summary).

   A. Identify the planning area to be served by the future collection and conveyance system.

   B. Identify the alternative chosen alternative.

   C. Include the cost opinion for implementing the proposed alternative.

   D. Identify the municipal commitments necessary to implement the plan.

   E. Provide a schedule for implementing the proposed project.

3. Include original signed and sealed Resolutions of Adoption.

4. Include comments provided by the Township Planning Commission, Chester County Planning Commission, and Chester County Health Department.

5. Include Proof of Public Notice.

6. Include a copy of all written comments received and written responses to each comment.

7. Prepare a project implementation schedule.

8. If any planning inconsistencies are identified, documentation will be provided discussing the resolution of the inconsistencies. If none are identified, a statement will be made to that effect.

General Plan

I. Previous Wastewater Planning

A. Identify and discuss existing wastewater planning.

1. Discuss previous Act 537 planning.

2. Discuss planning that has not been done in accordance with an approved implementation schedule.

3. Discuss additional planning, if any, that is anticipated or planned by East Whiteland Township.

4. Discuss planning that has been done via official plan revision such as planning modules or addenda.

B. Identification of Municipal and County planning documents.

1. Identify land use plans and zoning maps as they pertain to East Whiteland Township.

2. Identify the zoning regulations.

II. Physical and Demographic Analysis

A. Identify the planning area, municipal boundaries and service area boundaries utilizing existing mapping.

B. Identify physical characteristics of the planning area. Existing mapping will form the basis for this identification supplemented by USGS and National Wetlands Inventory maps, as required.

C. Discussion of soils characteristics is not applicable to this Special Study. .

D. Discussion of geological features in the service area is not applicable to this Special Study.

E. Discuss topographic features in the service area.

F. Identification of potable water supply is not applicable to this Special Study.

G. Identify wetlands in the area utilizing National Wetlands Inventory Mapping and existing Act 537 mapping.

III. Existing Sewage Facilities in the Planning Area

A. Identify and describe municipal sewerage systems in the planning area.

1. Discuss location, size and ownership of existing collection and conveyance facilities. A map will be provided to show the location of the collection and conveyance facilities within East Whiteland Township that could potentially serve the planning area.

2. Providing a narrative and schematic diagram of the basic treatment process is not applicable to this Special Study.

3. Providing a description of the problems, if any, with the existing treatment plant is not applicable to this Special Study. However, a description of problems, if any, associated with the existing conveyance system will be discussed.

4. Providing details, if any, relative to ongoing upgrading or expansion of the treatment facilities is not applicable to this Special Study. However, a description of ongoing upgrades or expansion, if any, of the conveyance system will be discussed.

5. Provide a description of operation and maintenance requirements and the status of past and present compliance with these requirements.

B. 1,2,3,4. Since this Special Study is to address public sewers upgrades to the planning area, identification of individual on-lot disposal will not be addressed.

C. 1,2,3. Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. Future Growth and Development

A. Describe future growth and development through mapping, text and analysis for the planning area as defined by this Special Study. Note: No planning will be done for Charlestown Township (CT) to establish projected flows. Documentation will be provided in the Appendix of the Special Study that will verify the flow needs for CT.

1. Discuss areas with existing development or plotted subdivisions.

2. Discuss land use designations including residential, commercial and industrial areas.

3. Discuss future growth areas, population and EDU projections for these areas.

4. Briefly discuss zoning and subdivision regulations as they pertain to planned development.

5. Discuss the sewage planning required to provide adequate wastewater conveyance for planned development.

V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Identify the alternative to provide for improved sewage facilities

1. Identification of regional wastewater treatment concepts as an alternative shall make mention that wastewater is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

2. The potential for extension of existing municipal sewage facilities to areas in need. This will examine the extension of conveyance facilities to accommodate planned future development, if any.

3. A discussion addressing the potential for continued use of existing on-site or on-lot systems is not applicable to this Special Study.

4. Analysis of a new community sewage system is not applicable to this Special Study.

5. Analysis of alternatives as they relate to repair, replacement, and upgrade of existing conveyance system components will be discussed.

6. Discussion as it relates to the use of alternate methods of collection/conveyance to serve needs areas is not applicable to this Special Study.

B. The use of individual sewage disposal systems is not applicable to this Special Study.

C. Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Analysis based on the use of community land disposal is not applicable to this Special Study.

E. Addressing the use of retaining tank alternatives is not applicable to this Special Study.

F. A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study and is not considered applicable to this Special Study.

G. Non-structural comprehensive planning alternatives are not applicable to this Special Study.

H. Provide a no-action alternative which includes impacts on:

1. Water Quality and Public Health.

2. Growth Potential.

3. Community and economic conditions.

4. Recreational opportunities.

5. Drinking water sources.

6. Other environmental concerns.

VI. The Evaluation of Alternatives

A. Evaluate the alternatives, identified in Section V, for consistency with respect to the following:

1. Plans developed under the Clean Streams Law.

2. Plans developed under the Municipal Wasteload Management Plan (Chapter 94).

3. Plans developed under Title II of the Clean Water Act.

4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code.

5. Anti-degradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 and the Clean Water Act.

6. State water plans developed under the Water Resources Planning Act.

7. Pennsylvania Prime Agricultural Land Policy.

8. The County Stormwater Management Plan.

9. Wetlands Protection.

10. Protection of rare, endangered or threatened plant and animal species as identified by the PNDI.

11. Historical and Archeological Resource Protection (PHMC).

B. Provide for the resolution of any inconsistencies with items 1 through 11 above, if necessary.

C. Evaluate the alternatives with respect to applicable water quality standards and effluent limitations.

D. Provide cost opinions for construction, financing and engineering fees for the alternatives identified in Section V.

E. Provide an analysis of funding methods available to finance the proposed alternatives including financial contributions from private entities.

F. Analyze the need for immediate or phased implementation.

G. Analyze the ability of the Township to implement the alternative.

VII. Institutional Evaluation

A. Provide a brief discussion of the Township, their past actions and present performance including:

1. Financial and debt status

2. Available staff and administrative resources

3. Provide an analysis of the Township's legal authority to implement wastewater planning recommendations, implement system-wide operation and maintenance activities, set user fees, take purchasing actions, take actions against ordinance violators, negotiate agreements with other parties and raise capital for construction, operation and maintenance of facilities.

B. Describe the various institutional alternatives necessary to implement the technical alternatives, including:

1. There is no need for a new Authority. No analysis will be completed for this.

2. Function of the Township.

2. Cost of administration, implementability, and capability of the Township to provide for future needs.

C. Describe necessary administrative and legal activities, if any, to be completed and adopted to ensure the implementation of the alternatives, including:

1. Legal authorities of incorporation.

2. Required ordinances, standards, regulations and inter-municipal agreements.

3. Provisions of rights-of-way, easements, and land transfers.

4. Other sewage facilities plan adoptions.

5. Legal documents, if any.

6. Dates or timeframes of 1-5 above on the implementation schedule.

VIII. Selected Wastewater Treatment and Institutional Alternative

A. Identify the alternative that is the most feasible from a technical, financial, and institutional standpoint. Justify the choice based on:

1. Existing wastewater disposal needs.

2. Future wastewater disposal needs.

3. Operations and maintenance considerations.

4. Cost effectiveness.

5. Availability management and administrative systems.

6. Available finance methods.

7. Environmental soundness.

B. Describe the capital financing plan chosen to implement the selected alternative.

Municipality East Whiteland Township Date of Report May-12

Date completed Plan will be submitted to DEP Estimated Cost of Plan $18,900

Task Activity	Project Manager						Expenses		Subtotal $
	Hr/Rate	$144.00	Hr/Ra	$0.00	Hr/Rate	$0.00		$	
Plan Section and/or Task	Hrs.	Cost ($)	Hrs.	t ($)	Hrs.	Cost ($)			
Plan of Study;TAR	2	$288		$0		$0		$14	$1,150
Section I (Prev. Planning)	0	$0		$0		$0		$0	$300
Section II (Phys. Demographic Analysis)	0	$0		$0		$0		$0	$300
Plan Section III (Existing Facilities)	0	$0		$0		$0		$50	$2,114
Plan Section IV (Future Growth)	0	$0		$0		$0		$0	$1,200
Plan Section V (Conveyance Alternatives)	0	$0		$0		$0		$50	$3,442
Plan Section VI (Alternative Evaluation)	2	$288		$0		$0		$0	$3,216
Plan Section VII (Institutional Evaluation)	0	$0		$0		$0		$0	$352
Plan Section VIII (Selection of Alternative)	0	$0		$0		$0		$0	$352
Executive Summary	2	$288		$0		$0		$0	$588
Submit Document to Township for Review	0	$0		$0		$0		$100	$204
Incorporate Township Comments; Respond	0	$0		$0		$0		$10	$754
Submit Document to County for Review	0	$0		$0		$0		$100	$204
Incorporate County Comments; Respond	0	$0		$0		$0		$10	$362
Advertise for Public Comment	0	$0		$0		$0		$500	$748
Submit Document for Public Comment	0	$0		$0		$0		$100	$204
Incorporate Public Comments; Respond	0	$0		$0		$0		$20	$620
Draft Resolutions of Adoption	2	$288		$0		$0		$20	$484
Submit Document to PA DEP for Review	0	$0		$0		$0		$300	$508
Revise Per DEP Comments; Respond	2	$288		$0		$0		$10	$1,394
Submit Final to DEP.	0	$0		$0		$0		$300	$404
Totals	10	$1,440		$0	0	$0		$1,584	$18,900

William L. Bohner Jr., P.E.
Name of Person Completing Report

Terry L. Woodman
Terry Woodman - Township Manager

APPENDIX Q

Corrective Action Plan/Connection Management Plan

EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PA

CORRECTIVE ACTION PLAN (CAP)
and
CONNECTION MANAGEMENT PLAN (CMP)

For

MILL LANE and SIDLEY ROAD
GRAVITY SEWER COLLECTION
and
CONVEYANCE SYSTEMS

February 13, 2013
Revised November 14, 2013

Prepared by:

ARRO Consulting, Inc.
649 N. Lewis Road, Suite 100
Limerick, PA 19468

CORRECTIVE ACTION PLAN (CAP)
and
CONNECTION MANAGEMENT PLAN (CMP)
for
MILL LANE and SIDLEY ROAD GRAVITY SEWER COLLECTION and CONVEYANCE SYSTEMS

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I. INTRODUCTION

II. CONNECTION MANAGEMENT

III. CONNECTION MANAGEMENT PLAN

EXHIBITS

Exhibit A ACT 537 Special Study Area
1. East Whitcland Township Plan
2. Charlestown Township Plan
3. East Whiteland Township Sanitary Sewer System Plan
4. DEP approval letter for ACT 537 Special Study

Exhibit B Exhibit B has been eliminated

Exhibit C Existing Overload Documentation
1. Existing System Capacities
2. Existing Features Plan – Sidley Road

Exhibit D Charlestown Township Southside Service Area
1. Projected flows from Southside Service Area
2. System Capacities with Projected Southside Flows and Existing Piping

Exhibit E Corrective Actions
1. Phase 1 - Mill Lane Improvements Plans
2. Phase 2 - Sidley Road Improvements Plans
3. System Capacities with Corrective Actions

Exhibit F Amendment to East Whiteland Trunk Line Agreement
1. December 12, 1979 Agreement
2. October 29, 2013 revised draft Agreement
3. Valley Forge Sewer Authority commitment letter

MILL LANE and SIDLEY ROAD
COLLECTION and CONVEYANCE SYSTEMS

A. CORRECTIVE ACTION PLAN (CAP)

I. INTRODUCTION

East Whitcland Township (Township) currently owns, operates, and maintains the Mill Lane and Sidley Road gravity sewer systems. The gravity sewer systems were originally installed in the early 1960's by a private developer. The gravity lines were originally owned and operated as part of the Great Valley Wastewater Company until the late 1970's at which time the infrastructure of the entire Great Valley Wastewater Company was dedicated to the Township. The Township has owned, operated, and maintained the gravity sewer lines since the late 1970's.

The Mill Lane and Sidley Road gravity sewer systems provide service for not only Township residential and commercial properties, but also adjacent residential and commercial properties in Charlestown Township (Charlestown). The Charlestown properties that drain to the Mill Lane and Sidley Road gravity sewer systems are generally known as Charlestown Southside (Southside). Data on Southside flows was provided by Charlestown Township. It is noted that Valley Forge Sewer Authority (VFSA) is responsible for the sanitary sewer system in Charlestown Township.

The Sidley Road system eventually drains into the Mill Lane system. The Mill Lane system drains into the Mill Lane Pump Station where the effluent is pumped to the Valley Forge Sewer Authority Wastewater Treatment Plant for treatment.

The Charlestown sewage needs were originally provided for in the Regional Act 537 Plan December 2008 Needs Assessment. In late 2011 Charlestown provided the Township with an update of the original sewage needs. The update consisted of a list of Southside properties and projected flows. In order to accommodate the projected Southside flows improvements are needed for the Mill Lane and Sidley Road gravity sewer systems. The Charlestown 2011 update was further updated in March 2013

with a latest revision of November 14, 2013. This report has been prepared based upon the Charlestown March 2013, revised to November 14, 2013 information.

In late 2011, it also became apparent certain structural deficiencies existed in the Mill Lane gravity sewer based upon the observation that sewage was leaking into Valley Creek an Exceptional Value Stream. The structural deficiencies have been eliminated due the construction of the Mill Lane Phase 1 improvements.

At a May 1, 2012 meeting at the Pennsylvania Department of Environmental Protection (DEP) in Norristown, PA, DEP indicated that due to the various sewage facilities planning issues that are raised by the construction of an improved Mill Lane and Sidley Road project, an ACT 537 Special Study should he prepared. The Special Study is to study not only the Mill Lane and Sidley Road drainage area in East Whiteland Township, but also the Southside area that drains to Mill Lane and Sidley Road. ARRO has completed the Special Study which was approved by DEP on September 17, 2013. The Township and Southside areas analyzed as part of the ACT 537 Special Study are included in Exhibit A. A copy of the DEP Special Study approval is also included in Exhibit A.

II. SANITARY SEWER COLLECTION and CONVEYANCE SYSTEM

Excluding the current proposed improvements, the Mill Lane and Sidley Road collection and conveyance system is comprised of 17 manholes and 4,090 linear feet of eight (8), ten (10), and twelve (12) inch gravity sewer. An overview of the Township sanitary sewer system is included as part of Exhibit A. Although the Mill Lane and Sidley Road systems are gravity sewers, three pump stations add flow to the Sidley Road system which in turn adds flow to the Mill Lane system. The Lee Boulevard Pump Station accepts not only Township commercial (9 lots) but also Southside residential/commercial flows and adds this flow to the Sidley Road system at Lee Boulevard. The Flat Road Pump Station accepts Township commercial flow (5 lots) and discharges this flow to the Wilburdale Pump Station. The Wilburdale Pump Station accepts Township commercial flow (16 lots) and adds this flow to the Sidley Road system at Flat Road. There are 185 Township residential homes connected to the Mill Lane and Sidley Road collection systems. The only expected Township residential growth expected to drain to the collection systems is the 23 lots identified as the Glasgow Tract. Additional Township

commercial flow is expected within the Great Valley Corporate Center (GVCC). A total of two-hundred twenty-nine (229) additional EDUs have been identified as being needed to address future growth in the GVCC. Twenty-nine (29) of the EDUs are assigned to 260 Great Valley Parkway for the J & J Sparta site. The remaining two-hundred (200) EDUs are assigned as an overall total to be used where needed in the GVCC based upon the actual future re-development of the sites. The Glasgow tract and the Great Valley Corporate Center (Great Valley Parkway area) are shown on the Township study area plan in Exhibit A. An additional 62 Township residential lots are connected to the Moores Road gravity sewer system which ultimately drains overland to the Mill Lane gravity sewer system.

III. EXISTING STRUCTURAL ISSUES

Prior to the construction of the current improvements, the portion of the Mill Lane system between Valley Creek north to the north side of State Route 202 (SR 0202) was a twelve (12) inch diameter asbestos cement pipe installed in the early 1960's. In late 2011 it was determined based upon physical evidence that sanitary sewage was leaking into a Tributary of Valley Creek just south of Rt 202 through an unknown drainage pipe. The drainage pipe was not indicated on any known design plans. Based upon Township investigation by means of televising the twelve (12) inch sanitary line, it appears that the joints in the existing twelve (12) inch pipe were defective and were the cause of the leakage. The existing structural issue was eliminated by the construction of the Mill Lane Phase 1 improvements which were fully operational as of November 4, 2013.

IV. EXISTING OVERLOAD

ARRO analyzed the Mill Lane and Sidley Road drainage systems for existing and future capacity. The existing capacity analysis indicates that three (3) ten (10) inch diameter segments of the Sidley Road system and one (1) eight (8) inch diameter segment of the Moore Road system are currently over capacity. Specifically, more flow is directed to the segments than the segment can handle hydraulically without exceeding the full flow pipe condition. In addition, a series of manholes (MHs) in Sidley Road that accept the Wilburdale and Lee Boulevard Pump Station flow surcharge during the pump discharge cycle. It is noted that the MH surcharge elevations currently do not exceed the MH rim elevations. Consequently no effluent is discharged from the MHs at street level. No DEP

Sanitary Sewer Overflow (SSO) reports have needed to be filed for the Sidley Road system. A copy of the existing system capacities spreadsheet is included as part of Exhibit C. A copy of the Sidley Road Existing Features Plans which shows the location of the existing overcapacity gravity lines and the MHs that surcharge during times of the Wilburdale and Lee Boulevard pump station discharge is included as part of Exhibit C.

V. PROJECTED OVERLOAD

The service area for Southside is included as part of Exhibit A. It is noted that an area west of Conestoga Road is listed as a Proposed Valley Forge Sewer Service Area. This area is considered a part of Southside and will drain to the Township. However, the flow will not drain through the Mill Lane and Sidley Road systems and therefore these flows are not included in the Mill Lane and Sidley Road calculations. A copy of the projected Southside flows is included as part of Exhibit D.

When the projected Southside flows are added to the existing system, additional pipe segments in the existing system are over capacity. The number of ten (10) inch diameter segments which are over capacity increases from three (3) at existing flow to ten (10) at the projected flows. In addition three (3) twelve (12) inch diameter lines downstream from Moores Road are also over capacity at the projected flows. An analysis of the existing Sidley Road and Mill Lane system with the projected Southside flows is included as part of Exhibit D.

VI. CORRECTIVE ACTIONS

The Township has prepared this Corrective Action Plan (CAP) to demonstrate its commitment towards resolving the hydraulic and conveyance issues in the Mill Lane and Sidley Road gravity sewer collection systems. The CAP consists of replacement construction measures that should effectively eliminate the structural and capacity issues in the identified collection systems.

Corrective actions are required due not only to the inadequacy of the existing system to adequately convey existing East Whiteland and Charlestown flows but also the inadequacy to adequately convey the future flows projected in East Whiteland and Charlestown. Consequently, a dialogue has been

established with VFSA, as representative for Charlestown, to communicate comments and ideas on the proposed design and cost of the overall construction process. It is noted that VFSA will share in the cost of all the work related to the analysis and design of the Mill Lane and Sidley Road systems in proportion to the amount of flow directly attributed to Charlestown. VFSA is representing Charlestown in the financial discussions with the Township.

The Township has started some of the corrective actions already and will continue the following actions and measures to the collection and conveyance systems:

A. Design and Construction of Phase 1 Improvements

Phase 1 - Mill Lane Improvements This phase of the improvements has been set up to include the sanitary sewer improvements from Valley Creek north to Sidley Road approximately 220' north of the intersection of Sidley Road and Lapp Road. Construction of the Phase 1 improvements will eliminate the structural issues related to the pipe leakage into Valley Creek as detailed in Section A.III of this report. Construction of the Phase 1 improvements will also increase the capacity of the system to allow for the increased capacity for the improvements of the Phase 2 - Sidley Road Improvements.

The Phase 1 design plans and specifications have been completed. Permits have been obtained from Penn DOT, PA DEP, and the Chester County Conservation District for the project. The Phase 1 construction bids were received on July 1, 2013 and construction started on September 9, 2013. The new piping system was operational on November 4, 2013. Final punch list type work still needs to be completed for the project. Final completion is expected to be completed by December 26, 2013. A copy of the Mill Lane Sewer Main Replacement Phase 1- Issued for Construction - design plans showing the plan and profile of the proposed piping system is included as part of Exhibit E.

B. Design and Construction of Phase 2 Improvements

Phase 2 – Sidley Road Improvements – This phase of the improvements has been set up to include the sanitary sewer improvements from the end of Phase 1 in Sidley Road north in Sidley Road to the intersection with Lee Boulevard. Construction of the Phase 2 improvements will

include the upgrading of sewer lines which will eliminate capacity issues related to the undersized pipe in Sidley Road as detailed in Sections IV and V of this report. Construction of the Phase 2 improvements will also increase the capacity of the system to allow for the increased flow projected from Southside.

The Phase 2 design plans are 100% complete. Phase 2 construction bids were received on November 4, 2013. The construction bid is expected to be awarded at the November 13, 2013 East Whiteland Township Board of Supervisors meeting. Phase 2 construction is expected to start by December 2013 and be substantially complete by March 2014, weather permitting. A copy of the Sidley Road Sewer Main Replacement Phase 2 - Issued for Bids - design plans showing the plan and profile of the proposed piping system along Sidley Road is included as part of Exhibit E.

It is noted that the eight (8) inch diameter existing over capacity segment in Moores Road will operate at an acceptable level when the Sidley Road gravity sewer is re-routed to drain south on Sidley Road toward Lapp Road and away from Moores Road. A capacity analysis of the entire improved Mill Lane and Sidley Road system is included as part of Exhibit E.

C. Design and Construction of Phase 3 Improvements

Phase 3 – Improvements to the Lee Boulevard Pump Station – The need for this phase of improvements will be based upon the timing of the connection schedules of the various Southside projects. Currently, the Lee Boulevard Pump Station (Pump Station) pumps have a hydraulic peak design capacity of 430 gallons per minute (gpm) which equates to 619,200 gallons per day (gpd). At the 619,200 gpd, using a 3.7 pump station peaking factor to evaluate the total allowable average daily flow, equates to an average daily flow of 167,350 gpd. The 2012 annual average daily flow through the Pump Station is 80,573 gpd which leaves (167,350 gpd – 80,573 gpd) 86,777 gpd remaining capacity before an upgrade to the pump station is needed.

According to current knowledge, Pickering Crossing (Charlestown) and Spring Oak (Charlestown) are actively seeking connection to the public sewer as soon as possible. The Office Restaurant (Charlestown) has also submitted a planning module to East Whiteland for

review. These three projects will not be able to connect to the East Whiteland sewer system until the Mill Lane Sewer Main Replacement Phase 1 and Sidley Road Sewer main replacement Phase 2 have been constructed and are operational. These three projects combined have been allocated a total of 273.1 EDUs which equates to an average daily flow of 75,103 gpd which is 86.6% of the remaining in the Pump Station and can be accommodated with the current pumps. It is noted that Pickering Crossing and Spring Oak are relatively larger type developments which may take a few years for full build out. Any additional Charlestown projects will require an upgrade to the Pump Station prior to connection to and discharge from the Pump Station.

It is noted that additional Charlestown projects listed on the CMP will require planning module approval from East Whiteland. As part of the planning module approval, East Whiteland is prepared to note the limitations at the Lee Boulevard Pump Station and delay approval of the modules until upgrades have been constructed at the pump station. It is further noted that the Volpi development does not drain to the Pump Station. Consequently the Volpi flows would not be subject to any restrictions at the pump station.

The design of the Pump Station upgrades is expected to be started in 2014. Construction of the improvements is expected to be completed in 2015 at the earliest. The specific timing of the actual construction of the upgrades will ultimately be determined by the actual construction schedule of the Charlestown Southside projects.

It is noted that Charlestown has a current 300,000 gpd average daily flow allocation in the Township sanitary sewer system. Discussions are in progress to grant Charlestown an increase of 132,302 gpd which will create a total allocation of 432,302 gpd. Additional discussion on the Charlestown allocation is included in the Connection Management Plan (CMP) section of this report.

VII. MILESTONES

The following is a list of the actions, with milestone dates, that the Township will undertake to resolve the structural and hydraulic issues with the Mill Lane and Sidley Road gravity sewer systems:

A. Prepare Design Plans for Phase I Mill Lane Sewer Replacement Project

Start: January 2012

Complete: May 2013

B. Prepare East Whiteland Township/Charlestown Township (Southside) ACT 537 Special Study

Start: August 2012

May/June – submit to DEP

Complete: September 2013 – approval by DEP

C. Resolve Cost Sharing with Valley Forge Sewer Authority

Start: August 2012

Complete: January 2014

D. Construct Phase 1 Mill Lane Sewer Replacement Project

Start: September 2013

Complete: December 2013

E. Prepare Design Plans for Phase 2 Sidley Road Sewer Replacement Project

Start: June 2012

Complete: September 2013

F. Prepare Water Quality Management General Permit – 02 (WQG-02)

Start: April 2013

May/June – submit to DEP

Complete: September 2013 – approval by DEP

G. Construct Phase 2 Sidley Road Sewer Replacement Project

Start: December 2013

Complete: March 2014

H. Design Phase 3 Lee Boulevard Pump Station Improvements Project

Start: March 2014

Complete: October 2014

I. Prepare Water Quality Management General Permit – 02 (WQG -02)

Start April 2014

September 2014 – submit to DEP

Complete December 2014 – approval by DEP

J. Construct Phase 3 Lee Boulevard Pump Station Improvements Project

Start: March 2015

Complete: September 2015

VIII.

MILL LANE and SIDLEY ROAD CORRECTIVE ACTION PLAN SUMMARY SHEET

Date: February 13, 2013 **Sheet 1 of 2**

Revised November 14, 2013

MUNICIPALITY:	**East Whiteland Township**
STRUCTURAL CONDITION:	**Mill Lane Sanitary Sewer Leakage**
OVERLOAD CONDITION:	**Sidley Road Sanitary Sewer Over-capacity**
REPORTING PERIOD:	**FROM: February 1, 2013 TO: November 8, 2013**
PROPOSED PLAN:	**Improve the Mill Lane and Sidley Road gravity sewer collection and conveyance systems to eliminate the structural and over-capacity issues.**

Task No.	Task Description	Actual Start Date	Anticipated Completion Date	Actual Completion Date	Anticipated Flow Reduction	Actual Metered Flow Reduction	Task Percent Complete	Comments
1	Prepare Design Plans for Phase 1 – Mill Lane Sewer Replacement	January 2012	April 2013	May 2013	N.A.	N.A.	100	
2	Prepare East Whiteland Township/Charlestown Township (Southside) ACT 537 Special Study	August 2012	September 2013	September 19, 2013 DEP Approval	N.A.	N.A.	100	
3	Resolve Cost Sharing with Charlestown Township	August 2012	January 2014		N.A.	N.A.	75	

MILL LANE and SIDLEY ROAD CORRECTIVE ACTION PLAN SUMMARY SHEET

Date: February 13, 2013 **Sheet 2 of 2**

Revised November 14, 2013

Task No.	Task Description	Actual Start Date	Anticipated Completion Date	Actual Completion Date	Anticipated Flow Reduction	Actual Metered Flow Reduction	Task Percent Complete	Comments
4	Construct Phase 1 – Mill Lane Sewer Replacement	September 2013	December 2013		N.A.	N.A.	90	
5	Prepare Design Plans for Phase 2 – Sidley Road Sewer Replacement Project	June 2012	July 2013	September 2013	N.A.	N.A.	100	
6	Prepare Water Quality Management General Permit – 02 (WQG-02)	April 2013	September 2013	September 2013 – DEP Approval	N.A.	N.A.	100	
7	Construct Phase 2 – Sidley Road Sewer Replacement Project	December 2013	March 2014		N.A.	N.A.	0	
8	Design Phase 3 – Lee Boulevard Pump Station Improvements Project	March 2014	October 2014		N.A.	N.A.	0	
9	Prepare Water Quality Management General permit -02 (WQG-02)	April 2014	December 2019 – approval by DEP		N.A.	N.A.	0	
10	Construct Phase 3 – Lee Boulevard Pump Station Improvements Project	March 2015	September 2015		N.A.	N.A.	0	

MILL LANE and SIDLEY ROAD COLLECTION and CONVEYANCE SYSTEMS

A. CONNECTION MANAGEMENT PLAN (CMP)

I. INTRODUCTION

As noted in the Corrective Action Plan (CAP) portion of the report, various existing system limitations are planned to be corrected by means of a series of improvements to the Mill Lane and Sidley Road gravity collection and conveyance systems.

Charlestown Township (Charlestown) has presented a schedule of flows from Charlestown Southside (Southside) which will drain to the Sidley Road and Mill Lane collection and conveyance lines. The timing of sewer connections will be determined by not only the progress of the corrective actions outlined in the CAP but also the individual progress of the identified Southside building projects.

An additional factor that will determine the timing of connections will be the status of the Amendment to East Whiteland Trunk Line Agreement (Agreement). The Agreement currently allows for 300,000 gallons per day from Southside. A copy of the Agreement is included in Exhibit F. In order to provide capacity for the entire list of identified Southside projects, additional capacity will need to be purchased by Charlestown. Discussions are underway with Valley Forge Sewer Authority (VFSA) to purchase the additional capacity for Charlestown. A copy of the revised draft Agreement is included in Exhibit F. A copy of the VFSA commitment letter is also included in Exhibit F.

II. CONNECTION MANAGEMENT

Connection management is based primarily upon a time table provided by Charlestown and included as part of Exhibit D. The flows and schedule in Exhibit D have been expanded to create a Connection Management Plan (CMP) which includes DEP Code Numbers, Date of Approval by DEP, Construction Status, and Connection Status. The CMP Schedule is included in Section B.III. The CMP does not include the existing Southside flows.

The 300,000 gallons per day allowed for Southside includes flows that do not drain to the Mill Lane and Sidley Road system. A tabulation of the 2012 existing Southside flows is as follows:

Charlestown Meadows – 19,074 gpd (does not drain to Mill Lane/Sidley Road)
Charlestown Oaks – 38,354 gpd (drains to Sidley Road/Mill Lane)
Lee Boulevard Pump Station – 77,668 gpd (drains to Sidley Road/Mill Lane)
Total 2012 Southside flow – 135,096 gpd

The remaining capacity, utilizing the existing 300,000 gpd allocation = 300,000 – 135,096 = 164,904 gpd which equates to 599.7 EDUs at 275 gallons/EDU. As noted in the CMP 599.7 EDUs are allocated to the Southside flow which will cover partial completion of projects projected to be constructed in years 2019 to 2023. An additional flow allocation is being discussed with Valley Forge Sewer Authority which will allow Charlestown to construct the remaining projects listed on the CMP. A copy of the current revised draft Agreement is included in Exhibit F.

B.III.

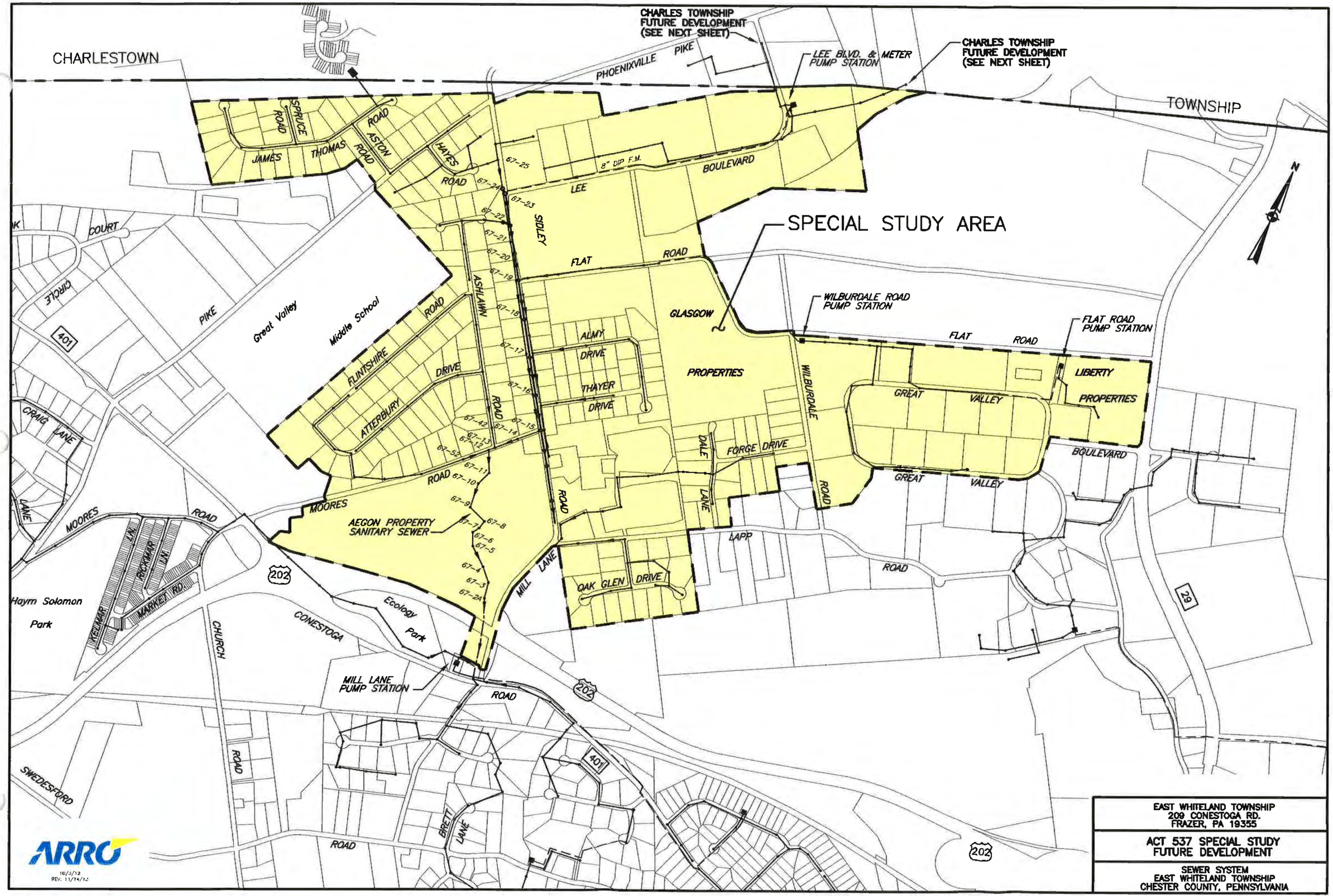
CONNECTION MANAGEMENT PLAN (CMP)

Name of Collection System	Mill Lane and Sidley Road Collection & Conveyance Systems, East Whiteland Township, Chester County, PA											
Date	2/13/2013, revised 11-14-13											
	Sewage Facilities Planning Status			Construction Status		Connection Status		Projected Connection Schedule				
Municipality/Project Name	DEP Code No.	Flow Approved	Date Approved by DEP	Construction Status Y/N	Building Permits Issued	EDUs *	EDUs *	2014 to 2018 (0 to 5 years)	2019 to 2023 (6 to 10 years)	2024 to 2028 (11 to 15 years)	2029 to 2033 (16 to 20 years)	2034 to 2038 (21 to 25 years)
		(gpd)				Needed	Allocated					
East Whiteland Township												
1. Glasgow Tract	1-15925-285-3J	6,325	5/3/2007	N	0	23	23			23		
2. J & J Lot - 260 GVP - GVCC	1-15925-334-3J	8,355				29	29	29				
3. Additional GVCC						200	200		50	50	50	50
	totals	**14,680**				**252**	**252**	**29**	**50**	**73**	**50**	**50**
Charlestown Township							**					
1. Pickering Crossing^	1-15913-200-3J	21,450	11/16/2012	Y	0	78	78	78				
2. Holy Ascension Church	n.a.	1,815	n.a	N	0	6.6	6.6	6.6				
3. Devault Foods	n.a.	37,000	n.a.	N	0	134.6	134.6	134.6				
5. Spring Oak Business Park	1-15913-197-3J	50,875	n.a.	N	0	185	185	185				
4. Charlestown School	n.a.	1,845	n.a.	N	0	6.7	6.7	6.7				
5. Warner Lane	n.a.	4,650	n.a.	N	0	16.9	16.9	16.9				
6. Volpi	n.a	275	n.a.	N	0	1	1		1			
7. Cellucci	n.a.	4,450	n.a.	N	0	16.2	16.2		16.2			
8. Laurabrooke	n.a	4,740	n.a.	N	0	17.2	17.2		17.2			
9. "Late Spring"	n.a.	2,130	n.a.	N	0	7.8	7.8		7.8			
10. Adjacent to Laurabrooke	n.a.	10,560	n.a.	N	0	38.4	38.4		38.4			
11. Fillippo Tract	n.a.	19,800	n.a.	N	0	72	72		72			
12. Across Spring Oak Park	n.a	2,475	n.a.	N	0	9	9		9			
13. Yellow Springs Road	n.a.	2,750	n.a.	N	0	10	10		10			
14. Rt 29 & Charlestown Rd.	n.a	13,750	n a.	N	0	50	0.3		50			
15. Northside of School	n a	1,925	n.a.	N	0	7	0		7			
16. Farm Residence	n a	275	n.a.	N	0	1	0		1			
17. The Office Restaurant	1-15913-205-3J	3,600	n.a.	N	0	13.1	0		13.1			
18. Commons at Great Valley	n a	11,000	n.a.	N	0	40	0		40			
19. Remainder I/O District	n.a	12,550	n.a	N	0	45.6	0			45.6		
20. Remainder B-1, District	n a.	13,656	n.a	N	0	49.7	0			49.7		
21. Remainder I/O District	n a	12,550	n.a	N	0	45.6	0				45.6	
22. Remainder B-1, District	n.a	13,655	n.a.	N	0	49.7	0				49.7	
23. Remainder I/O District	n a	12,550	n.a	N	0	45.6	0					45.6
24. Remainder B-1 District	n a.	13,655	n.a.	N	0	49.7	0					49.7
25. Credit for Volpi	n a.	23,225	n.a.	N	0	84.5	0		84.5			
	totals 1-25	**297,206**				**1080.9**	**599.7**	**427.8**	**367.2**	**95.3**	**95.3**	**95.3**
^ aka Tyler Griffith												
** Charlestown allocation based upon 300,000 gpd per current Agreement						*EDU = 275 gpd						
Total EDUs EWT & Charlestown Twp.								**456.8**	**417.2**	**168.3**	**145.3**	**145.3**

Exhibit A

Act 537 Special Study Area

1. East Whiteland Township Plan
2. Charlestown Township Plan
3. East Whiteland Township Sanitary Sewer System Plan
4. DEP approval letter for ACT 537 Special Study



ARRO
10/3/12
REV. 11/14/12

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

ACT 537 SPECIAL STUDY
FUTURE DEVELOPMENT

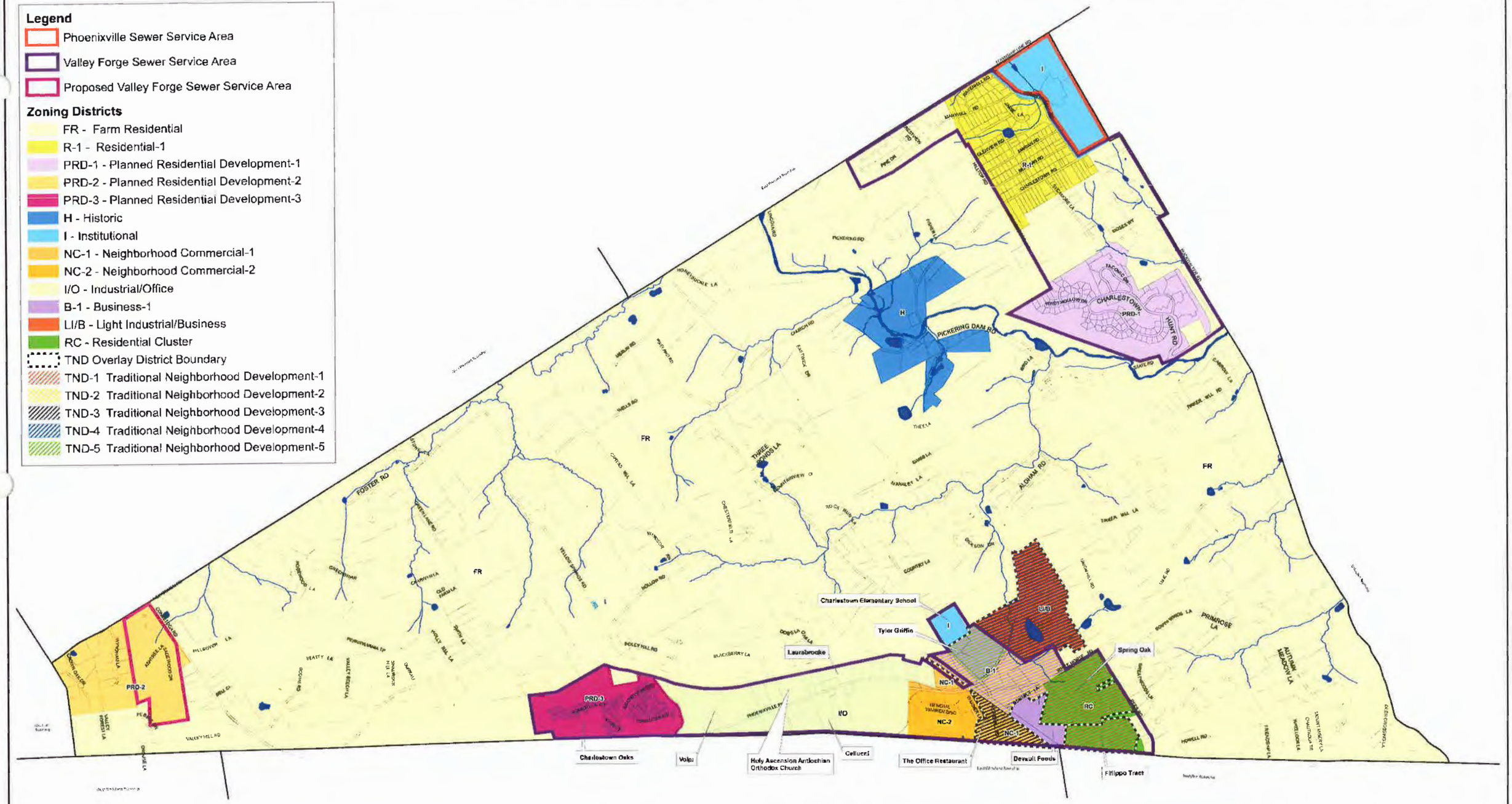
SEWER SYSTEM
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Legend

- Phoenixville Sewer Service Area
- Valley Forge Sewer Service Area
- Proposed Valley Forge Sewer Service Area

Zoning Districts

- FR - Farm Residential
- R-1 - Residential-1
- PRD-1 - Planned Residential Development-1
- PRD-2 - Planned Residential Development-2
- PRD-3 - Planned Residential Development-3
- H - Historic
- I - Institutional
- NC-1 - Neighborhood Commercial-1
- NC-2 - Neighborhood Commercial-2
- I/O - Industrial/Office
- B-1 - Business-1
- LI/B - Light Industrial/Business
- RC - Residential Cluster
- TND Overlay District Boundary
- TND-1 Traditional Neighborhood Development-1
- TND-2 Traditional Neighborhood Development-2
- TND-3 Traditional Neighborhood Development-3
- TND-4 Traditional Neighborhood Development-4
- TND-5 Traditional Neighborhood Development-5



Zoning Map & Sewer Service Areas

CHARLESTOWN TOWNSHIP
Chester County, Pennsylvania

Revised: October 8, 2012
Date: August 15, 2008; September 15, 2010

N

2,400 0 2,400
Feet

Data Sources:

Base Features: Chester County
GIS Department, February 2005

Prepared By:
Thomas Comitta Associates, Inc.
Town Planners & Landscape Architects
18 West Chestnut Street
West Chester, Pennsylvania 19380

Exhibit B

Exhibit B Has Been Eliminated

Exhibit C

Existing Overload Documentation

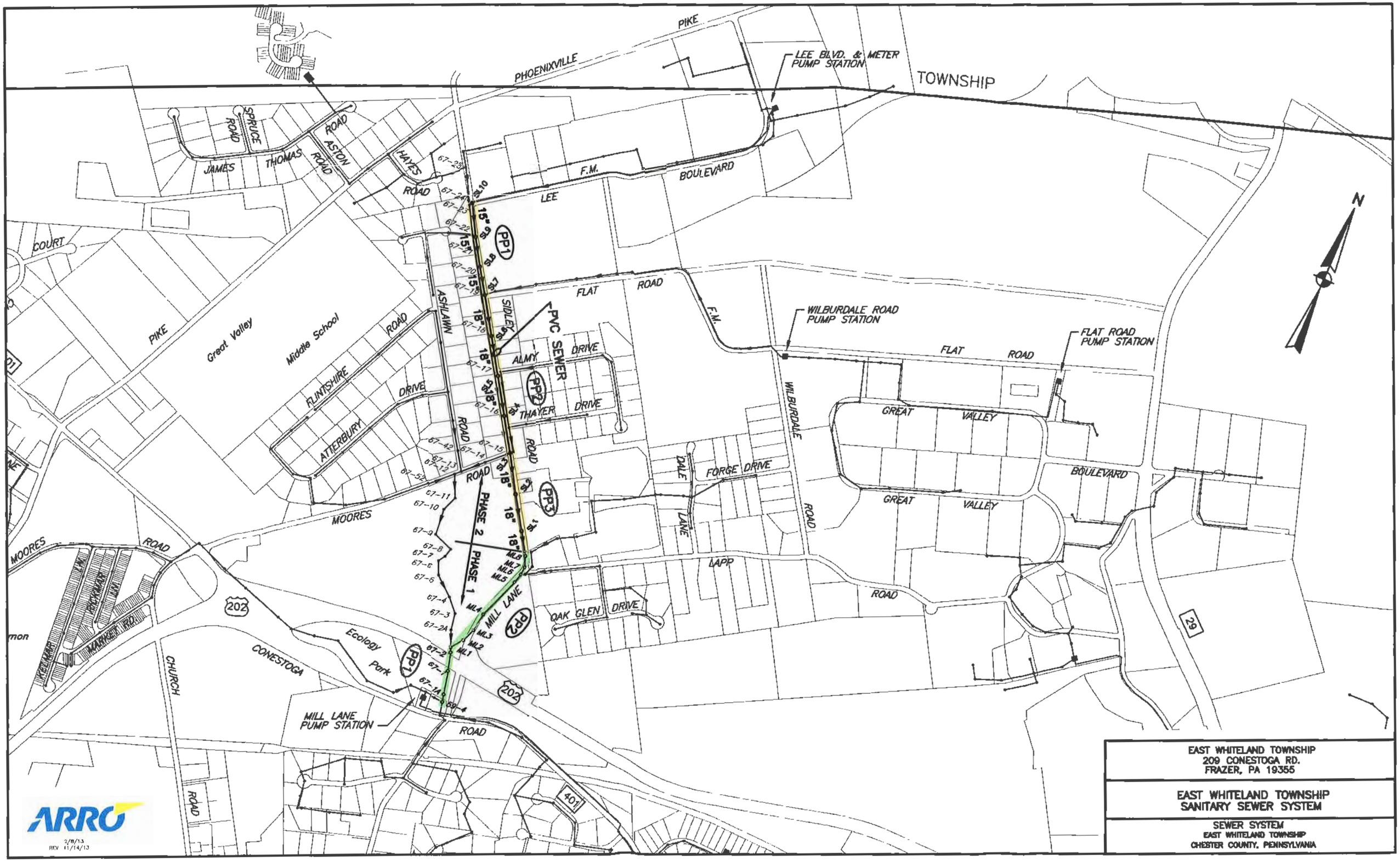
1. Existing System Capacities
2. Existing Features Plan – Sidley Road

East Whiteland
Gravity Sewer Hydraulic Capacity Analysis - Existing Capacity Evaluation without Charlestown Future Flows
ARRO #10310.02
12/14/2011, rev 12-17-12, rev 6-21-13, rev 11-14-13

									Full Pipe Capacity			*Proposed Capacity**	*Remaining Capacity*		
Up-Stream MH	*Down-Stream MH*	*Diam (in.)*	*Slope*	*Length (ft)*	*n*	*A(sf)*	*R*	*Q(cfs)*	*V(fps)*	*Q(gpm)*	*Q(gpd)*	*Q(gpd)*	*Q (gpd)*	*Percentage Used (%)*	*Note*
												837,911			*from - 2012 Wilburdale PS - 239,403 gpd existing -Do Not Add 23 EDUs Glasgow tract*
	To Lee Blvd PS from Lee Blvd PS	*10*	*0.0035*	*1450*	0.013	0.55	0.208	1.30	2.38	583	839,596	282,006 241,719	**557,591**	33.6	*to - 2012 Lee Blvd PS - 80,573** gpd existing - Do Not Add 296,931*** future Charlestown flow from - Lee Blvd PS flow*
67-25	67-24	*8*	*0.0029*	*392.5*	0.013	0.35	0.167	0.65	1.88	294	422,962	162,573	**260,389**	38.4	*add - 2012 Charlestown Oaks 38,354 gpd + 97 EDUs- Do Not Add 275 gpd future (Volpi)*
67-24	67-23	*8*	*0.0209*	*19*	0.013	0.35	0.167	1.75	5.02	786	1,132,386	162,573	**969,813**	14.4	
67-23	67-22	10	0.0030	212.5	0.013	0.55	0.208	1.19	2.19	535	770,810	404,292	**366,519**	52.5	*add - flow from Lee Blvd PS*
67-22	67-21	10	0.0039	207	0.013	0.55	0.208	1.36	2.50	612	881,719	415,292	**466,428**	47.1	*add - 16 EDUs*
67-21	67-20	10	0.0068	237.5	0.013	0.55	0.208	1.81	3.32	812	1,169,423	415,292	**754,131**	35.5	
67-20	67-19	10	0.0045	236.5	0.013	0.55	0.208	1.47	2.71	652	953,070	415,292	**537,779**	43.6	
67-19	67-18	10	0.0048	369	0.013	0.55	0.208	1.52	2.79	684	984,258	1,263,858	**-279,600**	128.4	*add - flow from Wilberdale PS flow - Do Not Add 23 EDUs (Glasgow tract) add 15.5 EDUs*
67-18	67-17	10	0.0039	395.5	0.013	0.55	0.208	1.37	2.51	613	882,860	1,265,233	**-382,373**	143.3	*add - 2 EDUs (west side of Sidley Road)*
67-17	67-16	10	*0.0050*	*400*	0.013	0.55	0.208	1.55	2.85	696	1,002,506	1,265,233	**-262,728**	126.2	
67-16	67-15	10	*0.0148*	*392.5*	0.013	0.55	0.208	2.67	4.89	1,197	1,723,584	1,267,983	**455,601**	73.6	*add - 4 EDUs (west side of Sidley Road)*
67-15	67-14	10	*0.0230*	*244*	0.013	0.55	0.208	3.33	6.11	1,495	2,153,224	1,301,671	**851,553**	60.5	*add - 49 EDUs (east side of Sidley Road+ 3 EDUs west side of Sidley Road)*
67-14	67-13	10	*0.0169*	*235*	0.013	0.55	0.208	2.85	5.23	1,281	1,844,384	1,301,671	**542,713**	70.6	
67-13	67-12	8	*0.0105*	*60*	0.013	0.35	0.167	1.24	3.56	557	802,058	1,330,546	**-528,490**	165.9	*add - 42 EDUs - MOST RESTRICTIVE COLLECTION LINE*
67-12	67-11	12	*0.0526*	*227.8*	0.013	0.79	0.250	8.19	10.43	3,678	5,292,726	1,344,296	**3,948,430**	25.4	*add - 20 EDUs*
67-11	67-10	12	*0.0308*	*174.5*	0.013	0.79	0.250	6.27	7.98	2,813	4,050,054	1,344,296	**2,705,758**	33.2	
67-10	67-9	12	*0.0104*	*376.4*	0.013	0.79	0.250	3.64	4.64	1,634	2,353,440	1,344,296	**1,009,145**	57.1	
67-9	67-8	12	*0.0438*	*173.7*	0.013	0.79	0.250	7.47	9.52	3,354	4,829,738	1,344,296	**3,485,443**	27.8	
67-8	67-7	12	*0.0200*	*77.7*	0.013	0.79	0.250	5.05	6.43	2,266	3,263,635	1,344,296	**1,919,339**	41.2	
67-7	67-6	12	*0.0300*	*55.4*	0.013	0.79	0.250	6.18	7.88	2,775	3,997,120	1,344,296	**2,652,824**	33.6	
67-6	67-5	12	*0.0084*	*129.3*	0.013	0.79	0.250	3.27	4.17	1,469	2,115,077	1,391,046	**724,031**	65.8	*add - 58 EDUs - from business park - MOST RESTRICTIVE CONVEYANCE LINE*
67-5	67-4	12	*0.0193*	*195.6*	0.013	0.79	0.250	4.98	6.32	2,225	3,205,012	1,391,045	**1,814,967**	43.4	
67-4	67-3	12	*0.0159*	*169.6*	0.013	0.79	0.250	4.50	5.74	2,021	2,909,947	1,391,046	**1,518,901**	47.8	
67-3	67-2A	12	*0.0197*	*180*	0.013	0.79	0.250	5.01	6.38	2,249	3,239,065	1,391,046	**1,848,019**	42.9	
67-2A	67-2	12	*0.0239*	*198.6*	0.013	0.79	0.250	5.52	7.03	2,478	3,567,677	1,438,483	**2,129,194**	40.3	*add - 69 EDUs - from Lapp Road*
67-2	67-1	12	*0.0069*	*339.2*	0.013	0.79	0.250	3.37	4.29	1,512	2,177,116	1,438,483	**738,633**	66.1	
67-1	67-1B	12	*0.0270*	*209*	0.013	0.79	0.250	5.87	7.47	2,633	3,791,299	1,438,483	**2,352,815**	37.9	

*** 432,302 - (38,354 + 19074 + 77,668 + 275 [volpi]) = 296,931*
**2012 flows - 77,668^ gpd (Charlestown) 2,905 gpd (East Whiteland) = 80,573 gpd total*
^2012 metered flow
2012 charlestown flows
- charlestown oaks - 38,354
- charlestown meadows - 19,074
- lee boulevard - 77,668

* Peaking factors from the draft "Sewage Pumping Station Guidance" by PA DEP Southeast Regional Office


PHOENIXVILLE PIKE
TOWNSHIP
LEE BLVD. & METER PUMP STATION
F.M. BOULEVARD
LEE
SPRUCE ROAD
JAMES ROAD
THOMAS ROAD
ASTON ROAD
HAYES ROAD
COURT
PIKE
Great Valley Middle School
ASHLAWN ROAD
FLINTSHIRE DRIVE
ATTERBURY ROAD
15" SL9
15" SL8
15" SL7
18" SL6
SIDLEY
PVC SEWER
ALMY DRIVE
THAYER DRIVE
18" SL5
18" SL4
18" SL3
18" SL2
18" SL1
PP1
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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

SEP 17 2013

Ms. Terry Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Act 537 Special Study
Sidley Road Area Sewage Conveyance System Upgrades
Status: ISSUED
APS ID 38912, AUTH ID 986960
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed Official Sewage Facilities Plan Special Study for the Sidley Road area sewage conveyance system upgrades in East Whiteland Township (Township), Chester County. The Special Study, titled East Whiteland Township/ Charlestown Township (Southside) Act 537 Special Study (Special Study), was prepared by ARRO Engineering & Environmental Consultants, and is dated June 2013. This Special Study was submitted to the Department of Environmental Protection (DEP), and a review was conducted in accordance in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program. Additional information was received by DEP on August 30, 2013.

Approval of the Special Study is hereby granted. This approval provides for the following:

1. The upgrade of portions of the existing sewage conveyance system to provide for the existing and future sanitary sewer needs of the north-central portion of the Township and the south-central portion of Charlestown Township. The implementation of these upgrades will occur in four phases.

    a. **Phase I** – will include the installation of a new 18-inch sanitary sewer main along Mill Lane from Manhole 67-1AA to Manhole ML-8 upstream of the Mill Lane Pump Station. (MLPS). The construction of these sanitary sewer sections has been allowed to proceed in order to mitigate the existing pipe leakage located under Route 202.

SEP 17 2013

b. **Phase II** – will include the installation of a new 18-inch sanitary sewer main along Sidley Road from Manhole ML-8 to Manhole SL-7 and the installation of a new 15-inch sanitary sewer main along Sidley Road from Manhole SL-7 to Manhole SL-10. The construction of these sanitary sewer sections shall be completed consistent with the implementation schedule found on pages 4 and 5 of the Special Study.

c. **Phase III** – The expansion of the Lee Boulevard Pumping Station (LBPS) to accommodate total average annual flows of 385,039 gallons of sewage per day (gpd), which accounts for the existing flows to the pump station and the projected flows through the year 2038 for the service area tributary to the pump station. The permitting and construction of the LBPS shall be completed consistent with the implementation schedule found on pages 4 and 5 of the Special Study.

d. **Phase IV** – commitment for additional sewage facilities planning for the planning area associated with Liberty Properties located in the Great Valley Industrial Park. This future planning effort will include planning for the expansion of the Wilburdale Pump Station. The timing of this future planning effort is dependent on the development of the Great Valley Industrial Park.

2. A commitment for additional sewage facilities planning for upgrades to portions of the interceptor/trunk sewer, downstream from the MLPS, and the existing 14-inch force main. The future planning effort will be triggered through the monitoring of average daily flows at the MLPS. This flow trigger will be approximately 989,126 gpd.

East Whiteland Township and Valley Forge Sewer Authority (VFSA) have committed to update and amend the existing intermunicipal agreement, known as the East Whiteland Trunkline Agreement, to allow for an increase in VFSA's annual average reserve capacity for Charlestown Township from 300,000 gpd to 432,302 gpd.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by DEP.

The Clean Streams Law permit application for Phases I and II improvements is currently under review by DEP. East Whiteland Township must secure Clean Streams Law permits from DEP for the construction and operation of the remaining project phases.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

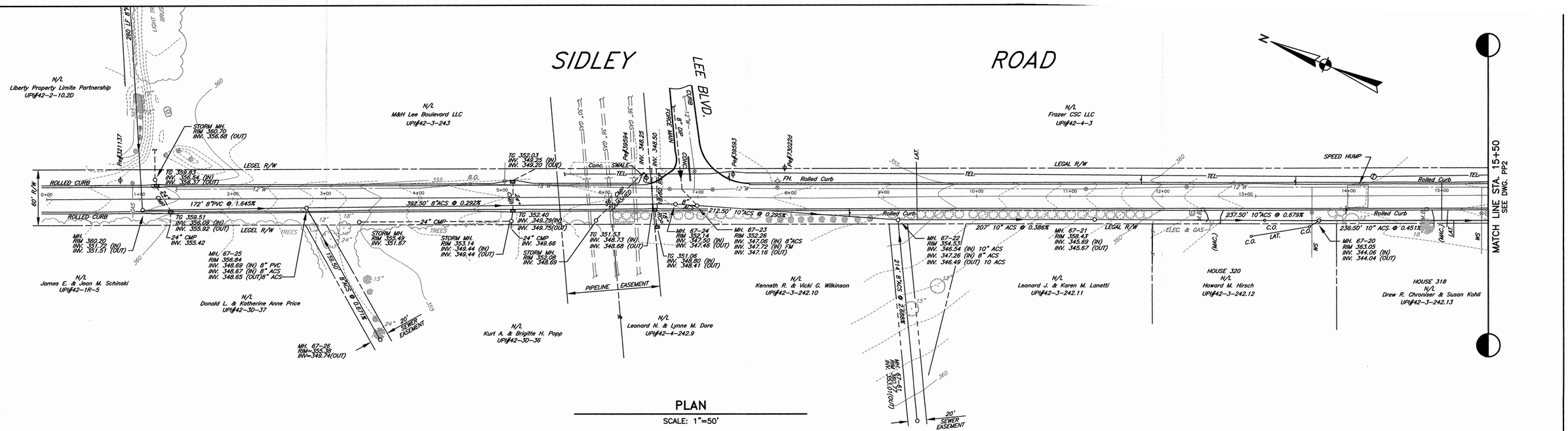
IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Ms. Kelly Boettlin of this office at 484.250.5184.

Sincerely,

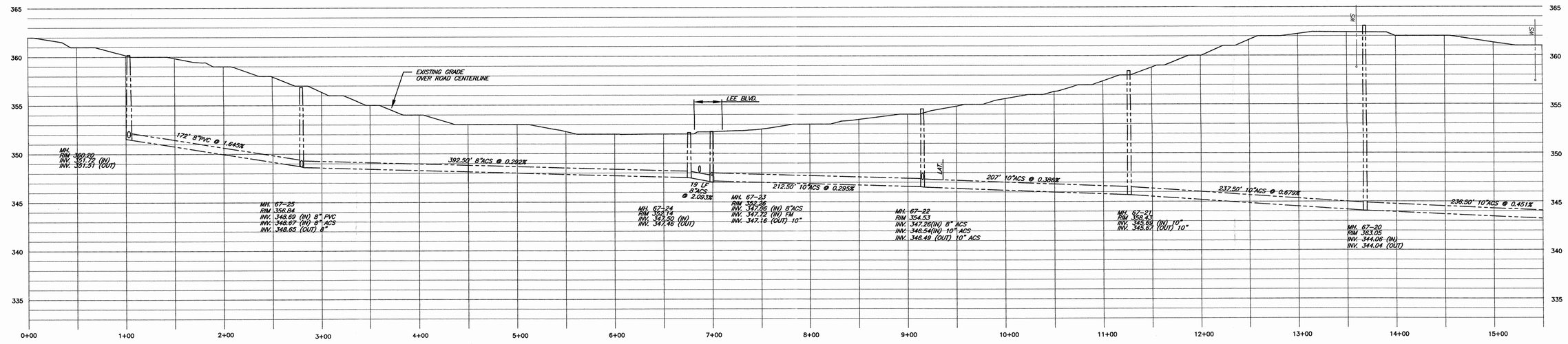
Jenifer Fields, P.E.
Regional Manager
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Mr. Steele – East Whiteland Township
Ms. Csete, Manager – Charlestown Township
Valley Forge Sewer Authority
Mr. Bohner – ARRO Engineering & Environmental Consultants
Planning Section
Re 30 (GJS13CLW)255-11



PLAN

SCALE: 1"=50'



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
C	ISSUED TO DEP FOR CAP/CMP	11/14/13	MCC	KM
B	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
A	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM

K. McAGHON, P.E.
RELEASED BY

DESIGN: K. McAGHON, P.E.	CHECKED: KM
DRAWN: BLATT	CHECKED: KM
DATE: 2/8/13	SURVEY DATE: 1/2012
	FIELD BOOK:

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SIDLEY ROAD NEW FORCE MAIN & SEWER
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

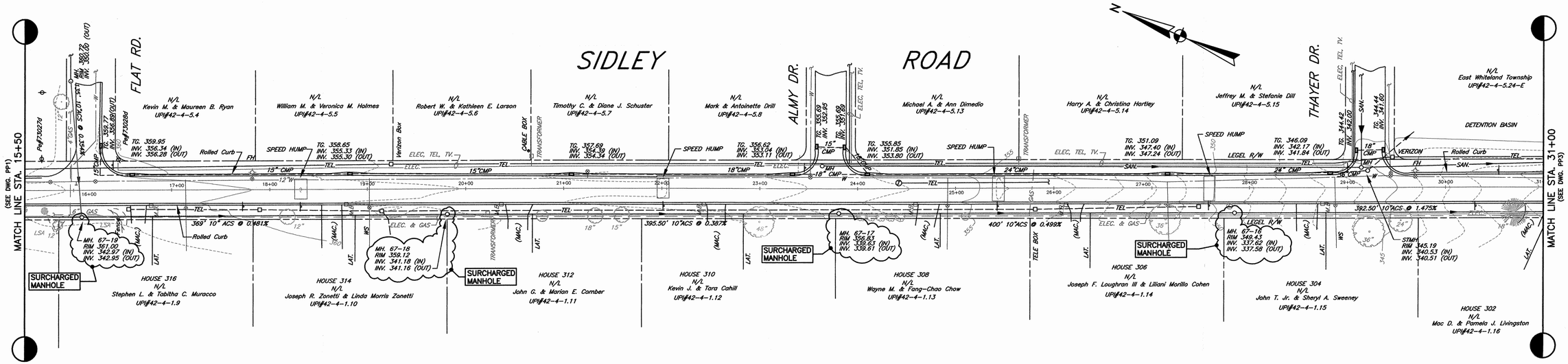
ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: EXISTING FEATURES
SIDLEY ROAD
STA. 0+00 TO 15+50

SCALE	DWG. NO.
AS NOTED	PP1

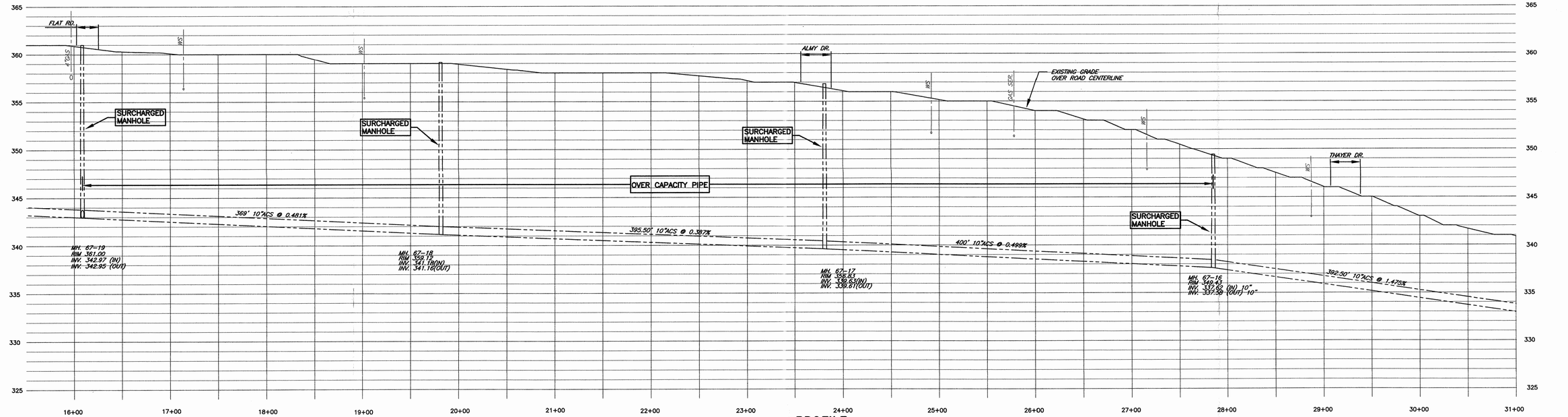
PROJECT NO.	SHEET NO.	REV.
10310.02	1 OF 2	C

Dwg. Name: CAP_CMP REPORT 1031002PP1_PP3_SIDLEY.DWG Plotted: 11/12/2013 10:46 AM



PLAN

SCALE: 1"=50'



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
C	ISSUED TO DEP FOR CAP/CMP	11/14/13	MCC	KM
B	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
A	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM

K. McAGHON, P.E.
RELEASED BY

DESIGN: K. McAGHON, P.E.	CHECKED: KM
DRAWN: BLATT	CHECKED: KM
DATE: 2/8/12	SURVEY DATE: 1/2012
	FIELD BOOK:

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SIDLEY ROAD NEW FORCE MAIN & SEWER
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: EXISTING FEATURES
SIDLEY ROAD
STA. 15+50 TO 31+00

SCALE: AS NOTED
DWG. NO. PP2

PROJECT NO. 10310.02
SHEET NO. 2 OF 2
REV. C

Dwg. Name: CAP_CMP REPORT 1031002PP1_PP3_SIDLEY.DWG Plotted: 11/12/2013 10:48 AM

Exhibit D

Charlestown Township Southside Service Area

1. Projected Flows from Southside Service Area
2. System Capacities with Projected Southside Flows and Existing Piping

Charlestown
TOWNSHIP

Board of Supervisors

Frank A. Piliero, Chair · Michael J. Rodgers, Vice Chair
Kevin R. Kuhn · Charles A. Philips · Hugh D. Willig

March 13, 2013

RECEIVED
MAR 18 2013

Martin F. Goldberg
Operations Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Re: Official Update of Charlestown South Side Sewerage Flow Projections

Dear Mr. Goldberg,

In accordance with the requirement of the Pennsylvania Department of Environmental Protection (PADEP) that all of the Valley Forge Sewer Authority's (VFSA) customers provide Municipal Needs Assessment Updates in order to complete its Regional Act 537 Plan, Charlestown Township provided the VFSA with its Needs Analysis prepared by Surender Kohli, P.E. and approved by its Board of Supervisors back in September of 2008.

The 2008 Needs Analysis indicates a projected total average flow from the south side of Charlestown Township at 417,060 gpd. This, along with the other community flow projects, was part of the basis for the PADEP-approved Act 437 Plan for the VFSA treatment plant.

Charlestown Township is hereby updating the 2008 Needs Analysis. This is included as Appendix A, which has been compiled by Charlestown's consulting engineer and approved by the Charlestown Township Board of Supervisors at their meeting on March 4, 2013.

Very truly yours,

Linda M. Csete
Township Manager

Cc: Board of Supervisors
Dan Wright, P.E.

4030 Whitehorse Rd. • P.O. Box 507 • Devault, PA 19432-0507
610.240.0326 • Fax 610.240.0328 • admin1@charlestown.pa.us

Appendix A

Charlestown Township Projects Which Drain to East Whiteland Township										
Revised: 11/14/13				Development Projected to Occur						
Description (modify as appropriate)	Total Flows (gpd)	Future Flows (gpd)	Current Flows (gpd)	0 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	20 to 25 Year	0 to 5 Years % of Future	0 to 10 Years % of Future
Existing Flows										
Charlestown Meadows - 2012	19,074		19,074							
Charlestown Oaks Existing Flows - 2012	38,354		38,354							
Charlestown Twp. Existing Flows - 2012	77,668		77,668							
Future Flows (Sidley, Not Lee Bvd. PS)										
Volpi	275	275			275					
Future Flows to Lee Bvd. and Sidley)										
Cellucci	4,450	4,450			4,450					
Laurabrook	4,740	4,740			4,740					
"Late Spring"	2,130	2,130			2,130					
Adjacent to Laurabrook	10,560	10,560			10,560					
Holy Ascention Ch.	1,815	1,815		1,815						
Remainder	12,550	12,550				12,550				
Remainder	12,550	12,550					12,550			
Remainder	12,550	12,550						12,550		
Devault Foods	37,000	37,000		37,000						
Spring Oak	50,875	50,875		50,875						
Pickering Crossing (a.k.a. Tyler Griffin)	21,450	21,450		21,450						
Charlestown Elem.	1,845	1,845		1,845						
Fillippo Tract	19,800	19,800			19,800					
Across from Spring Oak	2,475	2,475			2,475					
Yellow Springs Road	2,750	2,750			2,750					
Rt. 29 and Charlestown Rd.	13,750	13,750			13,750					
Northside of School	1,925	1,925			1,925					
Farm Residence	275	275			275					
Remainder	13,656	13,656				13,656				
Remainder	13,655	13,655					13,655			
Remainder	13,655	13,655						13,655		
Warner Lane	4,650	4,650		4,650						
The Office Restaurant	3,600	3,600			3,600					
Commons at Great Valley	11,000	11,000			11,000					
Credit for Volpi	23,225	23,225			23,225					
Present Flows Highlighted in Yellow - 2012	135,096									
Future Flows Less than 10 years out highlighted in white	218,590									
Flows Greater than 10 years out highlighted in blue	78,616									
Total	432,302									

East Whiteland

Gravity Sewer Hydraulic Capacity Analysis - Existing Capacity Evaluation with Charlestown Future Flows

ARRO #10310.02

12/14/2011, rev 12-17-12, rev 6-13-13, rev 11-14-13

									Full Pipe Capacity			Proposed Capacity*	Remaining Capacity	Percentage Used	
Up-Stream MH	Down-Stream MH	Diam (in.)	Slope	Length (ft)	n	A(sf)	R	Q(cfs)	V(fps)	Q(gpm)	Q(gpd)	Q(gpd)	Q (gpd)	(%)	Notes
	To Lee Blvd PS	10	0.0035	1450 +/-	0.013	0.55	0.208	1.30	2.38	583	839,596	992,160	-152,564	118.2	to - Lee Blvd PS - 80,573** gpd existing + 296,931*** future Charlestown+70.4 EDUs from EWT to Lee Blvd PS
	from Lee Blvd PS											1,210,435			from - Lee Blvd PS flow (PK factor = 3.05) - with future Charlestown
	To Wilburdale PS											1,048,250			to - Wilburdale PS - 350,000(2008 flow) + 252 EDUs (glasgow-23, J&J -29, other GVCC-200)
	from Wilburdale PS											1,257,900			from - Wilburdale PS (PK factor=3.0)
67-25	67-24	8	0.0029	392.5	0.013	0.35	0.167	0.65	1.88	294	422,962	173,573	249,389	41.0	add - 2012 Charlestown Oaks + 275 gpd future [volpi] + 112 EDUs
67-24	67-23	8	0.0209	19	0.013	0.35	0.167	1.75	5.02	786	1,132,386	173,573	958,813	15.3	
67-23	67-22	10	0.0030	212.5	0.013	0.55	0.208	1.19	2.19	535	770,810	1,384,008	-613,197	179.6	add - flow from Lee Blvd PS
67-22	67-21	10	0.0039	207	0.013	0.55	0.208	1.36	2.50	612	881,719	1,399,133	-517,414	158.7	add - 16 EDUs + 6 EDUs (R & F building east side) = 22 EDUs total
67-21	67-20	10	0.0088	237.5	0.013	0.55	0.208	1.81	3.32	812	1,169,423	1,399,133	-229,710	119.6	
67-20	67-19	10	0.0045	238.5	0.013	0.55	0.208	1.47	2.71	662	953,070	1,399,133	-446,063	146.8	
67-19	67-18	10	0.0048	369	0.013	0.55	0.208	1.52	2.79	684	984,258	2,667,689	-1,683,431	271.0	add - flow from Wilberdale PS flow + 2 EDUs (west side of Sidley Road) + 13.5 EDUs for 7 Lee Blv
67-18	67-17	10	0.0039	395.5	0.013	0.55	0.208	1.37	2.51	613	882,860	2,669,064	-1,786,204	302.3	add - 2 EDUs (west side of Sidley Road)
67-17	67-16	10	0.0050	400	0.013	0.55	0.208	1.55	2.85	696	1,002,506	2,670,439	-1,667,933	266.4	add - 2 EDUs (west side of Sidley Road)
67-16	67-15	10	0.0148	392.5	0.013	0.55	0.208	2.67	4.89	1,197	1,723,564	2,671,814	-948,229	155.0	add - 2 EDUs (west side of Sidley Road)
67-15	67-14	10	0.0230	244	0.013	0.55	0.208	3.33	6.11	1,495	2,153,224	2,706,189	-552,965	125.7	add - 49 EDUs (east side of Sidley Road)+1 EDU west side of Sidley Road
67-14	67-13	10	0.0169	235	0.013	0.55	0.208	2.85	5.23	1,281	1,844,384	2,706,189	-861,805	146.7	
67-13	67-12	8	0.0105	60	0.013	0.35	0.167	1.24	3.56	557	802,056	2,735,064	-1,933,008	341.0	add - 42 EDUs
67-12	67-11	12	0.0526	227.8	0.013	0.79	0.250	8.19	10.43	3,676	5,292,726	2,748,814	2,543,912	51.9	add - 20 EDUs
67-11	67-10	12	0.0308	174.5	0.013	0.79	0.250	6.27	7.98	2,813	4,050,064	2,748,814	1,301,250	67.9	
67-10	67-9	12	0.0104	376.4	0.013	0.79	0.250	3.64	4.64	1,634	2,353,440	2,748,814	-395,373	116.8	
67-9	67-8	12	0.0438	173.7	0.013	0.79	0.250	7.47	9.52	3,354	4,829,738	2,748,814	2,080,924	56.9	
67-8	67-7	12	0.0200	77.7	0.013	0.79	0.250	5.05	6.43	2,266	3,263,635	2,748,814	514,821	84.2	
67-7	67-6	12	0.0300	55.4	0.013	0.79	0.250	6.18	7.88	2,776	3,997,120	2,748,814	1,248,306	68.8	
67-6	67-5	12	0.0084	129.3	0.013	0.79	0.250	3.27	4.17	1,469	2,115,077	2,795,564	-680,487	132.2	add - 68 EDUs - from business park
67-5	67-4	12	0.0193	195.6	0.013	0.79	0.250	4.96	6.32	2,226	3,206,012	2,795,564	410,449	87.2	
67-4	67-3	12	0.0159	169.8	0.013	0.79	0.250	4.50	5.74	2,021	2,909,947	2,795,564	114,383	96.1	
67-3	67-2A	12	0.0197	180	0.013	0.79	0.250	5.01	6.38	2,249	3,239,065	2,795,564	443,501	86.3	
67-2A	67-2	12	0.0239	196.6	0.013	0.79	0.250	5.52	7.03	2,478	3,567,677	2,843,001	724,675	79.7	add - 69 EDUs - from Lapp Road
67-2	67-1	12	0.0089	339.2	0.013	0.79	0.250	3.37	4.29	1,512	2,177,116	2,843,001	-665,886	130.6	
67-1	59-4	12	0.0270	209	0.013	0.79	0.250	5.87	7.47	2,633	3,791,299	2,843,001	948,297	75.0	

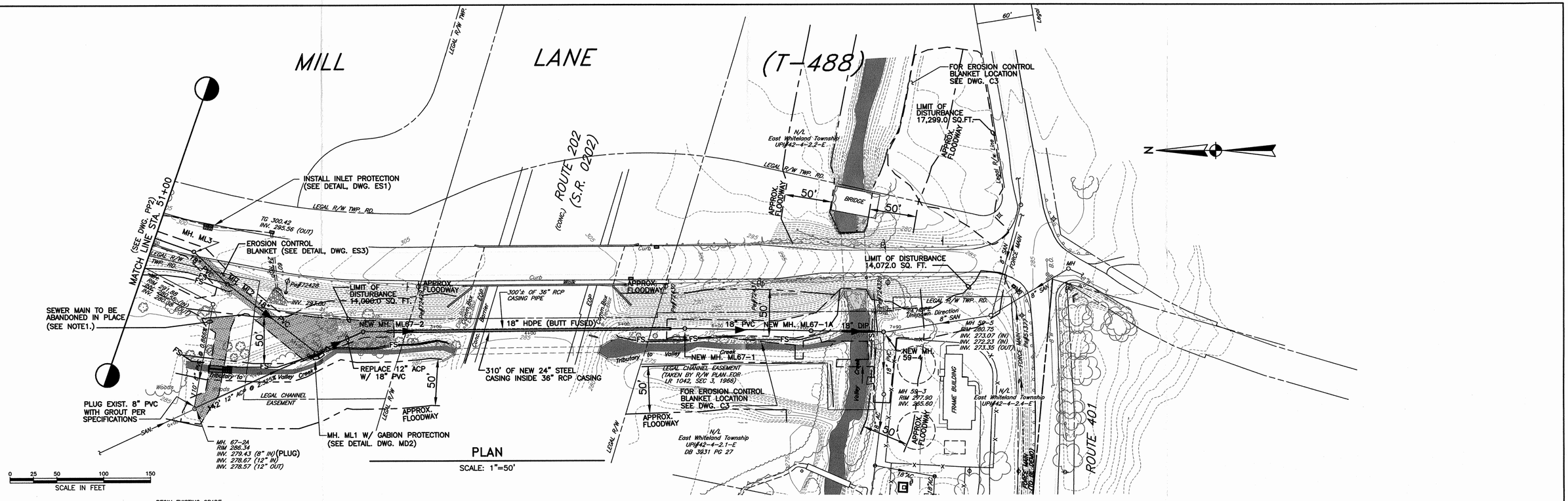
* Notes 1. Pump station peaking factors from the draft "Sewage Pumping Station Guidance" by PA DEP Southeast Regional Office
2. Residential/commercial flow peak factor = 2.5per *DEP Domestic Wastewater Facilities Manual (362-0300-001)*

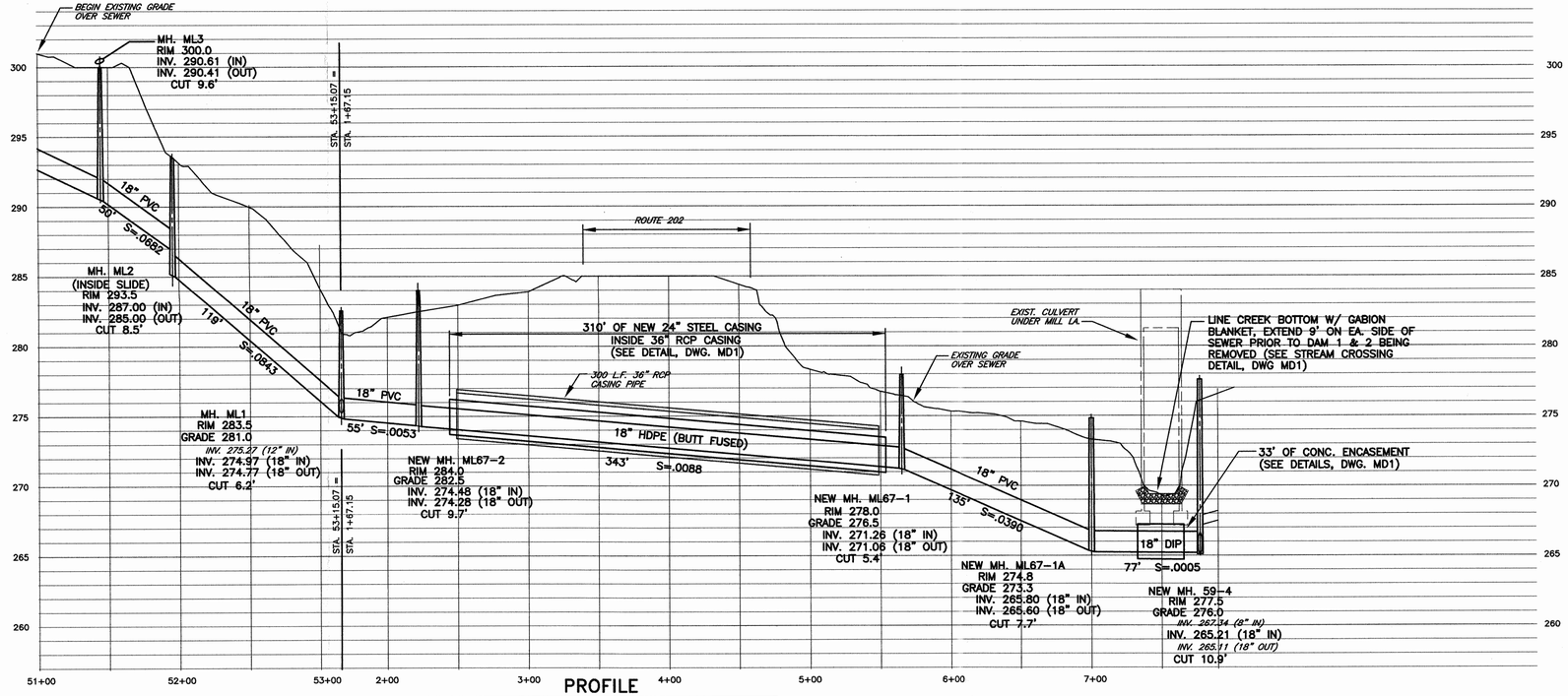
***2012 flows - 77,668^ gpd-Charlestown, 2,905 gpd-East Whiteland = 80,573 gpd total*
^ metered flow
2012 charlestown
- charlestown oaks - 38,354
- charlestown meadows - 19,074
- lee boulevard - 77,668
**** 432,302 -(38,354 + 19,074 + 77,668 + 275 [volpi]) = 296,931*

Exhibit E

Corrective Actions

1. Phase 1 – Mill Lane Improvements Plans
2. Phase 2 – Sidley Road Improvements Plans
3. System Capacities with Corrective Actions





PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NOTES:

1. REMOVE MANHOLE FRAMES & COVERS, DEMO MANHOLE TOP DOWN TO 3 FEET BELOW GRADE & FILL WITH 2A STONE.
2. SEE DWG. D1 & C3 FOR BYPASS PUMPING LAYOUT.
3. MANHOLES ML1, ML 67-2, ML 67-1, ML 67-1A, & 59-4 SHALL BE EQUIPPED W/ WATERTIGHT COVERS & EXTEND 18" ABOVE FINISHED GRADE.
4. FOR INSIDE SLIDE MANHOLE SEE DETAIL, DWG. MD1.
5. ALL MANHOLES SHOWN ON PP1 SHALL BE 5'-0" IN DIAMETER.
6. FULL & HALF LANE MILL & OVERLAY LIMITS TO BE DETERMINED IN THE FIELD.

E&S NOTES:

1. THIS PROJECT IS IN AN EXCEPTIONAL VALUE WATERSHED, EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH.

   BECAUSE THIS PROJECT IS IN AN EXCEPTIONAL VALUE WATERSHED, UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST IMMEDIATELY BE STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.
2. FOR PROPER STABILIZATION METHODS & DETAILS SEE DWGS. ES1, ES2, & ES3.
3. ALL FILTER SOCKS THIS SHEET SHALL BE 24" DIAMETER.
4. DISTURBED AREAS TO BE RE-VEGETATED WITHIN 50' OF SURFACE WATERS SHALL BE STABILIZED WITH EROSION CONTROL BLANKET (ECB).
5. SEE LEGEND ON DWG. ES1.

NO	REVISION	DATE	BY	APP.
2	ISSUED FOR CONSTRUCTION	8/16/13	MCC	KM
1	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
0	ISSUED FOR BID	5/29/13	DRB	KM
G	ISSUED TO CLIENT	5/21/13	DRB	KM
F	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM
E	RE-ISSUED TO CCCD	7/18/12	DRB	KM
D	RE-ISSUED TO PADOT	6/29/12	DRB	KM
C	ISSUED TO DEP & CCCD	6/14/12	DRB	KM
B	ISSUED TO PADOT	6/1/12	DRB	KM
A	ISSUED TO U.S. FISH & WILDLIFE SERVICE	4/20/12	DRB	KM
NO	REVISION	DATE	BY	APP.

RELEASED BY: K. McAGHON, P.E.
DESIGN: K. McAGHON, P.E. — CHECKED: KM
DRAWN: BLATT — CHECKED: KM
DATE: 2/10/12 — SURVEY DATE: 1/2012 — FIELD BOOK:

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

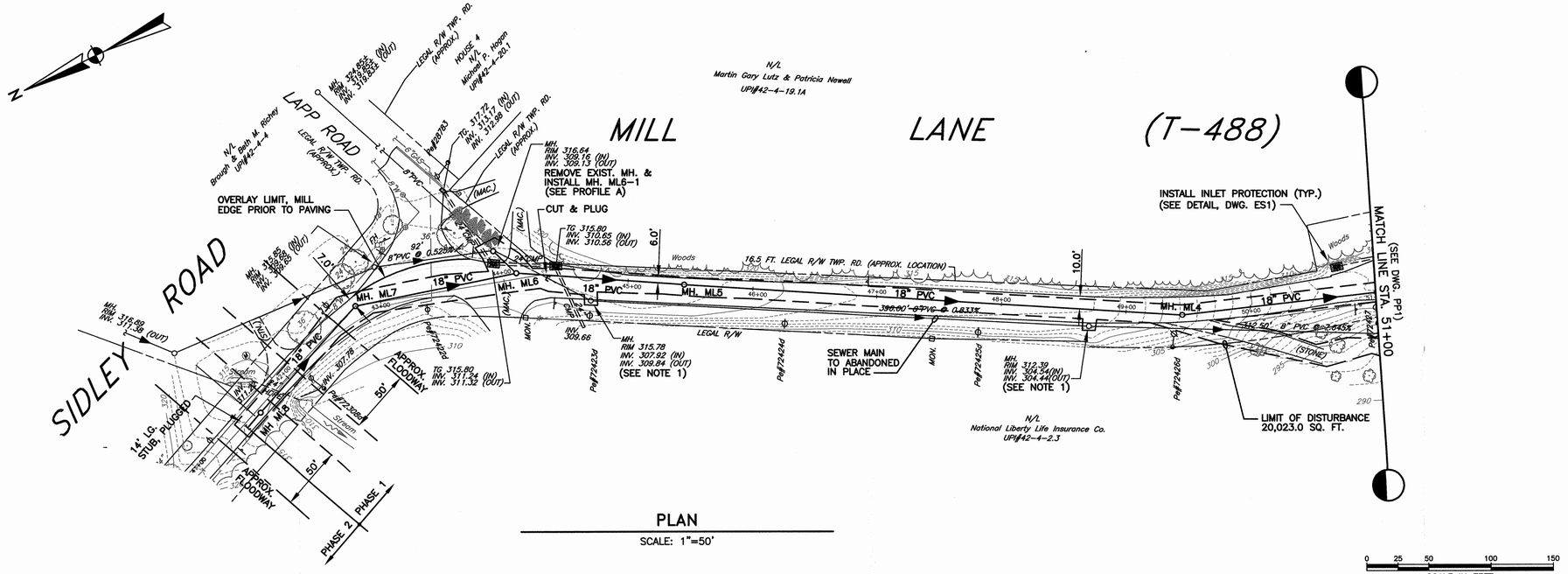
MILL LANE SEWER MAIN REPLACEMENT
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: MILL LANE TO LAPP ROAD
STA. 51+00 TO 7+90
& SOIL EROSION CONTROLS

SCALE: AS NOTED
DWG. NO.: PP1
PROJECT NO.: 10310.02
SHEET NO.: 10 OF 13
REV.: 1

Dwg. Name: PHASE 1 1031002_ MILL_SR_PP1_PP2.DWG Plotted: 11/12/2013 9:55 AM

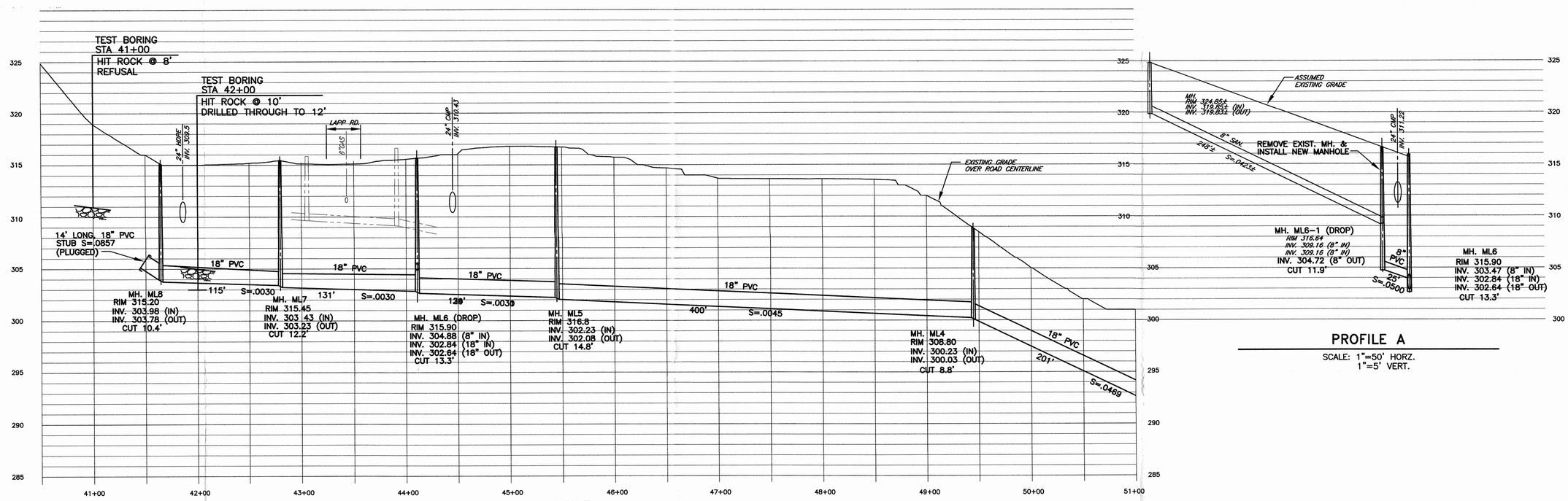


PLAN

SCALE: 1"=50'

NOTES:

1. REMOVE MANHOLE FRAMES & COVERS, DEMO MANHOLE TOP DOWN TO 3 FEET BELOW GRADE & FILL WITH 2A STONE. REGRADE TO MATCH SURROUNDING AREA.
2. MANHOLES ML4, ML5, & ML6 SHALL BE 5' IN DIAMETER.
3. FULL & HALF LANE MILL & OVERLAY LIMITS TO BE DETERMINED IN THE FIELD.



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

PROFILE A

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
4	ISSUED FOR CONSTRUCTION	8/16/13	MCC	KM
3	REVISED MILL LANE RIGHT-OF-WAY	7/19/13	MCC	KM
2	REVISED PER ADDENDUM 1	6/14/13	DRB	KM
1	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
0	ISSUED FOR BID	5/29/13	DRB	KM
E	ISSUED TO CLIENT	5/21/13	DRB	KM
D	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM
C	RE-ISSUED TO CCCD	7/18/12	DRB	KM
B	ISSUED TO DEP & CCCD	6/14/12	DRB	KM
A	ISSUED TO U.S. FISH & WILDLIFE SERVICE	4/20/12	DRB	KM

K. McAGHON, P.E.
RELEASED BY

DESIGN: K. McAGHON, P.E.	CHECKED: KM
DRAWN: BLATT	CHECKED: KM
DATE: 2/10/12	SURVEY DATE: 1/2012
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

MILL LANE SEWER MAIN REPLACEMENT
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

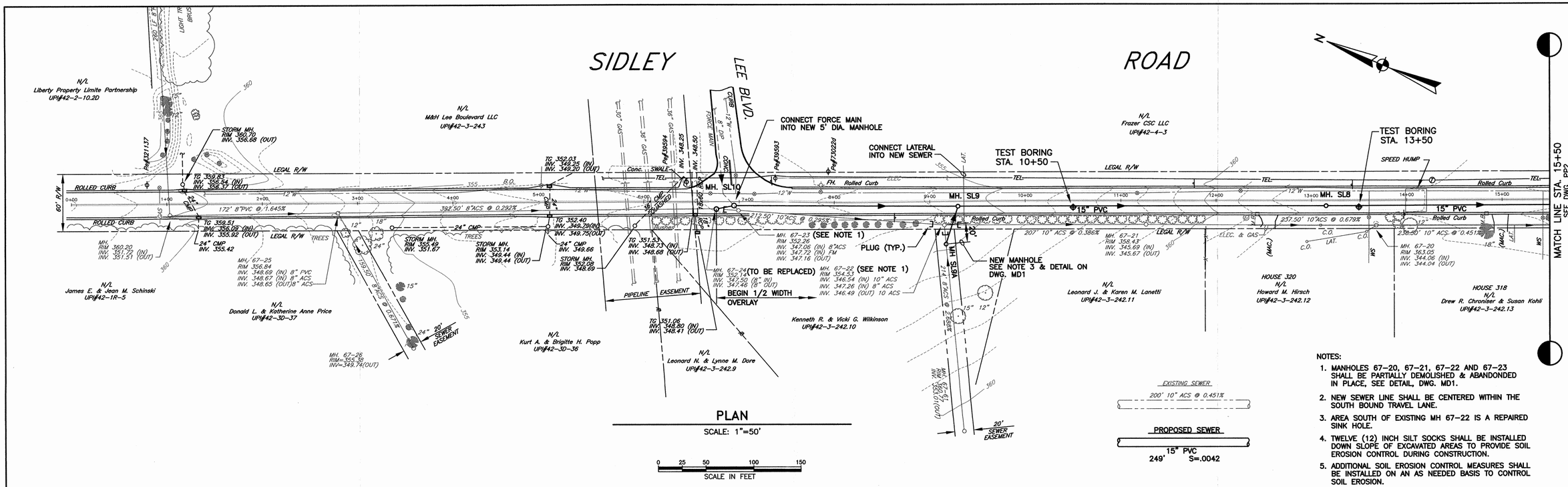
ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: MILL LANE TO LAPP ROAD STA. 41+50 TO 51+00 & SOIL EROSION CONTROLS

SCALE	DWG. NO.
AS NOTED	PP2

PROJECT NO.	SHEET NO.	REV.
10310.02	11 OF 13	2

Dwg. Name: PHASE 1 1031002_ MILL_SR_PP1_PP2.DWG Plotted: 11/12/2013 9:53 AM



PLAN

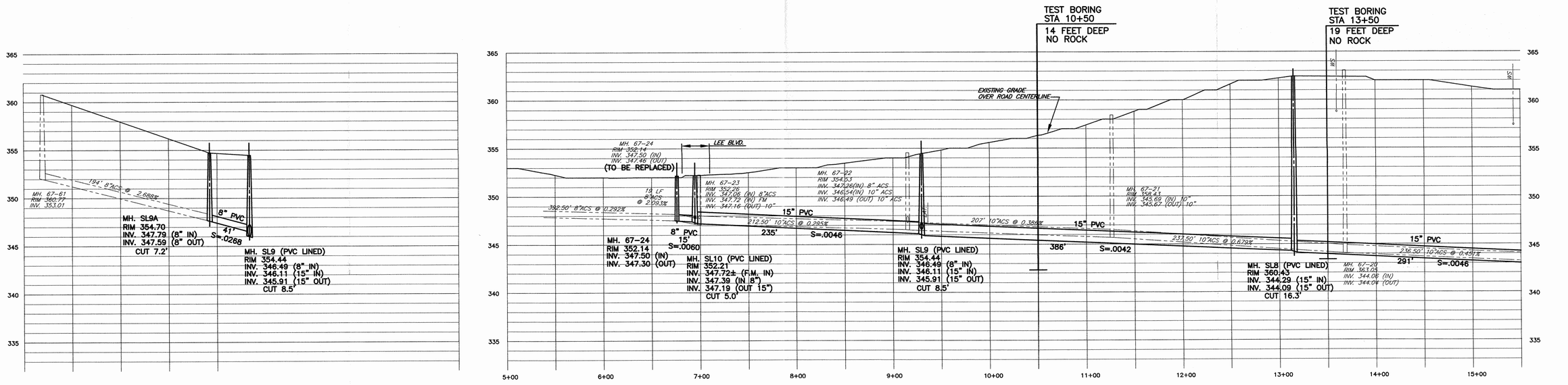
SCALE: 1"=50'

EXISTING SEWER
200' 10" ACS @ 0.451%

PROPOSED SEWER
15" PVC
249' S=.0042

NOTES:

1. MANHOLES 67-20, 67-21, 67-22 AND 67-23 SHALL BE PARTIALLY DEMOLISHED & ABANDONDED IN PLACE, SEE DETAIL, DWG. MD1.
2. NEW SEWER LINE SHALL BE CENTERED WITHIN THE SOUTH BOUND TRAVEL LANE.
3. AREA SOUTH OF EXISTING MH 67-22 IS A REPAIRED SINK HOLE.
4. TWELVE (12) INCH SILT SOCKS SHALL BE INSTALLED DOWN SLOPE OF EXCAVATED AREAS TO PROVIDE SOIL EROSION CONTROL DURING CONSTRUCTION.
5. ADDITIONAL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED ON AN AS NEEDED BASIS TO CONTROL SOIL EROSION.



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
E	ISSUED TO DEP FOR CAP/CMP	11/14/13	MCC	KM
0	ISSUED FOR BID	9/26/13	MCC	KM
D	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
C	ISSUED TO CLIENT	5/21/13	DRB	KM
B	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM
A	ISSUED TO VALLEY FORGE SEWER AUTHORITY	12/14/12	DRB	KM

K.M. McAGHON, P.E.
RELEASED BY

DESIGN	K.M. McAGHON, P.E.	CHECKED	K.M.
DRAWN	BLATT	CHECKED	K.M.
DATE	2/10/12	SURVEY DATE	1/2012
		FIELD BOOK	

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SIDLEY ROAD SEWER MAIN REPLACEMENT
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE
SIDLEY ROAD
STA. 0+00 TO 15+50

SCALE: AS NOTED

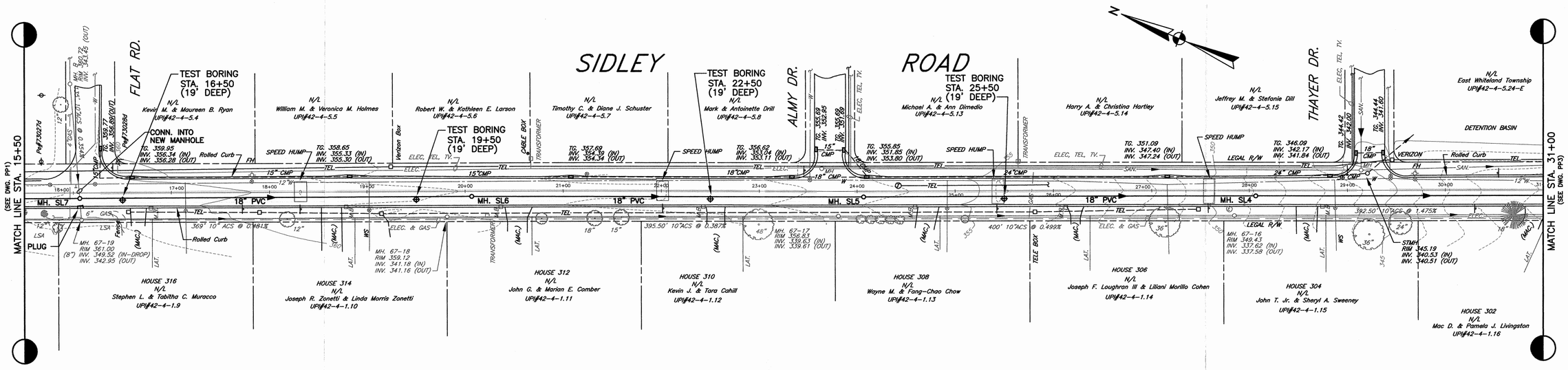
DWG. NO. PP1

PROJECT NO. 10310.02

SHEET NO. 8 OF 11

REV. E

Dwg. Name: PHASE 2 10310002PP1_PP3_SIDLEY_SR.DWG Plotted: 11/12/2013 11:29 AM



PLAN

SCALE: 1"=50'

0 25 50 100 150

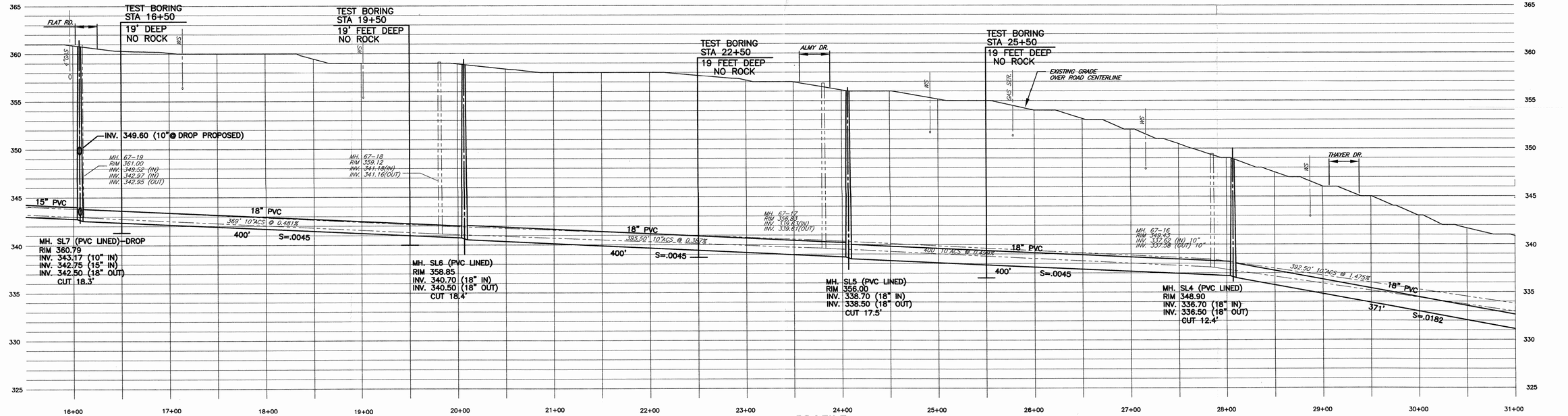
SCALE IN FEET

EXISTING SEWER
200' 10" ACS @ 0.451%

PROPOSED SEWER
249'
15"@S=.0042

NOTES:

1. NEW SEWER LINE SHALL BE CENTERED WITHIN THE SOUTH BOUND TRAVEL LANE.
2. MANHOLES 67-16, 67-17, 67-18 AND 67-19 SHALL BE PARTIALLY DEMOLISHED & ABANDONDED IN PLACE, SEE DETAIL, DWG. MD1.
3. TWELVE (12) INCH SILT SOCKS SHALL BE INSTALLED DOWN SLOPE OF EXCAVATED AREAS TO PROVIDE SOIL EROSION CONTROL DURING CONSTRUCTION.
4. ADDITIONAL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED ON AN AS NEEDED BASIS TO CONTROL SOIL EROSION.



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
E	ISSUED TO DEP FOR CAP/CMP	11/14/13	MCC	KM
0	ISSUED FOR BID	9/26/13	MCC	KM
D	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
C	ISSUED TO CLIENT	5/21/13	DRB	KM
A	ISSUED TO VALLEY FORGE SEWER AUTHORITY	12/14/12	DRB	KM

K.M. McAGHON, P.E.
RELEASED BY

DESIGN: K.M. McAGHON, P.E.	CHECKED: K.M.
DRAWN: BLATT	CHECKED: K.M.
DATE: 2/10/12	SURVEY DATE: 1/2012
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SIDLEY ROAD SEWER MAIN REPLACEMENT
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: SIDLEY ROAD STA. 15+50 TO 31+00

SCALE: AS NOTED

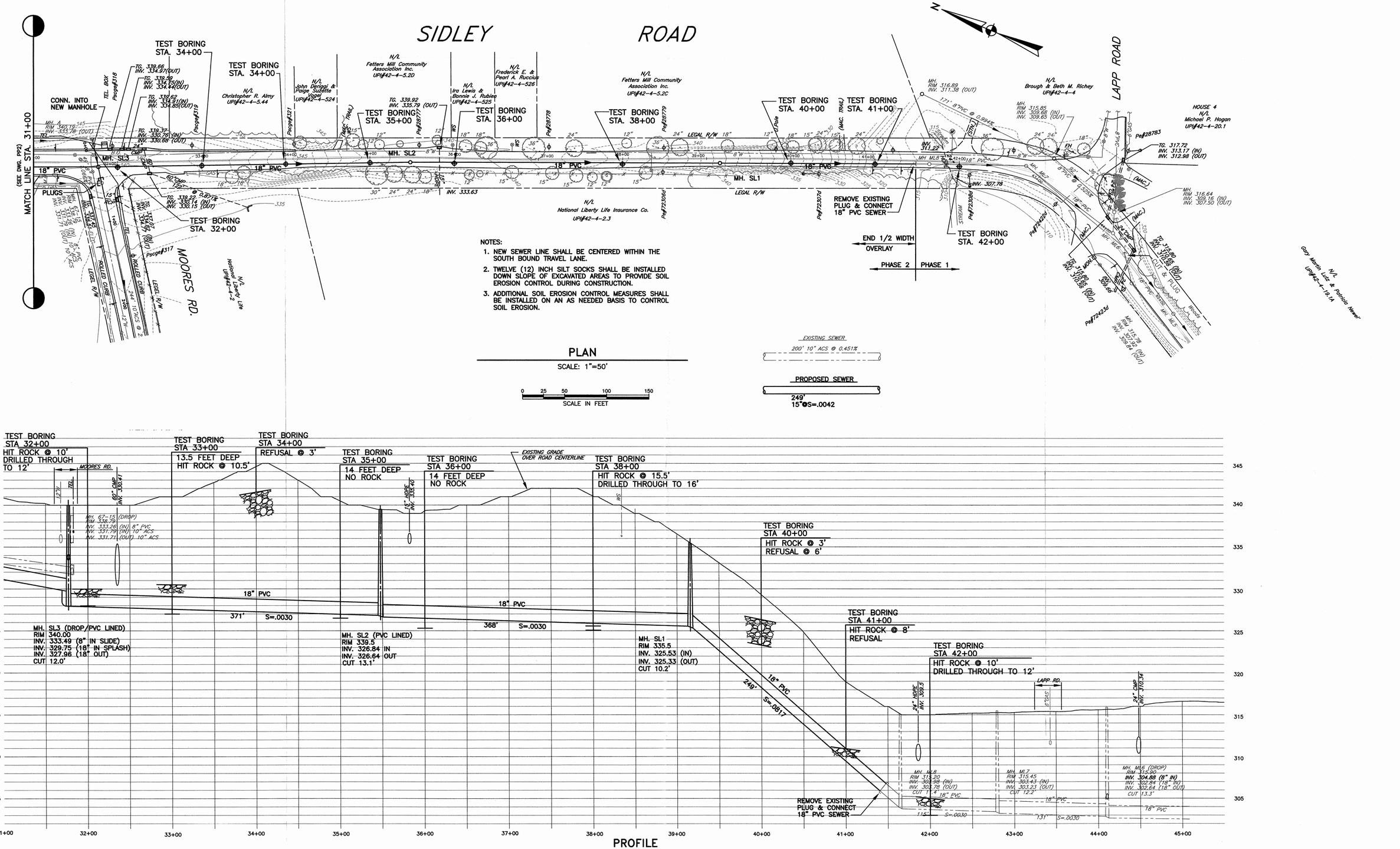
DWG. NO. PP2

PROJECT NO. 10310.02

SHEET NO. 9 OF 11

REV. E

Dwg. Name: PHASE 2 1031002PP1_PP3_SIDLEY_SR.DWG Plotted: 11/12/2013 11:30 AM



NOTES:

1. NEW SEWER LINE SHALL BE CENTERED WITHIN THE SOUTH BOUND TRAVEL LANE.
2. TWELVE (12) INCH SILT SOCKS SHALL BE INSTALLED DOWN SLOPE OF EXCAVATED AREAS TO PROVIDE SOIL EROSION CONTROL DURING CONSTRUCTION.
3. ADDITIONAL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED ON AN AS NEEDED BASIS TO CONTROL SOIL EROSION.

PLAN

SCALE: 1"=50'

0 25 50 100 150

SCALE IN FEET

EXISTING SEWER

200' 10" ACS @ 0.451%

PROPOSED SEWER

249'
15"@S=.0042

PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			

NO	REVISION	DATE	BY	APP.
F	ISSUED TO DEP FOR CAP/CMP	11/14/13	MCC	KM
0	ISSUED FOR BID	9/26/13	MCC	KM
E	ISSUED TO DEP FOR WQM PERMIT	6/12/13	DRB	KM
D	ISSUED TO CLIENT	5/21/13	DRB	KM
C	ISSUED TO DEP FOR CAP/CMP	2/13/13	DRB	KM
B	ISSUED TO VALLEY FORGE SEWER AUTHORITY	12/14/12	DRB	KM
A	US FISH & WILDLIFE SUBMISSION	8/15/12	DRB	KM

K.M. McAGHON, P.E.
RELEASED BY

DESIGN: K.M. McAGHON, P.E.	CHECKED: K.M.
DRAWN: BLATT	CHECKED: K.M.
DATE: 2/10/12	SURVEY DATE: 1/2012
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SIDLEY ROAD SEWER MAIN REPLACEMENT
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: SIDLEY ROAD
STA. 31+00 TO 42+00

SCALE: AS NOTED

DWG. NO. PP3

PROJECT NO. 10310.02

SHEET NO. 10 OF 11

REV. F

Dwg. Name: PHASE 2 1031002PP1_PP3_SIDLEY_SR.DWG Plotted: 11/12/2013 11:35 AM

East Whiteland

Gravity Sewer Hydraulic Capacity Analysis - Sidley Road 15" & 18" Upgrade with GVCC & Charlestown Future Flows

ARRO #10310.02

12/14/2011, rev 12-17-12, rev 6-13-13, rev 11-14-13

sheet 2Ca of 4

									Full Pipe Capacity			Proposed Capacity*	Remaining Capacity	Percentage Used	
Up-Stream MH	Down-Stream MH	Diam (in.)	Slope	Length (ft)	n	A(sf)	R	Q(cfs)	V(fps)	Q(gpm)	Q(gpd)	Q(gpd)	Q (gpd)	(%)	Notes
	To Lee Blvd PS	10	0.0035	1450 +/-	0.013	0.55	0.208	1.30	2.38	583	839,596	249,833	589,764	29.8	to - Lee Blvd P - existing conditions - 80,573** gpd existing + 70.4 EDUs from EWT to Lee Blvd PS
	To Lee Blvd PS	10	0.0035	1450 +/-	0.013	0.55	0.208	1.30	2.38	583	839,596	992,160	-152,564	118.2	to - Lee Blvd PS - 80,573** gpd existing + 298,931*** future Charlestown+70.4 EDUs from EWT to Lee Blvd PS
	from Lee Blvd PS											1,210,435			from - Lee Blvd PS flow (PK factor = 3.05) - with future Charlestown
	To Wilburdale PS											1,048,250			to - Wilburdale PS - 350,000(2008 flow) + 252 EDUs (glasgow-23, J&J -29, other GVCC-200)
	from Wilburdale PS											1,257,900			from - Wilburdale PS (PK factor=3.0)
67-25	67-24	8	0.0029	392.5	0.013	0.35	0.167	0.65	1.88	294	422,962	173,573	249,389	41.0	add - 2012 Charlestown Oaks(38,354)+ 275 gpd future(Volpi) -- 112 EDUs (includes 15 EDUs future-Micron Tech)
67-24	SL-10	8	0.0209	19	0.013	0.35	0.167	1.75	5.02	786	1,132,386	173,573	958,813	15.3	
SL-10	SL-9	15	0.0046	235	0.013	1.23	0.313	4.39	3.58	1,971	2,837,868	1,364,008	1,453,860	48.8	add - flow from Lee Blvd PS
SL-9	SL-8	15	0.0042	366	0.013	1.23	0.313	4.20	3.42	1,883	2,711,677	1,399,133	1,312,544	51.6	add - 16 EDUs (west side) + 6 EDUs (R & F building east side) = 22 EDUs total
SL-8	SL-7	15	0.0046	291	0.013	1.23	0.313	4.39	3.58	1,971	2,837,868	1,399,133	1,438,735	49.3	
SL-7	SL-6	18	0.0045	400	0.013	1.77	0.375	7.06	4.00	3,170	4,564,251	2,667,689	1,896,562	58.4	add - flow from Wilberdale PS flow + 2 EDUs (west side of Sidley Road) + 13.5 EDUs for 7 Lee Blvd
SL-6	SL-5	18	0.0045	400	0.013	1.77	0.375	7.06	4.00	3,170	4,564,251	2,669,064	1,895,187	58.5	add - 2 EDUs (west side of Sidley Road)
SL-5	SL-4	18	0.0045	400	0.013	1.77	0.375	7.06	4.00	3,170	4,564,251	2,670,439	1,893,812	58.5	add - 2 EDUs (west side of Sidley Road)
SL-4	SL-3	18	0.0178	371	0.013	1.77	0.375	13.97	7.91	6,268	9,026,504	2,671,814	6,354,690	29.6	add - 2 EDUs (west side of Sidley Road)
SL-3	SL-2	18	0.0030	371	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,705,501	1,021,194	72.6	add - 49 EDUs (east side of Sidley Road)
SL-2	SL-1	18	0.0030	368	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,705,501	1,021,194	72.6	
SL-1	ML-8	18	0.0857	249	0.013	1.77	0.375	30.82	17.45	13,832	19,918,363	2,705,501	17,212,862	13.6	
phase 2 - totals 67-24 to ML-6				3490											
ML-8	ML-7	18	0.0030	115	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,705,501	1,021,194	72.6	
ML-7	ML-6	18	0.0030	131	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,705,501	1,021,194	72.6	
ML-6	ML-5	18	0.0030	120	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,752,939	973,756	73.9	add - 69 EDUs from Lapp Road
ML-5	ML-4	18	0.0030	400	0.013	1.77	0.375	5.77	3.26	2,588	3,726,695	2,752,939	973,756	73.9	
ML-4	ML-3	18	0.0449	200	0.013	1.77	0.375	22.31	12.63	10,012	14,417,382	2,752,939	11,664,443	19.1	
ML-3	ML-2	18	0.0682	66	0.013	1.77	0.375	27.49	15.57	12,339	17,768,691	2,752,939	15,015,752	15.5	
ML-2	ML-1	18	0.0843	119	0.013	1.77	0.375	30.57	17.31	13,719	19,755,000	2,752,939	17,002,061	13.9	
phase 1 - totals ML-8 to ML-1				1151											
67-15	67-14	10	0.0230	244	0.013	0.55	0.208	3.93	6.11	1,495	2,153,224	668			add - 1 EDU west side of Sidley Road
67-14	67-13	10	0.0169	235	0.013	0.55	0.208	2.85	5.23	1,281	1,844,384	668	1,843,697	0.0	
67-13	67-12	8	0.0105	60	0.013	0.35	0.167	1.24	3.56	557	802,056	29,563	772,493	3.7	add - 42 EDUs
67-12	67-11	12	0.0526	227.8	0.013	0.79	0.250	8.19	10.43	3,676	5,292,726	43,313	5,249,414	0.8	add - 20 EDUs
67-11	67-10	12	0.0308	174.5	0.013	0.79	0.250	6.27	7.98	2,813	4,050,064	43,313	4,006,752	1.1	
67-10	67-9	12	0.0104	376.4	0.013	0.79	0.250	3.64	4.64	1,634	2,353,440	43,313	2,310,128	1.8	
67-9	67-8	12	0.0438	173.7	0.013	0.79	0.250	7.47	9.52	3,354	4,829,738	43,313	4,786,426	0.9	
67-8	67-7	12	0.0200	77.7	0.013	0.79	0.250	5.05	6.43	2,266	3,263,635	43,313	3,220,322	1.3	
67-7	67-6	12	0.0300	55.4	0.013	0.79	0.250	6.18	7.88	2,776	3,997,120	43,313	3,953,807	1.1	
67-6	67-5	12	0.0084	129.3	0.013	0.79	0.250	3.27	4.17	1,469	2,115,077	90,063	2,025,015	4.3	add - 68 EDUs - from business park
67-5	67-4	12	0.0193	195.6	0.013	0.79	0.250	4.96	6.32	2,226	3,206,012	90,063	3,115,950	2.8	
67-4	67-3	12	0.0159	169.8	0.013	0.79	0.250	4.50	5.74	2,021	2,909,947	90,063	2,819,885	3.1	
67-3	67-2A	12	0.0197	180	0.013	0.79	0.250	5.01	6.38	2,249	3,239,065	90,063	3,149,003	2.8	
67-2A	ML1	12	0.0233	142	0.013	0.79	0.250	5.44	6.94	2,444	3,518,828	90,063	3,428,765	2.6	total flow through business park
Moores Road & Aegon property totals				2441											
ML1	67-2	18	0.0053	55	0.013	1.77	0.375	7.66	4.34	3,440	4,953,375	2,843,001	2,110,373	57.4	add - flow through business park + 69 EDUs + 15" flow from Sidley/Moores Roads
67-2	67-1	15.63	0.0068	343	0.013	1.54	0.351	8.26	5.35	3,705	5,335,423	2,843,001	2,492,422	53.3	
67-1	67-1A	18	0.0390	135	0.013	1.77	0.375	20.79	11.77	9,331	13,436,790	2,843,001	10,593,789	21.2	**2012 flows - 77,668^ gpd-Charlestown, 2,905 gpd-East Whiteland, total = 80,573
67-1A	59-4	18	0.0050	77	0.013	1.77	0.375	7.44	4.21	3,341	4,811,143	2,843,001	1,968,141	59.1	^ metered flow
phase 1 - totals ML-1 to 59-4				610											2012 charlestown flows
															- charlestown oaks - 38,354
															- charlestown meadows - 19,074
															- charlestown Lee Blvd - 77,668
															***432,302 - (38,354 + 19,074 + 77,668 + 275 [volpi]) = 296,931

*Notes 1. Pump station peaking factors from the draft "Sewage Pumping Station Guidance" by PA DEP Southeast Regional Office

2 Residential/commercial flow peak factor = 2.5, *per DEP Domestic Wastewater Facilities Manual (362-0300-001)*

Exhibit F

Amendment to East Whiteland Trunk Line Agreement

1. December 12, 1979 Agreement
2. October 29, 2013 revised draft Agreement
3. Valley Forge Sewer Authority commitment letter

(5)

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment, dated as of the 12th day of December, 1979, to the East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974 (hereinafter referred to as "the Agreement"), is entered into between EAST WHITELAND MUNICIPAL AUTHORITY (East Whiteland Authority), the TOWNSHIP OF EAST WHITELAND (East Whiteland Township), parties of the first part, and the BOROUGH OF MALVERN (Malvern), and MALVERN MUNICIPAL AUTHORITY (Malvern Authority), parties of the second part, and VALLEY FORGE SEWER AUTHORITY, party of the third part.

WHEREAS, subsequent to the execution of the Agreement, Valley Forge Sewer Authority decided to seek the opportunity to transmit sewage from an area of Charlestown Township adjacent to East Whiteland Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Treatment Plant; and

WHEREAS, East Whiteland Authority and East Whiteland Township, at the request of Valley Forge Sewer Authority are willing to reserve for the Valley Forge Sewer Authority, the reserved capacity provided herein of the East Whiteland Trunk Line and the Mill Lane pumping station; and

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby, agree as follows:

1. Valley Forge Sewer Authority shall have no rights or liabilities with respect to Section 1.01 of the Agreement.

2. Within thirty (30) days of the date of this Amendment, Valley Forge Sewer Authority shall pay to East Whiteland Authority the sum of one hundred fifteen thousand nine hundred seventy-five

dollars ($115,975). Of that sum, $114,189 shall be allocated to Valley Forge Sewer Authority's capital contribution pursuant to Sections 2.01 and 2.02 of the Agreement and $1,786 to operating expenses for the first two (2) years pursuant to Section 4.13 of the Agreement. The calculation of the above figure takes into consideration all currently applicable grants. Exhibit B of the Agreement is hereby amended in part as set forth in Exhibit A attached hereto. All references in the Agreement to Exhibit B thereof shall be deemed to refer to Exhibit B as amended by Exhibit A attached hereto.

3. Valley Forge Sewer Authority hereby is granted rights, and assumes liabilities as if it were one of the parties referred to in the Agreement as a "Municipality" which rights and liabilities are defined in the Agreement.

4. Valley Forge Sewer Authority, at its own expense or at the expense of its users, may, during the term of the Agreement, cause sewage emanating from Charlestown Township to be discharged into sewer lines of East Whiteland Township which have been acquired from Great Valley Wastewater Company ("the Great Valley Line"). The East Whiteland Trunk Line shall thus be extended to the boundary of Charlestown Township.

5. Valley Forge Sewer Authority shall commence delivering sewage to the Great Valley Line as soon as practicable after the execution of thia Agreement. East Whiteland Authority, as soon as practicable thereafter, shall permit connection at the locations that East Whiteland Authority may agree to, which agreement may not be unreasonably withheld, and shall accept sewage for conveyance to the treatment plant subject to the terms and conditions herein set forth. Valley Forge Sewer Authority may make subsequent connections at locations agreed to by East

Whiteland Authority, which shall not unreasonably withhold its agreement. Except as permitted pursuant to Article VII of the Agreement, Valley Forge Sewer Authority shall not exceed its reserved capacity as set forth in Exhibit B, as amended by this Agreement.

6. Section 4.01 of the Agreement is hereby amended to read as follows:

"The Borough of Malvern, the township of East Whiteland and Valley Forge Sewer Authority (all of which are referred to in this article IV and elsewhere in this agreement as 'said municipalities') shall share the operating expenses of the East Whiteland Trunk Line and its extension to Charlestown Township, as defined in Section 4.06, as follows: the proportion that the volume of sewage (determined as hereinafter provided and by other agreement of the parties) emanating from each such municipality and discharged into the several sections or reaches of the interceptor or trunk sewer, constituting the East Whiteland Trunk Line and its extention to Charlestown Township bears to the total volume of sewage discharged by said municipalities into such sections or reaches shall be used in calculating the amount that each such municipality shall pay for sewage conveyance services. Operating expenses of the East Whiteland Trunk Line for the first two years of operation shall be paid as set forth in Section 4.13 hereof."

All references in Article 4 of the Agreement to East Whiteland Trunk Line shall be deemed also to refer to the Great Valley Line.

7. Any sewage discharged by Valley Forge Sewar Authority into the East Whiteland Trunk Line or Great Valley Line shall conform to the standards for quality of sewage set forth in Article V of the Agreement.

3. Pursuant to an Agreement entitled "Valley Creek Trunk Sewer Agreement" dated November 1, 1970, as amended, East Whiteland Authority has made payments to Tredyffrin Township for operating expenses of the Valley Creek Trunk Line during its first two years of operation, and will, during subsequent years, continue to be obligated to make payments on account of operating expenses. Valley Forge Sewer Authority agrees hereby to, within thirty days from the execution of this Agreement, reimburse East Whiteland Authority for 7.89% of the amount paid on account of operating expenses during the first two years by East Whiteland Authority to Tredyffrin Township. Valley Forge Sewer Authority further agrees to reimburse East Whiteland Authority for Valley Forge Sewer Authority's share of any payments East Whiteland must make to Tredyffrin Township pursuant to Article 4 of the Valley Creek Trunk Sewer Agreement for operating costs during years subsequent to the first two years of operation and for payments for capital contributions paid subsequent to the date hereof. Valley Forge Sewer Authority's share of the said operating costs and additional capital contributions will be its pro-rata share, based on the proportion that the volume of sewage emanating from Charleatown Township into the East Whiteland Trunk Line and Great Valley Line bears to the total sewage emanating from East Whiteland Township into the Valley Creek Trunk Sewer Line. The payments by Valley Forge Sewer Authority shall not exceed those that would be made if said Authority had made its payments directly to the Tredyffrin Township Municipal Authority.

9. At such time as East Whiteland Authority must pay funds to the Tredyffrin Township Municipal Authority resulting from an enlargement of an intercepter or trunk sewer (or any section or reach thereof) or the construction of an additional interceptor

or trunk sewer or the enlargement of a pumping station or the construction of an additional pumping station pursuant to the Valley Creek Trunk Sewer Agreement, then Valley Forge Sewer Authority shall reimburse East Whiteland Township for its pro-rata share of said funds calculated on the basis of its pro-rata share of reserved capacity, as such reserved capacity shall be determined by Valley Forge Sewer Authority, in such section or reach of interceptor or trunk sewer. In the alternative, Valley Forge Sewer Authority may reserve capacity pursuant to Section 7.02 of the Valley Creek Trunk Sewer Agreement.

10. Valley Forge Sewer Authority hereby agrees that all sewage from Charlestown Township shall be deemed to be sewage of Valley Forge Sewer Authorty for purpose of an Agreement dated as of November 1, 1970, as amended, known as "the Valley Forge Sewage Treatment Plan Agreement".

11. Valley Forge Sewer Authority shall, at its expense, construct or cause to be constructed a sewage meter or sewage flow measuring device to determine the volume of sewage emanating from Charlestown Township to East Whiteland Township.

12. All references in Sections 4.03, 7.03 and 8.03 of the Agreement to "Malvern" shall be deemed to refer to Malvern and Valley Forge Sewer Authority. Valley Forge Sewer Authority shall make payments pursuant to Section 4.04 of the Agreement at the same time as Malvern is required to make payments. All other sections of the Agreement refer to parties or municipalities defined in Section 4.01, as amended by Paragraph 6 of this Agreement, unless otherwise stated herein.

13. Pursuant to Paragraph 7.01 of the Valley Creek Trunk Sewer Agreement, Valley Forge Sewer Authority hereby is granted the right to rent a capacity of up to 300,000 gallons per day average flow (750,000 gallons per day peak flow) in the Valley

Creek Trunk Sewer from East Whiteland Authority, with all rental fees therefore being paid to East Whiteland Authority, as provided therein.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be executed and attested by its proper officers pursuant to the proper action of its governing body as of the day and year first above written.

BY: _____
Valley Forge Sewer Authority

ATTEST: _____
TOWNSHIP SECRETARY

EAST WHITELAND TOWNSHIP
BOARD OF SUPERVISORS
209 CONESTOGA ROAD
FRAZER PA. 19355

BY: _____
East Whiteland Municipal Authority

ATTEST: _____

BY: _____
Township of East Whiteland

ATTEST: _____

BY: _____
Borough of Malvern

ATTEST: _____

BY: _____
Malvern Municipal Authority

ATTEST: _____

EXHIBIT "A"

Exhibit "B" of the East Whiteland Trunk Line Agreement is amended in part to provide that if any expansion, repair, enlargement or construction to the Great Valley Line shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement or construction on the basis of its reserved capacity in the expanded or repaired Great Valley Line to the total reserved capacity therein. Notwithstanding the foregoing, 300,000 gallons per day of capacity shall be reserved in the Great Valley Line for Valley Forge Sewer Authority.

EXHIBIT "B"

THIS AGREEMENT made this 27th day of December 1978, by and between EAST WHITELAND MUNICIPAL AUTHORITY and VALLEY FORGE SEWER AUTHORITY

W I T N E S S E T H:

Valley Forge Sewer Authority and East Whiteland Municipal Authority have agreed to share cost for the Sidley Road Trunk Line repairs as indicated in Schedule A presented by East Whiteland Municipal Authority (Schedule A attached hereto). Items Nos. 1, 3, 4, and 6 of the Schedule A, which are line replacements, will be deferred until additional flows coming from Charlestown Township make ~~repairs~~ Replacements if necessary as determined by East Whiteland Municipal Authority's consulting engineers. Item No. 14 of Schedule A will be adjusted on the basis of proposed additional repairs to be required in lieu of replacement of earlier mentioned lines.

NOW THEREFORE, the parties hereto, agree that the mutual promises herein contained and previous arrangements will allow the parties to finalize the agreement to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line.

VALLEY FORGE SEWER AUTHORITY

EAST WHITELAND MUNICIPAL AUTHORITY

SCHEDULE A

EAST WHITELAND/CHARLESTON SHARED COSTS

	Manhole Runs	Total Est. Repair Cost	East Whiteland Twp. Capacity MGD	% Share	Share of Cost Est.	Charlestown Twp. Capacity MGD	% Share	Share of Cost Est.	Total Capacity
(1)*	67-25 to 23	$12,000	.038	29	0	0.75	71	$ 12,000	0.8
(2)	24 to 23		.038	29	0	0.75	71		
(3)*	23 to 19	7,000	0.25	25	1500	0.75 (1)	75	7,000	1.0
		3,000(2)			~~750~~			1500 ~~2,250~~	
(4)*	19 to 15	30,000	0.6	44	0	0.75	56	30,000	1.35
		3,000(2)			1,500			1,500	
(5)	15 to 13	1,300	0.635	46	650	0.75	54	650	1.39
(6)*	13 to 12	4,000	0.75	~~50~~		0.75	~~50~~ 100	4,000	1.5
(7)	12 to 6	600	0.75	50	300	0.75	50	300	1.5
(8)	6 to 2	300	0.80	52	150	0.75	48	150	1.55
(9)	2 to 59-4		0.85	53		0.75	47		1.6
(10)	59-4 to Pump Sta.		0.95	56		0.75	44		1.7
					400				
		$61,200			~~$5,900~~			$57,100	
(11)	Surveying	1,804		50	902			902	
(12)	TV & Cleaning	4,344		50	2,172			2,172	
(13)	TV Engr/Insp.	3,060		50	1,533			1,533	
(14)**	Line Replacement	12,000 (3)		0	0			12,000	
	Engr./Insp./Legal								
	TOTAL	$82,210			$10,507			$73,707	
					8707			77,907	

* TO BE POSTPONED UNTIL ADDITIONAL FLOW COMES FROM CHARLESTOWN
** TO BE ADJUSTED ON BASIS OF POSTPONED WORK

(1) Assume 750,000 MGD includes Ferguson & Warehouses

(2) Estimated cost for line repairs, assume benefit equal to each township

Solicitor Draft 04-15-13
Revised 10-08-13 VFSA
Revised 10-29-13-EWT

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment to East Whiteland Trunk Line Agreement is made this _____ day of _____, 2013, between EAST WHITELAND TOWNSHIP ("East Whiteland"), a township of the second class, EAST WHITELAND MUNICIPAL AUTHORITY ("East Whiteland Authority"), a municipal authority organized by East Whiteland and VALLEY FORGE SEWER AUTHORITY, a municipal authority organized by Charlestown, East Pikeland and Schuylkill Townships.

BACKGROUND

A. On December 27, 1978, East Whiteland Authority and Valley Forge Sewer Authority entered into a cost sharing agreement for the Sidley Road Trunk Line repairs as indicated on Schedule A attached thereto to provide sewer service to the southern portion of Charlestown Townsbip through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

B. On December 12, 1979, the parties hereto among others entered in an Amendment to thc East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974, to reserve for the Valley Forge Scwer Authority 300,000 gallons per day of reserved capacity in the East Whiteland Trunk Line (as extended to the boundary to Charlestown Township via the "Great Valley Line") and the Mill Lane Pumping Station, to transmit sewage from Charlestown Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

C. The purpose of this Agreement Amendment is to establish a new and increased reserve capacity for the Valley Forge Sewer Authority within and through the East Whiteland sewer system. This Agreement Amendment shall also serve to establish the cost sharing between East Whiteland and the Valley Forge Sewer Authority.

D. This Agreement Amendment hereby declares that Valley Forge Sewer Authority shall have a reserved capacity within and through the East Whiteland system as apportioned below.

E. This Agreement Amendment also amends Article VI Section 6.01 of the East Whiteland Trunk Line Agreement to include the use of Tele-metering devices for transmitting flow signals from certain VFSA Sewage Discharge points into the East Whiteland system.

F. For purposes of this Agreement, the various portions of the East Whiteland Township sewer system are defined as follows:

1. East Whiteland Trunk Line (A) - The Trunk Line (A) shall include the gravity line through the Mill Lane Pump Station, the Mill Lane Pump Station force main, and gravity lines from the force main through the point at which the force main turns to gravity and then south and east to the point at which the East Whiteland gravity sewer leaves East Whiteland and then enters the Tredyffrin System.

2. East Whiteland Trunk Line (B) - The Trunk Line (B) shall include the gravity line from Charlestown Township along Conestoga Road through the Hillbrook Pump Station, the Hillbrook Pump Station force main, and gravity lines from the force main to the discharge point at the Mill Lane Pump Station.

3. Great Valley Line – The Great Valley Line shall include the existing gravity line to the Mill Lane Pump Station from the East Whiteland/Charlestown Township line to the terminal manhole at the east end of the James Thomas Road cul-de-sac thence along and/or through James Thomas Road, Aston Road, Phoenixville Pike, Hayes Road, Sidley Road, Moores Road, across the Aegon property, under Rt 202 to the Mill Lane Pump Station. The portion of sewer line along Sidley Road is also known as the Sidley Road Trunk Line.

4. Lee Boulevard Force Main – The Lee Boulevard Force Main shall include the force main from the Lee Boulevard Pump Station to the force main discharge point in Sidley Road.

5. Mill Lane Trunk Line – The Mill Lane Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Mill Lane Sewer Main Replacement, Phase 1. The Mill Lane Trunk Line shall extend from Manhole ML8 in

Sidley Road approximately two-hundred (200) feet north of the intersection of Sidley Road and Lapp Road, thence south in and/or along Sidley Road, Mill Lane, under Rt 202 to an existing portion of the Great Valley Line which drains to the Mill Lane Pump Station.

6. New Sidley Road Trunk Line – The New Sidley Road Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Sidley Road Sewer Main Replacement, Phase 2. The New Sidley Road Trunk Line shall extend south in Sidley Road from the intersection of Sidley Road and Lee Boulevard to Manhole ML8 in Sidley Road which is the terminal end of the Mill Lane Sewer Main Replacement, Phase 1.

7. Mill Lane Pump Station – The pump station shall include the existing/new facility located north west of the intersection of Route 401 and Mill Lane.

8. Lee Boulevard Pump Station – The pump station shall include the existing facility located adjacent to Lee Boulevard.

9. Hillbrook Pump Station – The pump station shall include the existing facility located on Conestoga Road adjacent to Hillbrook Circle.

10. In summary, the various systems described in Sections F1 through F9 include all the pipelines through which Valley Forge Sewer Authority wastewaters drain in East Whiteland Township.

G. The various portions of the sanitary sewer system noted in Section F of this Agreement are outlined in Schedule C.

H. East Whiteland and East Whiteland Authority, at the request of Valley Forge Sewer Authority, are willing to reserve additional capacity for Valley Forge Sewer Authority, for a total reserved capacity of 432,302 gallons per day as provided herein.

NOW, THEREFORE, the parties hereto intending to be legally bound hereby agree as follows:

1. Sidley Road Trunk Line Cost Sharing Agreement. The December 27, 1978 Agreement between East Whiteland Authority and Valley Forge Sewer Authority establishing the cost sharing agreement for the Sidley Road Trunk Line is amended by eliminating Schedule A attached thereto and substituting therefor Schedule B attached hereto and incorporated herein. It is noted that construction costs noted in Schedule B are estimates.

The final cost sharing shall be based upon actual construction contract prices, subject to the prior review and approval of the Valley Forge Sewer Authority.

2. Reserved Capacity. Following the 2013 replacement and enlargement of the Mill Lane Pump Station and the construction of the Mill Lane and New Sidley Road Trunk Lines (as described in Section C of this Agreement and in the East Whiteland Special Study of 2013 prepared by ARRO Consulting, Inc.), reserved capacity for Valley Forge Sewer Authority in the East Whiteland Trunk Line shall be as follows:

a. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (A) shall be 432,302 gallons per day

b. The reserved capacity for the Valley Forge Sewer Authority in the New Sidley Road Trunk Line and Mill Lane Trunk Line shall be 412,302 gallons per day.

c. The reserved capacity for the Valley Forge Sewer Authority in the Lee Boulevard Pump Station and Lee Boulevard Force Main shall be 350,448 gallons per day.

d. The reserved capacity for the Valley Forge Sewer Authority in the Mill Lane Pump Station shall be 432,302 gallons per day.

e. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (B) shall be 20,000 gallons per day.

3. Flow Meters or Measuring Devices. The Valley Forge Sewer Authority shall be responsible for all costs to include, but not be limited to, the costs of the installation and maintenance of the equipment and the monthly costs for transmission of flow data to East Whiteland Township via cell phone technology from the Lee Boulevard Pump Station, the Charlestown Meadows Pump Station, and the Charlestown Oaks metering station to the Remote Terminal Unit (RTU) located in the new Mill Lane Pump Station.

If there are future locations requiring flow monitoring of Valley Forge Sewer Authority flows into the East Whiteland System, the Valley Forge Sewer Authority will be responsible for all costs to include, but not be limited to, the costs of installation and maintenance of equipment and the monthly charges for transmission of required flow data to East Whiteland system. The cell phone technology shall be updated by the Valley Forge Sewer Authority. -

4. Future Capital Projects. Following completion of the Mill Lane Pump Station, the Mill Lane Trunk Line, and the New Sidley Road Trunk Line replacement and enlargement projects, if any additional expansion, enlargement, repair or construction of any portions of any of the sewer system entities defined in Section F of this Agreement shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement, repair or construction on the basis of its reserved capacity as detailed in Section 2 Reserved Capacity of this Agreement.

5. Effective Date. This Amendment shall be effective upon the approval by the governing body of the last party to approve.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed as of the day and year first above written.

EAST WHITELAND TOWNSHIP

ATTEST: _____ By: _____

, Secretary , Chairman

EAST WHITELAND MUNICIPAL AUTHORITY

ATTEST: _____ By: _____

, Secretary , Chairman

VALLEY FORGE SEWER AUTHORITY

ATTEST: _____ BY: _____

, Secretary , Chairman

Schedule B

[Cost Sharing between East Whiteland and Valley Forge Sewer Authority to be provided by ARRO with review by Buchart Horn Engineers and agreement by East Whiteland and Valley Forge Sewer Authority.]

Schedule C

[Plan depiction of shared sewer lines to be provided by ARRO with review by Buchart Horn Engineers and agreement by East Whiteland and Valley Forge Sewer Authority.]

Environmental Protection by
Caring Professionals

Valley Forge Sewer Authority

333 Pawling Road
Phoenixville, Pennsylvania 19460
610-935-1553
Fax 610-983-9684

MUNICIPALITIES
Charlestown
Easttown
East Pikeland
East Whiteland
Malvern
Schuylkill
Tredyffrin
Willistown

August 28, 2013

Kelly Boettlin
Sewage Planning Specialist 2
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Re: East Whiteland Township Act 537 Special Study

Dear Ms. Boettlin:

This letter is to memorialize the Valley Forge Sewer Authority's (VFSA) commitment to finalizing the inter-municipal agreement amendment between East Whiteland the VFSA. We are aware that this amendment is part of the Special Study process and will endeavor to provide you with an amended Agreement in a timely manner, once the details are worked out and the amendment is executed. We and East Whiteland have both reviewed draft agreement amendments and are in basic agreement as to the major terms, namely that after completion of the Mill Lane and upstream sewer projects in East Whiteland, VFSA's reserve capacity in the East Whiteland system will be 432,302 gallons per day. This capacity is consistent with the Municipal Needs Assessment that supports the VFSA's Regional Act 537 Plan. In accordance with the inter-municipal agreements, these projects will be funded by each municipality according their respective reserve capacities.

Very truly yours,

Martin Goldberg

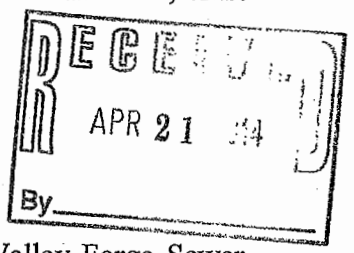
Martin Goldberg, Operations Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460
(610) 935-1553 ext. 226

APPENDIX R

Draft Intermunicipal Agreement Amendment

AMENDMENT TO EAST WHITELAND TRUNK LINE AGREEMENT

This Amendment to East Whiteland Trunk Line Agreement is made this 18 day of April, 2014, between EAST WHITELAND TOWNSHIP ("East Whiteland"), a township of the second class, EAST WHITELAND MUNICIPAL AUTHORITY ("East Whiteland Authority"), a municipal authority organized by East Whiteland and VALLEY FORGE SEWER AUTHORITY, a municipal authority organized by Charlestown, East Pikeland and Schuylkill Townships.



BACKGROUND

A. On December 27, 1978, East Whiteland Authority and Valley Forge Sewer Authority entered into a cost sharing agreement for the Sidley Road Trunk Line repairs as indicated on Schedule A attached thereto to provide sewer service to the southern portion of Charlestown Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

B. On December 12, 1979, the parties hereto among others entered in an Amendment to the East Whiteland Trunk Line Agreement dated as of February 1, 1971, as amended by Composite Amendment No. 1, dated as of December 1, 1974, to reserve for the Valley Forge Sewer Authority 300,000 gallons per day of reserved capacity in the East Whiteland Trunk Line (as extended to the boundary to Charlestown Township via the "Great Valley Line") and the Mill Lane Pumping Station, to transmit sewage from Charlestown Township through the East Whiteland Trunk Line (and the Valley Creek Trunk Line) to the Valley Forge Sewage Treatment Plant.

C. The purpose of this Agreement Amendment is to establish a new and increased reserve capacity for the Valley Forge Sewer Authority within and through the East Whiteland sewer system. This Agreement Amendment shall also serve to establish the cost sharing between East Whiteland and the Valley Forge Sewer Authority.

D. This Agreement Amendment hereby declares that Valley Forge Sewer Authority shall have a reserved capacity within and through the East Whiteland system as apportioned below.

E. This Agreement Amendment also amends Article VI Section 6.01 of the East Whiteland Trunk Line Agreement to include the use of Tele-metering devices for transmitting flow signals from certain VFSA Sewage Discharge points into the East Whiteland system.

F. For purposes of this Agreement, the various portions of the East Whiteland Township sewer system are defined as follows:

1. East Whiteland Trunk Line (A) - The Trunk Line (A) shall include the gravity line through the Mill Lane Pump Station, the Mill Lane Pump Station force main, and gravity lines from the force main through the point at which the force main turns to gravity and then south and east to the point at which the East Whiteland gravity sewer leaves East Whiteland and then enters the Tredyffrin System.

2. East Whiteland Trunk Line (B) - The Trunk Line (B) shall include the gravity line from Charlestown Township along Conestoga Road through the Hillbrook Pump Station, the Hillbrook Pump Station force main, and gravity lines from the force main to the discharge point at the Mill Lane Pump Station.

3. Great Valley Line – The Great Valley Line shall include the existing gravity line to the Mill Lane Pump Station from the East Whiteland/Charlestown Township line to the terminal manhole at the east end of the James Thomas Road cul-de-sac thence along and/or through James Thomas Road, Aston Road, Phoenixville Pike, Hayes Road, Sidley Road, Moores Road, across the Aegon property, under Rt 202 to the Mill Lane Pump Station. The portion of sewer line along Sidley Road is also known as the Sidley Road Trunk Line. The portion of Great Valley Line in Sidley Road from manhole 67-24 at Lee Boulevard to manhole 67-13 in Moores Road will be abandoned and replaced with the New Sidley Road Trunk Line described in Section F.6.

4. Lee Boulevard Force Main – The Lee Boulevard Force Main shall include the force main from the Lee Boulevard Pump Station to the force main discharge point in Sidley Road.

5. Mill Lane Trunk Line – The Mill Lane Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Mill Lane Sewer Main Replacement, Phase 1. The Mill Lane Trunk Line shall extend from Manhole ML8 in Sidley Road approximately two-hundred (200) feet north of the intersection of Sidley Road and Lapp Road, thence south in and/or along Sidley Road, Mill Lane, under Rt 202 to an existing portion of the Great Valley Line which drains to the Mill Lane Pump Station.

6. New Sidley Road Trunk Line – The New Sidley Road Trunk Line shall include the gravity line as detailed on design plans prepared by ARRO Consulting, Inc. entitled Sidley Road Sewer Main Replacement, Phase 2. The New Sidley Road Trunk Line shall extend south in Sidley Road from the intersection of Sidley Road and Lee Boulevard to Manhole ML8 in Sidley Road which is the terminal end of the Mill Lane Sewer Main Replacement, Phase 1.

7. Mill Lane Pump Station – The pump station shall include the existing/new facility located north west of the intersection of Route 401 and Mill Lane.

8. Lee Boulevard Pump Station – The pump station shall include the existing facility located adjacent to Lee Boulevard.

9. Hillbrook Pump Station – The pump station shall include the existing facility located on Conestoga Road adjacent to Hillbrook Circle.

10. In summary, the various systems described in Sections F1 through F9 include all the pipelines through which Valley Forge Sewer Authority wastewaters drain in East Whiteland Township.

G. The various portions of the sanitary sewer system noted in Section F of this Agreement are outlined in Schedule C.

H. East Whiteland and East Whiteland Authority, at the request of Valley Forge Sewer Authority, are willing to reserve additional capacity for Valley Forge Sewer Authority, for a total reserved capacity of 432,302 gallons per day Annual Average Daily Flow as provided herein.

NOW, THEREFORE, the parties hereto intending to be legally bound hereby agree as follows:

1. Sidley Road Trunk Line Cost Sharing Agreement. The December 27, 1978 Agreement between East Whiteland Authority and Valley Forge Sewer Authority establishing the cost sharing agreement for the Sidley Road Trunk Line is amended by eliminating Schedule A attached thereto and substituting therefore Schedule B attached hereto and incorporated herein. It is noted that some of the construction costs noted in Schedule B are estimates. The final cost sharing shall be based upon actual construction contract prices, subject to the prior review and approval of the Valley Forge Sewer Authority.

2. Reserved Capacity. Following the 2013 replacement and enlargement of the Mill Lane Pump Station and the construction of the Mill Lane and New Sidley Road Trunk Lines (as described in Section C of this Agreement and in the East Whiteland Special Study of 2013 prepared by ARRO Consulting, Inc.), reserved capacity for Valley Forge Sewer Authority and East Whiteland Township based on capacity needs analysis to the year 2035 in the East Whiteland Trunk Line the Annual Average Daily Flow shall be as follows:

a. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (A) shall be 432,302 gallons per day. The reserve capacity for East Whiteland Township and Malvern Borough in the East Whiteland Trunk Line (A) shall be 3,882,698 gallons per day. The amount of reserve capacity for each of these municipalities is defined by separate agreement between East Whiteland Township and Malvern Borough. Since the East Whiteland Township and Malvern Borough flow enters at several locations along this trunk line the weighted average of each party's flow shall be used to calculate cost sharing for any project that may occur in the future on this trunk line. Weighted average is defined as the average of each party's percent of flow in each pipe section weighted by the length of each pipe section compared to the total length of pipe sections included in a future project.

b. The reserved capacity for the Valley Forge Sewer Authority in the New Sidley Road Trunk Line and Mill Lane Trunk Line shall be 412,302 gallons per day. The reserve capacity for East Whiteland Township in the New Sidley Road

Trunk Line and Mill Lane Trunk Line shall be 552,803 gallons per day. Since the East Whiteland Township flow enters at several locations along these two sewer line segments the weighted average for cost sharing of each shall be 57.37 % VFSA and 42.63 % EWT in New Sidley Road Trunk Line and 44.63 % VFSA and 55.37 % EWT in Mill Lane Trunk Line up to manhole MH 59.4. The cost sharing for any improvements from manhole MH 59.4 to the Mill Lane Pump Station shall be based upon the weighted average concept outlined in Section 2.a.

c. The reserved capacity for the Valley Forge Sewer Authority in the Lee Boulevard Pump Station and Lee Boulevard Force Main shall be 373,673 gallons per day. The reserve capacity for East Whiteland Township in the Lee Boulevard Pump Station and Lee Boulevard Force Main shall be 22,265 gallons per day.

d. The reserved capacity for the Valley Forge Sewer Authority in the Mill Lane Pump Station and the Mill Lane Pump Station Forcemain shall be 432,302 gallons per day. The reserve capacity for East Whiteland Township in the Mill Lane Pump Station and the Mill Lane Pump Station Forcemain shall be 1,872,503 gallons per day.

e. The reserved capacity for the Valley Forge Sewer Authority in the East Whiteland Trunk Line (B) shall be 20,000 gallons per day. The reserve capacity for East Whiteland Township in the East Whiteland Trunk Line (B) is undefined at this time due to various development possibilities and connections points to the Mill Lane Pump Station, Great Valley Line, and Trunk Line B. Since the East Whiteland Township flow enters at several locations along this trunk line the weighted average of each party's flow shall be used to calculate cost sharing for any project that may occur in the future on this trunk line.

3. Flow Meters or Measuring Devices. The Valley Forge Sewer Authority shall be responsible for all costs of the installation and maintenance of the equipment and the monthly costs for transmission of flow data to East Whiteland Township via cell phone technology from the Lee Boulevard Pump Station, the Charlestown Meadows Pump Station, and the

Charlestown Oaks metering station to the Remote Terminal Unit (RTU) located in the new Mill Lane Pump Station.

If there are future locations requiring flow monitoring of Valley Forge Sewer Authority flows into the East Whiteland System, the Valley Forge Sewer Authority will be responsible for all costs of installation and maintenance of equipment and the monthly charges for transmission of required flow data to East Whiteland system. The cell phone technology shall be updated by the Valley Forge Sewer Authority as required.

4. Rehabilitation of Manholes 67-13 (at intersection of Moores Road and Ashlawn Road) to ML-1 of the Great Valley Trunk Line. Within six (6) months following substantial completion of replacement of the New Sidley Road Trunk Line replacement, East Whiteland Township shall engage an engineer to conduct an evaluation of those portions of the Great Valley Trunk Sewer Line that will no longer carry flows from the Valley Forge Sewer Authority, (identified as Manholes 67-13 on design drawings prepared by Roy F. Weston, Inc. to Manhole ML-1 on drawings prepared by ARRO Consulting, Inc. entitled Mill Lane Sewer Main Replacement Phase 1) but will remain in service for East Whiteland Township. Cost of the evaluation shall be shared in accordance with Schedule B, attached to this Agreement Amendment. Included in the evaluation shall be a television inspection of all sections of the sewer line. Based on the results of the inspection(s) of the sewer line, a conceptual report shall be prepared by the engineer that includes concept level descriptions of all practical alternatives to repair (line, slipline, grout or spot repairs) the sections of the gravity sewer line that require repair according to the opinion of the engineer. In addition, the report shall include conceptual level total project cost estimates (plus or minus 25%) for the alternatives presented in the report. The study shall include the engineers' recommended alternative(s) for each section of sewer line that requires repair. The conclusions of the study shall be subject to the approval of the Valley Forge Sewer Authority (which approval may be withheld only for sound engineering reasons), after consultation with the consulting engineers of the Valley Forge Sewer Authority. If there shall be disagreement regarding selected alternatives, and the parties cannot otherwise promptly resolve said disagreement, the disagreement shall be submitted for arbitration in accordance with ARTICLE IX of the East Whiteland Trunk Line Agreement of 1971.

The implementation of the selected Alternative(s) shall be completed by East Whiteland Township within six (6) years of the engagement of the engineer to perform the study. Costs to implement the selected alternative(s) shall be shared in accordance with Schedule B, attached to this Agreement Amendment.

Following six years after completion of the study, the Valley Forge Sewer Authority's obligation to share in any cost associated with repair, upgrade, enlargement or replacement of any portion of the Great Valley Sewer Trunk Line shall cease to exist.

5. Future Capital Projects. Following completion of the Mill Lane Pump Station, the Mill Lane Trunk Line, and the New Sidley Road Trunk Line replacement and enlargement projects, if any additional expansion, enlargement, repair or construction of any portions of any of the sewer system entities defined in Section F of this Agreement – with the exception of the rehabilitation of the Great Valley Line from manhole 67-13 to manhole ML-1 shall be required, Valley Forge Sewer Authority shall pay its pro rata share of such expansion, enlargement, repair or construction on the basis of its reserved capacity as detailed in Section H.2 Reserved Capacity of this Agreement Amendment, and subject to all provisions of the East Whiteland Trunk Line Agreement.

6. Effective Date. This Amendment shall be effective upon the approval by the governing body of the last party to approve.

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed as of the day and year first above written.

EAST WHITELAND TOWNSHIP

ATTEST: _____ By: _____

,Secretary ,Chairman

EAST WHITELAND MUNICIPAL AUTHORITY

ATTEST: _____ By: _____

,Secretary ,Chairman

VALLEY FORGE SEWER AUTHORITY

ATTEST: _____ BY: _____

,Secretary ,Chairman

Schedule A intentionally left blank in keeping with paragraph 1.

on page 4 of this Agreement.


CHARLESTOWN TOWNSHIP
WEST WHITELAND
TOWNSHIP LINE
TREDYFFRIN
TOWNSHIP
EAST WHITELAND TRUNK LINE (B)
HILLBROOK PUMP STATION
GREAT VALLEY LINE
GREAT VALLEY LINE (TO BE ABANDONED)
NEW SIDLEY ROAD TRUNK LINE
LEE BOULEVARD FORCE MAIN
LEE BOULEVARD PUMP STATION
MILL LANE TRUNK LINE
MILL LANE PUMP STATION
EAST WHITELAND TRUNK LINE (A)
MATTHEWS ROAD METER
TO VALLEY FORGE SEWER AUTH.
Philadelphia Memorial Park
Hayn Solomon Park
Ecology Park
Great Valley Middle School
EAST GOSHEN TOWNSHIP
WILLISTOWN TOWNSHIP
MALVERN
Amtrak
Conrail
Phoenixville
Conestoga
Church Road
Sheeds Road
King Road
Hershey Mill Road
Flat Road
Lee Boulevard
Great Valley Boulevard
Wilburdane Road
Moores Road
Mill Lane
Oak Glen Drive
Forge Drive
Thayer Drive
Ashbury Road
Flintshire Drive
Hillbrook Court
Clover Lane
Timberidge Lane
Spring Valley Road
Conestoga Road
Hillbrook Road
Boot Road
Valley Forge Road
Hill Road
Dalton Road
Aston Road
James Road
Thomas Road
Spruce Road
Birch Lane
Fairview Road
Sidley Road
Ashbury Road
Flintshire Drive
Aubrey Drive
Thayer Drive
Sale Line Road
Forge Drive
Oak Glen Drive
Mill Lane
Moores Road
Timberidge Lane
Clover Lane
Hillbrook Court
Boot Road
Valley Forge Road
Hill Road
Dalton Road
Spring Valley Road
Conestoga Road
Hillbrook

EXHIBIT P4

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS (SPECIAL STUDY 2015)

East Whiteland Township/

Great Valley Corporate Center

Act 537 Special Study

April 2015

(Revised September 2015)

Engineer's Project No. 10310.09

Prepared By:

ARRO Consulting, Inc.

649 North Lewis Road, Suite 100

Limerick, PA 19468

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Instructions for Completing Act 537 Plan Content and Environmental Assessment Checklist

Remove and recycle these instructions prior to submission

CHECKLIST INSTRUCTIONS

These instructions are designed to assist the applicant in completing the Act 537 Plan Content and Environmental Assessment Checklist.

This checklist is composed of three parts: one for "General Information," one for "Administrative Completeness," and one for "General Plan Content". A plan must be "administratively complete" in order to be formally reviewed by DEP. The General Plan Content portion of the checklist identifies each of the issues that must be addressed in your Act 537 Plan Update based on the pre-planning meeting between you and/or your consultant and DEP.

Use the right-hand column blanks in the checklist to identify the page in the plan on which each planning issue is found or to reference a previously approved update or special study (title and page number).

If you determine a planning issue is not applicable even though it was previously thought to be needed, please explain your decision within the text of the plan (or as a footnote) and indicate the page number where this documentation is found.

When information required as part of an official plan update revision has been developed separately or in a previous update revision, incorporate the information by reference to the planning document and page.

For specific details covering the Act 537 planning requirements, refer to Chapters 71 and 73 of DEP's regulations.

Wastewater projects proposing funding through the following sources must prepare an "Environmental Report" as described in the Uniform Environmental Review Process (UER) and include it with the plan submission designated as "Plan-Appendix A". The following funding programs use the UER process.

- The Clean Water State Revolving Loan Fund (PENNVEST, DEP, EPA)
- The RUS Water and Waste Disposal Grant and Loan Program (USDA-RD)
- The Community Development Block Grant Program (DCED, HUG)
- Other Federal Funding Efforts (EPA)

The checklist items or portions of checklist items required in the Act 537 Plan Update revision and that are also included in the UER process are indicated by shading. Most of the "Environmental Report" document may be constructed from the Act 537 Official Plan Update revision by using "copy & paste" techniques. The technical guidance document *Uniform Environmental Review Process* (UER) (DEP ID. 381-5511-111) is available electronically on DEP's website at www.dep.state.pa.us.

After Municipal Adoption by Resolution, submit three copies of the plan, any attachments or addenda and this checklist to DEP.

A copy of this completed checklist must be included with your Act 537 plan. DEP will use the "DEP USE ONLY" column during the completeness evaluation of the plan. This column may also be used by DEP during the pre-planning meeting with the municipality to identify planning elements that are not required to be included in the plan.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Act 537 Plan Content and Environmental Assessment Checklist

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name East Whiteland Township

2. Brief Project Description Act 537 Special Study - Great Valley Corporate Campus; Infrastructure improvements in East Whiteland Township to accommodate future wastewater needs and flows originating in the GVCC and adjacent properties.

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Nagel	John			Township Manager
Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line -- City	State	ZIP+4
Frazer	PA	19355

Phone + Ext.	FAX (optional)	Email (optional)
610-648-0600		

C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
Great Valley Corporate Campus Special Study	

Site Location Line 1	Site Location Line 2
Northeastern Portion of Township	

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Bohner	William	L	Jr

Title	Consulting Firm Name
Project Engineer	ARRO Consulting, Inc.

Mailing Address Line 1	Mailing Address Line 2
649 N. Lewis Road	Suite 100

Address Last Line – City	State	ZIP+4	Country
Limerick	PA	19468	USA

Email	Phone + Ext.	FAX
bill.bohner@thearrogroup.com	610-495-2102	610-495-5855

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
_____	i	1. **Table of Contents**
		2. **Plan Summary**
_____	1,2	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	2	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
_____	2	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	2	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	3	E. Provide a schedule of implementation for the project that identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
_____	App. N	3. **Municipal Adoption: Original,** signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	App. K	4. **Planning Commission / County Health Department Comments**: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	App. L	5. **Publication:** Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	App. M	6. **Comments and Responses:** Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	3	7. **Implementation Schedule:** A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, §71.31.d) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.c).
_____	App. H, I	8. **Consistency Documentation:** Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan		Item Required
_____	4	I.	**Previous Wastewater Planning**
			A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	4		1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
_____	4		2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
_____	5		3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
_____	5		4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
_____	7	II.	**Physical and Demographic Analysis utilizing written description and mapping** (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	7		A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
_____	7		B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
_____	7		C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
_____	8		D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference-Title 25, §71.21.a.1.iii).
_____	8		E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference-Title 25, §71.21.a.1.ii).
_____	8		F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.
_____	8		G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.

9 **III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs**

A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:

9 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21a.2.i.A).

9 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).

9 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference-Title 25, §71.21.a.2.i.B).

10 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).

11 5. A detailed description of the municipality's operation and maintenance requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).

11 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).

11 B. Using DEP's publication titled *Sewage Disposal Needs Identification*, identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:

11 1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).

11 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).

11 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).

11 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Sewage Disposal Needs Identification* publication. (Reference-Title 25 §71.21.a.2.ii.B).

11 5. Detailed description of operation and maintenance requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).

12 C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:

12 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).

12 2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).

12 3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).

13 **IV. Future Growth and Land Development**

A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:

13 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).

13 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).

14 3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.

14 B. Delineate and describe the following through map, text and analysis.

14 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDU's remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, §71.21.a.3.i).

15 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25,§71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).

16,17 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).

14 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference-Title 25, §71.21.a.3.iv).
--public ground/surface water supplies
--recreational water use areas
--groundwater recharge areas
--industrial water use
--wetlands

18 5. Sewage planning necessary to provide adequate wastewater treatment for five and ten year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference-Title 25, §71.21.a.3.v).

20 **V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities**

A. Conventional collection, conveyance, treatment and discharge alternatives including:

20 1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).

20 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, §71.21.a.4.i).

20 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).

20 a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).

20 b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).

20 c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).

20 d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).

20 e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).

20 4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).

21 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).

23 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).

23 B. The use of individual sewage disposal systems including individual residential spray irrigation systems based on:

23 1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).

23 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).

23 3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.

23 4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).

23 a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).

23 b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).

23 c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).

23 C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference-Title 25, §71.64.d).

23 1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).

23 2. Soil suitability. (Reference-Title 25, §71.64.c.I).

23 3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).

23 4. Municipal, Local, Agency or other controls over operation and maintenance requirements through a Sewage Management Program. (Reference-Title 25, §71.64.d). See Part "F" below.

23 D. The use of community land disposal alternatives including:

23 1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).

23 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).

23 3. Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title25, §71.21.a.2.ii.C). See Part "F" below.

23 4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.

23 E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference- Title 25, §71.21.a.4).

23 1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).

23 2 Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).

23 3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).

23 4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.

23 5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).

23 F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:

23 1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).

23 2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).

23 3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference-Title 25, §71.73.b.2).

23 4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:

23 a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).

23 b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.

23 5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).

23 6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).

24 G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, §71.21.a.4).

1. Modification of existing comprehensive plans involving:

24 a. Land use designations. (Reference-Title 25, §71.21.a.4).

24 b. Densities. (Reference-Title 25, §71.21.a.4).

24 c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).

24 d. Improved enforcement. (Reference-Title 25, §71.21.a.4).

24 e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).

24 2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).

24 3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference-Title 25, §71.21.a.4).

24 4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).

24 H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).

24 1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).

24 2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).

24 3. Community economic conditions. (Reference-Title 25, §71.21.a.4).

24 4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).

24 5. Drinking water sources. (Reference-Title 25, §71.21.a.4).

24 6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).

26 VI. Evaluation of Alternatives

A. Technically feasible alternatives identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, §71.21.a.5.i.).

26 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the Planning Guide.

26 2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.

27 3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A. 1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A 1251-1376). (Reference-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.

27 4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §71.21.a.5.i.D). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.

28 5. **Antidegradation requirements** as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.

28 6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.

28 7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.

28 8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §71.21.a.5.i.H). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.

29 9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference-Title 25, §71.21.a.5.i.I) Appendix B, Section II.I of the Planning Guide.

29 10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference-Title 25, §71.21.a.5.i.J). Provide DEP with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.

29 11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide.

30 B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.

30 C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).

30 D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).

31 E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).

35 F. Ana lyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).

35 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).

35 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).

35 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).

36 **VII. Institutional Evaluation**

A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:

36 1. Financial and debt status. (Reference-Title 25, §71.61.d.2).

36 2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)

37 3. Existing legal authority to:

37 a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).

37 b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).

37 c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).

37 d. Take enforcement actions against ordinance violators. (Reference-Title 25, §71.61.d.2).

37 e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).

37 f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25,§71.61.d.2).

37 B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:

37 1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).

37 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).

37 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).

37 C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:

37 1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).

37 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).

38 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).

38 4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).

39 5. Any other legal documents. (Reference-Title 25, §71.61.d.2).

39 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.

39 D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).

40 **VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives**

A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:

40 1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).

40 2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).

40 3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).

41 4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).

41 5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).

41 6. Available financing methods. (Reference-Title 25, §71.21.a.6).

41 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).

41 B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)

3 C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)

N/A **IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)**

N/A A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance 381-5511-111. Include this document as "Appendix A" to the Act 537 Plan Update Revision. Note: *An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.*

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EXECUTIVE SUMMARY

This Act 537 Special Study (Special Study) was prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This Special Study addresses the requirements necessary to upgrade components of the Township's conveyance system in order to meet the future wastewater needs of the Great Valley Corporate Campus.

The Plan is comprised of the following components addressed in the Plan of Study:

I. Previous Wastewater Planning

II. Physical and Demographic Analysis

III. Existing Sewage Facilities in the Planning Area

IV. Future Growth and Development

V. Alternatives to provide for new or improved wastewater disposal facilities

VI. Evaluation of Alternatives

VII. Institutional Evaluation

VIII. Selected Wastewater Treatment and Institutional Alternative

The primary focus of the Plan is to evaluate alternatives to provide for upgraded Township conveyance system facilities including the Wilburdale Pump Station and the Flat Road Pump Station.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives as follows:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Due to uncertainties regarding the timing of the Liberty Properties development, Liberty Properties will prepare planning for upgrades to the Flat Road Pump Station at the time of their module submission.

Currently, upgrades to the Mill Lane Pump Station are complete. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD.

The engineer's opinions of probable construction cost (planning level costs) for the alternatives established within this Special Study are:

Total Costs - Phase I

Planning Level - Construction Cost Opinion Total for Pump Station Upgrades: $690,000

Planning Level – Gravity Sewer and Force Main Construction Cost Opinion: $682,000

Total Planning Level Construction Cost: $1,372,000

Total Costs - Phase II

Planning Level – Defer to Future Planning.

With the need for infrastructure improvements being prompted by the wastewater to be generated from extensive development that is proposed for the corporate center, these alternatives will be paid for and financed through a combination of monies from developer funds and Township funds.

The following is a schedule for implementing the proposed alternative:

	Description	Months from DEP Approval of Plan
1.	Phase I – Preliminary Design of Wilburdale Pump Station, Force Main, and Gravity Sewer.	6
2.	Phase I – Complete Financing Considerations	6
3.	Phase I – Permitting (Part II WQM and E&S/Stormwater)	6
4.	Phase I – Receive Permits	9
5.	Phase I – Final Design	10
6.	Phase I – Bid the Project	11
7.	Phase I – Award the Project	14
8.	Phase I – Complete Construction	26
9.	Phase II – Flat Road Pump Station	Deferred to Future Planning

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Discuss Existing Wastewater Planning

1. *Previous Act 537 Planning*

An Act 537 Sewage Facilities Plan, dated May 2, 1995, was prepared for East Whiteland Township. This was a 'township-wide' plan. The primary purpose of the Plan was to consider the extension of the existing public collection and conveyance system to most of the Township as need was determined.

The Valley Forge Sewer Authority adopted their Act 537 Planning in November of 2006. The Authority is the point to where wastewater flows for ultimate treatment and disposal.

An Act 537 Plan amendment "Special Study" was prepared. It was last revised in September 2011. The purpose of this study was to focus on the wastewater needs to address the replacement and upgrade of the Mill Lane Pump Station. This Special Study was approved by PA DEP in 2011/2012.

An Act 537 Special Study was prepared in 2013 and approved by the Department. This Special Study identified and addressed the requirements necessary to upgrade portions of the Township's conveyance system to accommodate future flow needs from Charlestown Township and East Whiteland Township. The planning area included south central Charlestown Township and north central East Whiteland Township.

2. *Planning Not Done in Accordance with an Approved Implementation Schedule*

There has been no planning by the Township that has not been completed in accordance with an approved implementation schedule.

3. *Additional Planning*

Planning that is anticipated by the Township above and beyond the planning associated with this Act 537 Special Study is associated with the timing for installation of a fourth pump at the Mill Lane Pump Station and improvements to the MLPS force main and the down-stream trunk sewer. This will be triggered by the flow indicator of monitored average daily flows at the Mill Lane Pump Station. This flow is 989,126 gpd. The Township intends to monitor the average daily flows at the Mill Lane Pump Station knowing the flow contributions from adjacent drainage area (via metered flow) along with flow contributions from the Mill Lane Pump Station. From this, a base flow can be established with the assumption that the most significant growth in the Township will occur in the drainage area tributary to the Mill Lane Pump Station, the monitoring of the average daily flows at the station appears to be a reasonable approach.

4. *Planning Via Planning Madules or Addenda.*

Two revisions were made to the Township-wide 537 Plan. The first was the Special Study for the Mill Lane Pump Station that was last revised in September 2011. The second was the most recent Special Study (approved by the Department in September 2013) addressing conveyance system upgrades to accommodate future flows in East Whiteland and Charlestown Township.

B. Identification of Municipal and County Planning Documents

1. *Identify Land Use Plans and Zoning Maps*

The Chester County Comprehensive Plan entitled "Landscapes2" establishes guidelines for the following land use categories.

- Growth Management
- National Resource Protection and Open Space

- Agricultural and Farmland Protection

The categories are used to provide the municipalities with "planning strategies to assist them in implementing their growth boundaries."

The Township has three municipal planning documents that govern Land Use and Zoning.

- The East Whiteland Township Comprehensive Plan (Adopted 2001)
- The East Whiteland Township Zoning Ordinance (Adopted 2007)
- Subdivision and Land Development Ordinance (Adopted 2007)

A zoning map showing the designated zoning districts is found in Appendix A.

2. *Identify Zoning Regulations That Establish Lot Sizes*

The Zoning Ordinance adopted by the Township establishes the criteria for lot sizes for the following zoning districts in the planning area.

Zoning District		Minimum Lot Area
R1	Low Density Residential District	40,000 Sq. Feet
O/BP	Office/Business Park	80,000 Sq. Feet

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping

This Act 537 Special Study is being prepared to address the sewage facilities needs of existing and proposed development in the area served by the Flat Road Pump Station and the Wilburdale Pump Station. Refer to the Plan in Appendix B that shows the boundary for the planning area addressed in this Special Study.

The plan in Appendix B also represents a municipal plan/map showing the municipal boundaries of the entire Township. The area to be served by proposed sanitary sewer facilities falls with the planning area of this Special Study.

B. Identify the Physical Characteristics of the Planning Area

East Whiteland Township is located in Chester County, due east of Exton, PA. The topography of the planning area varies from a low elevation of 359 ft. near the Wilburdale Pump Station to an elevation of 383 ft. near the southern portion of the Great Valley Parkway loop. A topographical map of the area is presented in Appendix D.

In addition, the wetlands per the National Wetlands Inventory Map are detailed on the map found in Appendix E.

C. Soils Analysis

This Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

D. Geological Features of the Planning Area

As with Section C. above, this Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

E. Topography

As referenced in Section II.B. of this Plan, the topography of the planning area varies from a low elevation of 359 ft. near the Wilburdale Pump Station to an elevation of 383 ft. near the southern portion of the Great Valley Parkway loop. A topographical map of the area is presented in Appendix D.

F. Potable Water Supply Information

Since this is strictly a special study to address collection/conveyance issues within the planning area, potable water supply information is not applicable to this Special Study.

G. Wetlands

There are no wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the U.S. Fish and Wildlife Service.

III. EXISTING FACILITIES IN THE PLANNING AREA

A. Identify and Describe Municipal Sewage Systems in the Planning Area

1. Location, Size, and Ownership of Facilities

Currently, there are collection and conveyance facilities in the planning area. The sanitary sewer mains that currently make up the collection system are 8 inches in diameter.

There are two wastewater pump stations in the planning area. The Flat Road Pump Station is located along Flat Road on the northeast side of the GVCC. This pump station has a capacity of 0.540 MGD. Wastewater is pumped through an existing 6-inch force main to the gravity sewer main located in Great Valley Parkway.

The other station is the Wilburdale Pump Station located near the intersection of Wilburdale Road and Flat Road. The Wilburdale station has a capacity of 0.576 MGD. Wastewater is pumped through an existing 8-inch force main to the gravity sewer located in Flat Road just east of Sidley Road.

2. Narrative and Schematic Diagram of the Basic Treatment Process

Since the focus of this Special Study is to address the needs associated with the collection and conveyance system in the planning area, a narrative and schematic diagram of the basic treatment process is not applicable.

3. Description of Problems with the Existing Facilities

Both the Flat Road Pump Station and the Wilburdale Pump Station are aging submersible stations with control equipment and electrical disconnects mounted in outside enclosures that are exposed to daily weather conditions.

Plans and specifications were prepared for mechanical/maintenance improvements to the Flat Road Pump Station. However, this work was not completed since the potential for development in the GVCC could dictate the need for additional facility upgrades.

Since both pump stations are aging, operations and maintenance of the mechanical and electrical equipment are a concern.

4. *On-Going Upgrades or Expansion of Facilities*

The Mill Lane Pump Station, located at the intersection of Conestoga Road and Mill Lane, has been upgraded. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD. The station design has the capacity to pump the projected flows from Charlestown Township and East Whiteland Township. Ultimate projected flows are 2,521,433 gpd ADF. This includes existing flow plus projected flows for both Charlestown Township and East Whiteland Township. Applying a peaking factor of 2.78, established in the original basis of design report in concert with DEP guidance, the projected peak flow is 7.01 MGD. The ultimate pump station capacity is 7.2 MGD.

In accordance with the recommendations of the East Whiteland/Charlestown Township Special Study, approved in September 2013, a new 18-inch sanitary sewer main was installed in Mill Lane from manhole ML-8 to manhole 67-1AA.

This installation was completed in late 2013 to facilitate the diverting of a large portion of wastewater from the Sidley Road area and around the Aegon property. In addition, the Township recently installed a new sewer main in Sidley Road (15-inch from manholes SL-10 to SL-7 and 18-inch from manholes SL-7 to ML-8) to receive the majority of the proposed flow from the planning area and Charlestown Township. This new gravity sewer provides capacity for planned future flows and will remove flow from the existing Sidley Road sewer main that was hydraulically overloaded in some locations.

5. Operations and Maintenance Requirements and the Status of Past and Present Compliance

The Township is the facility permitee and the owner. They perform routine maintenance on the collection and conveyance system to keep the facilities operating satisfactorily.

B. Individual and Community On-Lot Disposal Systems

There are four lots located along Wilburdale Road that have individual on-lot disposal systems. These lots could potentially be served, in the future, through the extension of an 8-inch collector sewer. Investigation of Chester County Health Department records shows that there are no reported malfunctions. However, CCHD researched their records back to their 1968 micro film log and found nothing referencing Wilburdale Road in their records. Consequently, it was concluded that these OLDS may be old systems that were built before the CCHD permitted on-lot facilities. With the age of these OLDS being a potential factor, the Township feels that it is important to include planning for the extension of public sanitary sewer service to the four Wilburdale Road properties in the event there is a problem with these systems in the future.

C. Wastewater Sludge and Septage Generation

Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. Description of Future Growth and Development

1. *Areas with Existing Development and Plotted Subdivisions*

Existing development and plotted subdivisions are described as follows:

- Great Valley Corporate Center

2. *Land Use Designations*

Land use in East Whiteland Township is governed by the Township's Zoning Ordinance. Land use is given the following designations per the zoning ordinance.

R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Commercial Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally Oriented Commercial
ROC/R	Regionally Oriented Commercial/Res
PO	Professional Office

O/BP Office/Business Park

O/BPS Office/Business Park Services

I Industrial

INS Institutional

NS Neighborhood Schools

C Cemetery

OS Open Space

In the planning area, the zoning designations include:

- R-1 Low Density Residential
- O/BP Office Business Park
- C Cemetery

3. *Future Growth Areas and Projections*

For the planning area identified for this Special Study, there are areas that have existing development and areas that are planned for growth. The planned growth is:

- Liberty Properties
- J & J Properties (w/i GVCC)
- Glasgow Tract (w/i GVCC)
- Wilburdale Road OLDS

These are detailed in Table 2 below.

4. *Subdivision Regulations as they Pertain to Planned Developments*

East Whiteland Township has established guidelines for development, use, and protection of land. The guidelines are established in the Township's Zoning Ordinance.

The Zoning Ordinance regulates:

- Building height, area, and location on the lot;
- Flood plains and uses within the flood plains;
- Where certain land uses make occur in the Township;
- Quality, location, or size of signs;
- Minimum lot areas for various uses. Table 1

5. *Required Sewage Planning*

Sections V and VI of this Special Study will examine the technical alternatives necessary to meet the sewage facilities needs of the planning area. Projected wastewater flows for the planning area are classified by origin.

Table 1

Existing Flow Needs Summary

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	--------	279,600
TOTAL			**279,600**
(1) Based on pump station flow data obtained during full occupancy of the corporate center (2008). **(2) 3.13 People Per Household.** **(3) 275 gpd/EDU.**			

The means for serving the future needs of the planning area will be in the form of upgrades to the conveyance system including the Flat Road Pump Station and the Wilburdale Pump Station.

Table 2

Flow Projection Summary (Future Wastewater Needs)

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	--------	279,600
Glasgow Tract	23	72	6,325
Liberty Properties	371	--------	102,000
J & J Properties	29	--------	7,975
Wilburdale Road (OLDS)	4	12	1,100
TOTAL			**397,000**

(1) Great Valley Corporate Campus flow is based on flow data obtained during full occupancy (2008). Liberty Properties flow based on data provided by Liberty Properties.

(2) 3.13 People Per Household.

(3) 275 gpd/EDU.

Summarizing Pump Station Needs:

The **Wilburdale and Flat Road Pump Station**s are public submersible pump stations that serve existing properties in the GVCC. Development of wastewater flow parameters was based on system operational data that defined a maximum or worst case scenario. This operational data reflected that period in time when the GVCC was fully occupied in the mid to late 2000's (2008). With the economic decline over the course of the past five to six years, a number of tenants moved their businesses or facilities from the GVCC to other locations or closed their businesses altogether.

In an effort to establish a more current base flow, operational data from 2014 was reviewed. Assuming the former case described above represents the upper boundary, the latter (based on 2014 data) would more accurately represent a base scenario.

The two primary property owners in the GVCC include Liberty Properties and Johnson & Johnson. Both of these entities were consulted and both provided their anticipated future wastewater loading based on their known plans for development or redevelopment of their properties.

For the two flow bases, the average daily base flows for the entire GVCC are:

- Upper Boundary (2008) – 279,600 gpd
- Base Boundary (2014) – 238,466 gpd

When including the projected flows provided by the primary property owners of Liberty Properties and Johnson & Johnson, the projected average daily flows from the entire GCCC are:

- Upper Boundary (2008) – 389,575
- Base Boundary (2014) – 348,375 gpd

Upon review of these boundary conditions, there does not appear to be a significant difference in the base and upper flow rates. Therefore, the sizing of infrastructure to accommodate the projected flows would be better served by utilizing the Upper Boundary condition to remain conservative.

The **Wilburdale** pump station has an existing capacity of 576,000 gpd. Using the Upper Boundary case, the average daily flow is nearly 279,600 gpd. With the addition of Liberty Properties, J & J Properties, Wilburdale Road (OLDS), and the Glasgow Tract, average daily flows will be more nearly 397,000 gpd.

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

A. Identify Alternatives

1. *Regional Wastewater Treatment Concepts*

Wastewater from East Whiteland Township is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant

2. *Extension of Existing Municipal Sewage Facilities to Areas in Need*

Currently, there are public collection and conveyance facilities that serve the GVCC. As discussed in Part A.1. of this section, wastewater collected in these facilities is ultimately conveyed to the Valley Forge Sewer Authority for treatment. Currently there is no plan to extend these facilities beyond the current reach. Refer to the plan found in Appendix B that shows the existing collection and conveyance system.

3. *Continued Use of Existing Community Treatment Facilities*

Currently, there are no community systems in the planning area. This is not applicable to this Special Study.

4. *New Community Sewage Systems and Treatment*

Since this Plan is examining the public sewer needs and the impact on existing conveyance system components, the implementation of new community sewage systems is not applicable to this Special Study.

5. *Repair and Replacement of Existing Collection and Conveyance System Components*

As stated in Part A.2. of this section, there are wastewater collection and conveyance facilities that serve the GVCC. The planning area is served by gravity sewers and pump stations that collect and convey the wastewater to the Sidley Road gravity sewer main. One of the pump stations in the planning area is the Flat Road Pump Station. It receives flow from several parcels in the planning area. This pump station's force main discharges to the existing gravity sewer main located in Great Valley Parkway. The Wilburdale Pump Station, located in the western portion of the planning area, receives flow from the Great Valley Corporate Campus and pumps wastewater through a force main to the gravity sewer main located in Flat Road. This gravity main conveys wastewater to the gravity sewer in Sidley Road.

Operationally, the gravity sewer main in Sidley Road takes all flow from the above referenced pump stations along with flow from the adjacent subdivisions. Refer to the plan sheet in Appendix C.

There are areas of concern that need to be addressed to meet existing and future wastewater needs.

- The Wilburdale Pump Station: This is one of the oldest stations in the Township with no control building or permanent emergency power source.
- The Flat Road Pump Station: This is an antiquated submersible pump station with no control building or permanent emergency generator power source.
- The gravity sewer in Flat Road: This sewer main receives flow from the Wilburdale Pump Station's force main. The diameter of this gravity sewer will need to be increased to accommodate future flows.

- The force main for the Wilburdale Pump Station will need to be increased in diameter to reduce the headloss and accommodate future flows.
- The Flat Road Pump Station may need to be relocated pending a full determination of the physical scope of the development that is proposed by Liberty Properties.

Upon review, a Phased approach to the above referenced upgrades has been considered. Refer to Section VIII and the Executive Summary for specific details.

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road. The pump station site is limited in terms of available area. However, it is anticipated that through the implementation of a compact package pump station, upgrades can be implemented on the existing site. Two options that exist include a compact submersible station or a compact suction lift station constructed adjacent to the current station. This would enable the current station to stay in operation while the new facility is constructed. The existing fence would be expanded outward for placement of the new station on the northside of the current station. The force main will need to be upgraded from the existing 6 inch main to a new 10 inch main. An 8 inch main could accommodate the flows. But, headloss in the 8 inch main would be significant compared to that of a 10 inch main.

The pump station would also include a new structure to house the controls, a new permanent emergency generator, and a bypass connection.

Phase II: Upgrade the Flat Road Pump Station and relocate it if necessary (The need to relocate this station is dependent upon the configuration of the proposed entrance/access to the Liberty Properties development). Since the

design of the upgrades to this station is dependent upon the timing and location of the proposed development by Liberty Properties, the Township commits to deferring the planning for this pump station to the planning module submission for Liberty Properties.

6. Alternative Methods of Collection and Conveyance to Serve Areas in Need

Given that this Special Study addresses the needs associated with the upgrade of existing facilities to serve future flows, alternative methods of collection and conveyance to serve areas in need is not applicable to this Special Study.

B. Use of Individual Disposal Systems

The use of individual on-lot disposal systems will not be considered for this Special Study.

C. Small Flow Sewage Treatment Facilities

Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Community Land Disposal

Assessment of alternatives based on the use of community land disposal is not applicable to this Special Study.

E. Retaining Tank

The use of retaining tanks will not be evaluated as part of this Special Study.

F. Septage Management

A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study.

VI. EVALUATION OF ALTERNATIVES

A. Consistency Determination

1. Clean Stream Law

The construction of upgrades to the conveyance facilities in the Planning area does not conflict with the Clean Stream Law. Flow generated by the planning area will ultimately be treated at Valley Forge Sewer Authority's wastewater treatment plant and disposed of in accordance with requirements and limits set forth by PADEP.

2. Chapter 94 Report

The East Whiteland Township 2013 Chapter 94 Report indicates that both the Wilburdale and Flat Road Pump Stations have capacity to meet current flow needs. However, based on the needs identified in this Special Study, the capacity of both stations will be exceeded.

The Mill Lane Pump Station, located at the intersection of Conestoga Road and Mill Lane, has been upgraded. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD.

3. *Clean Water Act (Title II)*

This Act and the Federal Water Quality Act establish specific planning requirements for wastewater facilities planning. These requirements only apply to municipalities intending to apply for financial assistance from the Federal Government for the construction of sewage facilities. Since the funding of the construction of the alternatives would be through financial contributions by municipal users, and potentially State agencies, this analysis is not applicable.

4. *Comprehensive Plans*

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes2," was adopted in November of 2009. The alternatives to upgrade public sanitary sewer service to accommodate proposed development in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes2 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted a Comprehensive Plan in 2001 that identifies Township policies on future preservation and development.

In September 2002, Chester County adopted a water resources management plan, titled **'Watersheds'**. This is an element of the County's Comprehensive Plan. In Part 4 of the Plan (Goals and Objectives – Achieving the Vision), Goal 7 describes the need to integrate utility and municipal planning to meet future water supply and wastewater needs.

It further discusses the need to delineate municipal planned public water/wastewater service areas and evaluate infrastructure alternatives. This Special Study is consistent with the objectives set forth in Watersheds.

5. ***Antidegradation Requirements Contained in Chapters 93, 95 and 102 of the Clean Water Act***

Implementation of any of the alternatives for this Special Study will not impact the antidegradation requirements contained in Chapters 93, 95, 102 of the Clean Water Act.

6. ***State Water Plans***

There are no anticipated conflicts with the State Water Plan for this submission.

7. ***Pennsylvania's Prime Agricultural Land Policy***

East Whiteland Township is committed to protecting prime agricultural land within the Township's boundaries.

For the planning area in this Special Study, the Township's Zoning Ordinance and Comprehensive Plan give the land area a residential and office/business park designations. The development of this land is consistent with its land use designation.

It should be noted that the Chester County Planning Commission's agricultural conservation easement plan indicates that there are no agricultural conservation easements in East Whiteland Township. This plan was developed by the Chester County Department of Open Space Preservation utilizing information from the County Agricultural Preservation Board and the Chester County Bureau of Land Records. The latest update is January 2014.

8. ***County Stormwater Management Plan***

PA Act 167 Stormwater Management Plans (SWMP) have been completed and approved for portions of Chester County. The Valley Creek Watershed (East) is one of those plans that have been approved. PA DEP approved it February 2011. The Valley Creek (East) is designated as an exceptional value stream. This SWMP is incorporated via reference into the County-wide Act 167 SWMP

that is nearing the point of formal resolution of adoption. From a consistency perspective, it appears that the concept to provide sewer service to potential development is consistent with the SWMP. This special study planning area falls within the Valley Creek Watershed and the prescribed system improvements not only accommodate future flows but provide for minimizing inflow and infiltration of stormwater into the sanitary sewer system.

9. Wetlands Protection

As referenced in Section II.G. of this Plan, There are no mapped wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the US Fish and Wildlife Service.

10. Protection of Threatened, Rare, and Endangered Plant and Animal species (PNDI)

A Pennsylvania National Diversity Inventory (PNDI) search was completed for each area within the various phases. See Appendix H. No conflicts were found for proposed upgrades associated with the Wilburdale Pump Station or the Flat Road Pump Station.

11. Historic and Archaeological Resource Protection

The Pennsylvania Historic and Museum Commission (PHMC) were contacted to determine if there were any potential conflicts within the proposed Phases. PHMC reviews for the proposed sewerage facilities have been completed. The results of the PHMC's review for the proposed sewerage facilities can be found in Appendix I. It has been determined that the projects will have no impact on historic resources.

B. Resolution of Inconsistencies

Upon review of the constraints discussed in items 1 through 11, there are no apparent inconsistencies with applicable planning requirements.

C. Alternative Evaluation with Respect to Applicable Water Quality Standards and Effluent Limitations

The planned alternatives to provide a sanitary sewer collection and conveyance system for this proposed development will not impact water quality standards or effluent limitation. Wastewater will be discharged to the existing public collection and conveyance system. Ultimately, wastewater will be treated at the Valley Forge Sewer Authority's WWTP.

D. Preliminary Cost Opinions

Preliminary cost opinions were developed for the primary alternatives discussed in Section V. These cost opinions reflect the following:

1. Phase I – Wilburdale Pump Station and Force Main

Construct Phase I (refer to detail in Section V) to serve projected wastewater needs. Wastewater through Phase I would be conveyed to Sidley Road and ultimately the Mill Lane Pump Station.

Planning Level - Construction Cost Opinion Total for Pump Station Upgrades (pumps, wetwell, piping, bypass connection, permanent emergency generator, control building, flow meter): $690,000

Planning Level – Gravity Sewer Upgrade and Force Main Upgrade Construction Cost Opinion: $682,000

Total Planning Level Construction Cost - $1,372,000

Phase II – Flat Road Pump Station

Construct Phase II (refer to detail in Section V) to serve projected wastewater needs. Wastewater through Phase II would be conveyed to the Wilburdale Pump Station and ultimately to the Mill Lane Pump Station.

Planning Level – Planning deferred to future planning to be initiated by Liberty Properties.

E. Analysis of Available Funding Methods

This section of the Plan addresses methods available to finance the proposed Phases. Three financing alternatives exist for this particular project.

1. Municipal Bond Issue

a. General

There are several types of bonds; some are taxable and some are tax-exempt. However, the general classification of municipal bonds usually refers to tax-exempt bonds. There are three types of municipal bonds generally used in financing public works.

- *General Obligation Bonds* are tax-free bonds that are secured by the pledge of the full faith, credit, and taxing owner of the issuing agency. This means that this type of bond is backed by all of the taxes on real estates and personal property within the jurisdiction of the issuing agency. It involves minimum risk to the investor and therefore requires a lower rate of interest than other types of bonds.

- *Dedicated Tax Bonds* are payable only from the proceeds from a special tax and are not guaranteed by the full faith, credit and taxing power of the issuing agency. Examples of special dedicated taxes are the special assessments against property which is adjacent to and the principal beneficiary of the improvement, and gasoline taxes used to finance highway construction.

- *Revenue Bonds* are payable from revenues derived from the use of the improvement such as tools, sewer bills, or rents paid by the users of the improvement and do not otherwise represent an obligation of the issuing agency. Revenue bonds are not ordinarily subject to statutory or constitutional debt limitations. They are often issued by commissions, authorities, and other public agencies created for the specific purpose of financing, constructing, and operating essential public projects.

Typically, municipal bonds are sold to an investment-banking firm, which then resells the bonds to individual investors. The advantage of municipal bonds to the investor is their tax-free status. A bond discount (a percentage of the total bond issue) serves as the investment banker's commission. Before bonds are sold, they must be rated on the basis of risk to the investor by a rating agency such as Standard and Poor's or Moody's. The higher the rating, the lower the risk to the investor and, consequently, the lower the interest rate paid on the bond.

The legal instrument, which sets the rules that must be observed by the issuing agency, is the Trust Indenture. The Trust Indenture is prepared by the Bond Counsel and must be printed along with the bonds. Due to specific requirements as to the denominations of the bonds and methods and materials for printing, printing costs can be substantial. A

trustee is required to administer the bond issue and insure the terms of the Trust Indenture are observed. This results in an Annual Trustee Fee. Investment bankers indicate that it does not pay to extend the term beyond 25 years because the interest rate increases dramatically.

b. Advantages of Municipal Bond Issue Funding

- This program affords long-term fixed rate financing.
- Tax-exempt municipal bonds are in high demand.
- There is local investment opportunity.
- Municipal credit is established.
- It retains flexibility for future borrowing.

c. Disadvantages of Municipal Bond Issue Funding

- A cover may be required.
- A Debt Service Reserve Fund is generally required.
- There are trustee fees and costs of preparing a Trust Indenture.

2. Bank Loan

Another financing option for the implementation of this project is the bank loan. There are four basic categories of bank loans. These are:

- Real Estate Loans (Mortgage)
- Participation and Interbank Loans
- Installment Loans (Personal)
- Commercial and Industrial Loans

Of the four types, a commercial and industrial loan would be the most applicable to this project.

Commercial and industrial loans may be made on a demand or time basis. A demand basis loan allows the bank to call for repayment at any time, or the borrower can repay when convenient. A time basis loan provides for a specific loan maturity date.

Most commercial and industrial loans are unsecured. The credit is extended on the basis of an analysis of all available information pertaining to the customer and the bank's confidence in that customer's ability and willingness to repay.

For this planned project, it appears that it would be prudent to seek a time basis loan. An interest rate offering would be established, and an amortization schedule set. Interest rates may range from 5% to 10%.

Advantages of the Bank Loan Financing

- Ability to shop around for a loan structure that best fits the customer's needs.
- Flexibility in establishing repayment schedules.
- Working with and through a local financial institution.
- Municipal credit is established.
- Ability to obtain fixed rate financing.

Disadvantages of Bank Loan Financing

- Interest rates are charged for loan repayment.
- Processing fees may be required.
- Processing and issuances fees may be expensive.

3. Direct Funding by Developers

A third financing option for the implementation of this project is direct funding by those who are developing the property in the planning area. This would involve capital expenditures by the developer from his own capital funds.

Advantages of Direct Funding by Developer

- Avoid any third party involvement. Payment for services can be made directly to the manufacture or contractor by the Developer.
- There are no interest rate charges.
- Bank processing and issuance fees are avoided.
- Removes the financial burden from the Township.

Disadvantages of Direct Funding

- There are no disadvantages to this method of financing.

F. Immediate or Phased Implementation

It is planned to implement the collection and conveyance system improvements in phases. These include:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Upgrade the Flat Road Pump Station.

G. Ability of the Township to Implement the Alternative

The Township is well established and has the ability to implement the technical alternatives presented in this Plan.

VII. INSTITUTIONAL EVALUATION

A. Analysis of the Township, Past Actions, and Present Performance

1. Financial and Debt Status

The Township is a well-established entity that will be able to oversee the implementation of the proposed technical alternative. Financially, through the funding mechanisms identified above, the construction of the necessary collection and conveyance facilities can be accomplished. Ultimately, the Township will take dedication of these facilities and will be required to operate and maintain them. The funds for facility O&M may originate from the Township's Sewer Fund.

2. Available Staff and Administrative Resources

The Township is governed by a three-member Board of Supervisors elected at-large, who each serve six-year terms that include executive and legislative responsibilities. Others associated with the Township are:

- Township Manager
- Director of Public Works
- Solicitor
- Consulting Engineer

The Township has the necessary staff and administrative resources already in place. No further evaluation of staffing and resources is necessary at this time.

3. *Existing Legal Authority*

As provided for under Pennsylvania Law, the Township has the necessary legal authority to oversee the implementation of the technical alternatives presented in this Special Study.

B. Institutional Alternatives Necessary to Implement the Technical Alternative

1. *Need for a New Authority*

East Whiteland Township does not have an Authority in place at this time. It is not deemed necessary that a new Authority be established to meet the needs of the alternatives identified in this Special Study. The Township and public works personnel are capable of implementing the identified alternatives.

2. *Function of the Authority*

This is not applicable given that the there is no sewer authority in place at this time.

3. *Cost of Administration*

This is not applicable given that the there is no sewer authority in place at this time.

C. Administrative and Legal Activities to be Completed and Adopted to Ensure the Implementation of the Technical Alternative

1. *Legal Authorities of Incorporation*

No new wastewater Authorities of Incorporation are necessary and there will be no changes to the Township's structure to implement these projects.

2. *Required Ordinances, Standards, Regulations, and Intermunicipal Agreements*

In 1971, an Intermunicipal Agreement was signed by East Whiteland Township, the former East Whiteland Municipal Authority, Malvern Municipal Authority, Malvern Borough, and the Valley Forge Sewer Authority for conveyance of

wastewater through the Valley Creek Trunk Sewer to the Valley Forge Sewer Authority's WWTP for treatment and disposal. In December 1979, an amendment was issued to the existing 1971 intermunicipal agreement between East Whiteland Municipal Authority, East Whiteland Township, Malvern Municipal Authority, Borough of Malvern, and the Valley Forge Sewer Authority. This amendment facilitates the transmission of wastewater from an area in Charlestown Township adjacent to East Whiteland Township through the East Whiteland Township Trunk Line and the Valley Creek Trunk Line.

This intermunicipal agreement was amended and signed by all parties in 2013 to reflect the latest flow and cost sharing conditions. This effort to amend the agreement took place in accordance with the September 2013 Special Study approved by the Department.

3. *Provisions of Rights-of-Way, Easements, and Land Transfers*

Upgrades to the wastewater collection and conveyance system that will serve potential development will extend along Township or State Roads and easements. The Wilburdale Pump Station site is limited in terms of available area. However, it is anticipated that through the implementation of a compact package pump station, upgrades to the station can be implemented on the existing site.

The Flat Road Pump Station may need to be moved to accommodate the configuration associated with the access that is proposed for Liberty Properties. This location is yet to be determined pending further definition of the physical configuration of the proposed development.

4. *Other Sewage Facilities Plan Adoptions*

It is not anticipated that other sewage facilities plans will need to be adopted as part of this planning process.

5. Legal Documents

Legal documentation, in the form of an amended intermunicipal agreement was completed as part of the September 2013 Special Study. Revisions to this agreement are not necessary for this Special Study.

6. Dates and Timeframes of 1 Through 5 Above

The dates and timeframes for the items in this section are found in the implementation schedule in the Executive Summary of this Plan.

D. Selected Institutional Alternative

No changes are needed to the existing municipal structure. An amendment to the existing intermunicipal agreement was completed as part of the September 2013 Special Study.

VIII. SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVE

A. Identify the Chosen Technical Alternative

The selected alternative which best meets the wastewater treatment needs of the proposed development in the planning area is:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Upgrade the Flat Road Pump Station. (Planning deferred to the planning module submission by Liberty Properties)

The phasing of alternative is recommended based on the following:

1. Existing Wastewater Disposal Needs

Within the planning area, wastewater disposal needs are met through the use of the Flat Road Pump Station, the Wilburdale Pump Station, and a network of gravity sewer mains and force mains. These facilities can continue to meet the existing wastewater disposal needs of the planning area.

2. Future Wastewater Treatment Needs

Future wastewater disposal needs, identified in Section IV of this Plan show that upgrades will be needed for both the Wilburdale Pump Station and the Flat Road Pump Station. Additional upgrades will be planned for the Wilburdale Force Main and the downstream gravity sewer main that extends from the force main to the intersection of Sidley Road and Flat Road.

3. Operations and Maintenance Considerations

The proposed wastewater facilities will be owned and operated by East Whiteland Township upon completion. Operations and maintenance of the new facilities will be the responsibility of the Township which currently operates and maintains existing wastewater facilities within the Township.

Since both the existing Flat Road Pump Station and the Wilburdale Pump Station are antiquated facilities, new stations will greatly improve upon the operations and maintenance that is currently needed by Township personnel.

4. ***Cost Effectiveness***

In accordance with the cost opinions for the alternatives presented in Section VI of this study, the phasing of the Alternatives is the most cost effective approach. In addition, since the Wilburdale pump station is downstream from the Flat Road station, capacity will need to be built into the system at Wilburdale first. Then, upgrades to the Flat Road pump station can follow.

5. ***Available Management and Administrative Systems***

The Township has the management and administrative staff in place to implement the selected alternative.

6. ***Available Financing Methods***

Of the financing methods discussed in Section VI, each method can provide the necessary funding for the selected alternative. Refer to Section VIII.B. for the selected capital financing plan.

7. ***Environmental Soundness***

Environmentally, the Valley Forge Sewer Authority's WWTP can adequately treat the average and peak flows within the permitted concentration limits.

B. Selected Capital Financing Plan

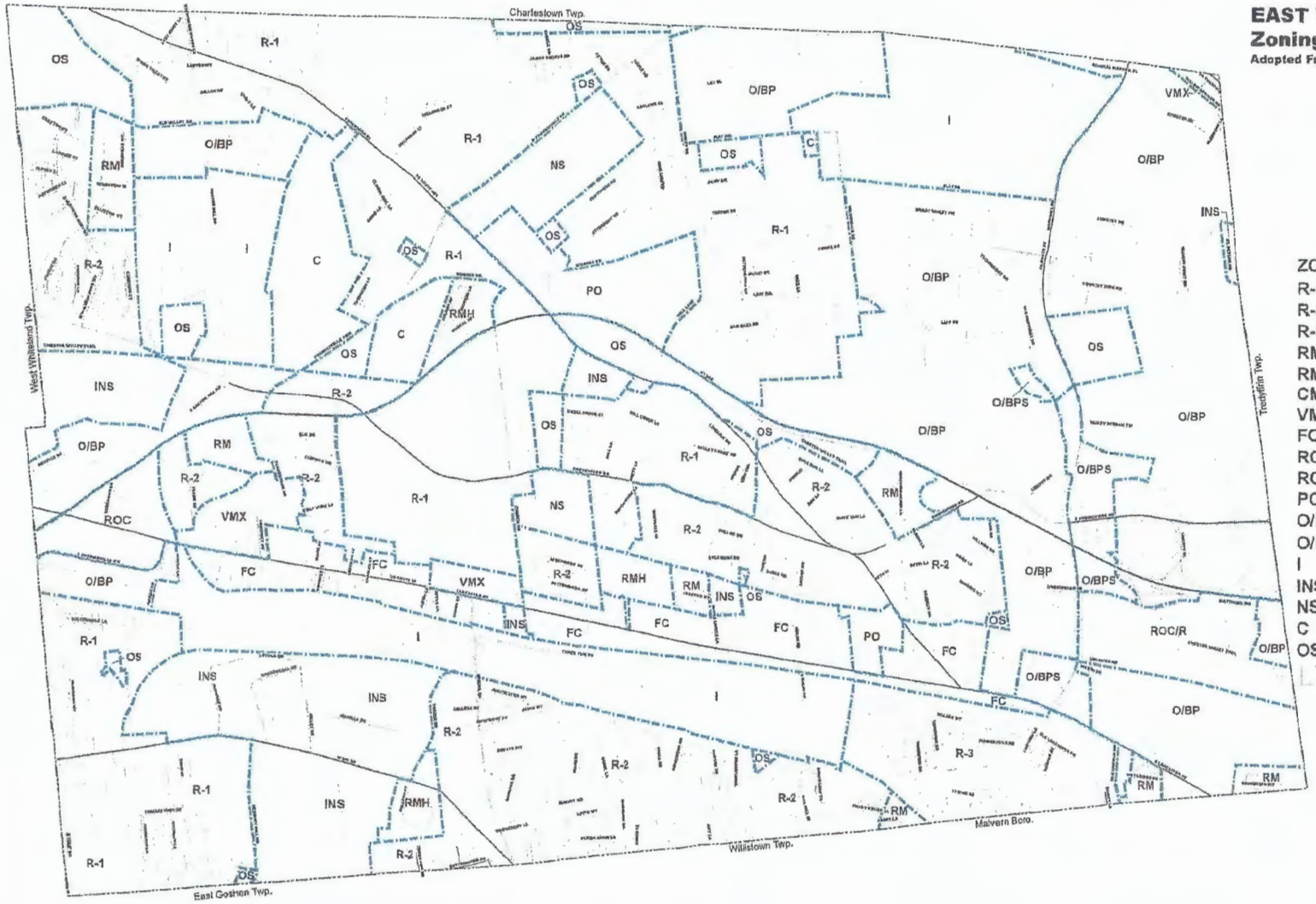
The selected technical alternative will be paid for and financed through bond funding mechanisms and sharing of costs between the municipality and developers. The planning-level costs are shown in Section VI.

The Township intends to pay for the proposed upgrades up-front and then plans to pass along those costs to the developers of the development that is proposed within the planning area.

APPENDIX A

Zoning Map

EAST WHITELAND TOWNSHIP
Zoning Map
Adopted February 21, 2007



ZONING DISTRICTS

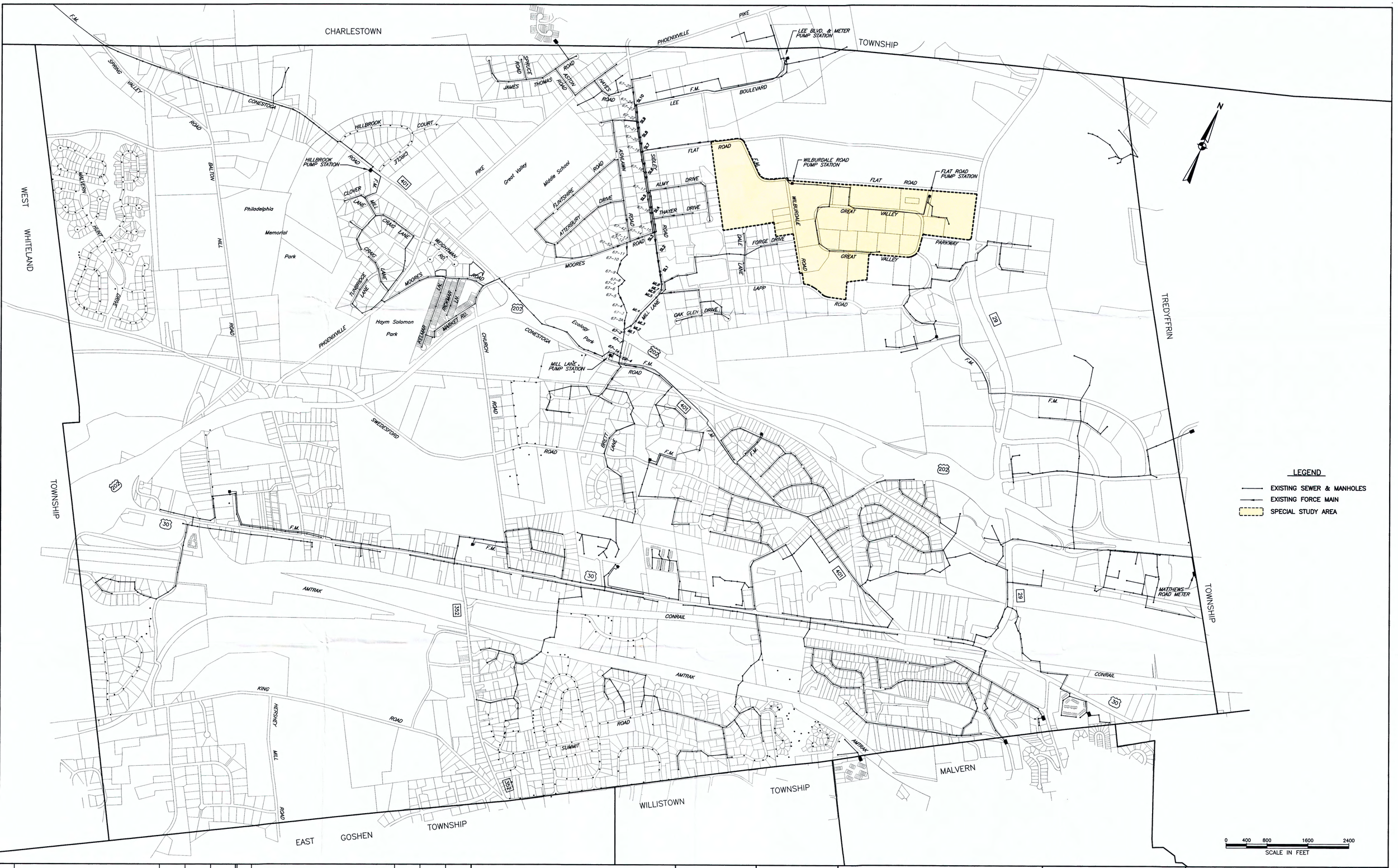
R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Community Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally-Oriented Commercial
ROC/R	Regionally-Oriented Comm/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space
	Corporate Gateway Overlay

N

0 1,200 2,400
Feet

APPENDIX B

Planning Area



NO	REVISION	DATE	BY	APP.

NO	REVISION	DATE	BY	APP.

W.L. BOHNER, P.E.
RELEASED BY

DESIGN	CHECKED
W.L. BOHNER, P.E.	K.M.
DRAWN	CHECKED
COLLINS	K.M.
DATE	SURVEY DATE
1/28/14	FIELD BOOK

SEAL

PRELIMINARY

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

SEWER SYSTEM
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE
ACT 537 SPECIAL STUDY
PLOT PLAN
SPECIAL STUDY AREA

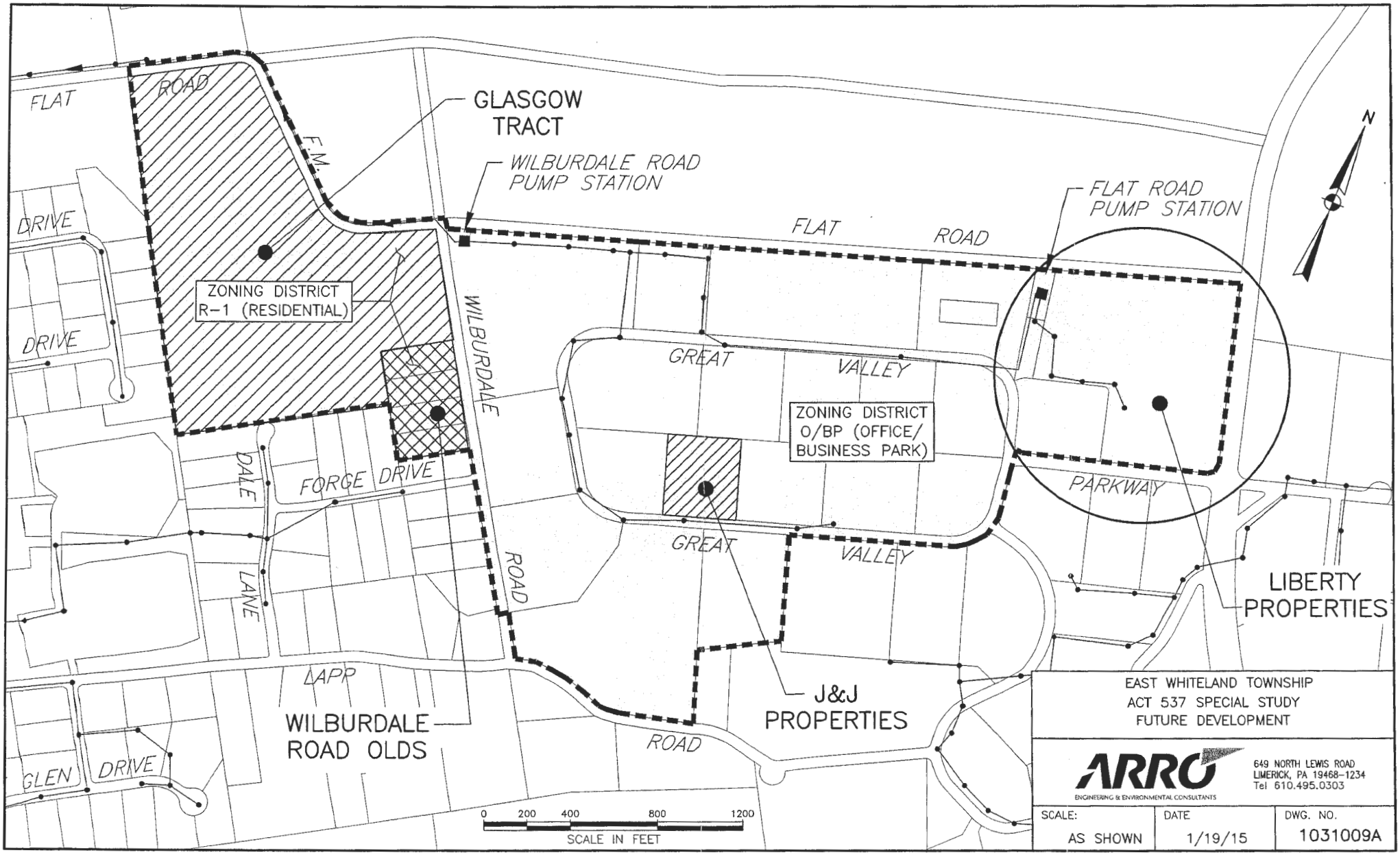
SCALE	DWG. NO.
AS NOTED	C1

PROJECT NO.	SHEET NO.	REV.
10310.09	1 OF 1	A

Dwg. Name: C1-ACT 537-SPEC.STDY.DWG Plotted: 1/15/2015 2:50 PM

APPENDIX C

Future Development



EAST WHITELAND TOWNSHIP
ACT 537 SPECIAL STUDY
FUTURE DEVELOPMENT

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
649 NORTH LEWIS ROAD
LIMERICK, PA 19468-1234
Tel 610.495.0303

SCALE:	DATE	DWG. NO.
AS SHOWN	1/19/15	1031009A

APPENDIX D

Topography

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MALVERN QUADRANGLE
PENNSYLVANIA–CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

5864 II NW (POTTSTOWN)
5864 II NE (PHOENIXVILLE)
5864 III NW (COLLEGEVILLE)
5863 I NW (UNIONVILLE)
5863 I NE (WEST CHESTER)
5863 IV NW (MEDIA)
5864 III SW (VALLEY FORGE)
5863 II SW (DOWNINGTOWN)

75°37'30" 40°07'30" 75°30' 40°00'

447 000m E. 448 449 450 451 453 454 457 000m E.

4441 000m N. 4440 4439 4438 4437 4436 4435 4434 4433 4432 4431 4430 4429 4428 000m N.

2 620 000 FEET 290 000 FEET 260 000 FEET

KIMBERTON 1.2 MI. 35' 32'30" 2'30" 5'

11 MI. TO PA. 100 PARKER FORD 6.6 MI. 0.7 MI. TO PA. 113

VALLEY FORGE 2.6 MI. PENNSYLVANIA TURNPIKE 6.2 MI.

DOWNINGTOWN 9.1 MI. UPPERMANS 1 MI.

ELVERSON 1.5 MI. LLOWISS CORNER (UNC. PA. 100) 6 MI.

HARRISBURG 70 MI. 2.6 MI. TO INTERCHANGE 23

LANCASTER (CIVIC CENTER) 36 MI. EXTON 4.2 MI.

0.6 MI. TO U.S. 30

6 MI. TO INTERCHANGE 24 NEW JERSEY TURNPIKE 44 MI.

PAOLI 10.9 MI. PHILADELPHIA (CITY HALL) 20 MI.

PAOLI 1.4 MI. NORRISTOWN 11 MI.

NORRISTOWN 9 MI.

WEST CHESTER 2.9 MI. WILMINGTON, DEL. 19 MI. GOSHENVILLE 0.4 MI. WEST CHESTER 4.5 MI.

WEST VINCENT
EAST PIKELAND
WEST PIKELAND
CHARLESTOWN
SCHUYLKILL
NORTH UWCHLAN
VALLEY HILLS
EAST WHITELAND
WEST WHITELAND
SOUTH VALLEY HILLS
TREDYFFRIN
EAST GOSHEN
WEST GOSHEN
WILLISTOWN

Hallman
Merlin
Pikeland
Chester Springs
St Peter Churches
Rapps Corner
Union Chapel
Bacton
PHILADELPHIA MEMORIAL PARK
Planebrook
Chester Valley Golf Course
Exton
St Mary Ch
Church Farm Sch
St Paul Ch
Glenloch
Immaculata College
Whiteland Crest (Whiteland Sta)
Ship Road Station
Iron Lake
Morstein
Indian King
Kirkland
Bertereux Sch
Hershey Mill
Rush Hospital
Sugartown
Township Hall
Wilmer
PHOENIXVILLE
U.S. MILITARY RESERVATION VALLEY FORGE ARMY HOSPITAL
Morris Cem
Hospital
St Ann Cem
Meadowbrook Golf Course
Corner Store
Trailer Park
Consolidated Sch
Pickering Creek Reservoir
Reservoir
Williams Corner
Charlestown
Aldham
Diamond Rock Hill
Post Office
Devault
Cedar Hollow
St John Ch
Salem Cem
Valley Store
Swimming Pool
Towers
Villa Maria Academy
Sub Sta
General Warren Village
Green Tree
Malvern
Paoli Memorial Grounds
Laymens Retreat
Malvern Preparatory Sch
Malvern Institute
Phelps Sch
Frazer
Immaculata Cem
Sub Station
Water
Microwave Tower
Radio Tower
Haym Salomon Memorial Park
Pumping Sta
Golf Course
Oil
RR Sta
Mill Lane
Valley Park Rd
Pickering Creek
Pickering
Broad Run
Pigeon Creek
Pine Creek
Cedar Creek
Valley Creek
Little Valley Creek
Crum Creek
Ridley Creek
Chester Creek
Broad Run
Iron Lake

Revisions shown in purple and woodland compiled from aerial photographs taken 1981 and other sources. This information not field checked. Map edited 1983
Purple tint indicates extensions of urban areas

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1951. Field checked 1955

Polyconic projection. 10,000-foot grid ticks based on Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters west as shown by dashed corner ticks

There may be private inholdings within the boundaries of the National or State reservations shown on this map

MN GN
11° 196 MILS 0°22' 7 MILS
UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route U. S. Route State Route

PENNSYLVANIA
QUADRANGLE LOCATION

YOAS SERVICES, INC.
509 W. 4th St.
Williamsport, PA 17701
1-800-222-2548

MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5864 II SE–SERIES V831

INTERIOR–GEOLOGICAL SURVEY, RESTON, VIRGINIA–1984

APPENDIX E

Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Special Study Planning Area

Jan 21, 2014



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

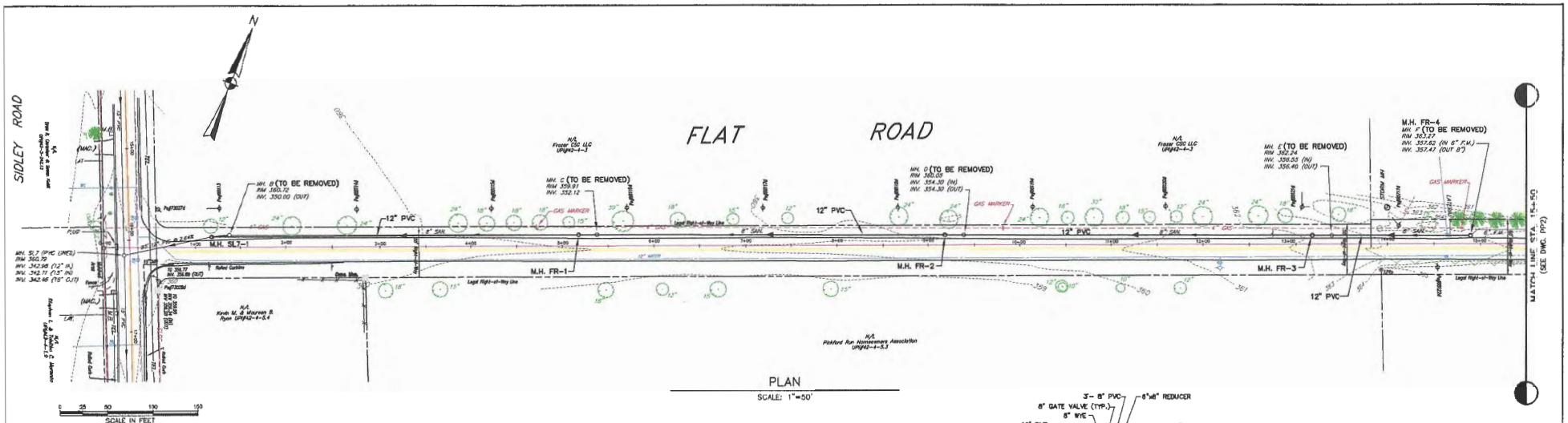
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Wilburdale PS/GVCC Planning Area

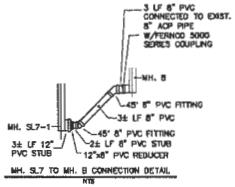
APPENDIX F

Collection/Conveyance System; Upgrades



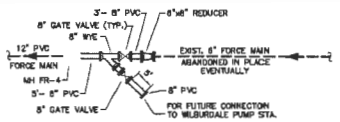
PLAN

SCALE: 1"=50'



MH. SL7 TO MH. B CONNECTION DETAIL

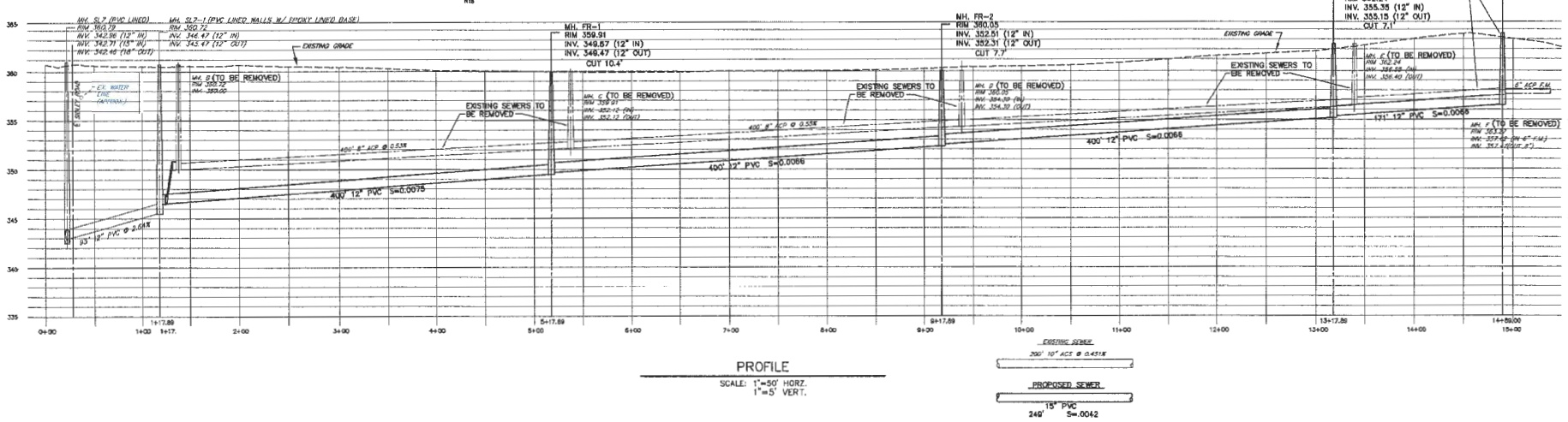
NTS



PLAN VIEW

ENLARGED CONNECTION PLAN @ MH FR-4

NO SCALE



PROFILE

SCALE: 1"=50' HORZ.
1"=5' VERT.

EXISTING SEWER
200' 10" ACP @ 0.45%

PROPOSED SEWER
15" PVC
240' S=.0042

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED TO CLIENT			

K. McAGHON, P.E.
RELEASED BY
DESIGN K. McAGHON, P.E. CHECKED
DRAWN COLLINS CHECKED
DATE 1/20/14 SURVEY DATE 1/2012
FIELD BOOK

SEAL
PRELIMINARY
SEAL

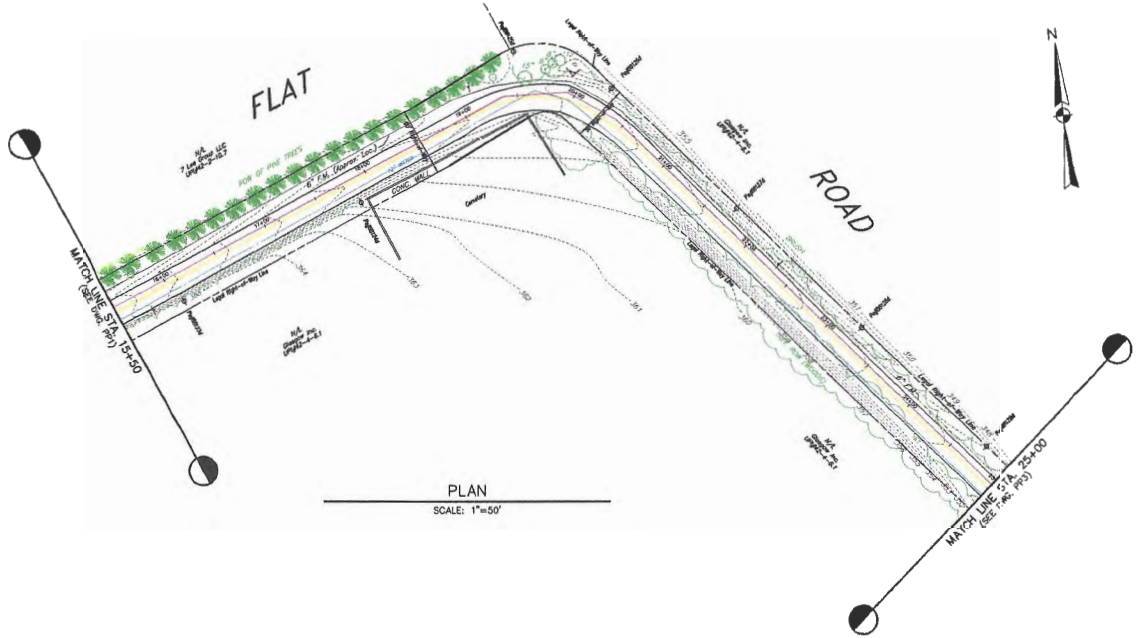
CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355
FLAT ROAD GRAVITY SEWER & WILBURDALE FORCE MAIN
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

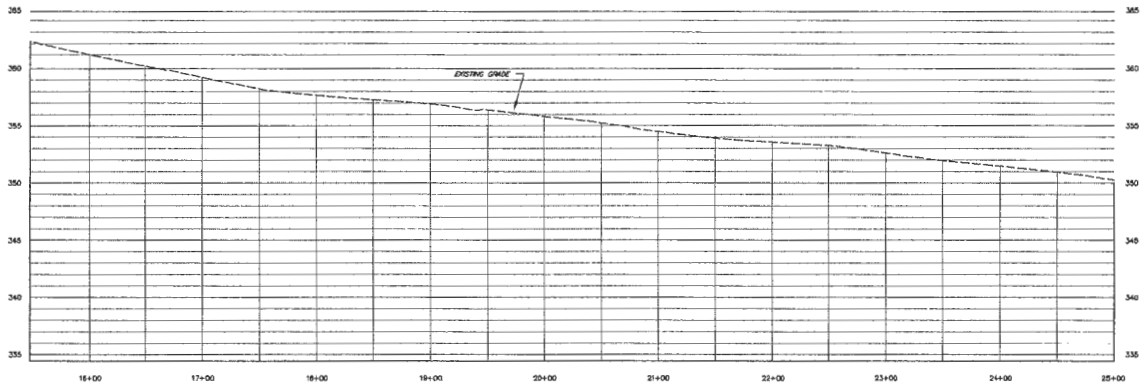
TITLE
FLAT ROAD
STA. 0+00 TO 15+50

SCALE AS NOTED
DWG. NO. PP1
PROJECT NO. 10310.11
SHEET NO. 6 OF 9
REV. A

Dwg. Name: PHASE 3 10310\PP1_PP3_FLAT RD_SEWG Plotted: 5/28/2014 10:10 AM



0 25 50 100 150
SCALE IN FEET



PROFILE
SCALE: 1"=50' HORZ.
1"=5' VERT.

EXISTING SEWER
200' 10" ACS @ 0.451%

PROPOSED SEWER
249' 15" PVC S=.0042

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
C	ISSUED FOR DEC			
A	ISSUED TO CLIENT			

K. McAGHON, P.E.
RELEASED BY
DESIGN: K. McAGHON, P.E. — CHECKED
DRAWN: DOLLINS — CHECKED
DATE: 1/20/14 — SURVEY DATE: 1/2012
FIELD BOOK

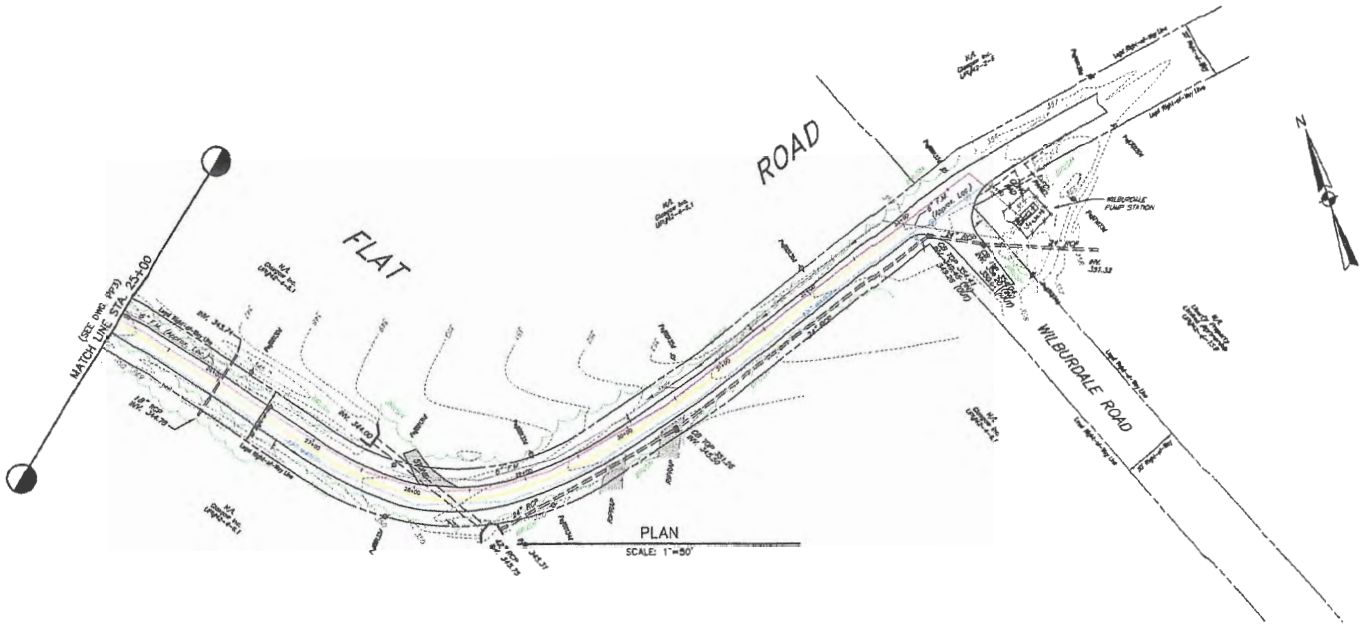
SEAL
PRELIMINARY
SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355
FLAT ROAD GRAVITY SEWER & WILBURDALE FORCE MAIN
CHESTER COUNTY, PENNSYLVANIA

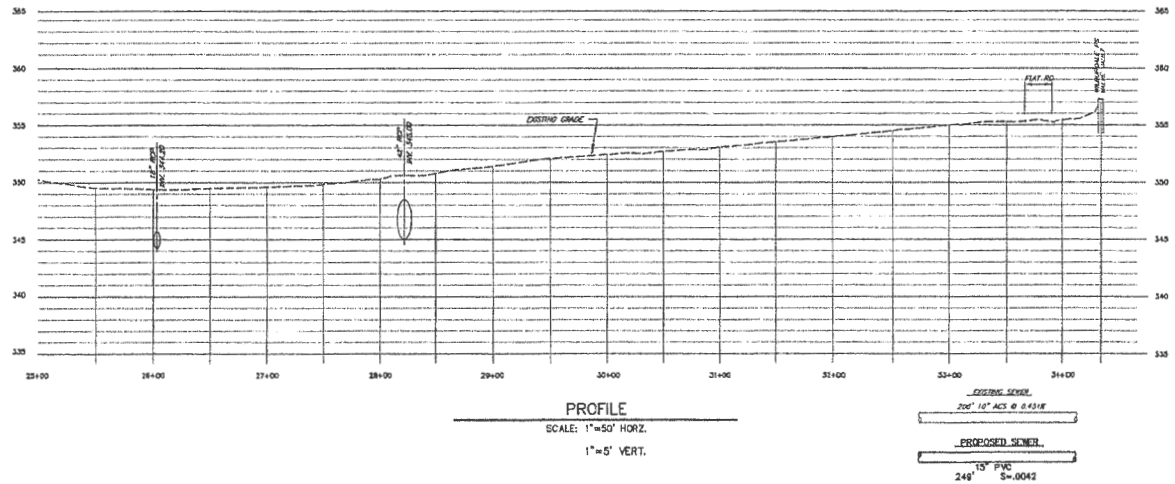
ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: FLAT ROAD
STA. 15+50 TO 25+00
SCALE: AS NOTED
DWG. NO. PP2
PROJECT NO. 10310.11
SHEET NO. 7 OF 9
REV. A

Dwg. Name: PHASE 3 10310\PP1_PP3_FLAT RD_SR.DWG Plotted: 5/28/2014 10:12 AM



PLAN
SCALE: 1"=50'



PROFILE
SCALE: 1"=50' HORZ.
1"=5' VERT.

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED TO CLIENT			

K. McAGHON, P.E.
RELEASED BY
DESIGN: K. McAGHON, P.E. — CHECKED
DRAWN: COLLINS — CHECKED
DATE: 1/20/14 — SURVEY DATE: 1/2012
FIELD BOOK

SEAL

PRELIMINARY

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355
FLAT ROAD GRAVITY SEWER &
WILBURDALE FORCE MAIN
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

TITLE: FLAT ROAD
STA. 25+00 TO 34+34

SCALE: AS NOTED
DWG. NO. PP3
PROJECT NO. 1031011
SHEET NO. 8 OF 9
REV. A

Dwg. Name: PHASE 3 1031011PP1_PP3_FLAT RD_SR.DWG Plotted: 5/28/2014 10:13 AM

APPENDIX G

Flow Projection Summary Table

Table 1

Existing Flow Needs Summary

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	--------	279,600
Glasgow Tract	0	0	0
Liberty Properties	0	--------	0
J&J Properties	0	0	0
Wilburdale Road (OLDS)	0	0	0
TOTAL			**279,600**

(1) Based on pump station flow data obtained during full occupancy of the corporate center (2008).

(2) 3.13 People Per Household .

(3) 275 gpd/EDU

Table 2

Flow Projection Summary (Future Wastewater Needs)

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	--------	279,600
Glasgow Tract	23	72	6,325
Liberty Properties	371	--------	102,000
J&J Properties	29	--------	7,975
Wilburdale Road (OLDS)	4	12	1,100
TOTAL			**397,000**

(1) Great Valley Corporate Campus flow is based on flow data obtained during full occupancy (2008). Liberty Properties flow based on data provided by Liberty Properties.

(2) 3.13 People Per Household.

(3) 275 gpd/EDU

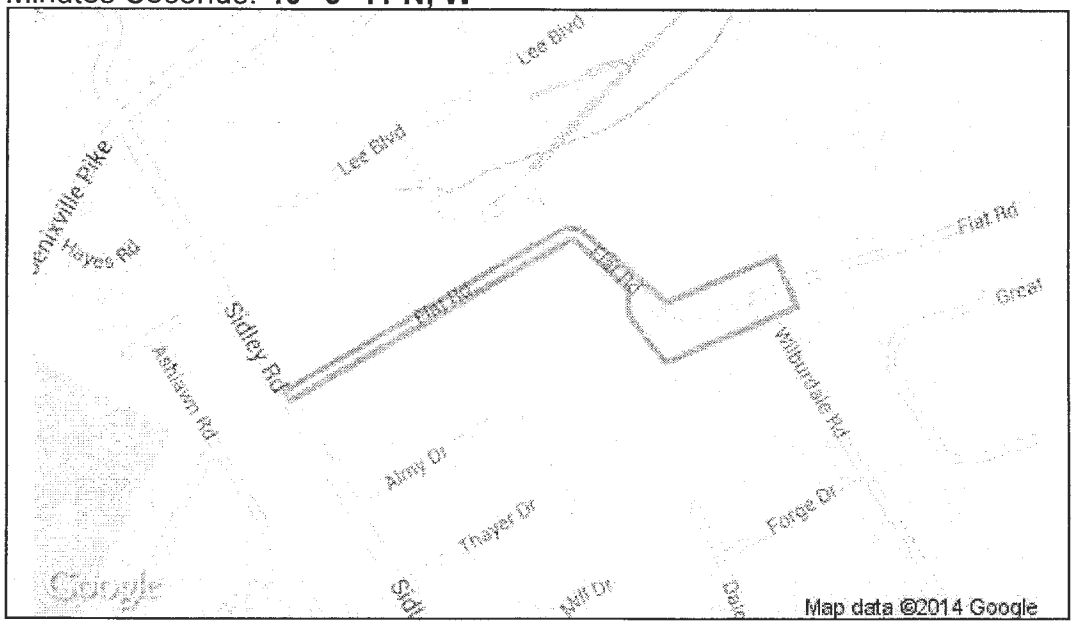
APPENDIX H

PNDI Response

PNDI Project Environmental Review Receipt Project Search ID: 20140513450681

1. PROJECT INFORMATION

Project Name: **Act 537 Study for Wilburdale PS and Flat Road PS**
Date of review: **5/13/2014 9:33:36 AM**
Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewage module/Act 537 plan**
Project Area: **11.4** acres
County: **Chester** Township/Municipality: **East Whiteland**
Quadrangle Name: **MALVERN** ~ ZIP Code: **19355**
Decimal Degrees: **40.061509 N, -75.553748 W**
Degrees Minutes Seconds: **40° 3' 41 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special

concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: David Kee
Company/Business Name: ARRO
Address: 1150 Glenlivet Dr, Suite A19
City, State, Zip: Allentown PA 18106
Phone:(484) 664-7310 Fax:(484) 664-7312
Email: david.kee@thearrogroup.com

8. CERTIFICATION

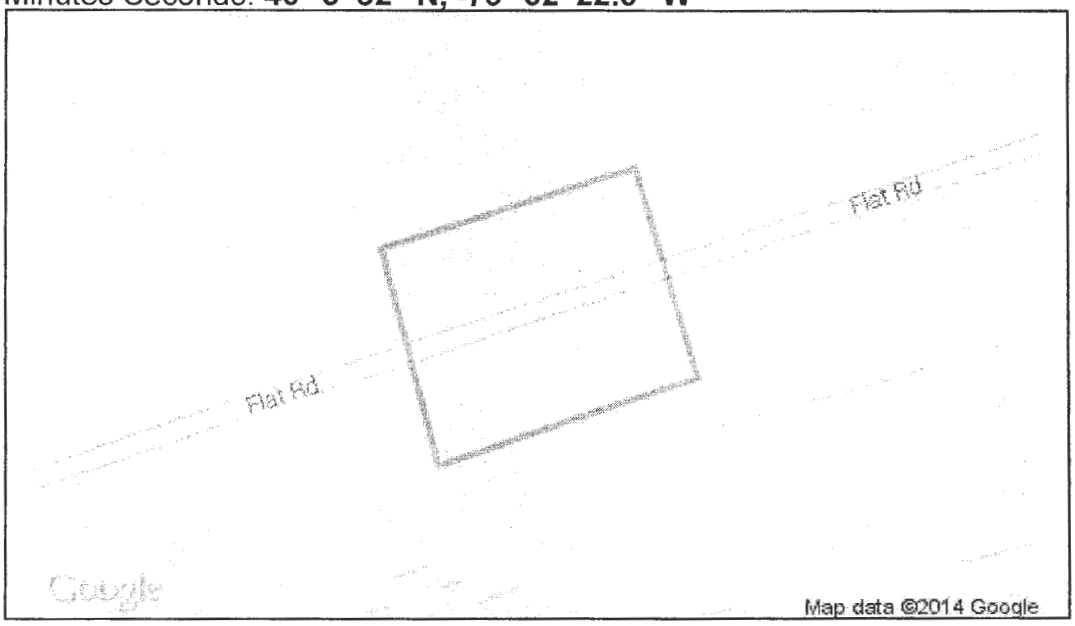
I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

5/14/14
date

1. PROJECT INFORMATION

Project Name: **Act 537 Study for Flat Road PS**
Date of review: **5/13/2014 10:15:55 AM**
Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewage module/Act 537 plan**
Project Area: **3.0** acres
County: **Chester** Township/Municipality: **East Whiteland**
Quadrangle Name: **MALVERN** ~ ZIP Code: **19355**
Decimal Degrees: **40.064441 N, -75.539521 W**
Degrees Minutes Seconds: **40° 3' 52" N, -75° 32' 22.3" W**



2. SEARCH RESULTS

Agency	Results	Response
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PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

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4. DEP INFORMATION

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concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

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For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: David Kee
Company/Business Name: ARRO
Address: 1150 Glenlivet Dr, Suite A-19
City, State, Zip: Allentown PA 18106
Phone:(484) 664-7310 Fax:(484) 664-7312
Email:

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature — 5/14/14 date

APPENDIX I

PHMC Response

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

May 20, 2014

David T. Kee, P.E.
ARRO Engineering & Environmental Consultants
649 North Lewis Road, Suite 100
Limerick, PA 19468

Re: File No. ER 2014-1234-029-A
DEP Act 537 Study: Wilburdale & Flat Road Pump Station Replacements & Upgrades, East Whiteland Twp., Chester Co.

Dear Mr. Kee:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Based on our survey files, which include both archaeological sites and standing structures, there are no National Register eligible or listed historic or archaeological properties in the area of this proposed project.

Therefore, your responsibility for consultation for this project is complete. However, should you encounter archaeological resources during construction, please notify the Bureau for Historic Preservation at (717) 783-8946.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology & Protection

cc: East Whiteland Township, 209 Conestoga Road, Frazer, PA 19355
DEP, Southeast Regional Office

DCM/tmw

649 N. Lewis Road, Suite 100
Limerick, PA 19468

T: 610.495.0303
F: 610.495.5855

LETTER OF TRANSMITTAL

Date:	5/13/14	Job No.	10310.09
Attention:			
Re:	East Whiteland Township		
	Act 537 Study		
	Cultural Resource Notice		
Submittal No.			

TO: Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street, Second Floor
Harrisburg, PA 17120-0093

WE ARE SENDING YOU: ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change Order ☒ **Sent via UPS Ground**

Copies	Date	No.	Description	Spec. Section	Action
1	5/13/14		Cultural Resource Notice		
1	5/13/14		Portion of USGS Map showing study areas		
1	5/13/14		PHMC Narrative		

THESE ARE TRANSMITTED as checked below:

☐ For Approval
☒ For your use
☐ As Requested
☐ For review and comment
☐ FOR BIDS DUE _____

A Approved as submitted
AN Approved as noted
RC Returned for correction
NS Not as Specified

☐ Resubmit _____ copies for approval
☐ Submit _____ copies for distribution
☐ Return _____ corrected prints
☐ _____
☐ DOCUMENTS RETURNED AFTER LOAN TO US

REMARKS:

COPY TO File

SIGNED *David Kee*
David T. Kee, P.E.

If enclosures are not as noted, kindly notify this office at once.

0120-PM-PY0003 Rev. 5/2006
NOTICE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY
Date Received

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name: East Whiteland Township

Street Address: 209 Conestoga Road

City: Frazer State: PA Zip: 19355

Telephone Number: 610-648-0600

Project Title: Act 537 Study

SECTION B. LOCATION OF PROJECT

Municipality: East Whiteland Township County Name: Chester DEP County Code: 15

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537 Study

Anticipated federal permits:

- ☐ Surface Mining
- ☐ Army Corps of Engineers
- ☐ 401 Water Quality Certification
- ☐ 404 Water Quality Permit
- ☐ Federal Energy Regulatory Commission
- ☐ Other: _____

SECTION D. GOVERNMENT FUNDING SOURCES

- ☐ State: (Name) _____
- ☒ Local: (Name) East Whiteland Township
- ☐ Federal: (Name) _____
- ☐ Other: (Name) _____

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☒ Southeast Regional Office (Norristown)
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Southcentral Regional Office (Harrisburg)
- ☐ Northcentral Regional Office (Williamsport)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ Northwest Regional Office (Meadville)
- ☐ District Mining Office: _____
- ☐ Oil & Gas Office: _____

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District: Chester County Conservation District

Telephone Number, if known: _____

SECTION G. CONSULTANT

Consultant, if applicable: Bill Bohner of ARRO

Street Address: 649 North Lewis Road, Suite 100

City: Limerick State: PA Zip: 19468

Telephone Number: 610-495-2102

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

Applicant's Signature	5/13/14 Date of Submission of Notice to PHMC



Adapted from the Malvern, PA Quadrangle, USGS Topo Maps –7.5 Minute Series

Figure 1
Site Location Map

East Whiteland Township
Act 537 Study
Chester County, PA
Project No. 10310.09

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
OUT IN FRONT

East Whiteland Township
Act 537 Study
PHMC Narrative
Project Number: 10310.09
Date: 5/13/14

This Act 537 study proposes the replacement and upgrades of two existing pump stations – Wilburdale and Flat Road Pump Stations. It also proposes to upgrade approximately 3,400 feet of sanitary sewer lines from the Wilburdale Pump Station near the intersection of Flat Road and Wilburdale Road to Sidley Road. All sanitary sewer line replacement shall be within the existing road. The anticipated disturbance and site area for the upgrades to the pump stations and sanitary sewer is less than 1 acre.

APPENDIX J

Municipal Comments and Responses

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 2, 2015

To Whom It May Concern:

On December 17, 2014, Bill Bohner, ARRO Engineers, made a presentation to the East Whiteland Township Planning Commission on the Act 537 Plan Special Study. At the meeting, one member, John Laumer, offered to prepare a response to the presentation. Other members of the Planning Commission offered no comments. Here is Mr. Laumer's response:

Prepared and Submitted by: John Laumer

Based on the preliminary ARRO presentation made to the Planning Commission on December 17, 2014, and on subsequent Commission discussions of points raised, the need clearly exists for improvement of Wilburdale and Flat Road Sewerage Pump Stations and inter-connected sewer mains (the "*conveyance system*").

More public input is needed.
Design flow projections, more than any other single factor, will strongly shape conveyance system design – in a manner of speaking, they 'toss the card into a cocked hat' as to what the pipe and pump capacities will be. Therefore, prior to ARRO initiating further billable design work on the system, the planning and cost implications of wastewater flow estimate(s) needs more public input.

Ideally, the additional public input should include facility managers from manor GVCC tenants and property owners, and especially should draw upon persons with an engineering expertise. Ideally, also, two scenarios should be run: base and upper boundary wastewater flows.

As the business world changed, so did our wastewater.
Wastewater characteristics of and volumes generated by the typical GVCC tenant have changed greatly over the last decade: laboratory, pilot, and commercial production operations, once prominent within the Center, have been relocated to Cambridge MA or similar biotech academic centers, or were closed outright as the conventional R&D pipeline was found to hold diminishing prospects for new products.

Most other water intensive business sectors, unlike the BioPharma sector, require fewer 'knowledge workers' or are otherwise incompatible with the GVCC setting for variety of reasons, most of which are self-evident. Examples include:

1. Pulp and paper production;
2. Power generation by fossil fuel or nuclear power;
3. Specialty & commodity chemical production;
4. Computer circuit board fabrication;
5. Vegetable and fruit processing, canning, freezing, etc;
6. Steel manufacture;
7. Animal slaughter and meat processing; and,
8. Vehicle manufacturing

What are water intensive industries doing to lower their water use?
Corporate water management is important for sustainable development programs, as well to meet investor demands. Corporate management systems have been widely expanded over the last decade to reduce water used per unit of production (saving money on raw materials). The other priority has been to reduce the mass of pollutants from getting into wastewater discharges (saving more money on pretreatment construction and operations). The upshot of such systems is to reduce water consumption by water recycling, through process equipment choices and reconfiguration, and through new operating protocols. (The plant that uses less water can better survive a drought and continues to operate reliably with a less complex wastewater management system in place, even in a flood! Hence, it is more sustainable.)

What are the most plausible water consumption scenarios for GVCC tenants, into the near term (Near term <= 10 years)?
There is no evidence that water intensive industrial tenants will relocate to or develop as from a startup, as has happened in the past. The converse is also true, though all 8 examples presented in the list above would be incompatible by most citizens, due to noise, odor, toxic emissions, unsightliness, transportation requirements, and difficulties posed by raw material and product storage.

The dream of a new, water-intensive biopharma operation locating in GVCC is just that: a dream.

A far more plausible scenario, by a *l-o-n-g* planning mile, would be for greatly increased overall tenant density, both of employees inside the Center and, eventually, by residences located contiguously to the Center so that those employees can "live work and play" in one closely configured locale. There are already strong indications that that is exactly the "future space" we in East Whiteland are entering.

Conclusion.
Use of wastewater flow numbers that reflect a bygone era of industrial operations 'just because" is potentially a waste of capital and commitment to unneeded operating and maintenance expenses. If the Township wants the large pipes and pumps 'just in case' higher density is coming, then just say so and lets get on with thinking about what that means for planning and zoning and budgeting.

Respectfully submitted,

Terry H. Woodman

Terry H. Woodman
Township Manager

The Township of
EAST WHITELAND
BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY
TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 12, 2015

East Whiteland Township Planning Commission
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: East Whiteland Township Act 537 Plan Special
Study for Planning Commission Review; Response to Comments.
ARRO #10310.09

Dear Commission Members:

We would like to take this opportunity to respond to the comments offered by the Commission for the above referenced Act 537 Special Study.

Response:

When preparing this Special Study, development of wastewater flow parameters was based on system operational data that defined a maximum scenario. This operational data reflected that period when the Great Valley Corporate Campus (GVCC) was fully occupied in the mid to late 2000's (2008). With the economic decline over the course of the past five to six years, a number of tenants moved their businesses or facilities from the GVCC to other locations or closed their businesses altogether.

In an effort to establish a more current base flow for the purposes of this Special Study, operational data for 2014 was reviewed.

Assuming that the former case described above represents the upper boundary scenario, the latter (based on 2014 data) would more accurately represent a base scenario.

The two primary property owners in the GVCC include Liberty Properties and Johnson & Johnson. Both of these entities were consulted and both provided their anticipated future wastewater loadings based on their known plans for development or redevelopment of their properties.

For the two flow cases, the average daily base flows from the GVCC are as follows:

Upper Boundary (2008) – 279,600 gpd
Base Boundary (2014) – 238,466 gpd

When including the projected flows provided by the primary property owners of Liberty Properties and Johnson & Johnson, the projected average daily flows from the GVCC are as follows:

Upper Boundary (2008) – 389,575 gpd
Base Boundary (2014) – 348,375 gpd

Upon review of these boundary conditions, there does not appear to be a significant difference in the base and upper flow-rates. Therefore, the sizing of infrastructure to accommodate the projected flows would be better served by utilizing the Upper Boundary condition to remain conservative.

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

Terry H. Woodman

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO

APPENDIX K

County Comments and Responses

THE COUNTY OF CHESTER

COMMISSIONERS
Kathi Cozzone
Terence Farrell
Michelle Kichline

JEANNE E. CASNER, MPH, PMP
County Health Director

CHESTER COUNTY HEALTH DEPARTMENT
Water and Sewage Division
Chester County Government Services Center
601 Westtown Road, Suite 288
West Chester, PA 19380-0990
610-344-6526 FAX: 610-344-5934
www.chesco.org/health

RECEIVED
JAN - 8 2015

ARRO Consulting, Inc.

January 6, 2015

Ms. Terry Woodman, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

RE: East Whiteland Township
Act 537 Plan Special Study
Wilburdale and Flat Road Pump Stations

Dear Ms. Woodman,

The Chester County Health Department (CCHD) is in receipt of the above noted Act 537 Plan Revision document. This Special Study was prepared by ARRO Engineering and Environmental Consultants and dated November, 2014. It was received by CCHD on November 25, 2014 and has been reviewed in accordance with Title 25, Environmental Protection, Chapter 71, Administration of Sewage Facilities Planning Program, Chapter 71 § 71.31.(b.). We offer the following comments:

- In Section I, Previous Wastewater Planning, item #3 on page 6 references the DEP approved 2013 Special Study flow triggers. For Continuity those triggers should be included in this Special Study.

- In Section II, Physical and Demographic Analysis:

  - Section A. on page 8 references maps found in Appendix B. These maps are too small to adequately provide the detail intended here.

  - Section B., Identify Physical Characteristics of the Planning Area, on page 8, references the map in Appendix D and mentions Great Valley Parkway. The map in Appendix C labels this as Great Valley Boulevard. Also, Great Valley Bulevard is referenced in item #5 on page 20. You may want to change one or the other for accuracy and consistency.

  - Section E. Topography, on page 9, the maps are too small to be of any value in understanding the area.

- In Section III, Existing (Wastewater) Facilities, item B identifies 4 lots in the planning area that use on-lot sewage facilities and will not be connected to the public sewer at this time. However, now would be the appropriate time to address them in this plan so that additional planning will not be necessary when these lots are eventually connected.

- In Section VI, Future Growth and Land Development, Section A.1., on page 13, lists the Glasgow Tract, Liberty Properties and J&J Properties, which are not identified on any map in this plan. Since they are mentioned, and flows are assigned to each on page 17, they should be identified on the map of the planning area.

CCHD recognizes that the purpose of this plan is to gain approval to upgrade the Wilburdale and Flat Road Pumping Stations to provide adequate capacity to provide for the ultimate final development of the planning area. We consider this planning to be appropriate and recommend approval once all review comments have been addressed.

Once this plan has been approved by PA DEP, please forward a final version to CCHD for our files. Electronic copies of the finally approved plan are acceptable.

Thank you for the opportunity to review this Special Study Plan. Please contact me with any questions at 610-344-6239.

Sincerely,

Ralph E. DeFazio, SEO
Environmental Health Supervisor
Division of Individual Water and Sewage
Chester County Health Department

cc: William Steele, East Whiteland Township
Kevin McAghon, P.E. ARRO Engineering
William Bohner, P.E., ARRO Engineering
Elizabeth Mahoney, PA DEP, SERO
CCPC
file

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

January 26, 2015

RECEIVED
JAN 29 2015
ARRO Consulting, Inc.

Mr. Ralph E. DeFazio
Environmental Health Supervisor
Water and Sewage Division
Chester County Health Department
Government Services Center, Suite 288
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special
Study for Health Department Review; Response to Comments.
ARRO #10310.09

Dear Mr. DeFazio:

East Whiteland Township would like to take this opportunity to respond to the Health Department's comments offered in the Department's January 6, 2015 review letter for the above referenced Act 537 Special Study.

Comment/Bullet 1:

In Section I, Previous Wastewater Planning, item #3 on page 6 references the DEP approved 2013 Special Study flow triggers. For continuity, those triggers should be included in the Special Study.

Response:

Acknowledged. Text has been added to this subsection showing the referenced trigger that was referenced in the PA DEP approval.

Comment/Bullet 2:

In Section II, Physical and Demographic Analysis:

Sub-bullet 1:

- Section A. on page 8 references maps found in Appendix B. These maps are too small to adequately provide the detail intended here.

Response:

These maps have been plotted at a larger scale (24"x36") to reflect the needed detail.

Sub-bullet 2:

- Section B., Identify Physical Characteristics of the Planning Area, on page 8, references the map in Appendix D and mentions Great Valley Parkway. The map in Appendix C labels this as Great Valley Boulevard. Also, Great Valley Boulevard is referenced in item #5 on page 20. You may want to change one or the other for accuracy and consistency.

Response:

Acknowledged. Text on the mapping and in the body of the Special Study has been revised to reflect consistent references to Great Valley Parkway.

Sub-bullet 3:

- Section E. Topography, on page 9, the maps are too small to be of any value in understanding the area.

Response:

Acknowledged. A larger scale topographic map has been provided in the appendix of the Special Study for reference.

Comment/Bullet 3:

In Section III, Existing (Wastewater) Facilities, item B identifies 4 lots in the planning area that use on-lot sewage facilities and will not be connected to the public sewer at this time. However, now would be the appropriate time to address them in this plan so that additional planning will not be necessary when these lots are eventually connected.

Response:

Acknowledged. Text has been added to this subsection that stipulates the projected flows from each of the OLDS properties have been accounted for in the overall flow projections. In addition, the planning area mapping reflects that these properties have been included in the Special Study's planning area.

Comment/Bullet 4:

In Section VI, Future Growth and Land Development, Section A.1., on page 13, lists the Glasgow Tract, Liberty Properties and J&J Properties, which are not identified on any map in this plan. Since they are mentioned, and flows are assigned to each on page 17, they should be identified on the map of the planning area.

Response:

Acknowledged. The mapping has been revised accordingly.

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

Terry H. Woodman

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO

THE COUNTY OF CHESTER

COMMISSIONERS
Terence Farrell
Kathi Cozzone
Michelle Kichline

RONALD T. BAILEY, AICP
Executive Director

PLANNING COMMISSION
Government Service Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990
(610) 344-6285 Fax: (610) 344-6515

January 22, 2015

RECEIVED
JAN 28 2015
ARRO Consulting, Inc.

William Holmes, Chairperson
Board of Supervisors
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: East Whiteland Township
Official Sewage Facilities Plan Special Study - Wilburdale Road and Flat Road Pump Stations

Dear Mr. Holmes:

The Chester County Planning Commission (CCPC) has reviewed the Draft 537 Plan Special Study dated November 2014 as required by Section 71.53(a)(2) of the Pennsylvania Sewage Facilities Act (Act 537). The Plan was prepared by ARRO. The Plan was received on November 25, 2014.

This Plan was prepared to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the Great Valley Corporate Campus and adjacent properties along Wilburdale Road and Flat Road, as well as examine the related impacts those needs will have on the Township's Flat Road Pump Station and the Wilburdale Pump Station.

The following comments are offered based on review of the document:

A. Consistency with the County Comprehensive Plan – *Landscapes2*:

1. The Study Area for East Whiteland Township, generally located south of Charlestown Township in the north-eastern portion of the Township, is primarily defined as the Suburban Landscape. The Act 537 Plan is consistent with the policies of *Landscapes2,* as they relate to the Suburban Landscape, including *Landscapes2* Policy UI 2.5 which states: "Maintain, upgrade, or expand existing public sewer and water facilities to support redevelopment and new development in designated growth areas, where consistent with local land use planning, while discouraging the extension of those facilities in the rural, agricultural and natural landscapes." The Plan indicates that East Whiteland Township is planning to upgrade components of the Township's conveyance system in order to accommodate future flows from the Great Valley Corporate Campus and adjacent properties along Wilburdale Road and Flat Road. The Plan, as proposed, is consistent with the goals and policies of *Landscapes2*.

2. *Watersheds*, the water resources element of the County comprehensive plan, identifies Objective 7.2 of Goal 7, "concentrate planned utility service areas to support designated growth areas," to be achieved through key strategies such as the extension of wastewater facilities in Suburban Landscapes. As such, East Whiteland Township, through its Act 537 Plan Update, intends to upgrade components of their public sewer system to accommodate existing and future planned growth. Therefore the goals for wastewater in East Whiteland Township are consistent with those of *Watersheds*.

B. Selection of Alternative:

1. The selected alternative for East Whiteland Township is to address the requirements necessary to upgrade components to the municipal conveyance system to accommodate future flows from the Great Valley Corporate Campus and adjacent properties. The proposed alternative is supported by *Landscapes2* Sewer and Water Policy UI 2.2, "Support infrastructure expansion and improvements that are consistent with *Landscapes2* and adopted regional and local plans that support projected future demands, avoid capacity shortfalls, protect natural resources, and provide safe and reliable utility services." As proposed, this alternative is consistent with the goals and policies of *Landscapes2*.

C. General Comments

1. The CCPC supports the comments made by the Chester County Health Department in their letter, dated January 6, 2015.

2. For clarity, please include a map of the Pump Stations, and associated lines, to be included in the Appendix as a separate map.

3. Please include information relating to the East Valley Creek being designated as an Exceptional Value stream. While there is text referencing the Act 167 Plan for this watershed, there is no discussion relating to the State designation.

4. Page 5. Previous Wastewater Planning. For clarity, please include information on the Valley Forge Sewer Authority's Act 537 Plan, adopted November 2006, which is the ultimate treatment and disposal method of this wastewater.

5. Page 6. Previous Wastewater Planning. For clarity, please include more information on the flow indicators, which are referenced as being included in the September 2013 Special Study, that was approved by PA DEP.

6. Page 6. Identify Land use Plans and Zoning Maps. Please update the text to reflect the title of the Chester County Comprehensive Plan as "Landscapes2."

7. Page 6. Identify Land Use and Zoning Maps. Please include the adoption dates of the plans listed.

8. Page 8. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through mapping. Please include a larger map in Appendix B. As presented, the text is unclear.

9. Page 9. Topography. The map, referenced as being in Appendix D, should be presented in a larger format, so that it is easier to read.

10. Page 12. Individual and Community On-lot Disposal Systems. The text indicates that there are four lots along Wilburdale Road that could potentially be served through the extension of an 8-inch collector sewer. It would seem that this planning effort would be an appropriate time to address this potential extension, as those lots would likely be connected to the system in the future.

11. Page 13. Description of Future Growth and Development. For clarity, please include a map that shows the zoning districts/land use designations with the existing development and future growth (if known) included on it, as the plan presents future wastewater needs for specific parcels.

12. Page 27. Comprehensive Plans. Please update the text to reflect the adoption date of *Landscapes2* as November 2009.

13. Page 29. County Stormwater Management Plans. The text should include a reference to the Countywide Act 167 Plan, which is an addendum to the *Watersheds* document. While the study area is correctly identified as being within the East Valley Creek watershed, it would be useful to readers, to include a reference to the Countywide Act 167 document as well.

14. Appendices. It would be helpful to have all of the maps included in the appendices presented in a larger size, to make them more readable.

Thank you for the opportunity to offer comments on this plan. We trust that these comments will be of assistance to you as you prepare the final document for submission to PA DEP. The CCPC recommends approval of the Plan after all comments have been addressed. If you have any questions, please contact Carrie Conwell at 610-344-6285.

Sincerely,

Ronald T. Bailey, AICP
Executive Director

RTB/CC/yg
cc: Elizabeth Mahoney, PaDEP
Ralph DeFazio, Chester County Health Department
Terry Woodman, Manager, East Whiteland Township
William Bohner, Jr., PE, ARRO

The Township of
EAST WHITELAND
BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY
TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 4, 2015

Mr. Ronald T. Bailey, AICP
Executive Director
Chester County Planning Commission
Government Services Center
Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special Study;
Great Valley Corporate Campus (Wilburdale PS and Flat Rd. PS);
Planning Commission Review; Response to Comments.
ARRO #10310.09

Dear Mr. Bailey:

East Whiteland Township would like to take this opportunity to respond to the Planning Commissions comments offered in the Commissions' January 22, 2015 review letter for the above referenced Act 537 Special Study.

General Comment 1:

The CCPC supports the comments made by the Chester County Health Department in their letter dated January 6, 2015.

Response:

Acknowledged.

General Comment 2:

For clarity, please include a map of the pump stations, and associated lines, to be included in the Appendix as a separate map.

Response:

Acknowledged. A collection/conveyance system map has been added to the Appendix for reference.

Mr. Ronald T. Bailey, AICP
February 4, 2015

General Comment 3:

Please include information relating to the East Valley Creek being designated as an exceptional value stream. While there is text referencing the Act 167 Plan for this watershed, there is no discussion relating to the State designation.

Response:

This discussion will be added to Section VI.A.8 titled "County Stormwater Management Plan.

General Comment 4:

Page 5. Previous Wastewater Planning: For clarity, please include information on the Valley Forge Sewer Authority's Act 537 Plan, adopted November 2006, which is the ultimate treatment and disposal method for this wastewater.

Response:

Acknowledged. Text with this information will be added to Section I.A.1. "Previous Wastewater Planning".

General Comment 5:

Page 6. Previous Wastewater Planning. For clarity, please include more information on the flow indicators, which are referenced as being included in the September 2013 Special Study, that was approved by PA DEP.

Response:

Acknowledged. The approved flow indicator will be added to the text accordingly.

General Comment 6:

Page 6. Identify Land Use Plans and Zoning Maps. Please update the text to reflect the title of the Chester County Comprehensive Plan as "Landscapes2".

Response:

Acknowledged. The text will be revised accordingly.

General Comment 7:

Page 6. Identify Land Use and Zoning Maps. Please include the adoption dates of the plans listed.

Response:

Acknowledged. Adoption dates will be added to the listing of plans and ordinances accordingly.

General Comment 8:

Page 8. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping. Please include a larger map in Appendix B. As presented, the text is unclear.

Response:

Acknowledged. A larger (24"x36") map/plan will be included in Appendix B for reference.

General Comment 9:

Page 9. Topography. The map, referenced as being in Appendix D, should be presented in a larger format, so that it is easier to read.

Response:

Acknowledged. A larger topographic map will be provided in Appendix D.

General Comment 10:

Page 12. Individual and Community On-Lot Disposal Systems. The text indicates that there are four lots along Wilburdale Road that could potentially be served through the extension of an 8 inch collector sewer. It would seem that this planning effort would be an appropriate time to address this potential extension, as those lots would likely be connected to the system in the future.

Response:

The projections in Section IV include the flows for these four properties in anticipation of future public sanitary sewer connection.

General Comment 11:

Page 13. Description of Future Growth and Development: For clarity, please include a map that shows the zoning districts/land use designation with the existing development and future growth (if known) included on it, as the plan presents future wastewater needs for specific parcels.

Response:

Acknowledged. The above referenced map will be provided.

General Comment 12:

Page 27. Comprehensive Plans. Please update the text to reflect the adoption date of Landscapes2 as November 2009.

Response:

Acknowledged. This text adjustment will be made.

General Comment 13:

Page 29. County Stormwater Management Plans. The text should include a reference to the Countywide Act 167 Plan, which is an addendum to the Watersheds document. While the study area is correctly identified as being within the East Valley Creek watershed, it would be useful to readers, to include a reference to the Countywide Act 167 document as well.

Response:

Acknowledged. The above referenced text will adjusted accordingly.

General Comment 14:

It would be helpful to have all of the maps included in the appendices presented in a larger size, to make them more readable.

Response:

Acknowledged. The maps will be plotted at a larger size and those larger prints will be incorporated into the appendices.

Mr. Ronald T. Bailey, AICP
February 4, 2015

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO

APPENDIX L

Proof of Publication

Proof of Publication of Notice in the Daily Local News

State of Pennsylvania
County of Montgomery {ss:

Marcia B Burns, Designated Agent, of the Daily Local News Company, a corporation, being duly affirmed, deposes and says that the *Daily Local News*, a newspaper of general circulation, published at 250 N. Bradford, Ave., West Chester, Chester County, Pennsylvania, was established November 19, 1872, and Incorporated December 11, 1911, since which date the *Daily Local News* has been regularly issued in Chester County, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said Daily Local News on the following dates viz:

February 20, 2015, A.D.

COPY OF NOTICE OR PUBLICATION

PUBLIC NOTICE

An Act 537 Plan Special Study has been prepared for East Whiteland Township, Chester County, Pennsylvania. The Special Study addresses the planning requirements necessary to provide for public sanitary conveyance improvements to existing portions of the Township's system. These improvements would provide the capacity for planned development to be located in the Great Valley Corporate Campus in East Whiteland Township.

Wastewater from the planning area identified in this document would be conveyed via upgraded wastewater conveyance system infrastructure, located along Flat Road, to Sidley Road at the western end of the planning area. The wastewater, once received at the Sidley Road sewer main would be conveyed to the Mill Lane pump station. This discharges through a force main and gravity sewer through East Whiteland Township and Tredyffrin Township to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives in two primary phases.

For Phase I, it is proposed that the existing 8" gravity main, located in Flat Road (west of Wilburdale Road) be replaced with 1400 +/- feet of new 12" pipe. The improved sewer line will provide capacity for the existing and projected future flows. In addition the Wilburdale Pump Station, located at the corner of Wilburdale Road and Flat Road (and its respective forcemain) would also be planned for upgrades.

For Phase II, the intent is to make sanitary sewer improvements to the Flat Road Pump Station located in the eastern portion of the Great Valley Corporate Campus, adjacent to Flat Road. Phase II improvements will include the upgrading of the pump station only. No upgrades to the forcemain or gravity sewer main are planned.

The engineer's opinions of probable construction cost for these alternatives and the respective phases are:

Phase I: $1,372,000
Phase II: $642,000

The selected technical alternative will be paid for and financed through bond funding mechanisms and sharing of costs between the municipality and developers. Costs shall be recouped through established tapping fee and user rate structures.

In accordance with Chapter 71.3(c) of the Pennsylvania Code, the Township is providing a 30-day public comment period. The plan is available, for review, at the Township's offices, 209 Conestoga Road, Frazer, PA 19355 from 9:00 AM to 4:00 PM, Monday through Friday. Comments may be addressed to Ms. Terry Woodman, Township Manager, and are due no later than thirty (30) days from the date of this advertisement.
DLN - 2/20 - 1a

Affiant further deposes that he/she is the proper person duly authorized by the Daily Local News Company, a corporation, publishers of said *Daily Local News*, a daily newspaper, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Marcia B Burns

Affirmed to and subscribed before me this

24th day of February, 2015

Eleanor B Reichel
Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
ELEANOR B. REICHEL, Notary Public
Lansdale Boro., Montgomery County
My Commission Expires December 15, 2018

APPENDIX M

Public Comments and Responses

The Township of
EAST WHITELAND
BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY
TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

March 26, 2015

William L. Bohner, Jr., P.E.
ARRO Consulting, Inc.
649 N. Lewis Road
Suite 100
Limerick, PA 19468

RE: East Whiteland Township Sewage Facilities
Planning Special Study for the
Great Valley Corporate Campus;
Public Comment Period.

Dear Mr. Bohner:

In accordance with Title 25, Chapter 71 of the Pennsylvania Code, a 30-day public comment period was conducted for the East Whiteland Township Sewage Facilities Planning Special Study, for the upgrades of public sanitary sewer facilities serving the Great Valley Corporate Campus. The public comment period began on February 20, 2015 and ended on March 21, 2015. During that period, no public comments were received by East Whiteland Township.

Sincerely,

Terry H. Woodman

Terry Woodman
Township Manager

APPENDIX N

Adopted Resolution

The Township of
EAST WHITELAND
BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY
TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

RECEIVED
APR 20 2015
ARRO Consulting, Inc.

April 16, 2015

Mr. William Bohner
Arro Engineering
649 N. Lewis Road, Ste. 100
Limerick, PA 19468

RE: Wilburdale – Flat Road Pump Station

Dear Mr. Bohner:

Enclosed you will find an executed copy of Resolution 16-2015 relative to the plan revisions of Act 537 Special Study adopted by the Board on April 8, 2015 for your files.

If I can be of any further assistance, please feel free to contact us.

Very truly yours,

Maureen G. Perri

Maureen G. Perri
Township Secretary

Enc.

EAST WHITELAND TOWNSHIP

RESOLUTION NO. 16-2015

Resolution for Plan Revision Act 537

RESOLUTION OF EAST WHITELAND TOWNSHIP BOARD OF SUPERVISORS, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537 known as the "Pennsylvania Sewage Facilities Act", as Amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection (PADEP) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the Township to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said Plan whenever it is necessary to meet the sewage disposal needs of the Township's service area.

NOW, THEREFORE, BE IT RESOLVED, that East Whiteland Township Board of Supervisors hereby adopts and submits to the Pennsylvania Department of Environmental Protection for its approval, as a revision to the "Official Plan" of the Township, this Act 537 Special Study.

East Whiteland Township (Township) hereby approves and adopts the Act 537 Special Study which establishes the planning requirements necessary to provide public sanitary sewer infrastructure improvements located in and adjacent to the Great Valley Corporate Campus (GVCC) in the north central part of the Township. Improvements are a result of wastewater needs generated from proposed development within and adjacent to the GVCC. Selected alternatives for infrastructure improvements include upgrades to the Wilburdale Pump Station and Force Main, upgrades to the Flat Road gravity sewer main, and upgrades to the Flat Road Pump Station. The Township is committed to implementing the recommendations of this Special Study in accordance with the Study's implementation schedule.

The Township finds that the Act 537 Special Study described above conforms to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

ADOPTED this 8th day of April, 2015.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

William Holmes, Chair

John A. Mott

ATTEST:

Township Secretary

Bill Wrabley

I, Maureen G. Perri, Secretary, East Whiteland Township, hereby certify that the foregoing is a true copy of Township Resolution No.16-2015, adopted April 8, 2015.

(TOWNSHIP SEAL)

Secretary

APPENDIX O

Approved Plan of Study and Task Activity Report

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

April 17, 2014

Ms. Terry H. Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 - Plan of Study
Great Valley Corporate Campus Special Study
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed Plan of Study, as prepared by Mr. William L. Bohner, Jr., P.E., of ARRO Engineering and Environmental Consultants, dated February 25, 2014, and a proposed Task Activity Report dated January 2014.

The proposed Special Study will provide planning to address the wastewater needs of the Great Valley Corporate Campus (GVCC) in East Whiteland Township, Chester County and will provide planning for any necessary upgrades to the existing collection and conveyance system that serves the GVCC. These facilities include the existing Wilburdale Pump Station, force main and gravity sewer as well as the Flat Road Pump Station that serves the easternmost portion of the GVCC. The completed Special Study is scheduled to be submitted to the Department of Environmental Protection (DEP) in November 2014.

We note that this planning effort addresses Phase IV of the East Whiteland Township/Charlestown Township (Southside) Act 537 Special Study that was approved by DEP on September 13, 2013. Please provide a status update on the implementation of the remaining phases of this Special Study in the proposed special study for the GVCC.

Approval of this proposed Plan of Study is hereby granted. The estimated cost of the plan is $33,964. Please be advised the approval of this scope of work is not a guarantee of eligibility of planning costs for reimbursement by the Commonwealth pursuant to Section 6 (a) of Act 537 and 25 Pa Code Chapter 71 of DEPs regulations.

This Plan of Study approval does not constitute a final action by DEP. When a completed plan is submitted to us, we will act upon it consistent with Pa. Code Title 25, Chapter 71.

Please consider the following comments as your municipality prepares its Act 537 Official Plan Update:

Your municipality's Act 537 Official Plan Update is to be formatted as suggested in the"A Guide for Preparing Act 537 Update Revisions" including the necessary items listed in the "Act 537 Plan Content and Environmental Assessment Checklist." All necessary items must be included, and a copy of the completed checklist must be included with your Act 537 Plan. This form is available on our website at:
http://www.dep.state.pa.us/dep/deputate/watermgt/wqp/Forms/Act537/Forms_537Plan.htm

Also, please be advised that DEP will not pay grants under the act for planning costs incurred prior to the date of this Plan of Study approval or for information that has been completed previously under local, state, or federal funding programs. In addition, approval of this POS/TAR does not guarantee that all tasks listed will be eligible for reimbursement.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by DEP.

If you have any questions, please contact me at 484.250.5184.

Sincerely,

Kelly Boettlin
Sewage Planning Specialist 2
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Mr. Bohner – ARRO Engineering and Environmental Consultants
Ms. Vollero - RCSOB, 11th Floor, Sewage Facilities
Planning Section
Re 30 (GJE14CLW)107-4

February 4, 2014

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Terry Woodman
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: East Whiteland Township;
Act 537 Special Study for the Wilburdale Pump Station and
Great Valley Corporate Campus Planning Area
ARRO # 10310.09

Dear Ms. Woodman:

In keeping with the Pennsylvania Department of Environmental Protection's (DEP) requirements to prepare an Act 537 Special Study (Special Study) for the Wilburdale Pump Station and the Great Valley Corporate Center planning area, we have prepared a Plan of Study and Task Activity Report. These documents must be submitted to DEP at the time that the work on the Special Study is initiated. The Plan of Study establishes the project scope for DEP and the Task Activity Report establishes the budget. The Task Activity Report is DEP's primary tool for budgeting as it relates to providing 50% reimbursement to municipalities for their Act 537 planning efforts.

Please sign the attached Task Activity Report (11x17 sheet) in the lower right hand corner of the report. Return it to my attention and I will send both documents to DEP for processing.

If you have any questions regarding these documents, please contact me. You can reach me at 610-495-2102 or at bill.bohner@thearrogroup.com.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Attachment

c: Kevin McAghon, P.E. – ARRO

Bohner, Bill

From: UPS Quantum View <auto-notify@ups.com>
Sent: Wednesday, February 26, 2014 11:14 AM
To: Bohner, Bill
Subject: UPS Delivery Notification, Tracking Number 1Z1667160396655935

UPS My Choice® can help you avoid missed home deliveries.

Learn More

***Do not reply to this e-mail. UPS and ARRO Consulting, Inc. will not receive your reply.

At the request of ARRO Consulting, Inc., this notice is to confirm that the following shipment has been delivered.

Important Delivery Information

Tracking Number: 1Z1667160396655935
Delivery Date / Time: 26-February-2014 / 10:42 AM

Delivery Location: FRONT DESK
Signed by: CAMBLE

Shipment Detail

Ship To:
Kelly Boettlin
PA Dept. Environmental Protection
2 E MAIN ST
NORRISTOWN
PA
19401
US

Number of Packages: 1
UPS Service: GROUND
Weight: 1.0 LBS
Reference Number 1: 10310.09 POS-TAR_WLB

EAST WHITELAND TOWNSHIP
GREAT VALLEY CORPORATE CAMPUS ACT 537 SPECIAL STUDY

In accordance with Title 25, Chapter 71, Administration of the Sewage Facilities Planning Program, of the Pennsylvania Code, a Plan of Study has been developed, for the preparation of a revision to the East Whiteland Township (Township) Act 537 Sewage Facilities Plan (Plan). This is being prepared to establish the planning elements that are necessary to meet the requirements of the Pennsylvania Department of Environmental Protection (PADEP) as they relate to the preparation of an Act 537 Plan Special Study (Special Study). This Special Study is to address the planning requirements necessary to address the need to upgrade existing collection and conveyance facilities that serve the Great Valley Corporate Campus (GVCC) in East Whiteland Township. These facilities include the existing Wilburdale Pump Station, force main, and gravity sewer as well as the Flat Road Pump Station that serves the eastern most portion of the GVCC. The planning area, as delineated on the location plan, will be the planning area for this Special Study. The Special Study shall become an amendment to the current Township-wide Act 537 Plan.

Based on the PADEP Act 537 Plan Content and Environmental Assessment Checklist, the following addresses the planning requirements necessary to complete the study:

Executive Summary

1. Prepare a table of contents for the document.

2. Prepare a plan summary (Executive Summary).

   A. Identify the planning area to be served by the future collection and conveyance system.

   B. Identify the alternative chosen alternative.

   C. Include the cost opinion for implementing the proposed alternative.

   D. Identify the municipal commitments necessary to implement the plan.

   E. Provide a schedule for implementing the proposed project.

3. Include original signed and sealed Resolutions of Adoption.

4. Include comments provided by the Township Planning Commission, Chester County Planning Commission, and Chester County Health Department.

5. Include Proof of Public Notice.

6. Include a copy of all written comments received and written responses to each comment.

7. Prepare a project implementation schedule.

8. If any planning inconsistencies are identified, documentation will be provided discussing the resolution of the inconsistencies. If none are identified, a statement will be made to that effect.

General Plan

I. Previous Wastewater Planning

A. Identify and discuss existing wastewater planning.

1. Discuss previous Act 537 planning.

2. Discuss planning that has not been done in accordance with an approved implementation schedule.

3. Discuss additional planning, if any, that is anticipated or planned by East Whiteland Township.

4. Discuss planning that has been done via official plan revision such as planning modules or addenda.

B. Identification of Municipal and County planning documents.

1. Identify land use plans and zoning maps as they pertain to East Whiteland Township.

2. Identify the zoning regulations.

II. Physical and Demographic Analysis

A. Identify the planning area, municipal boundaries and service area boundaries utilizing existing mapping.

B. Identify physical characteristics of the planning area. Existing mapping will form the basis for this identification supplemented by USGS and National Wetlands Inventory maps, as required.

C. Discussion of soils characteristics is not applicable to this Special Study. .

D. Discussion of geological features in the service area is not applicable to this Special Study.

E. Discuss topographic features in the service area.

F. Identification of potable water supply is not applicable to this Special Study.

G. Identify wetlands in the area utilizing National Wetlands Inventory Mapping and existing Act 537 mapping.

III. Existing Sewage Facilities in the Planning Area

A. Identify and describe municipal sewerage systems in the planning area.

1. Discuss location, size and ownership of existing collection and conveyance facilities. A map will be provided to show the location of the collection and conveyance facilities within East Whiteland Township that could potentially serve the planning area.

2. Providing a narrative and schematic diagram of the basic treatment process is not applicable to this Special Study.

3. Providing a description of the problems, if any, with the existing treatment plant is not applicable to this Special Study. However, a description of problems, if any, associated with the existing conveyance system will be discussed.

4. Providing details, if any, relative to ongoing upgrading or expansion of the treatment facilities is not applicable to this Special Study. However, a description of ongoing upgrades or expansion, if any, of the conveyance system will be discussed.

5. Provide a description of operation and maintenance requirements and the status of past and present compliance with these requirements.

B. 1,2,3,4. This Special Study is to address public sewers service and related upgrades within the planning area, There are four lots along Wilburdale Road that have on-lot systems. It is not planned that public sewer will be extended to these lots at this time. However, capacity will be allotted in the Wilburdale pump station in the event that public sewer is needed in the future.

C. 1,2,3. Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. Future Growth and Development

A. Describe future growth and development through mapping, text and analysis for the planning area as defined by this Special Study.

1. Discuss areas with existing development or plotted subdivisions.

2. Discuss land use designations including residential, commercial and industrial areas.

3. Discuss future growth areas, population and EDU projections for these areas.

4. Briefly discuss zoning and subdivision regulations as they pertain to planned development.

5. Discuss the sewage planning required to provide adequate wastewater conveyance for planned development.

V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Identify the alternative to provide for improved sewage facilities

1. Identification of regional wastewater treatment concepts as an alternative shall make mention that wastewater is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

2. The potential for extension of existing municipal sewage facilities to areas in need. Municipal collection and conveyance facilities currently exist for the GVCC.

3. A discussion addressing the potential for continued use of existing on-site or on-lot systems is not applicable to this Special Study.

4. Analysis of a new community sewage system is not applicable to this Special Study.

5. Analysis of alternatives as they relate to repair, replacement, and upgrade of existing conveyance system components will be discussed. Specific attention shall be given to the Wilburdale Pump Station and Force Main as well as the gravity sewer downstream from the point at which the Wilburdale forcemain discharges. The Flat Road Pump Station and force main shall also be evaluated.

6. Discussion as it relates to the use of alternate methods of collection/conveyance to serve needs areas is not applicable to this Special Study.

B. The use of individual sewage disposal systems is not applicable to this Special Study.

C. Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Analysis based on the use of community land disposal is not applicable to this Special Study.

E. Addressing the use of retaining tank alternatives is not applicable to this Special Study.

F. A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study and is not considered applicable to this Special Study.

G. Non-structural comprehensive planning alternatives are not applicable to this Special Study.

H. Provide a no-action alternative which includes impacts on:

1. Water Quality and Public Health.

2. Growth Potential.

3. Community and economic conditions.

4. Recreational opportunities.

5. Drinking water sources.

6. Other environmental concerns.

VI. The Evaluation of Alternatives

A. Evaluate the alternatives, identified in Section V, for consistency with respect to the following:

1. Plans developed under the Clean Streams Law.

2. Plans developed under the Municipal Wasteload Management Plan (Chapter 94).

3. Plans developed under Title II of the Clean Water Act.

4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code.

5. Anti-degradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 and the Clean Water Act.

6. State water plans developed under the Water Resources Planning Act.

7. Pennsylvania Prime Agricultural Land Policy.

8. The County Stormwater Management Plan.

9. Wetlands Protection.

10. Protection of rare, endangered or threatened plant and animal species as identified by the PNDI.

11. Historical and Archeological Resource Protection (PHMC).

B. Provide for the resolution of any inconsistencies with items 1 through 11 above, if necessary.

C. Evaluate the alternatives with respect to applicable water quality standards and effluent limitations.

D. Provide cost opinions for construction, financing and engineering fees for the alternatives identified in Section V.

E. Provide an analysis of funding methods available to finance the proposed alternatives including financial contributions from private entities.

F. Analyze the need for immediate or phased implementation.

G. Analyze the ability of the Township to implement the alternative.

VII. Institutional Evaluation

A. Provide a brief discussion of the Township, their past actions and present performance including:

1. Financial and debt status

2. Available staff and administrative resources

3. Provide an analysis of the Township's legal authority to implement wastewater planning recommendations, implement system-wide operation and maintenance activities, set user fees, take purchasing actions, take actions against ordinance violators, negotiate agreements with other parties and raise capital for construction, operation and maintenance of facilities.

B. Describe the various institutional alternatives necessary to implement the technical alternatives, including:

1. There is no need for a new Authority. No analysis will be completed for this.

2. Function of the Township.

2. Cost of administration, implementability, and capability of the Township to provide for future needs.

C. Describe necessary administrative and legal activities, if any, to be completed and adopted to ensure the implementation of the alternatives, including:

1. Legal authorities of incorporation.

2. Required ordinances, standards, regulations and inter-municipal agreements.

3. Provisions of rights-of-way, easements, and land transfers.

4. Other sewage facilities plan adoptions.

5. Legal documents, if any.

6. Dates or timeframes of 1-5 above on the implementation schedule.

VIII. Selected Wastewater Treatment and Institutional Alternative

A. Identify the alternative that is the most feasible from a technical, financial, and institutional standpoint. Justify the choice based on:

1. Existing wastewater disposal needs.

2. Future wastewater disposal needs.

3. Operations and maintenance considerations.

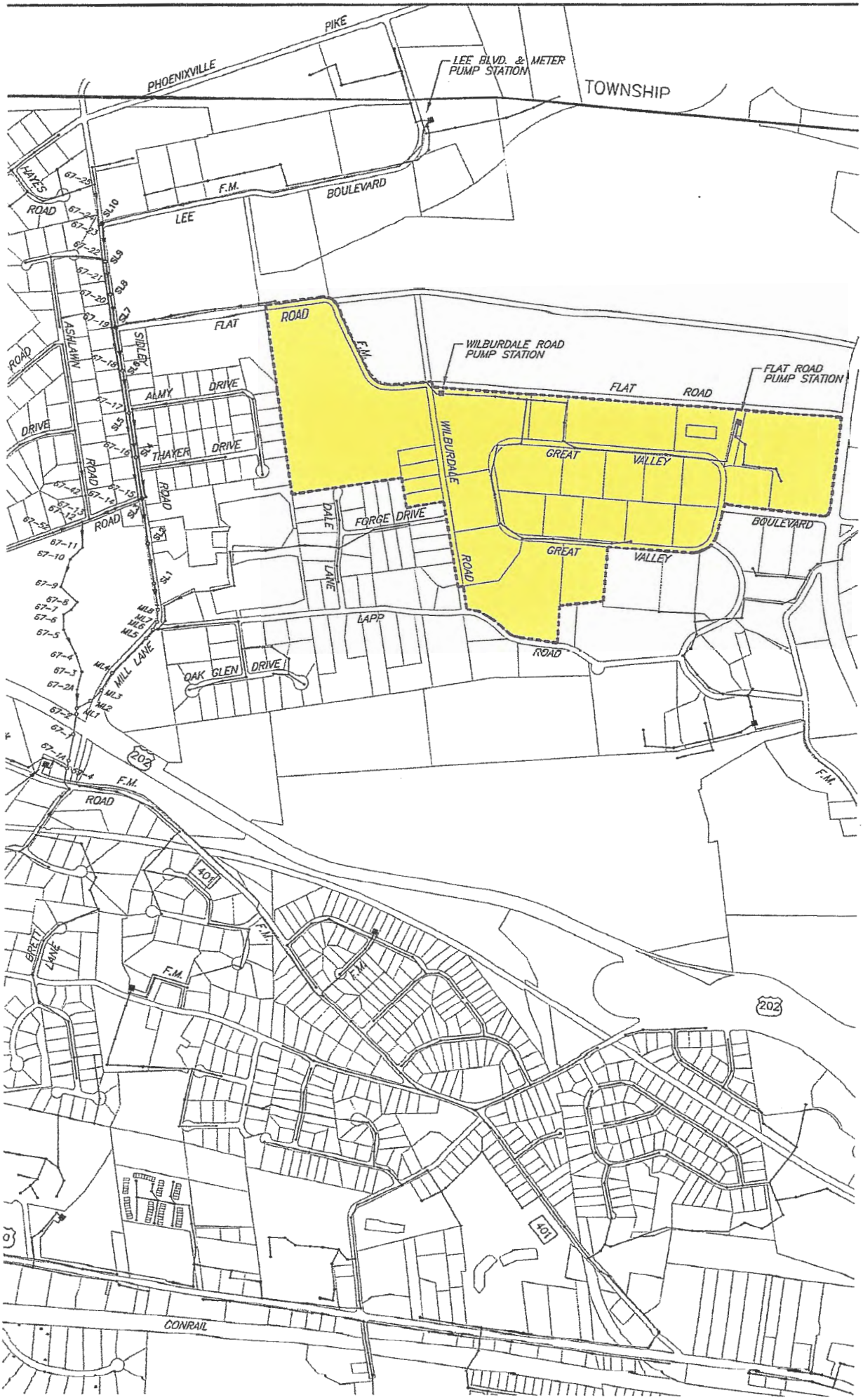
4. Cost effectiveness.

5. Availability management and administrative systems.

6. Available finance methods.

7. Environmental soundness.

B. Describe the capital financing plan chosen to implement the selected alternative.


PIKE
PHOENIXVILLE
LEE BLVD. & METER PUMP STATION
TOWNSHIP
HAYES ROAD
F.M.
LEE BOULEVARD
ASHLAWN ROAD
SIDLEY ROAD
FLAT ROAD
WILBURDALE ROAD PUMP STATION
FLAT ROAD PUMP STATION
ALMY DRIVE
THAYER DRIVE
DRIVE
WILBURDALE ROAD
GREAT VALLEY BOULEVARD
DALE FORGE DRIVE
LANE
LAPP ROAD
MILL LANE
OAK GLEN DRIVE
202
401
BRETT LANE
CONRAIL

Municipality: East Whiteland Township | County: Chester | Proposed Planning Area: Great Valley Corporate Campus (GVCC) (see attached plan sheet) | Date of Report: January-14

Date completed Plan will be submitted to DEP: November-14 | Estimated Cost of Plan: $33,964

Task Activity	Project Manager/Engineer		CADD Mapping		Clerical/Admin		Q/A Review														Expenses	Subtotal $
	Hr/Rate	$145.00	Hr/Rate	$80.00	Hr/Rate	$56.00	Hr/Rate	$121.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00		
Plan Section and/or Task	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)		
Plan of Study;TAR	10	$1,450	0	$0	2	$112	4	$484	0	$0		$0		$0		$0		$0		$0	$14	$2,060
Section I (Prev. Planning)	6	$870	0	$0	1	$56	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$926
Section II (Phys. Demographic Analysis)	6	$870	0	$0	1	$56	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$926
Plan Section III (Existing Facilities)	8	$1,160	8	$640	4	$224	0	$0	0	$0		$0		$0		$0		$0		$0	$50	$2,074
Plan Section IV (Future Growth)	24	$3,480	16	$1,280	4	$224	4	$484	0	$0		$0		$0		$0		$0		$0	$0	$5,468
Plan Section V (Conveyance Alternatives)	24	$3,480	8	$640	8	$448	4	$484	0	$0		$0		$0		$0		$0		$0	$50	$5,102
Plan Section VI (Alternative Evaluation)	24	$3,480	8	$640	4	$224	4	$484	0	$0		$0		$0		$0		$0		$0	$0	$4,828
Plan Section VII (Institutional Evaluation)	8	$1,160	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,272
Plan Section VIII (Selection of Alternative)	8	$1,160	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,272
Executive Summary	4	$580	0	$0	1	$56	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$636
Submit Document to Township for Review	2	$290	0	$0	2	$112	8	$968	0	$0		$0		$0		$0		$0		$0	$100	$1,470
Incorporate Township Comments; Respond	6	$870	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$880
Submit Document to County for Review	2	$290	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$100	$502
Incorporate County Comments; Respond	4	$580	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$702
Advertise for Public Comment	2	$290	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0		$0	$500	$790
Submit Document for Public Comment	2	$290	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$100	$502
Incorporate Public Comments; Respond	4	$580	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$20	$712
Draft Resolutions of Adoption	2	$290	0	$0	1	$56	0	$0	0	$0		$0		$0		$0		$0		$0	$20	$366
Submit Document to PA DEP for Review	2	$290	0	$0	4	$224	0	$0	0	$0		$0		$0		$0		$0		$0	$300	$814
Revise Per DEP Comments; Respond	8	$1,160	0	$0	2	$112	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$1,282
Submit Final to DEP.	0	$0	0	$0	2	$112	8	$968	0	$0		$0		$0	32	$0		$0		$0	$300	$1,380
Totals	156	$22,620	40	$3,200	48	$2,688	32	$3,872	0	$0	0	$0	0	$0	32	$0	0	$0	0	$0	$1,584	$33,964

William L. Bohner Jr., P.E.
Name of Person Completing Report

Signature

2/25/14
Date

Terry Woodman - Township Manager

EXHIBIT P5

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(SPECIAL STUDY 2016)

East Whiteland Township

Frame Avenue/Planebrook Road

Act 537 Special Study

August 2016

Engineer's Project No. 10310.21

Prepared By:

ARRO Consulting, Inc.

649 North Lewis Road, Suite 100

Limerick, PA 19468

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EXECUTIVE SUMMARY

This Act 537 Special Study (Special Study) was prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This Special Study addresses the requirements necessary to implement a regional pump station that is to provide service to the Frame Avenue and Planebrook Road planning area. (See Appendix B for planning area map)

The Plan is comprised of the following components addressed in the Plan of Study:

I. Previous Wastewater Planning

II. Physical and Demographic Analysis

III. Existing Sewage Facilities in the Planning Area

IV. Future Growth and Development

V. Alternatives to provide for new or improved wastewater disposal facilities

VI. Evaluation of Alternatives

VII. Institutional Evaluation

VIII. Selected Wastewater Treatment and Institutional Alternative

The primary focus of the Plan is to evaluate alternatives to provide for upgraded Township conveyance system facilities including the implementation of the above-referenced regional pump station and extension of sanitary sewer main to areas currently served by on-lot disposal systems.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the construction of a regional pump station and force main.

The engineer's opinions of probable construction cost **(planning level costs)** for the selected alternative is:

- Construct a regional pump station that will serve the current public sewer service area that drains to the existing Frame Avenue Pump Station as well as provide for future service to areas currently served by OLDS. $560,000

- Construct an 8-inch force main that will extend from the proposed regional pump station to a connection point with the existing Whiteland Village interceptor north of the intersection of Planebrook Road and Swedesford Road. $720,000

With the infrastructure improvements being prompted by the implementation of the proposed regional pump station as well as new development on the Cockerham Tract, these alternatives will be paid for and financed through a combination of monies from developer funds and Township funds.

The following is a schedule for implementing the proposed alternative:

	Description	Date
1.	Complete rehabilitation of Whiteland Village dry sewer and complete the missing link (Rehabilitation is on-going by others)	5/17
2.	Preliminary design Planebrook Road Force Main	5/17
3.	Preliminary design Planebrook Road Regional Pump Station	5/17
4.	Submit Permit Applications (Part II WQM/E&S/Stormwater)	6/17
5.	Receive Permits	9/17
6.	Final Design	9/17
7.	Project Bid – Force Main	9/17
8.	Developer Begin Construction – Pump Station	9/17
9.	Award Bid – Force Main	11/17

10.	Initiate Planning – Public Sewer Extensions to OLDS Properties [Component 3m]	11/17
11.	Complete Construction – Force Main	5/18
12.	Complete Construction – Pump Station	5/18
13.	Initiate Preliminary Design Public Sewer Extensions	11/17

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Discuss Existing Wastewater Planning

1. Previous Act 537 Planning

An Act 537 Sewage Facilities Plan, dated May 2, 1995, was prepared for East Whiteland Township. This was a 'township-wide' plan. The primary purpose of the Plan was to consider the extension of the existing public collection and conveyance system to most of the Township, as needed.

The Valley Forge Sewer Authority adopted their Act 537 Planning in November of 2006. The Authority's wastewater treatment plant is the point to where the Township's wastewater flows for ultimate treatment and disposal.

An Act 537 Plan amendment "Special Study" was prepared. It was last revised in September 2011. The purpose of this study was to focus on the wastewater needs to address the replacement and upgrade of the Mill Lane Pump Station. This Special Study was approved by PA DEP in 2011/2012.

An Act 537 Special Study was prepared in 2013 and approved by the Department. This Special Study identified and addressed the requirements necessary to upgrade portions of the Township's conveyance system to accommodate future flow needs from Charlestown Township and East Whiteland Township. The planning area included south central Charlestown Township and north central East Whiteland Township.

An Act 537 Special Study was prepared and approved in 2015. This Special Study identified and addressed the requirements necessary to upgrade the Wilburdale Pump Station as well as adjacent conveyance components to meet the future needs of the Great Valley Corporate Campus.

2. ***Planning Not Done in Accordance with an Approved Implementation Schedule***

There has been no planning by the Township that has not been completed in accordance with an approved implementation schedule.

3. ***Additional Planning***

Planning that is anticipated by the Township above and beyond the planning associated with this Act 537 Special Study is associated with the extension of public sanitary sewer service to properties currently served by on-lot disposal systems along and adjacent to Planebrook Road. Planning for this will need to be completed via a Component 3m Planning Module. This planning component is for Minor Act 537 Update revisions for proposed sanitary sewer extensions to serve existing development. This will facilitate specifics associates with costs to the residents and will allow for additional public involvement. Note that the initiation of this planning shall be triggered by the start of construction of the Planebrook Road Regional Pump Station and force main.

4. ***Planning Via Planning Modules or Addenda.***

Three (3) revisions were made to the Township-wide 537 Plan. The first was the Special Study for the Mill Lane Pump Station that was last revised in September 2011. The second was the Special Study (approved by the Department in September 2013) addressing conveyance system upgrades to accommodate future flows in East Whiteland and Charlestown Township. The third was the Special Study (approved 2015) addressing upgrades to the Wilburdale Pump Station to accommodate GVCC needs.

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping

This Act 537 Special Study is being prepared to address the sewage facilities needs of existing and new development in the area served by the Frame Avenue Pump Station, the temporary pump station on the Cockerham Tract, and properties surrounding Planebrook Road. Refer to the Plan in Appendix B that shows the boundary for the planning area addressed in this Special Study.

B. Identify the Physical Characteristics of the Planning Area

East Whiteland Township is located in Chester County, due east of Exton, PA. The topography of the planning area varies from a low elevation of 350 feet near the temporary pump station on the Cockerham Tract to an elevation of 550 feet near Glen Loch Way and Ravine Road. A topographical map of the area is found in Appendix D.

In addition, the wetlands per the National Wetlands Inventory Map are detailed on the map found in Appendix E.

C. Soils Analysis

In the identified planning area, most areas are served by public sewer. There is a portion of the planning area that is served by on-lot disposal systems. The soils in this area are UudB (UuB) "Urban Land-Udorthents complex, 0 to 8 percent slopes." For the application of wastewater to areas with this type of soil, the soil is very limited, has low absorption, slow water movement, and is too acidic.

D. Geological Features of the Planning Area

The primary geologic formations in the planning area include:

1. C1 - Ledger Dolomite

2. Ce - Elbrook Limestone

3. OCc - Conestoga Limestone

The ledger formation is light gray, locally mottled, pure, coarsely crystalline dolomite, and siliceous in the middle part. Elbrook Limestone is light blue, laminated, containing argillaceous limestone and calcareous shale and some dolomite. Conestoga Limestone is light gray, thin-bedded, impure, contorted limestone having shale partings.

E. Topography

As referenced in Section II.B. of this Plan, the topography of the planning area varies from a low elevation of 350 feet near the temporary pump station on the Cockerham Tract to an elevation of 550 feet near Glen Loch Way and Ravine Road. A topographical map of the area is presented in Appendix D.

F. Potable Water Supply Information

The entire area is served by public water supplied by Aqua PA.

G. Wetlands

There are no wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the U.S. Fish and Wildlife Service.

III. EXISTING FACILITIES IN THE PLANNING AREA

A. Identify and Describe Municipal Sewage Systems in the Planning Area

1. Location, Size, and Ownership of Facilities

Currently, there are collection and conveyance facilities in the planning area. The sanitary sewer mains that currently make up the collection system are 8 inches in diameter.

There is one (1) wastewater pump station in the planning area. The Frame Avenue Pump Station is located at the end of Frame Avenue in the northeast portion of the planning area. This pump station has a design capacity of 0.360 MGD. Wastewater is pumped through an existing 6-inch force main to the gravity sewer main located in Lancaster Avenue.

2. Narrative and Schematic Diagram of the Basic Treatment Process

Since the focus of this Special Study is to address the needs associated with the collection and conveyance system in the planning area, a narrative and schematic diagram of the basic treatment process is not applicable.

3. Description of Problems with the Existing Facilities

Currently, there are no specific problems with the existing facilities.

4. *On-Going Upgrades or Expansion of Facilities*

Adjacent to the planning area, there are some upgrades being made. These include:

a. Maintenance and placing into service the Whiteland Village Interceptor.

b. Construction of the sanitary sewer "connector" that will allow wastewater to be conveyed from the Whiteland Village Interceptor to the Mill Lane Pump Station.

5. *Operations and Maintenance Requirements and the Status of Past and Present Compliance*

The Township will be the facility permitee and the owner. They will perform routine maintenance on the collection and conveyance system to keep the facilities operating satisfactorily.

B. Individual and Community On-Lot Disposal Systems

Properties along Planebrook Road, Elk Drive, Fairway Drive, Golf View Lane, Bracken Avenue, Prospect Avenue, and Davis Avenue are currently served by individual on-lot disposal systems.

The property owners have expressed interest in connecting to the public sewer system. In the early 2000's, a public meeting was held and a survey was conducted to gather public input. Documentation showing this is found in Appendix O.

Act 537 Planning, completed and approved by the Department in 2011, included these properties within the proposed public sewer service area. A 'Sewage Needs Identification' evaluation for these properties is not needed as part of the planning process.

Upon initiation of the construction of the Planebrook Road Regional Pump Station and force main, Act 537 Planning (via Module Component 3m) will begin for the extension of the public sewer main to serve these properties. Preliminary design of the gravity sewer extensions will occur in parallel to the planning. This will enable OLDS property owners to get a better sense for what is planned and what the preliminary costs might be.

Upon completion of the Component 3m planning and the construction of the regional pump station, permit applications shall be submitted for construction of the proposed sanitary sewer extensions.

C. Wastewater Sludge and Septage Generation

Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. Identification of Municipal and County Planning Documents

1. *Identify Land Use Plans and Zoning Maps*

The Chester County Comprehensive Plan entitled "Landscapes2" establishes guidelines for the following land use categories.

- Growth Management
- National Resource Protection and Open Space
- Agricultural and Farmland Protection

The categories are used to provide the municipalities with "planning strategies to assist them in implementing their growth boundaries."

The Township has three (3) municipal planning documents that govern Land Use and Zoning.

- The East Whiteland Township Comprehensive Plan (Adopted 2001)
- The East Whiteland Township Zoning Ordinance (Adopted 2007)
- Subdivision and Land Development Ordinance (Adopted 2007)

A zoning map showing the designated zoning districts is found in Appendix A.

2. *Identify Zoning Regulations That Establish Lot Sizes*

The Zoning Ordinance adopted by the Township establishes the criteria for lot sizes for the following zoning districts in the planning area. Zoning mapping is found in Appendix A.

Zoning District		Minimum Lot Area
R1	Low Density Residential District	40,000 Sq. Feet
O/BP	Office/Business Park	80,000 Sq. Feet
OS	Open Space	-----
RM	Medium Density Residential	5,000 Sq. Feet
R-2	Low Density Residential	20,000 Sq. Feet
VMX	Village Mixed Use	10,000 Sq. Feet
FC	Frontage Commercial	20,000 Sq. Feet

B. Description of Future Growth and Development

1. Areas with Existing Development and Plotted Subdivisions

Existing development and plotted subdivisions are described as follows:

- Cockerham Tract
- Celia Tract
- Frame Avenue
- Elk Drive
- Fairway Drive
- Golf View Lane
- Bracken Avenue
- Davis Avenue
- Prospect Avenue
- Planebrook Road
- Ravine Road
- Whitewoods Tract
- Glenloch Tract

2. *Land Use Designations*

Land use in East Whiteland Township is governed by the Township's Zoning Ordinance. Land use is given the following designations per the zoning ordinance.

R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Commercial Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally Oriented Commercial
ROC/R	Regionally Oriented Commercial/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space

3. *Future Growth Areas and Projections*

For the planning area identified for this Special Study, there are areas that have existing development and areas that are planned for growth. The planned growth is:

- Cockerham Tract
- Celia Tract
- Existing Development served by the Frame Avenue P.S.
- Existing Development served by OLDS

These are detailed in Tables 1 and 2 below.

4. *Subdivision Regulations as they Pertain to Planned Developments*

East Whiteland Township has established guidelines for development, use, and protection of land. The guidelines are established in the Township's Zoning Ordinance.

The Zoning Ordinance regulates:

- Building height, area, and location on the lot;
- Flood plains and uses within the flood plains;
- Where certain land uses are allowed to occur in the Township;
- Quality, location, or size of signs;
- Minimum lot areas for various uses.

5. *Required Sewage Planning*

Sections V and VI of this Special Study will examine the technical alternatives necessary to meet the sewage facilities needs of the planning area. Projected wastewater flows for the planning area are classified by origin.

Table 1

Existing Flow Needs Summary

Source	EDUs	Population (1)	Avg. Daily Flows (gpd) (2)
1. Existing Development served by the Frame Avenue Pump Station	~327	1023	90,000
2. Cockerham Tract	50	157	13,750
3. Celia Tract	60	188	16,500
TOTAL			**120,250**
(1) 3.13 People Per EDU. **(2) 275 gpd/EDU.**			

Table 2

Flow Projection Summary (Future Wastewater Needs)

Source	EDUs	Population (1)	Avg. Daily Flows (gpd) (2)
Elk Drive	20	63	5,500
Fairway Drive	11	34	3,025
Planebrook Road	12	9	3,300
Golf View Lane	16	50	4,400
Bracken Avenue	8	25	2,200
David Avenue	1	3	275
Prospect	24	75	6,600
Miscellaneous Properties	15	47	4,125
TOTAL			**29,425**
(1) 3.13 People Per EDU. **(2) 275 gpd/EDU.**			

Summarizing Pump Station Needs:

The proposed Planebrook Road Pump Station will be a public submersible pump station that will serve existing development, new development, and properties with existing on-lot disposal systems. The projected average daily flow/need is:

120,250 gpd	Existing
29,425 gpd	Future
149,675	TOTAL

The planned peak flow, utilize the peaking factors established by PA DEP's Southeast Regional Office,

149,675 x 3.75 = 561,281 gpd

= 390 gpm

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

A. Identify Alternatives

1. *Regional Wastewater Treatment Concepts*

Wastewater from East Whiteland Township is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant. This regional treatment of the Township's wastewater is not planned to change.

2. *Extension of Existing Municipal Sewage Facilities to Areas in Need*

Currently, there are public collection and conveyance facilities that serve the Frame Avenue Pump Station's drainage area. As discussed in Part A.1. of this section, wastewater collected in these facilities is ultimately conveyed to the Valley Forge Sewer Authority for treatment. Refer to the plan found in Appendix C that shows the existing and proposed sanitary sewer service area. Adjacent areas served by existing OLDS are planned to receive future public sewer service. Conceptual facilities are reflected on the plan in Appendix F.

3. *Continued Use of Existing Community Treatment Facilities*

There are no community systems in the planning area. This is not applicable to this Special Study.

4. *New Community Sewage Systems and Treatment*

Since this Plan is examining the public sewer needs and the impact on existing conveyance system components, the implementation of new community sewage systems is not applicable to this Special Study.

5. *Repair and Replacement of Existing Collection and Conveyance System Components*

As stated in Part A.2. of this section, there are wastewater collection and conveyance facilities that serve the Frame Avenue drainage area. The planning area is served by gravity sewers and pump stations that collect and convey the wastewater to the gravity sewer main located in Lancaster Avenue originating near Davis Avenue.

Alternatives, as part of this Special Study, include:

Alternative 1: Retain the existing Frame Avenue Pump Station. Keep the small pump station recently constructed on the Cockerham Tract, in service, and continue to use the Frame Avenue Pump Station to serve both the Cockerham and Celia Tracts along with the existing flows. Properties with on-lot systems would continue to utilize their respective systems.

Alternative 2: Construct a regional pump station that will handle wastewater flows from the Cockerham and Celia tracts, from properties currently served by the existing Frame Avenue Pump Station, and from properties currently served by individual on-lot disposal systems. The existing Frame Avenue Pump Station would be decommissioned.

Under Alternative 1, the utilization of the Frame Avenue Pump Station will continue to discharge flow to the gravity sewer main in Route 30 and will continue to utilize the Church Road Pump Station and the Westgate Pump Station. A regional station (as identified under Alternative 2) will not only remove and redirect flow away from the Route 30 sewers and pump stations, it will provide a means for more effectively accommodating the wastewater needs of adjacent properties with OLDS.

New gravity sewer infrastructure and the restoration of an existing dry sewer main (Whiteland Village Interceptor) being completed by others, will complete the conveyance path for Alternative 2. Refer to the Exhibit found in Appendix F which shows the gravity sewer improvements and the "flow-path" for the wastewater discharged from the proposed Planebrook Road Force Main. These gravity sewer improvements are in progress and are planned for completion late 2016 or early 2017. Wastewater, through this portion of the collection and conveyance system, will ultimately pass through the Mill Lane Pump Station.

The installation of a regional pump station eliminates the need for the existing older station (Frame Avenue Pump Station), and removes flow from the Route 30 gravity sewers and pump stations. This frees-up capacity in the existing gravity mains and lightens the load on the existing pump stations, thus reducing O&M costs. This also eliminates the duplicity of keeping the smaller Cockerham Pump Station and the Frame Avenue Pump Station in operation.

6. Alternative Methods of Collection and Conveyance to Serve Areas in Need

Given that this Special Study addresses the needs associated with the upgrade of existing facilities to serve future flows, alternative methods of collection and conveyance to serve areas in need are not applicable to this Special Study.

B. Use of Individual Disposal Systems

Properties in the planning area, identified in Section IV.B.1, are served by individual on-lot disposal systems. These properties are planned to receive future public sewer service.

C. Small Flow Sewage Treatment Facilities

Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Community Land Disposal

Assessment of alternatives based on the use of community land disposal is not applicable to this Special Study.

E. Retaining Tank

The use of retaining tanks will not be evaluated as part of this Special Study.

F. Septage Management

A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study.

G. Non-Structural Comprehensive Planning Alternatives

It is not anticipated that there will be any modifications to the Township Comprehensive Plan. Non-structural comprehensive planning alternatives shall not be addressed as part of this Special Study.

H. No Action Alternative

1. Water Quality and Public Health

If wastewater collection and conveyance system upgrades are not implemented, water quality and public health may be impacted. Downstream conveyance might be impacted by present and increased future flows that could lead to the potential for sanitary sewer surcharging.

2. Growth Potential

The potential for growth in the planning area would be impacted by a no-action alternative. Even though development of both the Celia and Cockerham tracts has moved forward, potential in-fill development of OLDS area would not occur.

3. ***Community and Economic Conditions***

With no-action to provide means for upgraded conveyance of wastewater, development in adjacent commercial areas may not go forward. Consequently, future connections would be limited, thus restricting commercial development and economic growth that would supplement the Township tax base.

4. ***Recreational Opportunities***

A no-action alternative for this Special Study would not have an impact on recreational opportunities.

5. ***Drinking Water Sources***

If the proposed conveyance system upgrades are not constructed, there may be future indirect impacts on groundwater water sources since the existing OLDS will remain in place.

6. ***Other Environmental Issues***

If the proposed conveyance system upgrades are not implemented, it does not appear that other environmental issues would be impacted.

VI. EVALUATION OF ALTERNATIVES

A. Consistency Determination

1. Clean Stream Law

The construction of upgrades to the conveyance facilities in the planning area does not conflict with the Clean Stream Law. Flow generated by the planning area will ultimately be treated at Valley Forge Sewer Authority's wastewater treatment plant and disposed of in accordance with requirements and NPDES limits set forth by PA DEP.

2. Chapter 94 Report

The East Whiteland Township 2015 Chapter 94 Report indicates that the Frame Avenue Pump Station has capacity to meet current flow needs. Based on the needs identified in this Special Study, the capacity of this station will be exceeded if flows from the properties served by OLDS are directed to this station.

The Chapter 94 Report shows that the current capacity of the Frame Avenue Pump Station is 360,000 gpd which equates to 250 gpm. Flows projected for the planning area equate to 561,600 gpd (390 gpm). Refer to Section IV of this Special Study for a tabulation of projected flows.

3. Clean Water Act (Title II)

This Act and the Federal Water Quality Act establish specific planning requirements for wastewater facilities planning. These requirements only apply to municipalities intending to apply for financial assistance from the Federal Government for the construction of sewage facilities. Since the funding of the construction of the alternatives would be through financial contributions by the municipality and developers, this analysis is not applicable.

4. *Comprehensive Plans*

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes2," was adopted in November of 2009. The alternatives to upgrade public sanitary sewer service to accommodate proposed development in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes2 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted a Comprehensive Plan in 2001 that identifies Township policies on future preservation and development.

In September 2002, Chester County adopted a water resources management plan, titled **'Watersheds'**. This is an element of the County's Comprehensive Plan. In Part 4 of the Plan (Goals and Objectives – Achieving the Vision), Goal 7 describes the need to integrate utility and municipal planning to meet future water supply and wastewater needs.

It further discusses the need to delineate municipal planned public water/wastewater service areas and evaluate infrastructure alternatives. This Special Study is consistent with the objectives set forth in Watersheds.

5. *Antidegradation Requirements Contained in Chapters 93, 95 and 102 of the Clean Water Act*

Implementation of any of the alternatives for this Special Study will not impact the antidegradation requirements contained in Chapters 93, 95, 102 of the Clean Water Act.

6. *State Water Plans*

There are no anticipated conflicts with the State Water Plan for this submission.

7. *Pennsylvania's Prime Agricultural Land Policy*

East Whiteland Township is committed to protecting prime agricultural land within the Township's boundaries.

For the planning area in this Special Study, the Township's Zoning Ordinance and Comprehensive Plan give the land area residential, office/business park, open space, village mixed use, and frontage commercial designations. The development of this land is consistent with its land use designation.

It should be noted that the Chester County Planning Commission's agricultural conservation easement plan indicates that there are no agricultural conservation easements in East Whiteland Township. This plan was developed by the Chester County Department of Open Space Preservation utilizing information from the County Agricultural Preservation Board and the Chester County Bureau of Land Records. The latest update is January 2014.

8. *County Stormwater Management Plan*

A County-wide PA Act 167 Stormwater Management Plan (SWMP) has been completed and approved for Chester County. The Valley Creek Watershed (East) is a part of this Plan. PA DEP approved it July 2013. The Valley Creek (East) is designated as an exceptional value stream. From a consistency perspective, it appears that the concept to provide sewer service to existing and potential development is consistent with the SWMP. This special study planning area falls within the Valley Creek Watershed and the prescribed system improvements not only accommodate existing and future flows but provide for minimizing inflow and infiltration of stormwater into the sanitary sewer system.

9. *Wetlands Protection*

As referenced in Section II.G. of this Plan, there are no mapped wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the U.S. Fish and Wildlife Service.

10. *Protection of Threatened, Rare, and Endangered Plant and Animal species (PNDI)*

A Pennsylvania National Diversity Inventory (PNDI) search was completed for the planning area. See Appendix G. The U.S. Fish and Wildlife Service asked that, during construction of the force main, in-stream impacts should be avoided by spanning the creek (Waterway) or going under the creek via boring or directional drilling. If in-stream impacts cannot be avoided, the Fish and Wildlife Service requests that in-stream work be carried out between October 1 and March 31. Therefore, as a means for resolving this conflict, notes shall be placed on the force main design plans to instruct the contractor to install the force main accordingly.

11. *Historic and Archaeological Resource Protection*

The Pennsylvania Historic and Museum Commission (PHMC) were contacted to determine if there were any potential conflicts within the proposed infrastructure. PHMC reviews for the proposed sewerage facilities have been completed. The results of the PHMC's review for the proposed sewerage facilities can be found in Appendix H. It has been determined that the pump station and force main will have no impact on historic resources.

B. Resolution of Inconsistencies

Upon review of the constraints discussed in items 1 through 11, there is one apparent inconsistency with applicable PNDI requirements and that inconsistency has been resolved.

C. Alternative Evaluation with Respect to Applicable Water Quality Standards and Effluent Limitations

The planned alternatives to provide a sanitary sewer collection and conveyance system for this planning area will not impact water quality standards or effluent limitation. Wastewater will be discharged to the existing public collection and conveyance system. Ultimately, wastewater will be treated at the Valley Forge Sewer Authority's WWTP.

D. Preliminary Cost Opinions

Planning-level cost opinions were developed for the primary alternatives discussed in Section V. These cost opinions reflect the following:

Alternative 1:	No additional capital costs.	
	O&M costs (20 yr. PW):	$560,000
	TOTAL:	$560,000
Alternative 2:	Pump Station:	$560,000
	Force Main:	$720,000
	O&M Costs (20 yr. PW):	$321,000
	TOTAL:	$1,441,000

It should be noted that under Alternative #1, O&M expenses on existing infrastructure would continue at the current rate. Under Alternative #2 it is anticipated that O&M expenses could be reduced.

E. Analysis of Available Funding Methods

This section of the Plan addresses methods available to finance the proposed Phases. Three financing alternatives exist for this particular project.

1. Municipal Bond Issue

a. General

There are several types of bonds; some are taxable and some are tax-exempt. However, the general classification of municipal bonds usually

refers to tax-exempt bonds. There are three (3) types of municipal bonds generally used in financing public works.

- *General Obligation Bonds* are tax-free bonds that are secured by the pledge of the full faith, credit, and taxing owner of the issuing agency. This means that this type of bond is backed by all of the taxes on real estates and personal property within the jurisdiction of the issuing agency. It involves minimum risk to the investor and therefore requires a lower rate of interest than other types of bonds.

- *Dedicated Tax Bonds* are payable only from the proceeds from a special tax and are not guaranteed by the full faith, credit and taxing power of the issuing agency. Examples of special dedicated taxes are the special assessments against property which is adjacent to and the principal beneficiary of the improvement, and gasoline taxes used to finance highway construction.

- *Revenue Bonds* are payable from revenues derived from the use of the improvement such as tools, sewer bills, or rents paid by the users of the improvement and do not otherwise represent an obligation of the issuing agency. Revenue bonds are not ordinarily subject to statutory or constitutional debt limitations. They are often issued by commissions, authorities, and other public agencies created for the specific purpose of financing, constructing, and operating essential public projects.

Typically, municipal bonds are sold to an investment-banking firm, which then resells the bonds to individual investors. The advantage of municipal bonds to the investor is their tax-free status. A bond discount (a percentage of the total bond issue) serves as the investment banker's

commission. Before bonds are sold, they must be rated on the basis of risk to the investor by a rating agency such as Standard and Poor's or Moody's. The higher the rating, the lower the risk to the investor and, consequently, the lower the interest rate paid on the bond.

The legal instrument, which sets the rules that must be observed by the issuing agency, is the Trust Indenture. The Trust Indenture is prepared by the Bond Counsel and must be printed along with the bonds. Due to specific requirements as to the denominations of the bonds and methods and materials for printing, printing costs can be substantial. A trustee is required to administer the bond issue and insure the terms of the Trust Indenture are observed. This results in an Annual Trustee Fee. Investment bankers indicate that it does not pay to extend the term beyond 25 years because the interest rate increases dramatically.

b. Advantages of Municipal Bond Issue Funding

- This program affords long-term fixed rate financing.
- Tax-exempt municipal bonds are in high demand.
- There is local investment opportunity.
- Municipal credit is established.
- It retains flexibility for future borrowing.

c. Disadvantages of Municipal Bond Issue Funding

- A cover may be required.
- A Debt Service Reserve Fund is generally required.
- There are trustee fees and costs of preparing a Trust Indenture.

2. *Bank Loan*

Another financing option for the implementation of this project is the bank loan. There are four (4) basic categories of bank loans. These are:

- Real Estate Loans (Mortgage)
- Participation and Interbank Loans
- Installment Loans (Personal)
- Commercial and Industrial Loans

Of the four (4) types, a commercial and industrial loan would be the most applicable to this project.

Commercial and industrial loans may be made on a demand or time basis. A demand basis loan allows the bank to call for repayment at any time, or the borrower can repay when convenient. A time basis loan provides for a specific loan maturity date.

Most commercial and industrial loans are unsecured. The credit is extended on the basis of an analysis of all available information pertaining to the customer and the bank's confidence in that customer's ability and willingness to repay.

For this planned project, it appears that it would be prudent to seek a time basis loan. An interest rate offering would be established, and an amortization schedule set. Interest rates may range from 5% to 10%.

<u>Advantages of the Bank Loan Financing</u>

- Ability to shop around for a loan structure that best fits the customer's needs.
- Flexibility in establishing repayment schedules.
- Working with and through a local financial institution.
- Municipal credit is established.

- Ability to obtain fixed rate financing.

Disadvantages of Bank Loan Financing

- Interest rates are charged for loan repayment.
- Processing fees may be required.
- Processing and issuances fees may be expensive.

3. *Direct Funding by Developers, Supplement by Township Funds*

A third financing option for the implementation of this project is direct funding by those who have developed the property in the planning area. This would involve capital expenditures by the developer from his own funds along with the supplementing of costs by the Township.

Advantages of Direct Funding by Developer

- Avoid any third party involvement. Payment for services can be made directly to the manufacturer or contractor by the Developer.
- There are no interest rate charges.
- Bank processing and issuance fees are avoided.
- Removes part or the majority of the financial burden from the Township.

Disadvantages of Direct Funding

- There are no disadvantages to this method of financing.

F. Immediate or Phased Implementation

It is planned that the force main and pump station will be constructed as two separate projects. However, the timing of the construction will be such that the force main will be in concert with the pump station's construction. Planning for extension of sanitary sewers to serve properties (currently served by OLDS) will take place upon the start of construction of the pump station and force main.

G. Ability of the Township to Implement the Alternative

The Township is well established and has the ability to implement the technical alternatives presented in this Plan.

VII. INSTITUTIONAL EVALUATION

A. Analysis of the Township, Past Actions, and Present Performance

1. Financial and Debt Status

The Township is a well-established entity that will be able to oversee the implementation of the proposed technical alternative. Financially, through the funding mechanisms identified above, the construction of the proposed conveyance facilities can be accomplished. Ultimately, the Township will take dedication of these facilities and will be required to operate and maintain them. The funds for facility O&M are planned to originate from the Township's Sewer Fund.

2. Available Staff and Administrative Resources

The Township is governed by a three-member Board of Supervisors elected at-large, who each serve six-year terms that include executive and legislative responsibilities. Others associated with the Township are:

- Township Manager
- Director of Public Works
- Assistant Director of Public Works
- Solicitor
- Consulting Engineer

The Township has the necessary staff and administrative resources already in place. No further evaluation of staffing and resources is necessary at this time.

3. *Existing Legal Authority*

As provided for under Pennsylvania Law, the Township has the necessary legal authority to oversee the implementation of the technical alternatives presented in this Special Study.

B. Institutional Alternatives Necessary to Implement the Technical Alternative

1. *Need for a New Authority*

East Whiteland Township does not have an Authority in place at this time. It is not deemed necessary that a new Authority be established to meet the needs of the alternatives identified in this Special Study. The Township and public works personnel are capable of implementing the identified alternatives.

2. *Function of the Authority*

This is not applicable given that the there is no sewer authority in place at this time.

3. *Cost of Administration*

This is not applicable given that the there is no sewer authority in place at this time.

C. Administrative and Legal Activities to be Completed and Adopted to Ensure the Implementation of the Technical Alternative

1. *Legal Authorities of Incorporation*

No new wastewater Authorities of Incorporation are necessary and there will be no changes to the Township's structure to implement these projects.

2. *Required Ordinances, Standards, Regulations, and Intermunicipal Agreements*

In 1971, an Intermunicipal Agreement was signed by East Whiteland Township, the former East Whiteland Municipal Authority, Malvern Municipal Authority, Malvern Borough, and the Valley Forge Sewer Authority for conveyance of

wastewater through the Valley Creek Trunk Sewer to the Valley Forge Sewer Authority's WWTP for treatment and disposal. In December 1979, an amendment was issued to the existing 1971 intermunicipal agreement between East Whiteland Municipal Authority, East Whiteland Township, Malvern Municipal Authority, Borough of Malvern, and the Valley Forge Sewer Authority. This amendment facilitates the transmission of wastewater from an area in Charlestown Township adjacent to East Whiteland Township through the East Whiteland Township Trunk Line and the Valley Creek Trunk Line.

This intermunicipal agreement was amended in April 2014 to reflect the latest flow and cost sharing conditions. This effort to amend the agreement took place in accordance with the September 2013 East Whiteland Township/Charlestown Township (Southside) Special Study approved by the Department.

3. *Provisions of Rights-of-Way, Easements, and Land Transfers*

Proposed wastewater collection and conveyance system components will extend through the streets of new development (Cockerham Tract), through an easement already obtained through that same development and then through a newly acquired easement between existing homes near Planebrook Road. Once the force main is at Planebrook Road, it will follow the road right-of-way north to the point of connection to the existing gravity sewer.

4. *Other Sewage Facilities Plan Adoptions*

It is not anticipated that other sewage facilities plans will need to be adopted as part of this planning process.

5. *Legal Documents*

Revisions to intermunicipal agreements are not necessary for this Special Study.

6. Dates and Timeframes of 1 Through 5 Above

The dates and timeframes for the items in this section are found in the implementation schedule in the Executive Summary of this Plan.

D. Selected Institutional Alternative

No changes are needed to the existing municipal structure.

VIII. SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVE

A. Identify the Chosen Technical Alternative

The selected alternative which best meets the wastewater treatment needs of the proposed and existing development in the planning area is:

Alternative #2:

Construct a regional pump station and force main to serve the Frame Avenue Pump Station Drainage Area, to serve the Cockerham and Celia Tracts, and to ultimately serve properties with on-lot disposal systems located along and adjacent to Planebrook Road.

1. *Existing Wastewater Disposal Needs*

Within the planning area, wastewater disposal needs are currently met through the use of the Frame Avenue Pump Station, and individual on-lot disposal systems. This pump station can meet the existing wastewater disposal needs of the planning area provided the existing OLDS remain in service. If the OLDS are decommissioned and wastewater from these properties is directed to the existing Frame Avenue station, then there won't be adequate capacity at this station.

2. *Future Wastewater Treatment Needs*

Future wastewater disposal needs, identified in Section IV of this Plan show that in order to serve existing development, new development, and properties served by OLDS, a central regional pump station will be needed to meet the flow requirements and the wastewater needs.

3. *Operations and Maintenance Considerations*

The proposed wastewater facilities will be owned and operated by East Whiteland Township upon completion. Operations and maintenance of the new facilities will be the responsibility of the Township which currently

operates and maintains existing wastewater facilities within the Township. Since the Frame Avenue Pump Station is an existing pump station, a new station will improve upon the operations and maintenance that is currently needed by Township personnel.

4. ***Cost Effectiveness***

In accordance with the cost opinions for the alternatives presented in Section VI of this study, the separate construction of the force main is the most cost effective approach. Construction of the regional pump station can follow under the purview of the developer. Economically, Alternative 1 appears to be more favorable than Alternative 2. This is due to the lack of initial capital expenses to construct new infrastructure in Alternative 1. However, the environmental benefits of regionalizing the conveyance system and connecting existing OLDS to the public sewer system outweigh the financial implications.

5. ***Available Management and Administrative Systems***

The Township has the management and administrative staff in place to implement the selected alternative.

6. ***Available Financing Methods***

Of the financing methods discussed in Section VI, each method can provide the necessary funding for the selected alternative. Refer to Section VIII.B. for the selected capital financing plan.

7. ***Environmental Soundness***

Environmentally, the Valley Forge Sewer Authority's WWTP can adequately treat the projected average and peak flows within the permitted concentration limits.

B. Selected Capital Financing Plan

The selected technical alternative will be paid for and financed through the sharing of costs via Township capital funds and developer funds.

The planning level costs are shown in Section VI.

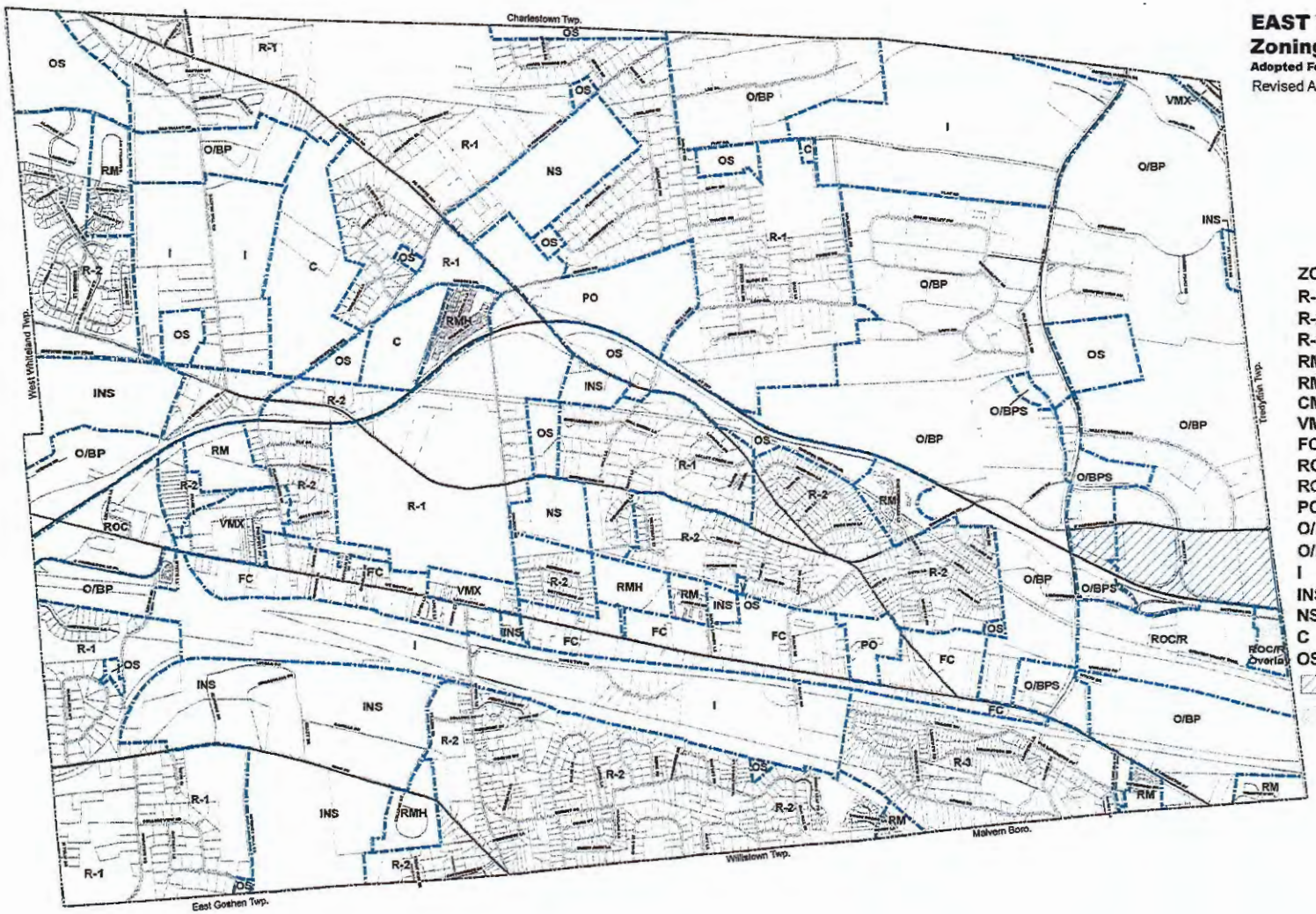
APPENDIX A

Zoning Map

EAST WHITELAND TOWNSHIP
Zoning Map

Adopted February 21, 2007

Revised August 13, 2008



ZONING DISTRICTS

R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Community Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally-Oriented Commercial
ROC/R	Regionally-Oriented Comm/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space

Corporate Gateway Overlay

Regionally-Oriented Comm/Res Overlay 8/13/08

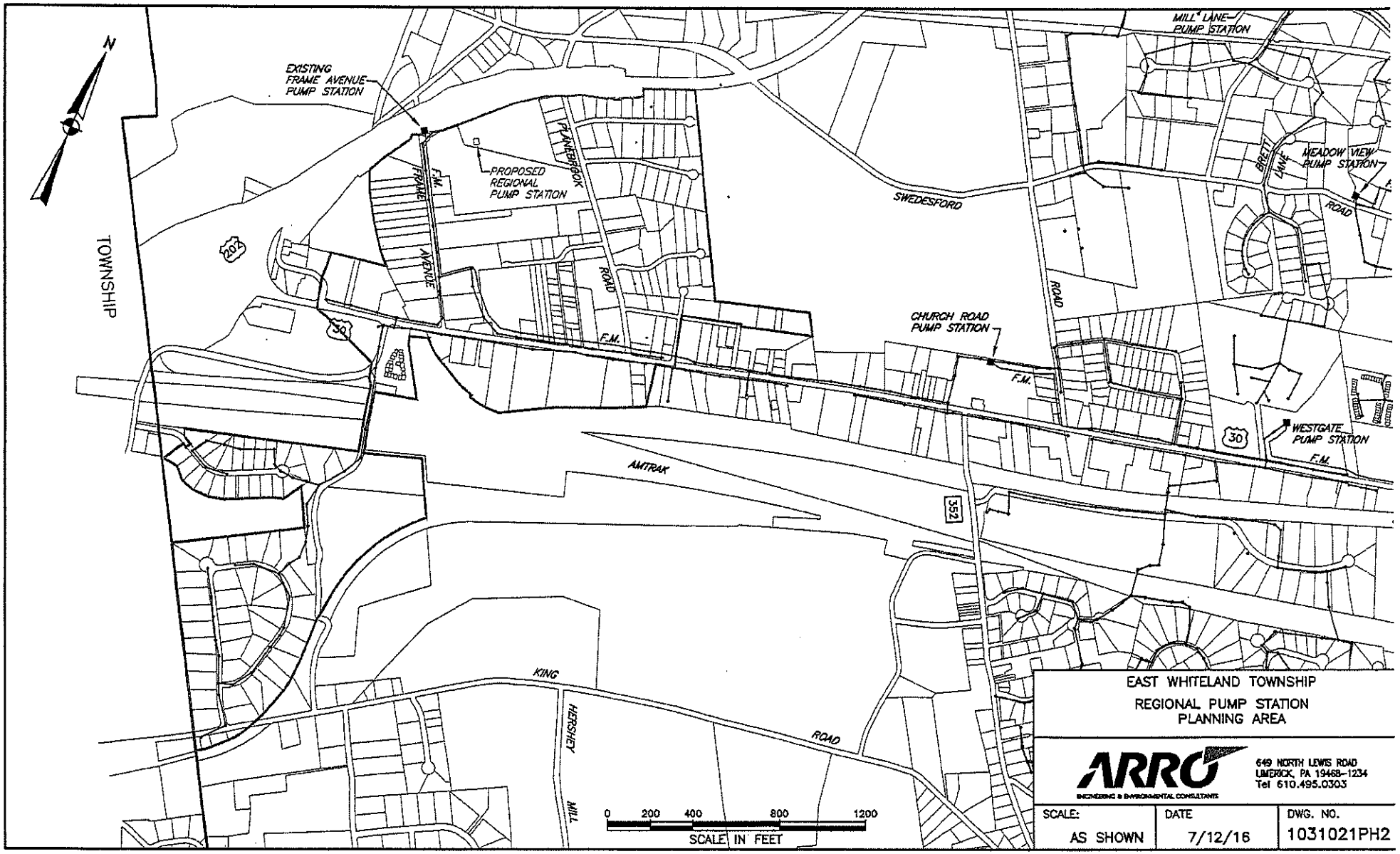
N

0 1,200 2,400

Feet

APPENDIX B

Planning Area

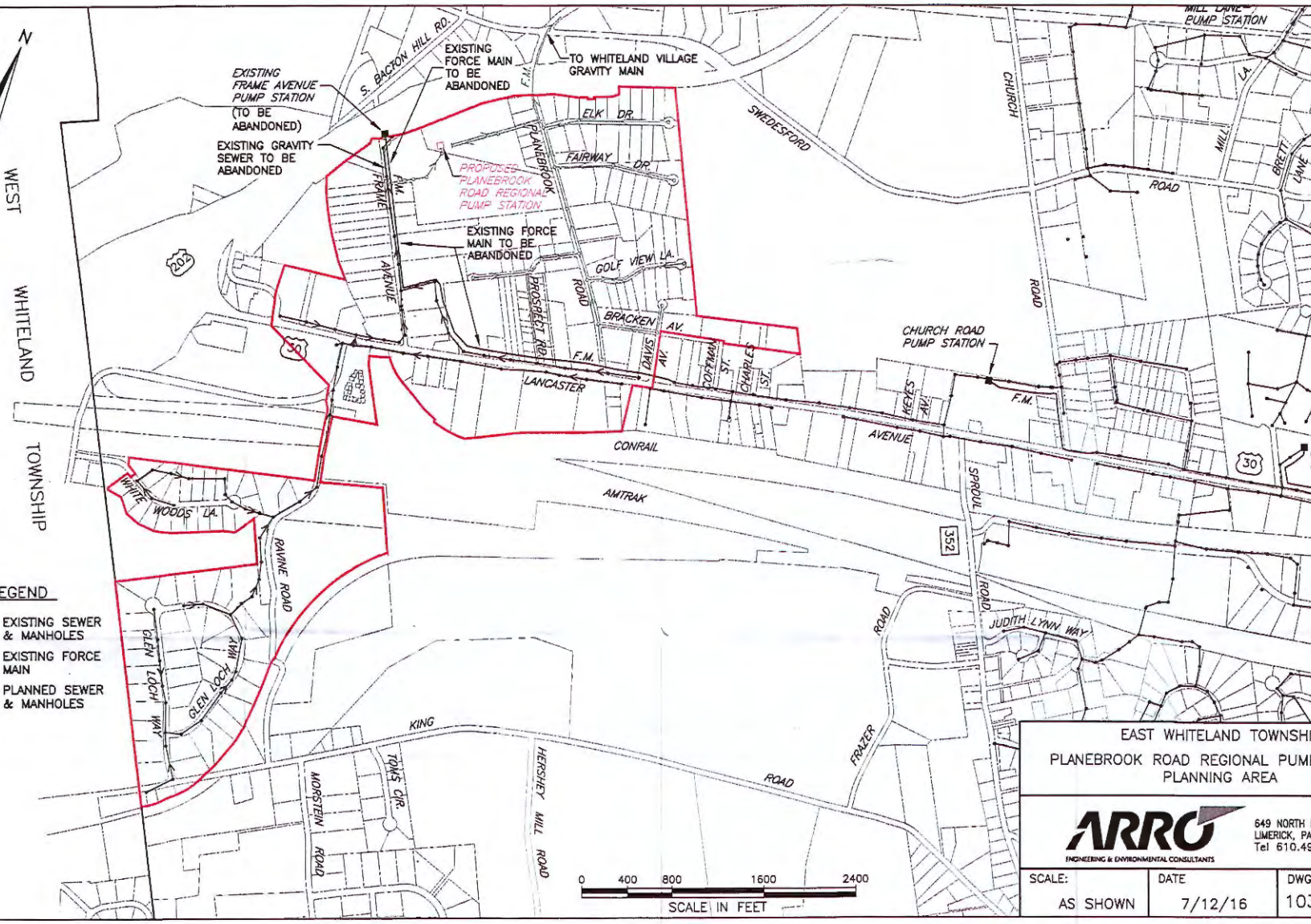


EAST WHITELAND TOWNSHIP

REGIONAL PUMP STATION
PLANNING AREA

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
649 NORTH LEWIS ROAD
LIMERICK, PA 19468-1234
Tel 610.495.0303

SCALE:	DATE	DWG. NO.
AS SHOWN	7/12/16	1031021PH2



EAST WHITELAND TOWNSHI
PLANEBROOK ROAD REGIONAL PUMI
PLANNING AREA

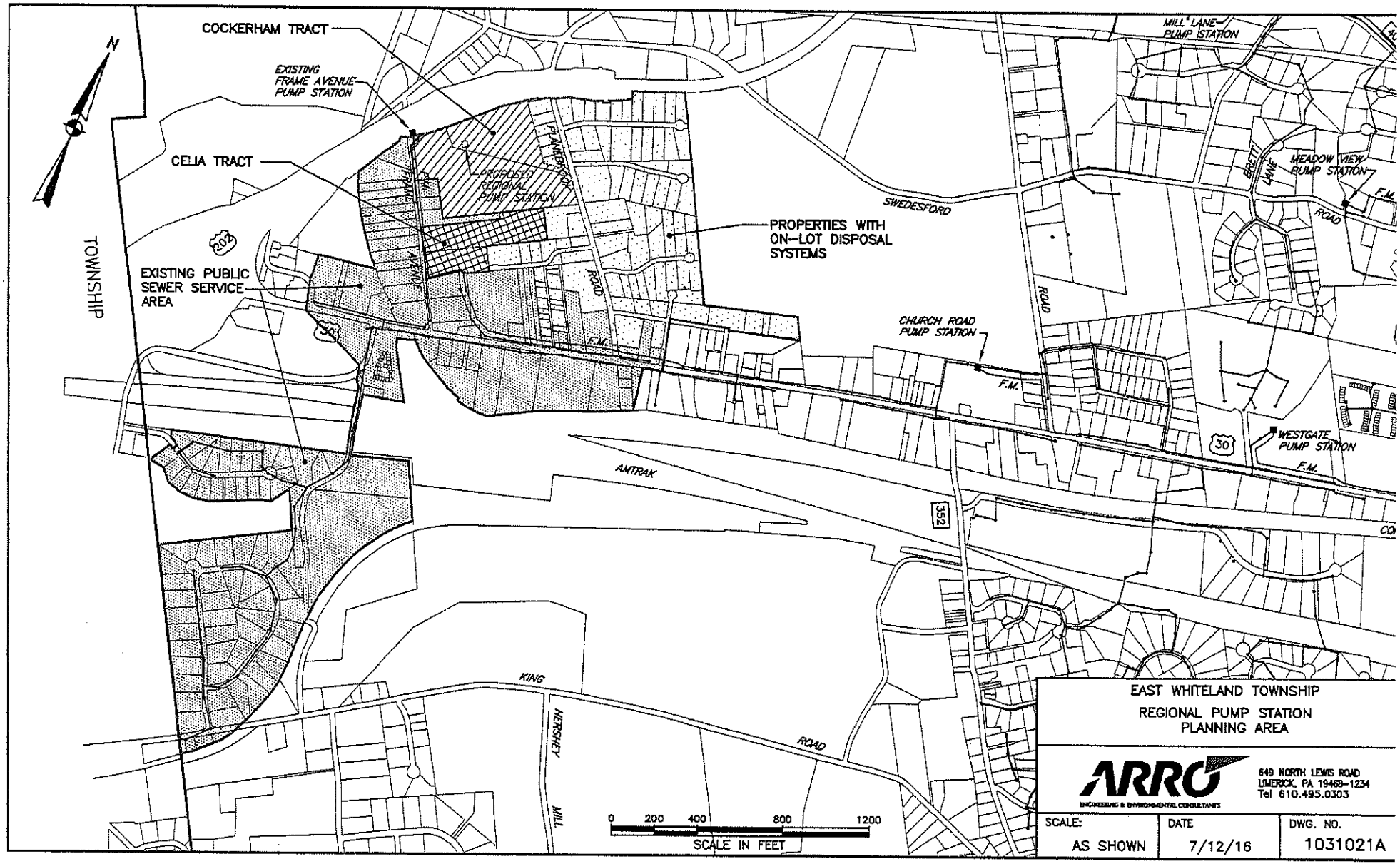
ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

649 NORTH
LIMERICK, PA
Tel 610.49

SCALE:	DATE	DWG
AS SHOWN	7/12/16	10

APPENDIX C

Existing and Proposed Sanitary Sewer Service Area

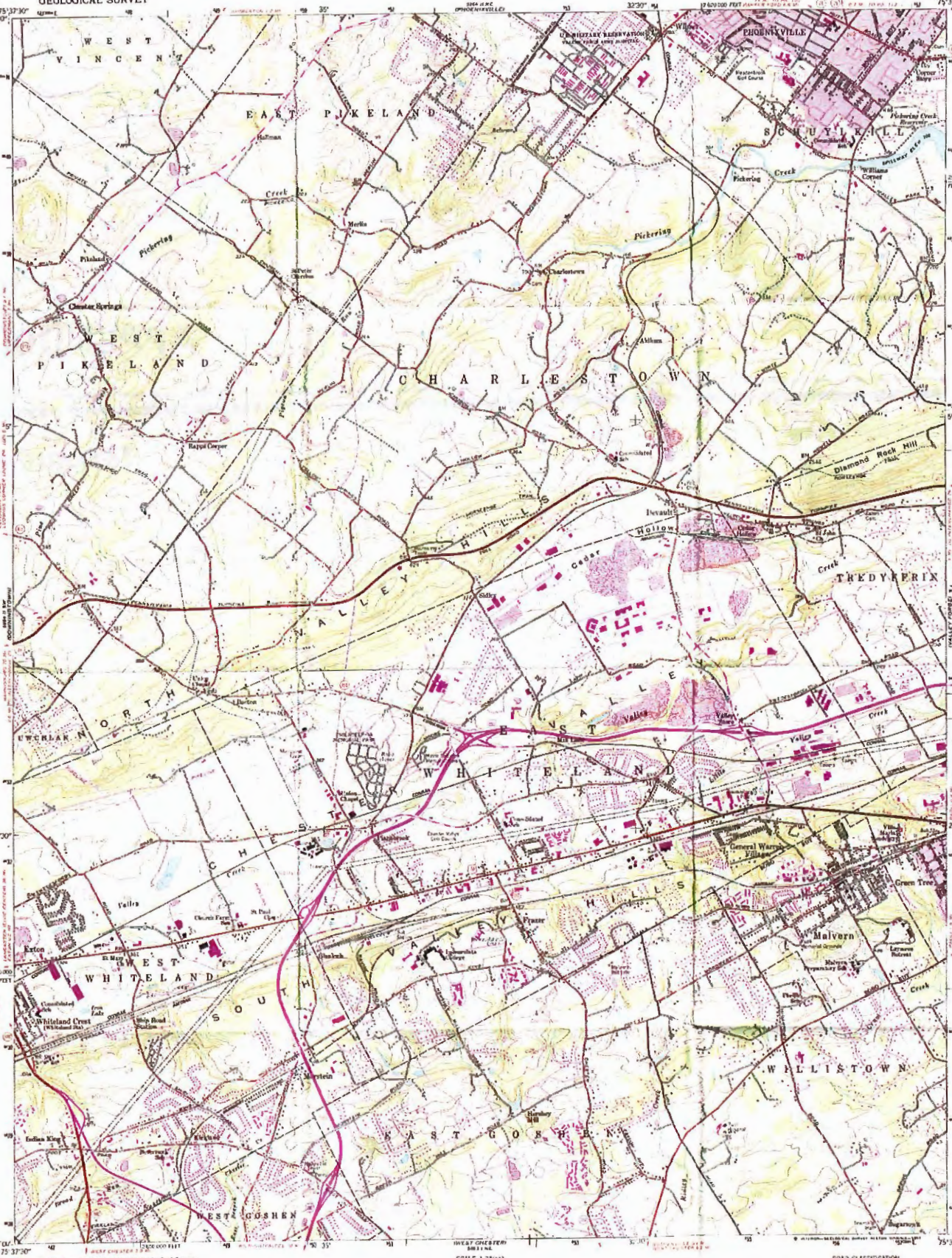

COCKERHAM TRACT
EXISTING FRAME AVENUE PUMP STATION
CELIA TRACT
PROPOSED REGIONAL PUMP STATION
PROPERTIES WITH ON-LOT DISPOSAL SYSTEMS
EXISTING PUBLIC SEWER SERVICE AREA
TOWNSHIP
N
FRAME AVENUE
PLANEBROOK ROAD
SWEDESFORD ROAD
MILL LANE PUMP STATION
BRETT LANE
MEADOW VIEW PUMP STATION
CHURCH ROAD PUMP STATION
WESTGATE PUMP STATION
F.M.
AMTRAK
KING ROAD
HERSHEY MILL
202
30
352
0 200 400 800 1200
SCALE IN FEET
EAST WHITELAND TOWNSHIP
REGIONAL PUMP STATION
PLANNING AREA
ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
649 NORTH LEWIS ROAD
LIMERICK, PA 19468-1234
Tel 610.495.0303
SCALE: AS SHOWN
DATE 7/12/16
DWG. NO. 1031021A

APPENDIX D

Topography

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MALVERN QUADRANGLE
PENNSYLVANIA-CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1951. Field checked 1955

Polyconic projection. 10,000-foot grid ticks based on Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters west as shown by dashed corner ticks

There may be private inholdings within the boundaries of the National or State reservations shown on this map

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U. S. Route — State Route

YOAS SERVICES, INC.
509 W. 4th St.
Williamsport, PA 17701
1-800-222-2548

MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5804 II SE-SERIES V831

APPENDIX E

Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory



Frame
Ave/Planebrook Rd
Planning Area

Jan 19, 2016

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

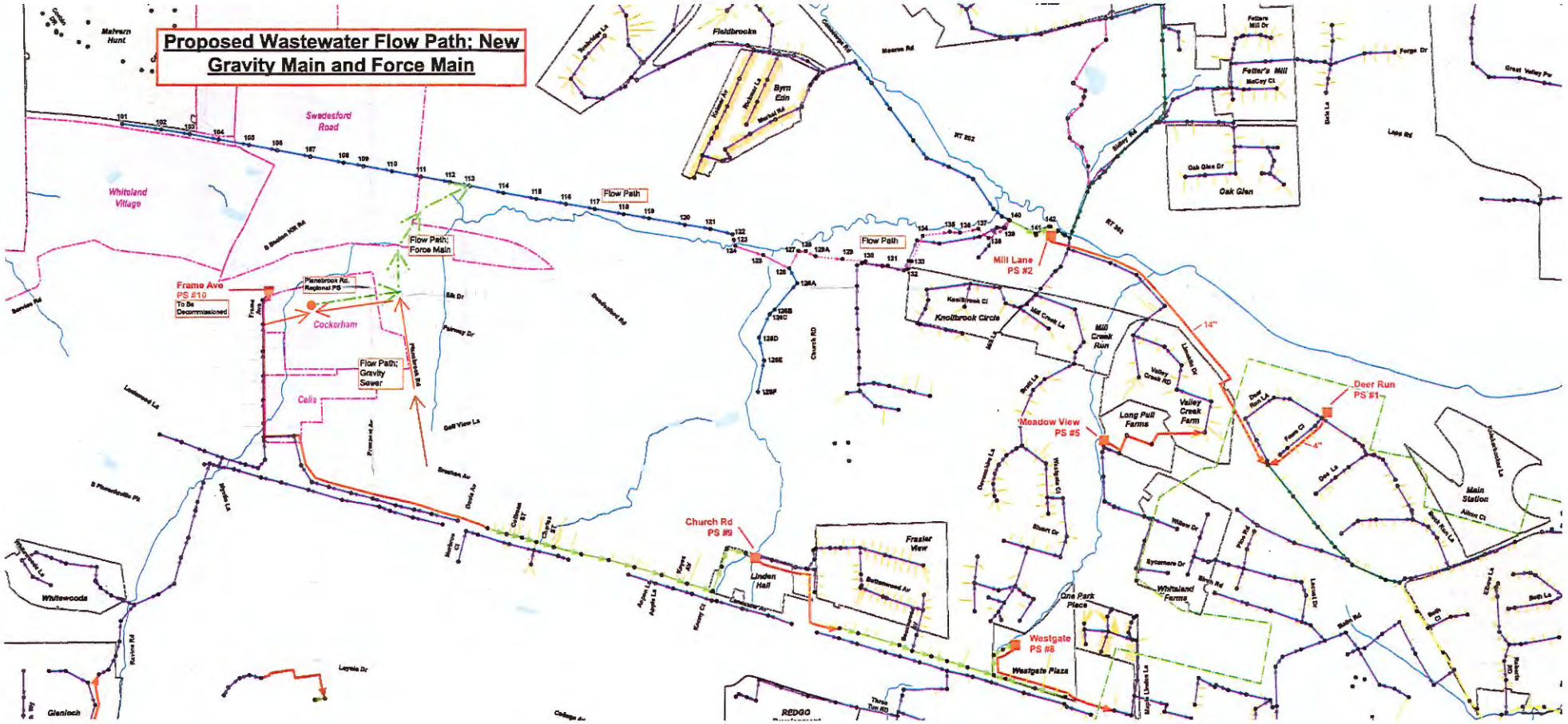
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Wetlands Mapping

APPENDIX F

Proposed Collection/Conveyance System and Flow Path


Proposed Wastewater Flow Path; New Gravity Main and Force Main
Swedesford Road
Whiteland Village
Flow Path
Flow Path; Force Main
Flow Path; Gravity Sewer
Frame Ave PS #10
To Be Decommissioned
Planebrook Rd. Regional PS
Cockerham
Cella
Mill Lane PS #2
Knollbrook Circle
Mill Creek Run
Long Pull Farms
Valley Creek Farm
Meadow View PS #5
Deer Run PS #1
Church Rd PS #9
Linden Hall
Frasier View
One Park Place
Westgate PS #8
Westgate Plaza
Whitewoods
Glenloch
Fieldbrooke
Byrn Edin
Oak Glen
Fetter's Mill
Main Station
Whiteland Farms
REDGO

APPENDIX G

PNDI Response

1. PROJECT INFORMATION

Project Name: **East Whiteland Township - Planebrook Rd. Regional Pump Station and Force Main**
Date of Review: **4/7/2016 03:16:08 PM**
Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**
Project Area: **2.68 acres**
County(s): **Chester**
Township/Municipality(s): **EAST WHITELAND**
ZIP Code: **19355**
Quadrangle Name(s): **MALVERN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Little Valley Creek-Valley Creek**
Decimal Degrees: **40.040187, -75.576318**
Degrees Minutes Seconds: **40° 2' 24.6716" N, 75° 34' 34.7431" W**

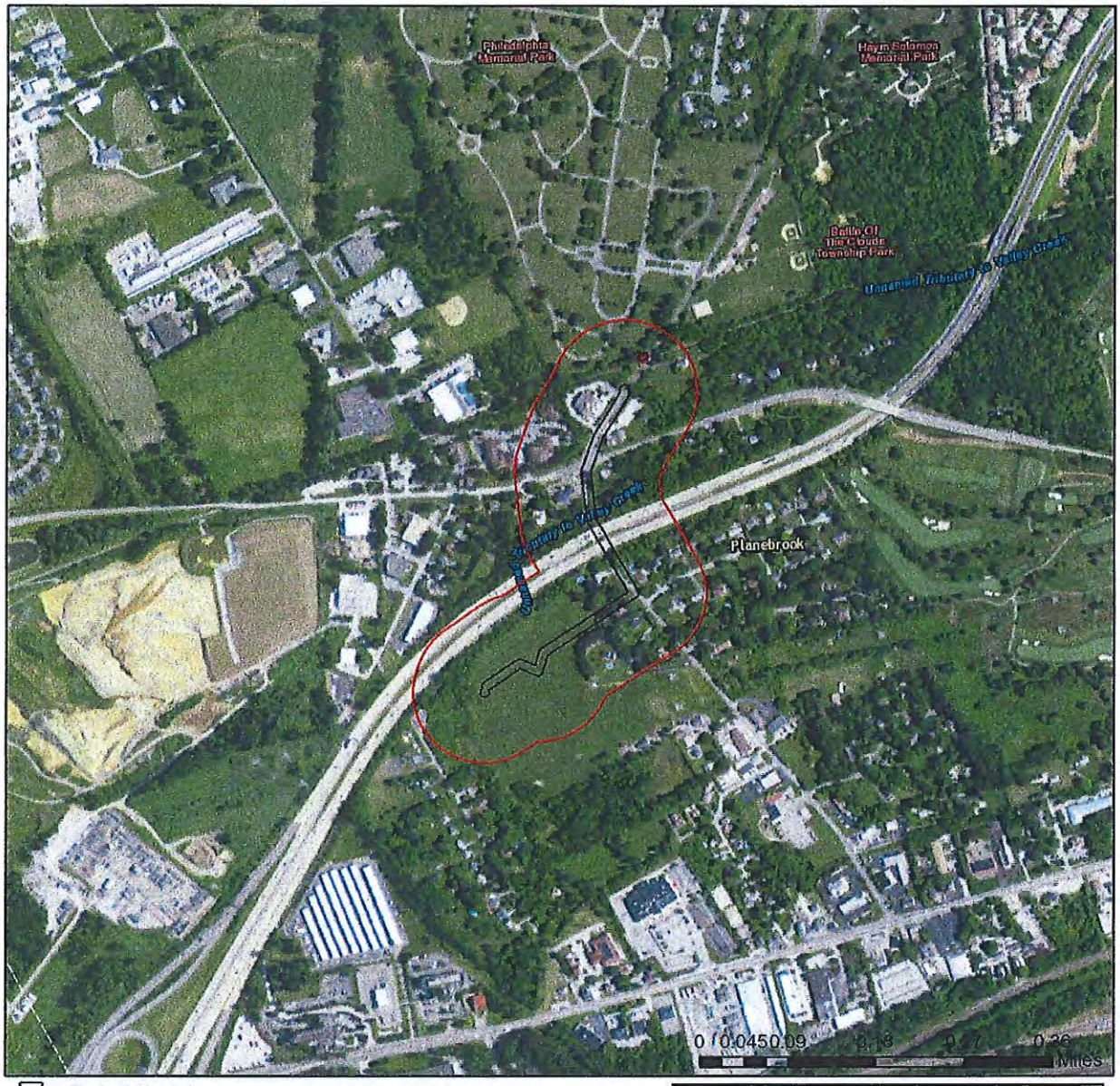
2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

East Whiteland Township - Planebrook Rd. Regional Pump Station and Force Main



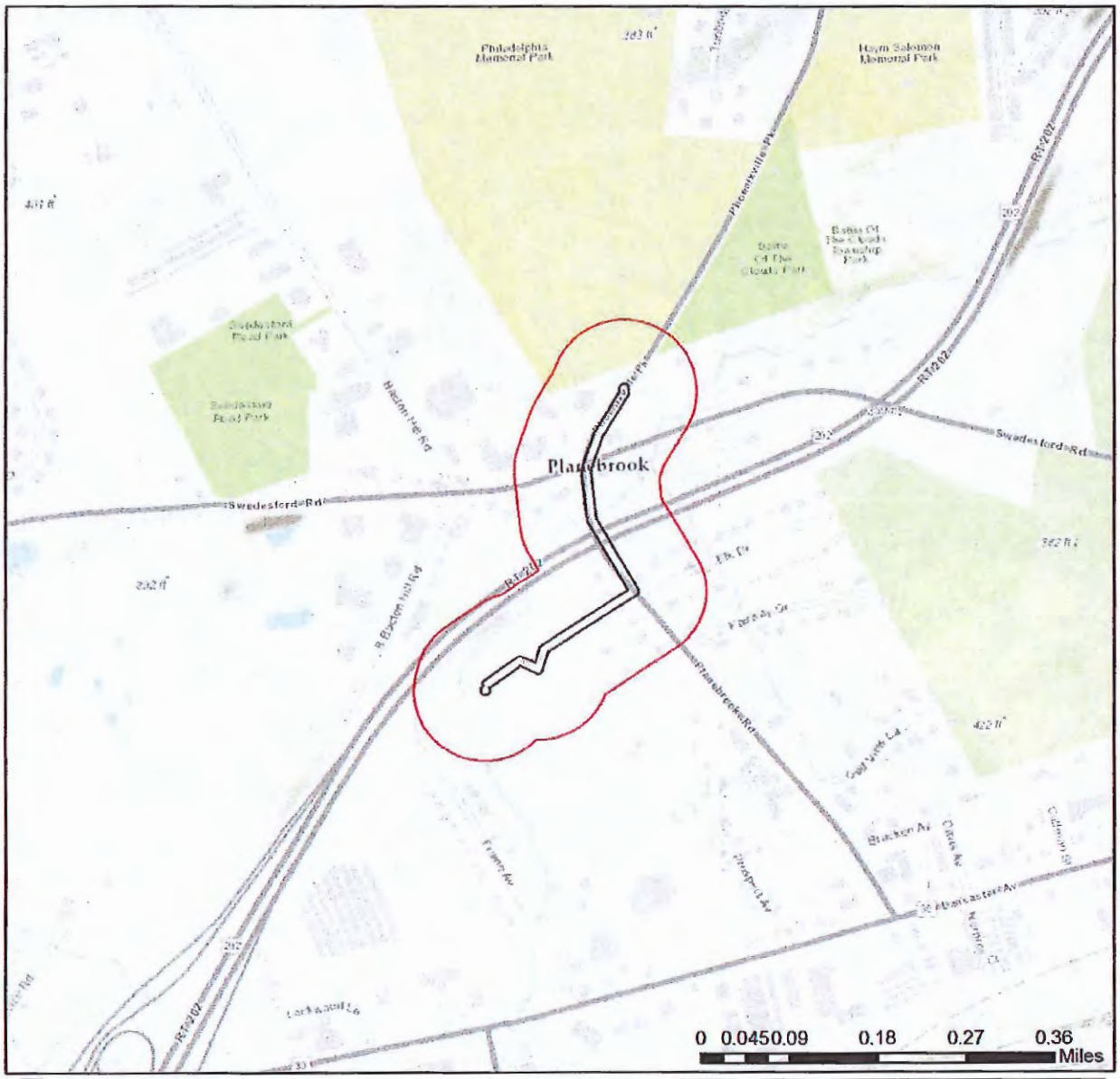
Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA,

East Whiteland Township - Planebrook Rd. Regional Pump Station and Force Main



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any In-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?
Your answer is: Yes

Q2: Describe how wastewater (effluent) will be handled (select one). For the purpose of this question, wastewater/effluent does not include stormwater runoff. If the project involves solely the renewal or modification of an existing discharge permit (e.g., NPDES permit), select from options 3, 4, 5, or 6 below.
Your answer is: All wastewater/effluent from this project/activity will be routed to an existing municipal wastewater treatment plant.

Q3: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: Someone qualified to identify and delineate wetlands has investigated the site, and determined that NO wetlands are located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:

Avoidance Measure: Avoid in-stream impacts by spanning the waterway or going under it (e.g., via horizontal boring or directional drilling). If in-stream impacts cannot be avoided, carry out instream work -- including installation of permanent structures (e.g., pipelines, livestock crossings, riprap), or installation, use, and removal of temporary structures (e.g., temporary road crossings) -- between October 1 and March 31.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____ (Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).
***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov
Fax:(717) 772-0271

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: William L. Bohner, Jr, P.E.
Company/Business Name: ARRO Consulting, Inc.
Address: 649 N. Lewis Road Suite 100
City, State, Zip: Limerick PA 19468
Phone:(610) 495-2102 Fax:(610) 495-5855
Email: bill.bohner@thearrogroup.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

William L. Bohner, Jr. — applicant/project proponent signature

4/7/16 — date

APPENDIX H

PHMC Response

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

RECEIVED
APR 14 '16
BUREAU FOR HISTORIC PRESERVATION

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

April 11, 2016

CERTIFIED MAIL #7008 0150 0000 7716 9902
RETURN RECEIPT REQUESTED

Pennsylvania Historical and Museum Commission
State Historic Preservation Office
400 North Street
Commonwealth Keystone Building; 2nd Floor
Harrisburg, PA 17120-0093

RE: East Whiteland Township (Chester County);
Act 537 Planning – Special Study;
Planebrook Road Regional Pump Station and Force Main; PHMC Review
ARRO # 10310.21

Dear Historical and Museum Commission:

On behalf of East Whiteland Township, we are assisting with the preparation of an Act 537 Sewage Facilities Special Study to update the Township's Act 537 Plan. This Special Study is to reflect the improvements necessary to meet the future wastewater needs of the western portion of East Whiteland Township near Frame Avenue and Planebrook Road. Improvements will require the construction of a regional wastewater pump station, a force main from the pump station to Planebrook Road, then along Planebrook Road to just north of the intersection of Planebrook and Swedesford Roads.

Enclosed, for your review, is the Project Review Form, the Malvern 7.5 Minute Quadrangle identifying the location of the proposed project, and an aerial photograph using 'Google Maps' data. The total area to be disturbed is approximately 0.5 acres. No structures are planned to be disturbed as a result of implementing the planned alternatives. The pump station is going to be installed on a parcel that has been designated for the station in a new development. The proposed force main will be installed through an easement and then will be primarily installed in the street right of way.

Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions, please do not hesitate to call me at 610-495-2102.

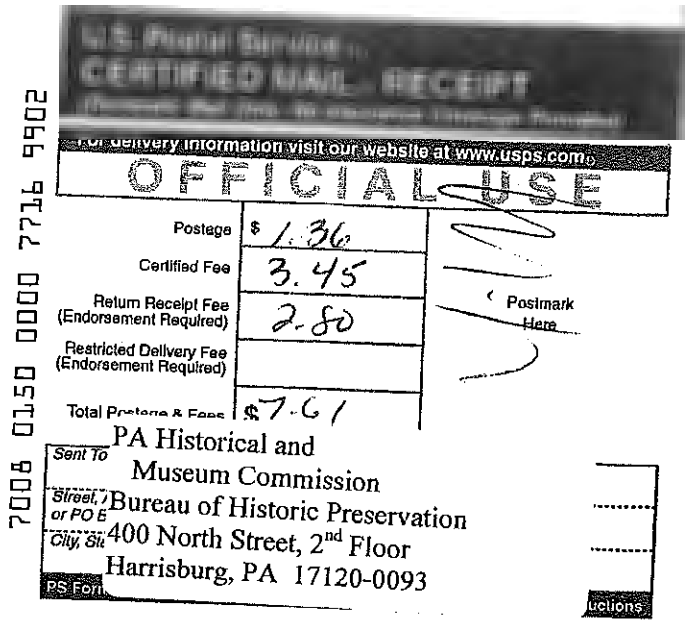
Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Enclosures

ER No. 2016-1123-029-A
There are NO HISTORIC PROPERTIES in the area of potential effect
Date 4.18.16 Reviewer Douglas McLearen



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OFFICIAL USE

Postage	$ 1.36
Certified Fee	3.45
Return Receipt Fee (Endorsement Required)	2.80
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$7.61

Postmark Here

7008 0150 0000 7716 9902

Sent To: PA Historical and Museum Commission
Street, Apt. No., or PO Box No.: Bureau of Historic Preservation
City, State, ZIP+4®: 400 North Street, 2nd Floor Harrisburg, PA 17120-0093

PS Form ... Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

PA Historical and
Museum Commission
Bureau of Historic Preservation
400 North Street, 2nd Floor
Harrisburg, PA 17120-0093

9590 9403 0179 5120 5138 94

2. Article Number (Transfer from service label)
7008 0150 0000 7716 9902

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Address

B. Received by (Printed Name) C. Date of Delive
APR 13 2016

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restric Delivery
☐ Return Receipt for Merchandise
☐ Signature Confirmation
☐ Signature Confirmation Restricted Delivery

PS Form 3811, April 2015 PSN 7530-02-000-9053 Domestic Return Receip

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

April 11, 2016

CERTIFIED MAIL #7008 0150 0000 7716 9902
RETURN RECEIPT REQUESTED

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Pennsylvania Historical and Museum Commission
State Historic Preservation Office
400 North Street
Commonwealth Keystone Building; 2nd Floor
Harrisburg, PA 17120-0093

RE: East Whiteland Township (Chester County);
Act 537 Planning – Special Study;
Planebrook Road Regional Pump Station and Force Main; PHMC Review
ARRO # 10310.21

Dear Historical and Museum Commission:

On behalf of East Whiteland Township, we are assisting with the preparation of an Act 537 Sewage Facilities Special Study to update the Township's Act 537 Plan. This Special Study is to reflect the improvements necessary to meet the future wastewater needs of the western portion of East Whiteland Township near Frame Avenue and Planebrook Road. Improvements will require the construction of a regional wastewater pump station, a force main from the pump station to Planebrook Road, then along Planebrook Road to just north of the intersection of Planebrook and Swedesford Roads.

Enclosed, for your review, is the Project Review Form, the Malvern 7.5 Minute Quadrangle identifying the location of the proposed project, and an aerial photograph using 'Google Maps' data. The total area to be disturbed is approximately 0.5 acres. No structures are planned to be disturbed as a result of implementing the planned alternatives. The pump station is going to be installed on a parcel that has been designated for the station in a new development. The proposed force main will be installed through an easement and then will be primarily installed in the street right of way.

Please review this documentation and provide us with any comments or concerns that you may have at your earliest convenience. If you have any questions, please do not hesitate to call me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Enclosures

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY
DATE RECEIVED:
ER NUMBER:

REV: 10/2014

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (●) YES ( ) NO OR ( ) This is additional information for ER Number:

Project Name: Planebrook Rd. Regional PS Act 537 Plan | County: Chester | Municipality: East Whiteland Township

Project Address: | City/State/ Zip:

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: William L. Bohner, Jr., P.E. | Phone: (610) 495-2102

Company: ARRO Consulting, Inc. | Fax: (610) 495-5855

Street/PO Box: 649 North Lewis Road; Suite 100 | Email: bill.bohner@thearrogroup

City/State/Zip: Limerick PA 19468

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
State	PA DEP Sewage Facilities Planning Program	Act 537 Planning (pump station and force main)

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 0.8 Total acres of earth disturbance: 0.5

Are there any buildings or structures within the project area? ( ) Yes (●) No Approximate age of buildings: 35 to 40 yrs.

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts	N/A
	( )	(●)	( )		

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate the location and age, if known, of all buildings in the project area
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

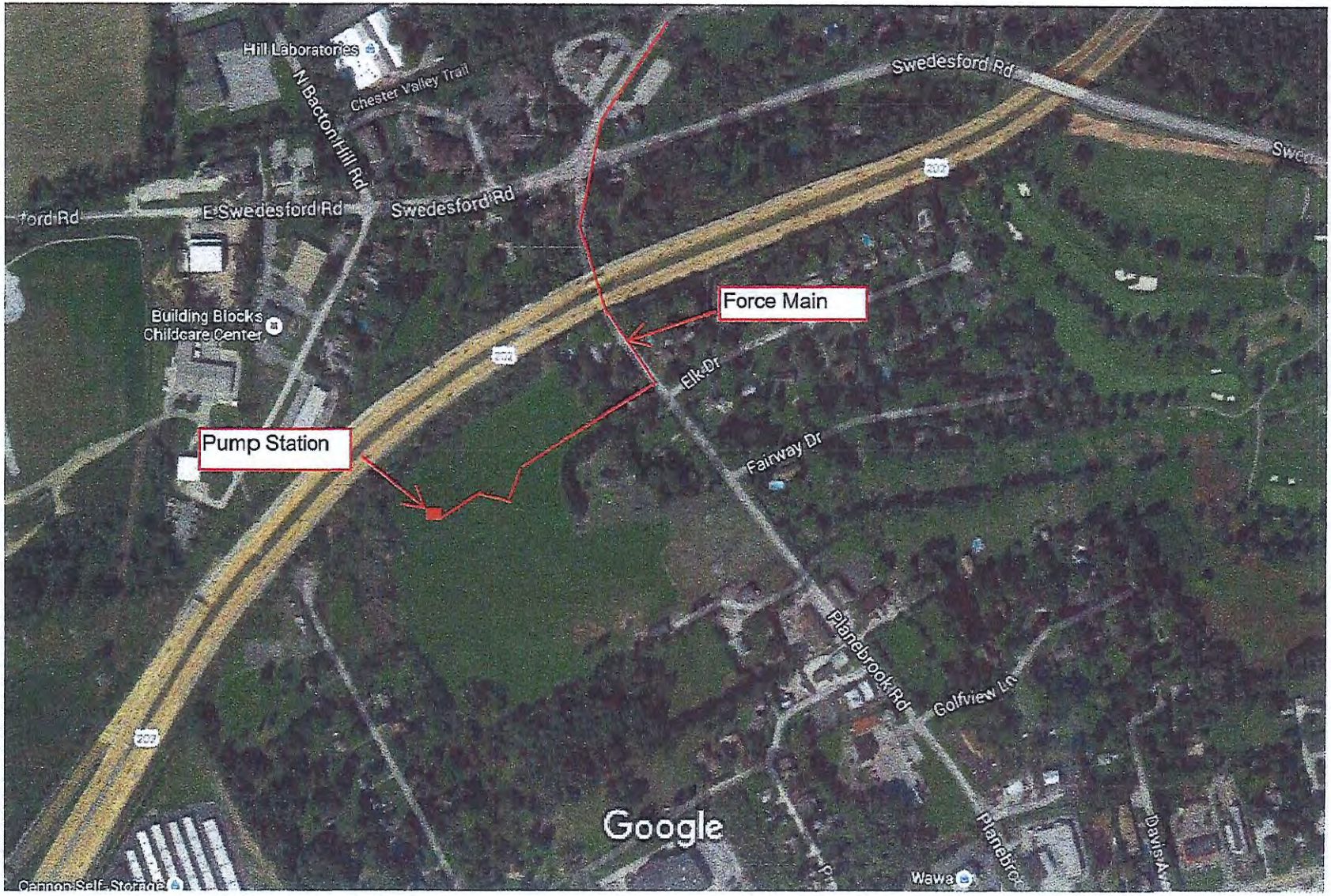
SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

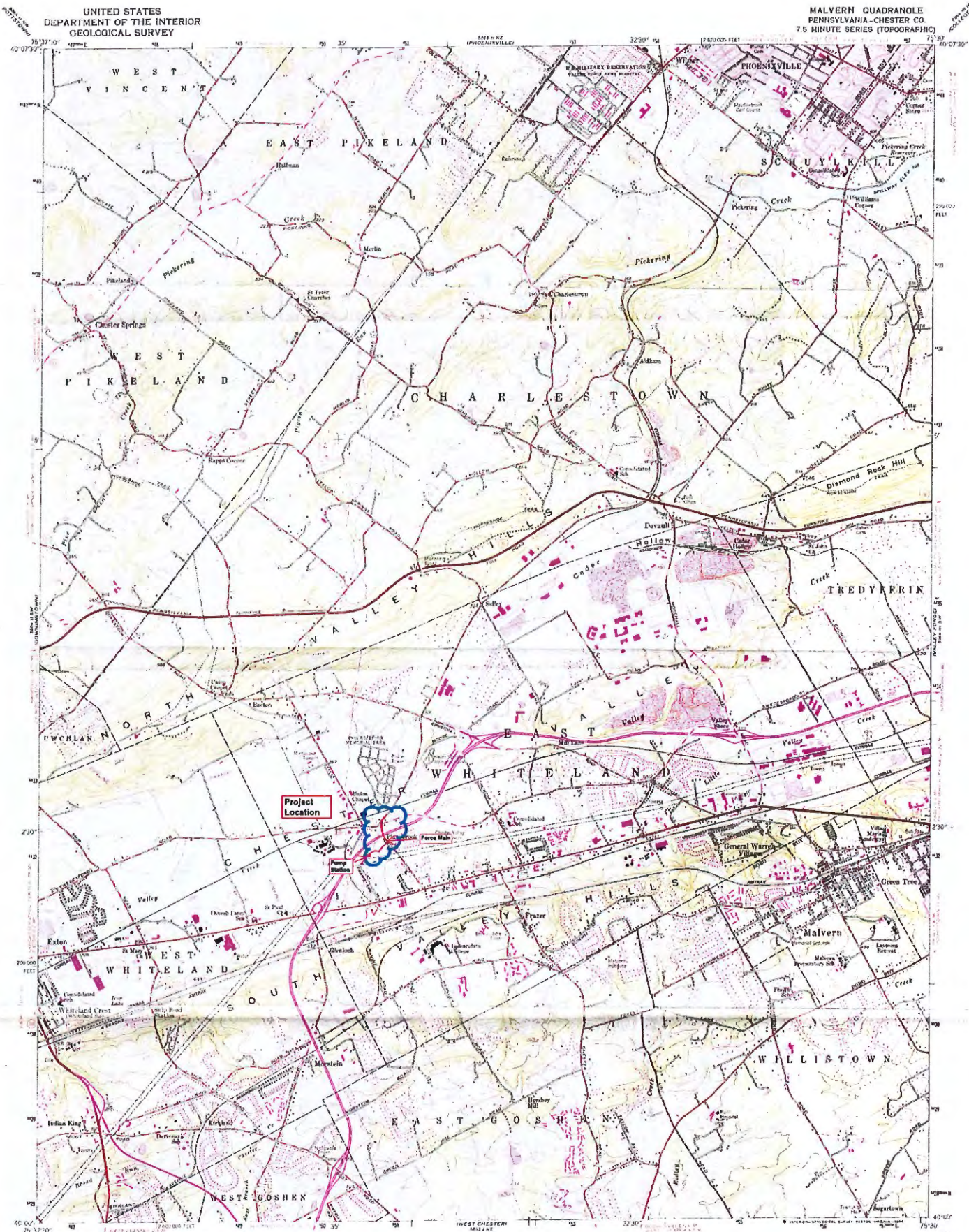
SHPO REVIEWER: _____ **DATE:** _____

Google Maps

**East Whiteland Twp.
Planebrook Rd. Regional
Pump Station and Force
Main**



Imagery ©2016 Google, Map data ©2016 Google 500 ft


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MALVERN QUADRANGLE
PENNSYLVANIA-CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
Project Location
Force Main
Pump Station
PHOENIXVILLE
WEST VINCENT
EAST PIKELAND
SCHUYLKILL
WEST PIKELAND
CHARLESTOWN
Chester Springs
Diamond Rock Hill
Devault
TREDYFFRIN
EAST WHITELAND
WEST WHITELAND
Exton
Malvern
WILLISTOWN
EAST GOSHEN
WEST GOSHEN
Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA
Topography by photogrammetric methods from aerial photographs taken 1951. Field checked 1955
Polyconic projection. 10,000-foot grid ticks based on Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of the National or State reservations shown on this map
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
ROAD CLASSIFICATION
Heavy duty
Light duty
Medium duty
Unimproved dirt
Interstate Route
U.S. Route
State Route
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
YORK SERVICES, INC.
516 W. 4th St.
Williamsport, PA. 17701
1-800-233-2544
MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5864 II SE-SERIES V831

APPENDIX I

Municipal Comments and Responses

Limerick Office
649 N. Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

VIA UPS GROUND

August 08, 2016

East Whiteland Township Planning Commission
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: East Whiteland Township
Act 537 Plan Special Study for Planning Commission Review;
Planebrook Road Regional Pump Station and Force Main
ARRO# 10310.21

Dear Planning Commission Members:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to address the requirements necessary to implement a regional pump station that is to provide service to the Frame Avenue and Planebrook Road planning area.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. Thank you for your assistance with the review of this planning document. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: John Nagel, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

Rauch, Cynthia

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, August 09, 2016 10:12 AM
To: Rauch, Cynthia
Subject: UPS Delivery Notification, Tracking Number 1Z1667160391225524

Your package has been delivered.

Delivery Date:	Tuesday, 08/09/2016
Delivery Time:	09:13 AM

At the request of ARRO CONSULTING INC, , this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z1667160391225524
Ship To:	Planning Commission East Whiteland Township 209 CONESTOGA RD MALVERN, PA 19355 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	3.0 LBS
Delivery Location:	FRONT DESK
Signed by:	MOORE
Reference Number 1:	10310.21 Phase 01
Reference Number 2:	EWT - Planning Commission

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APPENDIX J

County Comments and Responses

VIA UPS GROUND

Limerick Office
649 N. Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

August 08, 2016

Jeanne E. Casner, MPH, PMP
County Health Director
Chester County Health Department
Government Services Center
Suite 290
601 Westtown Road
West Chester, PA 19380-0990

RE: East Whiteland Township
Act 537 Plan Special Study for Health Department Review;
Planebrook Road Regional Pump Station and Force Main
ARRO# 10310.21

Dear Ms. Casner:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed draft Act 537 Plan/Special Study for Health Department review. The primary focus of the Special Study is to evaluate alternatives to address the requirements necessary to implement a regional pump station that is to provide service to the Frame Avenue and Planebrook Road planning area.

Please review this Special Study and offer any comments or concerns that the Health Department may have. Thank you for your assistance with the review of this planning document. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

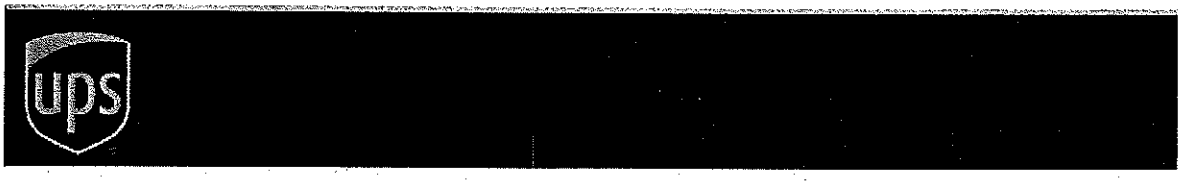
Enclosure

c: John Nagel, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

H:\East Whiteland\10310.21 Act 537 Special Study Aug 2016 ph 02\Health Dept Cty_080816.doc

Rauch, Cynthia

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, August 09, 2016 1:32 PM
To: Rauch, Cynthia
Subject: UPS Delivery Notification, Tracking Number 1Z1667160393988706



Your package has been delivered.

Delivery Date:	Tuesday, 08/09/2016
Delivery Time:	09:53 AM

At the request of ARRO CONSULTING INC, , this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z1667160393988706
Ship To:	Jeanne E. Casner CHESTER COUNTY HEALTH DEPARTMENT 601 WESTTOWN RD WEST CHESTER, PA 19382 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	3.0 LBS
Delivery Location:	DOCK
Signed by:	WILLIAMS
Reference Number 1:	10310.21 Phase 01
Reference Number 2:	Jeanne Casner, CCHD

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 Download the UPS mobile app

VIA UPS GROUND

Limerick Office
649 N. Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

August 08, 2016

Mr. Brian N. O'Leary, AICP
Executive Director
Chester County Planning Commission
Government Services Center
Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township
Act 537 Plan Special Study for Planning Commission Review;
Planebrook Road Regional Pump Station and Force Main
ARRO# 10310.21

Dear Mr. O'Leary:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed Act 537 Plan/Special Study for Planning Commission review. The primary focus of the Special Study is to evaluate alternatives to address the requirements necessary to implement a regional pump station that is to provide service to the Frame Avenue and Planebrook Road planning area.

Please review this Special Study and offer any comments or concerns that the Planning Commission may have. Thank you for your assistance with the review of this planning document. If you have any questions, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.

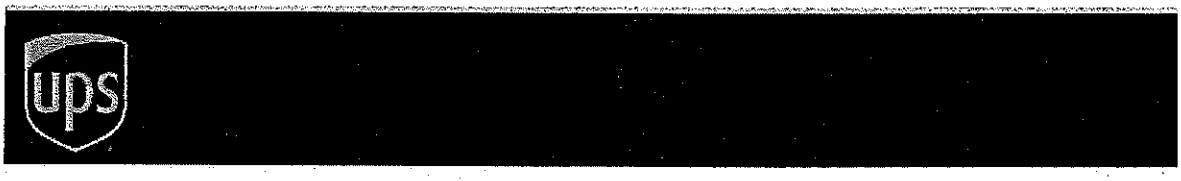
WLB:car

Enclosure

c: John Nagel, Township Manager – East Whiteland Township (w/o enclosure)
William Steele, Director of Public Works – East Whiteland Township (w/o enclosure)
Kevin McAghon, P.E. – ARRO (w/o enclosure)

Rauch, Cynthia

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, August 09, 2016 11:30 AM
To: Rauch, Cynthia
Subject: UPS Delivery Notification, Tracking Number 1Z1667160394092510



Your package has been delivered.

Delivery Date:	Tuesday, 08/09/2016
Delivery Time:	09:53 AM

At the request of ARRO CONSULTING INC, , this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z1667160394092510
Ship To:	Brian O'Leary Chester County Planning Commission 601 WESTTOWN RD WEST CHESTER, PA 19382 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	3.0 LBS
Delivery Location:	DOCK
Signed by:	WILLIAMS
Reference Number 1:	10310.21 Phase 01
Reference Number 2:	Brian O'Leary, CCPC

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 Download the UPS mobile app

APPENDIX K

Proof of Publication

21ST CENTURY media

PHILADELPHIA GROUP

AFFIDAVIT OF PUBLICATIO

307 Derstine Avenue • Lansdale, PA 194

ARRO CONSULTING
649 N LEWIS RD

Ste 100

LIMERICK, PA 19468
Attention:

STATE OF PENNSYLVANIA,
COUNTY OF MONTGOMERY

The undersigned Kathy Vicari, being duly sworn the he/she is the principal clerk of Daily Local News, Daily Local News Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

ARRO CONSULTING

ublished in the following edition(s):

Daily Local News	10/27/16
Daily Local News Digital	10/27/16

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MAUREEN SCHMID, Notary Public
Upper Dublin Twp., Montgomery County
My Commission Expires March 31, 2017

Sworn to the subscribed before me this 10/28/2016.

Maureen Schmid

Notary Public, State of Pennsylvania
Acting in County of Montgomery

Advertisement Information

Client Id: 891884 **Ad Id:** 1160482 **PO:**

PUBLIC NOTICE

An Act 537 Plan (Special Study) has been prepared for East Whiteland Township, Chester County, Pennsylvania. The Special Study addresses the planning requirements necessary to provide for public sanitary conveyance improvements to existing portions of the Township's system. These improvements would provide the capacity for existing and planned development located in the Frame Avenue and Planebrook Road areas in the western portion of East Whiteland Township.
Wastewater from the planning area identified in this Special Study will be conveyed via upgraded wastewater conveyance infrastructure from the Cockerham Tract to Planebrook Road and then to the existing sanitary sewer system. The existing system discharges through East Whiteland Township and Tredyffrin Township to the Valley Forge Sewer Authority's Wastewater Treatment Plant.
To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives as follows:
Implement Alternative 2 as identified in the Special Study. This alternative includes the construction of a regional pump station via the upgrading of the existing temporary pump station currently located on the Cockerham property. With the construction of this regional station, the existing Frame Avenue Pump Station would be decommissioned. In addition, the construction of approximately 2,000 feet of new 8 inch force main will be completed. This regional pump station and force main will provide capacity for the existing and projected future flows.
The engineer's opinions of probable construction cost for these alternatives and the respective phases are:
Regional Pump Station: $590,000
Force Main: $720,000
The selected technical alternative will be paid for and financed through the sharing of costs between East Whiteland Township and the developer of the Cockerham and Celia properties. Costs shall be recouped through established tapping fees and user rate structures.
In accordance with Chapter 71.3(c) of the Pennsylvania Code, the Township is providing a 30-day public comment period. The plan is available, for review, at the Township's offices, 209 Conestoga Road, Frazer, PA 19355 from 9:00 AM to 4:00 PM, Monday through Friday. Comments may be addressed to Mr. John Nagel, Township Manager, and are due no later than thirty (30) days from the date of this advertisement.
DL-Oct 27-1a

3304

RECEIPT 10/24/16

digitalfirst MEDIA

PENNSYLVANIA GROUP

Account:	891884
Name:	BILL BOHNER
Company:	ARRO CONSULTING
Address:	649 N LEWIS RD Ste 100 LIMERICK, PA 19468
Telephone:	(610) 374-5285
Fax:	
Description:	PUBLIC NOTICE An Act 537 Plan (Speci

Date:	10/24/16
Start Date:	10/27/16 Stop Date: 10/27/16
Class:	1201 - Legal Notices
Ad ID:	1160482
Ad Taker:	CRMASCHMID
Sales Person:	Kathy Vincent (093304)
Words:	359
Lines:	93
Agate Lines:	93
Depth:	10.333
Inserts:	2
Blind Box:	
PO Number:	

Ad sample

Total:	$275.69
Paid Amount:	$275.69
Amount Due:	$0.00

Publication

Daily Local News, Daily Local News Digital

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DL-Oct 27-1a

We Appreciate Your Business!
Thank You BILL BOHNER!

APPENDIX L

Public Comments and Responses

The Township of

EAST WHITELAND

BOARD OF SUPERVISORS: SUSAN DRUMMOND • WILLIAM HOLMES • RICHARD ORLOW

TOWNSHIP MANAGER: JOHN NAGEL

November 30, 2016

William L. Bohner, Jr., P.E.
ARRO Consulting, Inc.
649 N. Lewis Road
Suite 100
Limerick, PA 19468

RE: East Whiteland Township Sewage Facilities
Planning Special Study for the
For the Planebrook Rd. Regional PS and Force Main;
Public Comment Period – No Public Comment.

Dear Mr. Bohner:

In accordance with Title 25, Chapter 71 of the Pennsylvania Code, a 30-day public comment period was conducted for the above referenced East Whiteland Township Sewage Facilities Planning Special Study. The public comment period began on October 27, 2016 and ended on November 25, 2016. During that period, no public comments were received by East Whiteland Township.

Sincerely,

John Nagel
Township Manager

cc: file

209 CONESTOGA ROAD FRAZER PENNSYLVANIA 19355-1699 TELEPHONE 610 648 0600 WWW.EASTWHITELAND.ORG

APPENDIX M

Adopted Resolution

EAST WHITELAND TOWNSHIP

RESOLUTION NO. 41-2016

RESOLUTION FOR PLAN REVISION

WHEREAS, A RESOLUTION OF THE BOARD OF SUPERVISORS OF EAST WHITELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537 known as the "Pennsylvania Sewage Facilities Act", as Amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection (PADEP) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the Township to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said Plan whenever it is necessary to meet the sewage disposal needs of the Township's service area.

NOW, THEREFORE, BE IT RESOLVED, that East Whiteland Township Board of Supervisors hereby adopts and submits to the Pennsylvania Department of Environmental Protection for its approval, as a revision to the "Official Plan" of the Township, this Act 537 Special Study.

East Whiteland Township hereby approves and adopts the Act 537 Special Study which establishes the planning requirements necessary to provide public sanitary sewer infrastructure improvements to the Planebrook Road Pump Station and Force Main. The Township is committed to implementing the recommendations of this Special Study in accordance with the Study's implementation schedule.

The Township finds that the Act 537 Special Study described above conforms to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

ADOPTED this 14th day of December, 2016.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

William Holmes, Chairman

Richard Orlow, Vice Chairman

Susan Drummond

Attest:

Township Secretary

I, Maureen G. Turley, Secretary, East Whiteland Township, hereby certify that the foregoing is a true copy of Township Resolution No. 41-2016, adopted December 14, 2016.

(TOWNSHIP SEAL)

Maureen G Turley

Township Secretary

APPENDIX N

Approved Plan of Study and Task Activity Report

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED
MAR 24 2016
ARRO Consulting, Inc.

March 18, 2016

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Act 537 - Plan of Study
Planebrook Road Regional Pump Station Planning Area Special Study
East Whiteland Township
Chester County

Dear Mr. Nagel:

We have completed our review of your municipality's proposed Plan of Study, as prepared by Mr. William L. Bohner, Jr., P.E. of ARRO Engineering and Environmental Consultants, dated March 10, 2016, and a proposed Task Activity Report dated February 2016.

The proposed Special Study will provide planning to address the implementation of a regional pump station that is to provide service to the Frame Avenue and Planebrook Road area in East Whiteland Township, Chester County. As part of the implementation of this station, the existing Frame Avenue pump station will be decommissioned. The completed Special Study is scheduled to be submitted to the Department of Environmental Protection (DEP) in January 2017.

Approval of this proposed plan of study is hereby granted. The estimated cost of the plan is $39,988. Please be advised the approval of this scope of work is not a guarantee of eligibility of planning costs for reimbursement by the Commonwealth pursuant to Section 6 (a) of Act 537 and 25 Pa Code Chapter 71 of DEP's regulations.

This Plan of Study approval does not constitute a final action by DEP. When a completed plan is submitted to us, we will act upon it consistent with Pa. Code Title 25, Chapter 71.

Please consider the following comments as your municipality prepares its Act 537 Official Plan Update:

Your municipality's Act 537 Official Plan Update is to be formatted as suggested in the"A Guide for Preparing Act 537 Update Revisions" including the necessary items listed in the "Act 537 Plan Content and Environmental Assessment Checklist". All necessary items must be included, and a copy of the completed checklist must be included with your Act 537 Plan.

This form is available on our website at:
http://www.dep.state.pa.us/dep/deputate/watermgt/wqp/Forms/Act537/Forms_537Plan.htm

Also, please be advised that DEP will not pay grants under the act for planning costs incurred prior to the date of this Plan of Study approval or for information that has been completed previously under local, state or federal funding programs. In addition, approval of this POS/TAR does not guarantee that all tasks listed will be eligible for reimbursement.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by DEP.

If you have any questions, please contact me at 484.250.5184.

Sincerely,

Kelly Boettlin
Sewage Planning Specialist 2
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Mr. Bohner – ARRO Engineering and Environmental Consultants
Ms. Vollero - RCSOB, 11th Floor, Sewage Facilities
Planning Section
Re 30 (GJE16CLW)078-2

March 10, 2016

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

Ms. Kelly Boettlin
Sewage Planning Specialist
Water Management Program
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

RE: East Whiteland Township; Chester County;
Act 537 Special Study – Plan of Study
Planebrook Road Regional Pump Station Planning Area.
ARRO #10310.21

Dear Ms. Boettlin:

As discussed on Wednesday, I am sending you the enclosed Plan of Study (POS) for the Planebrook Road Regional Pump Station Act 537 Sewage Facilities Plan (Special Study). This is to supplement the Task Activity Report and Planning Area Map that was sent to you previously under separate cover.

Please give your consideration for approval of the POS and TAR. If you have any questions about these documents, please contact me at 610-495-2102.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Enclosure

Corporate Headquarters • 108 West Airport Road • Lititz, PA 17543
T 717.569.7021 • F 717.560.0577 • www.thearrogroup.com

OUT IN FRONT

EAST WHITELAND TOWNSHIP
FRAME AVENUE/PLANEBROOK ROAD ACT 537 SPECIAL STUDY

In accordance with Title 25, Chapter 71, Administration of the Sewage Facilities Planning Program, of the Pennsylvania Code, a Plan of Study has been developed, for the preparation of a revision to the East Whiteland Township (Township) Act 537 Sewage Facilities Plan (Plan). This is being prepared to establish the planning elements that are necessary to meet the requirements of the Pennsylvania Department of Environmental Protection (PADEP) as they relate to the preparation of an Act 537 Plan Special Study (Special Study). This Special Study is to address the planning requirements necessary to implement a regional pump station that is to provide service to the Frame Avenue and Planebrook Road planning area. As part of the implementation of this station, the existing Frame Avenue pump station will be decommissioned. The area, as delineated on the attached location plan, will be the planning area for this Special Study. The Special Study shall become an amendment to the current Township Act 537 Plan.

Based on the PADEP Act 537 Plan Content and Environmental Assessment Checklist, the following addresses the planning requirements necessary to complete the study:

Executive Summary

1. Prepare a table of contents for the document.

2. Prepare a plan summary (Executive Summary).

   A. Identify the planning area to be served by the future pump station as well as the future collection and conveyance system.

   B. Identify the alternative chosen alternative.

   C. Include the cost opinion for implementing the proposed alternative.

   D. Identify the municipal commitments necessary to implement the plan.

   E. Provide a schedule for implementing the proposed project.

3. Include original signed and sealed Resolutions of Adoption.

4. Include comments provided by the Township Planning Commission, Chester County Planning Commission, and Chester County Health Department.

5. Include Proof of Public Notice.

6. Include a copy of all written comments received and written responses to each comment.

7. Prepare a project implementation schedule.

8. If any planning inconsistencies are identified, documentation will be provided discussing the resolution of the inconsistencies. If none are identified, a statement will be made to that effect.

General Plan

I. Previous Wastewater Planning

A. Identify and discuss existing wastewater planning.

1. Discuss previous Act 537 planning.

2. Discuss planning that has not been done in accordance with an approved implementation schedule.

3. Discuss additional planning, if any, that is anticipated or planned by East Whiteland Township.

4. Discuss planning that has been done via official plan revision such as planning modules or addenda.

II. Physical and Demographic Analysis

A. Identify the planning area, municipal boundaries and service area boundaries utilizing existing mapping.

B. Identify physical characteristics of the planning area. Existing mapping will form the basis for this identification supplemented by USGS and National Wetlands Inventory maps, as required.

C. Discuss soils characteristics in the planning area.

D. Discuss geological features in the planning area.

E. Discuss topographic features in the service area.

F. Identify the potable water supply in the planning area.

G. Identify wetlands in the area utilizing National Wetlands Inventory Mapping.

III. Exlsting Sewage Facilities in the Planning Area

A. Identify and describe municipal sewerage systems in the planning area.

1. Discuss location, size and ownership of existing collection and conveyance facilities. A map will be provided to show the location of the collection and conveyance facilities within East Whiteland Township that could potentially serve the planning area.

2. Providing a narrative and schematic diagram of the basic treatment process is not applicable to this Special Study.

3. Providing a description of the problems, if any, with the existing treatment plant is not applicable to this Special Study. However, a description of problems, if any, associated with the existing conveyance system will be discussed.

4. Providing details, if any, relative to ongoing upgrading or expansion of the treatment facilities is not applicable to this Special Study. However, a description of ongoing upgrades or expansion, if any, of the conveyance system will be discussed.

5. Provide a description of operation and maintenance requirements and the status of past and present compliance with these requirements.

6. A description of disposal areas, other than stream discharge, is not applicable to this special study.

B. Identify the areas served by on-lot disposal systems located along the following roads:

- Planebrook Road
- Elk Drive
- Fairview Drive
- Golf View Lane
- Bracken Avenue
- Prospect Avenue

1. These areas were identified to be in the proposed public sanitary sewer service area in the 2011 Township wide Act 537 Plan approved by the Department. No further planning, to establish the need for public sewer, is required.

2. The planning area is served by public water. The public water supplier will be identified as part of this Special Study.

C. Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. Future Growth and Development

A. Identify and briefly summarize municipal and County planning documents for the planning area as defined by this Special Study.

1. Discuss the planning area in the context of land use planning and zoning.

2. Discuss zoning or subdivision regulations that establish lot sizes .

3. Discuss limitations and plans relating to the floodplain and stormwater management and special protection areas.

B. Describe future growth and development through mapping, text and analysis for the planning area as defined by this Special Study.

1. Discuss areas with existing development or plotted subdivisions.

2. Discuss land use designations including residential, commercial and industrial areas.

3. Discuss future growth areas, population and EDU projections for these areas.

4. Briefly discuss zoning and subdivision regulations as they pertain to planned development.

5. Discuss the sewage planning required to provide adequate wastewater conveyance for planned development.

V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Identify the alternative to provide for improved sewage facilities

1. Identification of regional wastewater treatment concepts as an alternative shall make mention that wastewater is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

2. The potential for extension of existing municipal sewage facilities to areas in need.

3. A brief discussion regarding the potential for continued use of existing on-site or on-lot systems.

4. Analysis of a new community sewage system is not applicable to this Special Study.

5. Analysis of alternatives as they relate to repair, replacement, and upgrade of existing conveyance system components will be discussed.

6. Discussion as it relates to the use of alternate methods of collection/conveyance to serve needs areas is not applicable to this Special Study.

B. The implementation of individual sewage disposal systems beyond the existing systems identified above, is not applicable to this Special Study.

C. Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. Analysis based on the use of community land disposal is not applicable to this Special Study.

E. Addressing the use of retaining tank alternatives is not applicable to this Special Study.

F. A discussion of the Township's sewage management program is not applicable to this Special Study.

G. Non-structural comprehensive planning alternatives are not applicable to this Special Study.

H. Provide a no-action alternative which includes impacts on:

1. Water Quality and Public Health.

2. Growth Potential.

3. Community and economic conditions.

4. Recreational opportunities.

5. Drinking water sources.

6. Other environmental concerns.

VI. The Evaluation of Alternatives

A. Evaluate the alternatives, identified in Section V, for consistency with respect to the following:

1. Plans developed under the Clean Streams Law.

2. Plans developed under the Municipal Wasteload Management Plan (Chapter 94).

3. Plans developed under Title II of the Clean Water Act.

4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code.

5. Anti-degradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 and the Clean Water Act.

6. State water plans developed under the Water Resources Planning Act.

7. Pennsylvania Prime Agricultural Land Policy.

8. The County Stormwater Management Plan.

9. Wetlands Protection.

10. Protection of rare, endangered or threatened plant and animal species as identified by the PNDI.

11. Historical and Archeological Resource Protection (PHMC).

B. Provide for the resolution of any inconsistencies with items 1 through 11 above, if necessary.

C. Evaluate the alternatives with respect to applicable water quality standards and effluent limitations.

D. Provide cost opinions for construction, financing and engineering fees for the alternatives identified in Section V.

E. Provide an analysis of funding methods available to finance the proposed alternatives including financial contributions from private entities.

F. Analyze the need for immediate or phased implementation.

G. Analyze the ability of the Township to implement the alternative.

VII. Institutional Evaluation

A. Provide a brief discussion of the Township, their past actions and present performance including:

1. Financial and debt status

2. Available staff and administrative resources

3. Provide an analysis of the Township's legal authority to implement wastewater planning recommendations, implement system-wide operation and maintenance activities, set user fees, take purchasing actions, take actions against ordinance violators, negotiate agreements with other parties and raise capital for construction, operation and maintenance of facilities.

B. Describe the various institutional alternatives necessary to implement the technical alternatives, including:

1. There is no need for a new Authority. No analysis will be completed for this.

2. Function of the Township.

3. Cost of administration, implementability, and capability of the Township to provide for future needs.

C. Describe necessary administrative and legal activities, if any, to be completed and adopted to ensure the implementation of the alternatives, including:

1. Legal authorities of incorporation.

2. Required ordinances, standards, regulations and inter-municipal agreements.

3. Provisions of rights-of-way, easements, and land transfers.

4. Other sewage facilities plan adoptions.

5. Legal documents, if any.

6. Dates or timeframes of 1-5 above on the implementation schedule.

D. Identify the proposed institutional alternative for implementing the selected technical alternative.

VIII. Selected Wastewater Treatment and Institutional Alternative

A. Identify the alternative that is the most feasible from a technical, financial, and institutional standpoint. Justify the choice based on:

1. Existing wastewater disposal needs.

2. Future wastewater disposal needs.

3. Operations and maintenance considerations.

4. Cost effectiveness.

5. Availability management and administrative systems.

6. Available finance methods.

7. Environmental soundness.

B. Describe the capital financing plan chosen to implement the selected alternative.

C. Designate and describe the implementation schedule (see Executive Summary).

Municipality: East Whiteland Township | County: Chester | Proposed Planning Area: Frame Avenue/Planebrook Road (see attached plan sheet) | Date of Report: February-16

Date completed Plan will be submitted to DEP: January-17 | Estimated Cost of Plan: $39,988

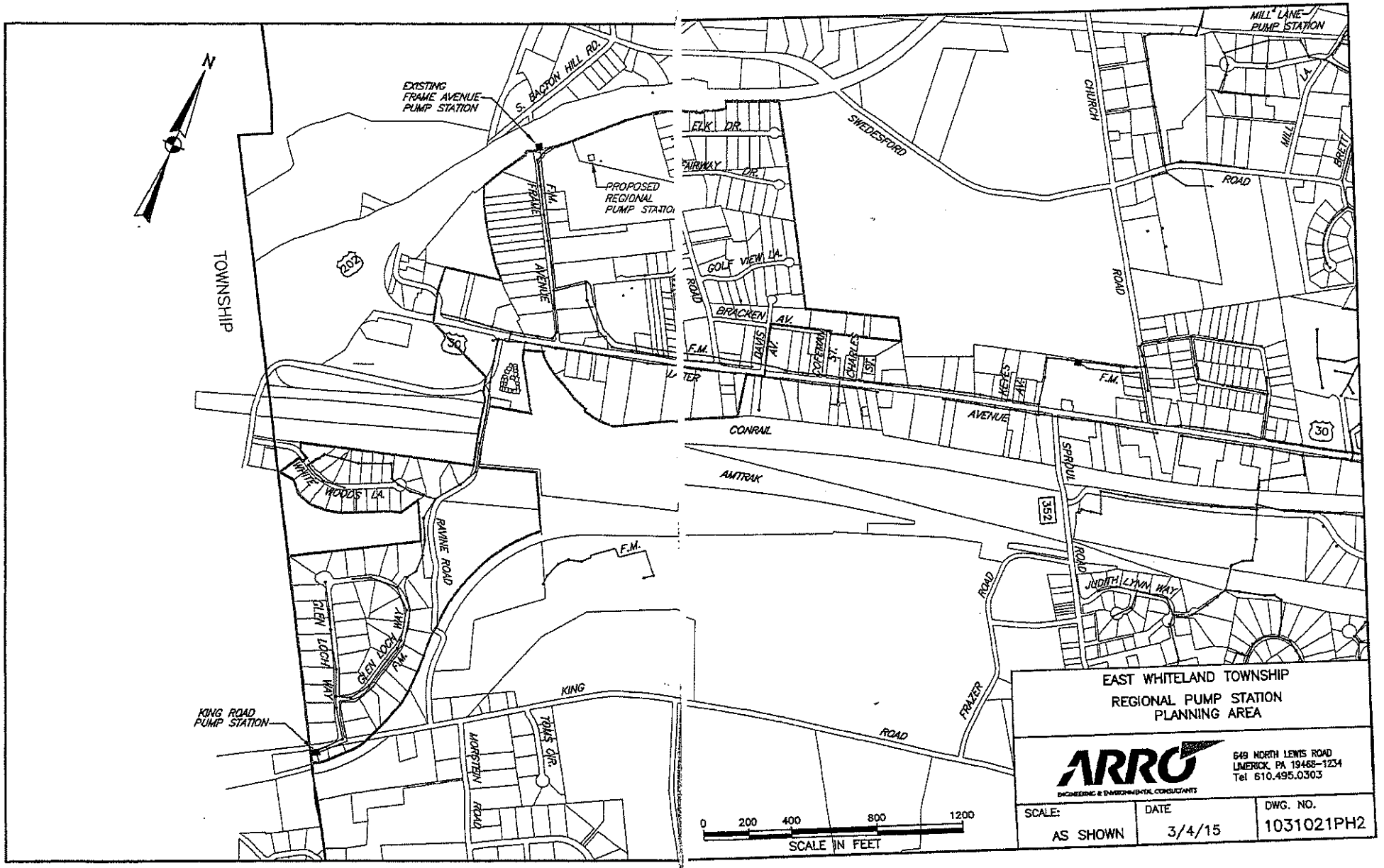
Task Activity	Project Manager/Engineer		CADD Mapping		Clerical/Admin		QA Review														Expenses	Subtotal $
	Hr/Rate	$143.00	Hr/Rate	$84.00	Hr/Rate	$60.00	Hr/Rate	$143.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	Hr/Rate	$0.00	$	
Plan Section and/or Task	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)	Hrs.	Cost ($)		
Plan of Study/TAR	10	$1,430	0	$0	2	$120	4	$572	0	$0		$0		$0		$0		$0		$0	$14	$2,136
Section I (Prev. Planning)	8	$1,144	0	$0	1	$60	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,204
Section II (Phys. Demographic Analysis)	8	$1,144	0	$0	1	$60	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,204
Plan Section III (Existing Facilities)	16	$2,288	24	$2,016	4	$240	0	$0	0	$0		$0		$0		$0		$0		$0	$50	$4,594
Plan Section IV (Future Growth)	24	$3,432	24	$2,016	4	$240	4	$572	0	$0		$0		$0		$0		$0		$0	$0	$6,260
Plan Section V (Conveyance Alternatives)	24	$3,432	8	$672	8	$480	4	$572	0	$0		$0		$0		$0		$0		$0	$50	$5,206
Plan Section VI (Alternative Evaluation)	24	$3,432	8	$672	4	$240	4	$572	0	$0		$0		$0		$0		$0		$0	$0	$4,916
Plan Section VII (Institutional Evaluation)	10	$1,430	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,550
Plan Section VIII (Selection of Alternative)	10	$1,430	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,550
Executive Summary	8	$1,144	0	$0	1	$60	0	$0	0	$0		$0		$0		$0		$0		$0	$0	$1,204
Submit Document to Township for Review	4	$572	0	$0	2	$120	8	$1,144	0	$0		$0		$0		$0		$0		$0	$100	$1,936
Incorporate Township Comments; Respond	6	$858	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$868
Submit Document to County for Review	2	$286	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$100	$506
Incorporate County Comments; Respond	4	$572	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$702
Advertise for Public Comment	2	$286	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0		$0	$500	$786
Submit Document for Public Comment	2	$286	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$75	$481
Incorporate Public Comments; Respond	4	$572	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$20	$712
Draft Resolutions of Adoption	2	$286	0	$0	1	$60	0	$0	0	$0		$0		$0		$0		$0		$0	$300	$826
Submit Document to PA DEP for Review	2	$286	0	$0	4	$240	0	$0	0	$0		$0		$0		$0		$0		$0	$10	$1,274
Revise Per DEP Comments; Respond	8	$1,144	0	$0	2	$120	0	$0	0	$0		$0		$0		$0		$0		$0	$300	$1,707
Submit Final to DEP	1	$143	0	$0	2	$120	8	$1,144	0	$0		$0		$0	32	$0		$0		$0	$1,559	$39,988
Totals	179	$25,597	64	$5,376	48	$2,880	32	$4,576	0	$0	0	$0	0	$0	32	$0	0	$0	0	$0		

William L. Bohner Jr., P.E.
Name of Person Completing Report

Signature

12/26/2016
Date

John Kugel - Township Manager



EAST WHITELAND TOWNSHIP

REGIONAL PUMP STATION
PLANNING AREA

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS
649 NORTH LEWIS ROAD
LIMERICK, PA 19468-1234
Tel 610.495.0303

SCALE:	DATE	DWG. NO.
AS SHOWN	3/4/15	1031021PH2

APPENDIX O

Communication – Extension of Public Sewers

to Serve OLDS Properties

Bohner, Bill

From: Boettlin, Kelly <kboettlin@pa.gov>
Sent: Wednesday, March 30, 2016 11:19 AM
To: Bohner, Bill
Cc: Mahoney, Elizabeth
Subject: RE: Planebrook Rd. Regional PS - Special Study (OLDS Properties)

Bill,

As long as your triggers are clearly defined, we would not have any objections to this approach.

Thank you.

Kelly Boettlin | Sewage Planning Specialist 2
Department of Environmental Protection | Clean Water
Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5184 | Fax: 484.250.5971
www.depweb.state.pa.us

From: Bohner, Bill [mailto:Bill.Bohner@TheARROGroup.Com]
Sent: Monday, March 28, 2016 1:32 PM
To: Boettlin, Kelly
Subject: Planebrook Rd. Regional PS - Special Study (OLDS Properties)

Hi Kelly,

We have been having an internal discussion regarding the planning for extending public sewer service to the OLDS properties as part of the Planebrook Road Regional PS Special Study.

Approximately 10 years ago, notifications were sent to these properties and a public meeting was held whereby property owners had the opportunity to express their interest or lack thereof. Generally, the Township found that these property owners were receptive to the extension of public sewer. The Township has also noted that there has been little owner turnover in these neighborhoods. So, the current desire for public sewer should remain consistent with what the Township determined in the past.

In thinking some more about how we would integrate this into the Special Study, we would like to consider making these notifications and the public meeting information a part of this Special Study and include in text that these properties are a part of the planned public sewer service area in accordance with the approved 2011 537 Plan Update.

Then, similar to what we discussed at our meeting in February, we would like to write text that describes triggers for the preparation of Component 3m's that will provide specifics for the extension of public sewer mains to the OLDS properties. During the 3m planning process, the Township would plan to issue new letters to each property owner and the Township could provide them with a more defined time line relative to when public sewers will be extended. This, from the Township's perspective, would avoid getting the property owners' hopes too high without clearer definition of a time line.

Please let me know what you think and if this approach sounds reasonable.

Thanks,

Bill

William L. Bohner, Jr., P.E.

P 610.495.2102
F 610.495.5855
www.thearrogroup.com



NOTE: This electronic message may contain PRIVILEGED AND CONFIDENTIAL INFORMATION intended only for the use of the addressee(s) named above. If you are not the intended recipient of this electronic message, or the employee or agent responsible for delivering it to the intended recipient, you have no legal right to read this message and are hereby notified that any dissemination, copying or disclosure of this message is strictly prohibited. If you have received this message in error, please notify the sender immediately via reply electronic message then delete the original message.

Board of Supervisors

MICHELE VAUGHN, Chair
VIRGINIA McMICHAEL, Vice-Chair
GREGORY F. DAVIS, Member

TERRY H. WOODMAN
Township Manager

East Whiteland Township

209 CONESTOGA ROAD
FRAZER, PENNSYLVANIA 19355-1699

VIRGINIA FENNIMORE
Assistant Township Manager
G.ERIC REED
Codes Enforcement Officer
KENNETH N. BATTIN
Director of Codes & Life Safety
WILLIAM H. STEELE
Public Works Director

March 1, 2001

Dear Resident:

This is to inform you of **the rescheduled date of the special meeting to discuss potential sewers for Planebrook Road, including Elk Drive, Fairway Drive, Golfview Lane and Prospect Avenue,** which was cancelled due to the snowstorm on February 22, 2001. The meeting has been rescheduled to **Thursday, March 15, 2001, at 6:00 PM** in the Municipal Building, 209 Conestoga Road, Frazer, PA.

Sincerely,

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

Cc: file

Proof of Publication of Notice in Daily Local News

Under Newspaper Advertising Act No. 587, Approved May 16, 1929

State of Pennsylvania

County of Chester { *ss:* { No. 361250 Term, 2001

Debra S. Wood, Legal Advg. Rep of the Daily Local News Company, a corporation, of the County and State aforesaid, being duly affirmed, deposes and says that the Daily Local News, a newspaper of general circulation, published at 250 N. Bradford Ave., West Chester, PA, County and State aforesaid, was established November 19, 1872, and Incorporated December 11, 1911, since which date the Daily Local News has been regularly issued in said county, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said Daily Local News on the following dates viz:

March 9 and 14 A.D. 2001

Affiant further deposes that he/she is the proper person duly authorized by the Daily News Company, a corporation, publishers of said Daily Local News, a newspaper of general circulation, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Debra S. Wood

COPY OF NOTICE OR PUBLICATION

affirmed to and subscribed before me this 15th

day of March 2001

Beverly A. Wolfe

Notary Public

Notarial Seal
Beverly A. Wolfe, Notary Public
East Fallowfield Twp., Chester County
My Commission Expires June 4, 2001

My Commission Expires:



NOTICE

NOTICE IS HEREBY GIVEN that the Board of Supervisors of East Whiteland Township will hold the following meetings in the Municipal Building, 209 Conestoga Road, Frazer, PA:

1. On Thursday, March 15th at 6:30 p.m. to discuss proposed sewer installations for Planebrook Road.

2. On Wednesday, March 21st at 7:00 p.m. to discuss proposed sewer installations for Glenloch Way.

Terry H. Woodman
Township Manager

Statement of Advertising Costs

East Whiteland Township

209 Conestoga Road

Frazer, PA 19355-1699

To DAILY LOCAL NEWS COMPANY, Dr.
For publishing the notice or publication attached

hereto on the above stated dates..... . . . $

Probating same..... ..... $

Total.. ..... $

Publisher's Receipt for Advertising Costs

The Daily Local News Company, a corporation, publishers of the Daily Local News, a newspaper of general circulation, hereby acknowledges receipt of the aforesaid notice and publication costs and certifies that the same has been duly paid.

DAILY LOCAL NEWS, a Corporation, Publishers of DAILY LOCAL NEWS, a newspaper of General Circulation.

By

EAST WHITELAND TOWNSHIP
SPECIAL MEETING
March 15, 2001

Chair, Michele Vaughn, called the meeting to order at 6:10 p.m. The meeting was advertised in the *Daily Local News* on March 9 and 14, 2001, the subject being discussion of proposed sewer installations in the Planebrook Road area. Terry Woodman, Township Manger, William Steele, Public Works Director, Surender Kohli, Township Engineer, and Mary Lou Knight, Assistant Township Secretary, were present. There were approximately thirty-five (35) people in the audience at the onset of the meeting. Virginia McMichael, Vice-Chair, joined the meeting at 6:15 p.m.

The Chair indicated that the meeting was informational only and intended to ascertain residents' interest in having sewers installed. Ms. Vaughn introduced Terry Woodman.

Ms. Vaughn gave a summary of costs to the homeowner associated with the sewer project:

$4,000.00 tapping fee (one time fee) paid to the Township
$25.00 per linear foot (approximate) fee to hook into the sewer line (one time fee) paid to the plumber
$300.00 to $500.00 fee to close current septic tank (one time fee) paid to the plumber.
$350.00 connection fee (one time fee) paid to the Township
$260.00 per year usage fee (sewer rental) paid to the Township

The Chair noted that the tapping fee charged to the homeowner is one-third of its actual cost, the balance being paid by the Township.

Ms. Vaughn explained that the plumber is only required to place the piping and do the hook-up, and the homeowner has the option of digging the pipe trench, thereby saving on this part of the cost. Savings might also be realized if neighborhood groups utilized the services of one plumber, as the contractor can realize savings, i.e., buying stone in bulk, placing equipment over a period of time.

Ms. Vaughn stated that state and federal government funds to aid homeowners with costs involved with connecting to the sewer line are not available, as East Whiteland Township, as a whole, does not qualify for these funds. She said that area banks have been approached regarding homeowner loans to cover these costs. The banks have indicated their willingness to help in this regard.

In response to a question regarding timing of the project, the Chair indicated that a letter would go out to residents to get their overall feeling on the project. If the response is favorable (51% of residents in agreement), Mr. Kohli would send a letter requesting details which relate to the piping connection for individual residents. The residents would have thirty (30) days to respond. If the project goes forward, completion would be expected between one to one and one-half years.

Mr. Davis joined the meeting at 6:25 p.m.

Mr. Cockerham brought up the fact that not all neighbors received notification of the meeting and asked that the Township review the mailing list of residents in the designated area under discussion.

In response to a question regarding the necessity for sewers, Ms. Vaughn stated that there have been a number of complaints regarding failing septic systems. This presents an environmental issue regarding the safety, health and welfare of residents. If enough failing systems turn up over time, the Department of Environmental Protection has the authority to mandate sewer installation. The Township is being proactive by offering residents the option of connecting to a sewer system. Several residents indicated that they were having a problem with their septic systems.

Ms. Vaughn stated that if the project did not go forward at this time, the price to the homeowner would likely increase.

The Township Engineer outlined the tapping fee as strictly for the sewer collection system design. The connection fee is for the house/street connection. In response to a question, Mr. Kohli stated that each property would require one connection, even if that property has two apartments.

The Chairperson of the East Whiteland Fire Company inquired if the Fire Company would be considered a business and, if so, would the cost be different than that charged to homeowners. This cost would be based on EDUs used.

A resident spoke to the charges which might be incurred when running the connection line from the house to the street due to particular piping lay-outs, oil tanks, trees, etc., on each individual property. He felt that the $25.00 per foot estimate mentioned above is low. Mr. Kohli responded that when individual responses are received, the lateral would be designed according to those responses. Ms. McMichael encouraged residents to contact a plumber to ascertain individual costs. In response to a question, Mr. Kohli responded that under the Ordinance, each home is required to have an individual hook-up, as opposed to sharing a line. Regarding placement of lines on individual property, Mr. Kohli stated that there is interplay between individual property owners and the Township on how things will be done.

Mr. Kohli gave a presentation of the project using the tax parcel map. Approximately 84 properties would be connected along Prospect, Gulfview, Elk, Fairview, Bracken and Planebrook. The sewer would be a gravity design. A number of properties will require an injector pump system, and the Township will supply this system which includes a pump, back-up pump, wet well and electrical panel. The pump will be located outside the residence. The resident will be responsible for the cost of installation. Mr. Kohli estimates that the actual cost for this particular neighborhood is $14,900.00 per household, however, the cost to the homeowner remains at $4,000.00. The main pump station is an approximately 10-ft. X 12-ft. building and will be maintained by the Township. Depth of the main line will be determined when the final engineering design is complete. Discussion ensued regarding placement of trunk lines. Sewer fees were discussed. Mr. Kohli explained that if the majority of neighbors elect to have sewers, everyone within 150 ft. of the line must connect. Anyone outside of that range does not have to connect.

The residents were invited to look at the plan.

There being no further business, Ms. Vaughn made a motion to adjourn the meeting. Ms. McMichael seconded the motion, and the meeting was adjourned at 7:20 p.m.

Respectfully submitted,

Mary Lou Knight
Assistant Township Secretary

Board of Supervisors
MICHELE VAUGHN, CHAIR
VIRGINIA McMICHAEL,
Vice Chair
GREGORY F. DAVIS
Member
TERRY H. WOODMAN
Township Manager

East Whiteland Township

209 CONESTOGA ROAD
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Codes Enforcement Officer
KENNETH N. BATTIN
Director of Codes
& Life Safety
WILLIAM H. STEELE
Public Works Director

TO: **PLANEBROOK ROAD AREA RESIDENTS**

FROM: **WILLIAM STEELE**

DATE: **APRIL 2, 2001**

RE: **PUBLIC SEWER**

East Whiteland Township has conducted a feasibility study in your area for the possibility of installing public sewer. There was a public meeting held on March 15, 2001 in the Municipal Building to discuss this potential project. (Meeting minutes attached) **As a follow up to that meeting we are asking all residents to respond on the enclosed post card.** This will help us to determine the interest in your area with regard to the addition of public sewer.

As discussed the costs to each homeowner would include a $4,000.00 tapping fee and a $350.00 connection fee. These would be the only fees paid to the Township to connect to the system. After connecting to the public sewer the sewer rental charge is $65.00 per quarter per EDU (equivalent dwelling unit) to total $260.00 per year.

There would be additional costs to each homeowner to contract with a plumber to install the lateral piping from the right of way to the house. Also to clean out and backfill the septic tank per Township regulations. These costs are estimated to be $25.00 per foot for the piping and $500.00 for the septic tank work. These costs could vary depending on conditions around your house.

The feasibility study has shown some homes would need a grinder pump to discharge your sewage into the Township system. The pit and pump would be supplied by the Township (at no addition cost) and installed by your plumber. It would then be owned and maintained by the property owner.

If you have any questions or concerns, please contact me at your earliest convenience. If you would like to contact the Township Supervisors you may reach them by calling Michele Vaughn (610-408-0793), Virginia McMichael (610-993-8725), or Gregory Davis (610-647-3586). **Please complete the enclosed post card and return it to the Township by April 30, 2001.** Thank you for your cooperation in this survey.

EAST WHITELAND TOWNSHIP
PLANEBROOK ROAD AREA
SEWER SURVEY APRIL 2001

PLEASE MARK ONE LINE BELOW

_____ **I WOULD** be interested in connecting to public sewer if it were made available to my property.

_____ **I WOULD NOT** be interested in connecting to public sewer.

_____
Signature

We received a total of 82 responses...

52 - Yes

30 - No

KOTROBA FRANK J
1 FAIRWAY DR
MALVERN PA 19355

RE: 1 FAIRWAY DR

BRYAN LEWIS F JR
13 FAIRWAY DR
MALVERN PA 19355

RE: 13 FAIRWAY DR

MCGUIRE DANIEL J
60 PLANEBROOK I
FRAZER PA 19355

RE: 60 PLANEBROOK RD

FZF ASSOCIATES
69 W INDIAN LA
NORRISTOWN PA 19403

RE: 5 S BACTON HILL RD

BRADLEY DAVID D
570 PARK RD
DOWNINGTOWN PA 19335

RE: 11 ELK DR

NEFF PAUL C
10 FAIRWAY DR
MALVERN PA 19355

RE: 10 FAIRWAY DR

LEMAN FRANK
11 GOLFVIEW RD
FRAZER PA 19355

RE: 11 GOLF VIEW LA

POWELL DONALD C
9 ELK DR
MALVERN PA 19355

RE: 9 ELK DR

MILLER RUTHERFORD S
606 SWEDESFORD
FRAZER PA 19355

RE: 606 SWEDESFORD RD

B & B HOMES INC
112 MOORES RD
STE 200 19355
MALVERN PA
RE: 102 N PHOENIXVILLE PK

EADEH FAMILY LIMITED
C/O EADEH ENTEI
511 OLD LANCASTER 19312
BERWYN PA
RE: 971 SWEDESFORD RD

AXIS FRAZER STORAGE LLC
24 LOUELLA CRT
STE 240 19087
WAYNE PA
RE: 32 BACTON HILL RD

ONEILL RUAIRI
20 ELK DR
MALVERN PA 19355

RE: 20 ELK DR

LOTZ CARL P
1 GOLF VIEW LA
FRAZER PA 19355

RE: 3 GOLF VIEW LA

SHEVLAND WILLIAM T
1738 TOWNE DR
WEST CHESTER PA 19380

RE: 31 COFFMAN ST

GRAY KIMBERLE M
14 COFFMAN LA
MALVERN PA 19355

RE: 14 COFFMAN ST

BLACKBURN ELIZ C
12 ELK DR
MALVERN PA 19355

RE: 12 ELK DR

PARK LANE GROUP INC
2 FOREST LAKE D
MEDIA PA 19063

RE: 1 BACTON HILL RD STE 201

KASH OSSAMA
6 BIRCH RD
MALVERN PA 19355

RE: 19 PROSPECT AV

MITCHELL ALBERT JR
8 S BACTON HILL
MALVERN PA 19355

RE: 8 S BACTON HILL RD

SHERMAN THERESA M
2 ELK DR
MALVERN PA 19355

RE: 2 ELK DR

GOLDEN GREGORY T
4 FAIRWAY DR
MALVERN PA 19355

RE: 4 FAIRWAY DR

DOMENICK THOMAS W
159 PLANEBROOK
FRAZER PA 19355

RE: 159 PLANEBROOK RD

EAST WHITELAND TOWNSHIP VOLUNTI
170 PLANEBROOK
FRAZER PA 19355

RE: 162 PLANEBROOK RD

EAST WHITELAND
170 PLANEBROOK
FRAZER PA 19355

RE: 170 PLANEBROOK RD

WAREHOUSE PARTNERSHIP L P
100 LAWRENCE D
WEST CHESTER PA 19380

RE: 961 SWEDESFORD RD

BRD GENERAL PARTNERSHIP
8 BACTON HILL R
FRAZER PA 19355

RE: 72 BACTON HILL RD

EADEH FAMILY LIMITED
C/O EADEH ENTEI
511 OLD LANCASTER 19312
BERWYN PA
RE: 101 N PHOENIXVILLE PK

SEGERMARK RICHARD L
316 N WAYNE AVI
WAYNE PA 19087

RE: 20 BACTON HILL RD

FERNANDES RICHARD A JR
10 BACTON HILL I
MALVERN PA 19355

RE: 10 BACTON HILL RD

WAREHOUSE PARTNERS L P
100 LAWRENCE D
WEST CHESTER PA 19380

RE: 963 SWEDESFORD RD

REDFERN EDNA W
76 PLANEBROOK
MALVERN PA 19355

RE: 76 PLANEBROOK RD

ABEL H JOHN
111 PHOENIXVILL
MALVERN PA 19355

RE: 111 N PHOENIXVILLE PK

GREAT VALLEY SCHOOL
47 CHURCH RD
MALVERN PA 19355

RE: 5 BACTON HILL RD

FOGG EDWARD C
32 SABRINA DR
REHOBOTH BEACH D 19971

RE: 7 ELK DR

AZAT JACK A
577 LANCASTER A
FRAZER PA 19355

RE: 577 LANCASTER AV

AZAT JACK A
577 LANCASTER A
FRAZER PA 19355

RE: 12 PROSPECT AV

WATTS STOUGHTON L
16 FAIRWAY DR
MALVERN PA 19355

RE: 16 FAIRWAY DR

ANTHONY MARTIN J
37 COFFMAN ST
MALVERN PA 19355

RE: 37 COFFMAN ST

SMITH-LITTLE SHELLEY
6 S BACTON HILL
FRAZER PA 19355

RE: 16 S BACTON HILL RD

AMERIGAS PROPANE LP
460 N GULPH RD
KING OF PRUSSIA PA 19406

RE: 9 BACTON HILL RD

FLIECK KAREN L
15 FAIRWAY DR
MALVERN PA 19355

RE: 15 FAIRWAY DR

CHESTER VALLEY GOLF CLUB
430 SWEDESFORD
FRAZER PA 19355

RE: 430 SWEDESFORD RD

FORCINE JOSEPH A
282 WOODLAND R
STRAFFORD PA 19087

RE: 964 SWEDESFORD RD

S R S LEASING A PRTN
C/O UTZ QUALITY
900 HIGH ST 17331
HANOVER PA

RE: 11 S BACTON HILL RD

SEKOLA ROBERT T
68 PLANEBROOK
MALVERN PA 19355

RE: 68 PLANEBROOK RD

GREAT VALLEY SCHOOL
ATTN CHARLES E
47 CHURCH RD 19355
MALVERN PA

RE: 7 BACTON HILL RD

HILL HOWARD A
3 BACTON HILL R
FRAZER PA 19355

RE: 3 BACTON HILL RD

EADEH FAMILY LIMITED
C/O EADEH ENTEI
511 OLD LANCASTER 19312
BERWYN PA

RE: 969 SWEDESFORD RD

SMITH CRAIG S
18 ELK DR
MALVERN PA 19355

RE: 18 ELK DR

CAPRIOLA ROBERT J
522 E SWEDESFOR
MALVERN PA 19355

RE: 522 SWEDESFORD RD

HINKLE BARRY L
16 GOLFVIEW LA
MALVERN PA 19355

RE: 16 GOLF VIEW LA

MCKAY SARA MAE TRU
9 PROSPECT AVE
MALVERN PA 19355

RE: 9 PROSPECT AV

COCKERHAM GLENN H
420 LANCASTER A
MALVERN PA 19355

RE: 24 PROSPECT AV

FRANCIS BRADLEY L
824 MONTEITH DR
WAYNE PA 19087

RE: 25 DAVIS AV

WRIGHT CHRISTOPHER
12 FAIRWAY DR
MALVERN PA 19355

RE: 12 FAIRWAY DR

HERWIG JOANNE M
6 GOLF VIEW LA
MALVERN PA 19355

RE: 2 PROSPECT AV

EDWARDS MICHAEL CHARLES
6 FAIRWAY DR
MALVERN PA 19355

RE: 6 FAIRWAY DR

DAVIS WILLIAM E
92 PLANEBROOK
MALVERN PA 19355

RE: 92 PLANEBROOK RD

ABRAHAM JAMES W JR
27 PROSPECT AVE
MALVERN PA 19355

RE: 27 PROSPECT AV

SAMPATH ANAND
511 SWEDESFORD
MALVERN PA 19355

RE: 511 SWEDESFORD RD

KIRKPATRICK DONALD M JR
32 N BACTON HILl
FRAZER PA 19355

RE: 32 BACTON HILL RD

CAPETOLA ANGELO
8 FAIRWAY DR
MALVERN PA 19355

RE: 8 FAIRWAY DR

TROFFO FRANK L
9 GOLF VIEW LA
FRAZER PA 19355

RE: 9 GOLF VIEW LA

AZAT ADIL J
7 GOLF VIEW LA
MALVERN PA 19355

RE: 7 GOLF VIEW LA

THOMAS MICHAEL
532 SWEDESFORD
FRAZER PA 19355

RE: 532 SWEDESFORD RD

STANTON DOUGLAS F
612 SWEDESFORD
FRAZER PA 19355

RE: 612 SWEDESFORD RD

BLACKLOCK ALLEN H
902 SHILOH RD
WEST CHESTER PA 19382

RE: 4 GOLF VIEW LA

LORINE JEFFREY J
15 GOLFVIEW RD
FRAZER PA 19355

RE: 15 GOLF VIEW LA

BABCOCK LLOYD J
10 DAVIS AVE
PO BOX 727 19355
FRAZER PA
RE: 14 DAVIS AV

AZAT JACK A
577 LANCASTER A
FRAZER PA 19355

RE: 581 LANCASTER AV

ZIMMERMAN DAVID P
13 ELK DR
MALVERN PA 19355

RE: 13 ELK DR

PELLE CHARLES
31 ISABELLA RD
ELVERSON PA 19520

RE: 36 BRACKEN AV

GILMORE THOMAS C
1 DAVIS AVE
MALVERN PA 19355

RE: 31 DAVIS AV

COCKERHAM BARRY M
148 PLANEBROOK
FRAZER PA 19355

RE: 148 PLANEBROOK RD

EUSTICE THOMAS F
15 ELK DR
MALVERN PA 19355

RE: 15 ELK DR

PHILA ELECTRIC CO
2301 MARKET ST
PHILADELPHIA PA 19101

RE:

BACTON HILL ROAD
28 N BACTON HILl
MALVERN PA 19355

RE: 28 BACTON HILL RD

LACONI ROBERTA ANN
10 COFFMAN ST
FRAZER PA 19355

RE: 10 COFFMAN ST

BEVEVINO MARK A
23 SPRING LEA LA
CHESTER SPRINGS PA 19425

RE: 24 BACTON HILL RD

WAITE FREDRIC J
509 SWEDESFORD
MALVERN PA 19355

RE: 509 SWEDESFORD RD

PROTESTO ROBERT V
2021 GRANTHAM
BERWYN PA 19312

RE: 157 PLANEBROOK RD

TAYLOR MELONY
30 PROSPECT AVE
FRAZER PA 19355

RE: 30 PROSPECT AV

BAYLES WILLIAM H JR
514 SWEDESFORD
MALVERN PA 19355

RE: 514 SWEDESFORD RD

EADEH LESLIE W REVOCABLE TRUST
511 OLD LANCAST
BERWYN PA 19312

RE: 967 SWEDESFORD RD

WHETSTONE DAVID D
610 SWEDESFORD
FRAZER PA 19355

RE: 610 SWEDESFORD RD

RE:

BLACKLOCK ALLEN H
902 SHILOH RD
WEST CHESTER PA 19382

RE: 24 DAVIS AV

CODY PROPERTIES INC
131 SUGARTOWN
DEVON PA 19333

RE: 960 SWEDESFORD RD

CLONBEAG INC
17 S BACTON HILl
FRAZER PA 19355

RE: 14 S BACTON HILL RD

JULIANA RALPH L
2 S BACTON HILL
FRAZER PA 19355

RE: 2 S BACTON HILL RD

JULIANA VINCENT A
973 E SWEDESFOR
EXTON PA 19341

RE: 973 SWEDESFORD RD

SHEINBACH HAROLD
33 COOL VALLEY
MALVERN PA 19355

RE: 11 BACTON HILL RD

HAPP EDWARD M III
513 SWEDESFORD
MALVERN PA 19355

RE: 513 SWEDESFORD RD

BROOME JAY
21 ELK DR
MALVERN PA 19355

RE: 21 ELK DR

BEVEVINO MARK A
23 SPRING LEA LA
CHESTER SPRINGS PA 19425

RE: 26 BACTON HILL RD

CANTRELL G BARCLAY JR
965 E SWEDESFOR
EXTON PA 19341

RE: 965 SWEDESFORD RD

ANTHONY MARTIN J
37 COFFMAN ST
MALVERN PA 19355

RE: 45 COFFMAN ST

SLONE WADE
5 CHARLES ST
MALVERN PA 19355

RE: 5 CHARLES ST

COATE JAMES M
10 ELK DR
MALVERN PA 19355

RE: 10 ELK DR

EAST WHITELAND TOWNSHIP
209 CONESTOGA I
MALVERN PA 19355

RE: 160 PLANEBROOK RD

REDFERN TRACE G
10 S BACTON HILI
FRAZER PA 19355

RE: 10 S BACTON HILL RD

LEHMANN GRACE W
5 ELK DR
FRAZIER PA 19355

RE: 5 ELK DR

DELLAPENNA LILLIAN
2 FAIRWAY DR
MALVERN PA 19355

RE: 2 FAIRWAY DR

BROGAN STEPHEN J
C/O CHRISTINE M
280 SNYDER AVE 19382
WEST CHESTER PA
RE: 33 PROSPECT AV

AUGUSTINE ALBERT A
1914 BRANDON RI
NORRISTOWN PA 19403

RE: 113 PLANEBROOK RD

COCKERHAM MCCOY R
150 PLANEBROOK
FRAZER PA 19355

RE: 150 PLANEBROOK RD

COCKERHAM MCCOY R
150 PLANEBROOK
FRAZER PA 19355

RE: 150 PLANEBROOK RD

R & B INVESTMENTS
176 PLANEBROOK
FRAZER PA 19355

RE: 176 PLANEBROOK RD

BROGAN STEPHEN J
C/O CHRISTINE M
280 SNYDER AVE 19382
WEST CHESTER PA
RE: 35 PROSPECT AV

VIGUERS SCOTT J
4 ELK DR
MALVERN PA 19355

RE: 4 ELK DR

JAMES SPRING & WIRE CO
PO BOX 878
FRAZER PA 19355

RE: 6 BACTON HILL RD

BRAUN RAYMOND J
84 PLANEBROOK I
MALVERN PA 19355

RE: 84 PLANEBROOK RD

HARNSBERGER ROBERT C
16 ELK DR
MALVERN PA 19355

RE: 16 ELK DR

SUTER DAVID A & KERRI L
23 PROSPECT AVE
MALVERN PA 19355

RE: 23 PROSPECT AV

PURCELL KATHRYN MCKEEMAN
7524 RENATO CRT
SARASOTA FL 34238

RE: 45 PROSPECT AV

FRAZER EXTON DEVELOPMENT
1075 ANDREW DR
SUITE I 19380
WEST CHESTER PA
RE: 954 SWEDESFORD RD

KCBD ASSOCIATES LP
22A BACTON HILI
FRAZER PA 19355

RE: 22 BACTON HILL RD

LOTZ CARL P
1 GOLF VIEW LA
FRAZER PA 19355

RE: 1 GOLF VIEW LA

HERWIG KARL F
6 GOLF VIEW LA
MALVERN PA 19355

RE: 175 PLANEBROOK RD

HERWIG KARL F
6 GOLF VIEW LA
MALVERN PA 19355

RE: 173 PLANEBROOK RD

MILLER RUTHERFORD S
606 SWEDESFORD
FRAZER PA 19355

RE: 606 SWEDESFORD RD

HOERR BRUCE TIMOTHY
52 PLANEBROOK I
MALVERN PA 19355

RE: 52 PLANEBROOK RD

GU BAOHUA
505 SWEDESFORD
MALVERN PA 19355

RE: 505 SWEDESFORD RD

CALHOUN WILLIAM M
3 ELK DR
MALVERN PA 19355

RE: 3 ELK DR

ABEL CECIL B
1 ELK DR
MALVERN PA 19355

RE: 1 ELK DR

GOSLIN DONALD N JR & ELIZABETH BL
6 ELK DR
MALVERN PA 19355

RE: 6 ELK DR

CLONBEAG INC
17 S BACTON HILI
FRAZER PA 19355

RE: 17 S BACTON HILL RD

BRADSHAW MICHAEL H
PO BOX 757
FRAZER PA 19355

RE: 600 SWEDESFORD RD

DIMARCELLO NICHOLAS
223 PLANEBROOK
FRAZER PA 19355

RE: 223 PLANEBROOK RD

SHERIDAN GARY J
14 GLEN LOCH W/
MALVERN PA 19355

RE: 13 PROSPECT AV

KRUEMMLING ERNST K
440 CREEKSIDE DI
DOWNINGTOWN PA 19335

RE: 177 PLANEBROOK RD

KIRK JOHN
10 GOLFVIEW LA
MALVERN PA 19355

RE: 10 GOLF VIEW LA

COZZONE FLORENCE
507 GREEN HILL L
BERWYN PA 19312

RE: 16 PROSPECT AV

GALLAGHER MEGAN E
18 PROSPECT AVE
MALVERN PA 19355

RE: 18 PROSPECT AV

AMODEI MICHAEL L
19 ELK DR
MALVERN PA 19355

RE: 19 ELK DR

MARTINDALE GARY L
12 GOLFVIEW LA
MALVERN PA 19355

RE: 12 GOLF VIEW LA

SHAVER DAVID N
15 WINDING WAY
MALVERN PA 19355

RE: 26 PROSPECT AV

WAWA INC
260 W BALTIMORI
WAWA PA 19063

RE: 567 LANCASTER AV

SWEDESFORD CORP CENTER
C/O MICHAEL S LI
ONE BACTON HILL SC 19355
FRAZER PA

RE: 601 SWEDESFORD RD

WAY CHRISTOPHER V
503 SWEDESFORD
MALVERN PA 19355

RE: 503 SWEDESFORD RD

MCGARVEY THOMAS J
31 PROSPECT AVE
MALVERN PA 19355

RE: 31 PROSPECT AV

CATREN ROBERT H
3 CHARLES ST
MALVERN PA 19355

RE: 3 CHARLES ST

WARREN MARY
C/O KATHLEEN A
250 CARLYN CRT 19335
DOWNINGTOWN PA

RE: 14 PROSPECT AV

FEDOR RUDOLPH A JR
69 W INDIAN LA
NORRISTOWN PA 19403

RE: 4 CHARLES ST

AZAT JACK A
577 LANCASTER A
FRAZER PA 19355

RE: 17 PROSPECT AV

HEDGLIN MARGARET E
4 S BACTON HILL
MALVERN PA 19355

RE: 4 S BACTON HILL RD

EAST WHITELAND TOWNSHIP
209 CONESTOGA I
MALVERN PA 19355

RE: 158 PLANEBROOK RD

MCKEEMAN RALPH L
41 PROSPECT AVE
FRAZER PA 19355

RE: 47 PROSPECT AV

BEVEVINO MARK
23 SPRING LEA LA
CHESTER SPRINGS PA 19425

RE: 28 BACTON HILL RD

MERCER ERIC
14 FAIRWAY DR
MALVERN PA 19355

RE: 14 FAIRWAY DR

AZAT JACK A
577 LANCASTER A
FRAZER PA 19355

RE: 585 LANCASTER AV

HERWIG KARL F
6 GOLF VIEW LA
MALVERN PA 19355

RE: 6 GOLF VIEW LA

CLARK KEVIN M
17 ELK DR
MALVERN PA 19355

RE: 17 ELK DR

WATSON DONALD F
13 GOLFVIEW LA
MALVERN PA 19355

RE: 13 GOLF VIEW LA

GILLESPIE LEONARD J
14 GOLFVIEW RD
MALVERN PA 19355

RE: 14 GOLF VIEW LA

DOMENICK THOMAS W
159 PLANEBROOK
FRAZER PA 19355

RE: 12 FAIRWAY DR

SEGERMARK RICHARD L
316 N WAYNE AVI
WAYNE PA 19087

RE: 45 COFFMAN ST

LIPSON ERIK
507 SWEDESFORD
MALVERN PA 19355

RE: 507 SWEDESFORD RD

NORCINI MARY MCKEEMAN
43 PROSPECT AVE
FRAZER PA 19355

RE: 43 PLANEBROOK RD

MCKEEMAN RALPH L
41 PROSPECT AVE
FRAZER PA 19355

RE: 41 PROSPECT AV

BRANDER PETER
14 ELK DR
MALVERN PA 19355

RE: 14 ELK DR

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED
APR 20 2017
By

APR 17 2017

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Act 537 Special Study
Frame Avenue/Planebrook Road Regional Pump Station
and Force Main
Status: ISSUED
APS ID 38912, AUTH ID 1175131
East Whiteland Township
Chester County

Dear Mr. Nagel:

We have completed our review of your municipality's proposed Official Sewage Facilities Plan Special Study for the Planebrook Road Regional Pump Station and Force Main in East Whiteland Township (Township), Chester County. The Special Study, titled East Whiteland Township Frame Avenue/ Planebrook Road Act 537 Special Study (Special Study), was prepared by ARRO Engineering & Environmental Consultants, and is dated December 2016. This Special Study was submitted to the Department of Environmental Protection (DEP) and a review was conducted in accordance in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program. Additional information in support of the December 2016 Special Study was received by DEP on March 29, 2017.

Approval of the Special Study is hereby granted. This approval provides for the following:

1. The construction of a regional pump station in place of the existing temporary pump station currently serving the Cockerham Tract Development. This regional pump station will be designed to accommodate total average annual flows of 151,325 gallons of sewage per day (gpd), which accounts for the existing flows to the Frame Avenue pump station, including flows from the Cockerham Tract and Celia Tract developments, and for flows from the properties currently served by individual on-lot disposal systems along and adjacent to Planebrook Road. The sewer service area for the regional pump station is delineated in the East Whiteland Township Regional Pump Station Planning Area plan found in Appendix C of the Special Study. The permitting and construction of the proposed regional pump station shall be completed consistent with the implementation schedule received by DEP on March 29, 2017.

2. The construction of an 8-inch force main that will extend from the proposed regional pump station through a sewer easement within the Cockerham Tract development, through an easement between existing homes near Planebrook Road, and along Planebrook Road to the point of connection with the existing Whiteland Village Interceptor north of the intersection of Planebrook Road and Swedesford Road. The permitting and construction of the proposed force main shall be completed consistent with the implementation schedule received by the DEP on March 29, 2017.

3. The decommissioning of the existing Frame Avenue Pump Station and the abandonment of the existing Frame Avenue force main that extends from the Frame Avenue pump station along Frame Avenue, through various properties to the point of connection to the existing gravity sewer within Lancaster Avenue (Route 30).

4. Commitment for additional sewage facilities planning for the proposed collection system to serve the properties currently served by on-lot disposal systems along and adjacent to Planebrook Road. This additional sewage facilities planning will be required to be adopted by the Township and approved by DEP prior to the connection of these properties to public sewer. The timing of this future planning effort will be triggered by the start of construction of the Planebrook Road Regional Pump Station and force main consistent with the implementation schedule received by the DEP on March 29, 2017.

The Special Study states that construction is currently ongoing on the sanitary sewer "connector" that will allow wastewater to be conveyed from the Whiteland Village Interceptor to the Mill Lane Pump Station. The Special Study also states that the Township is currently performing maintenance on the Whiteland Village Interceptor in preparation of placing the interceptor into service. As the proposed regional pump station and force main will be connecting the existing sewer system via the Whiteland Village Interceptor, construction of the proposed regional pump station and force main must be coordinated with the construction and completion of the missing link "connector" sewer.

The approved project will also require East Whiteland Township to secure a Water Quality Management (Part II) permit for the construction and operation of the proposed sewage collection and conveyance facilities. Issuance of a Part II permit will be based upon a technical evaluation of the permit application and supporting documentation. Starting construction prior to obtaining a Part II permit is a violation of the Pennsylvania Clean Streams Law (CSL).

Other DEP permits may be required for construction if encroachment to streams or wetlands will result. Information regarding the requirements for such permits or approvals can be obtained from DEP's Watershed Management Program at the letterhead address, by telephone at 484.250.5970 or downloaded from the Internet at www.dep.state.pa.us/dep/deputate/watermgt/wqp/forms/forms_home.htm.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by the DEP.

We note that the Chester County Health Department, in their letter of October 7, 2016, advised the Township of issues with the existing on-lot sewage disposal system serving the Chester Valley Golf Club. In response, the Township noted that the golf course property lies outside of the planning area of the Special Study but that the property was included in the public sewer service area in the Township's Mill Lane Pumping Station Special Study. The Township anticipates that future extension of the sanitary sewer system to serve Church Road will provide a connection for the golf course property. As the timing of this future sanitary sewer extension is currently unknown, we recommend that the Township work with the Chester Valley Golf Club to explore the possibility of connecting to Manhole 126F once the missing link "connector" sewer construction is complete and in operation.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE; HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions, please contact Ms. Kelly Boettlin of this office at 484.250.5184.

Sincerely,

Jenifer Fields, P.E.
Regional Manager
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Chester County Conservation District
Mr. Steele – East Whiteland Township
Valley Forge Sewer Authority
Tredyffrin Township
Mr. Bohner – ARRO Engineering & Environmental Consultants
Planning Section
Re 30 (GJE17CLW)130-6

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

RECEIVED
JUL 21 2017
By

July 18, 2017

CERTIFIED MAIL NO. 7015 0640 0002 3146 7453

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazier, PA 19355-1633

Re: WQM Permit - Sewage
Planebrook Road Regional Pump Station
Permit No. 1517401
Authorization ID No. 1170374
East Whiteland Township
Chester County

Dear Mr. Nagel:

Your Water Quality Management (WQM) permit is enclosed. You must comply with all Standard and Special Conditions attached to this Permit. Construction must be done in accordance with the permit application and all supporting documentation. Please review the permit conditions and the supporting documentation submitted with your application before starting construction.

Please note that you are responsible for securing all other required permits, approvals and/or registrations associated with the project, if applicable, under Chapters 102 (erosion and sedimentation control), 105 (stream obstructions and encroachments) and 106 (floodplains) of DEP's regulations. Construction may not proceed until all other required permits have been obtained.

Enclosed is the "Water Quality Management Post Construction Certification" form. A Pennsylvania-registered Professional Engineer must sign and complete this form prior to startup of the facilities. You or your authorized representative must also sign the form. This certification and other post-construction documentation must be submitted to DEP within 30 days of completion of the project and must be received by DEP prior to commencing operation of the facilities.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please contact Mr. James Roth at 484.250.5169.

Sincerely,

Jenifer L. Fields, P.E.
Regional Manager
Clean Water

Enclosures

cc: Chester County Health Department
Mr. Bohner, P.E. – ARRO Consulting, Inc.
Operations
Re 30 (GJE17CLW)109-1

3800-PM-WSFR0015 1/2011
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

PERMIT NO. 1517401

AMENDMENT NO. _____

APS ID. 933885

AUTH. ID. 1170374

WATER QUALITY MANAGEMENT PERMIT

A. PERMITTEE (Name and Address): CLIENT ID#: 78789 East Whiteland Township 209 Conestoga Road Frazier, PA 19355-1633	B. PROJECT/FACILITY (Name): Planebrook Road Regional Pump Station
C. LOCATION (Municipality, County): East Whiteland Township, Chester County	SITE ID#: 527339

D. THIS PERMIT APPROVES THE CONSTRUCTION AND OPERATION OF SEWAGE FACILITIES CONSISTING OF: a pump station and force main.

Pump Stations: Planebrook Road	Manure Storage:	Sewage Treatment Facility:
Design Capacity: 394 GPM	Volume: _____ MG	Annual Average Flow: _____ MGD
ACT 537 Flow: 151,325 GPD	Freeboard: _____ inches	Design Hydraulic Capacity: _____ MGD
		Design Organic Capacity: _____ lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **New Permits:** All construction, operations and procedures shall be in accordance with the Water Quality Management Permit application dated 1/13/2017, its supporting documentation and addendums dated _____, which are hereby made a part of this permit.

   Amendments: All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation and addendums dated _____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

   Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.
3. Special Conditions _____ are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED:

July 18, 2017

BY: _____

Jenifer L. Fields, P.E.
TITLE: Clean Water Program Manager
Southeast Regional Office

3800-PM-WSFR0179a 9/2005
Post Construction Certification

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

WATER QUALITY MANAGEMENT
POST CONSTRUCTION CERTIFICATION

PERMITTEE IDENTIFIER	
Permittee	East Whiteland Township
Municipality	East Whiteland Township
County	Chester
WQM Permit No.	1517401
Facility Type	Sewage (Planebrook Road Regional Pump Station)

All of the above information should be taken directly from the Water Quality Management Permit.

CERTIFICATION

This certification must be completed and returned to the permits section of the DEP's regional office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, and if requested, as-built drawings, photographs (if available) and a discussion of any DEP-approved deviations from the design plans during construction.

I, being a Registered Professional Engineer in Pennsylvania, do hereby certify to the best of my knowledge and belief, based upon personal observation and interviews, that the above facility approved under the Water Quality Management Permit has been constructed in accordance with the plans, specifications and modifications approved by DEP.

Construction Completion Date (MM/DD/YYYY): _____

Engineer's Seal

Professional Engineer

Name _____
(Please Print or Type)

Signature

Date

License Expiration Date

Firm or Agency

Telephone

Permittee or Authorized Representative

Name _____
(Please Print or Type)

Signature

Title

Telephone

Permit No. 1517401

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

PERMIT CONDITIONS RELATING TO SEWERAGE

For use in Water Quality Management Permits

(Check boxes that apply)

General

☒ 1. The Department of Environmental Protection (DEP) considers the licensed Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.

☐ 2. The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.

☐ 3. The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.

☒ 4. The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.

☐ 5. When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.

☒ 6. The approval of the plans, and the authority granted in this permit, if not specifically extended, shall cease and be null and void 2 years from the issuance date of this permit unless construction or modification of the facilities covered by this permit has begun on or before the second anniversary of the permit date.

☒ 7. If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.

☐ 8. If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.

☒ 9. This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.

☒ 10. This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.

☐ 11. The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No. _____ and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.

Construction

☒ 12. This permit is issued under the authorization of The Clean Streams Law and 25 Pa. Code Chapter 91. The permittee shall obtain all necessary permits, approvals and/or registrations under 25 Pa. Code Chapters 102, 105 and 106 prior to commencing construction of the facilities authorized by this permit, as applicable. The permittee should contact the DEP office that issued this permit if there are any questions concerning the applicability of additional permits.

☒ 13. The facilities shall be constructed under the supervision of a Pennsylvania licensed Professional Engineer in accordance with the approved reports, plans and specifications.

☒ 14. A Pennsylvania licensed Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" form (3800-PM-WSFR0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. As-built drawings, photographs (if available) and a description of all deviations from the application and design plans must be submitted to DEP within 30 days of certification.

☒ 15. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.

☐ 16. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

Operation and Maintenance

☒ 17. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.

☒ 18. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.

☒ 19. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.

☒ 20. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.

☒ 21. The sewerage facilities shall be properly operated and maintained to perform as designed.

☒ 22. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.

☐ 23. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, *et seq.* shall operate the sewage treatment plant.

☐ 24. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.

☒ 25. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.

☒ 26. All connections to the approved sanitary sewers must be in accordance with the official Act 537 Plan and, if applicable, a corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.

☒ 27. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.

EXHIBIT P6

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(PLANNING MODULES)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SENT VIA ELECTRONIC MAIL ONLY

February 26, 2021

Mr. John Nagel, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

Re: Approval Letter – Minor Act 537 Plan Update
Planebrook Road Area Sewer Extension
Component 3m
Status: ISSUED
APS No. 38912, Site ID No. 518980
East Whiteland Township
Chester County

Dear Mr. Nagel:

We have completed our review of your municipality's Minor Act 537 Update Revision for Planebrook Road Area Sewer Extension Component 3m for East Whiteland Township ("Township"), Chester County, as prepared by ARRO Consulting, Inc. The plan was received by the Department of Environmental Protection ("DEP") on July 30, 2020. Additional information in support of this plan was received by DEP on October 19, 2020 and January 25, 2021. This plan is being submitted to the Department in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the plan is hereby granted.

The plan provides for a connection of 84 residential and commercial properties along Planebrook Road, Prospect Avenue, Golfview Circle, Bracken Avenue, Davis Avenue, Elk Avenue and Fairview Drive. Elk Drive and Fairview Drive will connect via low-pressure force mains. Gravity sewer mains will be extended along the remaining roads. The proposed collection system will connect to an existing manhole in Planebrook Road that is tributary to the new Planebrook Regional Pump Station.

This project will be connected to the Township's collection system and will generate 29,425 gallons of sewage per day to be treated at the Valley Forge Sewer Authority Wastewater Treatment Facility.

The proposed collection system will be owned by the Township and will serve the Planebrook Road service area as described above. Properties that will connect to the proposed low-pressure sewers within Elk Drive and Fairview Drive will connect via grinder pumps and force main laterals which will be owned by the respective property owners.

The approved project will require a Water Quality Management (Part II) permit for the construction and operation of the proposed common force mains. The permit application must be submitted in the name of the Township. Issuance of a Part II permit will be based upon a technical evaluation of the permit

application and supporting documentation. Starting construction prior to obtaining a permit is a violation of the Clean Streams Law.

This plan approval does not include approval of the system design for the proposed conveyance system. The system design will be evaluated and approved as part of the Water Quality Management (Part II) permit application review.

The permitting and construction of the proposed collection system shall be completed consistent with the implementation schedule received by DEP on October 19, 2020.

This approval is specifically made contingent upon the applicant acquiring all necessary property rights by easement or otherwise, providing for the satisfactory construction, operation, maintenance, and replacement of all sewerage structures associated with the approved discharge in, along, or across private property, with full rights of ingress, egress and regress.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at http://ehb.courtapps.com or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions, please contact Ms. Kelly Boettlin of this office at 484.250.5184 or at kboettlin@pa.gov.

Sincerely,

Mr. Thomas Magge
Regional Manager
Clean Water

cc: Mr. Skiljo - Chester County Health Department (via email)
Ms. Conwell - Chester County Planning Commission (via email)
Mr. Strohmaier - Chester County Conservation District (via email)
Mr. Stoltz - Valley Forge Sewer Authority (via email)
Mr. Bubel - Aqua America (via email))
Mr. Burgo - Tredyffrin Township (via email)
Mr. Bohner - ARRO Consulting, Inc.
Mr. Neild - East Whiteland Township (via email)
RCSOB, 11th Floor, Sewage Facilities, Attn.: Janice Vollero (via email)
Planning Section
Re

DocuSign Envelope ID: 7DC5C824-79C6-4C38-9EA4-0449A91B3B1B

EAST WHITELAND TOWNSHIP
THE HEART OF GREAT VALLEY

209 Conestoga Road
Frazer, Pennsylvania 19355-1699
Telephone: 610-648-0600
www.eastwhiteland.org

Board of Supervisors: Susan Drummond • Scott Lambert • Richard Orlow **Township Manager:** John Nagel

January 25, 2021

Kelly Boettlin
Sewage Planning Specialist 2
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

RE: East Whiteland Township Act 537 Component 3m
Response to November 19, 2020 Review Comments.
Planebrook Road Area Sanitary Sewer Extension.
ARRO# 10310.36

Dear Ms. Boettlin:

We would like to take this opportunity to provide you with the requested information and responses to your review comments for the above referenced Act 537 Component 3m for the proposed Planebrook Road public sewer extension. We are submitting one (1) copy of the enclosed documentation in addition to the electronic copy provided to you via email.

Comment 1:

A plan of the Township's sewer system was provided but it did not provide the information requested in Item 5 of our September 24, 2020 review letter. Specifically, it did not show the location of the new Planebrook Regional Pump Station or its associated force main which is proposed to convey the sewage from the proposed collection sewers. Please provide a general map showing the path of the sewage from the point at which it connects into the existing sewer system to the receiving treatment plant.

Response:

Please see the attached plans for your reference.

Comment 2:

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In addition, it appears that the proposed collection system will connect to the Township's existing sewer system via a single point of connection from a manhole in Planebrook Road that is tributary to the new Planebrook Regional Pump Station. Please confirm.

Response:

That is correct.

Comment #3:

As requested by Item 7.c. of our September 24, 2020 review letter please state whether this area has experienced a high rate of on-lot malfunctions.

Response:

The land uses adjacent to the planning area are residential, office/business, and commercial. In item #2 above, the planned extension of the sanitary sewer system (to serve these properties) extends back to planning (and Department approval of this planning) to make this a future public sewer service area. Residents in this area have expressed and interest in having public sewer service and have been given an opportunity to express their desires (once in the 2000's and again in 2019). The selected alternative was chosen over the no action alternative since this area was previously defined and approved as a public sewer service area in prior planning (2011).ndic

To date, the Township has not received any formal notifications or complaints regarding failing on-lot systems. That said, the Township has received some inquiries from residents asking when the project will be built. This is, in part, because some residents' systems have expressed concern that their on-lot systems are showing signs of deterioration with the potential to fail.

Comment #4:

Section K requires that permittees of the receiving collection, conveyance and treatment facilities certify capacity for the project flows. As requested by Item 10 of our September 24, 2020 review letter, please have Section K completed by Aqua Resources, Inc., the permittee of the Valley Creek Trunk Sewer and Wilson Road Pump Station.

Response:

Please see the attached Section K completed by Aqua Resources, Inc.

Comment #5:

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The Township has requested in response to Item 13 of our September 24, 2020 review letter that they not have to republish for this project. DEP understands that the current pandemic has placed restrictions on typical municipal operations and has accepted alternate means of providing access to planning documents to the general public. However, while the Township's May 28, 2020 public notice in the Daily Local News provided access to the planning document on the Township's website, the notice did not state the address of the Township's website. In addition, the May 28, 2020 public notice directed written comments to be addressed to Mr. John Nagel, Township Manager, but the notice did not provide contact information for Mr. Nagel in either the form of a mailing address or an electronic mail address. Without the website and municipal contact information, the May 28, 2020 public notice does not meet the public notice requirements. As such, this project will need to be republished to include this information. We also continue to recommend that an alternative for viewing in addition to the Township's website also be provided for those people that may not have access to the internet. A copy of the public notice in the form of a notarized Proof of Publication should be submitted with the official planning module resubmission along with copies of any written comments received during the 30-day public comment period. Please also include the municipal response to these comments. If no comments are received, you may submit a letter to that effect and check the appropriate box in Section O of the Component 3m planning module.

Response:

Please see the attached notarized proof of publication and the letter stating that no public comments were received. The appropriate box in Section O has been checked.

Please let us know if you have any additional questions or would like further clarification. Thank you again for your attention to the review of the Act 537 Planning document.

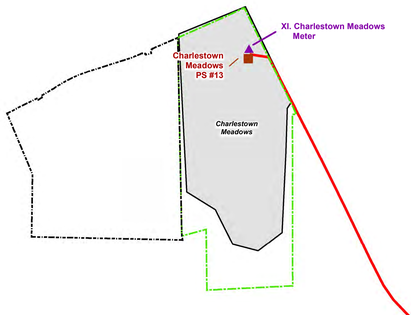
Sincerely,

Donna Wikert

East Whiteland Township

Cc: John Nagel – East Whiteland Township
John Neild – East Whiteland Township
John Mott, P.E. – ARRO
William Bohner, Jr., P.E. – ARRO

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA



Pump Stations

1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
9. Church Rd
10. Frame Ave
11. Hillbrook Circle
12. King Rd
13. Charlestown Meadows

Meters

I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows

LEGEND

- Manholes
- Meters
- PumpStations
- Laterals
- Weston Master Plan Area
- Municipal Boundaries
- Lakes & Ponds
- Streams
- Subdivisions
- Parcel Boundaries
- Valley Forge Service Area
- Valley Forge Service Area Proposed
- Future Developments
- Force Mains & Size
- 8" Gravity Sewer
- 10" Gravity Sewer
- 12" Gravity Sewer
- 12" Gravity (Proposed)
- 15" Gravity Sewer
- 16" Gravity Sewer
- 18" Gravity Sewer
- 20" Gravity Sewer
- 24" Gravity Sewer
- 27" Gravity Sewer
- 36" Gravity Sewer
- Unknown Pipe Diameter

0 600 1,200
Feet

1 inch = 600 feet

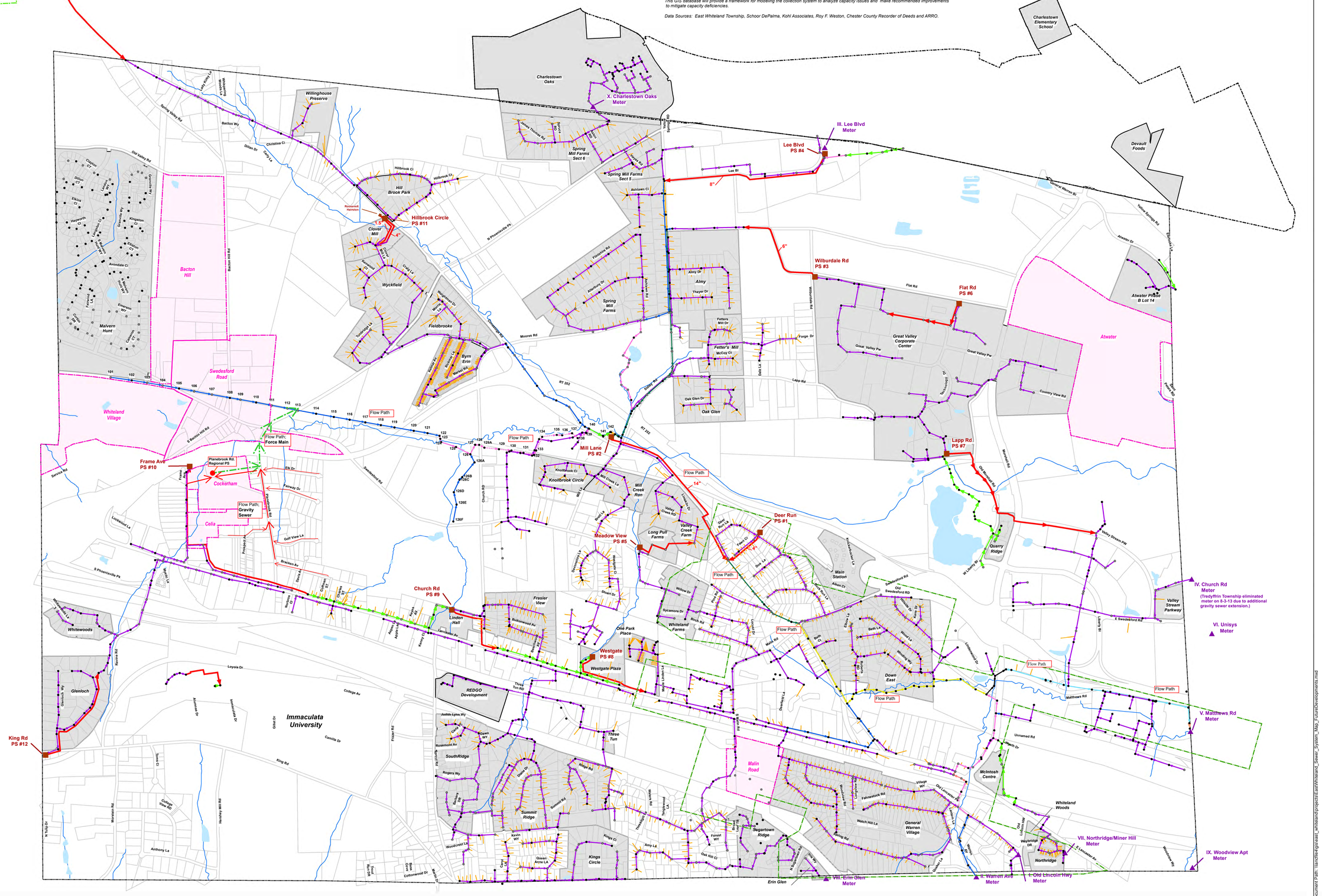
Print Date: 10/15/2015

ARRO

MAP NOTES:

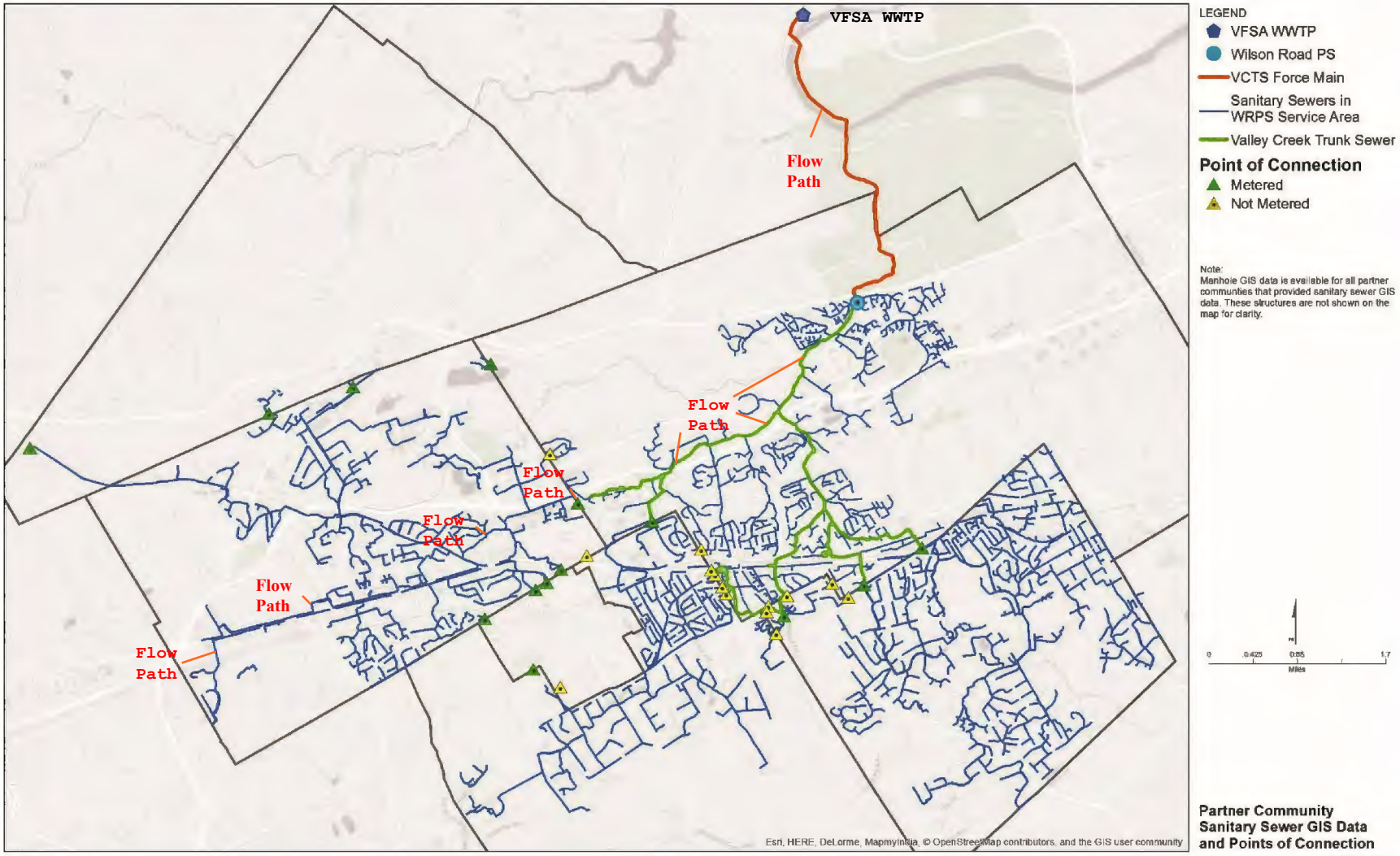
Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohl Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as -built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.

Data Sources: East Whiteland Township, Schoor DePalma, Kohl Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.



Document Path: \\ancfile\gis\east_whiteland\projects\EastWhiteland_Sewer_System_Map_FutureDevelopments.mxd

Figure 6-2. Comparison of 2010 Projected Future Flows to Recent Data and 1970 Reserve Capacity



9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☐ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 29,425 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	**Peak**	**Average**	**Peak**	**Average**	**Peak**
Collection	20772000	20772000	5193000	11943900	6076000	13974800
Conveyance	20160000	20160000	5654000	13004200	6631000	15251300
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality Aqua Resources, Inc.

Name of Responsible Agent Kyle Roberts

Agent Signature

Date 12/3/2020

d. Conveyance System

Name of Agency, Authority, Municipality Aqua Resources, Inc.

Name of Responsible Agent Kyle Roberts

Agent Signature

Date 12/3/2020

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality

Name of Responsible Agent

Agent Signature

Date

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☐ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

21ST CENTURY media

MediaNews Group

PHILADELPHIA GROUP

AFFIDAVIT OF PUBLICATION

307 Derstine Avenue • Lansdale, PA 19446

EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, PA 19355-1699
Attention:

STATE OF PENNSYLVANIA,
COUNTY OF MONTGOMERY

The undersigned _____, being duly sworn the he/she is the principal clerk of Daily Local News, Daily Local News Digital, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

EAST WHITELAND TOWNSHIP

Published in the following edition(s):

Daily Local News	12/21/20
Daily Local News Digital	12/21/20

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MAUREEN SCHMID, Notary Public
Lansdale Boro., Montgomery County
My Commission Expires March 31, 2021

Sworn to the subscribed before me this 1/22/21.

Notary Public, State of Pennsylvania
Acting in County of Montgomery

PUBLIC NOTICE

A "Sewage Facilities Planning Module for Minor Act 537 Update Revisions" (Plan) has been prepared for East Whiteland Township (Township), Chester County, Pennsylvania. The Plan addresses the planning requirements necessary for the construction a sanitary sewer extension to provide public sewer service to residential properties and some commercial properties located on and adjacent to Planebrook Road south of the Route 202 overpass.

The purpose of the sewer extension is to provide public sewer service properties that currently have on-lot disposal systems.

The primary alternatives for this plan include: (1) Continue to utilize the existing on-lot disposal systems and do nothing, or (2) Extend public sewer service to the respective properties and abandon the on-lot systems. The alternative for the extension of public sewer service was selected. To achieve this, the proposed sewer main will be a combination of gravity sewer. The sewer main extension will serve Planebrook Road, Elk Drive, Fairway Drive, Golf View Lane, Bracken Avenue, David Avenue, and Prospect Avenue. It will extend from the existing sanitary sewer manhole in Planebrook Road with flow directed to the newly constructed regional pump station.

Each property owner will be responsible for installing a service lateral or grinder pump and service lateral to connect to the proposed sewer main.

The engineer's planning-level opinion of probable construction cost for extending public sewer service is $1,740,000

This project will be paid for by the Township. Tapping fees and plumbers fees will be the responsibility of the property owners.

In accordance with Chapter 71.3(c) of the Pennsylvania Code, the Authority is providing a 30-day public comment period. This planning document is available, for review, on the Township's website at www.eastwhiteland.org and at the Township Building located at 209 Conestoga Road, Frazer, PA 19355. Viewing of the document at the Township Building is by appointment only. To schedule an appointment, please call 610-648-0600. When visiting the Township Building, all CDC COVID19 Safety Protocols shall be followed. Comments shall be addressed, in writing, to Mr. John Nagel, Township Manager at the Township Building address noted above and are due no later than 30 days from the date of this notice.
DLN 12/21; 1a

Advertisement Information

Client Id: 884447 **Ad Id:** 2104355 **PO:** **Sales Person:** 018303

DocuSign Envelope ID: 0F0820BD-EF70-4795-A13C-AF506F52F3C8

EAST WHITELAND TOWNSHIP
THE HEART OF GREAT VALLEY

209 Conestoga Road
Frazer, Pennsylvania 19355-1699
Telephone: 610-648-0600
www.eastwhiteland.org

Board of Supervisors: Susan Drummond • Scott Lambert • Richard Orlow **Township Manager:** John Nagel

January 21, 2021

William Bohner, Jr., P.E.
ARRO Consulting, Inc.
350 West Main Street
Suite 200
Trappe, PA 19426

RE: Planebrook Road Act 537 Component 3m;
East Whiteland Township, Chester County;
Public Comment (Readvertisement; January 2021)
No Comments Received;

Dear Mr. Bohner:

In accordance with Title 25, Chapter 71 of the Pennsylvania Code, a 30-day public comment period was conducted for the sanitary sewage facilities Act 537 Component 3m prepared for the extending of public sewer to the Planebrook Road planning area in East Whiteland Township (Township). The public comment period began on December 21, 2020 and ended on January 20, 2021. During that period, no public comments were received by the Township.

Sincerely,

John Nagel

John Nagel
Township Manager

East Whiteland Township
Sewage Facilities Planning Module
(Component 3m)
Planebrook Road Area
Sewer Extension

March 2020

PA DEP Code: 1-15925-392-3m
P.N. 10310.36

Prepared by:

ARRO Consulting, Inc.
350 West Main Street
Suite 200
Trappe, PA 19426

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Exhibit A

Resolution of Adoption

RESOLUTION NO. _____

Resolution for Plan Revision
DRAFT

RESOLUTION OF EAST WHITELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537 known as the "Pennsylvania Sewage Facilities Act", as Amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection (PADEP) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the Township to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said Plan whenever it is necessary to meet the sewage disposal needs of the Township.

NOW, THEREFORE, BE IT RESOLVED, that the Township hereby adopts and submits to the Pennsylvania Department of Environmental Protection for its approval, as a revision to the "Official Plan" of the Township, this Act 537 Planning Module; Component 3m.

The Township hereby approves and adopts this Act 537 Planning Module; Component 3m, which provides the basis to implement the selected alternative for the construction of a sanitary sewer extension to provide public sewer service to 107 properties located in the Planebrook Road Area. These properties currently have on-lot disposal systems. Key implementation activities include planning module approval, project bidding, and project construction. These activities shall be implemented in accordance with the implementation schedule detailed in Exhibit Q of the Sewage Facilities Planning Module.

The Township finds that this Act 537 Planning Module; Component 3m, described above, conforms to applicable zoning, subdivision, other municipal ordinances and plans, and to a comprehensive program of pollution control and water quality management.

I, _____, Secretary, East Whiteland Township, hereby certify that the foregoing is a true copy of Township Resolution No. _____, adopted _____, 2020.

(TOWNSHIP SEAL)

_____
Secretary

Exhibit B

Component 3m

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Code No.

SEWAGE FACILITIES PLANNING MODULE FOR MINOR ACT 537 UPDATE REVISION

Component 3m. Municipal or Authority Sponsored Minor Sewage Collection Project

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	**CLIENT ID #**	**SITE ID #**	**APS ID #**	**AUTH ID #**

This document provides a simplified planning format for municipalities and municipal authorities proposing the construction of a sewer extension primarily serving existing development. Typically, this format would be used for projects involving the extension of sewer service to no more than 100 equivalent dwelling units (EDUs) and where the majority of the project serves existing development. For projects where more than 50 percent of the proposed customers will result from new land development, a Component 3 Sewage Facilities Planning Module would typically be used. For larger projects or if the project would involve the construction or modification of a wastewater treatment facility, then a general Act 537 Update Revision, meeting all of the requirements of Title 25 Pennsylvania Code, Chapter 71 § 71.21, is appropriate.

DEP staff will make a final determination as to the appropriate type of planning for a given project based on the review of a plan of study. Eligibility for a grant to offset the cost of planning will be determined by DEP staff based upon review of a *Task/Activity Report* (3800-FM-BPNPSM0005). The project sponsor submits both documents. **DO NOT** use this form without coordinating with your local DEP staff. Refer to the instructions.

This planning document, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name

   East Whiteland Township; Planebrook Road Area Sanitary Sewer Extension

2. Brief Project Description

   Extend public sewer service to existing properties located along, adjacent to, and near Planebrook Road.

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact - Last Name	First Name	MI	Suffix	Title
Steele	William			Director of Public Works

Additional Individual - Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line - City	State	ZIP+4
Frazier	PA	19355

Phone + Ext.	FAX (optional)	Email (optional)
610-948-0600		wsteele@eastwhiteland.org

C. SITE INFORMATION (See Section C of instructions)

Site Name				
Planebrook Road Area				
Site Location Line 1		**Site Location Line 2**		
Immediately North of the Intersection of Planebrook Road and Lincoln Highway				
Site Location Last Line - City	**State**	**ZIP+4**	**Latitude**	**Longitude**
Malvern	PA	19355	40.04 Deg.	-75.57 Deg.

Detailed Written Directions to Site

State Route 202 South to the Exit for Rt. 30 E. Business.; Follow Rt. 30 E. Business to the intersection with Planebrook Road. Make a left on to Planebrook Road and this will take you to the planning area.

Description of Site

Primarily existing residential and some commercial properties.

Site Contact - Last Name	First Name	MI	Suffix	Phone	Ext.
Steele	William			(610)948-0600	

Site Contact Title	Site Contact Firm (if none, leave blank)
Director of Public Works	East Whiteland Township
FAX	**Email**
	wsteele@eastwhiteland.org
Mailing Address Line 1	**Mailing Address Line 2**
209 Conestoga Road	

Mailing Address Last Line – City	State	ZIP+4
Frazier	PA	19355

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Bohner	William	L	Jr.

Title	Consulting Firm Name
Project Engineer	ARRO Consulting, Inc.
Mailing Address Line 1	**Mailing Address Line 2**
350 West Main Street	Suite 200

Address Last Line - City	State	ZIP+4	Country
Trappe	PA	19426	USA

Email	Phone	Ext.	FAX
bill.bohner@thearrogroup.com	610.495.2102		610.495.5855

E. AVAILABILITY OF DRINKING WATER SUPPLY (See Section E of instructions)

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: Aqua PA

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section E of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section E of the instructions.

☐ G. SEWAGE DISPOSAL NEEDS IDENTIFICATION (See Section G of instructions)

Conduct sanitary and water supply surveys per DEP's publication entitled *Sewage Disposal Needs Identification*. This is highly recommended for all projects. It is required if PENNVEST funding is to be sought for the project, or if required by DEP as indicated by the checked box opposite this item.

H. EXISTING WASTEWATER FACILITIES (See Section H of instructions)

1. **COLLECTION SYSTEM**

Provide requested information concerning the existing treatment facility.

a. Name of existing collection system East Whiteland Twp. System

Clean Streams Law Permit Number 1515402

b. Name of interceptor Whiteland Village Sewer Extension/Interceptor

Clean Streams Law Permit Number 1515402

2. **WASTEWATER TREATMENT FACILITY**

Provide requested information concerning the existing treatment facility.

Name of existing facility Valley Forge Sewer Authority WWTP

NPDES Permit Number for existing facility 43974

I. PROPOSED WASTEWATER FACILITIES (See Section I of instructions)

1. Provide an estimate of the immediate and five year projected flow from the proposed sewer extension. Address the capacity for this flow in the existing conveyance and treatment facilities in terms of the most recent wasteload management annual report for these facilities.

2. **PLOT PLAN**

The following information is to be submitted on a plot plan or map of the proposed project that clearly reflects the relationship between the proposed facilities and the identified features.

a. Existing and proposed buildings.

b. Lot lines and lot sizes.

c. Adjacent lots.

d. Existing and proposed sewerage facilities.

e. Show tap-in or sewer extension to the point of connection to existing collection system.

f. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)

g. Existing and proposed rights-of-way.

h. Existing and proposed streets, roadways, access roads, etc.

i. Any designated recreational or open space area

j. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.

k. Flood plains or Floodprone area soils, floodways, watercourses, water bodies (from Federal Flood Insurance Mapping)

l. Prime Agricultural Land.

m. Any other facilities (pipelines, power lines, etc.)

n. Orientation to north.

I. PROPOSED WASTEWATER FACILITIES (continued)

3. **WETLAND PROTECTION**

	YES	NO	
a.	☐	☒	Are there wetlands in the project area? If yes, indicate these areas on the plot plan as shown in the mapping or through on-site delineation.
b.	☐	☒	Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on HQ or EV streams and address impacts of the permitting requirements of said encroachments on the project.

4. **PRIMARY AGRICULTURAL LAND PROTECTION**

a.	☐	☒	Will your project involve the disturbance of any prime agricultural lands? If "yes" indicate any alternatives to this disturbance that were considered and the reasons they were not deemed feasible. Identify any primary or secondary impacts of the project on the Commonwealth's prime agricultural lands. Evaluate alternatives to avoid or mitigate undesirable impacts. The selected sewage facilities plan must be consistent with local measures in place to protect prime agricultural lands.

5. **STORMWATER MANAGEMENT IMPACTS:**

a.	☐	☒	Will the project impact an area covered by a DEP approved County Stormwater Management Plan? If yes show that the proposed facilities are consistent with that plan.

6. **PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI) CONSISTENCY:**

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdiction agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials WLB

7. **COMPREHENSIVE PLAN CONSISTENCY:**

☒ A narrative and mapping to show that the proposed project is consistent with any comprehensive plan developed under the Pennsylvania Municipalities Planning Code (Act 247) is attached. Document that the proposed project is consistent with land use and all other requirements stated in the comprehensive plan.

8. **COOPERATION WITH PA. HISTORICAL AND MUSEUM COMMISSION (PHMC):**

☒ A copy of DEP's "Cultural Resource Notice" and map which were sent to the Commission and a copy of the Commission's response are attached. Note that the Commission may require archeological surveys if federal funds, including PENNVEST, will be used in the project. If PENNVEST funds are to be used, DEP cannot recommend the project to PENNVEST for consideration until any required surveys have been done and the project has been "cleared" by the Commission.

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 29425 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	**Peak**	**Average**	**Peak**	**Average**	**Peak**
Collection						
Conveyance						
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature _____

Date _____

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent _____

Agent Signature _____

Date _____

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

M. PROJECT COST AND FUNDING ANALYSIS (See Section M of instructions)

☒ A detailed cost estimate and present worth analysis for the project is attached. Provide a financing plan for the project, identifying the funding source(s) and identifying estimated tap fees and user rates. For projects proposing the use of PENNVEST funds, see Section I. 9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS**. Complete the following table:

Cost and Funding Information (Estimated)	
COST	
Construction cost	$ 1531200
Administrative, legal, engineering cost	$ 208800
Total project cost	$ 1740000
Annual O/M cost	$ 6000
FUNDING	
Tap-in fees ($ per EDU X no. EDUs)	$ 428000
Proceeds from primary funding source	$ 1312000
Proceeds from other funding sources	$ 0
USER COSTS	
Initial user base	107 EDUs
Monthly debt service per EDU	$ 0
Monthly O/M cost per EDU	$ 50
Total estimated monthly user cost per EDU	$ 50

N. PROJECT IMPLEMENTATION SCHEDULE (See Section N of instructions)

☒ A project implementation schedule showing milestone dates for submission of DEP permit applications, initiation and completion of construction and any other milestones significant to this particular project is attached to this component

O. PUBLIC NOTIFICATION REQUIREMENT (See Section O of instructions)

☒ Attached is a copy of the public notice. All comments received as a result of the notice are attached.

☐ Municipal response to these comments is attached.

☒ No comments were received. A copy of the public notice is attached.

☐ P. ADDITIONAL CHAPTER 71 PLANNING ELEMENTS (See Section P of instructions)

a. Additional planning elements are required by DEP.

- _____
- _____
- _____
- _____
- _____

Q. PLANNING AGENCY REVIEW (See Section Q of instructions)

☒ Local Planning Commission comments or Component 4a are attached.

☒ County, Area, Or Region Planning Commission comments or Component 4b are attached.

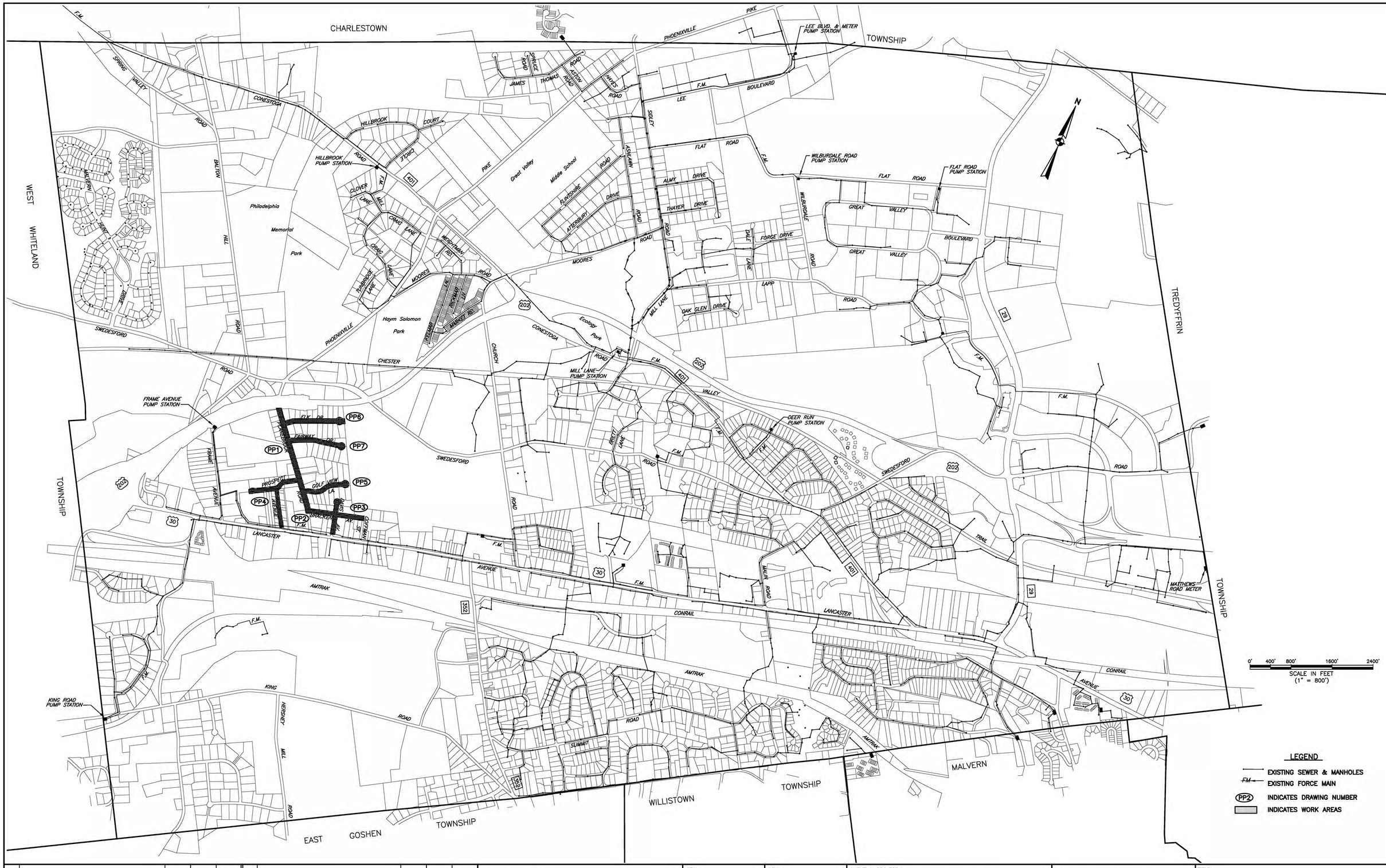
☒ County or Joint County Health Department comments (if appropriate) or Component 4c are attached.

R. RESOLUTION OF ADOPTION (See Section R of instructions)

☒ An **original**, **signed**, and **sealed** Resolution of Adoption is attached.

Exhibit C

Sewer Extension Plan Sheets



NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED TO CLIENT	1/23/20	PT	JM

RELEASED BY: JOHN A. MOTT, P.E.

DESIGN	CHECKED
JOHN A. MOTT, P.E.	JM
DRAWN	CHECKED
M. COLLINS/ P. TITUS	JM
DATE 1/23/2020	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT

EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

PLANEBROOK ROAD AREA
SANITARY SEWERS
CHESTER COUNTY, PENNSYLVANIA

ARRO
Building 100, Suite100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE: PLOT PLAN

SCALE	DWG. NO.
AS NOTED	C1

PROJECT NO.	SHEET NO.	REV.
10310.36	2 OF 19	A

Dwg. Name: 1031036C1-C2_PHASE4.DWG Plotted: 2/14/2020 1:22 PM

LEGEND

EXISTING SEWER

200' LF 8" ACP @ 1.33%

PROPOSED SEWER

250' LF 8" PVC S=0.0042

SV(FD) = SEWER VENT (LOCATED PER FIELD SURVEY)
SV = SEWER VENT (LOCATED PER AS-BUILT LATERAL REFERENCE SHEET)
WS = WATER SERVICE
WV = WATER VALVE
WM = WATER METER
MB = MAIL BOX

NOTES:

1. SHOWN EXISTING PLAN CONDITIONS ALONG PLANEBROOK ROAD AND ADJOINING ROADS PER FIELD SURVEY PERFORMED BY HOPKINS AND SCOTT, PROFESSIONAL LAND SURVEYORS, IN OCTOBER, 2019.

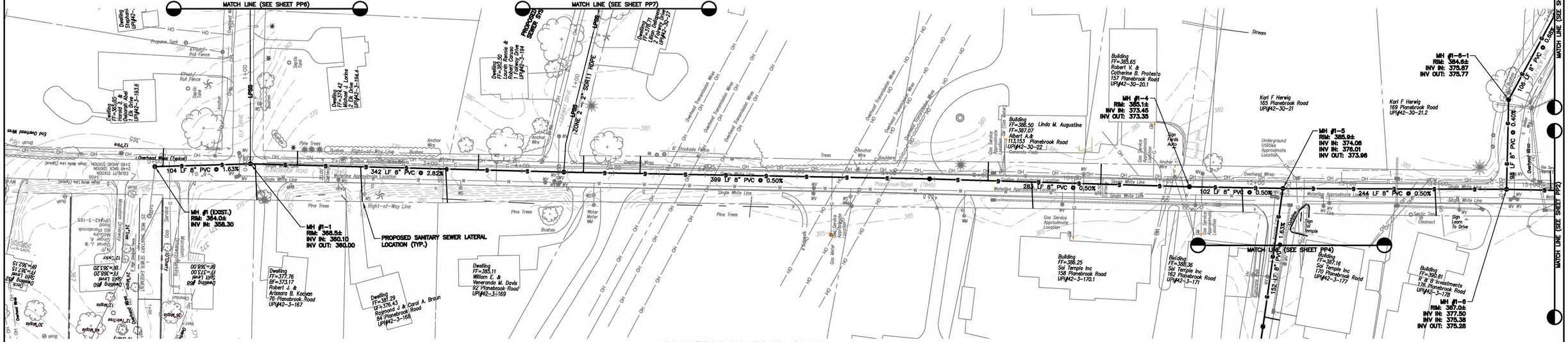
2. ALL PROPOSED PIPE LENGTHS ARE FROM CENTER-OF-MANHOLE TO CENTER-OF-MANHOLE, UNLESS NOTED OTHERWISE.

3. ALL NEW MANHOLES ARE TO BE 4-FOOT DIAMETER UNLESS NOTED OTHERWISE.

N

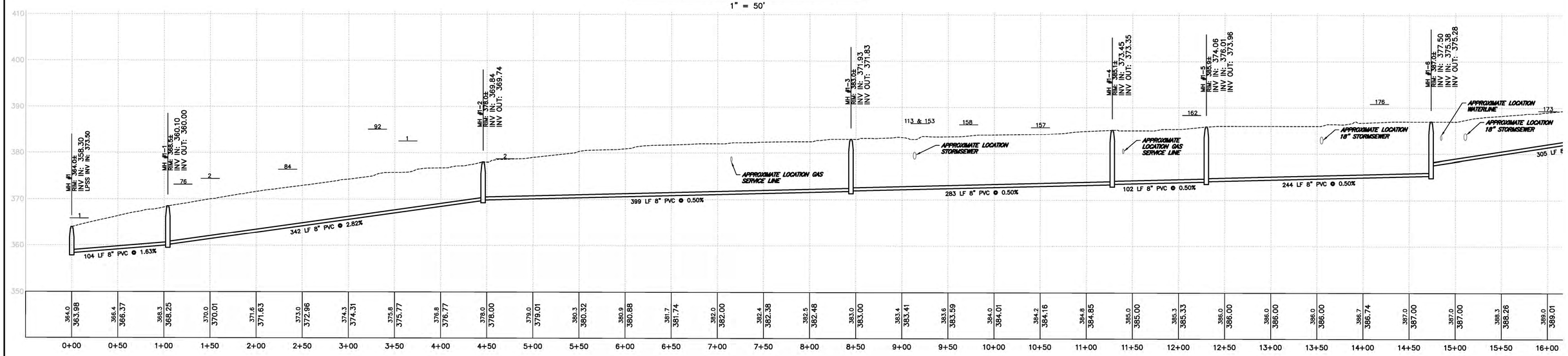
0' 25' 50' 100' 150'
HORIZ. SCALE IN FEET

0' 5' 10' 20' 30'
VERT. SCALE IN FEET



PLANEBROOK ROAD PLAN
STA. 0+00 TO STA. 15+00

1" = 50'



PLANEBROOK ROAD PROFILE
STA. 0+00 TO STA. 15+00

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

NO	REVISION	DATE	BY	APP.

JOHN A. MOTT, P.E.
RELEASED BY

DESIGN	CHECKED
DRK	JM
DRAWN	CHECKED
DRK	JM
DATE	SURVEY DATE
1/23/2020	FIELD BOOK

SEAL

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CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

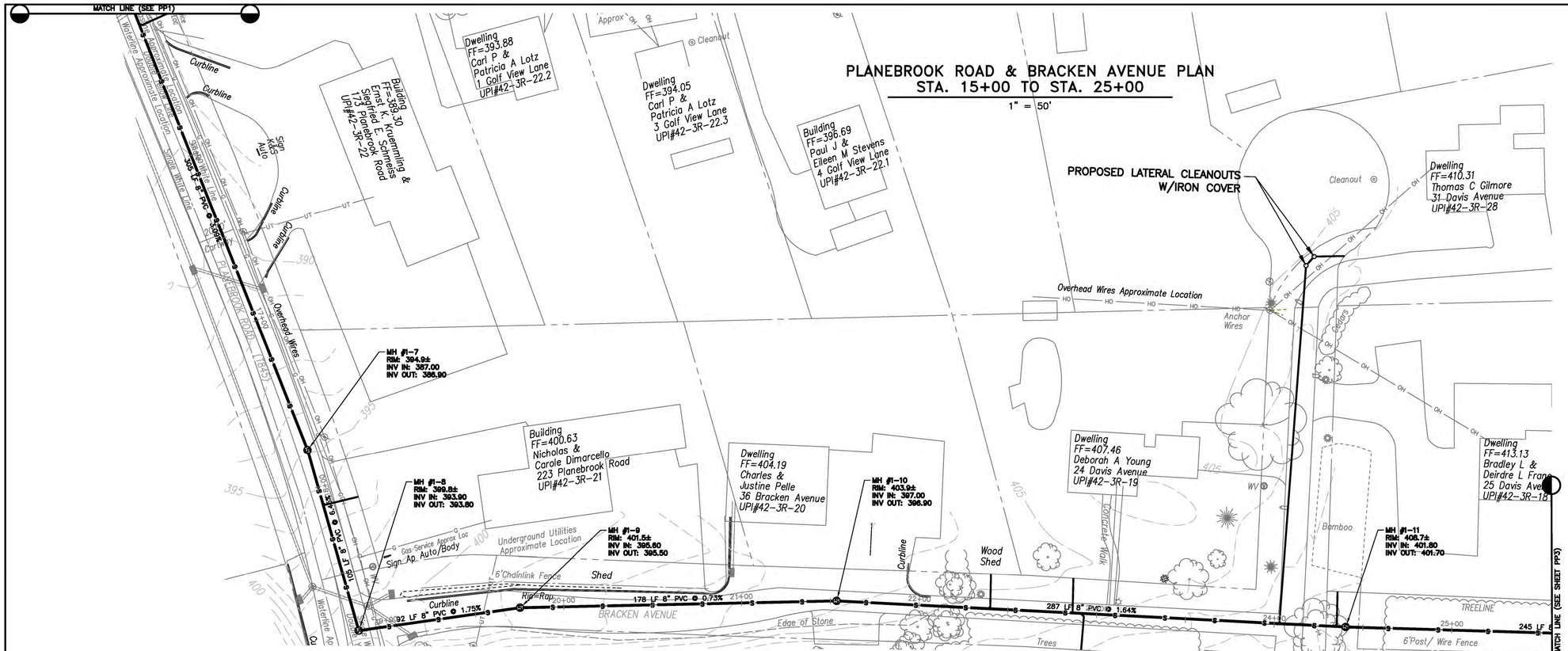
ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

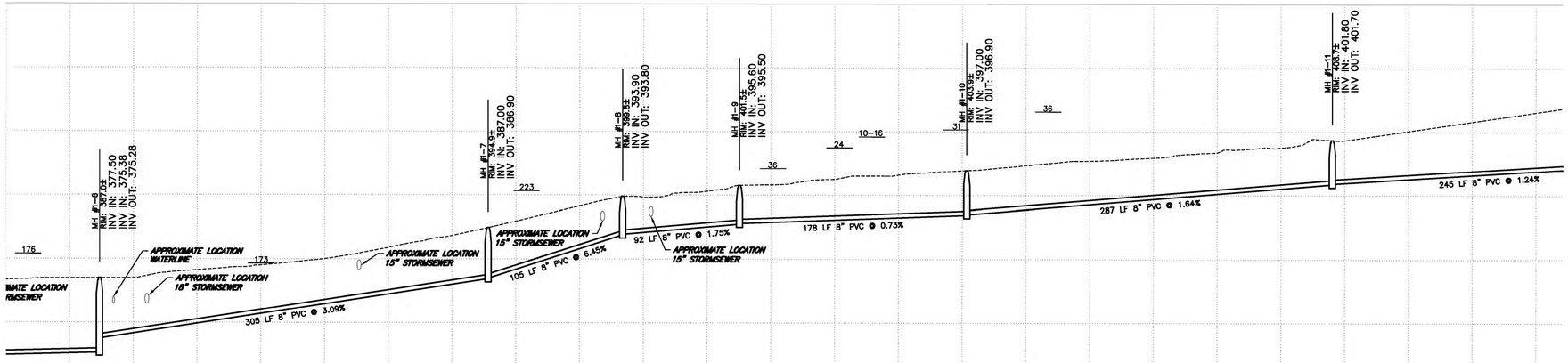
TITLE
PLANEBROOK ROAD
SANITARY SEWERS
PLAN/PROFILE PLAN 1

SCALE	DWG. NO.
1" = 50'	PP1

PROJECT NO.	SHEET NO.	REV.
10310.36	4 OF 19	A

PLANEBROOK ROAD & BRACKEN AVENUE PLAN
STA. 15+00 TO STA. 25+00
1" = 50'





PLANEBROOK ROAD & BRACKEN AVENUE PROFILE
STA. 15+00 TO STA. 25+00
HORZ. 1" = 50'; VERT. 1" = 10'

386.74	387.0 / 387.00	387.0 / 387.00	388.3 / 388.26	389.0 / 389.01	390.0 / 390.01	391.8 / 391.78	393.7 / 393.68	395.9 / 395.92	398.3 / 398.30	399.6 / 399.65	400.6 / 400.60	401.6 / 401.61	402.5 / 402.45	403.1 / 403.15	403.9 / 403.88	404.7 / 404.73	405.4 / 405.42	405.9 / 405.91	406.7 / 406.74	407.5 / 407.53	408.7 / 408.67	410.1 / 410.13	411.6 / 411.60	413.1 / 413.07
-00	14+50	15+00	15+50	16+00	16+50	17+00	17+50	18+00	18+50	19+00	19+50	20+00	20+50	21+00	21+50	22+00	22+50	23+00	23+50	24+00	24+50	25+00	25+50	26+00

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY

DESIGN	CHECKED
DRK	JM
DRAWN	CHECKED
DRK	JM
DATE	SURVEY DATE
1/23/2020	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

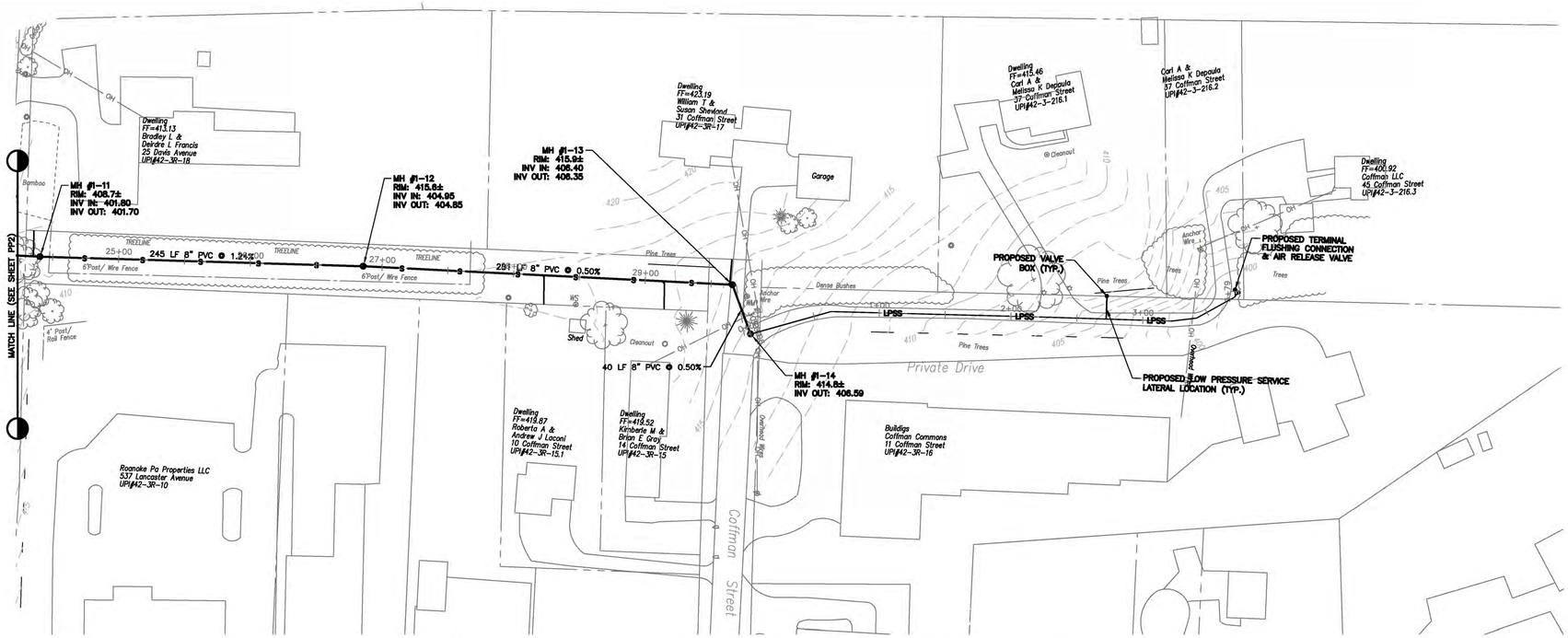
PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE PLANEBROOK ROAD & BRACKEN AVENUE
SANITARY SEWERS
PLAN/PROFILE PLAN 2

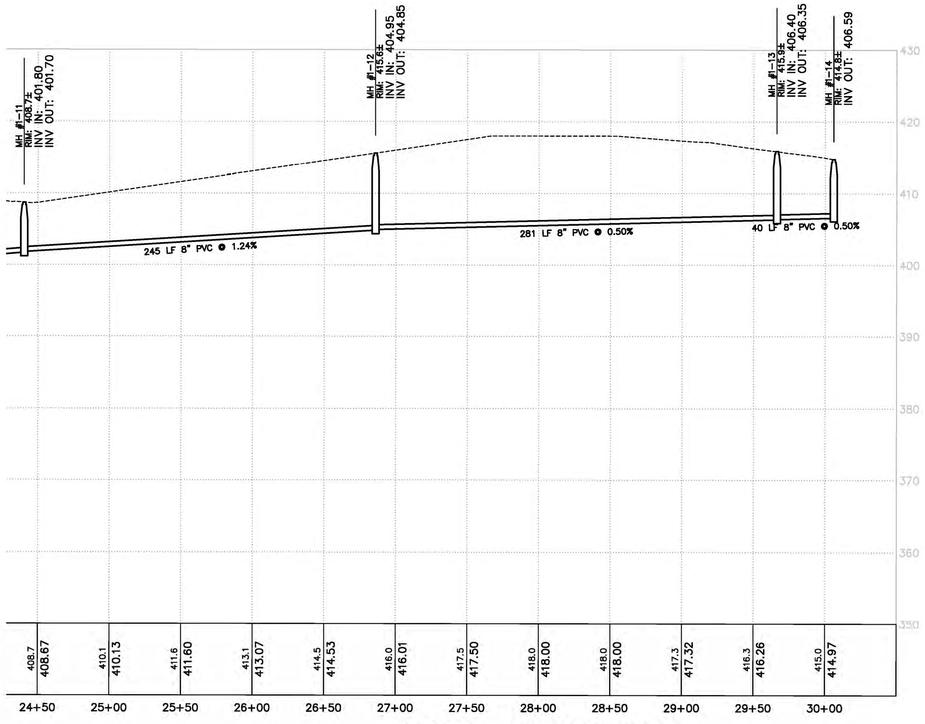
SCALE	DWG. NO.
1" = 50'	PP2
PROJECT NO. 10310.36	SHEET NO. 5 OF 19
REV. A	

1031036_PHASE4_PP2 Plotted 2/14/20 9:57 AM



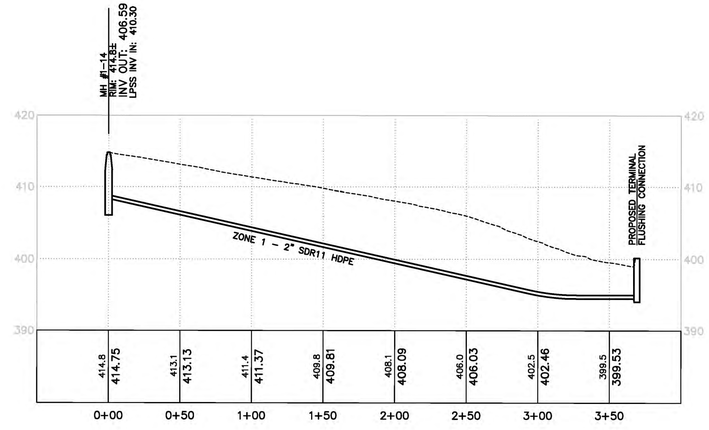
BRACKEN AVENUE & PRIVATE DRIVE PLAN
STA. 25+00 TO STA. 30+06

1" = 50'



BRACKEN AVENUE PROFILE
STA. 25+00 TO STA. 30+06

HORZ. 1" = 50'; VERT. 1" = 10'



BRACKEN AVENUE PRIVATE DRIVE PROFILE
STA. 0+00 TO STA. 3+79

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY
DESIGN: DRK | CHECKED: JM
DRAWN: DRK | CHECKED: JM
DATE: 1/23/2020 | SURVEY DATE | FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

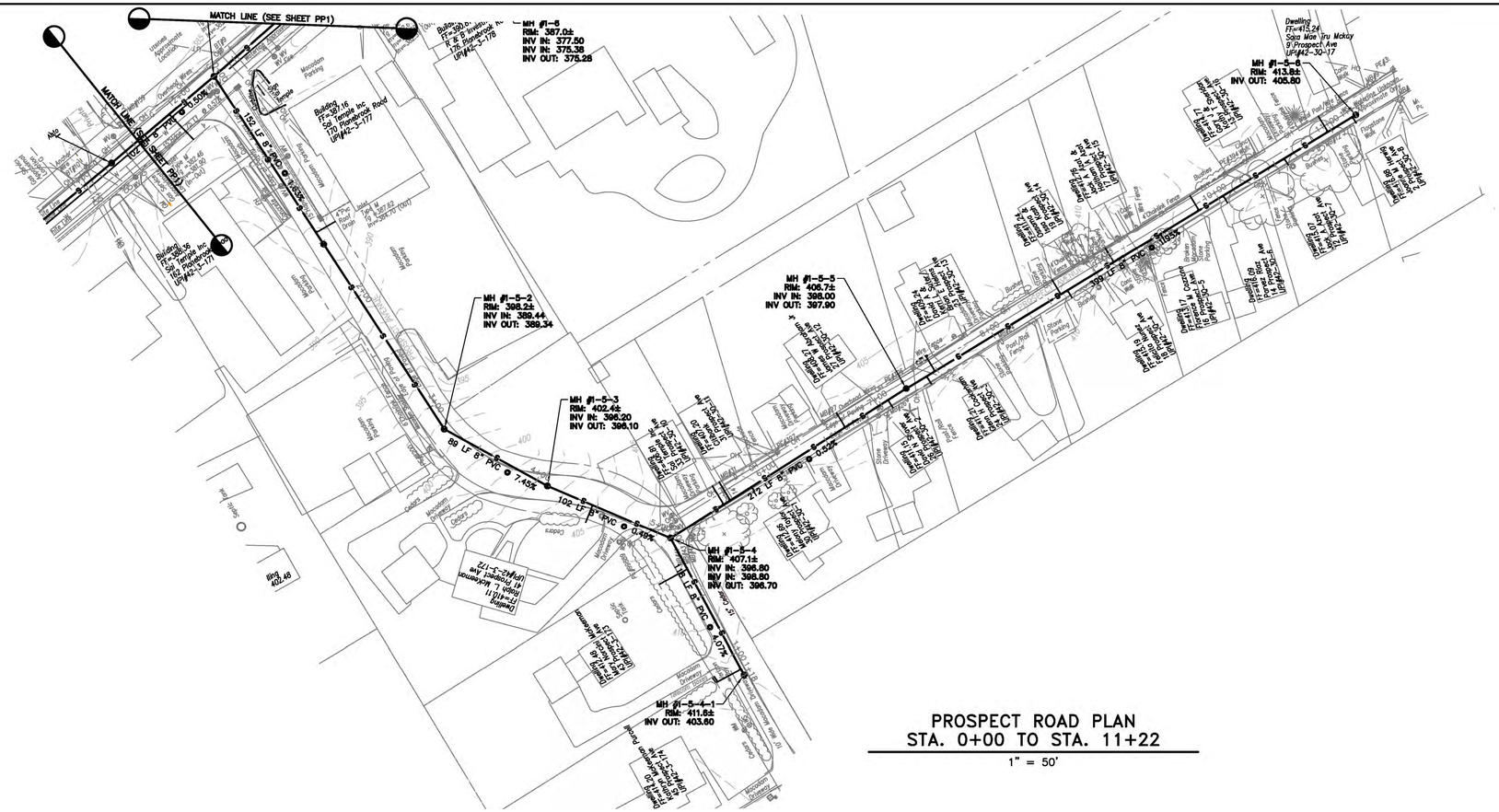
PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

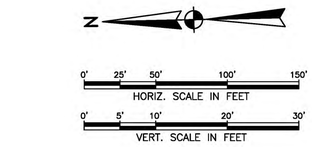
TITLE: BRACKEN AVENUE & COFFMAN STREET
SANITARY SEWERS
PLAN/PROFILE PLAN 3

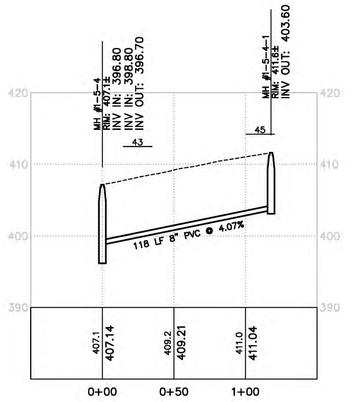
SCALE: 1" = 50' | DWG. NO. PP3
PROJECT NO. 10310.36 | SHEET NO. 6 OF 19 | REV. A

1031036_PHASE4_PP3 Plotted 2/14/20 10:00 AM

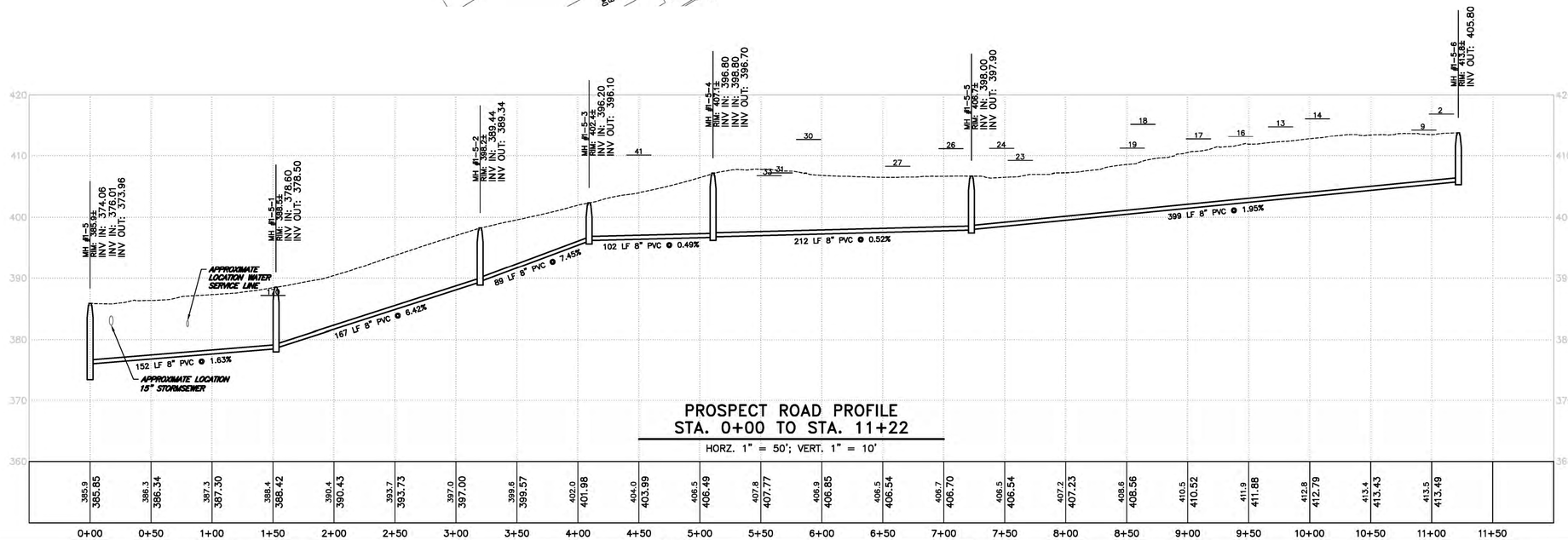


PROSPECT ROAD PLAN
STA. 0+00 TO STA. 11+22
1" = 50'





PROSPECT ROAD SPUR PROFILE
STA. 0+00 TO STA. 1+18
HORZ. 1" = 50'; VERT. 1" = 10'



PROSPECT ROAD PROFILE
STA. 0+00 TO STA. 11+22
HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY

DESIGN	CHECKED
DRK	JM
DRAWN	CHECKED
DRK	JM
DATE 1/23/2020	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

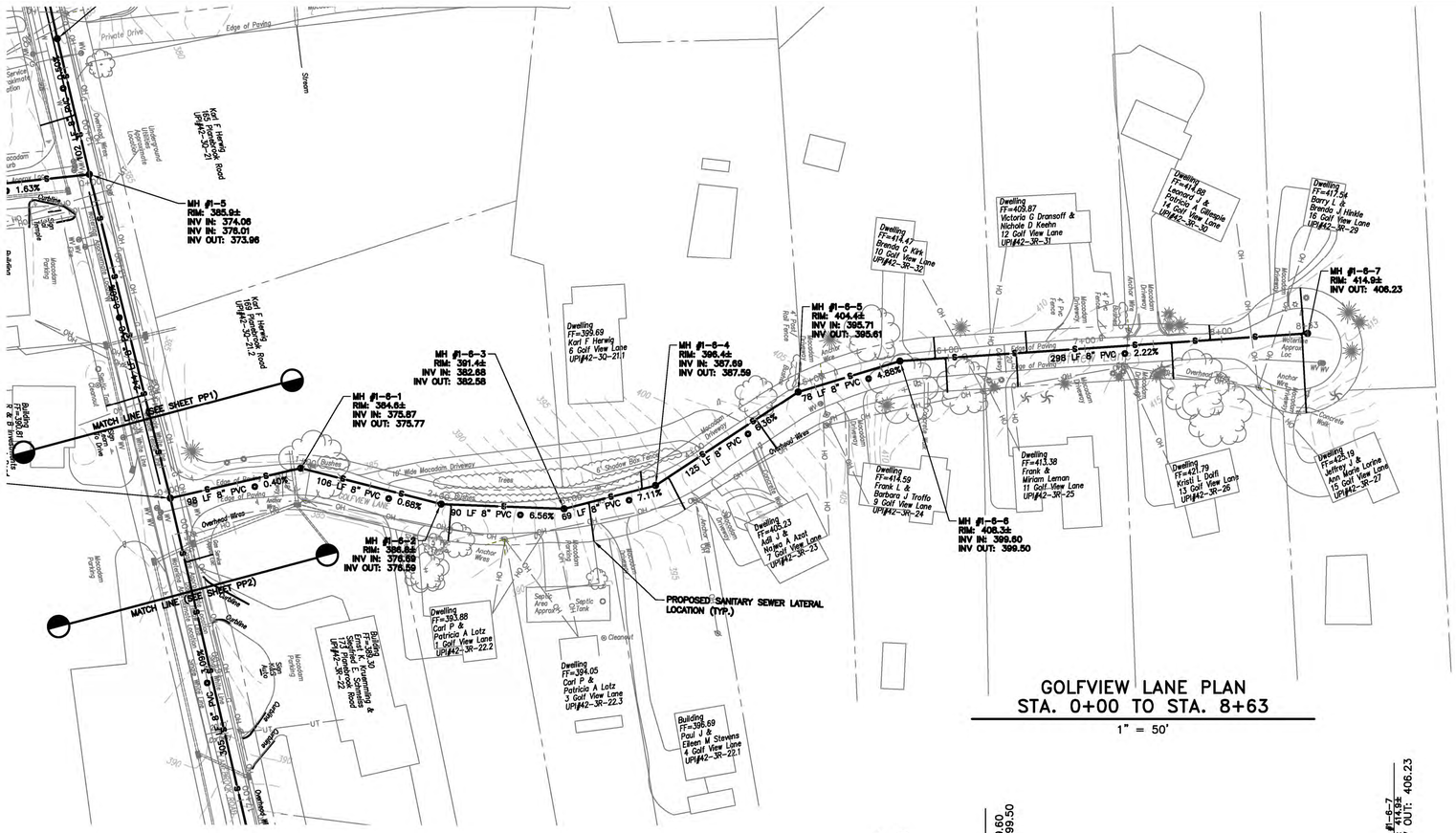
ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE
PROSPECT AVENUE
SANITARY SEWERS
PLAN/PROFILE PLAN 4

SCALE	DWG. NO.
1" = 50'	PP4

PROJECT NO.	SHEET NO.	REV.
10310.36	7 OF 19	A

1031036_PHASE4_PP4 Plotted 2/14/20 10:00 AM



GOLFVIEW LANE PROFILE
STA. 0+00 TO STA. 8+63

HORZ. 1" = 50'; VERT. 1" = 10'

MH #1-6-5
RIM: 404.4±
INV IN: 395.71
INV OUT: 395.61
MH #1-6-6
RIM: 408.3±
INV IN: 399.60
INV OUT: 399.50
MH #1-6-7
RIM: 414.9±
INV OUT: 406.23
MH #1-6-4
RIM: 396.4±
INV IN: 387.69
INV OUT: 387.59
MH #1-6-3
RIM: 391.4±
INV IN: 382.68
INV OUT: 382.58
MH #1-6-2
RIM: 388.8±
INV IN: 376.69
INV OUT: 376.59
MH #1-6-1
RIM: 384.6±
INV IN: 375.87
INV OUT: 375.77
MH #1-6
RIM: 387.0±
INV IN: 377.50
INV OUT: 377.38
INV OUT: 375.28
Dwelling FF=399.69 Karl F Herwig 6 Golf View Lane UPI#42-3O-21.1
Dwelling FF=414.47 Brenda G Kirk 10 Golf View Lane UPI#42-3R-30
Dwelling FF=409.87 Victoria G Dransoff & Nichole D Keehn 12 Golf View Lane UPI#42-3R-31
Dwelling FF=414.89 Leonard J & Teresa A Stenspie 14 Golf View Lane UPI#42-3R-29
Dwelling FF=417.56 Barry L & Brenda J Hinkle 16 Golf View Lane UPI#42-3R-28
Dwelling FF=414.59 Frank L & Barbara J Troffo 9 Golf View Lane UPI#42-3R-24
Dwelling FF=413.38 Frank & Miriam Leman 11 Golf View Lane UPI#42-3R-25
Dwelling FF=412.79 Kristi L Dafi 13 Golf View Lane UPI#42-3R-26
Dwelling FF=425.19 Jeffrey L & Ann Marie Lorine 15 Golf View Lane UPI#42-3R-27
Dwelling FF=425.23 Adil J & Nawal A Azar 7 Golf View Lane UPI#42-3R-23
Dwelling FF=393.88 Carl P & Patricia A Lotz 1 Golf View Lane UPI#42-3R-22.2
Dwelling FF=394.05 Carl P & Patricia A Lotz 3 Golf View Lane UPI#42-3R-22.3
Building FF=398.69 Paul J & Eileen M Stevens 4 Golf View Lane UPI#42-3R-22.1
Building FF=393.69 Karl F Herwig 6 Golf View Lane UPI#42-3O-21.1
Karl Frederick Herwig Road (SR 4013)
Private Drive
Edge of Paving
Stream
Overhead Wires
Concrete Walk
Anchor Wires
Trees
Shrubs
Septic Area Approx. Loc.
Septic Tank
Cleanout
Driveway
Curbline
Edge of Pavement
Utility Pole
Guy Wire
Mailbox
Fire Hydrant
Water Valve
Water Meter
Gas Valve
Gas Meter
Electric Meter
Light Pole
Sign
Mailbox
Deciduous Tree
Evergreen Tree
Bush
Fence
Wooden Fence
Chain Link Fence
Wire Fence
Stone Wall
Retaining Wall
Concrete Curb
Concrete Pad
Asphalt Pad
Gravel Pad
Gravel Driveway
Asphalt Driveway
Concrete Driveway
Brick Driveway
Stone Driveway
Dirt Driveway
Grass Driveway
Gravel Road
Asphalt Road
Concrete Road
Brick Road
Stone Road
Dirt Road
Grass Road
Gravel Path
Asphalt Path
Concrete Path
Brick Path
Stone Path
Dirt Path
Grass Path
Gravel Trail
Asphalt Trail
Concrete Trail
Brick Trail
Stone Trail
Dirt Trail
Grass Trail
Gravel Lane
Asphalt Lane
Concrete Lane
Brick Lane
Stone Lane
Dirt Lane
Grass Lane
Gravel Alley
Asphalt Alley
Concrete Alley
Brick Alley
Stone Alley
Dirt Alley
Grass Alley
Gravel Parking
Asphalt Parking
Concrete Parking
Brick Parking
Stone Parking
Dirt Parking
Grass Parking
Gravel Sidewalk
Asphalt Sidewalk
Concrete Sidewalk
Brick Sidewalk
Stone Sidewalk
Dirt Sidewalk
Grass Sidewalk
Gravel Curb
Asphalt Curb
Concrete Curb
Brick Curb
Stone Curb
Dirt Curb
Grass Curb
Gravel Gutter
Asphalt Gutter
Concrete Gutter
Brick Gutter
Stone Gutter
Dirt Gutter
Grass Gutter
Gravel Swale
Asphalt Swale
Concrete Swale
Brick Swale
Stone Swale
Dirt Swale
Grass Swale
Gravel Ditch
Asphalt Ditch
Concrete Ditch
Brick Ditch
Stone Ditch
Dirt Ditch
Grass Ditch
Gravel Culvert
Asphalt Culvert
Concrete Culvert
Brick Culvert
Stone Culvert
Dirt Culvert
Grass Culvert
Gravel Bridge
Asphalt Bridge
Concrete Bridge
Brick Bridge
Stone Bridge
Dirt Bridge
Grass Bridge
Gravel Tunnel
Asphalt Tunnel
Concrete Tunnel
Brick Tunnel
Stone Tunnel
Dirt Tunnel
Grass Tunnel
Gravel Overpass
Asphalt Overpass
Concrete Overpass
Brick Overpass
Stone Overpass
Dirt Overpass
Grass Overpass
Gravel Underpass
Asphalt Underpass
Concrete Underpass
Brick Underpass
Stone Underpass
Dirt Underpass
Grass Underpass
Gravel Intersection
Asphalt Intersection
Concrete Intersection
Brick Intersection
Stone Intersection
Dirt Intersection
Grass Intersection
Gravel Roundabout
Asphalt Roundabout
Concrete Roundabout
Brick Roundabout
Stone Roundabout
Dirt Roundabout
Grass Roundabout
Gravel Cul-de-sac
Asphalt Cul-de-sac
Concrete Cul-de-sac
Brick Cul-de-sac
Stone Cul-de-sac
Dirt Cul-de-sac
Grass Cul-de-sac
Gravel Dead End
Asphalt Dead End
Concrete Dead End
Brick Dead End
Stone Dead End
Dirt Dead End
Grass Dead End
Gravel Loop
Asphalt Loop
Concrete Loop
Brick Loop
Stone Loop
Dirt Loop
Grass Loop
Gravel Circle
Asphalt Circle
Concrete Circle
Brick Circle
Stone Circle
Dirt Circle
Grass Circle
Gravel Square
Asphalt Square
Concrete Square
Brick Square
Stone Square
Dirt Square
Grass Square
Gravel Rectangle
Asphalt Rectangle
Concrete Rectangle
Brick Rectangle
Stone Rectangle
Dirt Rectangle
Grass Rectangle
Gravel Triangle
Asphalt Triangle
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Brick Triangle
Stone Triangle
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Asphalt Hexagon
Concrete Hexagon
Brick Hexagon
Stone Hexagon
Dirt Hexagon
Grass Hexagon
Gravel Octagon
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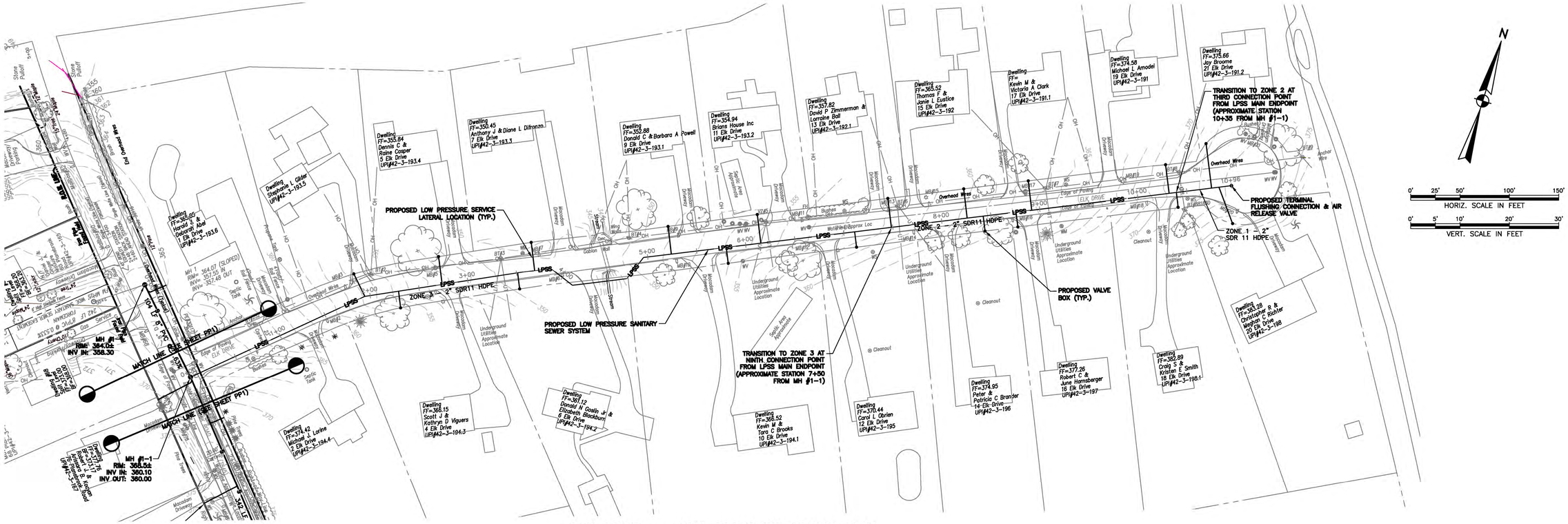
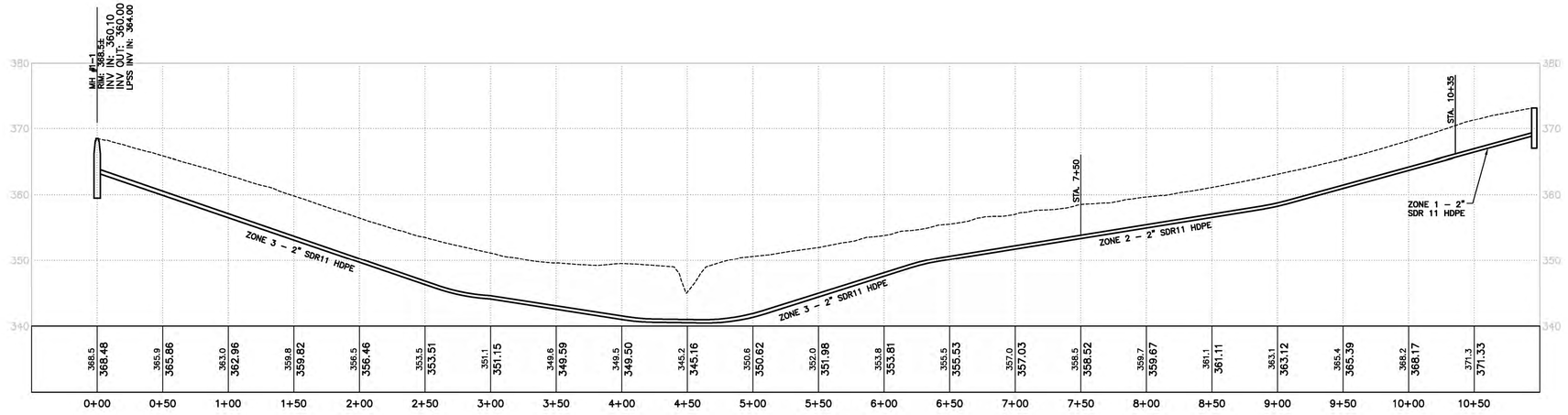
Grass Cloud
Gravel Sun
Asphalt Sun
Concrete Sun
Brick Sun
Stone Sun
Dirt Sun
Grass Sun
Gravel Moon
Asphalt Moon
Concrete Moon
Brick Moon
Stone Moon
Dirt Moon
Grass Moon
MATCH LINE (SEE SHEET PP1)
MATCH LINE (SEE SHEET PP2)
PROPOSED SANITARY SEWER LATERAL LOCATION (TYP.)
16' Wide Macadam Driveway
4" Shadow Box Fence
2-4" Dia. Bollards
Large Bushes
Small Bushes
Macadam Driveway
Macadam Parking
Macadam Sidewalk
Macadam Curb
Macadam Gutter
Macadam Swale
Macadam Ditch
Macadam Culvert
Macadam Bridge
Macadam Tunnel
Macadam Overpass
Macadam Underpass
Macadam Intersection
Macadam Roundabout
Macadam Cul-de-sac
Macadam Dead End
Macadam Loop
Macadam Circle
Macadam Square
Macadam Rectangle
Macadam Triangle
Macadam Hexagon
Macadam Octagon
Macadam Pentagon
Macadam Star
Macadam Heart
Macadam Cloud
Macadam Sun
Macadam Mo



ELK DRIVE – LOW PRESSURE SEWER PLAN
STA. 0+00 TO STA. 10+96

1" = 50'



ELK DRIVE – LOW PRESSURE SEWER PROFILE
STA. 0+00 TO STA. 10+96

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY

DESIGN: DRK	CHECKED: JM
DRAWN: DRK	CHECKED: JM
DATE: 1/23/2020	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

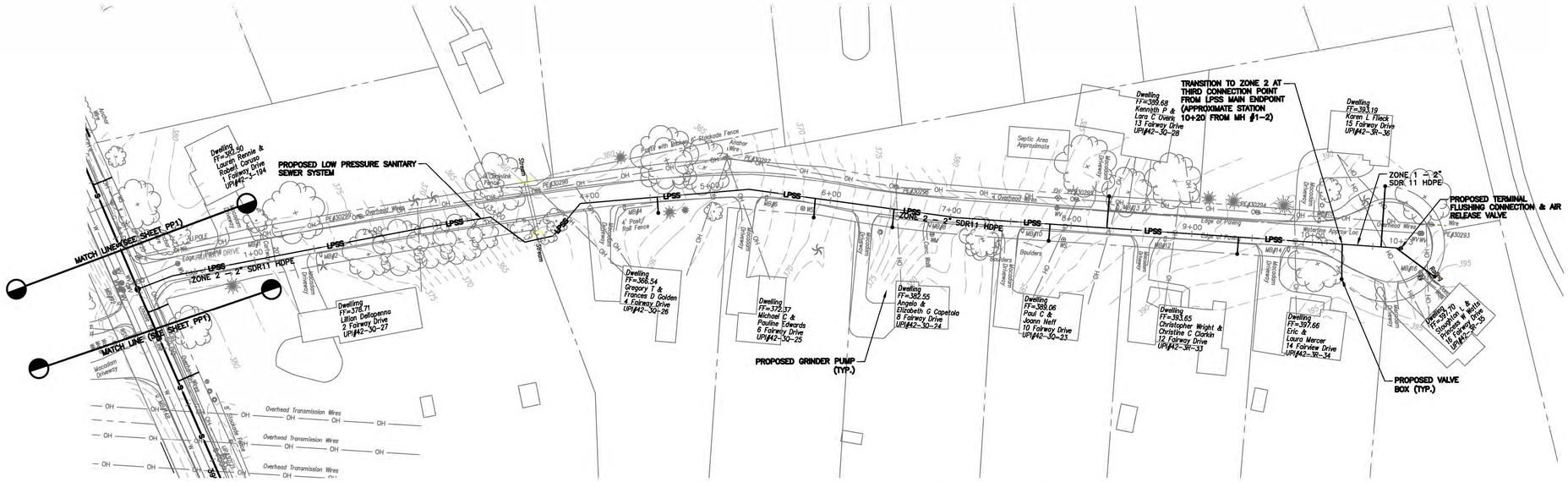
ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE: ELK DRIVE
LOW PRESSURE SEWER
PLAN/PROFILE PLAN 6

SCALE	DWG. NO.
1" = 50'	PP6

PROJECT NO.	SHEET NO.	REV.
10310.36	9 OF 19	A

1031036_PHASE4_PP6 Plotted 2/14/20 10:05 AM



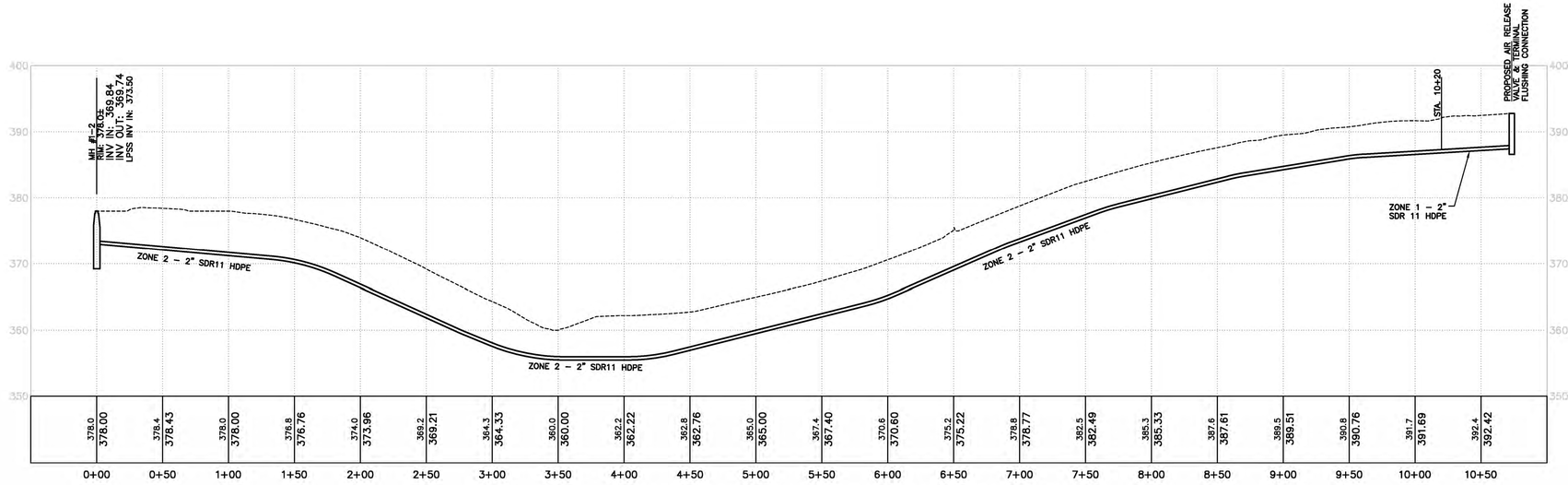
FAIRWAY DRIVE – LOW PRESSURE SEWER PLAN
STA. 0+00 TO STA. 10+73

1" = 50'

N

0' 25' 50' 100' 150'
HORIZ. SCALE IN FEET

0' 5' 10' 20' 30'
VERT. SCALE IN FEET



FAIRWAY DRIVE – LOW PRESSURE SEWER PROFILE
STA. 0+00 TO STA. 10+73

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID			
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY
DESIGN: DRK | CHECKED: JM
DRAWN: DRK | CHECKED: JM
DATE: 1/23/2020 | SURVEY DATE | FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PENNSYLVANIA

PLANEBROOK ROAD AREA
SANITARY SEWERS
EAST WHITELAND TOWNSHIP

ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE
FAIRWAY DRIVE
LOW PRESSURES SEWERS
PLAN/PROFILE PLAN 7

SCALE: 1" = 50'
DWG. NO.: PP7
PROJECT NO.: 10310.36
SHEET NO.: 10 OF 19
REV.: A

1031036_PHASE4_PP7 Plotted 2/14/20 10:07 AM

Exhibit D

East Whiteland Township Component 3, Section K

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 29,245 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection	29425	110344	0	0	29425	110344
Conveyance	151325	567469	68,000	255,000	74,000	277,500
Treatment	0	0	0	0	0	0

lanebrook oad PS

3. Collection and Conveyance Facilities

The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature Will- A. Steele

Date 2-11-2020

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature Will- A. Steele

Date 2-11-2020

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent

Agent Signature

Date

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

Exhibit E

Tredyffrin Township Component 3, Section K

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Code No.

SEWAGE FACILITIES PLANNING MODULE FOR MINOR ACT 537 UPDATE REVISION

Component 3m. Municipal or Authority Sponsored Minor Sewage Collection Project

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	**CLIENT ID #**	**SITE ID #**	**APS ID #**	**AUTH ID #**

This document provides a simplified planning format for municipalities and municipal authorities proposing the construction of a sewer extension primarily serving existing development. Typically, this format would be used for projects involving the extension of sewer service to no more than 100 equivalent dwelling units (EDUs) and where the majority of the project serves existing development. For projects where more than 50 percent of the proposed customers will result from new land development, a Component 3 Sewage Facilities Planning Module would typically be used. For larger projects or if the project would involve the construction or modification of a wastewater treatment facility, then a general Act 537 Update Revision, meeting all of the requirements of Title 25 Pennsylvania Code, Chapter 71 § 71.21, is appropriate.

DEP staff will make a final determination as to the appropriate type of planning for a given project based on the review of a plan of study. Eligibility for a grant to offset the cost of planning will be determined by DEP staff based upon review of a *Task/Activity Report* (3800-FM-BPNPSM0005). The project sponsor submits both documents. **DO NOT** use this form without coordinating with your local DEP staff. Refer to the instructions.

This planning document, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name

   East Whiteland Township; Planebrook Road Area Sanitary Sewer Extension

2. Brief Project Description

   Extend public sewer service to existing properties located along, adjacent to, and near Planebrook Road.

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact - Last Name	First Name	MI	Suffix	Title
Steele	William			Director of Public Works

Additional Individual - Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line - City	State	ZIP+4
Frazier	PA	19355

Phone + Ext.	FAX (optional)	Email (optional)
610-948-0600		wsteele@eastwhiteland.org

C. SITE INFORMATION (See Section C of instructions)

Site Name				
Planebrook Road Area				
Site Location Line 1		**Site Location Line 2**		
Immediately North of the Intersection of Planebrook Road and Lincoln Highway				
Site Location Last Line - City	**State**	**ZIP+4**	**Latitude**	**Longitude**
Malvern	PA	19355	40.04 Deg.	-75.57 Deg.

Detailed Written Directions to Site

State Route 202 South to the Exit for Rt. 30 E. Business.; Follow Rt. 30 E. Business to the intersection with Planebrook Road. Make a left on to Planebrook Road and this will take you to the planning area.

Description of Site

Primarily existing residential and some commercial properties.

Site Contact - Last Name	First Name	MI	Suffix	Phone	Ext.
Steele	William			(610)948-0600	

Site Contact Title	Site Contact Firm (if none, leave blank)
Director of Public Works	East Whiteland Township
FAX	**Email**
	wsteele@eastwhiteland.org
Mailing Address Line 1	**Mailing Address Line 2**
209 Conestoga Road	

Mailing Address Last Line – City	State	ZIP+4
Frazier	PA	19355

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Bohner	William	L	Jr.

Title	Consulting Firm Name
Project Engineer	ARRO Consulting, Inc.
Mailing Address Line 1	**Mailing Address Line 2**
350 West Main Street	Suite 200

Address Last Line - City	State	ZIP+4	Country
Trappe	PA	19426	USA

Email	Phone	Ext.	FAX
bill.bohner@thearrogroup.com	610.495.2102		610.495.5855

E. AVAILABILITY OF DRINKING WATER SUPPLY (See Section E of instructions)

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: Aqua PA

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section E of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section E of the instructions.

☐ G. SEWAGE DISPOSAL NEEDS IDENTIFICATION (See Section G of instructions)

Conduct sanitary and water supply surveys per DEP's publication entitled *Sewage Disposal Needs Identification*. This is highly recommended for all projects. It is required if PENNVEST funding is to be sought for the project, or if required by DEP as indicated by the checked box opposite this item.

H. EXISTING WASTEWATER FACILITIES (See Section H of instructions)

1. **COLLECTION SYSTEM**

Provide requested information concerning the existing treatment facility.

a. Name of existing collection system East Whiteland Twp. System

Clean Streams Law Permit Number 1515402

b. Name of interceptor Whiteland Village Sewer Extension/Interceptor

Clean Streams Law Permit Number 1515402

2. **WASTEWATER TREATMENT FACILITY**

Provide requested information concerning the existing treatment facility.

Name of existing facility Valley Forge Sewer Authority WWTP

NPDES Permit Number for existing facility 43974

I. PROPOSED WASTEWATER FACILITIES (See Section I of instructions)

1. Provide an estimate of the immediate and five year projected flow from the proposed sewer extension. Address the capacity for this flow in the existing conveyance and treatment facilities in terms of the most recent wasteload management annual report for these facilities.

2. **PLOT PLAN**

The following information is to be submitted on a plot plan or map of the proposed project that clearly reflects the relationship between the proposed facilities and the identified features.

a. Existing and proposed buildings.

b. Lot lines and lot sizes.

c. Adjacent lots.

d. Existing and proposed sewerage facilities.

e. Show tap-in or sewer extension to the point of connection to existing collection system.

f. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)

g. Existing and proposed rights-of-way.

h. Existing and proposed streets, roadways, access roads, etc.

i. Any designated recreational or open space area

j. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.

k. Flood plains or Floodprone area soils, floodways, watercourses, water bodies (from Federal Flood Insurance Mapping)

l. Prime Agricultural Land.

m. Any other facilities (pipelines, power lines, etc.)

n. Orientation to north.

I. PROPOSED WASTEWATER FACILITIES (continued)

3. **WETLAND PROTECTION**

	YES	NO	
a.	☐	☒	Are there wetlands in the project area? If yes, indicate these areas on the plot plan as shown in the mapping or through on-site delineation.
b.	☐	☒	Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on HQ or EV streams and address impacts of the permitting requirements of said encroachments on the project.

4. **PRIMARY AGRICULTURAL LAND PROTECTION**

a.	☐	☒	Will your project involve the disturbance of any prime agricultural lands? If "yes" indicate any alternatives to this disturbance that were considered and the reasons they were not deemed feasible. Identify any primary or secondary impacts of the project on the Commonwealth's prime agricultural lands. Evaluate alternatives to avoid or mitigate undesirable impacts. The selected sewage facilities plan must be consistent with local measures in place to protect prime agricultural lands.

5. **STORMWATER MANAGEMENT IMPACTS:**

a.	☐	☒	Will the project impact an area covered by a DEP approved County Stormwater Management Plan? If yes show that the proposed facilities are consistent with that plan.

6. **PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI) CONSISTENCY:**

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdiction agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials WLB

7. **COMPREHENSIVE PLAN CONSISTENCY:**

☒ A narrative and mapping to show that the proposed project is consistent with any comprehensive plan developed under the Pennsylvania Municipalities Planning Code (Act 247) is attached. Document that the proposed project is consistent with land use and all other requirements stated in the comprehensive plan.

8. **COOPERATION WITH PA. HISTORICAL AND MUSEUM COMMISSION (PHMC):**

☒ A copy of DEP's "Cultural Resource Notice" and map which were sent to the Commission and a copy of the Commission's response are attached. Note that the Commission may require archeological surveys if federal funds, including PENNVEST, will be used in the project. If PENNVEST funds are to be used, DEP cannot recommend the project to PENNVEST for consideration until any required surveys have been done and the project has been "cleared" by the Commission.

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 29425 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection						
Conveyance						
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature _____

Date _____

d. Conveyance System **Sign Here**

Name of Agency, Authority, Municipality Tredyffrin Township

Name of Responsible Agent _____

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent _____

Agent Signature _____

Date _____

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☐ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

M. PROJECT COST AND FUNDING ANALYSIS (See Section M of instructions)

☒ A detailed cost estimate and present worth analysis for the project is attached. Provide a financing plan for the project, identifying the funding source(s) and identifying estimated tap fees and user rates. For projects proposing the use of PENNVEST funds, see Section I. 9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS**. Complete the following table:

Cost and Funding Information (Estimated)	
COST	
Construction cost	$
Administrative, legal, engineering cost	$
Total project cost	$
Annual O/M cost	$
FUNDING	
Tap-in fees ($ per EDU X no. EDUs)	$
Proceeds from primary funding source	$
Proceeds from other funding sources	$
USER COSTS	
Initial user base	EDUs
Monthly debt service per EDU	$
Monthly O/M cost per EDU	$
Total estimated monthly user cost per EDU	$

N. PROJECT IMPLEMENTATION SCHEDULE (See Section N of instructions)

☒ A project implementation schedule showing milestone dates for submission of DEP permit applications, initiation and completion of construction and any other milestones significant to this particular project is attached to this component

O. PUBLIC NOTIFICATION REQUIREMENT (See Section O of instructions)

☒ Attached is a copy of the public notice. All comments received as a result of the notice are attached.

☐ Municipal response to these comments is attached.

☒ No comments were received. A copy of the public notice is attached.

☐ P. ADDITIONAL CHAPTER 71 PLANNING ELEMENTS (See Section P of instructions)

a. Additional planning elements are required by DEP.

- _____
- _____
- _____
- _____
- _____

Q. PLANNING AGENCY REVIEW (See Section Q of instructions)

☒ Local Planning Commission comments or Component 4a are attached.

☒ County, Area, Or Region Planning Commission comments or Component 4b are attached.

☒ County or Joint County Health Department comments (if appropriate) or Component 4c are attached.

R. RESOLUTION OF ADOPTION (See Section R of instructions)

☒ An **original**, **signed**, and **sealed** Resolution of Adoption is attached.

Exhibit F

Valley Forge Sewer Authority Component 3 Section K

RECEIVED
JAN 23 2020
By

January 16, 2020

Martin Goldberg, P.E.
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Trappe Office
350 West Main Street, Suite 200
Trappe, PA 19426
T 610.495.0303

RE: East Whiteland Township
Planebrook Road Area
Act 537 Component 3m Planning Module
Conveyance Capacity
ARRO #10310.21

Dear Mr. Goldberg:

On behalf of East Whiteland Township (Township), we are submitting a copy of the enclosed Component 3m Planning Module. The Township is preparing this module to address the planning needs for the extension of sanitary sewer service to existing properties in the Planebrook Road area of the Township located immediately south of the point where Route 202 crosses over Planebrook Road. The planned average daily wastewater flow from this area is projected to be 29,425 gpd (110,344 gpd Peak).

The wastewater will ultimately be conveyed to East Whiteland Township's Mill Lane Pump Station and discharged from that pump station via the existing force main to the gravity system. It will then proceed to discharge to Tredyffrin Township at their Matthews Road Flow Meter. It is important to note that the capacity of the pumps at the Mill Lane Pump Station shall remain the same. No upgrades are needed to accommodate the proposed flow from the Planebrook Road area.

Please review this planning module component as it relates to available treatment capacity at the VFSA Wastewater Treatment Plant. If there are no capacity concerns, please complete the Table in Section J for 'Treatment', sign the module at the noted location and return it to my attention.

If you have any questions or concerns, please contact me at 610.495.2102 or email me at bill.bohner@arroconsulting.com. Thank you for your assistance with the review of this planning document.

Sincerely,

William L. Bohner, Jr., P.E.

WLB:car

Enclosure

c: William Steele – East Whiteland Township (w/o enclosure)
John Mott, P.E. – ARRO (w/o enclosure)

H:\East Whiteland\10310.21_Planebrook Rd PS Phase 1\01 16 20_VFSA Treatment Component.doc

3800-FM-BPNPSM0353m 1/2013
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Code No.

SEWAGE FACILITIES PLANNING MODULE FOR MINOR ACT 537 UPDATE REVISION

Component 3m. Municipal or Authority Sponsored Minor Sewage Collection Project

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	CLIENT ID #	SITE ID #	APS ID #	AUTH ID #

This document provides a simplified planning format for municipalities and municipal authorities proposing the construction of a sewer extension primarily serving existing development. Typically, this format would be used for projects involving the extension of sewer service to no more than 100 equivalent dwelling units (EDUs) and where the majority of the project serves existing development. For projects where more than 50 percent of the proposed customers will result from new land development, a Component 3 Sewage Facilities Planning Module would typically be used. For larger projects or if the project would involve the construction or modification of a wastewater treatment facility, then a general Act 537 Update Revision, meeting all of the requirements of Title 25 Pennsylvania Code, Chapter 71 § 71.21, is appropriate.

DEP staff will make a final determination as to the appropriate type of planning for a given project based on the review of a plan of study. Eligibility for a grant to offset the cost of planning will be determined by DEP staff based upon review of a *Task/Activity Report* (3800-FM-BPNPSM0005). The project sponsor submits both documents. **DO NOT** use this form without coordinating with your local DEP staff. Refer to the instructions.

This planning document, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name

   East Whiteland Township; Planebrook Road Area Sanitary Sewer Extension

2. Brief Project Description

   Extend public sewer service to existing properties located along, adjacent to, and near Planebrook Road.

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact - Last Name	First Name	MI	Suffix	Title
Steele	William			Director of Public Works

Additional Individual - Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line - City	State	ZIP+4
Frazier	PA	19355

Phone + Ext.	FAX (optional)	Email (optional)
610-948-0600		wsteele@eastwhiteland.org

C. SITE INFORMATION (See Section C of instructions)

Site Name				
Planebrook Road Area				
Site Location Line 1		**Site Location Line 2**		
Immediately North of the Intersection of Planebrook Road and Lincoln Highway				
Site Location Last Line - City	**State**	**ZIP+4**	**Latitude**	**Longitude**
Malvern	PA	19355	40.04 Deg.	-75.57 Deg.

Detailed Written Directions to Site

State Route 202 South to the Exit for Rt. 30 E. Business.; Follow Rt. 30 E. Business to the intersection with Planebrook Road. Make a left on to Planebrook Road and this will take you to the planning area.

Description of Site

Primarily existing residential and some commercial properties.

Site Contact - Last Name	First Name	MI	Suffix	Phone	Ext.
Steele	William			(610)948-0600	

Site Contact Title	Site Contact Firm (if none, leave blank)
Director of Public Works	East Whiteland Township
FAX	**Email**
	wsteele@eastwhiteland.org
Mailing Address Line 1	**Mailing Address Line 2**
209 Conestoga Road	

Mailing Address Last Line – City	State	ZIP+4
Frazier	PA	19355

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Bohner	William	L	Jr.

Title	Consulting Firm Name
Project Engineer	ARRO Consulting, Inc.
Mailing Address Line 1	**Mailing Address Line 2**
350 West Main Street	Suite 200

Address Last Line - City	State	ZIP+4	Country
Trappe	PA	19426	USA

Email	Phone	Ext.	FAX
bill.bohner@thearrogroup.com	610.495.2102		610.495.5855

E. AVAILABILITY OF DRINKING WATER SUPPLY (See Section E of instructions)

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: Aqua PA

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section E of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section E of the instructions.

☐ G. SEWAGE DISPOSAL NEEDS IDENTIFICATION (See Section G of instructions)

Conduct sanitary and water supply surveys per DEP's publication entitled *Sewage Disposal Needs Identification.* This is highly recommended for all projects. It is required if PENNVEST funding is to be sought for the project, or if required by DEP as indicated by the checked box opposite this item.

H. EXISTING WASTEWATER FACILITIES (See Section H of instructions)

1. **COLLECTION SYSTEM**

Provide requested information concerning the existing treatment facility.

a. Name of existing collection system East Whiteland Twp. System

Clean Streams Law Permit Number 1515402

b. Name of interceptor Whiteland Village Sewer Extension/Interceptor

Clean Streams Law Permit Number 1515402

2. **WASTEWATER TREATMENT FACILITY**

Provide requested information concerning the existing treatment facility.

Name of existing facility Valley Forge Sewer Authority WWTP

NPDES Permit Number for existing facility 43974

I. PROPOSED WASTEWATER FACILITIES (See Section I of instructions)

1. Provide an estimate of the immediate and five year projected flow from the proposed sewer extension. Address the capacity for this flow in the existing conveyance and treatment facilities in terms of the most recent wasteload management annual report for these facilities.

2. **PLOT PLAN**

The following information is to be submitted on a plot plan or map of the proposed project that clearly reflects the relationship between the proposed facilities and the identified features.

a. Existing and proposed buildings.

b. Lot lines and lot sizes.

c. Adjacent lots.

d. Existing and proposed sewerage facilities.

e. Show tap-in or sewer extension to the point of connection to existing collection system.

f. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)

g. Existing and proposed rights-of-way.

h. Existing and proposed streets, roadways, access roads, etc.

i. Any designated recreational or open space area

j. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.

k. Flood plains or Floodprone area soils, floodways, watercourses, water bodies (from Federal Flood Insurance Mapping)

l. Prime Agricultural Land.

m. Any other facilities (pipelines, power lines, etc.)

n. Orientation to north.

I. PROPOSED WASTEWATER FACILITIES (continued)

3. WETLAND PROTECTION

YES NO

a. ☐ ☒ Are there wetlands in the project area? If yes, indicate these areas on the plot plan as shown in the mapping or through on-site delineation.

b. ☐ ☒ Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on HQ or EV streams and address impacts of the permitting requirements of said encroachments on the project.

4. PRIMARY AGRICULTURAL LAND PROTECTION

a. ☐ ☒ Will your project involve the disturbance of any prime agricultural lands? If "yes" indicate any alternatives to this disturbance that were considered and the reasons they were not deemed feasible. Identify any primary or secondary impacts of the project on the Commonwealth's prime agricultural lands. Evaluate alternatives to avoid or mitigate undesirable impacts. The selected sewage facilities plan must be consistent with local measures in place to protect prime agricultural lands.

5. STORMWATER MANAGEMENT IMPACTS:

a. ☐ ☒ Will the project impact an area covered by a DEP approved County Stormwater Management Plan? If yes show that the proposed facilities are consistent with that plan.

6. PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI) CONSISTENCY:

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdiction agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials WLB

7. COMPREHENSIVE PLAN CONSISTENCY:

☒ A narrative and mapping to show that the proposed project is consistent with any comprehensive plan developed under the Pennsylvania Municipalities Planning Code (Act 247) is attached. Document that the proposed project is consistent with land use and all other requirements stated in the comprehensive plan.

8. COOPERATION WITH PA. HISTORICAL AND MUSEUM COMMISSION (PHMC):

☒ A copy of DEP's "Cultural Resource Notice" and map which were sent to the Commission and a copy of the Commission's response are attached. Note that the Commission may require archeological surveys if federal funds, including PENNVEST, will be used in the project. If PENNVEST funds are to be used, DEP cannot recommend the project to PENNVEST for consideration until any required surveys have been done and the project has been "cleared" by the Commission.

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 29,425 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection						
Conveyance						
Treatment	11.75 MGD	32 MGD	7.512 MGD	13.898 MGD	7.681 MGD	9.212 MGD

3. Collection and Conveyance Facilities

The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature _____

Date _____

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent William Steele

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☑ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

Sign Here

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent Martin F. Goldberg

Agent Signature Martin F Goldberg

Date 01/28/20

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

M. PROJECT COST AND FUNDING ANALYSIS (See Section M of instructions)

☒ A detailed cost estimate and present worth analysis for the project is attached. Provide a financing plan for the project, identifying the funding source(s) and identifying estimated tap fees and user rates. For projects proposing the use of PENNVEST funds, see Section I. 9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS**. Complete the following table:

Cost and Funding Information (Estimated)	
COST	
Construction cost	$
Administrative, legal, engineering cost	$
Total project cost	$
Annual O/M cost	$
FUNDING	
Tap-in fees ($ per EDU X no. EDUs)	$
Proceeds from primary funding source	$
Proceeds from other funding sources	$
USER COSTS	
Initial user base	EDUs
Monthly debt service per EDU	$
Monthly O/M cost per EDU	$
Total estimated monthly user cost per EDU	$

N. PROJECT IMPLEMENTATION SCHEDULE (See Section N of instructions)

☒ A project implementation schedule showing milestone dates for submission of DEP permit applications, initiation and completion of construction and any other milestones significant to this particular project is attached to this component

O. PUBLIC NOTIFICATION REQUIREMENT (See Section O of instructions)

☒ Attached is a copy of the public notice. All comments received as a result of the notice are attached.

☐ Municipal response to these comments is attached.

☒ No comments were received. A copy of the public notice is attached.

☐ P. ADDITIONAL CHAPTER 71 PLANNING ELEMENTS (See Section P of instructions)

a. Additional planning elements are required by DEP.

- _____
- _____
- _____
- _____
- _____

Q. PLANNING AGENCY REVIEW (See Section Q of instructions)

☒ Local Planning Commission comments or Component 4a are attached.

☒ County, Area, Or Region Planning Commission comments or Component 4b are attached.

☒ County or Joint County Health Department comments (if appropriate) or Component 4c are attached.

R. RESOLUTION OF ADOPTION (See Section R of instructions)

☒ An **original**, **signed**, and **sealed** Resolution of Adoption is attached.

Exhibit G

Water Supply Will Serve Letter

September 16, 2016

William L. Bohner Jr
The Arro Group

Re: Water Availability
Frame and Planebrook
East Whiteland Twp, Chester County

In response to your request, this letter will serve as confirmation that the above referenced property is situated within Aqua Pennsylvania Inc. service territory.

Domestic and fire water service is available to this property and will be provided in accordance with Aqua Pennsylvania, Inc. Rules and Regulations. For further details, visit www.aquaamerica.com.

With regard to our capacity for domestic and fire service for this area, flow data information can be obtained upon written request to Ms. Lisa Thomas-Oliva of our Control Center. Ms. Thomas-Oliva can be reached at (610) 645-1067 but requests must be made in writing. Her fax number is (610) 645-1162.

Should you have any further questions or need to request an application for service, contact me at (610) 541-4160 or dlciotti@aquaamerica.com.

Regards,

Deanna L. Ciotti
Special Services Coordinator-New Business Applications
Aqua Pennsylvania, Inc
700 W Sproul Rd
Springfield, PA 19064
O: 610.541.4160

Exhibit H

Component 4B

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

INSTRUCTIONS FOR COMPLETING COMPONENT 4B
COUNTY PLANNING AGENCY REVIEW
(or Planning Agency with Areawide Jurisdiction)

Remove and recycle these instructions prior to mailing component to the approving agency.

Background

This component, Component 4, is used to obtain the comments of planning agencies and/or health departments having jurisdiction over the project area. It is used in conjunction with other planning module components appropriate to the characteristics of the project proposed.

Who Should Complete the Component?

The component should be completed by any existing municipal planning agency, county planning agency, planning agency with areawide jurisdiction, and/or health department having jurisdiction over the project site. It is divided into sections to allow for convenient use by the appropriate agencies.

The project sponsor must forward copies of this component, along with supporting components and data, to the appropriate planning agency(ies) and health department(s) (if any) having jurisdiction over the development site. These agencies are responsible for responding to the questions in their respective sections of Component 4, as well as providing whatever additional comments they may wish to provide on the project plan. After the agencies have completed their review, the component will be returned to the applicant. The agencies have 60 days in which to provide comments to the applicant. If the agencies fail to comment within this 60 day period, the applicant may proceed to the next stage of the review without the comments. The use of registered mail or certified mail (return receipt requested) by the applicant when forwarding the module package to the agencies will document a date of receipt.

After receipt of the completed Component 4 from the planning agencies, or following expiration of the 60 day period without comments, the applicant must submit the entire component package to the municipality having jurisdiction over the project area for review and action. If approved by the municipality, the proposed plan, along with the municipal action, will be forwarded to the approving agency (Department of Environmental Protection or delegated local agency). The approving agency, in turn, will either approve the proposed plan, return it as incomplete, or disapprove the plan, based upon the information provided.

Instructions for Completing Planning Agency and/or Health Department Review Component

Section A. Project Name

Enter the project name as it appears on the accompanying sewage facilities planning module component (Component 2, 3, 3s or 3m).

Section B. Review Schedule

Enter the date the package was received by the reviewing agency, and the date that the review was completed.

Section C. Agency Review

1. Answer the yes/no questions and provide any descriptive information necessary on the lines provided. Attach additional sheets, if necessary.

2. Complete the name, title, and signature block.

Section D. Additional Comments

The Agency may provide whatever additional comment(s) it deems necessary, as described in the form. Attach additional sheets, if necessary.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4B - COUNTY PLANNING AGENCY REVIEW

(or Planning Agency with Areawide Jurisdiction)

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning package and one copy of this *Planning Agency Review Component* should be sent to the county planning agency or planning agency with areawide jurisdiction for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name

Planebrook Road Area Sanitary Sewer Extension

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county planning agency _____
2. Date plan received by planning agency with areawide jurisdiction _____

   Agency name _____
3. Date review completed by agency _____

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☐	☐	1.	Is there a county or areawide comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101 *et seq.*)?
☐	☐	2.	Is this proposal consistent with the comprehensive plan for land use?
☐	☐	3.	Does this proposal meet the goals and objectives of the plan? If no, describe goals and objectives that are not met _____
☐	☐	4.	Is this proposal consistent with the use, development, and protection of water resources? If no, describe inconsistency _____
☐	☐	5.	Is this proposal consistent with the county or areawide comprehensive land use planning relative to Prime Agricultural Land Preservation? If no, describe inconsistencies: _____
☐	☐	6.	Does this project propose encroachments, obstructions, or dams that will affect wetlands? If yes, describe impact _____
☐	☐	7.	Will any known historical or archeological resources be impacted by this project? If yes, describe impacts _____
☐	☐	8.	Will any known endangered or threatened species of plant or animal be impacted by the development project? If yes, describe impacts _____
☐	☐	9.	Is there a county or areawide zoning ordinance?
☐	☐	10.	Does this proposal meet the zoning requirements of the ordinance? If no, describe inconsistencies _____

SECTION C. AGENCY REVIEW (continued)

Yes	No		
☐	☐	11.	Have all applicable zoning approvals been obtained?
☐	☐	12.	Is there a county or areawide subdivision and land development ordinance?
☐	☐	13.	Does this proposal meet the requirements of the ordinance?
			If no, describe which requirements are not met _____
☐	☐	14.	Is this proposal consistent with the municipal Official Sewage Facilities Plan?
			If no, describe inconsistency _____
☐	☐	15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality?
			If yes, describe _____
☐	☐	16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
☐	☐		If yes, is the proposed waiver consistent with applicable ordinances.
			If no, describe the inconsistencies _____
☐	☐	17.	Does the county have a stormwater management plan as required by the Stormwater Management Act?
☐	☐		If yes, will this project plan require the implementation of storm water management measures?
		18.	Name, Title and signature of person completing this section:
			Name: _____
			Title: _____
			Signature: _____
			Date: _____
			Name of County or Areawide Planning Agency: _____
			Address: _____
			Telephone Number: _____

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit county planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The county planning agency must complete this component within 60 days.

This component and any additional comments are to be returned to the applicant.

Exhibit I

Component 4A

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

INSTRUCTIONS FOR COMPLETING COMPONENT 4A
MUNICIPAL PLANNING AGENCY REVIEW

Remove and recycle these instructions prior to mailing component to the approving agency.

Background

This component, Component 4, is used to obtain the comments of planning agencies and/or health departments having jurisdiction over the project area. It is used in conjunction with other planning module components appropriate to the characteristics of the project proposed.

Who Should Complete the Component?

The component should be completed by any existing municipal planning agency, county planning agency, planning agency with areawide jurisdiction, and/or health department having jurisdiction over the project site. It is divided into sections to allow for convenient use by the appropriate agencies.

The project sponsor must forward copies of this component, along with supporting components and data, to the appropriate planning agency(ies) and health department(s) (if any) having jurisdiction over the development site. These agencies are responsible for responding to the questions in their respective sections of Component 4, as well as providing whatever additional comments they may wish to provide on the project plan. After the agencies have completed their review, the component will be returned to the applicant. The agencies have 60 days in which to provide comments to the applicant. If the agencies fail to comment within this 60 day period, the applicant may proceed to the next stage of the review without the comments. The use of registered mail or certified mail (return receipt requested) by the applicant when forwarding the module package to the agencies will document a date of receipt.

After receipt of the completed Component 4 from the planning agencies, or following expiration of the 60 day period without comments, the applicant must submit the entire component package to the municipality having jurisdiction over the project area for review and action. If approved by the municipality, the proposed plan, along with the municipal action, will be forwarded to the approving agency (Department of Environmental Protection or delegated local agency). The approving agency, in turn, will either approve the proposed plan, return it as incomplete, or disapprove the plan, based upon the information provided.

Instructions for Completing Planning Agency and/or Health Department Review Component

Section A. Project Name

Enter the project name as it appears on the accompanying sewage facilities planning module component (Component 2, 2m, 3, 3s or 3m).

Section B. Review Schedule

Enter the date the package was received by the reviewing agency, and the date that the review was completed.

Section C. Agency Review

1. Answer the yes/no questions and provide any descriptive information necessary on the lines provided. Attach additional sheets, if necessary.

2. Complete the name, title, and signature block.

Section D. Additional Comments

The Agency may provide whatever additional comment(s) it deems necessary, as described in the form. Attach additional sheets, if necessary.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4A - MUNICIPAL PLANNING AGENCY REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the local municipal planning agency for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name
Planebrook Road Area Sanitary Sewer Extension

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by municipal planning agency _____
2. Date review completed by agency _____

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☐	☐	1.	Is there a municipal comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101, *et seq.*)?
☐	☐	2.	Is this proposal consistent with the comprehensive plan for land use? If no, describe the inconsistencies _____
☐	☐	3.	Is this proposal consistent with the use, development, and protection of water resources? If no, describe the inconsistencies _____
☐	☐	4.	Is this proposal consistent with municipal land use planning relative to Prime Agricultural Land Preservation?
☐	☐	5.	Does this project propose encroachments, obstructions, or dams that will affect wetlands? If yes, describe impacts _____
☐	☐	6.	Will any known historical or archaeological resources be impacted by this project? If yes, describe impacts _____
☐	☐	7.	Will any known endangered or threatened species of plant or animal be impacted by this project? If yes, describe impacts _____
☐	☐	8.	Is there a municipal zoning ordinance?
☐	☐	9.	Is this proposal consistent with the ordinance? If no, describe the inconsistencies _____
☐	☐	10.	Does the proposal require a change or variance to an existing comprehensive plan or zoning ordinance?
☐	☐	11.	Have all applicable zoning approvals been obtained?
☐	☐	12.	Is there a municipal subdivision and land development ordinance?

SECTION C. AGENCY REVIEW (continued)

Yes	No		
☐	☐	13.	Is this proposal consistent with the ordinance? If no, describe the inconsistencies _____
☐	☐	14.	Is this plan consistent with the municipal Official Sewage Facilities Plan? If no, describe the inconsistencies _____
☐	☐	15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality? If yes, describe _____
☐	☐	16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
☐	☐		If yes, is the proposed waiver consistent with applicable ordinances? If no, describe the inconsistencies _____
		17.	Name, title and signature of planning agency staff member completing this section: Name: _____ Title: _____ Signature: _____ Date: _____ Name of Municipal Planning Agency: _____ Address _____ Telephone Number: _____

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit municipal planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The planning agency must complete this component within 60 days.

This component and any additional comments are to be returned to the applicant.

Exhibit J

Component 4C

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

INSTRUCTIONS FOR COMPLETING COMPONENT 4C
COUNTY OR JOINT HEALTH DEPARTMENT REVIEW

Remove and recycle these instructions prior to mailing component to the approving agency.

Background

This component, Component 4, is used to obtain the comments of planning agencies and/or health departments having jurisdiction over the project area. It is used in conjunction with other planning module components appropriate to the characteristics of the project proposed.

Who Should Complete the Component?

The component should be completed by any existing municipal planning agency, county planning agency, planning agency with areawide jurisdiction, and/or health department having jurisdiction over the project site. It is divided into sections to allow for convenient use by the appropriate agencies.

The project sponsor must forward copies of this component, along with supporting components and data, to the appropriate planning agency(ies) and health department(s) (if any) having jurisdiction over the development site. These agencies are responsible for responding to the questions in their respective sections of Component 4, as well as providing whatever additional comments they may wish to provide on the project plan. After the agencies have completed their review, the component will be returned to the applicant. The agencies have 60 days in which to provide comments to the applicant. If the agencies fail to comment within this 60 day period, the applicant may proceed to the next stage of the review without the comments. The use of registered mail or certified mail (return receipt requested) by the applicant when forwarding the module package to the agencies will document a date of receipt.

After receipt of the completed Component 4 from the planning agencies, or following expiration of the 60 day period without comments, the applicant must submit the entire component package to the municipality having jurisdiction over the project area for review and action. If approved by the municipality, the proposed plan, along with the municipal action, will be forwarded to the approving agency (Department of Environmental Protection or delegated local agency). The approving agency, in turn, will either approve the proposed plan, return it as incomplete, or disapprove the plan, based upon the information provided.

Instructions for Completing Planning Agency and/or Health Department Review Component

Section A. Project Name

Enter the project name as it appears on the accompanying sewage facilities planning module component (Component 2, 2m, 3, 3s or 3m).

Section B. Review Schedule

Enter the date the package was received by the reviewing agency, and the date that the review was completed.

Section C. Agency Review

1. Answer the yes/no questions and provide any descriptive information necessary on the lines provided. Attach additional sheets, if necessary.

2. Complete the name, title, and signature block.

Section D. Additional Comments

The Agency may provide whatever additional comment(s) it deems necessary, as described in the form. Attach additional sheets, if necessary.

3850-FM-BCW0362C 6/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4C - COUNTY OR JOINT HEALTH DEPARTMENT REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the county or joint county health department for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name

Planebrook Road Area Sanitary Sewer Extension

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county or joint county health department _____

   Agency name _____

2. Date review completed by agency _____

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☐	☐	1.	Is the proposed plan consistent with the municipality's Official Sewage Facilities Plan? If no, what are the inconsistencies? _____
☐	☐	2.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality? If yes, describe _____
☐	☐	3.	Is there any known groundwater degradation in the area of this proposal? If yes, describe _____
☐	☐	4.	The county or joint county health department recommendation concerning this proposed plan is as follows: _____
		5.	Name, title and signature of person completing this section: Name: _____ Title: _____ Signature: _____ Date: _____ Name of County Health Department: _____ Address: _____ Telephone Number: _____

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit county planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The county planning agency must complete this component within 60 days.
This component and any additional comments are to be returned to the applicant.

Exhibit K

Public Notice/Proof of Publication/Public Comment

PUBLIC NOTICE

((To be Drafted))

Exhibit L

PNDI/PHMC Correspondence

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: MS ED
DATE RECEIVED: 1/15/20	DATE DUE: 2/13/20
ER NUMBER: 2016-1123-029-C	HRSF:

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (●) YES ( ) NO OR ( ) This is additional information for ER Number:

Project Name: Planebrook Road Area Act 537 Planning | County: Chester | Municipality: East Whiteland Township

Project Address: Planebrook Road | City/State/ Zip: Malvern, PA 19355

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name	William L. Bohner, Jr. P.E.	Phone	(610) 495-2102
Company	ARRO Consulting, Inc.	Fax	(610) 495-5855
Street/PO Box	350 West Main Street; Suite 200	Email	bill.bohner@thearrogroup.com
City/State/Zip	Trappe, PA 19426		

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 1.5 Acres | Total acres of earth disturbance: 1.5 Acres

Are there any buildings or structures within the project area? (●) Yes ( ) No | Approximate age of buildings: 30-40 yrs.

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	( )	(●)	( )	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☒ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: DM for Douglas McLearen **DATE:** 2.10.2020

1. PROJECT INFORMATION

Project Name: **Planebrook Road Area Sanitary Sewer Extension**
Date of Review: **12/31/2019 10:30:27 AM**
Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**
Project Area: **11.26 acres**
County(s): **Chester**
Township/Municipality(s): **EAST WHITELAND**
ZIP Code: **19355**
Quadrangle Name(s): **MALVERN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Little Valley Creek-Valley Creek**
Decimal Degrees: **40.037688, -75.572765**
Degrees Minutes Seconds: **40° 2' 15.6780" N, 75° 34' 21.9528" W**

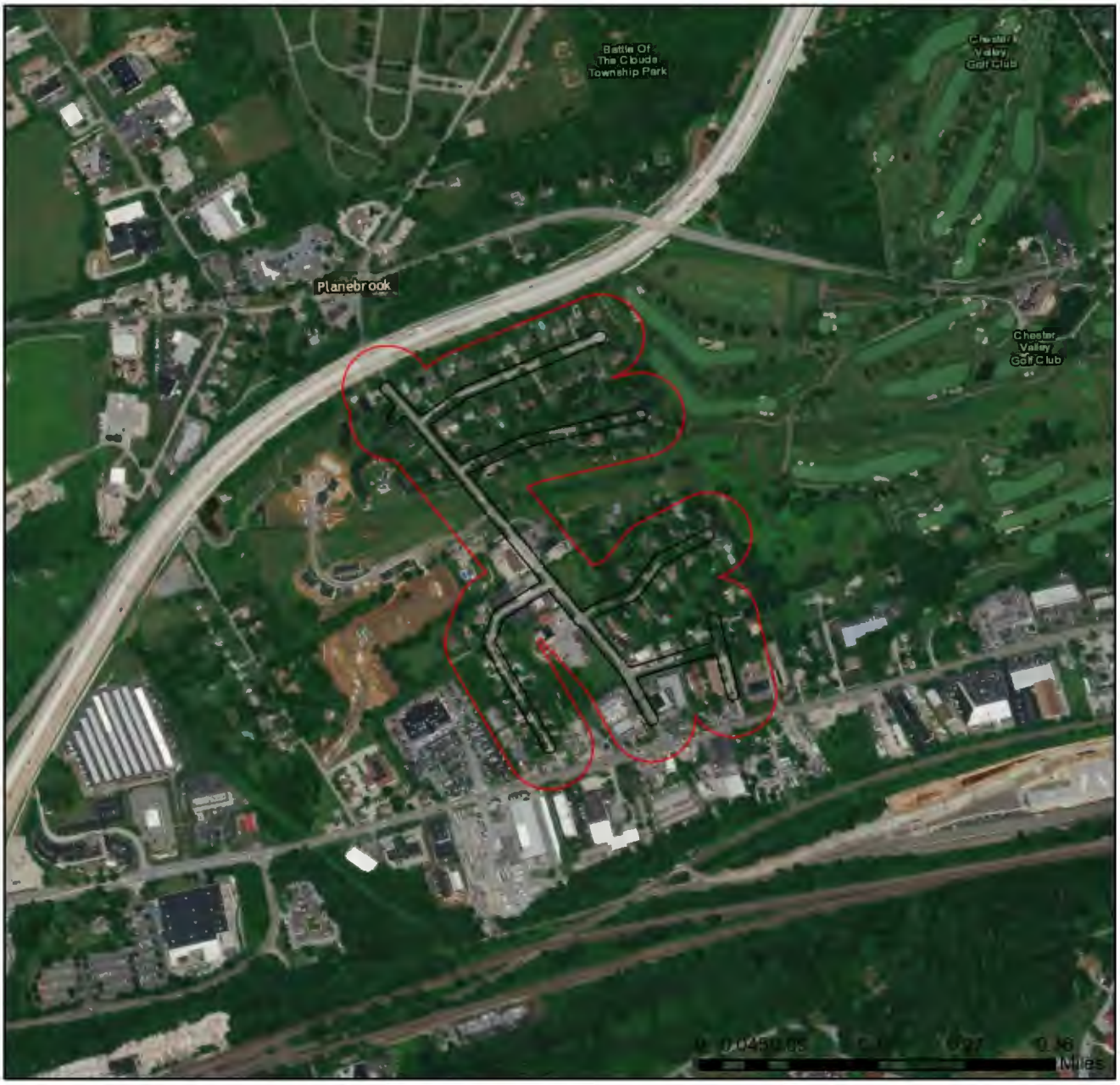
2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 must comply with the bog turtle habitat screening requirements of the PASPGP.

Planebrook Road Area Sanitary Sewer Extension



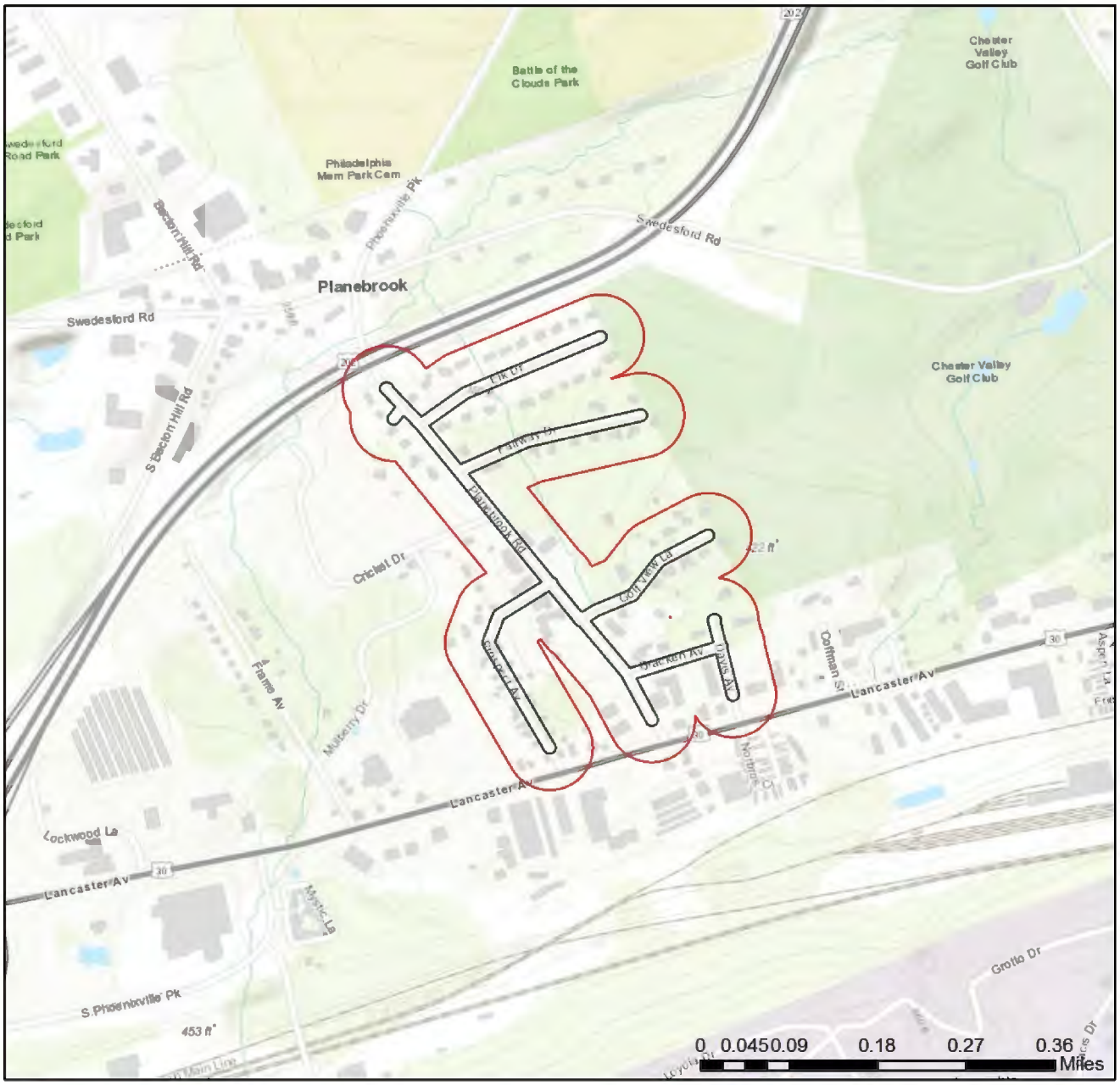
Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Planebrook Road Area Sanitary Sewer Extension



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?
Your answer is: No

Q2: Describe how wastewater (effluent) will be handled (select one). For the purpose of this question, wastewater/effluent does not include stormwater runoff. If the project involves solely the renewal or modification of an existing discharge permit (e.g., NPDES permit), select from options 3, 4, 5, or 6 below.
Your answer is: All wastewater/effluent from this project/activity will be routed to an existing municipal wastewater treatment plant.

Q3: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: The entire project and associated discharge, plus a 300-foot buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, or crop agriculture field.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:

Avoidance Measure: Do not conduct this project/activity within 50 feet of any streams, rivers, creeks, or tributaries. This includes both perennial and intermittent waterways.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).
***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name:_____
Company/Business Name:_____
Address:_____
City, State, Zip:_____
Phone:(_____)_____Fax:(_____)_____
Email:_____

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

_____ _____
applicant/project proponent signature date

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ____/____
DATE RECEIVED:	DATE DUE:
ER NUMBER:	HRSF: _____

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? ◯ YES ◯ NO **OR** ◯ **This is additional information for ER Number:**

Project Name: Planebrook Road Area Act 537 Planning | County: Chester | Municipality: East Whiteland Township

Project Address: Planebrook Road | City/State/ Zip: Malvern, PA 19355

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: William L. Bohner, Jr. P.E. | Phone: (610) 495-2102

Company: ARRO Consulting, Inc. | Fax: (610) 495-5855

Street/PO Box: 350 West Main Street; Suite 200 | Email: bill.bohner@thearrogroup.com

City/State/Zip: Trappe, PA 19426

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.	**Agency Type**	**Agency/Program/Permit Name**	**Project/Permit/Tracking Number (if applicable)**

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 1.5 Acres | Total acres of earth disturbance: 1.5 Acres

Are there any buildings or structures within the project area? ◯ Yes ◯ No | Approximate age of buildings: 30-40 yrs.

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	◯	◯	◯	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map –** 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope –** Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings –** Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs –** Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: _____ **DATE:** _____

Exhibit M

Stormwater Management Narrative

Stormwater Management Impacts

County Stormwater Management Plan

The Chester County Planning Commission currently has a stormwater management plan in place. Most of East Whiteland Township (and all of the planning area for this 537 Plan) is situated in Valley Creek Watershed. The "Valley Creek Watershed Stormwater Management Plan" was approved by PADEP February 2011.

It should be noted that an Act 167 Plan is not a land use plan. Runoff controls developed in the plan are not based upon controlling the location, type, density or rate of development throughout the watersheds. The stormwater runoff performance standards are based on the assumptions that development will occur throughout the watersheds. The plan is designed to provide for new development yet control the associated storm runoff impacts. The most important aspect of an Act 167 (Stormwater Management) Plan is that it establishes a process for decision making…the peak flows and timing relationships provide for development for a runoff control philosophy geared toward minimizing the storm runoff impacts of new development."

This particular stormwater management plan addresses the impacts of stormwater quality and quantity on groundwater and surface water resources, geomorphology, and aquatic habitat of the Valley Creek watershed.

The reason for preparing this Plan is to satisfy the requirements of the Pennsylvania Stormwater Management Act, Act 167 of 1978, and to establish scientifically-based stormwater management implementation strategies that restore and protect the water resources and maintain safe and productive communities.

From a consistency perspective, it appears that the plan to provide public sewer service to the Planebrook Road Planning Area is consistent with the stormwater management plan.

The stormwater ordinance does not regulate the development. It simply regulates how the stormwater will be managed. As a consequence, prior to construction of this project, the appropriate stormwater and E&S measures will be taken. An E&S plan will be submitted to the Chester County Conservation District for review and approval.

Exhibit N

Comprehensive Plan Consistency

Comprehensive Plans

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes3," was adopted in November of 2018. The alternatives to provide public sanitary sewer service to accommodate needs areas in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes3 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted their Comprehensive Plan in July 2016. This plan emphasizes the importance of public utilities to Township infrastructure. The Planebrook Road Area is identified in this comprehensive plan as a future public sewer service area.

This Component 3m is consistent with the objectives set forth in Watersheds as well as the Township's Comprehensive Plan.

Exhibit O

Alternative Analysis

Alternative Analysis

This Act 537 Planning Module (Component 3m) has been prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This planning module addresses the planning requirements necessary for the Township to provide public sanitary sewer service to existing developed properties.

For this planning module, the following pertinent information applies:

1. Project Name: Sanitary Sewer Service Extension.
2. Project Description:

    - Extend public sanitary sewer service from existing sanitary manhole located on Planebrook Road to existing properties located along Planebrook Road, Elk Drive, Fairview Drive, Prospect Avenue, Golfview Circle, Bracken Avenue, and Davis Avenue.

3. Applicant Name: East Whiteland Township
4. Applicant Contact: William Steele; 209 Conestoga Road, Frazer, PA 19355
5. Site Location: Planebrook Road Area
6. Municipality/County: East Whiteland Township/Chester County

The primary focus of the planning module is to establish the means and methods for providing public sewer service to existing properties in the Planebrook Road area south of Route 202.

Flow projections identified in the planning module show the ultimate wastewater flow of 29,425 gpd, which encompasses 107 equivalent dwelling units.

In considering alternatives for this project, there are two primary alternatives:

1. Do nothing and continue to utilize the existing on-lot disposal systems.
2. Provide public sewer service to the identified properties.

Due to the proximity of the existing pubic sewer, many local residents have expressed interest in the ability to make connection to the public system. Currently, sanitary sewer mains are located adjacent to the planning area, serving the new development on the Cockerham property.

To provide this type of service a connection will need to be made at the existing sanitary manhole located at Planebrook Road. All work shall be within the roadway and existing public right-of-way. The total disturbed area will be approximately 1.5 acres for the proposed sewer main.

Copies of the mailers returned by local residents are included in this section and the text from the Act 537 Planning for the Planebrook Road Regional Pump Station is also included for your reference.

.

Exhibit P

Institutional Evaluation

Institutional Evaluation

For the proposed sewer extension, the East Whiteland Township will prepare the design. In addition, the Township will obtain all of the necessary permits and pay for the construction of the sewer extension.

The individual property owners shall be responsible for contracting with a plumber and installing their own lateral to connect to the sewer main.

For those properties that will connect to low pressure sewers, the Township will purchase and supply grinder pumps to each property owner that will need one. The Township will not keep any spare grinder pump systems on-hand in the event of a failure.

Property owners will received their pump system, they will have their plumber install and connect to the lateral at the right of way line. Operation and maintenance will be the responsibility of the property owner.

Exhibit Q

Project Implementation Schedule

Implementation Schedule

Initiate Act 537 Sewage Facilities Planning Module	December 2019
Submit to Planning Commissions and Health Dept. for Review	March 2020
Advertise for Public Comment	April/May 2020
Respond to Comments (Public and County)	May 2020
Adopt Resolution	June 2020
Submit Planning Module to PA DEP for review	June 2020
Receive PA DEP Approval	September 2020
Begin Project Implementation	October 2020

Exhibit R

Project Narrative

Project Narrative

This Act 537 Planning Module (Component 3m) has been prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This planning module addresses the planning requirements necessary for the Township to provide public sanitary sewer service to existing developed properties.

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3. **Applicant Name**: East Whiteland Township
4. **Applicant Contact**: William Steele; 209 Conestoga Road, Frazer, PA 19355
5. **Site Location**: Planebrook Road Area
6. **Municipality/County**: East Whiteland Township/Chester County

The primary focus of the planning module is to establish the means and methods for providing public sewer service to existing properties in the Planebrook Road area south of Route 202.

Flow projections identified in the planning module show the ultimate wastewater flow of 29,425 gpd, which encompasses 107 equivalent dwelling units.

In considering alternatives for this project, there are two primary alternatives:

1. Do nothing and continue to utilize the existing on-lot disposal systems.
2. Provide public sewer service to the identified properties.

Due to the proximity of the existing pubic sewer, local residents have expressed interest in the ability to make connection to the public system. Currently, sanitary sewer mains are located adjacent to the planning area, serving new development recently constructed on the Cockerham property.

To provide this type of service, a connection will need to be made at the existing sanitary manhole located at Planebrook Road. Public Sewer service will be via gravity sewer for Planebrook Road, Prospect Avenue, Golfview Circle, Bracken Avenue, and Davis Avenue. Elk Drive and Fairview Drive will require low-pressure sewer service. Wastewater will ultimately be collected and conveyed by the Planebrook Regional Pump Station to the Whiteland Village Interceptor Extension which has the capacity to handle the proposed peak flow. From this interceptor, flow will be conveyed to the Mill Lane Pump Station. Wastewater will exit East Whiteland Township at the Matthews Road meter.

.

Exhibit S

Public Interest

PLANEBROOK ROAD AREA SEWER PROJECT RETURNED POSTCARD VOTES

	A	B	C	D
1	**NAME & ADDRESSES**	**RESPONSES**	**RESPONSES**	**UNDECIDED**
2				
3	**PLANEBROOK ROAD**			
4				
5	52 PLANEBROOK RD, 42-3-164	YES		
6	84 PLANEBROOK RD, 42-3-168	YES		
7	92 PLANEBROOK RD, 42-3-169	YES		
8	150 PLANEBROOK RD, 42-3-170		NO	
9	113/153 PLANEBROOK RD, 42-3Q-22	YES		
10	173 PLANEBROOK RD, 42-3R-22	YES		
11	176 PLANEBROOK RD, 42-3-178	YES		
12				
13	**GOLF VIEW LANE**			
14				
15	4 GOLF VIEW LANE, 42-3R-22.1	YES		
16	9 GOLF VIEW LANE, 42-3R-24		NO	
17	10 GOLF VIEW LANE, 42-3R-32		NO	
18	13 GOLF VIEW LANE, 42-3R-26	YES		
19	14 GOLF VIEW LANE, 42-3R-30	YES		
20	15 GOLF VIEW LANE, 42-3R-27	YES		
21	16 GOLF VIEW LANE, 42-3R-29	YES		
22				
23	**ELK LANE**			
24				
25	3 ELK DR, 42-3-193.5		NO	
26	4 ELK DR, 42-3-194.3	YES		
27	5 ELK DR, 42-3-193.4	YES		
28	6 ELK DR, 42-3-194.2	YES		
29	13 ELK DR, 42-3-192.1	YES		
30	15 ELK DR, 42-3-192		NO	
31	17 ELK DR, 42-3-191.1	YES		
32	18 ELK DR, 42-3-198.1	YES		
33	19 ELK DR. 42-3-191			MAYBE
34	20 ELK DR. 42-3-198		NO	
35	21 ELK DR, 42-3-191.2	YES		
36				
37	**FAIRWAY DRIVE**			
38				
39	1 FAIRWAY DR, 42-3-194		NO	
40	2 FAIRWAY DR, 42-3Q-27		NO	
41	15 FAIRWAY DR. 42-3R-36	YES		
42				
43	**PROSPECT AVE**			
44				
45	9 PROSPECT AVE, 42-3Q-17		NO	
46	16 PROSPECT AVE, 42-3Q-5	YES		

PLANEBROOK ROAD AREA SEWER PROJECT RETURNED POSTCARD VOTES

	A	B	C	D
47	19 PROSPECT AVE, 42-3Q-14	YES		
48	23 PROSPECT AVE, 42-3Q-13	YES		
49	26 PROSPECT AVE, 42-3Q-2	YES		
50	27 PROSPECT AVE, 42-3Q-12	YES		
51	41 PROSPECT AVE, 42-3-172	YES		
52	43 PROSPECT AVE, 42-3-173	YES		
53	45 PROSPECT AVE, 42-3-174	YES		
54				
55	**DAVIS AVE**			
56				
57	24 DAVIS AVE, 42-3R-19		NO	
58	25 DAVIS AVE, 42-3R-18	YES		
59	31 DAVIS AVE, 42-3R-28			MAYBE
60				
61	**COFFMAN AVE**			
62				
63	10 COFFMAN AVE, 42-3R-15.1	YES		
64	14 COFFMAN AVE, 42-3R-15	YES		
65	37 COFFMAN AVE, 42-3-216.1	YES		
66	45 COFFMAN AVE, 42-3-216.3	YES		
67				
68	**BRACKEN AVENUE**			
69				
70	36 BRACKEN AVE, 42-3R-20		NO	
71				
72				
73		**32**	**11**	**2**
74				
75	45/84			

East Whiteland Township
Sewage Facilities Planning Module
(Component 3m)
Swedesford Road
Low Pressure Sewer Extension

April 2021

P.N. 10310.36

Prepared by:

ARRO Consulting, Inc.
321 North Furnace Street
Suite 200
Birdsboro, PA 19508

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Exhibit A

Resolution of Adoption

Exhibit B

Component 3m

3800-FM-BPNPSM0353m 1/2013
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

Code No.

SEWAGE FACILITIES PLANNING MODULE FOR MINOR ACT 537 UPDATE REVISION

Component 3m. Municipal or Authority Sponsored Minor Sewage Collection Project

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE #	CLIENT ID #	SITE ID #	APS ID #	AUTH ID #

This document provides a simplified planning format for municipalities and municipal authorities proposing the construction of a sewer extension primarily serving existing development. Typically, this format would be used for projects involving the extension of sewer service to no more than 100 equivalent dwelling units (EDUs) and where the majority of the project serves existing development. For projects where more than 50 percent of the proposed customers will result from new land development, a Component 3 Sewage Facilities Planning Module would typically be used. For larger projects or if the project would involve the construction or modification of a wastewater treatment facility, then a general Act 537 Update Revision, meeting all of the requirements of Title 25 Pennsylvania Code, Chapter 71 § 71.21, is appropriate.

DEP staff will make a final determination as to the appropriate type of planning for a given project based on the review of a plan of study. Eligibility for a grant to offset the cost of planning will be determined by DEP staff based upon review of a *Task/Activity Report* (3800-FM-BPNPSM0005). The project sponsor submits both documents. **DO NOT** use this form without coordinating with your local DEP staff. Refer to the instructions.

This planning document, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name

   East Whiteland Township; Swedesford Road Low Pressure Sewer Extension

2. Brief Project Description

   Extend low pressure sewer service to properties on Swedesford Road.

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact - Last Name	First Name	MI	Suffix	Title
Neild	John			Director of Public Works

Additional Individual - Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Address Last Line - City	State	ZIP+4
Frazer	PA	19355

Phone + Ext.	FAX (optional)	Email (optional)
610-948-0600		jneild@eastwhiteland.org

C. SITE INFORMATION (See Section C of instructions)

Site Name				
Swedesford Road (Low Pressure Sewer Extension)				
te Location Line 1		Site Location Line 2		
Immediately North of Rt. 202 and near the Intersection of Planebrook Road and Swedesford Road				
Site Location Last Line - City	State	ZIP+4	Latitude	Longitude
Malvern	PA	19355		

Detailed Written Directions to Site

State Route 202 South to the Exit for Rt. 30 E. Business.; Follow Rt. 30 E. Business to the intersection with Planebrook Road. Make a left on to Planebrook Road and follow it to the intersection with Swedesford Road.

Description of Site

Primarily existing residential properties.

Site Contact - Last Name	First Name	MI	Suffix	Phone	Ext.
Neild	John			(610)948-0600	

Site Contact Title	Site Contact Firm (if none, leave blank)
Director of Public Works	East Whiteland Township
FAX	Email
	jneild@eastwhiteland.org
Mailing Address Line 1	Mailing Address Line 2
209 Conestoga Road	

Mailing Address Last Line – City	State	ZIP+4
Frazer	PA	19355

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Bohner	William	L	Jr.

Title	Consulting Firm Name
Project Engineer	ARRO Consulting, Inc.
Mailing Address Line 1	Mailing Address Line 2
321 N. Furnace Street	Suite 200

Address Last Line - City	State	ZIP+4	Country
Birdsboro	PA	19508	USA

Email	Phone	Ext.	FAX
bill.bohner@thearrogroup.com	610.495.2102		610.495.5855

E. AVAILABILITY OF DRINKING WATER SUPPLY (See Section E of instructions)

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: Aqua PA

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section E of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section E of the instructions.

☐ G. SEWAGE DISPOSAL NEEDS IDENTIFICATION (See Section G of instructions)

Conduct sanitary and water supply surveys per DEP's publication entitled *Sewage Disposal Needs Identification.* This is highly recommended for all projects. It is required if PENNVEST funding is to be sought for the project, or if required by DEP as indicated by the checked box opposite this item.

H. EXISTING WASTEWATER FACILITIES (See Section H of instructions)

1. COLLECTION SYSTEM

Provide requested information concerning the existing treatment facility.

a. Name of existing collection system East Whiteland Twp. System

Clean Streams Law Permit Number 1515402

b. Name of interceptor Whiteland Village Sewer Extension/Interceptor

Clean Streams Law Permit Number 1515402

2. WASTEWATER TREATMENT FACILITY

Provide requested information concerning the existing treatment facility.

Name of existing facility Valley Forge Sewer Authority WWTP

NPDES Permit Number for existing facility 43974

I. PROPOSED WASTEWATER FACILITIES (See Section I of instructions)

1. Provide an estimate of the immediate and five year projected flow from the proposed sewer extension. Address the capacity for this flow in the existing conveyance and treatment facilities in terms of the most recent wasteload management annual report for these facilities.

2. PLOT PLAN

The following information is to be submitted on a plot plan or map of the proposed project that clearly reflects the relationship between the proposed facilities and the identified features.

a. Existing and proposed buildings.

b. Lot lines and lot sizes.

c. Adjacent lots.

d. Existing and proposed sewerage facilities.

e. Show tap-in or sewer extension to the point of connection to existing collection system.

f. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)

g. Existing and proposed rights-of-way.

h. Existing and proposed streets, roadways, access roads, etc.

i. Any designated recreational or open space area

j. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.

k. Flood plains or Floodprone area soils, floodways, watercourses, water bodies (from Federal Flood Insurance Mapping)

l. Prime Agricultural Land.

m. Any other facilities (pipelines, power lines, etc.)

n. Orientation to north.

I. PROPOSED WASTEWATER FACILITIES (continued)

3. WETLAND PROTECTION

YES NO

a. ☐ ☒ Are there wetlands in the project area? If yes, indicate these areas on the plot plan as shown in the mapping or through on-site delineation.

b. ☐ ☒ Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on HQ or EV streams and address impacts of the permitting requirements of said encroachments on the project.

4. PRIMARY AGRICULTURAL LAND PROTECTION

a. ☐ ☒ Will your project involve the disturbance of any prime agricultural lands? If "yes" indicate any alternatives to this disturbance that were considered and the reasons they were not deemed feasible. Identify any primary or secondary impacts of the project on the Commonwealth's prime agricultural lands. Evaluate alternatives to avoid or mitigate undesirable impacts. The selected sewage facilities plan must be consistent with local measures in place to protect prime agricultural lands.

5. STORMWATER MANAGEMENT IMPACTS:

a. ☐ ☒ Will the project impact an area covered by a DEP approved County Stormwater Management Plan? If yes show that the proposed facilities are consistent with that plan.

6. PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI) CONSISTENCY:

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdiction agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials WLB

7. COMPREHENSIVE PLAN CONSISTENCY:

☒ A narrative and mapping to show that the proposed project is consistent with any comprehensive plan developed under the Pennsylvania Municipalities Planning Code (Act 247) is attached. Document that the proposed project is consistent with land use and all other requirements stated in the comprehensive plan.

8. COOPERATION WITH PA. HISTORICAL AND MUSEUM COMMISSION (PHMC):

☒ A copy of DEP's "Cultural Resource Notice" and map which were sent to the Commission and a copy of the Commission's response are attached. Note that the Commission may require archeological surveys if federal funds, including PENNVEST, will be used in the project. If PENNVEST funds are to be used, DEP cannot recommend the project to PENNVEST for consideration until any required surveys have been done and the project has been "cleared" by the Commission.

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 3025 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection	3025	7563	0	0	3025	7563
Conveyance	319000	797502	224460	561600	282210	705525
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature _____

Date _____

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent _____

Agent Signature _____

Date _____

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

M. PROJECT COST AND FUNDING ANALYSIS (See Section M of instructions)

☒ A detailed cost estimate and present worth analysis for the project is attached. Provide a financing plan for the project, identifying the funding source(s) and identifying estimated tap fees and user rates. For projects proposing the use of PENNVEST funds, see Section I. 9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS**. Complete the following table:

Cost and Funding Information (Estimated)		
COST		
Construction cost	$	450000
Administrative, legal, engineering cost	$	67500
Total project cost	$	517500
Annual O/M cost	$	6000
FUNDING		
Tap-in fees ($ per EDU X no. EDUs)	$	44000
Proceeds from primary funding source	$	473500
Proceeds from other funding sources	$	0
USER COSTS		
Initial user base	11	EDUs
Monthly debt service per EDU	$	0
Monthly O/M cost per EDU	$	50
Total estimated monthly user cost per EDU	$	50

N. PROJECT IMPLEMENTATION SCHEDULE (See Section N of instructions)

☒ A project implementation schedule showing milestone dates for submission of DEP permit applications, initiation and completion of construction and any other milestones significant to this particular project is attached to this component

O. PUBLIC NOTIFICATION REQUIREMENT (See Section O of instructions)

☒ Attached is a copy of the public notice. All comments received as a result of the notice are attached.

☐ Municipal response to these comments is attached.

☒ No comments were received. A copy of the public notice is attached.

☐ P. ADDITIONAL CHAPTER 71 PLANNING ELEMENTS (See Section P of instructions)

a. Additional planning elements are required by DEP.

- _____
- _____
- _____
- _____
- _____

Q. PLANNING AGENCY REVIEW (See Section Q of instructions)

☒ Local Planning Commission comments or Component 4a are attached.

☒ County, Area, Or Region Planning Commission comments or Component 4b are attached.

☒ County or Joint County Health Department comments (if appropriate) or Component 4c are attached.

R. RESOLUTION OF ADOPTION (See Section R of instructions)

☒ An **original**, **signed**, and **sealed** Resolution of Adoption is attached.

Exhibit C

Sewer Extension Plan Sheets



NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID	7/30/20	PT	JM
A	ISSUED TO CLIENT	1/23/20	PT	JM

JOHN A. MOTT, P.E.
RELEASED BY
DESIGN: JOHN A. MOTT, P.E. — CHECKED: JM
DRAWN: M. COLLINS/ P. TITUS — CHECKED: JM
DATE: 1/23/2020 — SURVEY DATE:
FIELD BOOK:

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA RD.
FRAZER, PA 19355

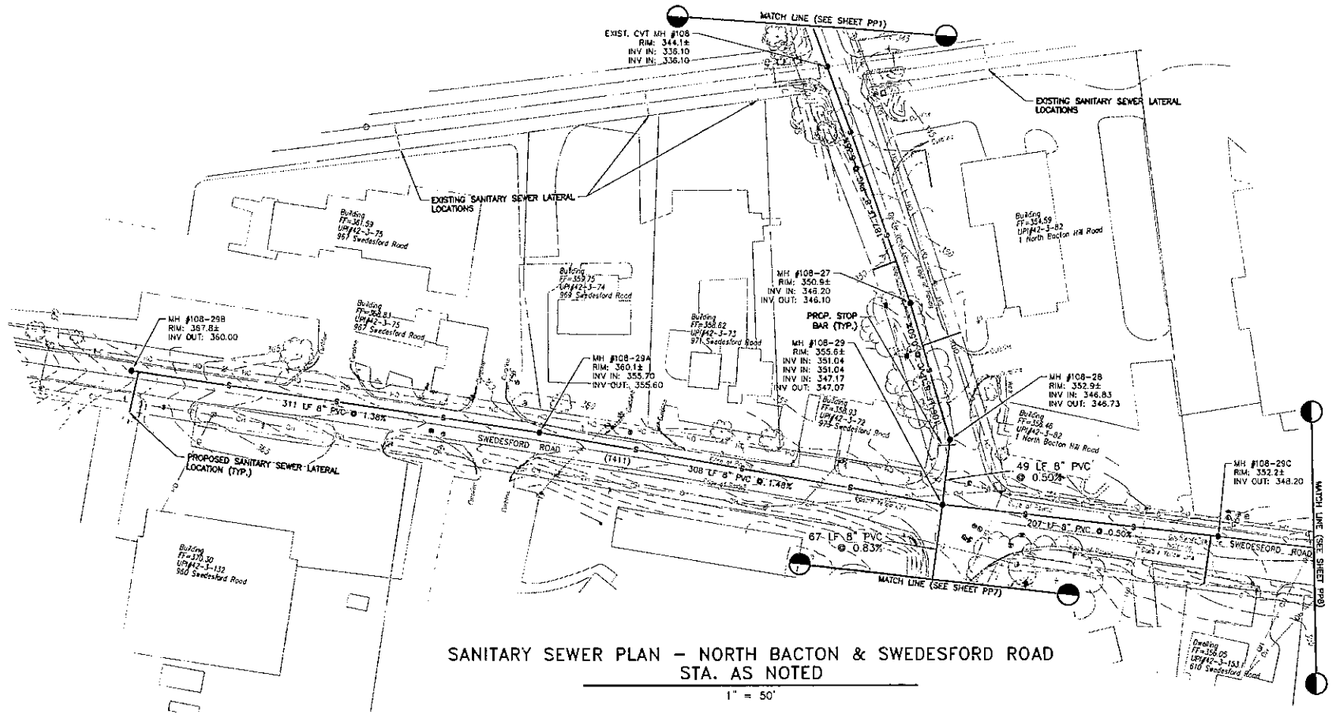
NORTH BACTON HILL & SWEDESFORD RD.
AREAS SANITARY SEWERS
CHESTER COUNTY, PENNSYLVANIA

ARRO
Suite 100, 649 North Lewis Road
Limerick, Pennsylvania 19468
Tel 610.495.0303

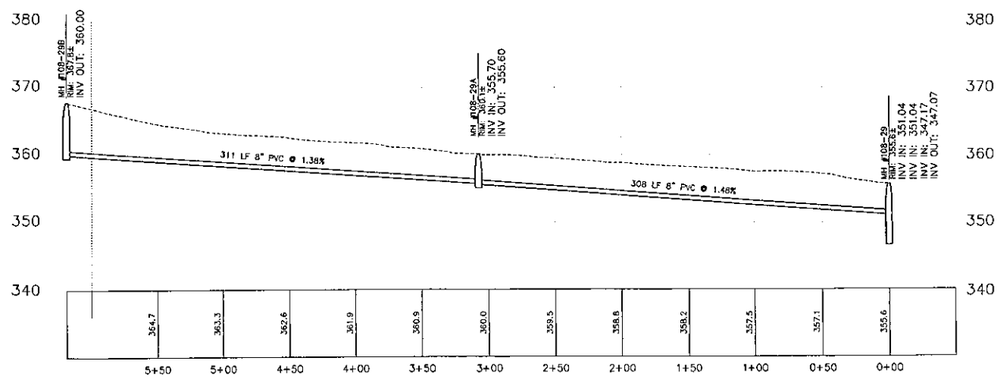
TITLE
SANITARY SEWERS
PLOT PLAN

SCALE: AS NOTED
DWG. NO.: C1
PROJECT NO.: 10310.36
SHEET NO.: 2 OF 24
REV.: 0

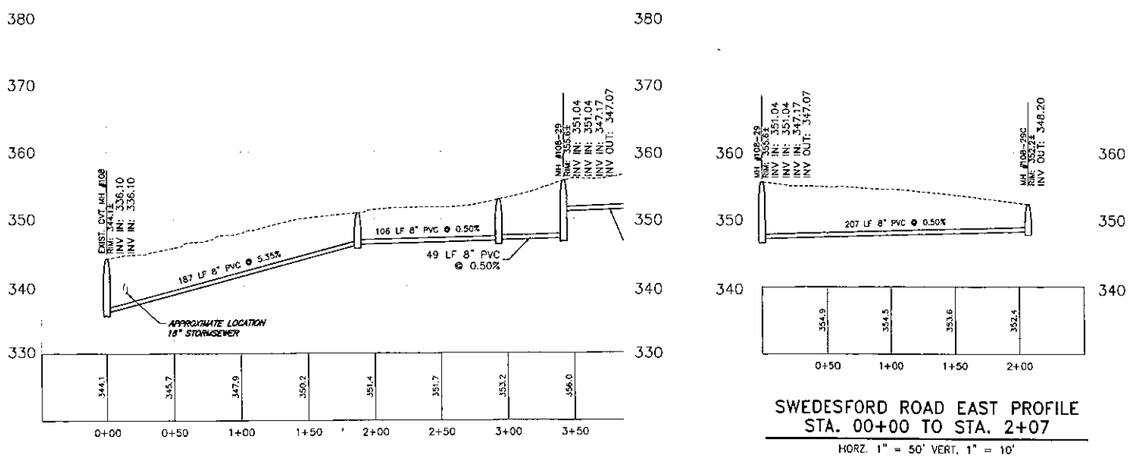
Dwg. Name: 10310361C1_C2_PHASE2.DWG Plotted: 7/30/2020 1:28 PM



SANITARY SEWER PLAN – NORTH BACTON & SWEDESFORD ROAD
STA. AS NOTED
1" = 50'



SWEDESFORD ROAD WEST PROFILE
STA. 00+00 TO STA. 6+18
HORZ. 1" = 50' VERT. 1" = 10'



NORTH BACTON HILL ROAD "SOUTH" PROFILE
STA. 00+00 TO STA. 3+50
HORZ. 1" = 50' VERT. 1" = 10'

SWEDESFORD ROAD EAST PROFILE
STA. 00+00 TO STA. 2+07
HORZ. 1" = 50' VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID	7/30/20	MC	JM
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY
DESIGN: DRK
CHECKED: JM
DRAWN: DRK/MCC
CHECKED: JM
DATE: 1/23/2020
SURVEY DATE
FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PA

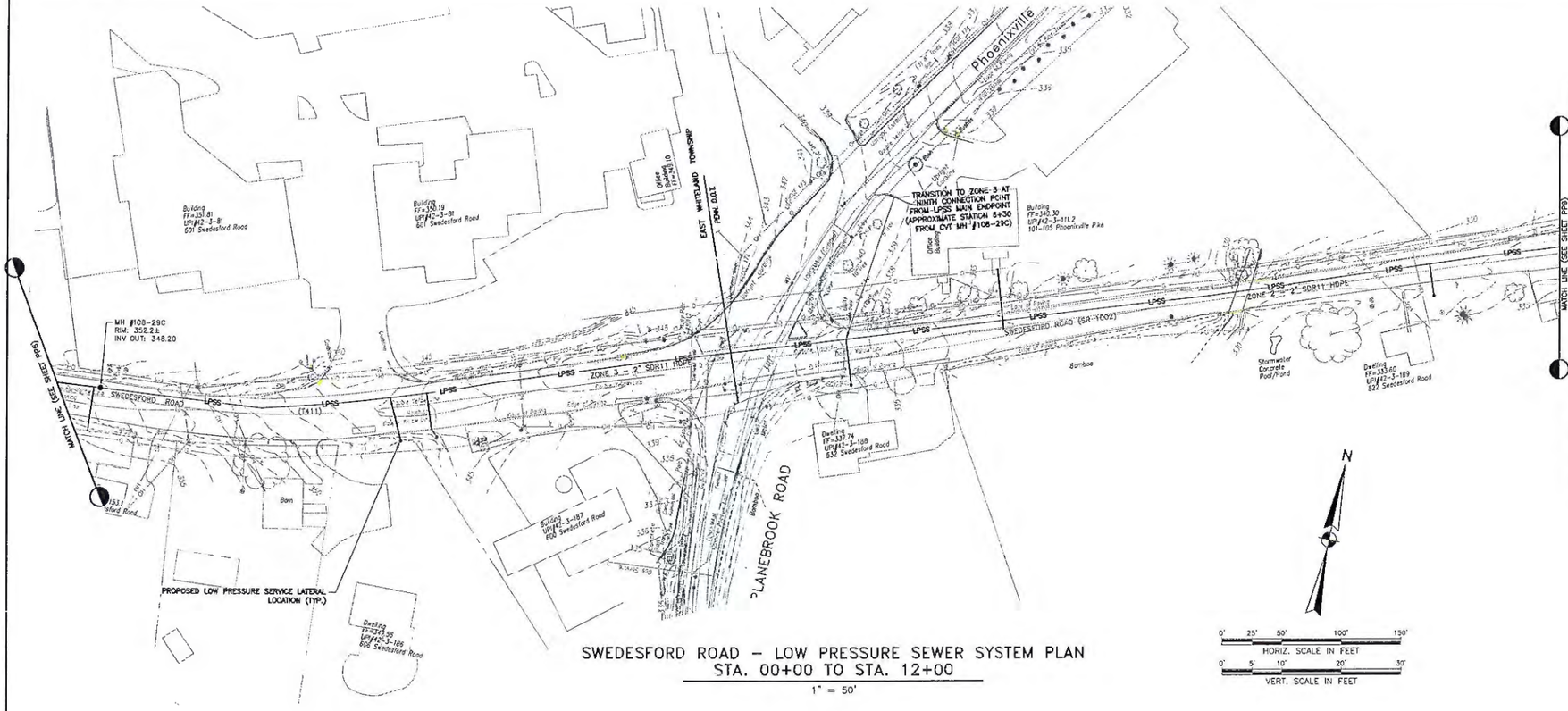
NORTH BACTON HILL AND SWEDESFORD ROAD
AREAS SANITARY SEWERS
EAST WHITELAND TOWNSHIP

ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE: N. BACTON HILL & SWEDESFORD ROADS SANITARY SEWERS PLAN/PROFILE SHEET 6

SCALE: AS NOTED
DWG. NO.: PP6
PROJECT NO.: 10310.36
SHEET NO.: 9 OF 24
REV.: 0

10310.36_PHASE2_PP2 Plotted 2/03/20 2:35 PM



SWEDESFORD ROAD – LOW PRESSURE SEWER SYSTEM PLAN
STA. 00+00 TO STA. 12+00

1" = 50'

N

0' 25' 50' 100' 150'
HORIZ. SCALE IN FEET

0' 5' 10' 20' 30'
VERT. SCALE IN FEET

WARNING: HIGH PRESSURE PIPELINE(S)

NO EXCAVATION OR CONSTRUCTION IN THESE AREAS WITHOUT CONTACTING THE STATE ONE CALL CENTER, SUNOCO PIPELINE L.P. AT 1-888-786-3260 OR BUCKEYE PIPELINE COMPANY AT 1-877-530-5685.

PIPELINE NOTES:

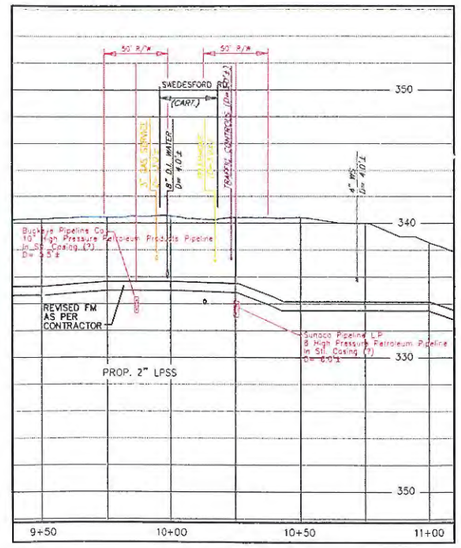
1. SHOWN EXISTING PLAN CONDITIONS ALONG PLANEBROOK ROAD, SWEDESFORD ROAD PER FIELD SURVEY PERFORMED BY HOPKINS AND SCOTT, PROFESSIONAL LAND SURVEYORS, OCTOBER 2019.

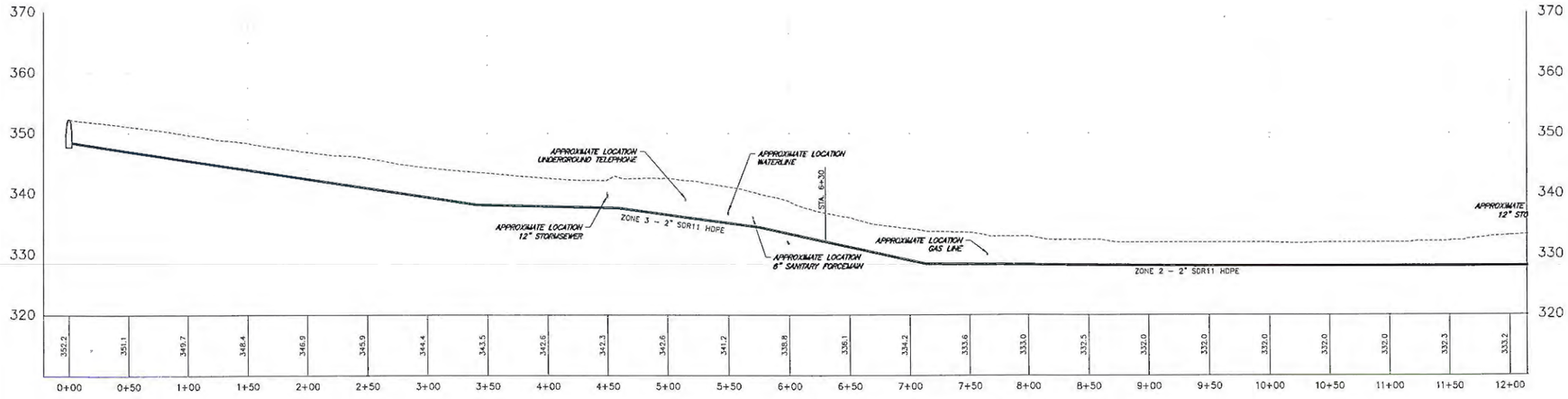
2. REFER TO THE PROJECT MANUAL FOR THE SUNOCO PIPELINE "ENGINEERING AND CONSTRUCTION GUIDELINES" LIST FOR WORK WITHIN THE PIPELINE RIGHT-OF-WAY.

3. CONTACT INFORMATION:
   A. SUNOCO:
      1.) SPSL CONSTRUCTION CONTACT NUMBER: FORT MIFFLIN FIELD OFFICE @ 215-669-3241
      2.) SUNOCO PIPELINE EMERGENCY CONTACT NUMBER: MONTELLO @ 1-800-786-7440
   B. BUCKEYE:
      1.) MALVERN FACILITY LOCATION: 610-695-8001.

4. DEPTH OF SUNOCO 8" HIGH PRESSURE PIPELINE DETERMINED BY SUNOCO FIELD REPRESENTATIVES (PATTY BINGAMAN AND JOHN FERRY) PERFORMING DEPTH PROBES TO DETERMINE DEPTH OF THE TOP OF THE PIPELINE BELOW EXISTING GRADE, DETERMINED TO BE 6' DEEP (PER PROBE LOCATION #2) IN APPROXIMATE CENTER OF PHOENIXVILLE PIKE, PER SITE TESTING PERFORMED ON JUNE 15, 2016.

5. DEPTH OF BUCKEYE 10" HIGH PRESSURE PIPELINE DETERMINED BY BUCKEYE FIELD REPRESENTATIVES (WILLIAM BARBER, WARREN MICHAEL AND FRAN BRUTON) PERFORMING DEPTH PROBES ON BOTH SIDES OF PLANEBROOK ROAD TO DETERMINE THE DEPTH OF THE TOP OF THE PIPELINE FROM EXISTING GRADE, BUT COULD NOT DETERMINE THE EXACT PIPELINE DEPTH DUE TO EXISTING ROADSIDE SLOPE CONDITIONS DURING SITE TESTING PERFORMED ON JUNE 20, 2016. REPRESENTATIVE SUGGESTED AN APPROXIMATE DEPTH OF 5.5' BE USED FOR PLANNING PURPOSES, BUT RECOMMENDED THAT THE ACTUAL DEPTH BE DETERMINED BY A "SOFT DIG" PRIOR TO THE START OF ANY ACTUAL SITE WORK ACTIVITIES.





SWEDESFORD ROAD – LOW PRESSURE SEWER SYSTEM PROFILE
STA. 00+00 TO STA. 12+00

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID	7/30/20	MC	JM
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY

DESIGN	CHECKED
DRK	JM
DRAWN	CHECKED
DRK/MCC	JM
DATE 1/23/2020	SURVEY DATE
	FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PA

NORTH BACTON HILL AND SWEDESFORD ROAD
AREAS SANITARY SEWERS
EAST WHITELAND TOWNSHIP

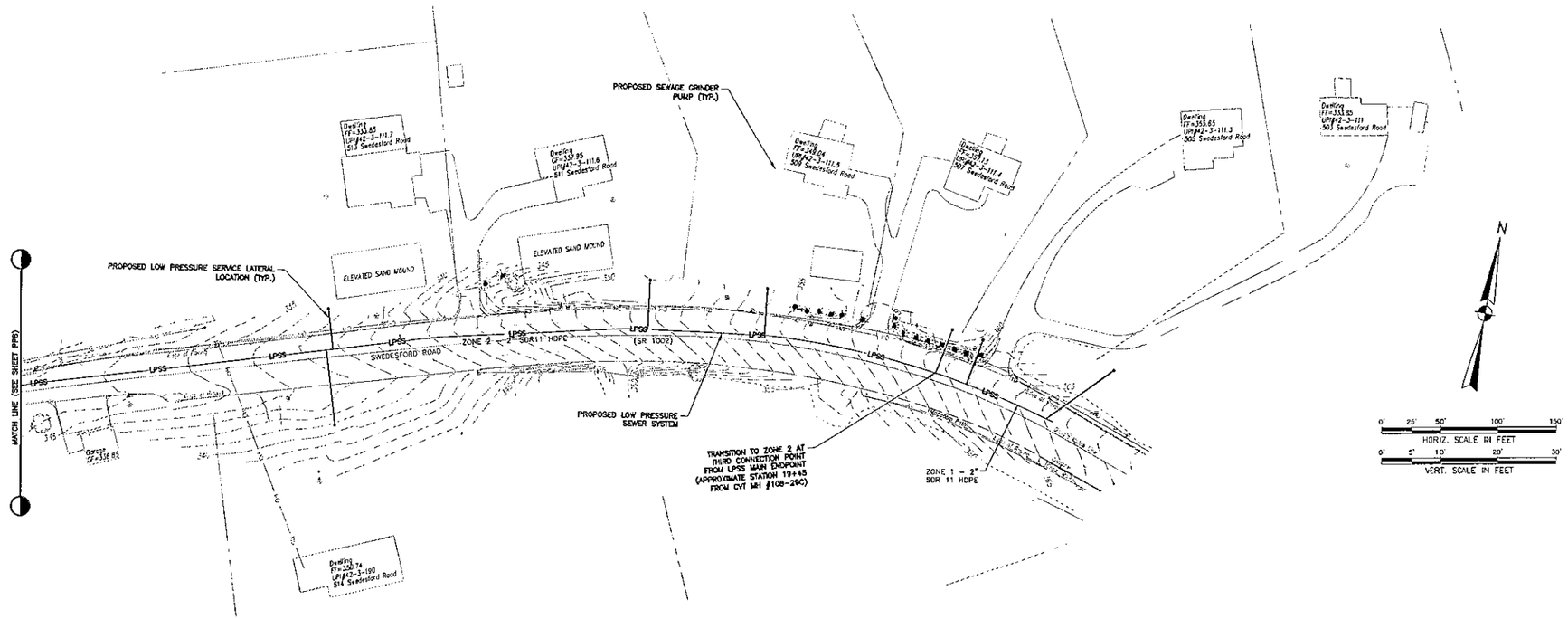
ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE
SWEDESFORD ROAD
LOWER PRESSURE SEWER SYSTEM
PLAN/PROFILE SHEET 8

SCALE	DWG. NO.
AS NOTED	PP8

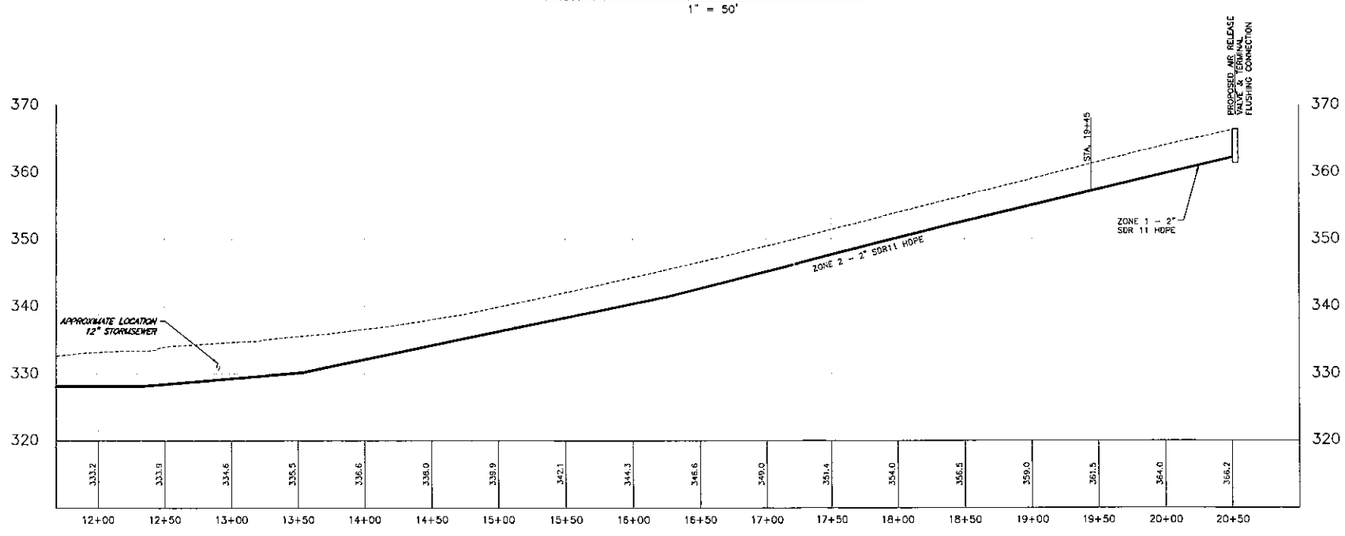
PROJECT NO.	SHEET NO.	REV.
10310.36	11 OF 24	0

1031036_PHASE2_PP2 Plotted 2/03/20 2:45 PM



SWEDESFORD ROAD – LOW PRESSURE SEWER SYSTEM PLAN
STA. 12+00 TO STA. 20+53

1" = 50'



SWEDESFORD ROAD – LOW PRESSURE SEWER SYSTEM PROFILE
STA. 12+00 TO STA. 20+53

HORZ. 1" = 50'; VERT. 1" = 10'

NO	REVISION	DATE	BY	APP.
1	ISSUED FOR CONSTRUCTION			
0	ISSUED FOR BID	7/30/20	MC	JM
A	ISSUED FOR CLIENT REVIEW	1/23/20	DK	JM

JOHN A. MOTT, P.E.
RELEASED BY
DESIGN: DRK | CHECKED: JM
DRAWN: DRK/MCC | CHECKED: JM
DATE: 1/23/2020 | SURVEY DATE
FIELD BOOK

SEAL

SEAL

CLIENT & PROJECT
EAST WHITELAND TOWNSHIP
209 CONESTOGA ROAD
FRAZER, CHESTER COUNTY, PA

NORTH BACTON HILL AND SWEDESFORD ROAD
AREAS SANITARY SEWERS
EAST WHITELAND TOWNSHIP

ARRO
Building 100, Suite 100-B
1450 E. Boot Road
West Chester, Pennsylvania 19380
Tel 484.999.6150

TITLE
SWEDESFORD ROAD
LOW PRESSURE SEWER SYSTEM
PLAN/PROFILE SHEET 9

SCALE: AS NOTED | DWG. NO.: PP9
PROJECT NO.: 10310.36 | SHEET NO.: 12 OF 24 | REV.: 0

10310.36_PHASE2_PP2 Plotted 2/03/20 2:50 PM

Exhibit D

East Whiteland Township Component 3, Section K

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature John Neild

Date 1/21/21

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature John Neild

Date 1/21/21

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent _____

Agent Signature _____

Date _____

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

Exhibit E

Aqua PA Component 3, Section K

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 3025 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection	3025	7563	0	0	3025	7563
Conveyance						
Treatment						

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

d. Conveyance System

Name of Agency, Authority, Municipality Aqua PA

Name of Responsible Agent _____ Sign and Date Here

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☐ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

Exhibit F

Valley Forge Sewer Authority Component 3 Section K

9. **ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS:**

☐ A copy of the additional information is attached. If PENNVEST funding is to be sought for the project, address these additional items in terms of any project impacts and measures to avoid or mitigate same.

- Cost Effectiveness
- Air quality
- Floodplains
- Wild and scenic rivers
- Coastal zone management
- Socio-economic impacts
- Water supplies
- Other environmentally sensitive areas

J. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section J of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section J of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section J of the instructions.

K. CHAPTER 94 CONSISTENCY DETERMINATION (See Section K of instructions)

☒ Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Chapter 94 of DEP's rules and regulations (relating to Municipal Wasteload Management). If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 3025 gpd

2. Total Sewage Flows to Facilities

   a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

   b. Enter the present average and peak sewage flows for the critical sections of existing facilities.

   c. Enter the average and peak sewage flows projected for 5 years through the critical sections of existing facilities which includes existing, proposed, or future projects.

   To complete the table, refer to Section K of instructions.

	a. Design and/or Permitted Capacity (gpd)		b. Present Flows (gpd)		c. Projected Flows in 5 years (gpd)	
	Average	Peak	Average	Peak	Average	Peak
Collection	3025	7563	0	0	3025	7563
Conveyance	319000	797502	224460	561600	282210	705525
Treatment	11,750,000	32,000,000	7,512,000	13,898,000	7,681,000	9,212,000

3. Collection and Conveyance Facilities

   The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table.

   This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system? ☐ Yes ☒ No

   a. If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the module package.

b. If no, the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 94 requirements and that this proposal will not affect this status.

c. Collection System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature _____

Date _____

d. Conveyance System

Name of Agency, Authority, Municipality East Whiteland Township

Name of Responsible Agent John Neild

Agent Signature _____

Date _____

K. CHAPTER 94 CONSISTENCY DETERMINATION (continued)

4. Treatment Facility

The questions below are to be answered by the facility permittee in coordination with the information in the table and the latest Chapter 94 report.

This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility? ☐ Yes ☑ No

a. If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved plan and schedule granting an allocation for this project. A letter granting allocations to this project under the plan and schedule must be attached to the planning module.

b. If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with Chapter 94 requirements and that this proposal will not impact this status

c. Name of Agency, Authority, Municipality Valley Forge Sewer Authority

Name of Responsible Agent Martin F. Goldberg Sign and Date Here

Agent Signature Martin F Goldberg

Date 1/22/21

L. INSTITUTIONAL EVALUATION (See Section L of instructions)

☒ An institutional evaluation is attached. Identify the entity which will design, obtain necessary permits, construct, own and operate the proposed facilities. If a low pressure vacuum or effluent sewer are proposed, discuss purchase, installation, operation and maintenance responsibilities for the individual pumping, valves, tanks, etc.

Exhibit G

Water Supply Will Serve Letter

January 4, 2021

William L Bohner
Arro Consulting

Re: Water Availability
Swedesford Rd properties between Bacton Hill and Rt 202
East Whiteland Twp, Chester County

In response to your request, this letter will serve as confirmation that the above referenced properties are situated within Aqua Pennsylvania Inc. service territory.

Domestic and fire water service is available and will be provided in accordance with Aqua Pennsylvania, Inc. Rules and Regulations. For further details, visit www.aquaamerica.com.

With regard to our capacity for domestic and fire service for this area, flow data information can be obtained upon written request to Lisa Thomas of our Control Center at LATHOMAS@AQUAAMERICA.COM. Include the address with town or township and the nearest intersecting street.

Should you have any further questions or need to request an application for service, contact me at (610) 541-4160 or dlciotti@aquaamerica.com.

Regards,

Deanna L. Ciotti
Special Services Coordinator-New Business Applications
Aqua Pennsylvania, Inc
700 W Sproul Rd
Springfield, PA 19064
O: 610.541.4160

Exhibit H

Component 4B

3800-FM-WSWM0362B Rev. 9/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

DEP CODE #No Code Assigned by PA DEP

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4B - COUNTY PLANNING AGENCY REVIEW
(or Planning Agency with Areawide Jurisdiction)

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning package and or copy of this ***Planning Agency Review Component*** should be sent to the existing county planning agency or planning agency with areawide jurisdiction for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name & Municipality Swedesford Road Low Pressure Sewer Extension, East Whiteland Township

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county planning agency. February 26, 2021
2. Date plan received by planning agency with areawide jurisdiction **N/A** Agency name **N/A**
3. Date review completed by agency April 19, 2021

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
[X]	[ ]	1.	Is there a county or areawide comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101 *et seq.*)? **Landscapes3**, the Chester County Comprehensive Plan, was adopted in 2018. **Watersheds**, the Chester County Comprehensive Plan Integrated Water Resources Element, was adopted in 2002.
[X]	[ ]	2.	Is this proposal consistent with the comprehensive plan for land use? According to the Landscapes map adopted in 2018, the proposed subdivision/land development includes land designated as the Suburban Landscape. The vision for the Suburban Landscape is predominantly residential communities with locally-oriented commercial uses and facilities, accommodating growth at a medium density that retains a focus on residential neighborhoods, with enhancements in housing diversity and affordability. Both on-lot and public sewer systems are supported in this landscape.
[X]	[ ]	3.	Does this proposal meet the goals and objectives of the plan? If no, describe goals and objectives that are not met
[X]	[ ]	4.	Is this proposal consistent with the use, development, and protection of water resources? If no, describe inconsistency Landscapes3 Protect Objective A states: "Guide development away from sensitive natural resources and toward areas appropriate for accommodating growth." According to PA Code Title 25, Chapter 93, this proposal is located in a watershed or sub-watershed that has a stream use designated as Exceptional Value Waters, Valley Creek. These streams are given high priority when considering watershed protection measures. The applicant may need to conduct further coordination with DEP or other agencies in order to comply with the water quality standards set forth in this regulation.
[X]	[ ]	5.	Is this proposal consistent with the county or areawide comprehensive land use planning relative to Prime Agricultural Land Preservation? If no, describe inconsistencies:
[ ]	[X]	6.	Does this project propose encroachments, obstructions, or dams that will affect wetlands? If yes, describe impact:
[ ]	[ ]	7.	Will any known historical or archaeological resources be impacted by this project? **Not Known.** If yes, describe impacts
[ ]	[X]	8.	Will any known endangered or threatened species of plant or animal be impacted by the development project?
[ ]	[X]	9.	Is there a county or areawide zoning ordinance?
[ ]	[ ]	10.	Does this proposal meet the zoning requirements of the ordinance? **N/A**

Yes No SECTION C. AGENCY REVIEW (continued)

Yes	No		
☐	☐	11.	Have all applicable zoning approvals been obtained? **N/A**
☐	☒	12.	Is there a county or areawide subdivision and land development ordinance? **No**
☐	☐	13.	Does this proposal meet the requirements of the ordinance? **N/A** If no, describe which requirements are not met
☒	☐	14.	Is this proposal consistent with the municipal Act 537 Official Sewage Facilities Plan? If no, describe inconsistency
☐	☐	15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality? **Not known** If yes, describe
☐	☐	16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision? If yes, is the proposed waiver consistent with applicable ordinances. **Not Known** If no, describe inconsistencies
☒	☐	17.	Does the county have a stormwater management plan as required by the Stormwater Management Act? If yes, will this project plan require the implementation of storm water management measures? According to our records, all municipalities have updated their stormwater management ordinances to be consistent with Chester County's PA DEP approved stormwater management (SWM) plan, dated July 2, 2013.
		18.	Name, Title and signature of person completing this section:

Name: Carrie J. Conwell
Title: Senior Environmental Planner Signature: Carrie J Conwell
Date: 4/19/2021
Name of County or Areawide Planning Agency: Chester County Planning Commission
Address: Government Services Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990
Telephone Number: (610) 344-6285

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This submission ☒ does ☐ does not indicate that the Planning Module is consistent with Township planning. Please be advised that DEP may require additional information from the municipality and/or applicant to determine consistency with local planning and/or to show references to Act 537 planning and applicable municipal ordinances.

Per discussion with the project consultant, PA DEP has not assigned a Code # for this Component 3m.

PC53-04-21-16720

The county planning agency must complete this Component within 60 days.
This Component and any additional comments are to be returned to the applicant.

cc: Elizabeth Mahoney, PaDEP
Chester County Health Department
John Neild, East Whiteland Township Director of Public Works
John Nagel, East Whiteland Township
William Bohner, Jr., Arro Group

Exhibit I

Component 4A

3850-FM-BCW0362A 6/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4A - MUNICIPAL PLANNING AGENCY REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the local municipal planning agency for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name
Swedesford Road Area Low-Pressure Sewer Extension

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by municipal planning agency 2/26/21
2. Date review completed by agency 3/29/21

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☑	☐	1.	Is there a municipal comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101, *et seq.*)?
☑	☐	2.	Is this proposal consistent with the comprehensive plan for land use?
			If no, describe the inconsistencies _____
☑	☐	3.	Is this proposal consistent with the use, development, and protection of water resources?
			If no, describe the inconsistencies _____
☑	☐	4.	Is this proposal consistent with municipal land use planning relative to Prime Agricultural Land Preservation?
☐	☑	5.	Does this project propose encroachments, obstructions, or dams that will affect wetlands?
			If yes, describe impacts _____
☐	☑	6.	Will any known historical or archaeological resources be impacted by this project?
			If yes, describe impacts _____
☐	☑	7.	Will any known endangered or threatened species of plant or animal be impacted by this project?
			If yes, describe impacts _____
☑	☐	8.	Is there a municipal zoning ordinance?
☑	☐	9.	Is this proposal consistent with the ordinance?
			If no, describe the inconsistencies _____
☐	☑	10.	Does the proposal require a change or variance to an existing comprehensive plan or zoning ordinance?
☑	☐	11.	Have all applicable zoning approvals been obtained?
☑	☐	12.	Is there a municipal subdivision and land development ordinance?

SECTION C. AGENCY REVIEW (continued)

Yes	No		
☒	☐	13.	Is this proposal consistent with the ordinance?
			If no, describe the inconsistencies _____
☒	☐	14.	Is this plan consistent with the municipal Official Sewage Facilities Plan?
			If no, describe the inconsistencies _____
☐	☒	15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality?
			If yes, describe _____
☐	☒	16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
☐	☐		If yes, is the proposed waiver consistent with applicable ordinances?
			If no, describe the inconsistencies

17. Name, title and signature of planning agency staff member completing this section:

Name: Zachary Barner

Title: Director of Planning + Development

Signature: Zach Barner

Date: 3/29/21

Name of Municipal Planning Agency: East Whiteland Township Planning Comm

Address 209 Conestoga Road, Frazer, PA 19355

Telephone Number: 610-897-4265

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit municipal planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The planning agency must complete this component within 60 days.

This component and any additional comments are to be returned to the applicant.

Exhibit J

Component 4C

3850-FM-BCW0362C 6/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4C - COUNTY OR JOINT HEALTH DEPARTMENT REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the county or joint county health department for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name

Swedesford Road Low-Pressure Sewer Extension

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county or joint county health department 2-26-21

   Agency name Chester County Health Department

2. Date review completed by agency 3-2-21

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☑	☐	1.	Is the proposed plan consistent with the municipality's Official Sewage Facilities Plan?
			If no, what are the inconsistencies?
☐	☑	2.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality?
			If yes, describe
☐	☑	3.	Is there any known groundwater degradation in the area of this proposal?
			If yes, describe
☐	☐	4.	The county or joint county health department recommendation concerning this proposed plan is as follows: Accept as long as all local land ordinances are met

5. Name, title and signature of person completing this section:

   Name: Ross Fisher

   Title: SEO CCHD

   Signature: Ross Fisher

   Date: 3-2-21

   Name of County Health Department: Chester County

   Address: 601 Westtown rd W. Chester 19380

   Telephone Number: 610 344 6000

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit county planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The county planning agency must complete this component within 60 days.

This component and any additional comments are to be returned to the applicant.

Exhibit K

Public Notice/Proof of Publication/Public Comments

Exhibit L

PNDI/PHMC Correspondence

PNDI Receipt

1. PROJECT INFORMATION

Project Name: **East Whiteland Sanitary Sewer**
Date of Review: **3/3/2020 02:26:22 PM**
Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line (new - construction in new location)**
Project Area: **4.32 acres**
County(s): **Chester**
Township/Municipality(s): **EAST WHITELAND**
ZIP Code: **19355**
Quadrangle Name(s): **MALVERN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Little Valley Creek-Valley Creek**
Decimal Degrees: **40.040106, -75.573274**
Degrees Minutes Seconds: **40° 2' 24.3804" N, 75° 34' 23.7881" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

East Whiteland Sanitary Sewer



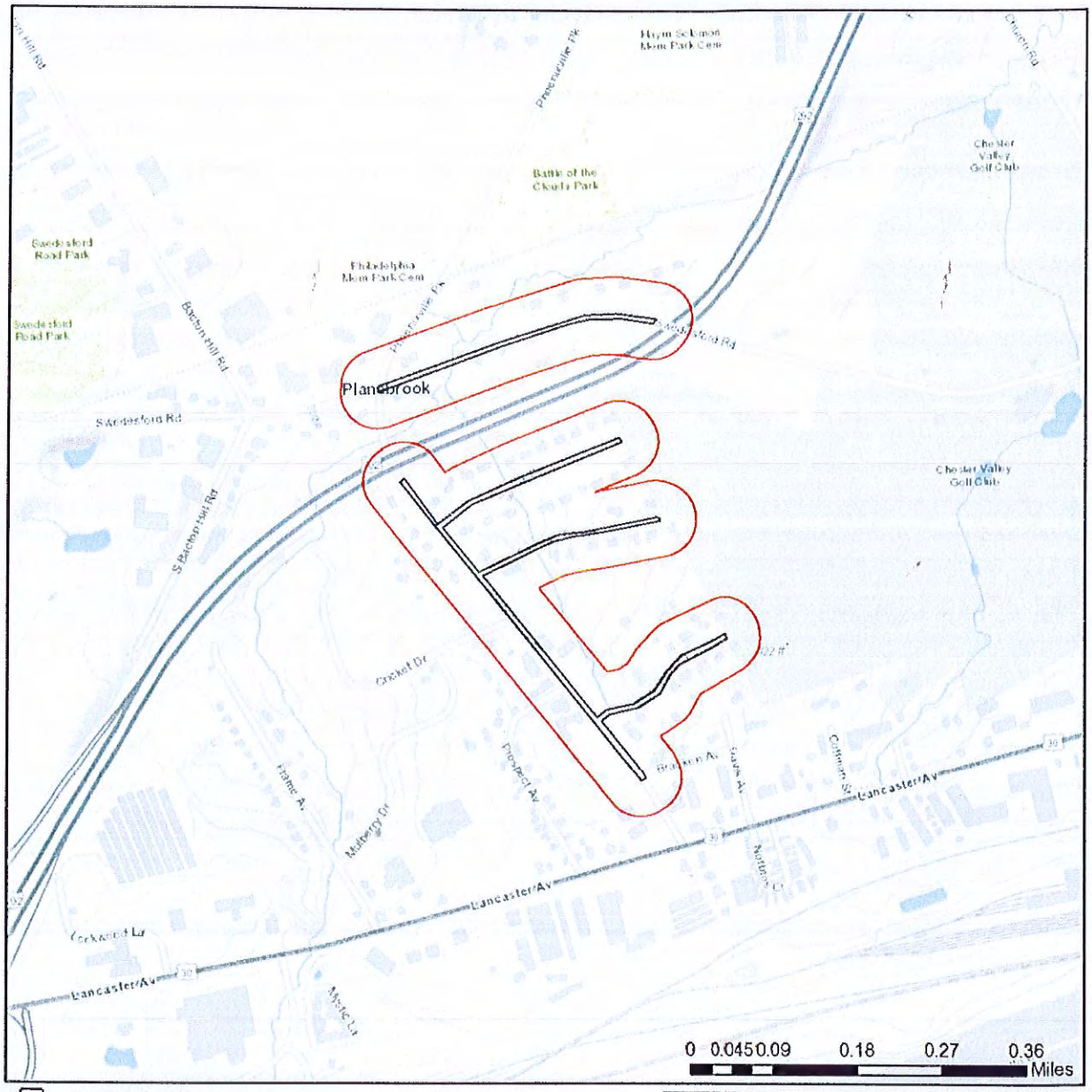
Project Boundary

Buffered Project Boundary



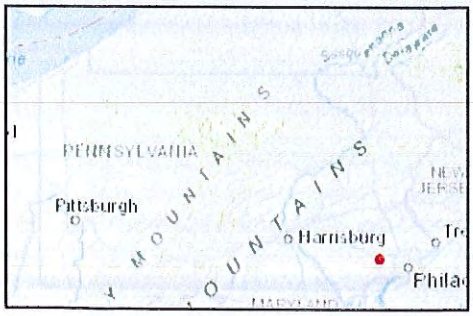
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

East Whiteland Sanitary Sewer



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?
Your answer is: Yes

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: Someone qualified to identify and delineate wetlands has investigated the site, and determined that NO wetlands are located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:
Avoidance Measure: Avoid in-stream impacts by spanning the waterway or going under it (e.g., via horizontal boring or directional drilling). If in-stream impacts cannot be avoided, carry out instream work -- including installation of permanent structures (e.g., pipelines, livestock crossings, riprap), or installation, use, and removal of temporary structures (e.g., temporary road crossings) -- between October 1 and March 31.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).
***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Mikah Schlesinger
Company/Business Name: ARRO Consulting, Inc.
Address: 1450 East Boot Road, Suite 100-B
City, State, Zip: West Chester, PA
Phone:(484) 999 6150 Fax:( )
Email: Mikah.Schlesinger@arroconsulting.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

MC
applicant/project proponent signature

03/03/2020
date

Cultural Resource Notice
and PHMC Review Letter

West Chester Office
1450 East Boot Road
Building 100, Suite 100-B
West Chester, PA 19380
T 484-999-6150

February 27, 2020

Pennsylvania Historical and Museum Commission
State Historic Preservation Office
Commonwealth Keystone Building, Second Floor
400 North Street
Harrisburg, PA 17120-0093

RE: Planebrook Road Area Sanitary Sewer Expansion
PA DEP Joint Permit – Small Projects Registration
East Whiteland Township, Chester County, PA
ARRO No.: 10310.36

Dear Reviewer,

ARRO Consulting, Inc. (ARRO) is submitting a Joint Permit – Small Project application package to the Pennsylvania Department of Environmental Protection (PA DEP) on behalf of East Whiteland Township, for the installation of new sanitary sewer systems in the Planebrook Road area in East Whiteland, Chester County, Pennsylvania. The area surrounding the proposed sanitary sewer systems installation comprises of roadway, residential properties containing maintained lawn, a number of small businesses and unnamed tributaries to Valley Creek, designated by the Pennsylvania Code Title 25, Chapter 93, as Exceptional Value–Migratory Fish (EV-MF).

Project Description:

The project involves extending public sanitary sewer service to existing properties in the area from existing sanitary manholes located on Planebrook Road and the Whiteland Village Interceptor, located just north of Swedesford Road.

The project scope involves installation of new gravity sanitary sewer services for properties along Planebrook Road (11 properties), Golf View Lane (13 properties), Bracken Avenue, Davis Avenue and Coffman Street (10 properties), and Prospect Avenue (19 properties), and low pressure sanitary sewer services for properties along Elk Drive (20 properties), Fairway Drive (11 properties) and Swedesford Road east and west of the Planebrook Road/Phoenixville Pike intersection (13 commercial/residential/vacant lots).

The discharge line of the gravity sewer (8" PVC pipe) in Golf View Lane and the low pressure sewer systems in Elk Drive, Fairway Drive and Swedesford Road (2" SDR11 HDPE pipe) will require crossing of tributaries of Valley Creek, designated as an exceptional value stream.

Wastewater will ultimately be collected and conveyed to the Whiteland Village Interceptor Extension which has the capacity to handle the proposed peak flow. From this interceptor, flow will be conveyed to the Mill Lane Pump Station. Wastewater will exit East Whiteland Township at the Matthews Road meter.

Enclosed are Project Review Form, Topographic Map, Natural Resources Map, Site Plans, site visit photographs, and a CRGIS Map.

Please complete a PHMC review for this project and provide us with your findings. Please do not hesitate to contact me should you have any questions or require any additional information.

Sincerely,
ARRO Consulting, Inc.

Mikah Schlesinger,
Environmental Scientist
484-999-6189
mikah.schlesinger@arroconsulting.com

CC: John Mott, P.E., ARRO Consulting, Inc.
William Steele, Public Works Director, East Whiteland Township, PA.

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ___/___
DATE RECEIVED:	DATE DUE:
ER NUMBER:	HRSF: _____

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (•) YES ( ) NO OR ( ) This is additional information for ER Number:

Project Name: Planebrook Road Area Sanitary Sewer Expansior | County: Chester | Municipality: East Whiteland Townhip

Project Address: Planebrook Road | City/State/ Zip: Malvern | PA | 19355

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Mikah Schlesinger | Phone: 610-999-6150

Company: ARRO Consulting, Inc. | Fax:

Street/PO Box: 1450 E. Boot Road, Building 100-B | Email: mikah.schlesinger@arroconsulting.com

City/State/Zip: West Chester | PA | 19380

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 1.5 | Total acres of earth disturbance: 1.5

Are there any buildings or structures within the project area? (•) Yes ( ) No | Approximate age of buildings: 30-40 years

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	( )	(•)	( )	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

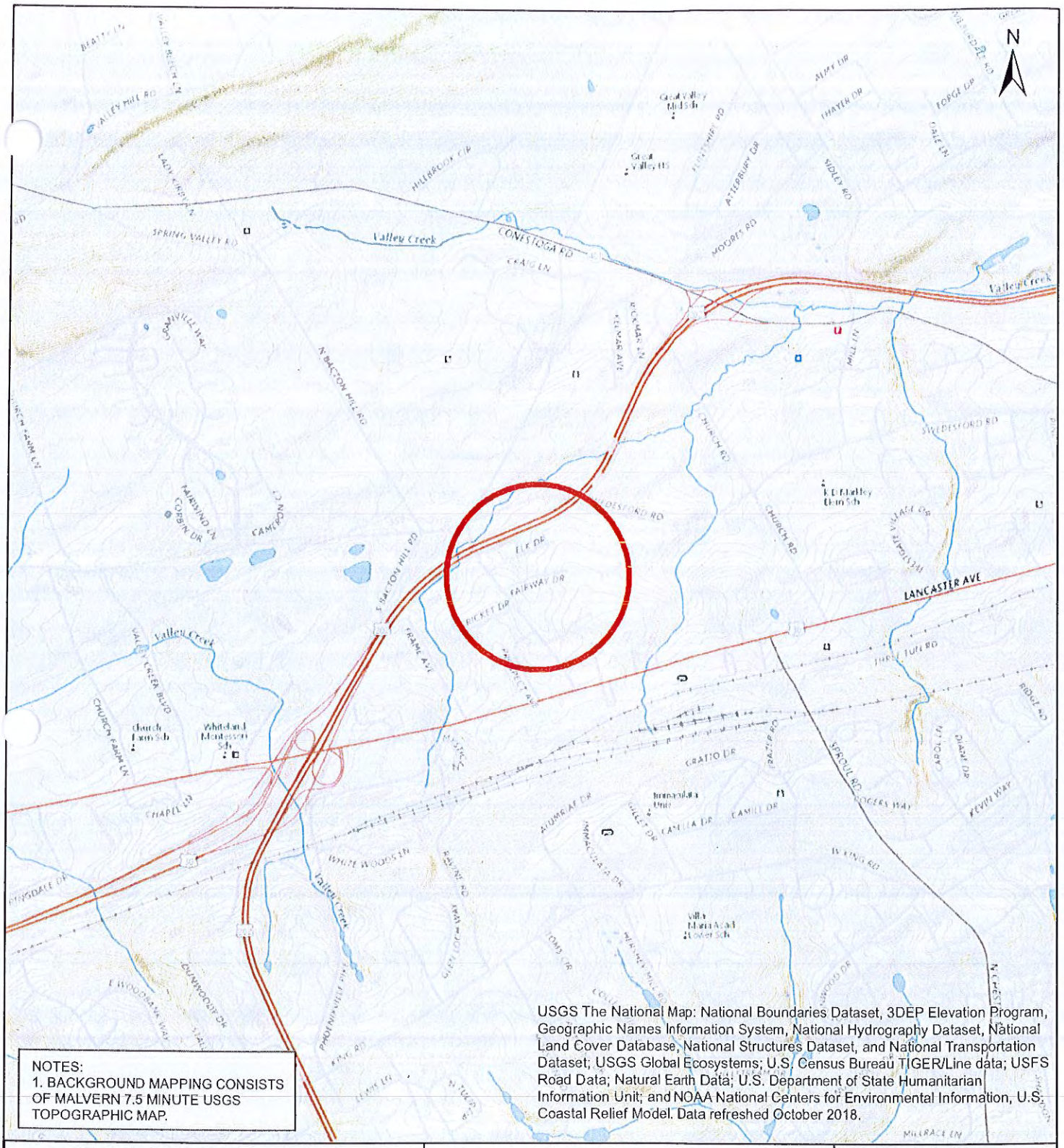
Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: _____ **DATE:** _____



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed October 2018.

NOTES:
1. BACKGROUND MAPPING CONSISTS OF MALVERN 7.5 MINUTE USGS TOPOGRAPHIC MAP.

USGS TOPOGRAPHIC MAP

SANITARY SEWER STREAM CROSSINGS
PLANEBROOK ROAD AREA

East Whiteland Township,
Chester County, Pennsylvania

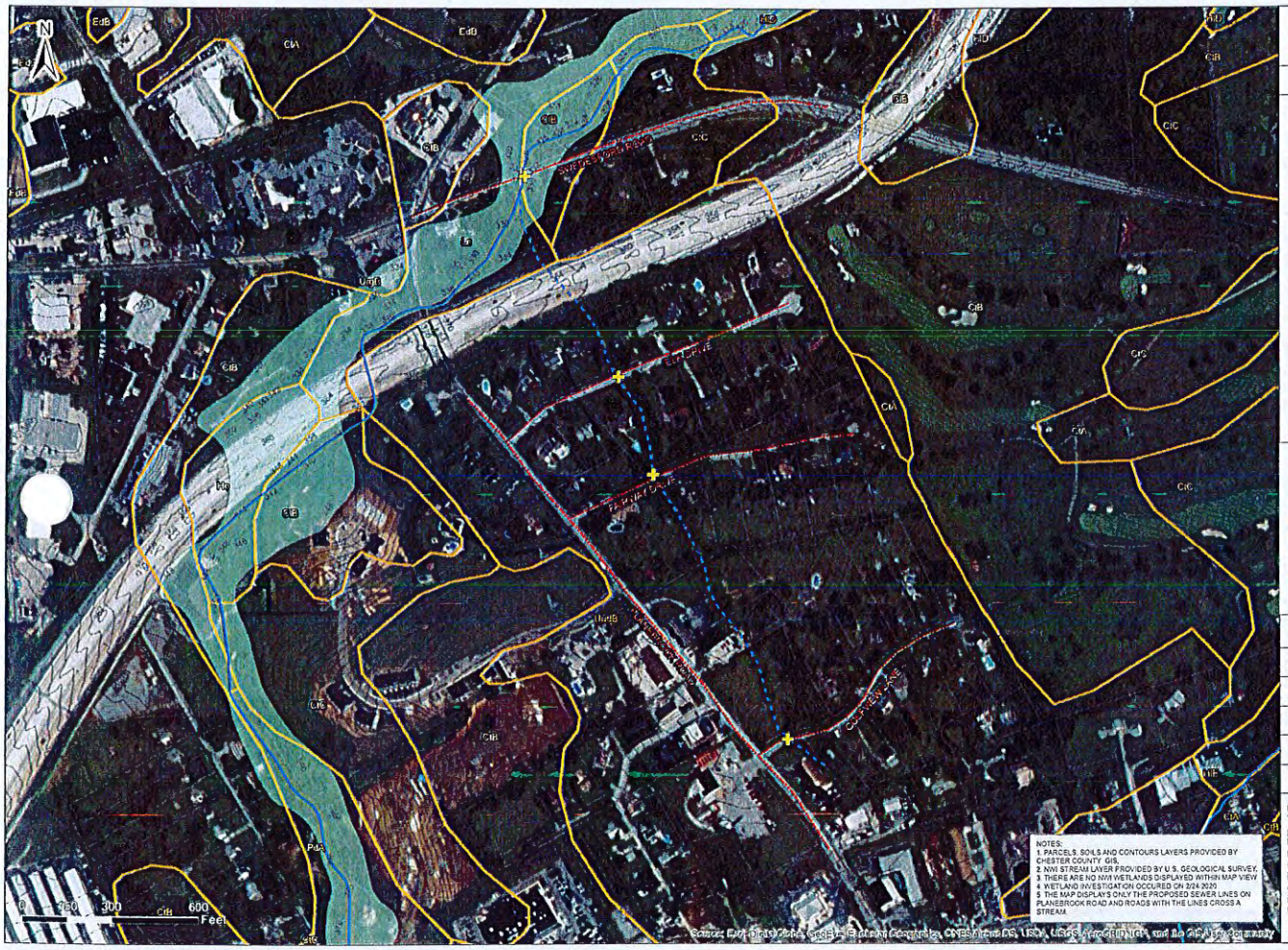
Legend

Site Location

ARRO

DISCLAIMER:
This product is for informational purposes and may not have been, prepared for, or be suitable for legal,engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Date: 02/25/2020	Project #: 10310.28	0 1,000 2,000 Feet	1 inch = 2,000 feet



ARRO

Project #: 10310.36

NATURAL RESOURCES MAP
PLANEBROOK ROAD AREA SANITARY SEWER EXPANSION
East Whiteland Township
Chester County, Pennsylvania

Legend
- Stream Crossings
- Proposed Sanitary Sewer lines
- NWI Stream (UNT #1)
- Located Tributary (UNT #2)
- NWI Wetlands
- FEMA Floodway
- Parcels
- Soils
- 2-ft Contours

1 inch = 300 feet

Date: 02/25/2020

Revisions:

DISCLAIMER:
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Photograph 1. View of Swedesford Road facing east



Photograph 2. View of Unnamed Tributary to Valley Creek from Swedesford Road facing north.



Photograph 3. View of Elk Drive facing east.



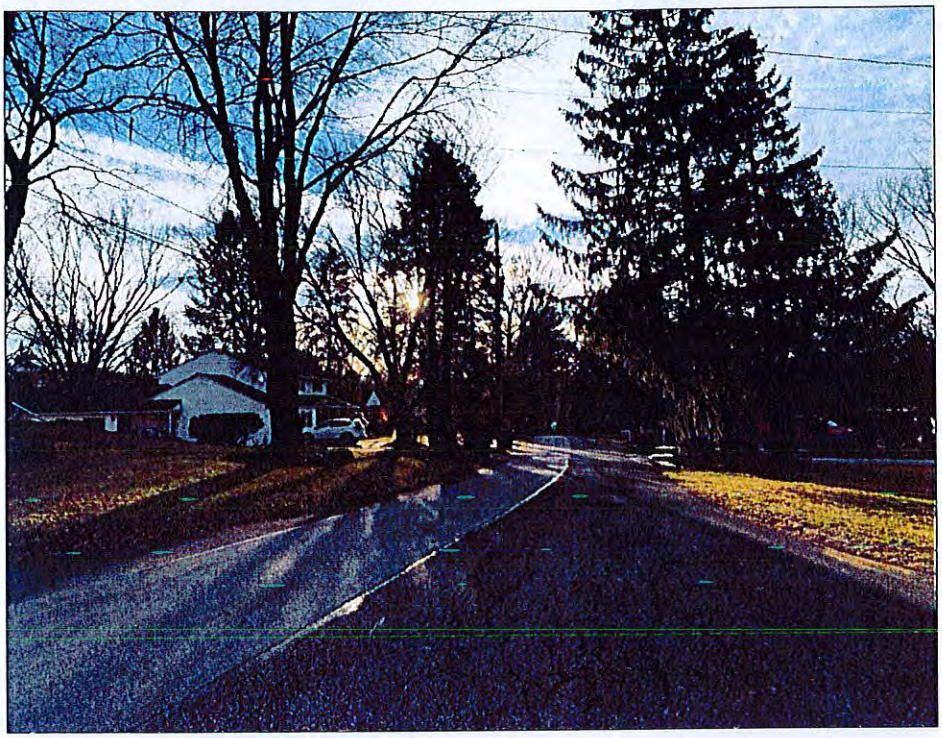
Photograph 4. View of Elk Drive facing west.



Photograph 5. View of Fairway Drive facing east.



Photograph 6. View of Fairway Drive facing west.



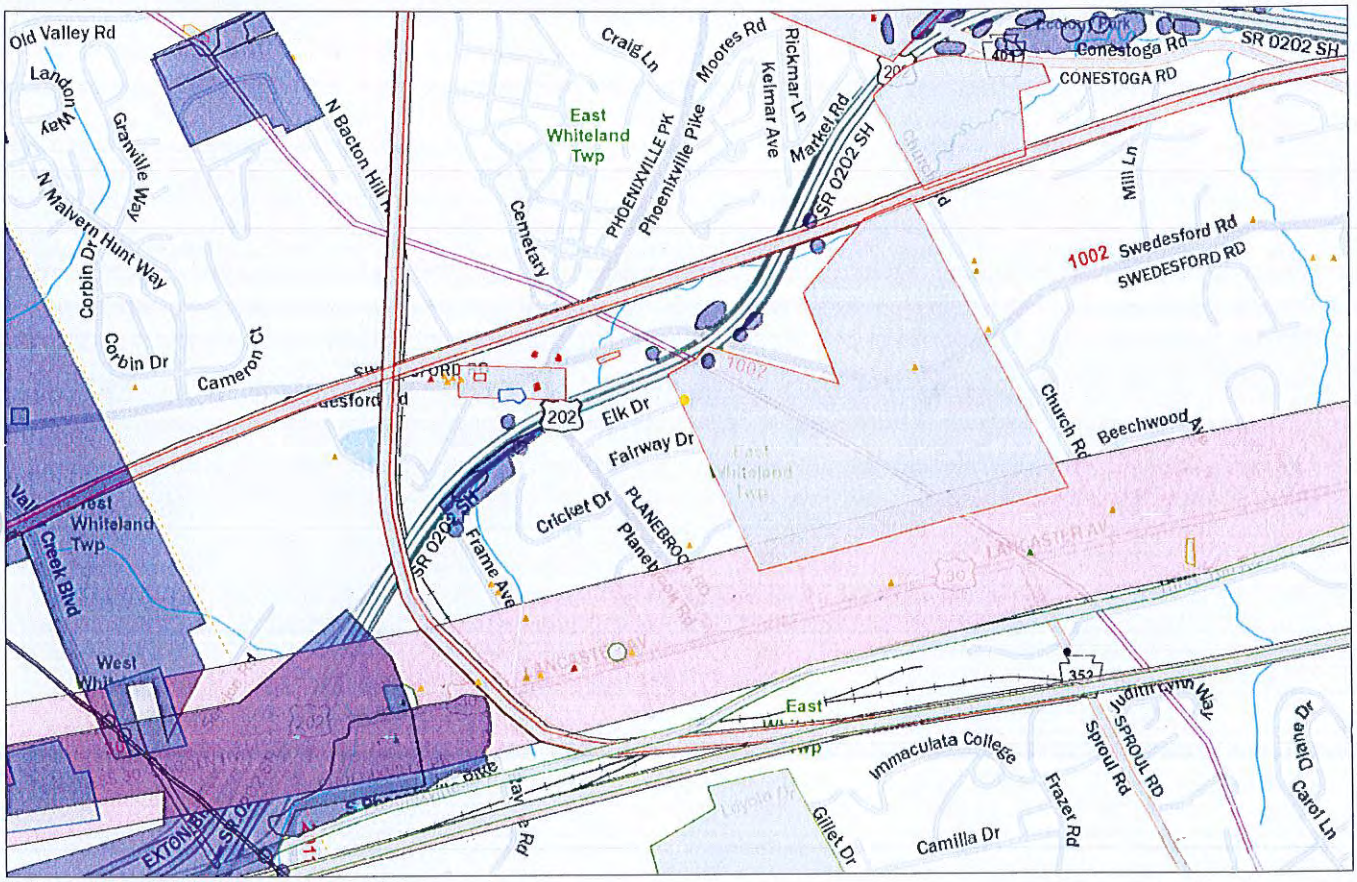
Photograph 7. View of Golf View Lane facing west.



Photograph 8. View of unnamed tributary to Valley Creek from Golf View Lane facing north.

pennsylvania
DEPARTMENT OF TRANSPORTATION

CRGIS Planebrook Road Sanitary Sewer Expansion



February 24, 2020

1:21,130

0 0.175 0.35 0.7 mi

0 0.275 0.55 1.1 km

Surveyed Areas · Undetermined · NHL - poly · Eligible · Ineligible - poly · Watersheds

Bridge - point · Undetermined - poly · Listed · Eligible - poly · Appendage · Lat/Lon Point

Bridge - poly · NHL · Listed - poly · Ineligible · HDA

© 2014-2019 PA Department of Transportation

PennDOT

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: MS ED
DATE RECEIVED: 3/2/20	DATE DUE: 3/31/20
ER NUMBER: 2016-1123-029-D	HRSF:

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (●) YES ( ) NO OR ( ) This is additional information for ER Number:

Project Name: Planebrook Road Area Sanitary Sewer Expansior | County: Chester | Municipality: East Whiteland Townhip

Project Address: Planebrook Road | City/State/ Zip: Malvern | PA | 19355

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Mikah Schlesinger | Phone: 610-999-6150

Company: ARRO Consulting, Inc. | Fax:

Street/PO Box: 1450 E. Boot Road, Building 100-B | Email: mikah.schlesinger@arroconsulting.com

City/State/Zip: West Chester | PA | 19380

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.	Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 1.5 | Total acres of earth disturbance: 1.5

Are there any buildings or structures within the project area? (●) Yes ( ) No | Approximate age of buildings: 30-40 years

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	( )	(●)	( )	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☒ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: Douglas McLaren | DATE: 3.12.2020

Exhibit M

Stormwater Management Narrative

Stormwater Management Impacts

County Stormwater Management Plan

The Chester County Planning Commission currently has a stormwater management plan in place. Most of East Whiteland Township (and all of the planning area for this 537 Plan) is situated in Valley Creek Watershed. The "Valley Creek Watershed Stormwater Management Plan" was approved by PADEP February 2011.

It should be noted that an Act 167 Plan is not a land use plan. Runoff controls developed in the plan are not based upon controlling the location, type, density or rate of development throughout the watersheds. The stormwater runoff performance standards are based on the assumptions that development will occur throughout the watersheds. The plan is designed to provide for new development yet control the associated storm runoff impacts. The most important aspect of an Act 167 (Stormwater Management) Plan is that it establishes a process for decision making...the peak flows and timing relationships provide for development for a runoff control philosophy geared toward minimizing the storm runoff impacts of new development."

This particular stormwater management plan addresses the impacts of stormwater quality and quantity on groundwater and surface water resources, geomorphology, and aquatic habitat of the Valley Creek watershed.

The reason for preparing this Plan is to satisfy the requirements of the Pennsylvania Stormwater Management Act, Act 167 of 1978, and to establish scientifically-based stormwater management implementation strategies that restore and protect the water resources and maintain safe and productive communities.

From a consistency perspective, it appears that the plan to provide public sewer service to the Swedesford Road Area (to be served by low-pressure sewers) is consistent with the stormwater management plan.

The stormwater ordinance does not regulate the development. It simply regulates how the stormwater will be managed. As a consequence, prior to construction of this project, the appropriate stormwater and E&S measures will be taken. An E&S plan has been submitted to the Chester County Conservation District for review and approval.

Exhibit N

Comprehensive Plan Consistency

Comprehensive Plans

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes3," was adopted in November of 2018. The altematives to provide public sanitary sewer service to accommodate needs areas in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes3 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted their Comprehensive Plan in July 2016. This plan emphasizes the importance of public utilities to Township infrastructure. The Swedesford Road Area is identified in this comprehensive plan as a future public sewer service area.

This Component 3m is consistent with the objectives set forth in Watersheds as well as the Township's Comprehensive Plan.

Exhibit O

Alternative Analysis

Alternative Analysis

This Act 537 Planning Module (Component 3m) has been prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This planning module addresses the planning requirements necessary for the Township to provide public sanitary sewer service to existing developed properties.

For this planning module, the following pertinent information applies:

1. **Project Name:** Low-pressure Sanitary Sewer Service Extension.
2. **Project Description**:

    - Extend public low-pressure sanitary sewer service from a sanitary manhole to be located on Swedesford Road (just east of the intersection with North Bacton Hill Road) to existing properties located along Swedesford Road, east and west of its intersection with Planebrook Road.

3. **Applicant Name**: East Whiteland Township
4. **Applicant Contact**: John Neild; 209 Conestoga Road, Frazer, PA 19355
5. **Site Location**: Swedesford Road Area
6. **Municipality/County**: East Whiteland Township/Chester County

The primary focus of the planning module is to establish the means and methods for providing public sewer service to existing properties along Swedesford Road, immediately east and west of its intersection with Planebrook Road.

Flow projections identified in the planning module show the ultimate wastewater flow of 3,025 gpd, which encompasses 11 equivalent dwelling units.

In considering alternatives for this project, there are two primary alternatives:

1. Do nothing and continue to utilize the existing on-lot disposal systems.

2. Provide public sewer service (via a low-pressure sewer extension) to the identified properties.

To provide this type of service, a connection will need to be made at a new sanitary manhole located just east of the intersection of Swedesford Road and North Bacton Hill Road. All work shall be within the roadway and existing public right-of-way.

Wastewater will ultimately be collected and conveyed to the Whiteland Village Interceptor Extension which has the capacity to handle the proposed peak flow. From this interceptor, flow will be conveyed to the Mill Lane Pump Station. Wastewater will exit East Whiteland Township at the Matthews Road meter.

The extension of the low-pressure sewer was chosen over the no action alternative. This area was previously defined and approved as a public sewer service area in approved Act 537 Planning in 2011. To accommodate the public sewer needs for the above referenced parcels, low pressure sewer is necessary.

Exhibit P

Institutional Evaluation

Institutional Evaluation

For the proposed low-pressure sewer extension, the East Whiteland Township will prepare the design. In addition, the Township will obtain all of the necessary permits and pay for the construction of the sewer extension.

The individual property owners shall be responsible for contracting with a plumber and installing their own lateral to connect to the sewer main.

The Township will purchase and supply grinder pumps to each property owner that will need one. The Township will not keep any spare grinder pump systems on-hand in the event of a failure.

Property owners will receive their pump system, they will have their plumber install and connect to the lateral at the right of way line. Operation and maintenance will be the responsibility of the property owner.

Exhibit Q

Project Implementation Schedule

Implementation Schedule	Months from DEP Approval
Receive PA DEP Approval	----------
Submit Permit Applications to PADEP and PADOT	2
Obtain Permits from PADEP and PADOT	4
Advertise Project for Bidding	4
Receive Bids	5
Award Project	6
Notice To Proceed	7
Substantial Completion	14
Final Completion	15

Exhibit R

Project Narrative

Project Narrative

This Act 537 Planning Module (Component 3m) has been prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This planning module addresses the planning requirements necessary for the Township to provide public sanitary sewer service to existing developed properties.

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3. **Applicant Name**: East Whiteland Township
4. **Applicant Contact**: John Neild; 209 Conestoga Road, Frazer, PA 19355
5. **Site Location**: Swedesford Road Area
6. **Municipality/County**: East Whiteland Township/Chester County

The primary focus of the planning module is to establish the means and methods for providing public sewer service to existing properties along Swedesford Road, immediately east and west of its intersection with Planebrook Road.

Flow projections identified in the planning module show the ultimate wastewater flow of 3,025 gpd, which encompasses 11 equivalent dwelling units.

In considering alternatives for this project, there are two primary alternatives:

1. Do nothing and continue to utilize the existing on-lot disposal systems.
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To provide this type of service, a connection will need to be made at a new sanitary manhole located just east of the intersection of Swedesford Road and North Bacton Hill Road. All work shall be within the roadway and existing public right-of-way.

Wastewater will ultimately be collected and conveyed to the Whiteland Village Interceptor Extension which has the capacity to handle the proposed peak flow. From this interceptor, flow will be conveyed to the Mill Lane Pump Station. Wastewater will exit East Whiteland Township at the Matthews Road meter.

Please refer to the enclosed plan sheet that identifies the area to be served. The parcels in the planning area are located in the residential zoning districts with some parcels in the Village Mixed Use district. The Q in some of the parcel numbers refers to 'Village Mixed Use'.

Currently, 11 parcels are to be served. There is collection and conveyance capacity for the planned flow of 3,025 gpd (based on 275 gpd/EDU). Affected parcels are in the blue box below.

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SEWDESFORD ROAD AREA LATERAL LOCATIONS

Swedesford Road Sewer

PROPERTY	ADDRESS	APPROXIMATE LATERAL LOCATION	SYSTEM TYPE
42-3-132	960 Swedesford Road	6+15 S	Gravity
42-3-153.1	610 Swedesford Road	2+00 S	Gravity
42-3-186	606 Swedesford Road	2+52 S	Grinder Pump
42-3-187	600 Swedesford Road	2+52 S	Grinder Pump
42-3-188	532 Swedesford Road	6+33 S	Grinder Pump
42-3-189	522 Swedesford Road	11+27 S	Grinder Pump
42-3-190	514 Swedesford Road	14+37 S	Grinder Pump
42-3-111.7	511 Swedesford Road	14+43 N	Grinder Pump
42-3-111.6	509 Swedesford Road	17+04 N	Grinder Pump
42-3-111.5	507 Swedesford Road	18+02 N	Grinder Pump
42-3-111.4	505 Swedesford Road	19+59 N	Grinder Pump
42-3-111.3	503 Swedesford Road	19+75 N	Grinder Pump
42-3-111	503 Swedesford Road	20+47 N	Grinder Pump

EXHIBIT P7

VALLEY FORGE SEWER AUTHORITY
ACT 537 PLAN DOCUMENTS

Environmental Protection by
Caring Professionals

Valley Forge Sewer Authority

333 Pawling Road
Phoenixville, Pennsylvania 19460
610-935-1553
Fax 610-983-9684

MUNICIPALITIES
Charlestown
Easttown
East Pikeland
East Whiteland
Malvern
Schuylkill
Tredyffrin
Willistown

TRANSMITTAL

TO: Mr. Kevin Kuhn, Board Chairman, Charlestown Township
Ms. Kimberly Moretti, Manager, East Pikeland Township
Mr. Gene Williams, Manager, Easttown Township
Ms. Terry Woodman, East Whiteland Township
Ms. Sandra Kelley, Manager, Borough of Malvern
Mr. Norman Vutz, Board Chairman, Schuylkill Township
Ms. Mimi Gleason, Manager, Tredyffrin Township
Mr. Hugh Murray, Manager, Willistown Township

FROM: Martin Goldberg

DATE: April 26, 2007

ENCLOSED HEREWITH ___X___ UNDER SEPARATE COVER_____ARE THE FOLLOWING:

One (1) disk copy of Valley Forge Sewer Authority Act 537 Sewage Facilities Plan Update in PDF Format. This includes agency comments and comment responses. There were no additional comments received during the public comment period.

Martin F. Goldberg, PE
Operations Manager

Regional Act 537 Plan

for

Valley Forge Sewer Authority

November 2006

BUCHART HORN,INC.

Gannett Fleming

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Section 5 – Alternatives for Proposed Wastewater Disposal Facilities

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Section 8 – Justification for Selected Alternatives

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B. Member Municipality Report

C. Member Municipality Validation Report

D. Preliminary Effluent Criteria

E. Detailed Cost Breakdown of Alternatives

F. PNDI Correspondence

G. PHMC Correspondence

H. Member and Partner Municipality Flow Projections

I. Planning Agencies and Municipalities Correspondence

J. Proof of Public Notice and Comments

K. Member and Partner Municipality Plan Adoptions

Executive Summary

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H. Member and Partner Municipality Flow Projections

I. Planning Agencies and Municipalities Correspondence

J. Proof of Public Notice and Comments

K. Member and Partner Municipality Plan Adoptions

Figures:

None

Exhibits:

None

A. PLAN SUMMARY

This Regional Act 537 Plan presents the basis for establishing and implementing the long-term wastewater treatment needs for the areas served by the Valley Forge Authority (VFSA). The VFSA is comprised of the Townships of Schuylkill, East Pikeland and Charlestown and provides wastewater treatment services to Easttown, East Whiteland, Tredyffrin and Willistown Townships and Malvern Borough. Herein, this group of eight (8) Municipalities is referred to as the Service Area Municipalities. The Pennsylvania Department of Environmental Protection (PADEP) approved a two-part process whereby the individual municipalities would assess service area needs and determine wastewater flow projections. Once approved by the municipalities and the PADEP, this information would be used by the VFSA to perform an alternative analysis and select an alternative for serving the long-term needs of the communities in their service area. The goal of the process was to best meet the needs of the communities while addressing the PADEP rules and regulations along with local issues. The VFSA has been actively addressing the many and varied issues of this process since the mid 1990's.

In 1993 the VFSA determined that wet weather flows revealed a potential hydraulic overload of the plant by 1995. The PADEP required the VFSA to adopt a management plan to "ration" EDUs to the municipalities. The PADEP also required the initiation of the regional planning process to address the future wastewater treatment needs of the VFSA service area.

The preparation of the Regional Plan began in 1994. The VFSA retained a consultant to compile the information prepared by the communities and address the long term conveyance and treatment needs of the region. Sections 1 through 3 of this Plan were based on information that originally was prepared in 1993 and earlier by Gannett Fleming, Inc. Due to the nature of the regional planning process, it has taken to the year 2006 to complete the process, which is elaborated in Section 5 authored by the VFSA staff and their engineer of record, Buchart Horn, Inc. (B-H). Obviously population projections made in 1993 are now actual numbers and differ, some less some more, from the original projections. In order to keep this plan as current as possible, the sections dealing with wastewater flows and loadings have utilized up-to-date flow projection information from the individual municipalities which can be seen in Table 4-8 and

Appendix H. Sections 5 through 8 reflect those numbers. The PADEP recognizes the issues associated with having to redo the first portion of the Plan and has indicated that as long as the flow projection data is as current as possible, no revision to the first four (4) sections is required. For clarity, minor updates have been interjected into the first three (3) sections, and Section 4 has been updated based on the latest growth estimates in each community served. In these instances, dates of pertinent data are included so that the update is apparent.

Associated Planning

Wastewater from portions or all of Charlestown, Easttown, East Whiteland, Tredyffrin, and Willistown Townships and Malvern Borough is transported through the Valley Creek Trunk Sewer (VCTS), which is owned and operated by Tredyffrin Township, to the VFSA wastewater treatment plant. Tredyffrin Township is conducting Act 537 planning for the VCTS and the Wilson Road Pumping Station, which is a critical component of the VCTS, to determine if the conveyance facilities have adequate capacity to convey the projected wastewater flows to the VFSA wastewater treatment plant.

With the exception of the Wilson Road Pumping Station, the VCTS has adequate capacity to convey the projected wastewater flows for the next five years. The capacity of the Wilson Road Pumping Station, however, will need to be expanded within the next 5 or 6 years. Act 537 planning for the Wilson Road Pumping Station and VCTS is nearing completion and is expected to be approved in March 2007.

Various alternatives were considered for increasing the capacity of the Wilson Road Pumping Station, including installing larger pump impellers, installing larger pump impellers and motors, installing a fourth pump and motor, peak flow storage and off-peak pumping of excess flows, locating and removing excessive infiltration/inflow, and no action. The recommended alternative is to install larger pump impellers and motors. The changes will increase pumping station capacity to 20.16 mgd (peak flow rate), which will be sufficient to meet the wastewater conveyance needs of the municipalities through the year 2025. The increased pumping station capacity matches the current capacity of the Wilson Road Pumping Station force main.

B. Sewage Treatment Plant Expansion Alternatives

Three (3) main alternatives and nine (9) subalternatives were identified as viable options or interim options to satisfy the wastewater management needs established by the Service Area Municipalities. The following alternatives were considered for treatment and discharge of a portion or all on the additional projected wastewater flow from the VFSA member municipalities.

1. Divert flow to other existing treatment facilities.

1A. Divert French Creek Pump Station discharge to Phoenixville.

1B. Divert Pickering Creek Pump Station discharge to Phoenixville.

2. Construct satellite wastewater treatment facilities.

2A. Locate a satellite plant at Cromby and divert French Creek Pump Station discharge.

2B. Locate a satellite plant at French Creek Pump Station and divert effluent to Cromby outfall.

3. Upgrade/expand the existing wastewater treatment facilities.

3A. Upgrade existing plant with step feed, primary chemical feed and UV disinfection.

3B. Same as alternative 3A but add a 4th final clarifier.

3C. Same as alternative 3E but add a 3rd primary clarifier.

3D. Innovative alternatives

3E. Same as alternative 3B but add a 3rd aeration tank.

These alternatives can be implemented individually or in combination to meet the wastewater treatment needs of the study area. Section 5 provides descriptions and preliminary analyses of each of the nine (9) subalternatives identified.

The selected alternative from Section 5 is 3E (Expand the existing wastewater treatment plant by upgrade it with complete mix, activated sludge, UV disinfection, adding a 3rd aeration tank, and a

4th final clarifier). A PADEP approved screening process of the alternatives was utilized for evaluation. The reasons for elimination of the other alternatives are presented in Section 5.

Cost of Implementation

Table 6-4 includes a present worth evaluation of the forward flow portions of the alternatives considered. Conceptual level capital costs based on 2006 dollars for upgrading capacity for treating forward flow, sludge processing, and plant improvements are $10.35 million, $3.62 million, and $6.91 million, respectively. Capital expenditures for expansion and improvements identified in this Plan will be shared by the Partners on a flow based cost allocation. The Partners will provide funds for the pending project from funds on hand or through loans or bond issues.

C. Project Implementation Schedule

Table E-1. Implementation Schedule

Date	Task
November 2006	VFSA Approval (November Board Meeting)
December 2006	Submit 537 Plan to Municipalities and County Planning Agencies and Health Department
February 2006	Public Advertisement of Plan
March 2007	Approval obtained from all Agencies
May 2007	VFSA Adopts
July 2007	Submit to PADEP
October 2007	PADEP approval
January 2008	Design Contract
December 2008	Complete Design
April 2008	Obtain Permits
August 2009	Award Contract
September 2009	Begin Construction
December 2010	Begin Operations

The VFSA is committed and has the organizational structure in place to implement this project. The individual municipalities have expressed their desire to finalize this planning document, adopt, and implement the selected alternatives.

D. Original, signed sealed Resolution of Adoption by Municipalities

The partner and member municipalities were provided the opportunity to review and adopt the recommendations of this Plan Update. Appendix K provides copies of each municipal Resolution of Plan Adoption.

E. Comments from the various planning agencies

The VFSA has submitted this plan and requested comments from the various municipal and county planning agencies. Correspondence documenting plan submission and responses are provided in Appendix I of this Plan Update.

F. Proof of Public Notice and results of 30 day written comment period

On XX/XX/XXXX the recommendations of this Plan Update are to be listed in The Phoenix. Proof of this publication, which also established a 30 day written public comment period is provided in Appendix J of this Plan Update. Any written comments received as a result of the publication of the Plan Update will be addressed and included in Appendix J.

G. Resolution of Inconsistencies

As documented in Section 6 of this report, the recommendations of this Plan Update are basically consistent with the environmental regulations associated with wastewater disposal and plan development.

Section 1

Previous Wastewater Planning

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B. Summary of Existing Wastewater Planning 1-5

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B. Member Municipality Report

C. Member Municipality Validation Report

Figures:

1-1. Public Sewered Areas, Chester County, PA

Exhibits:

None

A. Introduction and Planning Objectives

History

The Valley Forge Sewer Authority (VFSA) was organized in the late 1960s by the Townships of Schuylkill, East Pikeland, and Charlestown in Chester County, Pennsylvania for the purposes of acquiring, constructing, maintaining, owning or leasing sewer systems and sewage treatment works. On November 1, 1970 VFSA entered into an agreement to provide wastewater treatment services to the following municipalities in Eastern Chester County: Easttown Township, East Whiteland Township, Malvern Borough, Tredyffrin Township and Willistown Township (Valley Creek Trunk Sewer (VCTS) Municipalities). The VFSA and each VCTS Municipality has a specific reserved capacity at the Valley Forge Sewage Treatment Plant (STP), located in Schuylkill Township. The initial reserve capacities were established in the Valley Forge STP Agreement of 1970. The VCTS Municipalities and the municipalities comprising the VFSA are hereafter defined and referred to as the Service Area Municipalities.

The Valley Forge STP is the largest wastewater treatment plant in terms of treatment capacity in Chester County. The plant was constructed in 1977 to meet a projected design year (1985) capacity requirement of 8.0 million gallons per day (MGD). The construction of the treatment plant and collection and conveyance systems resulted in cleaning up the surface water and groundwater in the region by collecting domestic wastes from malfunctioning and failing on-lot sewage disposal systems. The wastewater facilities were designed to correct this situation first in the areas where the problems were most severe, and then to eliminate the existing and potential water quality problems in other areas within the Service Area Municipalities. These facilities were also intended to eliminate severe odors, which had been arising from saturated leach fields and cesspools. The construction of public sewers substantially mitigated these problems in the Service Area Municipalities.

Through the mid 1980s, the Valley Forge STP's average daily flows remained below its maximum treatment capacity. The original design flow was not realized in 1985 due to a general regional slow down in development in the early 1980's, but as development within the Service Area Municipalities increased during the later part of the 1980's, the VFSA recognized the importance of initiating a regional planning process to examine future wastewater needs.

The Regional Planning Process

In October 1987, a two-part regional planning process was developed and agreed upon by the Service Area Municipalities. In the first part of the planning process, the Service Area Municipalities were asked to prepare individual Act 537 Sewage Facilities Plans for the purpose of providing the VFSA and the Pennsylvania Department of Environmental Protection (PADEP) with information concerning development potential, proposed expansions to the service area boundaries, and other documentation related to the development of wastewater flow projections. The intent was to allow each individual Service Area Municipality to evaluate its development potential and determine its wastewater needs and priorities within the Act 537 framework. One of the VFSA's policies is that it will not, on its own, initiate extension of the service area boundaries; each municipality must initiate any service area revisions.

In the second part of the process, the information prepared by the Service Area Municipalities would be used by the VFSA to prepare a regional wastewater facilities plan which in turn, would be adopted by each Service Area Municipality. PADEP approved this two part plan in a letter dated May 31, 1988. The municipalities also approved this approach through a series of documents, copies of which are included in Appendix A. From 1987 to the present, each of the Service Area Municipalities prepared Act 537 plans, and they have either initiated the approval process within their own municipality, or have submitted plans to the PADEP for approval. The status of the Service Area Municipalities' plans at is summarized in Table 1-1.

Table 1-1. Status of Municipal Act 537 Plans Valley Forge Sewer Authority Partner Municipalities

Municipality	Plan Reviewed	Municipal Adoption	DEP Status	Comments
Charlestown Township	4/1989	6/05/1989	Approved 6/17/2002	Plan indicates that no additional capacity needed based on projected development until 1999.
Easttown Township	3/07/88, rev. to 9/92	7/06/1992 last approval	Approved 3/13/2000	Agreement with Tredyffrin for transmission of 1.484 MGD through Valley Creek Trunk Sewer (VCTS).
East Pikeland Township	8/26/1991	1/1991	Submitted 12/2/1991 – conditionally approved 12/9/1994	Plan does not clearly indicate how flow projections were estimated.
East Whiteland Township	8/12/91	No	Approved 11/27/2002	Township plans to obtain further capacity when VFSA increases treatment capacity at plant.
Malvern Township	11/1993	11/16/1993	Approved 5/12/1995	Borough plans to sell 85,000 gpd of its reserved capacity to Easttown Township.
Schuykill Township	10/1994	Yes	Approved 1996	DEP granted conditional approval in 1996 because of the incomplete regional plan.
Tredyffrin Township	5/1993	12/13/1993	Approved 12/12/1994	Township maintains agreements with Easttown, E. Whiteland, and Malvern for use of VCTS.
Willistown Township	7/03/1990 rev. to 2/06/1991	5/1991	Approved 3/28/2000	Plan notes that Township has elected to purchase an additional allocation of 200,000 gpd to provide buffer against any changes in land use policy.

In the spring of 1993, the VFSA reviewed the flow projections provided by the Service Area Municipalities in the 1992 Chapter 94 Report and determined they did not portray a realistic projection of wet weather flows. Average daily flows exceeded 8.0 MGD (the then current capacity) during early 1993. On September 22, 1993, the VFSA provided revised hydraulic loading projections to PADEP. These projections indicated a potential hydraulic overload by 1995. In response to the revised projections, PADEP acknowledged the projected overload and directed the VFSA to follow a planning module processing procedure based upon individual Service Area Municipalities' EDU commitment lists, first developed in 1991. PADEP also directed the VFSA to submit a schedule for the preparation and implementation of the regional Act 537 Plan. The schedule was submitted in December 1993, and the VFSA initiated the second part of the regional planning process.

The VFSA continues to monitor the remaining STP capacity, and work with the Service Area Municipalities to encourage infiltration/inflow (I/I) reduction. The I/I reduction effort has been successful and is having a tangible positive effect upon the VFSA system. This is especially true in Easttown where the projected capacity requirements have been reduced down to their original reserve capacity of about 1.5 mgd. The planning module procedure plan approved by the Service Area Municipalities and required by PADEP continued until the STP was rerated to 9.2 MGD in 2000. Since the rerate, new planning modules have been processed on a first come, first serve basis and are incorporated into each municipalities current Chapter 94 Report.

Planning Objectives

In accordance with the approved plan of study, this Act 537 Regional Plan is being prepared to meet the following objectives:

1. Identify wastewater planning related to the VFSA that has been previously undertaken or is planned.
2. Address future treatment plant capacity requirements for the VFSA Service Area Municipalities.
3. Analyze the existing conveyance system owned and operated by the VFSA to identify available capacity and problem areas in the system.

4. Gather and analyze data supporting wastewater flow projections to the VFSA system for short and long-term planning horizons, prepared by the municipalities.
5. Identify future public sewer service areas in the overall region, based on Service Area Municipalities' Act 537 plans.
6. Analyze alternatives for additional VFSA conveyance facilities and VFSA wastewater treatment facilities.
7. Evaluate the feasibility of implementing alternative treatment and disposal methods.
8. Recommend a plan and its implementation schedule.

The VFSA was selected by the municipalities as the lead agency to develop the regional plan, and after PADEP approval, implement it. The intent of the regional planning process is to produce a regionally approved and viable document, which supersedes previous wastewater planning, documents and provides a tool for wastewater facilities management. Toward this end, the Authority has made every effort to address the comments, suggestions, and concerns of the Service Area Municipalities, as well as the numerous parties, agencies and groups who have expressed an interest in this process.

Additionally the VFSA is coordinating their planning efforts with the Service Area Municipalities involved with the Valley Creek Trunk Sewer System.

B. Identify and summarize all existing wastewater planning and management activities previously undertaken and determine consistency status.

Existing Wastewater Planning Documents

- **Master Sewer Plan, Revised Edition 1970, for Chester County, Pennsylvania**
  The Chester County Master Sewer Plan, 1970 revised edition, was prepared by Roy F. Weston Engineers. It was originally published in 1968 and was revised, in part, to address the planning of a regional system to serve Tredyffrin, Easttown, Willistown, and East Whiteland Townships and Malvern Borough.

The alternative proposed was the construction of a new wastewater treatment plant in Upper Merion Township, Montgomery County, PA. It was estimated that the proposed regional wastewater treatment plant would receive a flow of 3.53 MGD by 1978 and 5.97 MGD by 1988.

Due to the relatively great distance of three (3) of the western most municipalities (East Whiteland Township, Willistown Township and Malvern Borough) from the proposed regional plant, an alternative plan was suggested. The alternative proposed that Tredyffrin and Easttown Townships follow the regional plan and have Willistown, East Whiteland, and Malvern share a joint plant on Little Valley Creek. An additional alternative proposed for Easttown Township involved conveying sewage to the Radnor-Haverford-Marple Authority facilities.

As stated previously in this report, the VFSA was organized in the late 1960's by the Townships of Schuylkill, East Pikeland, and Charlestown and on November 1, 1970 VFSA entered into an agreement to provide wastewater treatment services to the communities of Easttown Township, East Whiteland Township, Malvern Borough, Tredyffrin Township, and Willistown Township. All of these Service Area Municipalities have portions of their township served by the Valley Forge STP, which was constructed in 1977.

- **Final Environmental Impact Statement (EIS), Valley Forge Area Wastewater Treatment Facility, Chester County, Pennsylvania (September, 1974)**

  An Environmental Impact Statement was prepared for the Valley Forge STP in September 1974 by the United States Environmental Protection Agency (USEPA), Region Three. The purpose of the EIS was to give meaningful consideration to the environmental issues involved in the project, rather than dictate the ultimate solution to water quality management for the area. The EIS examined the relationship of the proposed treatment plant to land use plans, policies and controls of the affected area. The report presents population and growth assumptions used to support the project and to determine secondary population and growth impacts resulting from the proposed action

and its alternatives. The EIS also addresses how the project would conform or conflict with the objectives of approved or proposed Federal, state and local land use plans, policies and controls, and the positive and negative impacts of the project on the environment.

As a result of the analysis of all possible alternatives, including environmental effects, costs, and risks of each such alternative, the EPA concluded that the most appropriate alternative was an 8 MGD wastewater treatment plant utilizing a completely mixed activated sludge process with the processed sludge to be landfilled. The report further concluded that the proposed systems would alleviate existing health hazards, prevent surface and subsurface water contamination, and with adequate planning of land use and the publicly owned treatment facilities, provide ways to prevent urban sprawl and insure orderly future growth.

- **Individual Act 537 Sewage Facilities Plans - Summary of VFSA Participation Information**

  The following are excerpts from or summaries of the information provided in the most recent versions of the VFSA Service Area Municipalities' Act 537 Plans. Please note that as of this writing; only three of the VFSA Service Area Municipalities have plans approved by PADEP. Therefore, there may be minor revisions to the information presented in this document, as each municipality moves closer to approval; however, this will not impact upon the conclusions of this Regional Plan.

  Charlestown Township (Approved 6/17/2002)
  Wastewater disposal needs will be primarily related to future residential land use and industrial development in areas zoned for Planned Residential Development (PRD) and industrial and commercial land use in the southern portion of the Township near and primarily south of the Turnpike. This area is projected to be serviced by the VFSA sewer system.

The majority of Charlestown's residences and businesses will continue to employ conventional or alternate subsurface absorption area systems. As the cost of extending community sewerage systems outside the original VFSA Service Area is appreciably higher than within the VFSA Service Area, reliance on the on-lot methods will continue during the major part of the time frame considered in their Plan.

East Pikeland Township (Approved 12/9/1994)

East Pikeland is a member municipality of the VFSA. The public sewer system in the Township is designed, monitored, maintained and owned by the VFSA. The majority of residents in East Pikeland Township are connected to the VFSA. With the exception of two community systems, the remaining residents rely on individual on-site systems. A minor portion of West Vincent enters the VFSA system through East Pikeland. This was approved by agreement in order to alleviate potential public health issues from on-lot system malfunctions from existing homes outside VFSA's service area.

Easttown Township (Approved 3/13/2000)

Easttown Township's Act 537 Plan was last revised September, 1992 and adopted by the Township July 6, 1992. It was approved by PADEP on November 6, 1992.

Easttown Township is well established with respect to sanitary sewage facilities. The Township areas planned for eventual public sewer service include a number of residential infill developments, institutional or school facilities, and households currently using on-lot disposal systems. The majority of the collection systems in the Township drain to a network of 13 pump stations for conveyance through Tredyffrin Township to the Valley Forge STP. Some small peripheral areas of the Township drain by gravity to Tredyffrin and Radnor Townships.

Approximately sixty percent of the remaining parcels in the Township that are planned for eventual inclusion into the public sewer system are in the planning or construction phases. The development of these parcels necessitates the retrofitting and/or expansion of some pump stations in the system and associated gravity line extensions.

All multi-family dwelling areas are connected, or are planned for connection, to the public sewer system. That being the case, and since all other undeveloped areas in the Township are zoned for single-family dwellings on very large lots, there is no necessity for any community on-lot systems.

East Whiteland Township (Approved 11/27/2002)
East Whiteland Municipal Authority owns the sewage collection system and leases its operation to East Whiteland Township. The eastern two-thirds of the Township including all of Route 30 is now served by the public sewer system. The Township needs more capacity to accommodate development in western areas of the Township.

Seven private package treatment plants operate in East Whiteland Township. These treatment plants are generally located in the southern and western portions of the Township. One community on-lot sewage disposal system is operated at the K.D. Markley Elementary and Intermediate School.

Approximately one third of the East Whiteland Township land area relies on individual on-lot disposal systems. The two concentrated areas of on-lot disposal systems are: the area between Swedesford Road and U.S. Route 30 from Penflex to the Township line, and the area east of PA Route 352, and north of Summit Road.

Malvern Borough (Approved 5/12/1995)
Malvern Borough's Act 537 Plan was last revised November 1993 and adopted by the Borough on November 16, 1993. It was submitted to PADEP and is currently under review. The Borough is almost completely served by the public sewer system. The Valley Forge STP treats all wastewater flows.

There are no public sewage facilities provided south of First and Second Avenue. This area, which is made up of the property owned by Malvern Prep and Malvern Retreat and a few single-family residential units, is served by on-lot sewage disposal systems. The Borough does not intend to construct a public sewer system in this specific area.

There are also unsewered areas located in the northeast and northwest corners of the Borough. There are no dwelling units located in these areas. Future wastewater flow from both of these areas is proposed to be connected to the public sewer system and conveyed to the Valley Forge STP. The remainder of the Borough is connected to the public sewer system, which is maintained by the Borough.

Schuylkill Township (Approved 1996)

Schuylkill Township's Act 537 Plan was last updated in October 1994. The Plan describes anticipated township development by watershed area from 1998 to 2002. In addition, the Plan describes the number of equivalent dwelling units (EDU's) expected to be added to the VFSA system.

Two treatment plants serve the public sewage areas of the Township. The majority of sewered EDUs (approximately 96%) are treated by the Valley Forge STP. Approximately four percent (4%) of the sewered EDU's are treated at the Phoenixville Borough's STP.

Overall, seventy percent (70%) of existing dwelling units located within Schuylkill Township are connected to public sewers. The balance of the Township's residential units is served by individual on-lot disposal systems.

Tredyffrin Township (Approved 12/12/1994)

Tredyffrin Township's Act 537 Plan was revised in May 1993, adopted by the Township on December 13, 1993 and approved by PADEP. The Tredyffrin Township Municipal Authority's Paoli Area sewerage project (public sewers connected to the VFSA system) was completed and placed into operation in 1978, thereby eliminating many documented, malfunctioning on-lot sewage disposal systems and providing that area of Tredyffrin Township with public wastewater facilities. The Paoli Area project, the Authority's largest to date, included over 30 miles of sewers and four wastewater pumping stations. Many miles of sewers, and an additional pumping station, have been constructed in this area since 1978 by various developers.

In 1987, to help alleviate a hydraulic overload at a treatment plant in Upper Merion, the Cassatt Road pumping station was constructed to divert flow from the Township's Trout Run drainage area to the Valley Forge STP. This flow has been redirected back to the Upper Merion plant.

Furthermore, a small portion of the northern section of the Township, which is currently served by individual on-lot disposal systems, may be connected to the public sewer system.

Willistown Township (Approved 3/28/2000)
Willistown Township's Act 537 Plan was last revised February 6, 1991 and adopted by the Township in May, 1991. It was conditionally approved by PADEP on October 16, 1991.

The Township's public sewer system connected to the Valley Forge STP is located in the northern portion of the Township. The system crosses the ridge separating the Crum and Valley Creek Watersheds. In addition to this system the Township has nine private or community treatment facilities. Those areas not served by public or community system rely on private on-lot disposal systems. According to the Chester County Health Department (CCHD) there is evidence of on-lot malfunctions in these areas.
The plan recommends that additional capacity be acquired from the VFSA necessary to meet the future wastewater treatment needs of the northern portion of the Township.

- **Municipal Wasteload Management Annual (Chapter 94) Reports**
  Municipal Wasteload Management Annual Reports are intended to provide a review of the hydraulic and organic loads on sewerage facilities for the past year and insure that there is sufficient time to plan and construct needed additions to wastewater treatment plants. Each Chapter 94 Report provides wastewater flow estimates for a five year planning horizon.

The VFSA maintains current records regarding the future growth expectations of the eight communities that are served. Near term growth projections are identified by the communities and utilized to project the five year future needs, described in the Chapter 94 reports prepared by the VFSA and submitted to the PADEP on a yearly basis. Each community's submittal is included as an appendix to VFSA's yearly submittal to the PADEP.

The eight communities have maintained a dialogue with the VFSA in order to prepare for the longer term wastewater needs that are addressed in this Act 537 Plan. Although these communities are not entirely built out, the future growth courses of these municipalities have been fairly well defined over the years, and therefore, although the rates of development may vary based on market conditions, the EDU estimates summarized and presented in this subsection provide a high degree of confidence.

Adequacy of Previous Planning for Service Area

The Chester County Sewage Plan of 1970 recognized the need to provide regional systems to serve the entire Pickering Creek, French Creek, and Valley Creek Drainage Basins. The recommended feasibility studies for the individual municipalities were completed. Due to the age and general scope of this document, this regional plan will replace the 1970 study as the official Act 537 Planning study for the VFSA Service Area.

The Valley Forge STP EIS noted that, "the provision of less than 8 MGD capacity for the treatment plant would not be prudent." In addition it recommended that revised comprehensive land use plans and 537 sewage facility plans should be completed as soon as possible to guide development in the Design Service Area to meet projected 1985 sewer service demands. The plant was constructed and each of the Service Area Municipalities has prepared revisions to their individual Act 537 Plans. Although the EIS provides valuable information on the natural and physical characteristics of the service area, its main emphasis was to evaluate impacts of the plant at its design year of 1985. Therefore, this document will not be utilized for evaluating future capacity needs of the service area.

Sewage facilities planning which has been implemented through official plan revisions (planning modules) and addenda are referenced in the individual municipal Act 537 Plans, where appropriate.

C. Identify and summarize all existing municipal and county planning documents, including land use plans and zoning maps and regulations.

Municipal Planning Documents

The population and wastewater flow estimates prepared by the individual Service Area Municipalities reflect a number of different variables which impact local development. These variables include each community's comprehensive land use plan, zoning ordinance, and land development and subdivision regulations. Each municipality designates a sewer service area boundary or boundaries, depending on the number of public sewer service areas and infrastructure needs. The basis for this regional plan is the projections and wastewater facilities needs identified by the Service Area Municipalities in their Act 537 Plans. As part of the regional planning process these projections and methods were reviewed for consistency with the Act 537 planning guidelines and the protection of environmentally sensitive areas. Issues concerning individual plans were discussed with the municipal representatives during the development of the regional plan.

County Planning Documents

- **Landscapes: Managing Land in Chester County (1996-2020)**
  Landscapes is the land use policy plan for Chester County and was first adopted in 1996, which includes the County's vision for the year 2020. Landscapes and its associated Livable Landscapes map were updated in 2000. It recommends that development be encouraged in designated "Suburban" and "Urban" Landscapes, or "Suburban" or "Rural Centers" instead of in "Rural" and "Natural" Landscapes.

  The Suburban Landscape is to contain a mix of uses and higher densities of development than those found in the Rural Landscape. In order for this pattern to occur, Landscapes

supports the provisions of infrastructure and public services, such as public sewer systems. VFSA's draft Regional Plan supports Landscapes Policies to:

- Encourage coordination between municipalities and authorities to ensure consistency with land use plans.
- Maintain or expand existing sewer and water facilities to support development in Urban and Suburban Landscapes.

- **Sewage Facilities Inventory - 1991**

  The Chester County Planning Commission prepared this document to update its Community Facilities Inventory of 1985. The inventory shows the geographic location of sewage collection, conveyance, and treatment facilities in the County, as of 1991 (see Figure 1-1). According to the document, approximately 60% of the Chester County population relies on public sewage facilities for the collection, treatment and disposal of wastewater (1990 Census). The inventory also notes that the most thoroughly sewered areas of the County are in the central and eastern sections of the County along Routes 30 and 202. The Valley Forge STP is noted as being the largest treatment facility in the County in terms of sewage flows.

  Growth has been significant in recent years. Whereas VFSA Service Area sewered EDUs totaled 19,400 in December of 1993, the VFSA now services 25,540 as of year end 2005.

Public Sewered Areas (1991)

Chester County, Pennsylvania

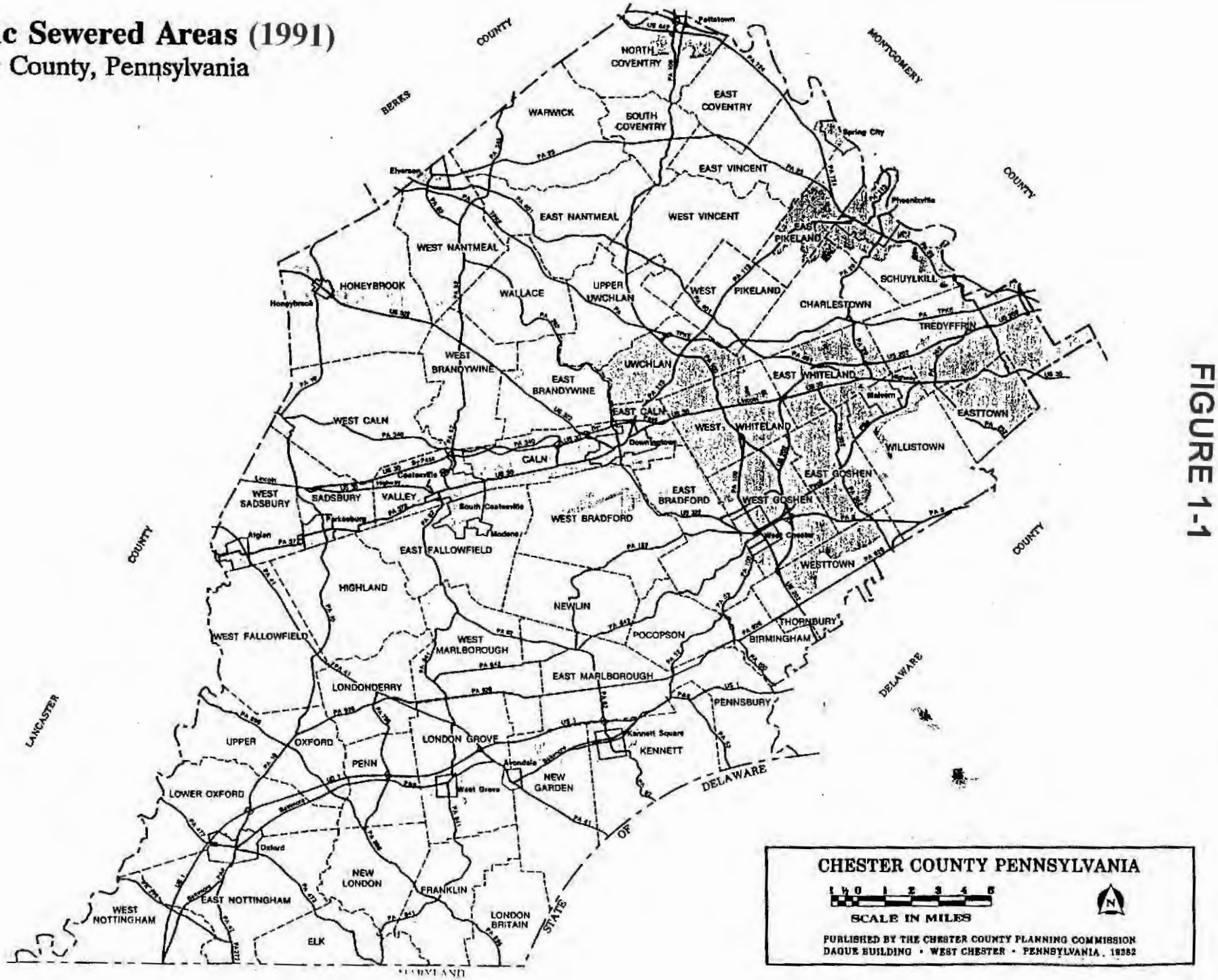


FIGURE 1-1

Section 2

Physical and Demographic Analysis

Table of Contents **Page No.**

A/B. Municipal Borders and Sewer Service Areas 2-1

C. Soils 2-4

D. Geography 2-5

E. Topography 2-7

F. Potable Water Supplies 2-8

G. Wetlands 2-10

Appendices:

None

Figures:

Figure 2-1. VFSA service area

Figure 2-2. Designated and potential connection areas in Service Area Municipalities to Valley Forge STP

Figure 2-3. Major surface water bodies and drainage basins

Exhibits:

None

A/B. Prepare exhibits depicting planning areas, municipal boundaries, and sewer service areas utilizing USGS topographic maps, municipal comprehensive maps, and sewer service maps.

Regional Setting

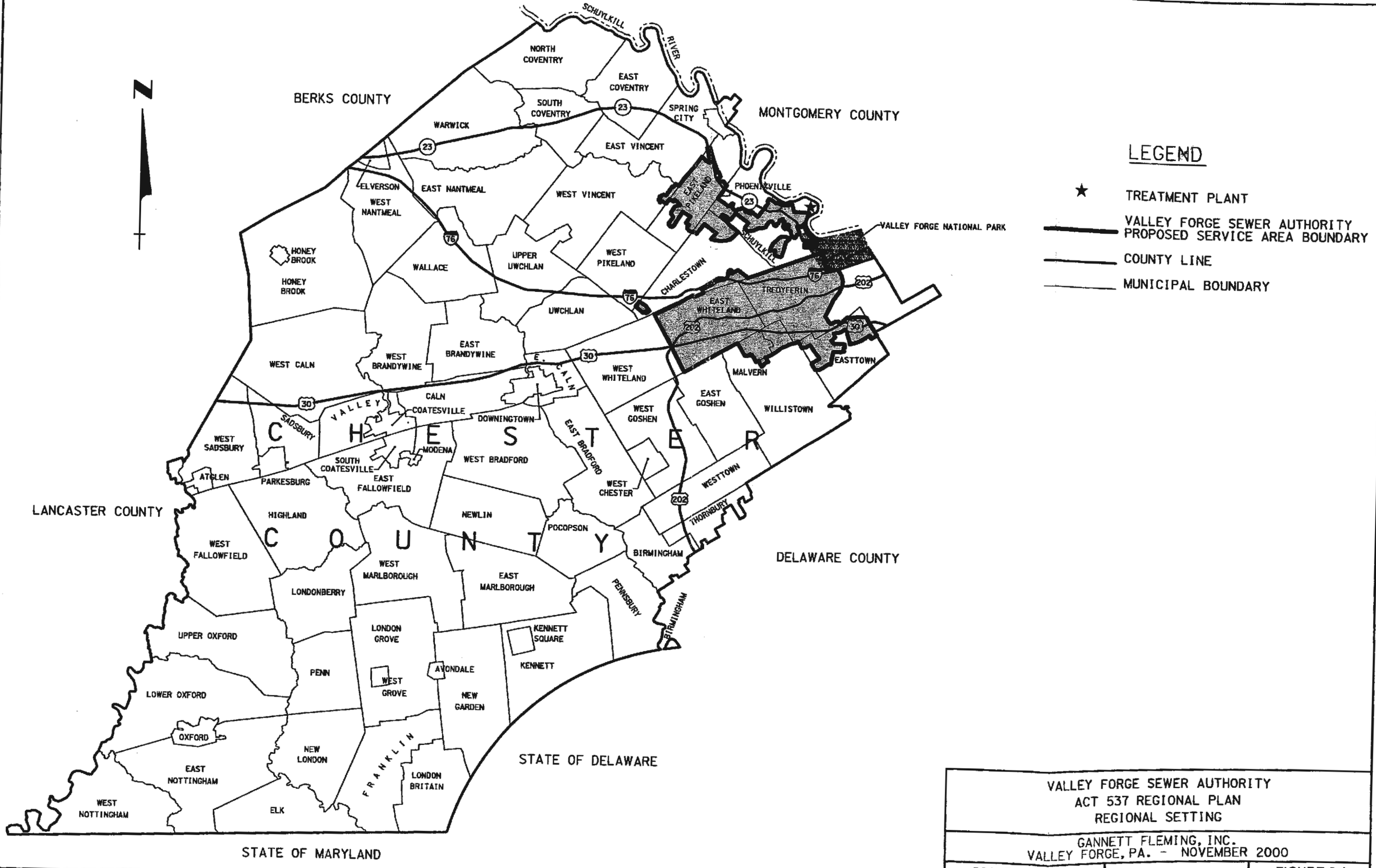
The VFSA Service Area is regionally located in Eastern Chester County, adjacent to Montgomery and Delaware Counties in Southeastern Pennsylvania. Figure 2-1 shows the regional setting of the VFSA service area and illustrates the area's proximity to the Schuylkill River, Valley Forge National Historical Park and major transportation routes such as the Pennsylvania Turnpike, Schuylkill Expressway, and State Routes 202, 422 and 23. The area's proximity to the City of Philadelphia and its access to a major transportation network have contributed to its desirability for residential as well as commercial/office development.

Sewer Service Area

The extent of the VFSA Service Area is shown in more detail on Figure 2-2 and includes areas currently designated or proposed by the Service Area Municipalities for connection to and treatment by the Valley Forge STP. Prior to construction of the STP in 1977, the U.S. Environmental Protection Agency (USEPA) prepared an Environmental Impact Statement (EIS) to address the plant's projected impacts and to define areas requiring corrective action. The EIS identified two service areas: The Initial Service Area and the Design Service Area. The Initial Service Area contains the most severe health hazards and activities that were degrading water quality in the area. The Design Service Area was defined as the minimum area to which service was intended to be extended by 1985, the design year of the treatment plant. A few areas within Charlestown Township and a small area in West Vincent Township are the only changes to the Design Service Area projected in the 1974 EIS.

At the start-up of the plant, in October 1977, the estimated number of equivalent dwelling units (EDUs) to be connected was approximately 3,000. As of December 1993, the VFSA Service Area included approximately 19,400 EDUs.

The 2005 year end EDUs totaled 25,540.

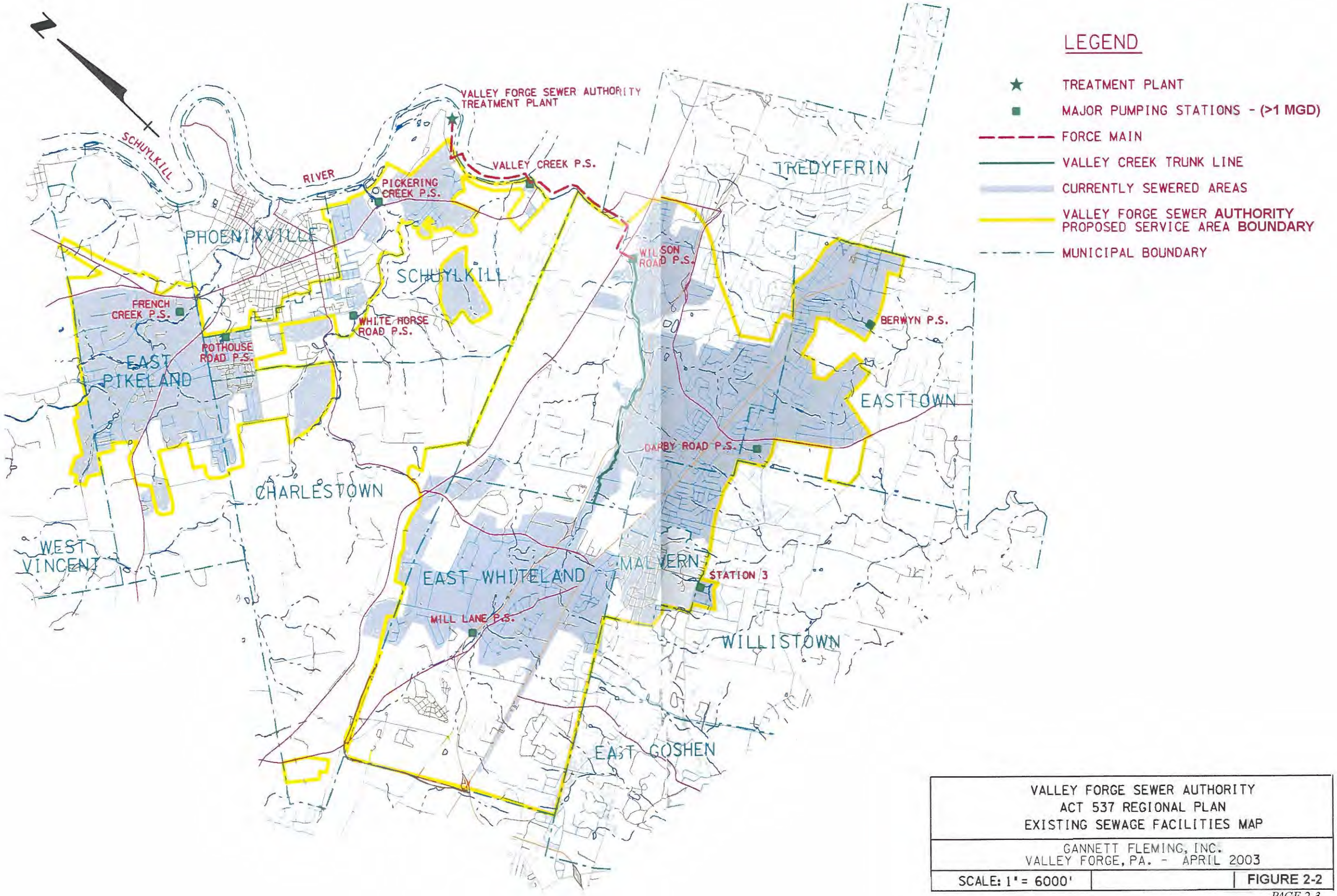


VALLEY FORGE SEWER AUTHORITY
ACT 537 REGIONAL PLAN
REGIONAL SETTING

GANNETT FLEMING, INC.
VALLEY FORGE, PA. - NOVEMBER 2000

SCALE: 1" = 20000'

FIGURE 2-1



VALLEY FORGE SEWER AUTHORITY ACT 537 REGIONAL PLAN EXISTING SEWAGE FACILITIES MAP	
GANNETT FLEMING, INC. VALLEY FORGE, PA. - APRIL 2003	
SCALE: 1" = 6000'	FIGURE 2-2

C. Soils

The service area has six soil associations, or general groups. The following gives the typical characteristics of these associations:

- Penn-Croton-Bucks Association - Deep, silty soil.
- Glenelg-Manor-Chester Association - Generally shallow to deep, silty and channery soils, ranging from level to steep, but primarily gently to moderately sloping.
- Edgemont Association - Moderately deep, well drained.
- Hagerstown-Conestoga-Guthrie Association - Deep, silty soils.
- Neshaminy-Chrome-Conowings Association - Moderately deep and silty.
- Neshaminy-Glenelg Association - Moderately deep to deep, well-drained, silty, channery and gravelly.

The soil types are influenced by the geologic formation(s) which underlie them. Graphitic gneisses and grandiorite are generally overlain by deep and well-drained soils like those in the Glenelg-Manor Soil Association. The Stockton Formation is primarily overlain by a thin soil layer, typically of the Penn-Croton-Bucks series. Due to the solution channels which form in limestone and dolomite in Chester Valley, the soils overlying the Conestoga, Elbrook and Ledger Formations are generally well-drained and of the Hagerstown-Conestoga-Guthrie Association. The Chickies Formation is overlain by deep, often strong, well-drained soils, e.g., the Edgemont Association. The Serpentinite and Wissahickon Schist have deeply weathered rock which generally improves the percolation characteristics of the overlying soil. Soils such as those in the Neshaminy-Chrome-Conowings Association overlay these formations.

Specific descriptions of the local soil types found in the VFSA Service Area Municipalities may be found in the individual municipalities' plans.

Major Drainage Basins

The VFSA service area is divided into two major drainage basins. The majority of the service area is within the Schuylkill River Basin with the smaller southern portion within the Delaware River Basin. The area is further divided into sub-major drainage basins: French Creek, Pickering

Creek, Valley Creek, Darby Creek, Crum Creek, and Stony Run. The major surface water bodies and drainage basins are shown on Figure 2-3.

The French and Pickering Creeks are located in the northern portion of the service area. French Creek flows in an east, southeast direction through the central portions of West Vincent and East Pikeland Townships and through the northern portion of Schuylkill Township. Pickering Creek flows eastward through the southern portion of East Pikeland and the northern portion of Charlestown Township, and then eastward, then north through the central portion of Schuylkill Township. Flow from these creeks empties into the Schuylkill River. The Valley Creek watershed flows in a northeast direction through East Whiteland and Tredyffrin Townships and empties into the Schuylkill River.

The Darby and Crum Creek watersheds are located in the southern portion of the service area. Darby Creek flows southeasterly through the central portion of Easttown Township. Crum Creek flows southeasterly through the central and eastern portions of Willistown Township. Both creeks continue to flow in a southeasterly direction and empty into the Delaware River.

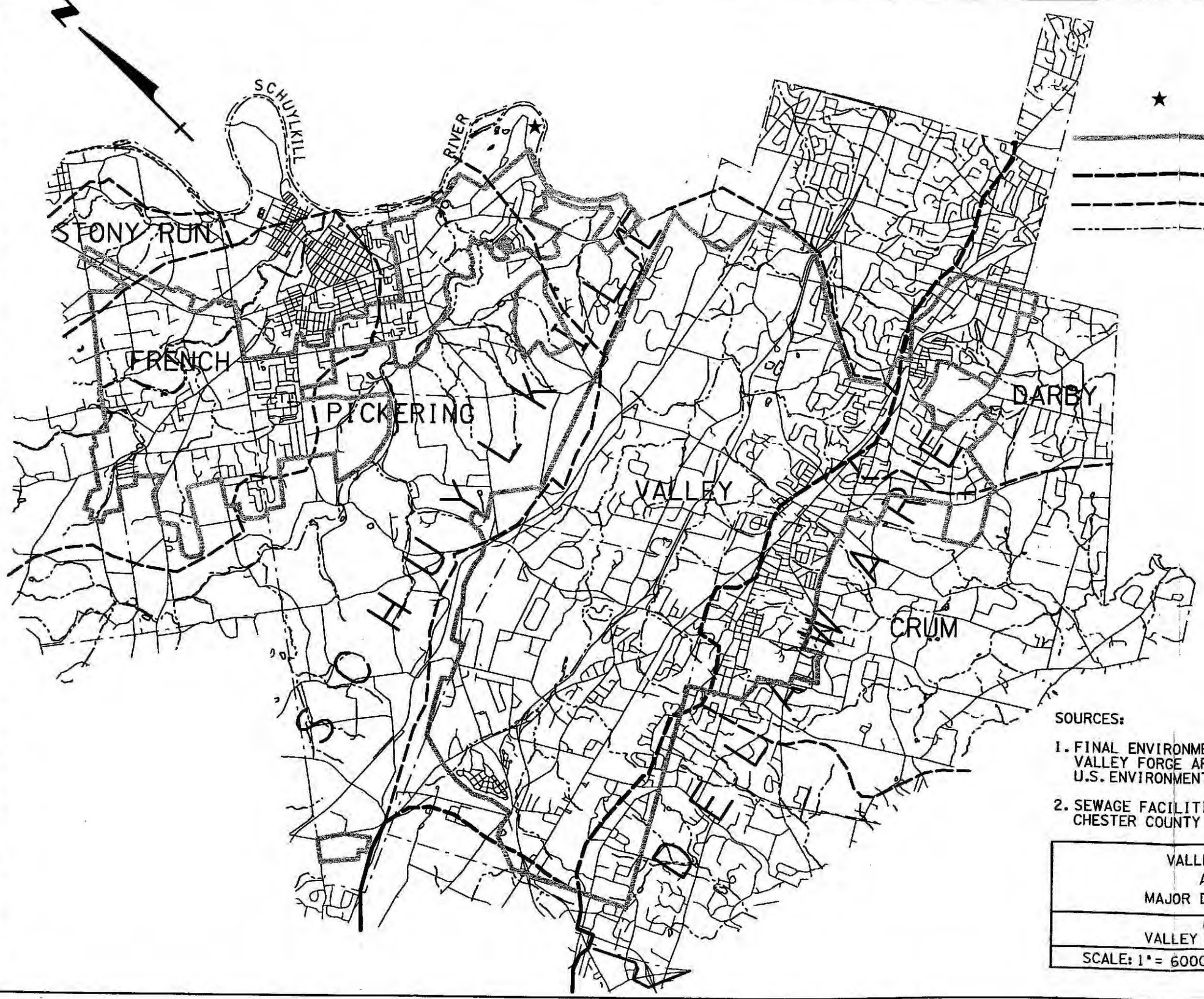
The Stony Run Drainage Basin is found in the northwestern edge of the service area, adjacent to French Creek and located in East Pikeland Township.

Descriptions of the smaller streams, lakes and impoundments located in the VFSA Service Area Municipalities may be found in the individual plans.

D. Geologic Features

The geologic features underlying the service area are made up of complex, folded and altered rocks of varying ages and of igneous, metamorphic and sedimentary origins. The following is a brief summary of the major rock formations underlying the service area.

The northwestern portion of the sewer area is primarily underlain by graphitic gneiss and granodiorite. These formations characteristically have low permeability. The Stockton



SOURCES:

1. FINAL ENVIRONMENTAL IMPACT STATEMENT
   VALLEY FORGE AREA WASTEWATER TREATMENT FACILITY
   U.S. ENVIRONMENTAL PROTECTION AGENCY, SEPTEMBER 1974

2. SEWAGE FACILITIES INVENTORY 1991
   CHESTER COUNTY PLANNING COMMISSION

VALLEY FORGE SEWER AUTHORITY ACT 537 REGIONAL PLAN MAJOR DRAINAGE BASINS/WATERBODIES		
GANNETT FLEMING, INC. VALLEY FORGE, PA. - NOVEMBER 2000		
SCALE: 1" = 6000'		FIGURE 2-3

Formation is located in the northeastern portion of the service area and is comprised of layers of sandstone, siltstone and conglomerates. It has moderate to high porosity and permeability, and provides good surface drainage.

The central portion of the service area is underlain primarily by the Conestoga, Elbrook and Ledger Formations, which are comprised of limestone and dolomite. These formations commonly contain solutions channels. The north-central portion of the service area is underlain by Chickies Formation, which is composed of quartzite, which resists erosion and weathers very slowly.

The southeastern portion of the VFSA service area is underlain by felsic gneiss, which is highly resistant to weathering. The central southern portion of the VFSA service area is predominately underlain by the Wissahickon Formation and Serpentine. Wissahickon Schist and Serpentinite are moderately to high weathered rocks that provide good surface drainage.

The above-mentioned formations and rocks underlay the majority of the service area. More detailed descriptions of the underlying geologic formations may be found in the individual municipalities' plans along with the required mapping.

E. Topography

The service area lies within the Piedmont Province of the Appalachian Highlands. Most of the ridges tend northeast-southwest. The Piedmont is an area of fairly deep, sharp valleys. The service area's most steeply sloping land is primarily along the North and South Valley Hills. The moderately sloping land is predominately in the Pickering Creek Basin. The gentle slopes are located mainly within Chester Valley.

The service area is comprised of three major physiographic regions: the Schuylkill Valley, Triassic Lowland, Chester Valley, and West Chester-Paoli Plain. The Schuylkill Valley and Triassic Lowland, which includes portions of the French and Pickering Creek drainage basins, is characterized by relatively level, gentle lowlands. Chester Valley, which includes the Little Valley Creek and Valley Creek drainage basins, extends northeast and southwest across the

middle of Chester County. In particular, the southern portions of Charlestown, East Whiteland, Tredyffrin, and the northern-most portions of Malvern Borough and Willistown Township fall in the Chester Valley. The West Chester-Paoli Plain, which includes the Crum and Darby Creek drainage basins, consists of gently rolling terrain.

The topography in the study area is affected by the geologic formation underlying the area. The topography of the land overlying the graphitic gneiss and granodiorite depends upon the local variation of the rock hardness, but is generally hilly with medium relief and has natural slopes which are fairly steep and stable. The Stockton Formation is comprised of rock which erodes easily and therefore forms gently rolling hills or relatively flat lowlands.

The Conestoga, Elbrook and Ledger formations provide topography with rolling valleys, hills of low relief, and natural, gentle and stable slopes. Felsic gneiss provides topography of rough hills of medium to high relief, and natural slopes, which are fairly steep and stable. Serpentinite weathers easily and has topographic characteristics including undulating hills of low relief having gentle, stable slopes. The Wissahickon Formation provides undulating hills of medium relief, and natural slopes which are moderately steep and stable.

Detailed local topography and, in particular, identification of steep slopes in the VFSA Service Area Municipalities is provided in the individual plans.

F. Potable Water Supplies

The population in the VFSA Service Area obtains drinking water from public water suppliers and private wells. Major water supply systems in the VFSA Service Area are summarized in Table 2-1.

Groundwater availability in the VFSA Service Area is limited by the low porosity and permeability of most of the underlying rock formations. These crystalline rock formations in the county provide some available groundwater in the fractures and fissures. The Triassic sediments located in the Stockton Formation provide the best groundwater yields in the area. Groundwater

pollution is possible in areas where the sandstones are particularly permeable. The limestone underlying the Chester Valley has variable groundwater yields. The channels create the potential for groundwater contamination to be carried long distances in unpredictable patterns.

Table 2-1. Major Water Systems Servicing VFSA Service Area Municipalities

Major Water Supply Systems	Location of Supply Area within VFSA Service Area	Population Served	Water Source(s)
Philadelphia Suburban Water Company	Easttown, Tredyffrin, Schuylkill, Charlestown East Whiteland and Willistown Townships	N/A (Serves more than VFSA Service Area Municipalities)	Crum, Perkiomen, and Neshaminy Creeks and Schuylkill River intakes
Nichols MHP Water System	Schuylkill Township	27	One well
Phoenixville Water System	Schuylkill and East Pikeland Townships	N/A (Serves more than VFSA Service Area Municipalities)	Schuylkill River intake
Phoenix MHP Water Systems Nos. 1 and 2	East Pikeland Township	171	Three wells
Citizens Utilities Home Water Company	East Pikeland Township	10,768	Schuylkill River intake Three wells
Merlin Hills Water System (owned by Citizens Utilities)	East Pikeland Township	313	One well
Fox Knoll Water Company	Small portion of south central East Pikeland Township	N/A	One well
Deerfield Knoll Water System	Willistown Township	260	Two wells
Plumsock Road Homeowners Assoc.	Willistown Township	100	Two wells
Malvern Courts Water System	East Whiteland Township	220	Two wells
Philadelphia Suburban Water Company	Malvern Borough	3,100	Three wells

N/A - Not Available
Source: Chester County Planning Commission, Water Facilities Inventory, 1991

G. Wetlands

A review of the National Wetland Inventory quadrangles that include the VFSA Service Area (Phoenixville, Collegeville, Malvern, Valley Forge, West Chester and Media) has shown that Palustrine wetlands are scattered throughout the Service Area due to the presence of a number of surface water bodies. The individual municipalities' plans provide more detailed information on the wetlands located in the Service Area.

Section 3

Existing Sewage Facilities

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A. Description of Existing Sewage Facilities
   a. Wastewater Treatment 3-1
   b. Collection System 3-7

B. Description of Areas Using Onlot Sewage Disposal Systems 3-10

C. Solids Handling 3-13

Appendices:

None

Figures:

3-1. Treatment Plant Site Layout

3-2. Treatment Plant Schematic

Exhibits:

None

A. Identify, map, and describe municipal and non-municipal, individual and community sewerage systems in the planning area.

VFSA Wastewater Treatment System

The Valley Forge STP is owned and operated by the VFSA and is located in Schuylkill Township, Chester County, Pennsylvania. A site plan of the treatment plant is included as Figure 3-1. The VFSA finances, owns and operates the Valley Forge STP in accordance with the provision of the agreements signed on November 1, 1970; the Valley Forge Sewage Treatment Plant Agreement; the Valley Creek Trunk Sewer Agreement; and the East Whiteland Trunk Line Agreement.

Treated effluent is discharged into the Schuylkill River at a point located approximately 2000 feet upstream from Pawling Road. The plant's National Pollutant Discharge Elimination System (NPDES) Permit No. 0043974 is dated July 19, 2004 and expires on July 31, 2009. It states that the average monthly flow of effluent discharged from the plant shall not exceed 9.2 MGD. The permit also establishes effluent discharge limits and requirements. These parameters are summarized in Table 3-1.

TABLE 3-1. Discharge Parameters for the Valley Forge Wastewater Treatment Plant

Discharge Parameter	Average Monthly (lbs/day)	Average Weekly (lbs/day)	Average Monthly (mg/l)	Average Weekly (mg/l)
CBOD-5 (5-1 to 10-31)	1535	2302	20.0	30
CBOD-5 (11-1 to 4-30)	1918.0	3069.0	25.0	40
Suspended Solids	2302	3453	30.0	45
Ammonia as N (5-1 to 10-31)	614	---	8.0	---
Ammonia as N (11-1 to 4-30)	1228	---	16.0	---
Fecal Coliform	(200 colonies/100 ml as a geometric average)			
pH	(Within limits of 6.0-9.0 standard units at all times)			
Dissolved Oxygen	(Minimum of 5.0 mg/l at all times)			
Total Residual Chlorine	---	---	0.5	---

In addition, the following parameters are required to be monitored only: total lead, zinc, arsenic, cadmium, selenium, silver, mercury, copper, free cyanide, and hex chromium.

Description of Treatment Process

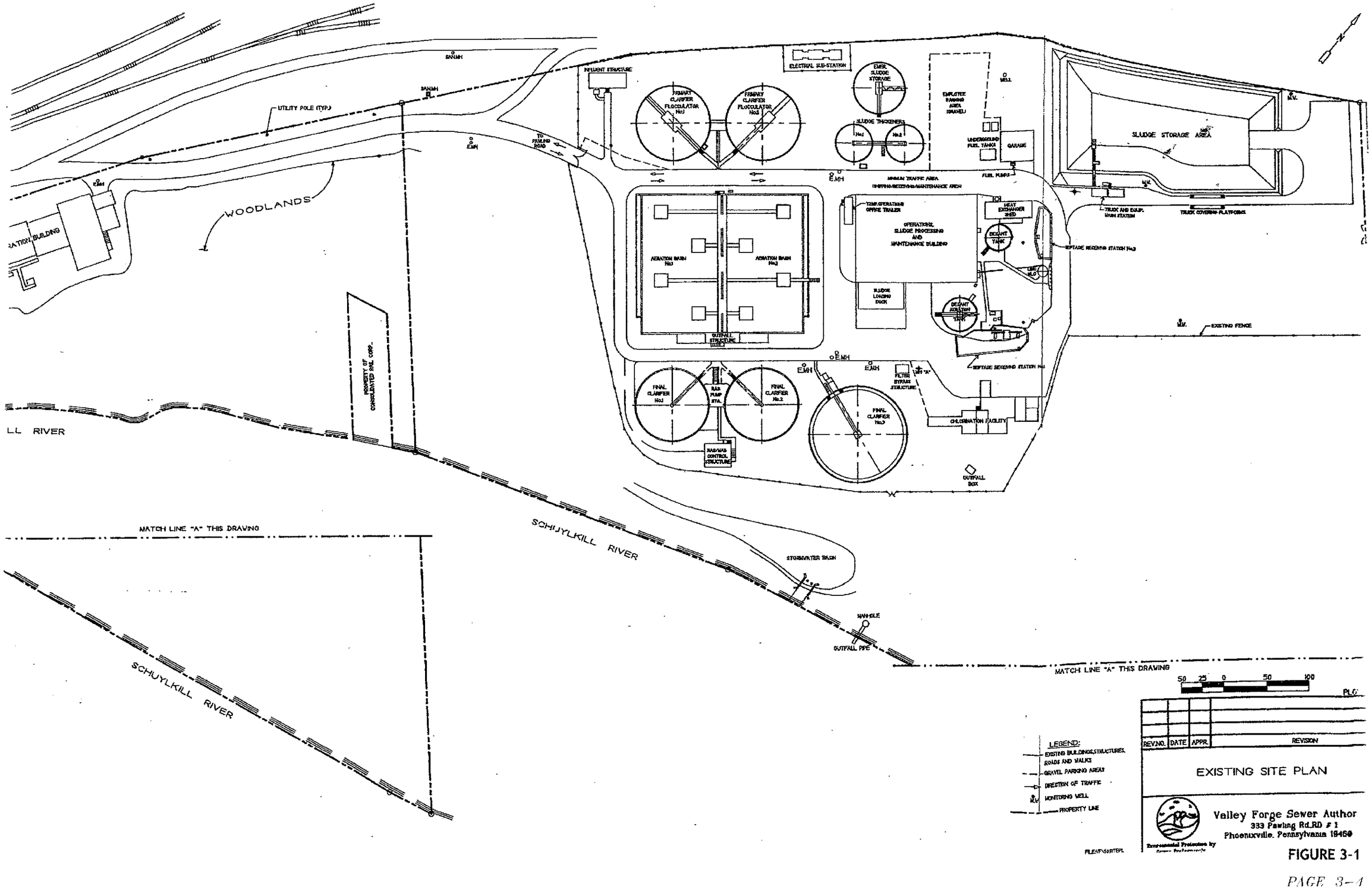
The Valley Forge Sewer Authority Sewage Treatment Plant (STP) was constructed in the mid-1970's with a design hydraulic capacity of 8.0 MGD. Design constituents loadings were 16,680 lbs/day [250 mg/L] for carbonaceous biochemical oxygen demand (CBOD-5); 16,680 lbs/day [250 mg/L] for total suspended solids [TSS]; and 2,000 lbs/day [30 mg/L] for ammonia nitrogen (NH_4-N). Presently, the plant is permitted at a not-to-exceed monthly average flow of 10.4 MGD, and a not-to-exceed average annual flow of 9.2 MGD. Hydraulic capacity is defined as "the rated hydraulic capacity of the treatment facility and is used to help determine whether a

hydraulic overload exists. Monthly average effluent discharge limitations are 20/25 mg/L for CBOD-5; 30 mg/L for TSS; and 8/16 mg/L for NH_4-N.

Mainstream wastewater processing as depicted in Figure 3-2, consists of influent metering/distribution, primary clarification, mechanically aerated activated sludge, final clarification, and chlorination for effluent disinfection. Sludge stream processing consists of primary underflow degritting, gravity co-thickening of primary and waste activated sludge, centrifuge dewatering, and dewatered cake stabilization via post-lime addition. Stabilized bio-solids disposal is by contracted hauling/disposal services.

The original plant design is unique in that it allows for operation of two parallel mainstream treatment trains. At the influent/metering structure, control gates and two parallel Parshall flumes distribute and measure flow to Side No. 1 and Side No. 2 of the plant, each side consisting of a primary clarifier, aeration tank, and final clarifier in the original design. In 1992, a third, larger final clarifier was built and is aligned with Side No. 2 and the original two final clarifiers are now aligned with Side No. 1. The aeration tanks effluent distribution chamber was also modified to accommodate flow splitting to the final clarifiers, and a new return activated sludge distribution chamber was constructed to maintain segregation of RAS for the two treatment trains. A weir box was added to the influent/metering structure to allow for distribution of in-plant recycle flow to Side No. 1 and Side No. 2 by weir gate settings. Previously, the side-stream recycle flow was dedicated to Side No. 2.

The original designed and constructed plant included a pressure filtration system for clarified effluent suspended solids removal and a heat treatment system for biosolids stabilization. These have since been decommissioned. The pressure filtration tanks are in place in the Operations Building basement and are available for reuse for hauled-in wastewater storage/feeding. Most of the heat treatment equipment has been removed. The decant tank (DT) and the decant aeration tank (DAT) have been retained and serve as receiving/storage tanks for hauled-in wastewaters. Original piping/pumping equipment associated with these tanks remains and serves for transport of the stored hauled-in wastewaters to the process application points.



WOODLANDS
UTILITY POLE (TYP.)
SANMH
INFLUENT STRUCTURE
ELECTRICAL SUB-STATION
PRIMARY CLARIFIER FLOCCULATOR No.1
PRIMARY CLARIFIER FLOCCULATOR No.2
EMER. SLUDGE STORAGE
SLUDGE THICKENERS
EMPLOYEE PARKING AREA (GRAVEL)
UNDERGROUND FUEL TANKS
GARAGE
FUEL PUMPS
SLUDGE STORAGE AREA
TRUCK AND EQUIP. WASH STATION
TRUCK COVERING PLATFORMS
MINIMUM TRAFFIC AREA
SHIPPING/RECEIVING/MAINTENANCE AREA
TEMP. OPERATIONS OFFICE TRAILER
OPERATIONS, SLUDGE PROCESSING AND MAINTENANCE BUILDING
HEAT EXCHANGER SHED
DECANT TANK
SEPTAGE RECEIVING STATION No.2
SLUDGE LOADING DOCK
DECANT AERATION TANK
AERATION BASIN No.1
AERATION BASIN No.2
OUTFALL STRUCTURE
EXISTING FENCE
SEPTAGE RECEIVING STATION No.1
FINAL CLARIFIER No.1
RAS PUMP STA.
FINAL CLARIFIER No.2
FINAL CLARIFIER No.3
FILTER BYPASS STRUCTURE
CHLORINATION FACILITY
RAS/WAS CONTROL STRUCTURE
OUTFALL BOX
PROPERTY OF CONSOLIDATED RAIL CORP.
LL RIVER
SCHUYLKILL RIVER
MATCH LINE "A" THIS DRAWING
STORMWATER BASIN
MANHOLE
OUTFALL PIPE
MATCH LINE "A" THIS DRAWING
SCHUYLKILL RIVER
50 25 0 50 100
PLC
LEGEND:
EXISTING BUILDINGS, STRUCTURES, ROADS AND WALKS
GRAVEL PARKING AREAS
DIRECTION OF TRAFFIC
MONITORING WELL
PROPERTY LINE
REV.NO. DATE APPR. REVISION
EXISTING SITE PLAN
Valley Forge Sewer Author
333 Pawling Rd.RD # 1
Phoenixville, Pennsylvania 19460
Environmental Protection by Sewer Professionals

FIGURE 3-1

VALLEY FORGE SEWER AUTHORITY
WASTEWATER TREATMENT PLANT
FLOW SCHEMATIC

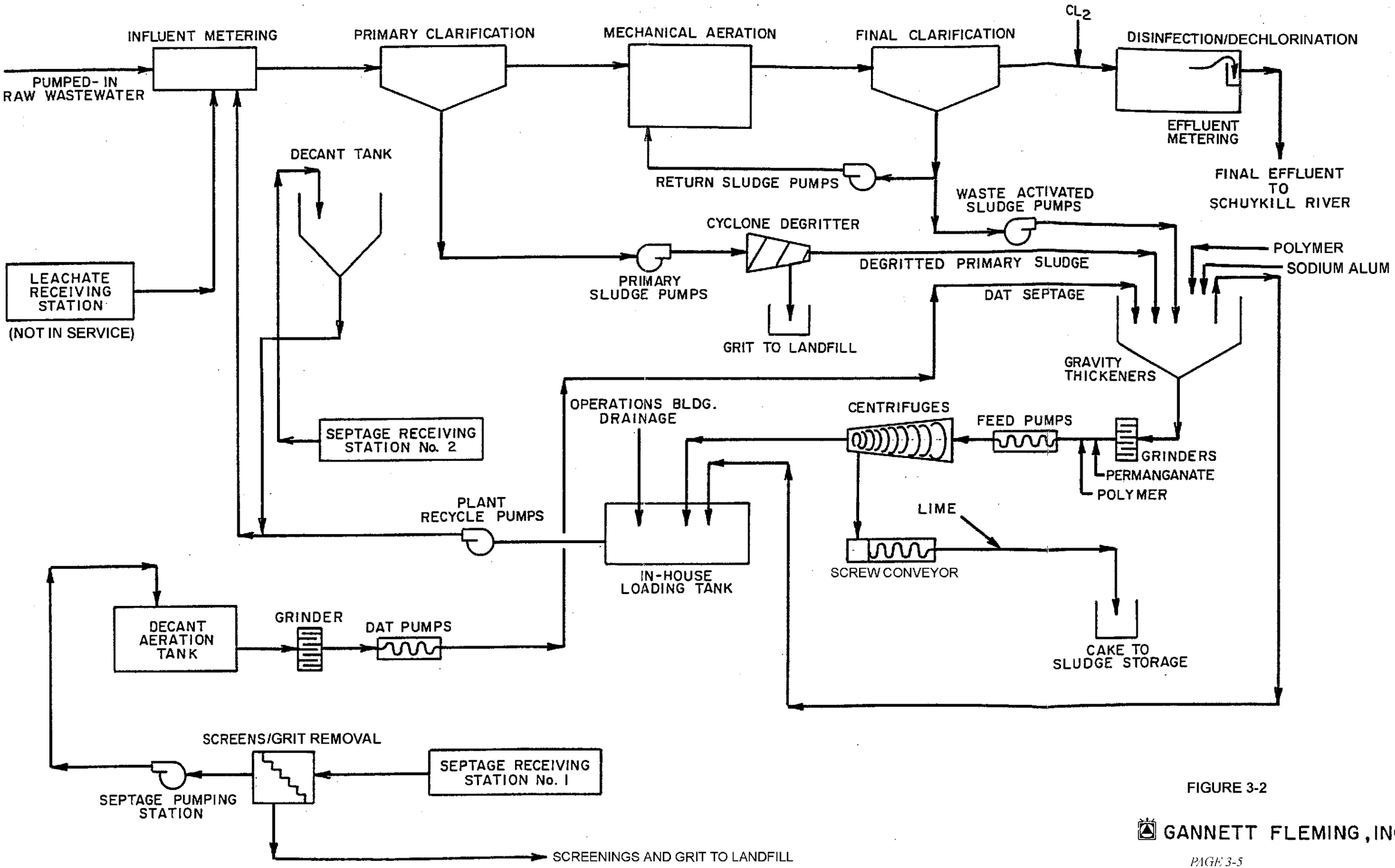


FIGURE 3-2

GANNETT FLEMING, INC.

Influent wastewater streams enter the plant through an influent metering chamber. Compatible liquid wastewaters are accepted from tank trucks at a septage acceptance facility where this wastewater receives pretreatment consisting of screening and grit removal. Following equalization it is pumped to the existing gravity thickening. Trucked wastes are accepted during normal working hours.

Description of Problems

There were no significant problems with the existing facilities at the Valley Forge STP during 2005 and this excellent performance was documented in the 2005 Engineer's Annual Report.

Upgrading or Expansion of Treatment Facilities

The Valley Forge STP was upgraded by the addition of a final clarifier and upgrading the chlorine contact tanks. This work was completed during 1992 and placed into service in December of 1992. The clarifier and contact tank remained in service in 1993 and refinement of the operation of the instrumentation occurred in 1993. Since the initial preparation of this document, the VFSA has accomplished the plant re-rate to 9.2 mgd, which was completed in 2000. Several improvements have been made in recent years including:

- Upgrading plant controls with improvements such as variable frequency drives (VFDs), and process logic controllers (PLCs).
- Adding a biosolids mixing and conveyance system to mix hydrated lime with bio-solids cake and convey the material from centrifuges to tractor trailers.
- Replacement of the plant's main motor control centers with new modern equipment.

Description of Operation and Maintenance Requirements

According to the VFSA's 2005 Engineer's Annual Report, operation and maintenance of the Valley Forge STP was performed adequately. The treatment plant is staffed 16 hours per day, five days per week. The operation of the treatment plant is monitored on weekends and staffed five hours per day on Saturday and Sunday. Remote alarms acknowledge emergency conditions that alert the staff to respond to the facility during unattended hours.

The plant's Operations and Maintenance Manual is routinely maintained. Ongoing improvements to the preventive/predictive maintenance and annual treatment unit inspection programs are continuing. Short and long-range planning is formalized for machinery rehabilitation, upgrades and replacements; facility repair and upgrades; and vehicle replacement and upgrades. The implementation of a computerized Operations and Maintenance Management System is complete. This system automatically creates schedules for planned and preventative maintenance work.

Major VFSA Service Area Sewer System Components (Collection System)

The VFSA finances, owns and operates its collection and transmission facilities in East Pikeland, Charlestown and Schuylkill Townships' independent of the 1970 Agreement. The other VFSA Service Area Municipalities are responsible for the financing, ownership and operation of their collection and conveyance system independent of any agreements, and are also parties to agreements where they use facilities in downstream municipalities.

Two major agreements have been signed with respect to sewer system components within the VFSA Service Area: the Valley Creek Trunk Sewer (VCTS) Agreement and the East Whiteland Trunk Line (EWTL) Agreement. In accordance with the VCTS Agreement, Tredyffrin is responsible for financing, ownership and operation of the VCTS within Tredyffrin, the main pumping station and the force main to the Valley Forge STP. East Whiteland, in accordance with the EWTL Agreement, is responsible for the financing, ownership and operation of the EWTL within East Whiteland.

Trunk Lines

The two major wastewater trunk lines that convey flow to the Valley Forge STP are the VCTS and EWTL. The portion of the VCTS located in Tredyffrin Township was financed, and is owned and operated by Tredyffrin. All of the wastewater flow to the Valley Forge STP from Tredyffrin, Easttown, East Whiteland, Willistown Townships, Malvern Borough, and a portion of the VFSA flow from Charlestown is conveyed to the plant via Tredyffrin's VCTS facilities. These facilities include gravity sewers and force mains, the Little Valley Intercepting Sewer and the Wilson Road Pumping Station and force main. The 1993 flow through the Wilson Road

Pumping Station was 5.192 mgd. The 2005 flow through the Wilson Road pumping station was 6.126 mgd.

The EWTL is financed, owned, and operated by East Whiteland Township. The EWTL conveys flow from East Whiteland, Malvern and Charlestown. The 1993 flow through the EWTL was 1.67 mgd.

Pumping Stations

Wastewater generated by the sewered service areas in East Whiteland, Easttown, Malvern, Tredyffrin, Willistown, West Vincent, Charlestown, East Pikeland, and Schuylkill Township is ultimately discharged to the common influent chamber of the plant's influent/metering structure from two main pumping stations --- the Wilson Road Pump Station in Tredyffrin (30-inch force main) and the Pickering Creek P.S. in Schuylkill Township (20-inch force main). **Note:** The Wilson Road Pumping Station is the subject of a separate Act 537 Plan by Tredyffrin Township.

Pickering Creek P.S. has a firm discharge capacity of 5.6 MGD, and an installed pumping capacity of 12.6 MGD. Comminutors at these pumping stations macerate solids prior to pumping. A composite sampler at the plant's influent/metering structure samples the combined pumped-in raw wastewater.

The major pumping stations within the area have been identified in the following table. Their locations have been identified on Figure 2-2, Existing Sewage Facilities.

Table 3-2. Major Service Area Pumping Stations

Pumping Station	Owner	Rated Maximum Daily Capacity (MGD)	1993 Average Daily Flow (MGD)	2005 Average Daily Flow (MGD)
Pickering Creek	VFSA	4.750	0.780	1.165
White Horse Road	VFSA	4.600	0.681	0.874
Pot House Road	VFSA	3.200	0.592	0.690
French Creek	VFSA	2.900	0.440	0.600
Mill Lane	East Whiteland	2.073	0.415	0.967
Station 3	Malvern	1.710	0.396	0.269
Berwyn	Easttown	1.526	0.630	0.858
Wilson Road P.S.	Tredyffrin	16.272	1.706	6.131
Darby Road	Tredyffrin	1.008	0.479	0.385

* Major pumping stations were identified as those having a rated capacity of 1.0 mgd or more.

Force Mains

The Wilson Road force main receives wastewater flow from Tredyffrin, Easttown, East Whiteland, Willistown Townships, Malvern Borough, and a portion of the VFSA flow from Charlestown. The design capacity of the force main is 8.393 MGD.

VFSA System Compliance with Municipal Wasteload Management Regulations

According to the VFSA 1993 Chapter 94 Report, none of the 1993 average daily flows at the major pumping stations within the VFSA exceeded their rated capacities. Also, none of the highest daily flows exceeded the major pumping stations' capacities. The projected maximum daily flows for the major pumping stations were determined for ultimate build out of the service areas.

More recently the report entitled, "Validation of the Member Municipality Collection System Portion of the Regional Act 537 Plan," November 2005, stated that the VFSA flow projections do not exceed the flow allocation of any pump station capacity. Any long term capacity Issues may be addressed as the 30-plus-year-old pumps stations are modernized.

Description of Operation and Maintenance Requirements of Major VFSA Service Area Sewer System Components

A formal predictive/preventative maintenance program covers all VFSA-owned pumping stations, which are visited routinely, several times per week. Each pumping station has on-site emergency power and portable bypass pumping capability. All stations have auto transfer electrical back up systems.

In the VFSA owned collection system, problem sewer lines are routinely flushed. The VFSA has annual contracts for right-of-way clearing and I/I correction. The annual I/I study and corrective action plan includes: key manhole monitoring, plug and weir testing in problem areas, internal video inspection and cleaning and grouting where necessary.

VFSA has sufficient staffing assigned to maintain the collection system. Repair maintenance activities are supported by a plant maintenance staff assigned to duties at the VFSA treatment plant and collection system.

B. Identify, map, and describe areas that utilize individual and community onlot sewage discharge and, unpermitted collection and disposal systems.

The following are summaries of or excerpts from the municipalities' most recent Act 537 plans regarding on-lot sewage disposal systems. More detailed information can be found in the individual plans.

Charlestown Township

A large portion of the Township is serviced by on-lot disposal or alternative systems. The greatest concentration of the sewage disposal problem areas was in the northern portion of the Township in the Tyrone Farms neighborhood, an area which was served by a community sewerage system. Further discussion on malfunctions of the systems and soil limitations in the Township is included in Sections 3 (C) and (D) of the Township's Act 537 Plan.

East Pikeland Township

The majority of residents in East Pikeland Township are connected to the VFSA. With the exception of two community systems, the remaining residents rely on individual on-site systems. According to East Pikeland's Act 537 Plan, after considering the cost of extending sewer lines, many Township residents will not be connected to the VFSA. These residents, for the most part, will utilize individual on-lot systems. The Township has been divided into five study areas in the Plan. The Plan provides information on the current wastewater disposal methods used and the alternatives and proposed recommendations for future wastewater planning in each of the study areas.

Easttown Township

Four areas in the Township are not planned for public sewers. All are large lot zoning (80,000 sf) and all have soils suitable for on-site sewage. The first area is Waynesborough Country Club. The second area is the YMCA tract, located in the northwest portion of the Township. These two tracts have existing uses served by public sewer. However, future use and capacity issues dictate that on-lot systems be considered. The other two areas are in the southern portion of the Township. One is the southwest corner of the Township around White Horse Road. The second is in the south central portion of the Township in the vicinity of the easterly portion of Waterloo Road. All multi-family (community) systems are already connected, or are planned for connection, to the public sewer system.

East Whiteland Township

Approximately one third of East Whiteland Township relies on individual on-lot disposal systems. Existing systems have operated with few reports of malfunction. According to the Act 537 Plan, the Chester County Health Department reported two concentrations of on-lot disposal system malfunctions in the Township: the area east of PA Route 352, north of Summit Road, and the area between Swedesford Road and U.S. Route 30 from Penflex to the Township line. The malfunctions are primarily due to shallow depth to bedrock and other soil characteristics which prevent adequate percolation.

Malvern Borough

The area in the Borough that does not have public sewers is owned by Malvern Prep, Malvern Retreat, and a few single-family residential units located along Paoli Pike and on South Warren Avenue just south of Second Avenue. These areas utilize on-lot sewage disposal facilities for wastewater disposal. A small area of ground located in the far northeast corner of the Borough that abuts Willistown Township and an area of ground in the northwest corner of the Borough that is located north of the railroad tracks and that abuts East Whiteland Township both do not have public sewers. Currently, there are no buildings on the latter two parcels of land. There are no known malfunctioning on-lot sewage disposal facilities in the Borough.

Schuylkill Township

According to the Township's Act 537 Plan Update, approximately 30% of the residential units located within Schuylkill Township utilize individual on-lot disposal systems. These systems include cesspools, conventional septic system with absorption fields, and elevated sand mounds.

There is one area in the Township which is experiencing on-lot system malfunctions. Approximately four to five existing malfunctioning units are located in the vicinity of Route 29 and Creek Road. The Plan indicates that these units will be connected to the planned Charlestown Hunt interceptor.

The Township is currently updating its 1976 holding tank ordinance and intends to adopt an individual on-lot management ordinance and implement an on-lot management program this year.

Tredyffrin Township

There are approximately 500 on-lot sewage systems in Service Area A of Tredyffrin Township. All but about 10 to 15 of the 500 serve individual homes. It has been assumed, based on permit records that approximately half of these systems were constructed since Act 537 and Chapter 73 regulations were enacted. Most of the malfunctions occurred due to the age of the systems and because over one-half of the original systems predated present design standards and are approaching the end of their life expectancies. In 1991, Gannett Fleming, Inc. met with

representatives of the Chester County Health Department to discuss the existing problem areas in Service Area A. As a result of these discussions, ten specific areas were identified as having permitting problems or malfunctions. More detailed information can be found in Section 6.1.1 of Tredyffrin Township's 1993 Act 537 Update.

Willistown Township

The distribution of on-lot system malfunctions shows a concentration in the central portion of the township directly south of Malvern Borough. Comparing the soil suitability for on-lot disposal systems to the concentration of failing systems indicates soils, which are severely limited by flood plain and high water table areas. Remaining sites of on-lot malfunctions were not concentrated in any one area although most occur in the northern half of the municipality. These failures can be attributed to poor soil conditions, age of systems, and a lack of maintenance.

C. Identify wastewater bio-solids and septage generation, transport, and disposal methods.

Primary bio-solids, waste activated sludge, and hauled-in-septage are co-thickened in the plant's two gravity thickeners, which supply thickened bio-solids to the centrifuge feed pumping system. Concentrated bio-solids from each thickener flows through an in-line grinder prior to pumping by its associated progressive-cavity feed pump. Two solid-bowl centrifuges located on the upper level of the Operations Building dewater thickened bio-solids. Centrate from the dewatering operation is discharged to the plant's side stream storage tanks, referred to as the in-house loading tanks (IHLT). Centrate is returned to the head of the plant for processing. Centrifuge feed bio-solids is conditioned prior to dewatering by polymer addition from the dry-polymer/solution makeup and feed system. Dewatered bio-solids cake discharged from the centrifuges drops down to a screw conveyor system whose purpose it is to mix the bio-solids cake with the hydrated lime while carrying it outside of the building to a trailer attached to a jockey truck. The lime conditioned bio-solids are piped to a trailer located on a jockey truck. Trailers are removed from the site on a daily basis so as to minimize odors. The trailers are transported by tractor-trailer by a private contractor to permitted farmland where it is used as a natural fertilizer.

VFSA secures its own landfill disposal approvals. The current biosolids disposal contractor, Synagro, hold permits for agricultural, landfill, and compost disposal sites. Synagro is responsible for coordinating biosolids disposal to any of these sites to satisfy its overall biosolids management program.

Section 4

Future Growth and Land Development

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A. Municipal and County Planning Documents 4-1

B. Future Growth Areas and EDU Projections 4-1

Appendices:

None

Figures:

None

Exhibits:

None

A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code.

See Section 1 for summaries of this information.

B. Future growth areas and EDU projections

The VFSA Service Area includes parts of eight (8) municipalities and provided wastewater collection, conveyance and treatment to approximately 25,511 EDUs as of the end of 2005. The Service Area is located in Eastern Chester County, an area whose growth continues to be influenced by suburban expansion outward from Philadelphia through Chester, Delaware, and Montgomery Counties.

The VFSA maintains current records regarding the future growth expectations of the eight (8) communities that are served. Near term growth projections are identified by the communities and utilized to project the five-year future needs, described in the Chapter 94 reports prepared by the VFSA and submitted to the PADEP on a yearly basis. Each community's submittal is included as an appendix to VFSA's yearly submittal to the PADEP. The eight (8) communities have maintained a dialogue with the VFSA in order to prepare for the longer term wastewater needs that are addressed in this Act 537 Plan. Although these communities are not entirely built out, the future growth courses of these municipalities have been fairly well defined over the years, and therefore, although the rates of development may vary based on market conditions, the EDU estimates summarized and presented in this subsection provide a high degree of confidence. The following discussion provides a summary of these short and long term estimates of growth rates which were used to establish the EDU and long term capacity needs of the VFSA.

Some historical perspective on development patterns and growth is provided in Appendix B, which is from the draft Act 537 report prepared in 1994.

Partner Municipalities (Easttown, East Whiteland, Malvern, Tredyffrin, Willistown)

Easttown Township

As of the end of 2005 Easttown had a total of 3,511 EDUs contributing about 1.4 mgd to the VFSA wastewater treatment plant. Easttown estimates that by 2010, there will be an additional 240 EDUs served by the VFSA. The compilation of the near term subdivision growth is listed in Easttown's latest Chapter 94 Report Submittal. The corresponding average daily flow rate projected in 2010 is 1.423 mgd. Thirty years later, by year 2035, Easttown Township projects a total of 4,115 EDUs that will contribute 1.523 mgd to the VFSA system roughly equaling its current treatment plant reserve capacity. Therefore, Easttown projects that additional capacity is not needed to serve their long term growth needs. Table 4-1 is the long term EDU and average daily flows projected by Easttown Township for the next 30 years.

Table 4-1. Easttown EDU/Flow Growth Estimates

Year	Easttown EDU's	Average Daily Flow (mgd)
2005	3,511	1.357
2010	3,751	1.423
2015	3,824	1.443
2025	3,973	1.484
2035	4,115	1.523

It is noted that Easttown has made and is making significant progress is reducing infiltration and inflow (I/I) within their service area.

East Whiteland

At the end of 2005 East Whiteland had a total of 5,393 EDUs contributing about 1.97 mgd to the VFSA wastewater treatment plant. East Whiteland estimates that by 2010, there will be an additional 1,622 EDUs served by the VFSA. The compilation of the near term subdivision growth is listed in Easttown latest Chapter 94 Report Submittal. Virtually the entire area encompassed by East Whiteland will be served by the VFSA at total build out, and East Whiteland expects that the growth rate will be relatively steady for the next 30-years.

Table 4-2 presents East Whiteland's projected EDU and average daily flow rates to the VFSA treatment plant.

Table 4-2. East Whiteland EDU/Flow Growth Estimates

Year	East Whiteland EDU's	Average Daily Flow (mgd)
2005	5,393	1.963
2010	7,015	2.409
2015	8,469	2.809
2025	10,288	3.309
2035	12,469	3.909

The current reserved capacity for East Whiteland is 1.940 mgd compared to an average daily flow of 3.909 mgd. Therefore at build out, East Whiteland will require an additional 1.97 mgd of treatment plant reserve capacity to serve their long term needs.

Malvern Borough

As of the end of 2005 Malvern Borough had a total of 1,658 EDUs contributing about 0.329 mgd to the VFSA wastewater treatment plant. Malvern estimates that by 2010, there will be an additional 52 EDUs served by the VFSA. The compilation of the near term subdivision growth is listed in Malvern's latest Chapter 94 Report Submittal. Malvern's future growth rates are outlined below in Table 4-3.

Table 4-3. Malvern EDU/Flow Growth Estimates

Year	Malvern EDU's	Average Daily Flow (mgd)
2005	1,658	0.329
2010	1,710	0.352
2015	1,730	0.358
2025	1,850	0.391
2035	1,973	0.425

Malvern's current reserve capacity is 0.543 mgd; therefore at build out, Malvern Borough will not exceed its current reserve capacity.

Tredyffrin

At the end of 2005, the total number of EDU's connected to the VFSA system from Tredyffrin was 5,967.

By 2035, Tredyffrin expects additional growth to result in an average daily flow 2.1 mgd resulting from EDU growth of an additional approximate 2,900 EDUs. Tredyffrin's current reserve capacity at the VFSA treatment plant is 2.001 mgd; therefore Tredyffrin will require an additional 0.099 mgd of reserve capacity.

Willistown

As of the end of 2005, the total number of EDU's connected to the VFSA system was 2,521, contributing an average daily flow of about 1.2 mgd. Most of Willistown's growth is expected to occur over the next 5 years and the specific developments are described in Willistown's latest Chapter 94 report. The growth is expected to occur as detailed in Table 4-4.

Table 4-4. Willistown EDU Growth Estimates

Year	Additional Willistown EDUs
2006	285.5
2007	208
2008	242
2009	240.5
2010	59

In the longer term, Willistown estimates their ultimate EDU count to increase by about 10% to 3,075 EDU's in 2035, resulting in an average daily flow rate of 1.348 mgd. The current reserve capacity for Willistown Township is 1.064 mgd, resulting in the need for an additional 0.284 mgd of reserve capacity at the treatment plant.

Member Municipalities (Charlestown, East Pikeland, and Schuylkill Townships)

Charlestown

The VFSA treatment plant serves approximately 549 EDU's in Charlestown Township. Projected future growth in Charlestown Township is outlined by subdivision in Table 4-5. It is expected that by 2015, there will be an additional 336 EDUs and by 2020 there will be another additional 409 EDUs resulting in a total of 1,294 EDUs by 2020. At build out, expected to occur by 2025, it is estimated that there will be another 389 EDUs added, resulting in a total of 1,683 EDUs served by the VFSA treatment plant.

Table 4-5. Charlestown EDU Projection by Subdivision

Drainage Basin	2004 Yr. End EDUs	Platted EDUs as of 12/2004	5 Yr Proj.	Proposed EDUs	10 Yr. Proj.	Undeveloped Land	20 Yr. Proj.	Total EDUs
Lee Tire Blvd. (3010)	301	Commons @ GV	28	Volpi	60	Behind Spring Oak	15	
		DeVault Meats	34	Griffin	33	Across from Spring Oak	6	
		Late Spring Dev.	10	Cellucci	11	Yellow Spring's Road	7	
		Laurabrooke	20	Warner Lane	12	Rte 29 & Chrlstwn. Rd	35	
		Spring Oak Bus. Center	53	Charlestown Saloon	10	North Side of School Farm Residence	1	
				Charlestown Elementary	13	Adj. To Laurabrooke-Phoenix Pike	25	
				20 Single Family	20	DeVault Meats (add'l)	65	
				*DeVault Areas	250	Remaining Acreage throughout basin	198	
Route 401		Charlestown Meadows	191					
Sidley Road	248					Adj. To Chas. Oaks	32	
VALLEY CREEK DB	549		336		409		389	1,683

Zoning Amendment under consideration by Charlestown Twp.

East Pikeland

The VFSA treatment plant serves approximately 2,600 EDU's in East Pikeland. Projected future growth in East Pikeland Township is outlined by subdivision in Table 4-6. It is expected that by 2015, there will be an additional 260 EDUs and by 2020 there will be an additional 157 EDUs resulting in a total of 3,015 EDUs by 2020. At build out, expected to occur by 2025, there will be a total of 3,117 EDUs served by the VFSA treatment plant.

Table 4-6. East Pikeland EDU Projection by Subdivision

Drainage Basin	2004 Yr. End EDUs	Platted EDUs as of 12/2004	5 Yr Proj.	Proposed EDUs	10 Yr. Proj.	Undeveloped Land	20 Yr. Proj.	Total EDUs
Rte 724 North of Rte 23 - New Act 537 Service Area – added by East Pikeland Twsp		Kimberton Meadows	23	Phoenixville Crossing Schuylkill Rd. Corp.	112 2	Rte 724 @ Rte 23	20	
Kimble Drive (2008)	77	Barn at				Croft	3	
Kimble Drive (3008)	22	Kimberton	2	Campbell Tract	35			
French Creek (2009)	2,384	Brimful Farm	2	Cornerstone Bank	1.0	Emery Oil Co.	3	
French Creek (3009)						Fish & Game		
West Vincent (4009)	88	Coldstream		Fitzsimmons	1.0	Frog Hollow Miller Rd	0	
	27	Crossing	141	French Creek Inn	6	N.	20	
						Hares Hill @ Camp Council		
		Deer Run Lane *	3					
		Henry Co.	3					
		Heritage Coccia	25			Rte 113 - Shelly's	6	
		Kimberbrae	3			Steimer	5	
		Kimberton Square	10			Weinstein	45	
		Kimberton Valley Homes	6					
		Main Line Animal Rescue						
		Miller Machine Shop						
		Pothouse Road	7					
		Shick	3					
		St. Basil	1					
		Western Road	3					
		Yentis	6					
		Kimberton Elementary School	22					
FRENCH CREEK PS	**2598**		**260**		**157**		**102**	**3,117**

Schuylkill

The VFSA treatment plant currently serves approximately 3,058 EDUs in Schuylkill Township. Consistent with the Draft Regional Plan, the Board of Schuylkill Township approved amending EDU projections to include an additional 294 EDUs at build out, plus an additional 63 EDU's for commercial development resulting in about 360 additional EDU's at build out. The Plan estimates this growth to occur at the rate shown in Table 4-7.

Table 4-7. Schuylkill EDU Growth

Time Frame	Additional Schuylkill Twp. EDUs
2005-2010	149
2010-2015	132
2015-2035	76
Total	357

Member Municipality Reserve Capacity

The Member Municipalities' projected capacity requirement at build out of 1.957 mgd, based on the historical flow rate of 240 gpd per EDU, is less than the current reserve capacity of 2.128 mgd. Therefore the Member Municipalities will not require additional reserve capacity at the treatment plant at build out.

Summary

Table 4-8 summarizes the projected EDU counts and corresponding flow rates for the 5, 10, 20 and 30-year projections. Based on the growth estimates presented in the foregoing discussion, in 10-years the capacity required at the treatment plant of approximately 9.73 mgd will exceed the existing plant rated capacity of 9.2 mgd by about 0.5 mgd. Similarly, the plant's rated capacity will be exceeded by 1.41 mgd in 20 years and by 2.24 mgd in 30 years. At that time the capacity needed will be 11.44 mgd.

Table 4-8. EDU and flow projection (Present – 2035)

Municipality	Current Reserved Capacity	Present		5-year		10 year		20 year		30 year	
		2005		2010		2015		2025		2035	
		gpd	Edu	gpd	edu	gpd	edu	gpd	edu	gpd	edu
Partner Municipalities											
Easttown	1,523,000	1,357,000	3,511	1,423,000	3,751	1,443,000	3,824	1,484,000	3,973	1,523,000	4,115
East Whiteland	1,940,350	1,963,000	5,393	2,409,000	7,015	2,809,000	8,469	3,309,000	10,288	3,909,000	12,469
Malvern	543,650	329,000	1,666	352,000	1,710	358,000	1,730	391,000	1,850	425,000	1,973
Tredyffrin	2,001,000	1,128,000	5,996	1,540,000	6,853	1,840,000	7,849	1,970,000	8,432	2,100,000	8,904
Willistown	1,064,000	1,221,000	2,785	1,235,000	2,817	1,281,000	2,922	1,324,000	3,020	1,348,000	3,075
Partner subtotal	7,072,000	5,998,000	19,351	6,959,000	22,146	7,731,000	24,794	8,478,000	27,563	9,305,000	30,563
Member Municipalities											
Charlestown			549	212,400	885	310,560	1,294	403,920	1,683	403,920	1,683
East Pikeland			2,598	685,920	2,858	723,600	3,015	748,080	3,117	748,080	3,117
Schuylkill			3,058	769,680	3,207	801,360	3,339	819,600	3,415	819,600	3,415
VFSA subtotal	2,128,000	1,479,635	6,205	1,668,000	6,950	1,835,520	7,648	1,971,600	8,215	1,971,600	8,215
Trucked waste (365 day basis)		140,000		165,000		165,000		165,000		165,000	
Total Average Daily Flow (mgd)	**9.20**	**7.62**	**25,556**	**8.79**	**29,096**	**9.73**	**32,442**	**10.61**	**35,778**	**11.44**	**38,751**
Additional Capacity Needed (mgd)				**(None)**		**0.532**		**1.41**		**2.24**	

Section 5

Alternatives for Proposed Wastewater Disposal Facilities

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5-1. Centrifuge Production Based on Feed Concentration

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Exhibits:

None

A.1. Perform an evaluation to address the potential for providing sewage treatment service to future development areas and existing development areas, not currently served by public sewer, within the planning areas for the wastewater treatment and disposal facilities.

and

A.2. Perform an evaluation to address the potential for extension of existing Borough conveyance facilities to provide sewer service to future development areas and existing developed areas, not currently served by public sewer, within the planning area.

See section 4 of the Regional Act 537 Plan for the summary of each individual municipality's Act 537 Plan, and refer to each report for more in-depth information.

A.3. Perform an evaluation of the potential for continued use of existing sewage treatment facilities through repair, upgrading, reduction of hydraulic or organic loadings, or improved operation and maintenance practices.

and

A.4. Perform an evaluation to address the potential need for the construction of new sewage treatment or conveyance facilities.

and

A.5. Perform an evaluation to address the potential for repair or replacement of existing collection and conveyance system components.

Background

Section 5 of the Regional Act 537 Plan describes and evaluates a number of alternatives, which would satisfy the future wastewater management needs of the Valley Forge Sewer Authority (VFSA). This section was originally completed in April 2003. Due to age of the flow projections when the Regional Plan was completed, the flow projections of the Member and Partner

municipalities needed to be reviewed and updated. In conjunction with the flow analysis, the Authority elected to review, update and supplement the various wastewater management alternatives previously presented in Section 5 of the 2003 Plan. Due to the comprehensive nature of the new evaluation, Section 5 was completely rewritten.

In 2005, an Ad Hoc committee was formed for the purpose of reviewing and assisting the VFSA in establishing future capacity needs in accordance with the Act 537 planning process, and in the selection of the optimal strategy for subsequent engineering and implementation. The committee consisted of representatives from Schuylkill Township as well as VFSA staff, Authority members, and the engineer of record, Buchart-Horn, Inc.

Flow projections have been updated in Section 4 of this Regional Act 537 Plan and describe the projected capacity needs over the next 30-years. The original design of the VFSA wastewater treatment plant was based on a capacity of 8 MGD. In 2000, the plant was rerated to 9.2 MGD. Future average flow rates are projected by this Act 537 Plan to be as follows:

Table 5-3. Projected Average Flowrates.

Years	Projected Flow Capacity Needed (MGD)
Current	7.6
10	9.7
20	10.6
30	11.52

Section 5 describes the process by which the concept strategy for the optimal alternative was determined. A series of committee meetings were held in 2005 for the purpose of identifying potential alternatives for the required capacity. This list, known as the "long list", was finalized at a committee meeting on June 29, 2005.

Screening of Alternatives

Following the establishment of the "long list", the committee met Thursday, August 11, 2005 at VFSA with the objective of reviewing the draft flow projections and screening out those alternatives which were not worthy of further study because they were either not feasible, too costly, or in some other way, not practical. The result of this work was a manageable "short list" of alternatives requiring a more detailed technical evaluation.

Technical reasons for screening from the long list were identified and discussed to assure that there were no alternatives eliminated unless the committee could say with reasonable certainty, that further evaluation was not warranted. The long list is summarized below along with the results of the screening evaluation performed on August 11, 2005. The alternatives are presented in two categories: Eliminated Alternatives, and Retained Alternatives (those considered viable for further evaluation).

Eliminated Alternatives

Alternative 1 - Enter into an agreement for a privately owned and operated wastewater treatment plant (partial capacity need alternative)

This alternative consists of utilizing a privately owned treatment plant to provide service to VFSA customers. While developers have constructed such facilities elsewhere, there are no such treatment plants that can provide the needed capacity to the VFSA at the present time. Plans for any such future facilities are too undefined to evaluate in detail. Accordingly, Alternative 4 was eliminated from further evaluation.

Alternative 2 - Construct a satellite facility at Church Farm School and spray irrigate the property

This alternative consists of a new satellite wastewater treatment plant to be located at the location of the Church Farm School near Route 30 in East Whiteland Township. The treated wastewater effluent would be used to spray irrigate the property.

This alternative was eliminated from further evaluation for the following reasons:

1. Conveyance distances would require significant construction costs.
2. The amount of property needed to meet spray irrigation requirements and store wastewater during the winter is significant and would not be cost effective or practical.
3. Public acceptance of such a facility will be difficult to obtain due to concerns for airborne aerosols from wind action.

Alternative 3 - Encourage the sale of capacity among partner municipalities

This alternative consists of selling or exchanging existing treatment capacity from those partners with excess capacity to those who require capacity. Such exchanges would make more efficient use of the existing STP's capacity. This alternative was eliminated from further consideration, because even if the most efficient use of capacity were accomplished through agreements between partners, this alternative would not provide a sufficient amount of needed capacity to meet the VFSA's future needs.

Alternative 4 - Encourage the partner municipalities to divert their flows to other Townships

This alternative consists of partner municipalities (East Whiteland, Easttown, Malvern, Tredyffrin, and Willistown Townships) diverting wastewater flows that would have otherwise been conveyed to the VFSA for treatment, to other townships that are not part of the VFSA. Based on conversations with Partner representatives it does not appear that the partners of the VFSA would support such an alternative. Accordingly, this alternative was eliminated from further consideration.

Retained Alternatives

The following alternatives identified by the Ad-Hoc committee were considered feasible for further evaluation.

Alternative 1 – Purchase Capacity at another Wastewater Treatment Plant

Alternative 1 consists of diverting wastewater from the VFSA to another treatment plant owned and operated by a nearby authority. This alternative would be accomplished by diverting existing

wastewater pumping station flow through a new conveyance line toward the treatment facilities of the nearby authority. An inter-municipal agreement for the required conveyance and treatment service would be established with the nearby authority.
Authorities considered as candidates for a municipal agreement consisted of Phoenixville, Oaks, Spring City, Upper Merion, and East Vincent.

Advantages

- The existing VFSA wastewater treatment plant stays essentially the same. Rented capacity means that the VFSA will be paying for another authority to treat some or all of our additional wastewater treatment capacity needs.
- Odor potential can be kept to existing locations where it can be most cost effectively controlled. Odors resulting from the additional flows are off loaded to a "landlord."
- Bureaucratic and siting difficulties may be minimized, since the treatment plant for which the VFSA would be purchasing capacity already exists.

Disadvantages

- Costs will be established by the "landlord," and will escalate based on their management capability. VFSA would lose this degree of cost control. Costs will potentially escalate at a higher rate than those alternatives where VFSA operates all of their own wastewater treatment facilities for the needed capacity.
- Depending on the specific alternative, significant capital costs will be incurred for new wastewater conveyance lines and pumping station modifications.
- Right-of-Ways and condemnation costs for new wastewater conveyance could be significant and time consuming.
- This alternative may not provide sufficient capacity to meet the VFSA's long term needs.

Alternative 1 – Results of Screening

Capacity from Phoenixville was retained for further evaluation. Phoenixville's management staff indicated that they would supply the required information for the VFSA to do a feasibility study. Flows may be diverted from either VFSA's French Creek Pump Station or the Pickering Creek

Pump Station to Phoenixville, resulting in capacity of about 0.6 MGD or 1.0 MGD, respectively. Eliminated from further evaluation were the following variations of Alternative 1:

- Lower Perkiomen Valley Regional Sewer Authority (Oaks)
  Although discharging some or part of the wastewater flow to the Lower Perkiomen Valley Regional Sewer Authority (LPVRSA) would be feasible, the LPVRSA Board of Directors decided that they were not interested in pursuing this option in detail. Their position is documented in a Letter from Barbara Cepko to the VFSA dated August 15, 2005.
- Upper Merion
  The pumping distance was (approximately 6.8 miles) considered too great to make this option economically feasible.
- East Vincent
  The pumping distance (approximately 5.8 miles) was considered too great to make this option economically feasible.
- Spring City
  This treatment facility does not have the capacity to accommodate the quantities of wastewater that would be needed if the French Creek Pump Station (FCPS) were diverted to Spring City. The FCPS is the closest VFSA pumping facility to the Spring City plant.
- Wilson Road Pumping Station Location
  Treated wastewater would have to be discharged into a high quality stream (Valley Creek), or a new conveyance line leading to a Schuylkill River outfall would have to be constructed at a considerable expense. This option would not be economically feasible compared to the other available alternatives.

Alternative 2 – Construct a Satellite Treatment Facility – Discharge near Cromby

This alternative consists of constructing a satellite wastewater treatment plant at a location that is separate from the existing plant and in one of the incorporating municipalities. Potential sites consist of the area around the FCPS and at or near the Cromby electrical power generating plant. If the satellite treatment plant were constructed near the FCPS, then the treated effluent would be pumped to the Cromby site where it would be discharged to the Schuylkill River after being combined with the treated discharge from the electrical power plant. If the treatment plant were

constructed at the Cromby site, untreated wastewater would be pumped from the FCPS to the Cromby site where it would be combined with the power plant's untreated wastewater and treated by a new satellite wastewater treatment plant.

Constructing a new treatment plant near the FCPS with discharge to the French Creek was considered as a separate alternative, but it was not considered to be feasible because of the higher quality requirements for the treated wastewater that would be imposed for new treated wastewater discharges to the French Creek. Accordingly, this alternative was eliminated from further consideration.

Advantages

- The VFSA would maintain control of all its capacity and does not relinquish this to a "landlord." This assures stability of management and control.
- The existing wastewater treatment plant would stay essentially the same for a period of time until the capacity of the existing plant and the Cromby plant is exceeded. The expected time period is approximately 10 years. All initial improvements would be at the new location.
- Some electrical and other operating costs would be saved because pumping distances and "cascade" pumping would be reduced. Currently, the FCPS discharge is pumped through three additional pumping stations before it reaches the existing VFSA treatment plant.

Disadvantages

- There would be administrative considerations to locating a new wastewater treatment plant such as permitting and siting.
- The new treatment plant location would only address a portion of the ultimate needs of the VFSA. Approximately 0.6 MGD could be delivered from the FCPS compared to the capacity needs of about 3 MGD as outlined in Replacement Section 5.
- There would be significant capital costs for construction of a new wastewater treatment plant, which would probably be greater on a cost per gallon basis than most of the plant expansion strategies outlined in the description of Alternative 3.

- Odors could be a potential problem from two locations and not just one. This is especially true if the satellite wastewater treatment plant were constructed near the FCPS, which is in close proximity to an outdoor shopping mall and a fished stream.
- The scale economy of one large treatment plant would not be enjoyed; instead, the Authority would be constrained to two separate facilities, including a smaller plant that would be generally less efficient on the cost to treat per gallon.
- Laboratory services would have to practically double in number of analysis performed. In addition, samples would have to be transported to the existing laboratory.
- Transport of sludge to the existing treatment plant would result in additional truck traffic, labor costs, and additional operating costs for the VFSA versus alternatives that do not include two wastewater treatment plants.
- In general, operating costs would be higher with two treatment plants versus one treatment plant.

Alternative 2 - Results of Screening

Alternative 2 was retained for further evaluation.

Alternative 3 - Increase capacity at the existing treatment plant maintaining a single discharge point

This alternative consists of providing additional capacity to the existing treatment plant through some combination of newly installed and constructed process equipment, or technological improvements to existing equipment. Several variations on this approach could be used to meet either long term or short-term capacity needs depending on the time frame of implementation. Variations on this alternative could be implemented to provide either partial or the total additional capacity needed. The options within this approach may range from converting the existing process to a more efficient process thereby gaining more capacity without adding in kind additional tanks and process equipment thereby gaining capacity while using the same technology.

Advantages

- The operating costs are likely to be less than those alternatives that are being evaluated which include a satellite plant. Maintenance costs will be reduced since all preventative and repair functions will be carried out in one location with a smaller staff.
- Management control would be kept in the hands of the VFSA. This is an advantage versus those alternatives that include an inter-municipal agreement where future pricing would be in the control of those providing the service.
- Sludge processing would be operated and maintained at the one existing location where there is existing capacity versus other alternatives where sludge may have to be processed at a separate location.
- Odor potential resulting from VFSA wastewater can be kept to one location where it can be most cost effectively controlled. This is an advantage over alternatives that include a satellite treatment plant where expenses and problems resulting from odors may result from two separate treatment plant locations.
- Potential for permit violations is minimized with one discharge point and one permit. Similarly environmental liability is limited to one location and controlled entirely by VFSA.
- Laboratory analysis and monitoring/permitting administration efforts are minimized. Assuming that the discharge permits conditions for monitoring would be similar to VFSA's existing permit, the monitoring requirements and associated expense for a satellite plant may nominally double.
- Discharge to the Schuylkill River is the least restrictive alternative from a regulatory perspective.

Disadvantages

- The existing wastewater treatment plant would get marginally larger depending on the specific alternative that is selected.
    - There could be as many as one more primary clarifier, aeration tank and secondary clarifier.
    - A third primary clarifier, assuming no additional process changes, may result in the potential of creating more odors.

- Additional sludge processing would result in the potential of generating additional odors, although these sources can be readily controlled.

Alternative 3 - Results of Screening

Alternative 3 was retained for further evaluation. It was decided to evaluate a broad range of Alternative 3 capacity upgrade strategies - from those that upgrade the technology to provide additional capacity while minimizing additional tankage and mechanical equipment, to those that use the same technology and expand upon the existing plant "in kind".

Evaluation of Retained Alternatives

The results of the evaluation identified alternatives that would be evaluated in further detail. This section presents the analysis of the retained alternatives, which are as follows:

Alternative 1 – Pump wastewater from the member municipalities (Schuylkill, East Pikeland, and Charlestown Townships) to the existing Phoenixville wastewater treatment facility for treatment. Such a strategy would require that appropriate conveyance facilities be constructed by VFSA at their expense. A contract for service would be negotiated and executed between the VFSA and Phoenixville. The two (2) options considered within this study include:

Alternative 1a - Diversion of flows from the French Creek Pump Station to Phoenixville's French Creek Interceptor, and

Alternative 1b - Diversion of VFSA's Pickering Creek Pump Station flow directly to the Phoenixville Wastewater Treatment Plant.

Alternative 2 – Construction of a new "satellite" wastewater treatment plant. Two options were considered within the Alternative 2 strategy.

Alternative 2a - Locating the plant near the French Creek Pump Station and conveying the treated wastewater to the Exelon's Cromby Facility for commingling and discharge with Exelon's existing wastewater treatment plant effluent.

Alternative 2b - Conveying the untreated wastewater from the French Creek Pump Station to the Cromby site. The new satellite treatment plant would be located at the Cromby site.

Alternative 3 – Expand the capacity of the existing VFSA wastewater treatment plant by providing the improvements and capacity upgrades that would be required to meet additional capacity requirements. Within Alternative 3, this study considers a range of capacity upgrade strategies ranging from conversion of the existing complete mix process to step feed, to expansion of the existing treatment process in kind by way of adding more primary, aeration, and secondary settling tanks. The sub-alternatives are described as alternatives 3a, through 3e.
Alternative 3a - Conversion of the existing complete mix activated sludge process to a step feed process.

Alternative 3b - Conversion of the existing complete mix activated sludge process to a step feed process and add a 4th secondary clarifier.

Alternative 3c -Add a 2nd aeration tank, a 4th secondary clarifier, and a 3rd primary settling tank.

Alternative 3d - Innovative alternatives such as the use of media processes

Alternative 3e - Add a 2nd aeration tank and a 4th secondary clarifier.

The alternatives described above are general strategies intended to provide a technically sound basis for a conceptual evaluation. Once a general strategy is selected, the specific concept needs to be developed to an appropriate level of detail prior to beginning implementation and the detailed design.

For this evaluation, the preliminary effluent criteria provided by PADEP, included in Appendix D, is used for evaluation of the alternatives. The present treatment plant's discharge permit has requirements for the removal of carbonaceous biochemical oxygen demand (BOD), total suspended solids (TSS), and ammonia. These limits require nitrification to take place in the

treatment plant and nitrification is the current limiting factor in the biological treatment process at the Authority's existing facility.

At this time, the Authority understands that PADEP has not imposed denitrification requirements on any wastewater treatment plants located along the Schuylkill River. However the potential for additional denitrification was considered in the detailed evaluation of alternatives.
It is important to note that the existing gravity thickeners are generally overloaded on the basis of solids load mainly as a result of trucked wastewaters. Sludge thickening and dewatering capacity is discussed later in Section 5. In spite of the present shortfall condition in thickening capacity because of trucked in wastewaters, the VFSA has been routinely meeting its discharge permit requirements. However it is noted that the current shortfall in thickening capacity is an item that should be addressed in any expansion capacity strategy. In 2005, approximately one-half (½) of all solids processed at the VFSA wastewater treatment plant originate from trucks discharging to the treatment plant's septic dump station. Accordingly any plant expansion alternative should consider in detail, the impact that trucked wastewaters have on the treatment process. At a minimum, additional gravity thickening and a 3rd dewatering device should be utilized if VFSA is to expand its capacity while maintaining or growing its current level of trucked wastewaters accepted at the plant.

Such consideration of solids handling and processing should also include a detailed evaluation of what ancillary upgrades, if any, need to be implemented if a technology upgrade is to be utilized for biological wastewater treatment. For example, use of Integrated Fixed Film Activated Sludge (IFAS), discussed in a following subsection may be optimal; however this option may require additional separate treatment of septage, and pretreatment to eliminate screenable wastes. Such factors need to be considered in greater detail than what is provided in the context of this conceptual alternatives analysis.

VFSA also has the ability to reduce the amount of trucked wastes accepted at the treatment facility. Although this may not be preferred, but it offers the Authority some flexibility in the evaluation of alternatives associated with solids handling.

Existing Wastewater Treatment Plant Capacity

PADEP approved capacity of the VFSA STP at 9.2 MGD. This capacity was the result of the plant rerate from 8.0 MGD to 9.2 MGD approved by the PADEP in 2000. To support the rerate to 9.2 MGD, Buchart-Horn (B-H) prepared a report entitled, "Re-rate Feasibility Evaluation for the Valley Forge Sewer Authority, July 1997". The evaluation included an assessment of the capacity and recommended upgrades of each individual component of the existing wastewater treatment plant to achieve a capacity upgrade from 8.0 MGD to 9.2 MGD. The results of the assessment are summarized in Table 7 of the report, reprinted as Table 5-1, below.

Table 5-1. Process Unit Capacity

Process Unit	Actual Capacity	Proposed Capacity for Re-rate	Comments
Influent Structure	21.4 MGD	9.2 MGD	No modifications required
Primary Clarifiers	10.0 MGD	9.8 MGD	No modifications required
Aeration Basins	12.0 MGD	9.5 MGD	Requires additional oxygen supply to satisfy nitrification requirements. Consideration to be given to baffling the tank to provide plug flow versus complete mix.
Final Clarifiers	10.3 MGD	9.5 MGD	Modify return sludge drawoff nozzles on FC Nos. 1 and 2.
Chlorine Contact Tank	11.0 MGD	9.4 MGD	Raise effluent weir to increase sidewater depth and use additional available tankage and pipe at tank inlet for contact time.
Gravity Thickeners	44,964 ppd 2.997MGD	34,847 ppd 0.66 MGD	Convert the existing decant tank for use as a third gravity thickener.
Primary Sludge Pumps	10.5+ MGD	9.6 MGD	No modifications required
Return Sludge Pumps	84%	45-70%	No modifications required
Waste Sludge Pumps	10.5+ MGD	9.5 MGD	No modifications required
Sludge Dewatering	43,200 ppd	31,657 ppd	No modifications required

The 1997 evaluation included recommended upgrades to be considered or needed to rerate the plant to 9.2 MGD, as follows:

1. Consider baffling the aeration tanks to achieve more efficient plug flow conditions versus the existing complete mix system.
2. Modify the return sludge draw off nozzles on final clarifiers No. 1 and 2.
3. Convert the existing decant tank for use as a third gravity thickener.
4. Raise the effluent weir of the chlorine contact tank to increase side water depth and use additional available tankage and tank inlet pipe to provide additional contact time.

Following that evaluation, a field study was performed to document that there is sufficient aeration capacity for a rated treatment plant capacity of 9.2 MGD with no tank modifications. The results of this evaluation, indicating that no additional aeration tanks were needed at an average daily flow of 9.2 MGD, were approved by PADEP.

Items 2 through 4, above were designed by B-H for the VFSA and installed under a construction permit issued by PADEP. Following the conversion of the decant tank (DT) to a thickener, this tank was then converted to a septage holding tank for better solids equalization capacity for trucked in wastewaters. This conversion reduced thickening capacity back to pre-rerate levels. As a sludge thickener, the DT tank did not achieve underflow sludge concentration sufficient for its continued use as a thickener.

After completion of the re-rate improvements, the "actual" capacities of the individual process units within the existing plant range from 9.2 MGD to 21.4 MGD. The current limiting processes consist of the aeration tanks, final clarifiers, and chlorine contact tank, each with an "actual" capacity of about 9.5 MGD. The next limiting process is the primary clarifiers, which have an "actual" capacity of 9.8 MGD. However starting in 2002 through mid-April of 2004, the VFSA operated consistently at an annual average flowrate of about 7 MGD with only one primary clarifier in service while producing effluent that consistently met effluent requirements.

For the purposes of this plant expansion evaluation, it is assumed that all alternatives would include new ultraviolet (UV) disinfection to replace the existing chlorination/dechlorination

system. Although VFSA has operated the chlorination system with no major incidents since the facility was started up in the mid-70s, future regulatory requirements relating to risk management have motivated many similar facilities to upgrade to UV disinfection. VFSA would require additional chlorination/dechlorination capacity to meet its long term future needs, and it would therefore be timely to upgrade their disinfection system concurrent with the capacity expansion.

Alternative 1 – Construct a New Satellite Wastewater Treatment Plant

Alternative 1 consists of constructing a new wastewater treatment facility that would treat wastewater flows from the French Creek pumping station's service area. This treatment plant would contain all capability to treat wastewater and discharge the treated wastewater into the Schuylkill River at or near the existing Exelon Cromby wastewater treatment plant outfall. Because of the relatively small size of the satellite treatment plant, there would be no solids treatment other than thickening to about three (3) percent solids. The solids from the satellite plant would be trucked to the existing plant for processing and dewatering. Processing and dewatering of sludge at the satellite plan would require additional facilities. It would also require more operating labor to manage biosolids processing at two separate locations, and therefore this option was not considered in detail.

For purposes of defining the costs associated with this alternative, it is assumed that:

- A fully automated sequencing batch reactor treatment plant would be utilized at the satellite facility. This is a fairly common technology for new wastewater treatment facilities of this size.
- Liquid sludge at a production rate of about 5,000 gallons per day would be trucked from the satellite plant to the VFSA treatment plant for processing.
- The existing plant laboratory would perform routine effluent analysis, and the VFSA would have to maintain a second discharge permit for the satellite facility, resulting in additional laboratory labor and supply costs.

For estimating lifecycle costs, it has been assumed that Alternative 1a would require the following upgrades at the existing VFSA plant after 10 years of operation:

- New UV disinfection.

- A fourth secondary clarifier.
- Conversion of the aeration system to step feed similar to Alternative 3a.

Further, it was assumed that operating costs would not vary significantly between this alternative and Alternative 3 (existing plant expansion) because of increased flows from growth that would occur 10 years into the future and beyond.

Advantages

- The major advantage of this alternative is that there would be less expansion needed at the existing plant.
- There would be some marginal power savings associated with pumping wastewater from the French Creek pumping station to the new satellite plant instead of to the existing VFSA treatment plant by way of four pumping stations in a cascading series.

Disadvantages

- The costs to operate and maintain two treatment plants would be greater than one treatment plant. The potential economy of scale of one treatment plant versus two would be lost. Additional operating cost items consist of:
  1. Trucking sludge from the satellite plant to the existing plant. This operation would require either VFSA to pay a licensed tank truck driver or contract for this service.
  2. Travel time for personnel to operate and maintain the satellite plant.
  3. Maintenance of two discharge permits, including the required laboratory services and the related regulatory risks.
  4. The potential of the satellite plant as a second odor source. In addition, the existing Pothouse, Whitehorse, and Pickering pump stations would have to be modified to accept flow rates that were well below their design capacity. Failure to adequately address this problem would result in the pumping stations becoming problematic sources of odor and potential increase in corrosion of concrete wet wells and other concrete structures.
  5. An average flow of only about 0.7 MGD could be delivered from the French Creek station. This rate is not sufficient to meet VFSA's long-term needs. Such an

approach would be marginal in meeting VFSA's 10-year needs and is a disadvantage of this alternative.

Alternative 2 – Pump Wastewater to Phoenixville for Treatment

Alternative 2 consists of rerouting the wastewater that is currently pumped to the existing VFSA WWTP to the existing Phoenixville Wastewater treatment plant. There are 2 subalternatives considered:

Alternative 2a – Pump wastewater from the existing French Creek Pump Station to Phoenixville's French Creek Intercepting Sewer, which feeds the Phoenixville Wastewater Treatment Plant

Alternative 2b – Pump wastewater from the existing Pickering Creek Pump Station to the Phoenixville Wastewater Treatment Plant.

Alternative 2a - Pump Wastewater from the Existing French Creek Pump Station to Phoenixville's French Creek Intercepting Sewer which feeds the Phoenixville Wastewater Treatment Plant

Alternative 2a would require the following components:

- Construction of a conveyance line from the existing French Creek Pump Station to Phoenixville's French Creek Intercepting Sewer.
- Modifications of the VFSA's French Creek pump station to divert flows to the new conveyance line.
- Construction of additional capacity at the Phoenixville WWTP.

Buchart-Horn estimates that the construction costs for the conveyance line and pump station modification would be approximately $2 million. All detailed cost estimates are in Appendix D.

In addition, an average flow of only about 0.7 MGD could be delivered from the French Creek station to Phoenixville. This would be insufficient to meet VFSA's long-term needs. Such an

approach would be only marginal at best in meeting VFSA's 10-year needs, and inadequate for long-term needs without additional capacity from another source.

Phoenixville provided the following estimates for connection and treatment costs for their system:

Tapping Fee	$7.40/gallon
Treatment Cost	$2.56/1000 gallons

These costs were used in calculating this alternatives capital and life cycle cost. For estimating lifecycle costs, it has been assumed that Alternative 2a would require the following upgrades at the VFSA plant after 10 years of operation:

- New UV disinfection.
- A fourth secondary clarifier.
- Conversion of the aeration system to step feed similar to Alternative 3a (plant expansion).

Further, it was assumed that operating costs would not vary significantly between this alternative and Alternative 3 because of increased flows from growth that would occur 10 years into the future and beyond.

Advantage

- VFSA's needs for expansion at the existing treatment plant would be delayed. As discussed above, it does not appear as if there would be sufficient capacity provided from diverting wastewater flows from the French Creek Station away from the VFSA treatment plant.
- There would be some marginal savings in operating costs related to power saved from eliminating the multiple pumping of the French Creek Pump Station flow through the VFSA cascading system.

Disadvantages

- A major disadvantage of this alternative is the higher capital and operating cost. The commercial rates charged by Phoenixville based on their rate schedule results in capital

and operating cost that are prohibitive relative to the alternatives that include an expansion in capacity at the VFSA treatment plant.

- As a customer of another municipality, VFSA would lose some control over the service that is provided to their customers. There is a risk that cost for service would escalate at a higher rate than for those alternatives where VFSA provides all of the wastewater conveyance and treatment service.
- This alternative does not completely satisfy the long-term wastewater management needs of the VFSA without providing future expansion facilities at the VFSA plant.

Alternative 2b - Pump Wastewater from the Existing Pickering Creek Pump Station to the Phoenixville Wastewater Treatment Plant

Alternative 2b would require the following components:

- Construction of a conveyance line from the existing Pickering Creek Pump Station to Phoenixville's Wastewater Treatment Plant.
- Modifications of the VFSA's Pickering Pump Station to divert flows to the new conveyance line.
- Construction of additional capacity at the Phoenixville WWTP.

Buchart-Horn estimates that the construction costs for the conveyance line and pump station modification would be approximately $2 million. If flow were diverted from the Pickering Creek Station, adequate capacity would exist for VFSA's service capacity for more than 10 years. The total capacity of the existing plant and the Pikering diversion provides 10.6 MGD and the 10-year need is 9.9 MGD. This only provides a marginal amount of safety factor at best.

The cost to connect and treat wastewater at Phoenixville under this alternative is the same as that for Alternative 2a.

For estimating lifecycle costs, it has been assumed that Alternative 2b would require the following upgrades at the VFSA Plant after 10 years of operation:

- New UV disinfection.

- A 4th secondary clarifier.

Further, it was assumed that operating costs would not vary significantly between this alternative and Alternative 3 because of increased flows from growth that would occur 10 years into the future and beyond.

Advantages

The advantages of Alternative 2b are that the VFSA's needs for expansion at the existing treatment plant would be delayed and reduced.

Disadvantages

- A major disadvantage of this alternative is the higher capital and operating cost. The commercial rates charged by Phoenixville as indicated in their rate schedule would result in capital and operating costs that were prohibitive relative to the alternatives that include an expansion in capacity at the existing VFSA treatment plant.
- As a customer of another municipality, VFSA would lose some control over the service that is provided to their customers. There is a risk that cost for service would escalate at a higher rate than for those alternatives where VFSA provides all of the wastewater conveyance and treatment service.
- Unlike Alternative 2a, there would not be any savings resulting from lower power usage at the pump stations. All four components of the cascade pumping system (i.e., French Creek, Pothouse, Whitehorse, and Pickering Creek pump stations) would still be necessary.

Alternative 3 – Expand Capacity of Existing VFSA STP

As noted previously, there are a number of ways that capacity expansion can be achieved, ranging from conversion to step feed, the use of fixed media processes, use of membrane processes, and/or provisions of additional tanks in kind. For this study, the following options were included for evaluation:

Alternative 3a - Conversion of the existing complete mix activated sludge process to a step feed process.

Alternative 3b - Conversion of the existing complete mix activated sludge process to a step feed process and add a 4th secondary clarifier.

Alternative 3c - Add a 2nd aeration tank, a 4th secondary clarifier, and a 3rd primary settling tank.

Alternative 3d - Innovative alternatives such as media processes.

Alternative 3e - Add a 2nd aeration tank and a 4th secondary clarifier.

Alternative 3a – Step Feed Process Conversion

Alternative 3a consists of the converting the existing complete mix process to step feed. As described in the "Biological Process Evaluation" by BCM Engineers prepared August 2004, "Step feed is a modified operating procedure that is feasible in the existing activated sludge tankage."

A similar strategy was proposed by Buchart-Horn in their "Rerate Feasibility Study". The BCM study concluded that if the existing process were converted to step feed, then the existing treatment plant could adequately treat up to 11 MGD of wastewater with the same or more operating flexibility as exists at present. However, while this is readily possible from a biological kinetics perspective, an increase of influent flow beyond current levels will present difficulties in the operation of the secondary clarifiers. Conversion to step feed would require that the current mixed liquor suspended solids (MLSS) concentrations be maintained at approximately the same levels while average daily influent flows increased to 11 MGD. There would be potential losses in operating flexibility in the secondary clarification process which is likely to result in risks to consistently meeting effluent permit requirements for total suspended solids (TSS).

It is noted that if the treatment plant were converted to a step feed process, according to the PADEP's "Domestic Wastewater Facilities Manual", additional secondary clarification will be necessary to treat an average daily flow of 11 MGD.

As discussed previously, trucked wastewaters also present potential impact to the aeration and secondary clarification process that would not exist if the treatment plant only treated its connected customers. Alternative 3a is the plant expansion alternative with the least operating flexibility and as a result would be impacted the greatest.

While the potential for loss of operating flexibility exists, implementation and testing of the step feed process can be performed well before the time additional capacity is actually needed. By implementing this alternative in the near future, the VFSA will be able to gain a better idea as to whether the loss of operating flexibility will be significant.
Alternative 3a may be feasible for flow rates of up to 10 MGD if chemical precipitation is added in the primary tanks in addition to a conversion to step feed. Ferric chloride can be added to the treatment plant influent. Chemical addition with appropriate detention time and mixing upstream of the primary settling process would serve to precipitate additional amounts of colloidal biochemical oxygen demand material which would normally pass through the primary settling process and require biological treatment in the aeration system. Instead of passing through the primary treatment process, these precipitated solids would be settled, collected, and removed upstream of the biological process thereby reducing the biochemical oxygen demand on the downstream secondary system. This strategy would provide additional biological treatment capacity without an increase in additional new tanks and their associated capital cost. However, the operating costs associated with chemical addition are significant.

Enhanced primary treatment by chemical addition will reduce the amount of waste activated sludge (WAS) that is produced in the process since the loading to the aeration system is reduced. WAS is generally difficult to dewater, however the additional precipitated metal-containing solids that occur in the primary settling process are similarly difficult to dewater. For this evaluation, it was assumed that these two changes would offset each other. However, the specific impact that plant expansion has on the solids processing would need to be evaluated in detail in the context of the long-term solids management plan at VFSA.

For estimating lifecycle costs, it has been assumed that Alternative 3a would require the addition of a fourth secondary clarifier after 10 years of operation.

Advantages

- The advantage of this alternative is that it may be initially implemented without the addition of new tanks and their associated capital cost up to an average daily flow of 10 MGD. According to the evaluation performed by BCM engineers, the process will provide 11 MGD of rated capacity for the aeration tank, not including any additional capacity that may be gained by improvement to primary settling via chemical addition. According to the Regional Act 537 flow projections, 11 MGD would provide for VFSA's capacity needs up to about 2030. However, treating influent flow beyond 10 MGD (about 2020) without a fourth secondary clarifier poses an unacceptable risk.
- Capital costs are delayed or avoided for an extended period of time if growth projections do not materialize as planned.
- Alternative 3a utilizes technologies that are the same or similar to those currently used at the wastewater treatment plant. No major operating or maintenance changes would need to be implemented.
- Alternative 3a may be implemented and tested before the capacity is actually needed. If it is found to be acceptable to meet the VFSA's intermediate term capacity needs, then additional wastewater treatment plant upgrades may be postponed or only constructed when long-term development occurs. Implementation of Alternative 3a may enable VFSA to meet its long-term capacity needs without additional tanks and with minimal chemical addition for an extended period of time; especially if development growth does not occur at the rate that is projected. However, it is important to evaluate whether this alternative will be able to consistently meet effluent quality requirements.

Disadvantages

- From an operating perspective, Alternative 3a may be acceptable as an interim step, however, assuming that long-term growth projections materialize as projected, plant additions beyond those included in Alternative 3a would be needed in the future.
- This alternative has the least operating flexibility and therefore is the Alternative with the most risk. It is also subject to negative effects resulting from the trucked wastewater business.

- Alternative 3a is unlikely to provide sufficient treatment plant capacity if a future regulatory requirement for denitrification is imposed by PADEP. A significant plant upgrade would be needed at that time.
- Operating costs would increase due to chemical costs which are significant. Process optimization may result in lower costs for chemicals, however increases in chemical costs, due to increasing commodity prices may also offset this process optimization.
- The potential for chemical costs to increase over time are a disadvantage compared to those alternatives that include higher capital cost but lower operating costs. The chemical sludge could also impact upon VFSA's successful land application program for biosolids.
- The biological treatment process increase in capacity would be gained from conversion by a complete mix to step feed. Although the gain in capacity would be achieved according to biological kinetics, the step feed process is not as resistant to upsets compared to the present complete mix process which is the optimal process for avoiding process upsets. Some loss of operating flexibility would occur.
- This alternative may be subject to upsets in the biological system from trucked wastewaters due to fluctuating organic loads. The present complete mix system is more forgiving to inconsistent influent characteristics as compared to step-feed.

Alternative 3b - Conversion of the existing complete mix activated sludge process to a step feed process and add a 4th secondary clarifier.

Alternative 3b is the same as 3a, except that Alternative 3b includes the addition of a 4th secondary clarifier that is similar in capacity to secondary clarifier No. 3. With the fourth clarifier there would not be a loss in operating flexibility from additional hydraulic loading to the secondary clarification system. Provided the conversion to step feed maintains nitrification with no loss of operating flexibility, the VFSA would be able to achieve a rated capacity of 11.3 MGD which is sufficient to meet its capacity needs until about 2030.

Advantages

- Alternative 3b includes all of the advantages as Alternative 3a. The process would utilize processes that are similar to those that are currently practiced at the present wastewater

treatment plant. Alternative 3b would readily achieve the capacity needed through 2024 of 11.3 MGD.

- Alternative 3b is not expected to require chemical addition to the primary tanks, and therefore these significant operating costs could be avoided.
- The presence of a 4th secondary clarifier provides a considerable amount of operating flexibility, which would not exist with alternative 3a. Therefore it is inherently less risky.

Disadvantages

- The biological treatment process increase in capacity would be gained by conversion from a complete mix to step feed. Although the gain in capacity would be achieved according to biological kinetics, the step feed process is not as resistant to upsets compared to the present complete mix process. Some loss of operating flexibility would likely occur.
- Alternative 3b which includes conversion to step feed, would be subject to upsets to the biological system from trucked wastewaters. To some extent the impacts would be partially mitigated by additional secondary settling capacity, but not entirely. The present complete mix system is more forgiving to inconsistent influent characteristics compared to step-feed.
- The inclusion of a fourth secondary settling tank is a significant capital cost compared to Alternative 3a.
- Alternative 3b would not provide the capability of denitrification. If future denitrification were required, additional aeration tank capacity would have to be provided in the future.
- Alternative 3b does not include additional primary settling capacity. However, it is noted that in 2002 through mid April of 2004, the VFSA STP routinely operated with one of the two primary clarifiers out of service at an annual average daily flow of about 7 MGD. Therefore the operating data suggests that additional primary clarification is not needed.

Alternative 3c - Add a 2nd aeration tank, a 4th secondary clarifier, and a 3rd primary settling tank

Alternative 3c is the same as Alternative 3e except that it includes the addition of a third primary clarifier. This alternative would essentially increase the primary clarification capacity by 50%,

aeration capacity by 50%, and the secondary clarification capacity by 33%. This alternative nominally provides the treatment plant with a rated capacity that is well beyond the 30-year projected capacity requirement. It would do so utilizing the same flexible technology extended air activated sludge that was part of the original plant design. No significant different O&M procedures would be needed.

Advantages

- Alternative 3c would enable VFSA to upgrade to a denitrification plant with minimum future changes, should this become a future effluent permit requirement.
- Of all the options considered within Alternative 3, 3c is the alternative that features the maximum amount of operating flexibility.
- If Alternative 3c is implemented, it is unlikely that VFSA would ever need to add additional tanks into the foreseeable future.

Disadvantages

- Although providing the maximum operational flexibility, Alternative 3c would have the highest capital cost.
- The addition of a 3rd primary clarifier may result in the potential for more odors since primary clarifiers are more likely to be sources of odor.
- For a future conversion to a denitrification plant, it may be desirable to maintain BOD loadings to the aeration system by reducing BOD removal in the primary clarifiers.

Alternative 3d - Innovative Alternatives

Alternative 3d consists of an upgrade of the current complete mix activated sludge system to an innovative process designed to increase system capacity without the construction of additional tanks. Integrated Fixed Film Activated Sludge (IFAS) is a process that may be applicable to a capacity expansion at the VFSA. The IFAS process combines fixed and suspended biological growth in one reactor by adding fixed or suspended media to an existing activated sludge basin. The suspended growth continues to behave like a conventional activated sludge process, while the fixed growth on the added media effectively increases sludge age, so complete nitrification

can occur. The fixed growth remains in the reactor, so solids loading on the final clarifiers are not increased. Essentially the concept includes making the aeration system more concentrated while using the media for increasing activated sludge age. While the concept would work well for increasing capacity without the increase of the aeration tanks a 4th secondary clarifier should be provided. In addition, there would need to be several capital changes to the existing treatment plant to make it work effectively.

Such changes include:

- Improved influent screening and grit removal. This system would also require odor control.
- Replacement of the existing surface aeration system with a diffused air blower system, either coarse or fine bubble. Some of the existing surface aeration may be usable as a supplement.
- Plant hydraulics must be evaluated in detail. There may be changes required to make the process work hydraulically.
- The optimal IFAS process must be evaluated and selected.
- It is likely that the plant instrumentation would need significant upgrades.
- Changes in biosolids characteristics could impact the solids handling processes.
- Trucked waste characteristics would have the potential to adversely affect the process; therefore, additional monitoring and/or regulation of loads may be required. Alternatively separate facilities to treat trucked wastes may be required thereby reducing the capital cost advantage of this alternative. It is likely that implementation of an IFAS process would need to be implemented only concurrent with a reduction of trucked wastewaters or the installation of separate facilities to biologically treat trucked wastewaters.

If VFSA were to pursue Alternative 3d, it would be necessary to perform a detailed conceptual study to establish the optimal IFAS process and equipment additions and upgrades that would be required.

For this evaluation a detailed analysis of the various IFAS processes and associated capital costs was not performed. These processes are typically used where a capacity increase and/or effluent

requirement upgrade of an existing facility are needed and additional tanks cannot be constructed because of space requirements or some other reason. It appears that the VFSA has adequate space for the plant expansion alternatives described above; however, if there is an objective to upgrade the plant's capacity without adding tanks, then it would be appropriate to evaluate the various IFAS alternatives in detail along with the supplemental process changes and trucked wastewater acceptance changes that would be needed to accommodate IFAS.

Advantages

The advantage of an IFAS process is that it would be designed to make use of the existing treatment plant footprint. In concept, the required additional capacity could be added without adding any additional large process tanks.

Disadvantages

- The IFAS strategy would result in significant changes from the current activated sludge process and the overall stability of the system could potentially be lessened compared to other expansion strategies.
- Implementation of an IFAS process would require a detailed evaluation as to the optimal specific process, ancillary equipment and instrumentation changes needed to make it work dependably. There is the potential that the trucked waste would need to be more carefully regulated or pretreated so as to maintain the stability of the treatment process. Alternatively separate treatment facilities could be added for trucked wastewaters.
- While it has not yet been rigorously established, the costs for conversion of the present process to an IFAS process are expected to be significant. In their August 2004 process evaluation, the engineering firm BCM estimated the equipment costs to convert the current WWTP aeration basins to a Moving Bed Biological Reactor (MBBR) system at $1.8 million for equipment alone. This estimate did not include the equipment necessary to upgrade the pretreatment system. Total capital costs to convert to an IFAS process may be more than $5 million.

Alternative 3e - Add a 2nd aeration tank and a 4th secondary clarifier – Retain the current complete mix activated process

Alternative 3e maintains the current treatment process and includes the addition of a 3rd aeration tank and 4th secondary clarifier. The 3rd aeration tank will enable VFSA to maintain the stable complete mix system while providing the needed capacity for its future growth. For this evaluation, it is assumed that the new aeration tank would be sized similarly to the two existing aeration tanks and the 4th secondary clarifier would be sized to match secondary clarifier No. 3, therefore maintaining hydraulic symmetry throughout the treatment plant.

Advantages

- Alternative 3e would enable VFSA to maintain the same technologies that are currently used to treat its influent wastewaters. With excess tank capacity resulting from expanding with similarly sized tanks, the VFSA would meet its future capacity needs and maintain operating a sufficient level of flexibility.
- The additional aeration tank, although a significant capital cost, will enable VFSA to take tanks out of service for routine maintenance without a significant amount of risk of effluent permit violations.
- As with Alternative 3b, 3e would not require chemical addition to the primary clarifiers thus avoiding significant chemical costs.
- Primary clarifiers have a higher potential for odors compared to secondary clarifiers and aeration tanks. The lack of an additional primary clarifier assures that odor potential will not increase.
- If there were a future requirement to provide denitrification, Alternative 3e should have sufficient aeration tank capacity to provide denitrification without the addition of more tankage by utilizing one of the integrated fixed film activated sludge systems.

Disadvantages

- Alternative 3e does not include additional primary settling capacity. However, it is noted that in 2002 through mid April of 2004, the VFSA STP routinely operated with one of two primary clarifiers out of service, an annual average daily flow of about 7 MGD thereby indicating an excess of operating capacity on a routine basis. This capacity would need to be documented and approved by the PADEP.

- The inclusions of a fourth secondary clarifier and a third aeration tank are significant capital costs.

Alternative 4 – No Action

The final alternative considered was the "no action" alternative. This would not allow for the treatment of any of the additional projected flow to be generated in the VFSA Service Area.

Table 5-2. Advantages and Disadvantages of Alternative 4.

Advantages	Disadvantages
- No cost.	- Future wastewater flows in the service area indicate that additional wastewater facilities will be necessary to address the needs of the service area municipalities.

Selected Alternative

Alternative 3e is the recommended alternative because it is the alternative that provides the optimal combination of operating flexibility, minimal risk, and appropriate capital costs considering the short and long term capacity needs of the VFSA.

Solids Thickening and Dewatering Capacity

In addition to the need to address the liquid treatment capacity, it is also necessary to address the capacity of the sludge and biosolids treatment processes. This section provides a summary of the solids thickening and dewatering needs of the VFSA wastewater treatment plant. Additional capacity and upgrades are recommended as follows:

- Provide an additional gravity thickener for a total of three (3) gravity thickeners.
- Provide two (2) new state-of-the-art dewatering devices that each have a capacity of 1,350 lb/hour.
- Provide all associated appurtenances to accommodate this equipment.

The existing solids thickening and dewatering system consists of a splitter box, two (2) 40-foot diameter gravity thickening tanks with mechanical sludge withdrawal, two centrifuge feed pumps, a bulk polymer tank, two (2) centrifuges (each with a polymer feed system), a hydrated lime storage silo, two (2) lime day tanks with feed conveyors, and a dewatered biosolids conveyor/mixing system.

When the plant was rerated from an average daily design capacity of 8.0 to 9.2 MGD in 2000, there was no additional dewatering equipment installed. Extending the hours that the equipment was operated accommodated dewatering additional biosolids beyond the original design intent. Extended hours of dewatering equipment operation were also used to accommodate services for the septage and trucked wastewater hauling service. Thickening was address by converting an existing decant tank (DT) to a thickener.

The existing equipment was well built and is well maintained; however, the existing centrifuges have been in continuous service for over 30 years and are not state-of-the-art technology. Based on the original plant design concept, the expansion of the gravity thickening capacity would be approximately 53% to accommodate an increase in average flow from 8.0 to the long-term projected flow. This increase would result in the need for a 3rd gravity thickener that is approximately the same diameter as the existing thickeners. A larger new thickener could be added at a relatively small increase in construction cost to provide additional operational flexibility. Such a larger thickener would also enable VFSA to more easily accommodate trucked wastewaters, as well as maintenance outages without significant process disruption.

The VFSA currently operates two (2) centrifuges to dewater the gravity thickened biosolids. Each centrifuge has a capacity of approximately 900 dry pounds per hour, resulting in a total plant capacity of 1,800 dry pounds per hour. Similarly, assuming additional thickening capacity and future acceptance of trucked wastewaters, the VFSA would have to operate up to 3 shifts per day with existing dewatering equipment. Without trucked wastewaters, VFSA could meet its long term future dewatering needs without additional capacity, and overtime levels could actually be reduced versus current levels. The continued acceptance of various types of trucked

wastewaters is a decision. The VFSA needs to make this decision based on the overall operating philosophy and market conditions. Such factors have the potential to change over time.

Since the existing centrifuges are over 30-years old, it would be beneficial to add new state-of-the-art equipment, which could provide additional capacity and increased efficiency thereby reducing operating and maintenance costs in the long run. In addition to modernizing the plant, new equipment would enable VFSA to provide excess dewatering capacity, which would both provide operating flexibility as well as enable VFSA to accept trucked wastewaters, while reducing operating costs for overtime..

Based on the original plant design concept, the expansion of the dewatering capacity would be approximately 50% to accommodate an increase in average flow from 8.0 to the long-term projected flow. Replacement of the 2 centrifuges with new dewatering devices with 50% additional capacity each would result in providing the needed capacity while also upgrading the dewatering equipment to the most modern technology.

Thickening

The VFSA currently operates two (2) gravity thickeners, each 40 feet in diameter. An analysis of the hydraulic and solids' loading to the thickener indicates that sufficient hydraulic capacity exists, but the thickeners have inadequate solids loading capacity. This solids loading thickening capacity shortfall exists whether or not the VFSA continued acceptance of trucked wastewaters; however, because solids from the trucked wastewater business amounts to almost half (½) of the total solids processed, the capacity shortfall will be much greater with the continued future acceptance of trucked wastewaters.

Hydraulics

On a daily average basis (based on May 2005 through April 2006 data) VFSA's thickeners receive a typical loading of 675,000 gpd. The two (2) tanks have an area of approximately 2,500 square ft, resulting in a hydraulic loading of 240 gpd/square foot. According to WPCF MOP 8, "thickeners generally are designed on a rise rate of 400 to 800 gpd/square foot. Excessive liquid detention time is to be avoided as septic conditions can result and cause odors." Therefore our

current loading of 240 gpd/square foot is well below the design criterion of 400 to 800 gpd/square foot, and additional hydraulic capacity is not needed.

Solids Loading

Below are the VFSA's average solids loadings from May 2005 through April 2006 data, along with design criteria per the Water Environment Federation's Manual of Practice for Design (WEF MOP 8):

Table 5-4. VFSA's Average Solids Loading, May 2005 – April 2006.

Source	Average lb/day	Required Area lb/ft^2 (Per WEF MOP 8)	Required Area (ft^2)
Waste Activated Sludge	6,143	Secondary Sludge 2.65	2,318
Primary Sludge	5,463	Primary Sludge 10	546
Subtotal (Waste Activated and Primary Sludge	11,606		2,864
Trucked Waste (DAT/DT)	17,704	Primary sludge 10	1,770
Total Required (includes trucked waste)	24,947		4,634
Available with DT			3,210
Available w/o DT			2,500

The current capacity with the DT utilized as a thickener is 3,210 square feet of surface area. Even if the VFSA eliminated trucked waste receipt and put the DT into service as a thickener, the present solids loading requirement would only be met only marginally. Please note that the DT tank does not contribute very much capacity because of its relatively small diameter. The thickener system is overloaded in terms of solids loading and additional capacity is needed.

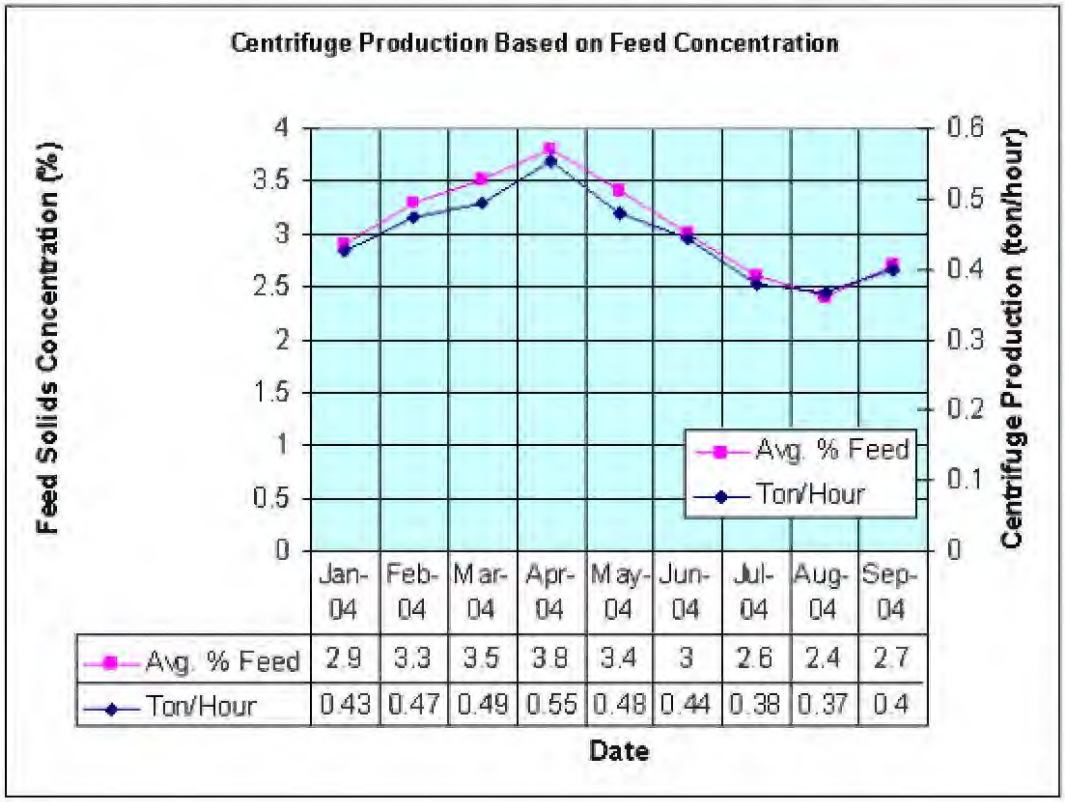
The VFSA is able to operate the treatment plant successfully at present loadings, because of the excess of organic capacity that currently exists in the remainder of the treatment system. Overloading the thickeners results in excess organic discharge over the thickener effluent weirs into the plant internal recycle stream. This organic discharge is recycled back to the head of the

plant for treatment. Although this operating flexibility enables VFSA to manage the capacity shortfall in an acceptable manner, their may be negative implications with regard to odor. As the numbers of connected customers increase according to the growth projected in this Act 537 plan, this excess organic treatment capacity will decrease and the deficit of thickening capacity will result in substantial risk of process upsets. As a result, effluent quality will suffer.

The recommended thickening capacity is 4,045 square feet of surface area for a connected flow of 11.3 MGD with no trucked waste. To include the existing trucked waste business volume and an assumed increase of 10% overall growth of the business, the recommended thickening surface area is 6,045 square feet. The two 40-foot diameter units and one (1) additional 57.5-foot diameter unit are needed to meet this requirement. Without inclusion of the septage business, the existing gravity thickening capacity is marginal, and a third thickener is recommended to allow for maintenance outages of one thickening tank to prevent solids handling disruptions.

Furthermore, additional gravity thickening capacity could improve the efficiency of the centrifuges by providing higher centrifuge feed solids concentrations. This claim is clearly demonstrated in the chart below of monthly 2004 data. The correlation of higher thickened solids content to dewatered cake solids is clear.

Figure 5-1. Centrifuge Production Based on Feed Concentration.



In summary:

- The existing thickening capacity is marginal at present without inclusion of trucked wastewaters. With the presence of trucked wastewaters, the VFSA's thickening capacity is insufficient for current loadings.
- Additional thickening capacity is needed to accommodate future connected customers.
- A third thickener sized at about 57.5 feet in diameter could accommodate future growth while providing the necessary flexibility to handle maintenance outages with a minimum of operational disruption.
- To add operational flexibility, a thickener could be added.

Dewatering Capacity

The available dewatering capacity is 17,520 hours per year based on both centrifuges operating continuously. The actual 2005 dewatering hours was approximately half (½) of that total or 8,790 hours. The actual operating hours include both machines operating 5 days per week

between two (2) and three (3) shifts per day, depending upon trucked waste loading. During 2005, the VFSA processed approximately 4,700 dry tons of biosolids products.

Based on data from the last 5 years recorded in the "Valley Forge Sewer Authority Annual Summary", the average solids production from connected customers versus trucked waste are as follows:

Table 5-5. Average Solids Production From Connected Customers Versus Trucked Waste.

Year	Dewatered Solids from Connected Customers (dry tons per day)	Dewatered Solids from Trucked Wastewater Business (dry tons per day)	Total Dewatered Solids (dry tons per day)
2005	6.2	5.9	12.1
2004	10.1**	5.5	15.6**
2003	7.2	5.7	12.9
2002	7.0	4.2	11.2
2001	6.3	4.2	10.5
Average	6.7	5.1	11.8

**Outlier. Not included in average

The data indicates that about 43 percent of the solids dewatered at VFSA originate from the septage business.

The following are the estimated sludge dewatering capacity requirements for the projected growth estimated to occur 10, 20, and 30 years into the future:

Table 5-6. Estimated Sludge Dewatering Capacity Requirements.

Years	Projected Flow Capacity Needed (MGD)	Dewatered Solids From Connected Customers (dry tons per day)	Dewatered Solids From Trucked Waste Business (dry tons per day)	Total Dewatered Solids (dry tons per day)
Current	7.6	5.8	5.1	10.9
10	9.7	7.4	6.0	13.4
20	10.6	8.1	6.0	14.1
30	11.4	8.7	6.0	14.7

Table 5-6 above indicates the VFSA can meet its dewatering capacity requirements into the distant future for its connected customers if the current operating time is maintained. If the septage business is maintained, additional run time is required or the dewatering capacity per hour must be increased with an additional machine or with machines of greater capacity.

Considering the existing centrifuges are over 30 years old, there may be benefit in replacing the units with new larger units. Such an upgrade will provide the operating flexibility to maintain or even grow the trucked wastewater business. Increased dewatering capacity will also provide VFSA with the flexibility to reduce operating hours to less than two (2) full shifts.

Replacement of the two (2) centrifuges with new dewatering devices each with 50 percent additional capacity would provide the needed capacity while also upgrading the dewatering equipment to the most modern technology.

Plant Improvements

This section outlines the improvements that would logically be made to the VFSA STP concurrently with an expansion of the existing STP. The items described in this section are not required to meet future connected capacity needs; however, these items will serve to upgrade and modernize the plant. The improvements described in this section are considered conceptual and subject to more detailed engineering evaluation.

The existing STP, constructed in the mid-1970's, was well-built and has been well-maintained. However, the available technology features and advancement in equipment have improved over the last 30 years and it would be appropriate to upgrade the treatment in order to provide state-of-the-art equipment and automation. Some of these improvements, if implemented, will also provide savings in operating and maintenance costs.

In summary, the recommended upgrades are as follows:

- Influent chamber modifications
- New centralized plant automation.
- Upgrades to the existing chlorine building.
- Additions and modifications to the Control Building odor control system.
- Additions and modifications to the influent and primary influent odor control system.
- Operations and Maintenance Building upgrades.
- In-house loading tank system and recycle stream handling improvements.
- A day bin for biosolids.
- A blend tank for dewatering feed.
- Existing biosolids conveyor system upgrade.

The following describes in conceptual terms, the recommended improvements and rational basis for these recommendations.

Influent Chamber Modifications

Several modifications are needed to be conducted to prepare for the increased flows in the future. These constructions items include but are not limited to:

- Forcemain changes and upgrades
- Bypassing around influent meters and channels, and connection to existing site piping downstream
- Gate replacement

Centralized Plant Automation

The existing treatment control system consists of the original 1970's technology plus advances that were made by the VFSA staff in recent years. Allen Bradley process logical controllers (PLCs) are used to control the aeration, dewatering, and polymer systems. To modernize, centralize and expand the plant's control systems, the following upgrades are recommended:

- Ethernet data highway. Graphical interface with the network, which includes indication of parameters and control. Access to data highway via the internet for access of data as well as control.
- Implementation of a user-friendly graphical interface package such as Wonder Wear®
- Monitoring parameters online such as pH, temperature, D.O. (upgraded technology for measurement) TSS, Organic Load (or other BOD derivative), Ammonia, others as required. And indication on network graphic interface.
- Wireless data transmission from remote plant locations where this is found to be cost effective and needed.
- Capability to easily access key process data for analysis from authorized PCs.
- An upgraded maintenance software package.

Chlorine Building Renovation

The existing building contains three rooms that house chlorine and sulfur dioxide storage, chlorine and sulfur dioxide feed equipment, effluent sampling equipment, and utility water (treated effluent) pumps.

The plant expansion alternative includes the conversion from gaseous chlorine disinfection to ultraviolet light (UV) disinfection. This conversion will allow renovation of the building use to include the following:

- UV system maintenance room for UV module lifting hoists, a space to clean UV bulbs, spare parts storage area, local instrument indicators and controls.
- Chemical storage of liquid sodium hypochlorite and feed equipment for periodic return sludge chlorination.
- The utility water pump system is 1970 technology and has been a source of maintenance problems. It should be replaced with more modern equipment with increased capacity.

- A new effluent monitoring station with appropriate online analyzers is also recommended.

Added Odor Control for Control Building

The off gasses from the Control Building recycle tanks, existing centrifuges, degrit area, DT tank, and DAT tank are treated in an activated carbon treatment system. This system is effective in removing the compounds that cause most of the odor from the treatment plant – sulfur containing compounds (including hydrogen sulfide). However, the more complex compounds and those derived from ammonia (amines) are not entirely removed by the existing system. Therefore, additional controls are recommended for treating odors from the Operations Building. For the purposes of this study, a two stage chemical wet scrubber system is considered as the needed improvement. The specific components and design will be evaluated in further detail prior to implementation.

Permanent Installation of Primary Settling Tank Odor Control

Previous odor studies suggest that a significant portion of the potential odors associated with the normal operation of the STP may come from the quiescent surfaces of the primary tanks. The VFSA staff has conducted tests utilizing iron salts to oxidize hydrogen sulfide and thereby reduce odors in the influent to the WWTP. These tests showed promise in the summer of 2005. The additional testing being conducted in the spring and summer of 2006, indicates that potential for excess light solid precipitants from the process. Accordingly alternate odor control chemicals that do not produce precipitated solids are being evaluated.

It is recommended that upgrades to this system be added concurrently with the required capacity upgrades. Such upgrades would consist of a permanent installation of chemical addition equipment, including chemical storage tanks and metering equipment.

Additionally, covers for the open sections of the tanks could be added to the primary clarifiers; however, these must be designed to enable safe and easy routine maintenance of the tanks, as well as providing ventilation that is adequate to prevent corrosion beneath the covers of the tanks.

The specific type of odor control upgrades for the influent should be evaluated in more detail. If a permanent system for odor control chemical addition is decided upon, then an optimal dosing philosophy should be established that balances considerable chemical costs with the potential for odor in the surrounding communities.

Upgrade Operations Building

The existing Operations Building is over 30 years old and there has not been a renovation of the building since the plant was commissioned. Renovating the building would update the operations and maintenance areas while providing a safe and pleasant working environment for the VFSA employees. The renovation would encompass the existing Control Room, lunch room, locker room, and maintenance shop. It would include upgrading the appearance and ventilation system in these rooms as well as providing better functionality therein. Such renovations would include upgrading lifting cranes, compressors, and equipment.

In addition, there is a large potential work area that is currently occupied by pressure filters that were built but never commissioned. These filters were converted to trucked wastewater storage, but this converted system has not been used to date due to lack of need. Improvements to the Operations Building should include the removal of these large pressure filters and conversion of the space to a usable workspace for maintenance activities and parts storage.

In-House Loading Tank Improvements

Recycle flows consisting of gravity thickener overflow and centrifuge centrate are routed by gravity to a sloped-bottom rectangular "in-house" loading tank located below the ground level of the operations building. There is a larger operating tank and a smaller spare tank. Four (4) pumps operated in parallel to return the internal wastewater flows back to the plant influent structure. These tanks were originally designed to store treated water as part of the pressure filter system. However, they were converted to handle these generally high strength wastewater streams. Off gas from the in-house is presently routed to the existing Phoenix activated carbon system. This odor control system also treats odors from the degrit cyclone area, conveyor system and centrifuge vent.

Although the system works satisfactorily, it is not without certain operating and maintenance problems. The ceilings of these tanks, which are a portion of the buildings first floor, were not designed for high strength wastewater. Corrosion of the ceiling has occurred and it must be coated on a regular basis. There is some risk of structural failure.

In addition, these tanks do not have a means for easily removing solids that accumulate at the bottom and top of the tank. As a result, the VFSA must pay a contractor to clean the tank on a yearly basis, and this could cost about $15,000 per cleaning, or more.
The recommended improvement for this system includes:

- Adding a pumped mixing system.
- Replacing the concrete ceiling.
- Adding larger access hatches
- Improving the ventilation.

Solids Processing Improvements

The current solids processing consists of gravity thickening followed by centrifuge dewatering, mixing with hydrated lime, and daily loading onto trailers for hauling to land application sites. This appears to be a viable means of processing and utilization into the foreseeable future.

In addition to adding capacity via new state-of-the-art dewatering devices, there are several improvements to this system that are recommended:

Day Bin for Biosolids

Currently, dewatered biosolids fall from the centrifuges into an existing shaftless screw conveyor system. There, the solids are mixed with hydrated lime and conveyed into a 40 cubic yard contractor-owned trailer that is positioned with a VFSA-owned Jockey Truck. This system requires the trailer to be jockeyed every 20 minutes or so to evenly load the biosolids. This operation is a labor-intensive task. The installation of the new day bin would eliminate this task as trailers could be loaded by the contractor's drivers. This improvement would free up an operator for other O&M duties. In addition, with appropriate odor controls, a day bin could practically eliminate the truck loading operation as a significant source of plant odor.

The day bin would be sized for the volume of biosolids that would be generated over a two or three day period, resulting in a capacity of about 200 wet tons.

The day bin would contain additional mechanical equipment such as the loading mechanisms on the bottom that would require normal maintenance. This additional maintenance would be offset by the reduced O&M costs for the existing jockey truck.

In addition to the day bin, modifications to the existing conveyor system would be necessary to properly load the bin. At the least, one of the existing conveyors would have to be extended in order to reach the top of the bin.

Blend Tank for Dewatering Feed

The existing gravity thickener bottoms are used to feed the centrifuges. The gravity thickeners are subjected to variability in their influent characteristics that result from three separate sources of influent (primary, waste activated and trucked sources). The variability in influent characteristics also affects the consistency of the thickener bottoms, and makes it more difficult to produce a consistently dry cake and optimize use of chemicals. The function of a blend tank will be to take in thickener bottoms, and mix it thereby producing a consistent dewatering process feed.

Conveyor Modifications

The existing conveyor system has adequate capacity to meet the additional dewatering equipment that is being considered. An extension, as described in the forgoing subsection would be needed to feed the day bin. As with VFSA's existing system, most conveyor system designs used at other plants do not include replication of the conveying equipment, because any failure could be fixed relatively quickly. However, some replication of equipment would provide a margin of safety to keep the dewatering process operating during conveyor liner replacement and repair activities. Appropriate conveyor modifications should be considered as part of the specific changes that are being considered to increase and upgrade the solids handling system.

Figure 5-2 depicts a general aerial view of the existing treatment plant with the proposed modifications.

Figure 5-2. Proposed wastewater treatment plant layout



No Action Alternative

The No Action Alternative is rejected, because it fails to satisfy objectives of Act 537 Plan, and it is inconsistent with objectives and policies of municipal planning documents and state regulations.

Section 6

Evaluation of Alternatives

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D. Capital and Operating Costs/Present Worth Analysis 6-3

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G. Legal Authority 6-13

Appendices:

D. Preliminary Effluent Criteria

F. PNDI Correspondence

G. PHMC Correspondence

Figures:

None

Exhibits:

None

A. Perform an evaluation of all viable alternatives identified in the previous section of the Plan for consistency with all related municipal, county, and state planning documents and programs including copies of notification and responses from all appropriate planning agencies.

As discussed in Section 5, Alternative 3e was the selected alternative, which involved the construction of a second aeration tank and a fourth secondary clarifier.

Table 6-1. Consistency Evaluation of Selected Alternative from Section 5.

Evaluation Category	Consistency		Comments
	Yes	No	
Plans developed under the Clean Streams Law or Section 208	X		All water discharged into the waters of the Commonwealth must satisfy the requirements assigned by Pennsylvania Department of Environmental Resources (DEP). Alternative 3e will be constructed and operated within the requirements of DEP. The selected alternative is consistent with the objectives of the Clean Stream Laws.
Municipal Wasteload Management Plans (Chapter 94)	X		The alternative is associated with treatment of projected flow not the creation of new flow. This alternative will aid in the prevention of an overload hydraulically or organically resulting from the projected connections; therefore, the alternative does not conflict with Chapter 94. The selected alternative is consistent with the objectives of the Chapter 94.
Plans developed under the Clean Water Act	N/A		Not applicable. No federal funding anticipated.
Chester County Landscapes 1996-2020-Comprehensive Plan – Policy Element.	X		The Comprehensive Plan indicates that improvements shall be consistent with land use policy to maintain and upgrade existing sewer and water facilities, to address problems, and to support revitalization and development activities. The alternative should not adversely impact that plan. The selected alternative is consistent with the objectives of Chester County's Comprehensive Plan.
Municipal Comprehensive Plans	X		This Act 537 Plan addresses the maximum wastewater load associated with the eight Townships that comprise the region in the vicinity of VFSA. The values associated with the plan were determined from the zoning requirements of each township. The selected alternative is consistent with Municipal Comprehensive Plans.

Evaluation Category	Consistency		Comments
	Yes	No	
Antidegradation requirements (Chapters 93, 95, 102)	X		No exceptional or high quality streams will be impacted by the alternatives. Construction activities associated with expansion of existing facilities would be subject to statewide Erosion and Sedimentation controls. Preliminary effluent criteria have been established by PADEP and are included in Appendix E. The selected alternative is consistent with Antidegradation requirements.
State Water Plan (Subbasin #2)	X		The Schuylkill River in the vicinity of the proposed improvements is listed as impaired in the State Water Plan. The impact of this listing is not yet known because TMDLs for the river have not been established. PADEP will control the TMDL by the limits established for the permit. The selected alternative will not produce non-point pollution. Therefore, the alternative will not adversely impact the intent of the State Water Plan. The selected alternative is consistent with the State Water Plan.
Pa. Prime Agricultural Land Policy	X		All of the construction associated with the selected alternative would occur on property owned by the VFSA. Therefore, agricultural land will not be impacted. The selected alternative is consistent with the PA Prime Agricultural Land Policy.
Chester County Stormwater Management Plans (Act 167)	X		All construction will be permitted in accordance with applicable stormwater management plans. Currently, there is no reason to suspect that the selected alternative cannot satisfy the requirements of these plans. Therefore, there will be no impact upon the stormwater management plans Each alternative is consistent with Chester County Stormwater Management Plan.
Wetland Protection (Chapter 105)	X		A review of the wetlands maps indicated that there are no wetlands in the vicinity of construction. Therefore, the impact upon wetland should be none. Additionally, all construction will be designed and permitted in accordance with Chapter 105. The selected alternative is consistent with Chapter 105.
PNDI Review	X		A PNDI Project Environmental Review was conducted on March 27, 2006 and the results showed three (3) potential impacts with the U.S. Fish and Wildlife Service, PA Department of Conservation and Natural Resources, and PA Fish and Boat Commission. The receipt of this search is included in Appendix F. Information was sent to these agencies for further review and responses were received indicating no potential effect as long as there is no disturbance within any wetland. For the PA Fish and Boat Commission, if there will be any direct or indirect on any wetland, a habitat suitability assessment for bug turtles must be completed. The responses are included also in Appendix F. The selected alternative is consistent with the PNDI.

Evaluation Category	Consistency		Comments
	Yes	No	
PHMC Review	X		A request was sent to the Pennsylvania Historical and Museum Commission for analysis of potential impacts on archaeological resources as a result of the construction activities. A reply was received indicating a high probability exists that archaeological resources may occur with the proposed permit area, and can be seen in Appendix G. If federal funding were being pursued for the construction an appropriate survey would need to be conducted to determine the exact potential of effect. There is no federal funding being pursued for the construction of the selected alternative; therefore, the selected alternative is consistent with the requirements of PHMC.

B. Provide copies of correspondence indicating resolution of any inconsistencies with appropriate planning agencies.

No inconsistencies were noted. All correspondence regarding the PNDI and PHMC can be seen in Appendix F and G, respectively.

C. Perform and evaluation of all identified viable alternatives with respect to applicable water quality standards, effluent limitations, other technical, legislative, or legal requirements.

The VFSA STP currently discharges effluent to the Schuylkill River under NPDES Permit No. PA 0043974. In preparation for the evaluation of alternatives to expand the STP, a request was made to PADEP for effluent criteria at the new design flow rate. Preliminary effluent limits for the expanded STP were provided by PADEP, as referenced previously and are included in Appendix D. The selected alternative is capable of meeting the specified criteria.

D. Prepare opinions of probable construction costs, including allowances for soft costs such as engineering, legal, and administrative costs, for each of the identified viable alternatives. Prepare operating cost estimates for each alternative and perform a present worth analysis to finance the alternative.

and

E. Prepare an analysis of funding methods available to finance the identified viable alternatives, including documentation to support which alternatives and financing scheme, in combination, is most cost effect.

Expansion Alternative Capital Costs

Conceptual level construction costs for each alternative were estimated by Buchart-Horn and included a 25% contingency. Buchart-Horn's documentation to support these estimates is included as Appendix D. Note that the estimates do not include Alternative 3d, which is the construction of an IFAS process. A more detailed evaluation would be necessary to establish reliable construction costs for IFAS. Table 6-2, below summarizes the estimated project costs for the expansion alternative. All of the alternatives listed as "Alternative 3" (i.e., b, c, d) include the addition of UV disinfection. Estimated project costs for a 3rd thickener, dewatering devices and other plant improvements are presented in separate tables later in this section. For evaluating capital costs and the present worth of alternatives, a 25% factor is applied for associated project costs such as engineering, legal, finance and other administrative expenses.

The capital cost comparison is based on a flow rate of 11.4 MGD. The cost of delayed expansion items for each alternative is added in so an equal comparison can be made.

Table 6-2. Estimated Project Cost for the Expansion Alternatives

Alternative No.	Alternative Description	Estimated 2006 Construction Cost (million $)	Associated Project Cost @ 25% of Construction	Estimated Total Capital Cost (2006)
1a	Locate a Satellite Plant at Cromby	$10.02	$2.50	$12.52
1b	Locate a Satellite Plant at French Creek, Discharge at Cromby	$10.65	$2.66	$13.31
2a	Divert French Creek pump station and discharge to Phoenixville, including Phoenixville Tapping Fee	$7.43	$1.86	$9.29
2b	Divert Pickering Creek pump station to Phoenixville, including Phoenixville Tapping fee.	$6.46	$1.62	$8.08
3b	Alt. 1a plus add a 4th Clarifier	$4.65	$1.16	$5.81
3c	Alt 1c plus add a 3rd Primary Clarifier	$10.10	$2.53	$12.63
3e	**Current process plus add a 3rd Aeration Tank and 4th Clarifier**	**$8.28**	**$2.07**	**$10.35**

Based on the conceptual project cost estimates, Alternative 3b is the least costly.

Expansion Alternatives Estimated Operating Costs

Table 6-3, presents the estimated operating costs of each expansion alternative. This comparison was based on the projected 10-year flow rate of 10 MGD to provide the expected average annual cost for the 20-year period. Beyond the 10-year flow projection, the alternatives that include flow diversion of the French Creek pump station (Alternatives 1a, 1b, and 2a) would require additional capital and operating costs to meet longer term capacity requirements. This is because an average flow of only about 0.7 MGD could be delivered from the French Creek station. This would be insufficient to meet VFSA's long-term (20-year) needs. In addition, such an approach would be only marginal in meeting VFSA's 10-year needs.

Table 6-3. Estimated 2006 Annual Operating Costs (Expressed per $1,000 unless otherwise noted)

Alternative No.	Null	1a	1b	2a	2b	3b	3c	3e
Operating Expenditures:								
Administrative Operating Costs	244	314	314	244	244	244	244	244
Benefits	77	100	100	77	77	77	77	77
Administrative Insurance	4	4	4	4	4	4	4	4
Operating & Maintenance Admin. Supplies	83	85	85	85	85	85	85	85
Operating and Maintenance Salaries	851	922	922	851	851	867	872	869
Operating and Maintenance Benefits	301	326	326	301	301	307	308	307
Electricity and Energy	370	398	398	398	398	398	398	398
Pump Station Power	156	48	48	48	168	168	168	168
Chemicals	324	385	385	385	385	385	385	385
Laboratory Supplies	96	117	117	97	97	97	97	97
Miscellaneous Supplies	34	39	39	34	34	34	34	34
Solids Transportation and Disposal	590	693	693	613	613	613	613	613
Corrosion and Odor Control	211	267	267	227	227	227	227	227
Predictive Maintenance	71	86	86	71	71	71	71	71
Landscaping	21	26	26	21	21	21	21	21
Maintenance Materials	43	53	53	43	43	43	43	43
Annual Services and Special Projects	69	79	79	69	69	69	69	69
Property and Liability Insurance	56	69	69	57	57	57	57	57
Metered Sewer usage to Phoenixville (~0.7 MGD)	0	0	0	654	654	0	0	0
ANNUAL EXPENDITURES (2006 Million $)	**3.44**	**4.01**	**4.01**	**4.28**	**4.40**	**3.77**	**3.77**	**3.77**
Difference vs. No Action Alternative	0	565	565	835	954	322	328	324

NULL = OPERATIONS BASED ON CURRENT PLANT CONDITIONS (2006)

Operating costs for alternative 3d were not developed.

Highlights of the operating cost summary include:

- Operating cost increases for various alternatives that include modifications and upgrades of the wastewater treatment plant are generally related to treating additional wastewater flows such as increased power, chemical addition, and solids transportation and disposal.
- Alternative 3d - IFAS processes should be considered in further detail. Operating costs (not presented in Table 6-3) are likely to be competitive with the other plant expansion alternatives.

- Relatively higher operating costs for the Phoenixville wastewater diversion (Alts. 2a & 2b) are due to the high-metered rates charged by the Borough. These are the rates listed in their rate schedule.
- There is some pump station power operating cost savings in Alternatives 1a, 1b, and 2a that include diverting wastewaters from the French Creek pump station; however, this is not enough to offset other increased operating costs.
- The satellite treatment plant alternatives' higher operating costs are related to increased O&M labor (2 additional O&M employees were estimated); laboratory costs (in order to accommodate 2 separate permits and associated monitoring); and solids transport and disposal (routine trucking from the satellite plant to the existing STP would be needed).
- For alternatives requiring additional capacity 10-years into the future, it was assumed that operating costs would escalate similarly (differences between alternatives are likely to be negligible), and therefore incremental operating cost differences between alternatives in the distant future are not considered in this comparison.

Present Worth Comparison

Table 6-4 presents a summary of the capital, operating and present worth of each alternative using a 20-year project life and 4 percent annual discount rate. The summary is shown in graphic form in Figure 1. Alternatives 3b, and 3e appear to be the most cost effective from a present worth perspective. Note that although alternatives 1a and 1b are comparable in present worth to Alternative 3e, but they would only provide the capacity that is needed for a limited time frame. After that time, additional capacity may be needed.

Table 6-4. 2006 Present Worth Analysis (Costs are in million dollars)

Alternative No.	Null	1a	1b	2a	2b	3a	3b	3c	3e
Construction Cost ($million)	0	4.57	5.2	1.98	2.01		4.65	10.1	8.28
Tapping Fee – Phoenixville	0	0	0	5.9	5.9		0	0	0
Engineering & Admin @ 25% ($ million)	0	1.14	1.3	0.55	0.5		1.16	2.52	2.07
Capital Cost (MM$)	0	**5.75**	**6.5**	**8.38**	**8.41**		**5.81**	**12.63**	**10.35**
Additional Operating Cost ($million/year)	0	0.56	0.56	0.83	0.95		0.32	0.33	0.32
Present Worth Factor (P/A, 4.0%, 20 years)	13.6	13.6	13.6	13.6	13.6		13.6	13.6	13.6
Present Worth of Annual Costs	0	**7.69**	**7.69**	**11.3**	**13**		**4.38**	**4.46**	**4.4**
Annualized Cost Factor (A/P, 4%, 20 years)	0.07	0.07	0.07	0.07	0.07		0.07	0.07	0.07
Annualized Capital Cost	0	0.37	0.42	0.59	0.59		0.38	0.82	0.67
Future Construction Cost in 10-years	0	6.45	6.45	6.45	5.27		0	0	0
Future Capital Cost (includes 25% Eng and Admin)	0	8.07	8.07	8.07	6.59		0	0	0
Present Worth Factor (P/F, 4% 20 years)	0.676	0.676	0.676	0.676	0.676		0.676	0.676	0.676
Present Worth of Future Costs		**5.45**	**5.45**	**5.45**	**4.45**				
Present Worth Cost of Alternative ($million)	**0**	**18.84**	**19.63**	**25.16**	**25.83**		**10.19**	**17.08**	**14.75**

Although alternative 3e is more costly in present worth than 3a and 3b, it would provide additional operating flexibility while meeting all long-term capacity needs. Alternative 1d provides the most operating flexibility, but at the highest capital cost of the plant expansion alternative. IFAS costs are expected to be at the higher range of the plant alternatives and this

strategy would warrant further study if additional tanks at the plant was not considered to be a viable option.

While IFAS is promising, an additional study would be required to establish whether such a design (including all pretreatment components that would be required) is the optimal design in terms of reliability and cost.

While Alternatives 1 and 2 have some favorable aspects, they would only provide some of the long-term future capacity needed. Accordingly the need to expand the existing plant in the future results in these alternatives being higher in present worth costs compared to alternatives consisting of expansion of the existing plant.

Biosolids Handling Capacity Improvements

Table 6-5 below outlines the estimated capital costs for additional gravity thickening and dewatering. The construction estimates are conceptual and include a 25 percent contingency. When additional engineering is performed, the capital costs can be estimated to a higher degree of accuracy. The associated project costs for engineering, legal, finance and other administration fees are estimated at 25 percent of construction. Documentation of construction cost estimates is included in the Appendix D.

Table 6-5. Estimated 2006 Capital Costs – Solids Thickening and Dewatering

Thickening and Dewatering Addition	Estimated 2006 Construction Cost ($ million)	Associated Project Cost @ 25% of Construction	Estimated Total Project Cost (2006) ($M)
One Additional Gravity Thickener including ancillary equipment	$0.9	$0.22	$1.12
Two New Dewatering Devices including ancillary equipment	$2.0	$0.50	$2.50
Subtotal	**$2.9**	**$0.72**	**$3.62**

Plant Upgrades

Table 6-6 outlines the estimated capital costs for the improvements described in Section 5. The construction estimates are conceptual and include a 25 percent contingency. When additional engineering is performed, the capital costs can be estimated to a higher degree of accuracy. The associated project costs for engineering, legal, finance, and other administration fees are estimates at 25 percent of construction. Documentation of capital cost estimating is included the in Appendix D.

Table 6-6 Estimated Capital Costs – Wastewater Treatment Plant Improvements

Proposed WWTP Improvement	Estimated 2006 Construction Cost ($ million)	Associated Project Cost @ 25% of Construction	Estimated Total Project Cost (2006) ($M)
Influent Chamber Modifications	$0.80	$.200	$1.000
Centralized Plant Automation.	$0.66	$0.165	$0.825
Renovation of Chorine Building	$0.08	$0.020	$0.100
Utility Water System Replacement and Upgrade	$0.31	$0.076	$0.386
Control Building Odor Control System	$0.47	$0.118	$0.588
Influent Odor Control System (chemical addition, assumed)	$0.10	$0.025	$0.125
Upgrade Operations Building	$0.90	$0.226	$1.126
Improve Recycle Stream Handling	$0.22	$0.056	$0.276
Day Bin for Biosolids Staging and Truck Loading	$1.00	$0.250	$1.250
Addition of a Blend Tank for Dewatering Feed	$0.366	$0.0925	0.458
Replicate Biosolids Conveyor System	$0.62	$0.155	$0.775
Subtotal – Plant Improvements	**$5.53**	**$1.384**	**$6.909**

Conclusions

This section presented a conceptual analysis of the capacity expansion alternatives that were retained for evaluation as well as other non-capacity-related plant improvements. Conclusions of this analysis:

- The alternatives that include expansion of capacity at the existing VFSA treatment plant appear to be the most viable, because they are the lowest in present worth cost and allow for meeting both the short and long-term future capacity needs.
- The specific plant expansion strategy needs to be determined. In general, those alternatives that include the additional aeration tank provide more operating flexibility at a higher capital cost.
- Any expansion strategy should include the impact that trucked wastewaters have on the treatment process. At a minimum, additional gravity thickening and dewatering capacity should be provided if VFSA is to expand its service capacity while maintaining (or growing) its current level of trucked wastewaters at the plant.

The cost analysis presented in Section 6 is conceptual only and should not be used as stand alone budget for the anticipated expansion project. It does, however, provide the necessary comparative analysis to identify focus in on the most cost effective solution for the expansion.

Project Funding Sources

The selected alternative will be financed by tax-exempt municipal bonds. The individual municipalities will be given the option to make capital contributions to offset the borrowing. The cost sharing for each partner municipality and the VFSA can be seen in Table 6-7.

Table 6-7. Project Cost Sharing

Plant expansion

Estimated total		$13,970,000		
	MGD *		Percent of expansion	Est. $ share expansion cost
Easttown	0.000		0.00	$0
East Whiteland	1.969		80.30	$11,217,768
Malvern	0.000			
Tredyffrin	0.199		8.12	$1,133,942
Valley Forge	0.000			
Willistown	0.284		11.58	$1,618,290
	2.460		100.00	$13,970,000

Plant upgrade

Estimated total		$5,909,000		
			Percent of upgrade	Est. $ share upgrade cost
Easttown	1.523		0.1655	$1,143,740
East Whiteland	1.940		0.2109	$1,456,898
Malvern	0.544		0.0591	$408,532
Tredyffrin	2.001		0.2175	$1,502,708
Valley Forge	2.128		0.2313	$1,598,082
Willistown	1.064		0.1157	$799,041
	9.200			$6,909,000

Grand total	**Upgrade**	**Expansion**	**Total Contribution**	**Overall Percent of the Project**
Easttown	$1,143,740	$0	$ 1,143,740	0.055
East Whiteland	$1,456,898	$11,217,768	$ 12,674,666	0.607
Malvern	$408,532		$ 408,532	0.020
Tredyffrin	$1,502,708	$1,133,942	$ 2,636,650	0.126
Valley Forge	$1,598,082		$ 1,598,082	0.077
Willistown	$799,041	$1,618,290	$ 2,417,331	0.116
	$6,909,000	$13,970,000	$ 20,879,000	1

1. MGD* = Projected ultimate capacity less current owned

Example: East Whiteland projected need 3.909 less current reserved capacity 1.940 equals 1.969 mgd

2. Overall percent of the project is to be utilized in calculating planning and engineering expenses
3. The cost estimates presume that the existing treatment plant is expanded and upgraded utilizing existing technology

F. Prepare an analysis of the need for immediate or phased implementation of each identified viable alternative including descriptions for any activities to abate critical public health hazards, or for any advantages to phasing implementation of the sewage management program.

No immediate actions are necessary to abate critical public health hazards. There is no need for phased implementation according to connection projections.

G. Evaluate administrative organizations and legal authority necessary for plan implementation. Provide a narrative description.

Refer to Section 7A for evaluation of administrative organizations and legal authority necessary for plan implementation.

Section 7

Institutional Evaluation

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A. Financial Status and Resources 7-1

B. Institutional Alternatives 7-2

C. Administrative and Legal Activities 7-3

D. Chosen Institutional Alternative 7-3

Appendices:

None

Figures:

None

Exhibits:

None

A. Provide a narrative description of the Authority's financial status, operating, and administrative resources and legal authority to implement the selected alternative based upon information provided by the Authority.

Overview of the VFSA

The Townships of Schuylkill, East Pikeland, and Charlestown in Chester County, Pennsylvania organized the Valley Forge Sewer Authority (VFSA) in the late 1960s for the purposes of acquiring, constructing, maintaining, owning or leasing sewer systems and sewage treatment works. On November 1, 1970 VFSA entered into an agreement to provide wastewater treatment services to the following municipalities in Eastern Chester County: Easttown Township, East Whiteland Township, Malvern Borough, Tredyffrin Township and Willistown Township (VCTS Municipalities). These five municipalities, along with the three VFSA organizing municipalities are collectively referred to as the VFSA Partner municipalities. The VFSA and each VCTS Municipality has a specific reserved capacity at the 9.2 million gallons per day (MGD) Valley Forge Sewage Treatment Plant (STP), located in Schuylkill Township.

Table 7-1 Current Capital Cost Sharing Summary for 2005

Partner Municipality	Reserve Capacity Available		2005 Capacity Utilized (MGD)	2005 Capacity Rented (MGD)
	Percentage	MGD		
Easttown	16.55%	1.523	1.357	0
East Whiteland	20.87%	1.94	1.963	0.023
Malvern	6.13%	0.564	0.329	0
Tredyffrin	21.75%	2.001	1.128	0
V.F.S.A.	23.13%	2.128	1.480	0
Willistown	11.57%	1.064	1.221	0.157
Total	**100.00%**	**9.2**	**7.478**	**0.180**

The 1970 Agreement authorizes the VFSA to provide capacity for the Partners. The cost sharing of capital improvement expenditures to date have been based on allocated percentages identified in Table 7-1. Capital expenditures for expansion and improvements identified in this Plan will be shared by the Partners by a revised cost allocation. Refer to Section 6 for the cost sharing of the selected alternative and improvements.

The VFSA finances, owns and operates its collection and transmission facilities in East Pikeland, Charlestown and Schuylkill Townships' independent of the 1970 Agreement. The other VFSA Service Area Municipalities are responsible for the financing, ownership and operation of their collection and conveyance system independent of any agreements, and are also parties to agreements where they use facilities in downstream municipalities.

Two major agreements have been signed with respect to sewer system components within the VFSA Service Area: the Valley Creek Trunk Sewer (VCTS) Agreement and the East Whiteland Trunk Line (EWTL) Agreement. In accordance with the VCTS Agreement, Tredyffrin is responsible for financing, ownership and operation of the VCTS within Tredyffrin Township, which means the main pumping station and the force main to the Valley Forge STP. East Whiteland, in accordance with the EWTL Agreement, is responsible for the financing, ownership and operation of the EWTL within East Whiteland Township.

Financial Statement

In 2004, the Authority called its bond issue which financed the original construction of the Authority's facilities as well as several upgrade projects. The bond issue was refinanced with a bank note saving the Authority $487,000 in interest over the life of the note. The remaining fee in this note is $ 1,800,000 and will be completely satisfied by 2010. The Authority will finance its share of the pending project from its Capital Improvement Fund which currently has a balance of $ 16,610,107.

The Partners will provide funds for the pending project from funds on hand or thorough loans or bond issues.

B. Provide a narrative description of the various institutional alternatives necessary to implement the selected alternative.

The selected alternative can be fully implemented by the current organization of the VFSA. The VFSA has a total of 27 employees combining full-time and part-time employees. Operation,

maintenance, collection system, and laboratory consist of 15 employees, and the other 12 employees are involved in administration and engineering. Therefore, no changes are proposed to the existing arrangement to implement the recommendations of this plan.

C. Provide a narrative description of the necessary administrative and legal activities required to ensure implementation of the selected alternative.

The VFSA, via agreements with the VFSA member municipalities has the Authority to implement the plan and has successfully undertaken projects in the past.
The following legal activities are necessary for plan implementation:

1. Obtain necessary permits including, but not limited to:
    a. Part I – NPDES permit for discharge criteria
    b. Part II – NPDES permit for construction
    c. Sediment and Erosion Control Plan (approval)
2. Obligate funds for the overall project and collect accordingly from the Partner Municipalities.

D. Identify the chosen institutional alternative for implementing the selected alternative and provide justification considering administrative issues, organizational needs and legal authority.

As stated previously, there are no proposed changes to the current institutional arrangement since Agreements already exist that allow the planning and implementation of this pending project.

The following institutional activities must be accomplished for plan implementation:

1. Obtain municipal adoptions for this plan.
2. Initiate design and permitting processes for proposed project.

Section 8

Justification for Selected Alternatives

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A. Recommended Technical Wastewater Disposal Alternative 8-1

B. Recommended Capital Financing Plan 8-2

Appendices:

None

Figures:

None

Exhibits:

None

A. Prepare a narrative to identify the recommended technical wastewater disposal alternative with justification for the recommendations based upon needs, cost effectiveness, and environmental considerations.

Based on this evaluation the following summarizes recommendations for VFSA to proceed with meeting the wastewater disposal needs established by the Service area Municipalities.

- Alternative 3e, expansion of the existing wastewater treatment plant from 9.2 MGD to a permitted capacity of 11.52 MGD is the recommended alternative. This alternative is comprised of the upgrade and expansion of the exiting wastewater treatment plant including UV disinfection and the addition of a 4th clarifier and a 3rd aeration basin. Alternative 3e provides an adequate amount of operational flexibility, with a minimal amount of risk, and the capital cost is appropriate to the level of capacity that will be added. It meets VFSA's capacity needs into the distant future. It will also enable VFSA to upgrade to a denitrification plant if needed due to future regulatory requirements without major structural additions.
- Capacity additions that are required for dewatering should be added. The analysis presented in this report suggests that two new dewatering devices, each at a capacity of 150% of the existing centrifuges are appropriate. This will provide VFSA with sufficient dewatering capacity to dewater its connected customers' solids during a one-shift working day. This was the same basis as was used for sizing the existing wastewater treatment plant and will provide adequate capacity into the long-term future.
- Additional gravity thickening capacity is marginal at the present time and therefore more capacity is needed and should be added in a timely manner.

  Potential plant improvements are presented with a discussion of the benefits in terms of operating flexibility and the potential of upgrading the existing plant from mid-1970s to state-of-the-art technology. Implement plant improvements based on an analysis of the benefits and costs.

Alternative 3e (increase Capacity at Existing Plant) was selected because it is the most cost efficient, satisfies ultimate-treatment demand for the affected area in and of itself, is consistent with objectives and policies of municipal planning documents and regulations, and is easily implemented.

The selected alternative satisfies the guidelines established in Section 6. Discharge to high quality or exceptional streams and disturbance of recreational and historical areas are avoided, and construction is minimized. All flow stays within the Schuylkill River Basin, maintaining the water balance there.

B. Prepare a narrative to identify the recommended capital financing plan selected to implement the recommended alternative.

This alternative will be financed by tax-exempt municipal bonds. The individual municipalities will be given the option to make capital contributions to offset the borrowing. A breakdown of the cost estimate is included in Appendix D. The proposed implementation schedule for this project is presented in Table 8-1.

Table 8-1. Implementation Schedule

Date	Task
November 2006	VFSA Approval (August Board Meeting)
December 2006	Submit 537 Plan to Municipalities and County Planning Agencies and Health Department
February 2006	Public Advertisement of Plan
March 2007	Approval obtained from all Agencies
April 2007	VFSA Adopts
July 2007	Submit to PADEP
October 2007	PADEP approval
January 2008	Design Contract
December 2008	Complete Design
April 2008	Obtain Permits
August 2009	Award Contract
September 2009	Begin Construction
December 2010	Begin Operations

APPENDIX A

Valley Forge Sewer Authority

Article of Incorporation

Commonwealth of Pennsylvania

Department of State

3-1-69.03 16

Office of The
Secretary of the Commonwealth

To all to whom these Presents shall come, Greeting:

WHEREAS, In and by the provisions of the Municipality Authorities Act approved May 2, 1945, P. L. 382, as amended, the Secretary of the Commonwealth is authorized and required to issue a

CERTIFICATE OF INCORPORATION

evidencing the incorporation of an authority under the provisions of said Act.

AND WHEREAS, The stipulations and conditions of said Act have been fully complied with by the Municipal Authorities of the Charlestown Township, East Pikeland Township, and Schuylkill Township, all of the County of Chester

Commonwealth of Pennsylvania desiring the organization of

VALLEY FORGE SEWER AUTHORITY

THEREFORE, KNOW YE, That subject to the Constitution of this Commonwealth, and under the authority of Act No. 164, approved the second day of May, Anno Domini one thousand nine hundred and forty-five, P. L. 382, as amended, I DO BY THESE PRESENTS, which I have caused to be sealed with the Great Seal of the Commonwealth, declare and certify the creation, erection and incorporation of

VALLEY FORGE SEWER AUTHORITY

into a body politic and corporate in deed and in law by the name chosen hereinbefore specified, now to become operative with authority to transact business, and which shall exist for a term of fifty years unless sooner dissolved according to law.

Such corporation shall have and enjoy and shall be the subject to all the powers, duties, requirements, and restrictions, specified and enjoined in and by the above Act of Assembly and all other applicable laws of this Commonwealth.

GIVEN under my Hand and the Great Seal of the Commonwealth, at the City of Harrisburg, this 6th day of February, in the year of our Lord one thousand nine hundred and sixty-nine and of the Commonwealth the one hundred and ninety-third

Secretary of the Commonwealth

fmk sat

File: VFSA Act 537

ARTICLES OF INCORPORATION

TO THE SECRETARY OF THE COMMONWEALTH OF PENNSYLVANIA:

In compliance with the requirements of the Municipality Authorities Act of 1945, approved May 2, 1945, P. L. 382, as amended, Charlestown Township, East Pikeland Township and Schuylkill Township, all of which are Second Class Townships situated in Chester County, Pennsylvania, pursuant to duly adopted resolutions expressing the intention and desire of the municipal authorities of said townships to organize an Authority under said Act, do hereby certify:

(a) The name of the Authority shall be VALLEY FORGE SEWER AUTHORITY.

(b) The Valley Forge Sewer Authority is formed under the Municipality Authorities Act of 1945, May 2, P. L. 382, as amended.

(c) The following authorities have been organized under the Municipality Authorities Act of 1945 or the Municipality Authorities Act of 1935 and are in existence in or for the incorporating municipalities:

Charlestown Township Municipal Authority

Schuylkill Township Sewer Authority

(d) The names of the incorporating municipalities are Charlestown Township, East Pikeland Township and Schuylkill Township. The names and addresses of their municipal authorities, being the members of the boards of supervisors of said townships are as follows:

Charlestown Township

Charles D. Glackin	27 Marion Road, Phoenixville, Pennsylvania
Charles E. Ott	Charlestown Road, R.D. #1, Malvern, Pennsylvania
Harold F. Pyle	Yellow Springs Road, R.D. #1, Malvern, Pennsylvania

East Pikeland Township

John F. Yeager	Western Road, R.D. #2, Phoenixville, Pennsylvania
William A. McCord	Valley Dell Road Phoenixville, Pennsylvania
Earl F. Emery	Cold Stream Road Phoenixville, Pennsylvania

Schuylkill Township

C. W. Bothwell, Jr.	City Line Avenue, Phoenixville, Pennsylvania
H. Brent Bamberger	87 Rossiter Avenue, Phoenixville, Pennsylvania
Charles E. Rammel	Country Club Road, Valley Forge, Pennsylvania

(e) The names, addresses and terms of office of the first members of the Board of Valley Forge Sewer Authority are:

	Name	Address	Appointing District	Term of Office Expiring
1	Michael Stevens	Mary Hill Road Phoenixville, Pa.	Charlestown Township	12/31/1969
2	Andrew Nesspor, Jr.	Route 29, R.D.#2 Phoenixville, Pa.	Charlestown Township	12/31/1970
3	John A. Gubanich	6 Glaicia Drive Phoenixville, Pa.	East Pikeland Township	12/31/1971
4	William J. Walker	1251 Township Line Rd., Phoenixville, Pa.	East Pikeland Township	12/31/1972
5	Joseph Weinstock	1234 Pothouse Road Phoenixville, Pa.	Schuylkill Township	12/31/1973
6	Richard Leeson	Ferry Lane & Pawling Road Phoenixville, Pa.	Schuylkill Township	12/31/1969

There shall be six members of the Board of said Authority. Subject to existing and future provisions of law, each Board of Supervisors of the incorporating townships shall continue to appoint two members of the Board of the said Authority.

(f) The purposes for which said Authority is organized are to acquire, hold, construct, improve, maintain, operate, own and lease, either in the capacity of lessor or lessee, sewers, sewer systems or parts thereof, sewage treatment works, including works for treating and disposing of

industrial waste, and such other purposes provided by said Municipality Authorities Act as may be incidental to the above enumerated purposes.

IN WITNESS WHEREOF, the undersigned have executed these Articles of Incorporation on behalf of the Townships above named and have caused the seals thereof to be affixed hereto as of the 28th day of October, 1968.

3-1-69.08 13

ATTEST:

Elizabeth E. Pyle
Secretary of Board of Supervisors
Charlestown Township

CHARLESTOWN TOWNSHIP

BY Charles D. Schenk
Chairman of the Board of Supervisors
Charlestown Township

3-1-69.08 14

EAST PIKELAND TOWNSHIP

Attest: Ralph S Quinter
Secretary of Board of Supervisors of East Pikeland Township

By John F Yeager Pres.
Chairman of Board of Supervisors of East Pikeland Township

SEAL

SEAL

3-1-69.08 15

SCHUYLKILL TOWNSHIP

by

Chairman
SCHUYLKILL TOWNSHIP
BOARD OF SUPERVISORS

ATTEST:

Secretary
SCHUYLKILL TOWNSHIP
BOARD OF SUPERVISORS

Approved and filed in the Department of State on the

6th day of February, A. D. 1969.

Secretary of the Commonwealth

fmk

APPENDIX B

Member Municipality Report

VALLEY FORGE SEWER AUTHORITY
MEMBER MUNICIPALITY COLLECTION SYSTEM

SUPPLEMENT TO THE VFSA
REGIONAL ACT 537 PLAN

FINAL REPORT
SEPTEMBER 1996

REVISED
APRIL 14, 1997

BUCHART-HORN, INC.
CONSULTING ENGINEERS AND PLANNERS
445 W. PHILADELPHIA ST.
P.O. BOX 15040
YORK, PA 17405-7040

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MEMBER MUNICIPALITY COLLECTION SYSTEM

INTRODUCTION

The Valley Forge Sewer Authority (VFSA) is an operating Authority created in 1968 by Charlestown Township, East Pikeland Township and Schuylkill Township, all northern Chester County communities. This Authority is the owner and operator of the 8 million gallon per day regional wastewater treatment plant as well as an extensive sewage collection and transmission system. In addition to providing service to the creating Townships, the Authority provides wastewater treatment services for Easttown Township, East Whiteland Township, Malvern Borough, Tredyffrin Township and Willistown Township, all of which are located in Chester County, south of the Valley Forge Sewer Authority Service Area along U.S. Route 30. Recently, the VFSA has also extended sewer service to a small portion of West Vincent Township.

The three Townships forming the Valley Forge Sewer Authority are called the Member Municipalities. The other municipalities originally connected to the regional wastewater system are the Partner Municipalities.

This report is limited to the evaluation of the Valley Forge Sewer Authority collection system which serves the Member Municipalities. It is intended to serve as an appendix to the Regional Act 537 Plan which addresses the wastewater needs of both the Partner and Member Municipalities. To accomplish the Regional Act 537 Plan, each Member and Partner Municipality was requested to either develop or update its municipal Act 537 Plan detailing the community's wastewater disposal needs. The Member Municipalities each accomplished this task. As a part of the Act 537 planning process, Charlestown, East Pikeland , and Schuylkill Townships designated a sewer service boundary within their municipality. All development, existing and proposed, which is within this boundary is to be provided with public sewage collection facilities for conveyance of wastewater to the regional treatment plant for processing and disposal. The Act 537 Sewer Boundary as designated by the Member Municipalities is displayed on Exhibit No. 1.

EXISTING CONDITIONS

The member municipality collection system currently consists of approximately 68 miles of gravity sewer with pipe diameters ranging in size from 6" to 42", four major pump stations, and six minor pump stations. See Exhibit 2. The sewerage network also includes approximately 3,000 LF of low pressure sewer systems. The majority of the collection system transmits wastewater to the VFSA wastewater treatment plant, via the four major pump stations which operate in series. A small portion of the collection system, located in the southern end of Charlestown Township, transmits wastewater to the regional treatment plant via the Valley Creek Trunk Sewer and Wilson Road Pump Station in Tredyffrin Township.

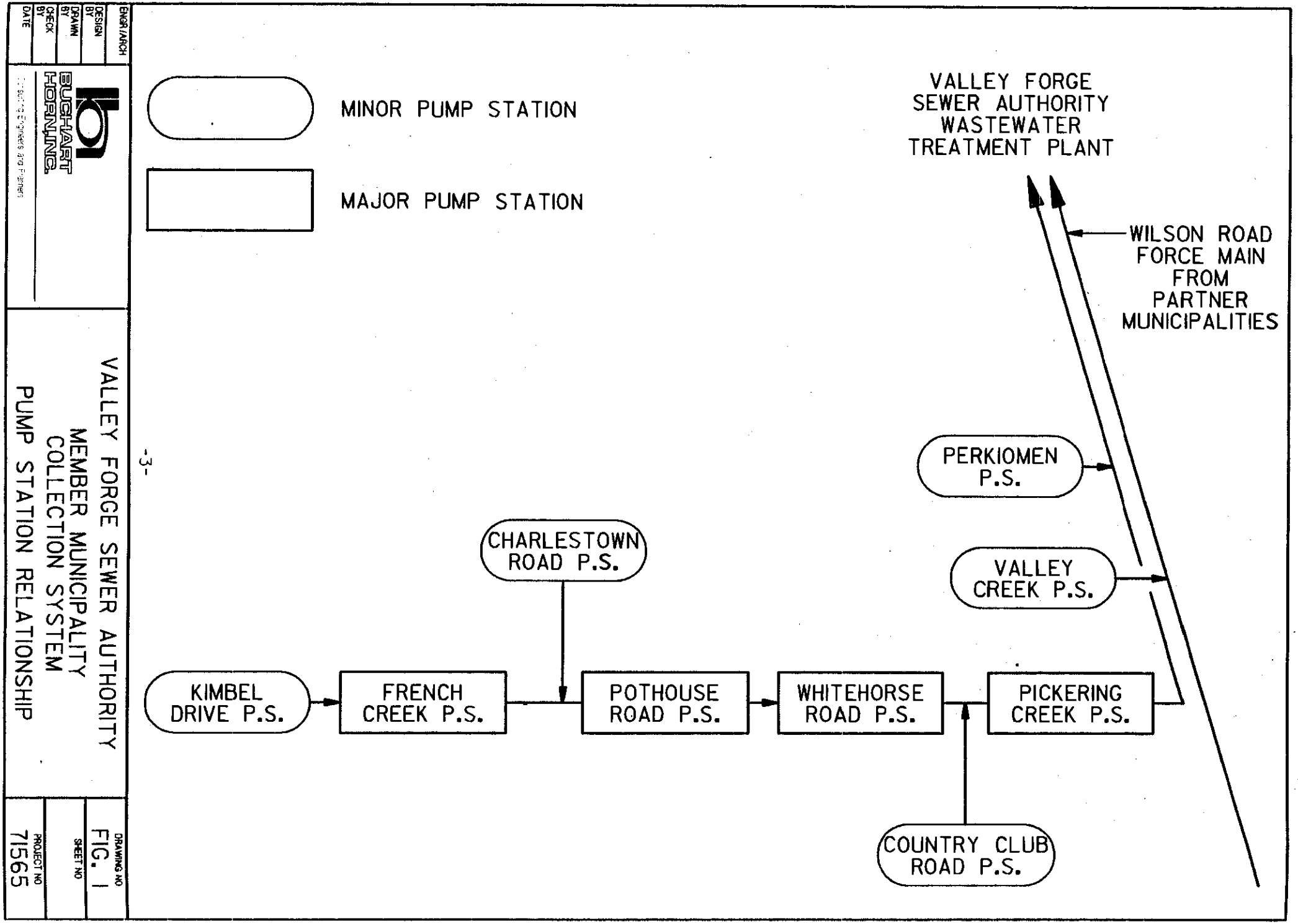
Pump Stations

Four of the minor pump stations pump to the four major pump stations. The remaining two minor pump stations pump directly to the wastewater treatment plant. The relationship between the various pump stations is described below and depicted in Figure 1.

Minor Pump Stations	Major Pump Stations
Kimbel Drive Pump Station discharges to	FRENCH CREEK PUMP STATION discharges to
Sandra La. & Charlestown Rd. Pump Station discharge to	POTHOUSE RD. PUMP STATION discharges to WHITEHORSE RD. PUMP STATION discharges to
Country Club Rd. Pump Station discharges to	PICKERING CREEK PUMP STATION discharges to VFSA WWTP
Valley Creek Pump Station discharges to	WILSON RD. PUMP STA. FORCE MAIN discharges to VFSA WWTP
Perkiomen Pump Station discharges to	PICKERING CREEK P. S. FORCE MAIN discharges to VFSA WWTP

Table No. 1 lists the capacity of each metered pump station and the average daily flow and maximum daily flow recorded at each pump station over the last three years. The gallons per day per dwelling unit for average and maximum daily flows are also provided in Table No. 1. Where known, the results of pump station drawdown testing is noted.

The Valley Forge Region experienced drought conditions in 1991 and 1992 considerably reducing the average daily flows. Therefore, the flow data for 1991 and 1992 would skew the analysis herein, so the discussion is limited to a three year duration (1993 - 1995). Additionally, in January 1996 the Valley Forge Region experienced severe flooding. Watertight manhole inserts had been removed by a contractor in French Creek Drainage Basin invalidating flow data at the four major pump stations, however, the January 1996 flow data has been incorporated into this report for Perkiomen and Valley Creek pump stations.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MINOR PUMP STATION
MAJOR PUMP STATION
VALLEY FORGE SEWER AUTHORITY WASTEWATER TREATMENT PLANT
WILSON ROAD FORCE MAIN FROM PARTNER MUNICIPALITIES
PERKIOMEN P.S.
VALLEY CREEK P.S.
PICKERING CREEK P.S.
CHARLESTOWN ROAD P.S.
KIMBEL DRIVE P.S.
FRENCH CREEK P.S.
POTHOUSE ROAD P.S.
WHITEHORSE ROAD P.S.
COUNTRY CLUB ROAD P.S.
VALLEY FORGE SEWER AUTHORITY
MEMBER MUNICIPALITY COLLECTION SYSTEM
PUMP STATION RELATIONSHIP
PROJECT NO 71565
SHEET NO
DRAWING NO FIG. 1

TABLE NO. 1
PUMP STATION FLOWS

Major Pump Station	Rated Capacity (MGD)	Drawdown (2 pumps on)	Year	ADF (MGD)	ADF (GPD/EDU)	MDF (GPD)	MDF (GPD/EDU)
French Creek	2.88	3.57	1995	0.455	223	1.858	919
			1994	0.475	239	2.55	1,283
			1993	0.440	223	1.759	892
Pothouse Road	3.17	3.96	1995	0.585	226	2.32	907
			1994	0.641	254	3.2	1,270
			1993	0.592	237	2.52	1,008
Whitehorse Road	4.61	6.39	1995	0.660	223	2.54	849
			1994	0.724	250	3.45	1,193
			1993	0.681	238	3.05	1,063
Pickering Creek	5.62	Unknown	1995	0.729	119	2.83	968
			1994	0.793	224	3.24	913
			1993	0.780	223	3.39	771
Perkiomen	0.216	Unknown	1996				0.280
	1,346						
			1995	0.046	221	0.117	564
			1994	0.048	230	0.166	795
			1993	0.049	226	0.186	894
Valley Creek	0.144	Unknown	1996				0.140
	2,634						
			1995	0.011	192	0.038	725
			1994	0.013	253	0.071	1,369
			1993	0.013	260	0.107	2,120

ADF - Annual average daily flow
MDF - Maximum flow day recorded for the year

MGD - Million gallons per day
GPD/EDU - Gallons per day per equivalent dwelling unit

All of the Valley Forge Sewer Authority Pump Stations are wet well/dry well configured. Each has two centrifugal pumps operating in a lead/lag mode. Pickering Creek Pump Station also has a jockey pump which handles normal average daily flows. Each of the major pump stations are equipped with variable pump speed control systems (Flow Matcher), however, these variable speed systems are set to run the pumps at the maximum constant speed. The VFSA determined the electric consumption compared to the power utility's rate structure resulted in no benefit to operating in a variable speed mode.

All of the pump stations are equipped with an emergency generator and with reliable auto transfer switch systems. In addition, each pump station includes an alarm monitoring system with automatic dialer to alert maintenance personnel of operating problems. Each pump station also has connection facilities for portable bypass pumping.

Operations

A formal predictive/preventative maintenance program covers all collection system pumping stations which are visited seven (7) days a week. The program includes routine wet well cleaning.

VFSA assigns two (2) staff members to maintain the sewage collection system. One staff member is the designated collection system maintenance supervisor, and the second position is filled by weekly rotating operators from the wastewater treatment to the collection system. This rotation expands the experience and knowledge base of the overall staff to address emergencies, vacations, and sick leave. Repair maintenance activities are supported by nine (9) plant maintenance staff and outside contractors. The wastewater treatment plant is staffed sixteen (16) hours per day, five (5) days per week. The operation of facilities is monitored on weekends and the WWTP is staffed five (5) hours per day Saturday, Sunday, and holidays. Remote alarms acknowledge emergency conditions and alert VFSA staff to respond to the facility during unattended hours.

The metered pump stations are equipped with twenty-four hour circular charts and totalizer. The metered data is recorded during the daily site visit. Although the operators usually read the meters at approximately the same time each day, various circumstances may cause readings to be delayed or shortened by several hours. Since the totalizer data is used for evaluation, the total flow, typically based on a 24 hour period, may actually cover anywhere from a 20 to 30 hour period. The 6 metered pump stations in the VFSA system need to be read on a consistent schedule. This could be resolved by reading the meter results electronically. The data could also be transmitted back to the wastewater treatment plant, considerably reducing the labor required to visit the pump stations on a daily basis. Conceptual cost $9,000 for first installation, $6,500 for subsequent installations. A pump station alarm system upgrade was accomplished in 1995. The only effort necessitating daily visits now that the alarm upgrade is complete is obtaining the flow data. The pump stations would still be routinely visited to accomplish wet well cleaning and verify system operation.

Collection System

The member municipality collection system is in satisfactory operating condition. Repairs are promptly conducted when problems are identified.

In the collection system, trouble sewer lines are routinely flushed. The VFSA has annual contracts for right-of-way clearing and I/I correction (sewer rehabilitation). The I/I study and corrective action plan includes: key manhole monitoring, plug and weir testing in problem areas, internal video inspection and cleaning and grouting where necessary.

CONNECTIONS TO THE MEMBER MUNICIPALITY COLLECTION SYSTEM

The number of connected equivalent dwelling units, EDUs, is computed quarterly by pump station drainage basin and municipality. Table No. 2 provides the number of EDUs by pump station for the past three years. The EDUs listed are exclusive of EDUs from upstream pump stations.

TABLE NO. 2
YEAR END EDUs BY PUMP STATION①

Major Pump Station②	1993 EDUs	1994 EDUs	1995 EDUs
French Creek	1,859	1,922.5	1,978
Pothouse Road	391	391	392
Whitehorse Road	351.5	435.5	330
Pickering Creek	641	652	650
Minor Pump Station			
Perkiomen	207.5	207.5	201
Valley Creek	50	53	55
Kimbel Drive	98	99	99
Sandra Lane	23	23	22
Charlestown Road	115.5	119.5	128
Country Club Road	0	27	72
②Lee Boulevard	116	154	169
Total	**3,852.5**	**4,084**	**4,096**

①Year End EDUs as counted on the first day of the following year.
② Lee Boulevard is not a pump station. It meters the flow that passes through the Valley Creek Trunk Sewer and Wilson Rd. Pump Station.

As previously noted, only three years of data are presented because 1991 and 1992 were drought years. It was determined that the earlier years would skew the projections developed herein.

The number of EDUs is also reported by member municipality. The number of EDUs connected by municipality for 1993 through 1995 is listed in Table No. 3.

TABLE NO. 3
YEAR END EDUs BY MEMBER MUNICIPALITY

	1993 EDUs	1994 EDUs	1995 EDUs
Charlestown Township	302.5	345.5	377.0
East Pikeland Township	1,886.0	1,927.5	1,975.0
Schuylkill Township	1,664.0	1,789.0	1,717.0
West Vincent Township	0.0	22.0	27.0
Total	**3,852.5**	**4,084.0**	**4,096.0**

FUTURE CONNECTIONS

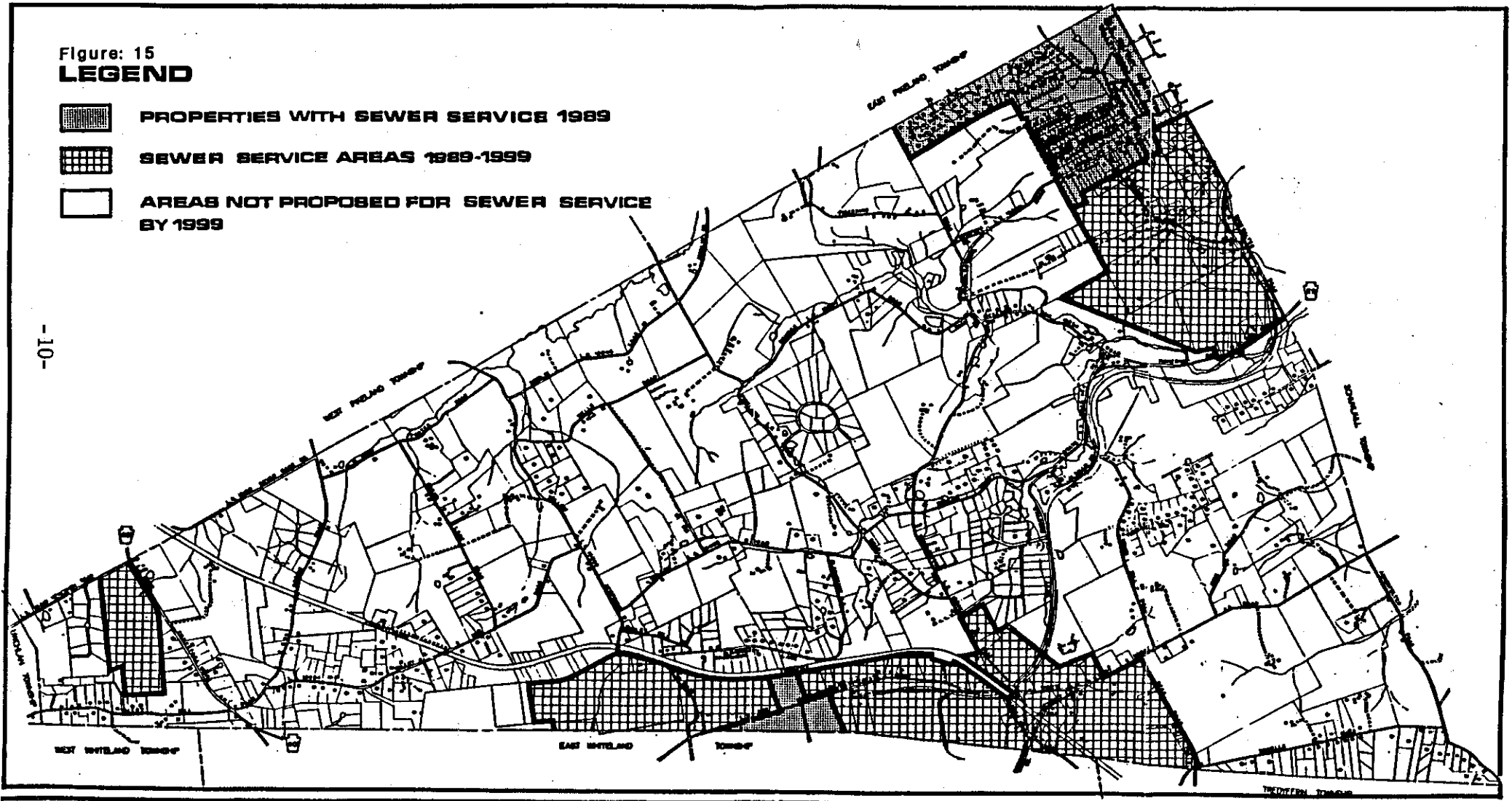
Each of the member municipalities and the Valley Forge Sewer Authority have carefully monitored development within the sewer service area. To ensure an orderly growth, sewage facilities proposed to serve new developments are sized to consider the ultimate needs of the area which the members have designated to be served. The proposed sewer routing must be situated to serve the overall sewerage objective of the Township within which the project is located. New development is typically evaluated by drainage basin. An analysis of the proposed routing is performed to determine whether adjacent properties within the Township's designated sewer service area may ultimately obtain public sewerage service through the proposed sewer. This determination may require the construction of a deeper sewer or provisions for future sewer connections, however, the intent is to eliminate the need for pump station construction in the future. Whenever possible, gravity alternatives are pursued. The Valley Forge Sewer Authority has had considerable success in evaluating proposed sewer extensions by drainage basin rather than just individual developments. Only one additional pump station has been required within the member municipality collection system since the original collection system construction.

Each of the Member Municipalities evaluated the future wastewater disposal needs of its community. As a result of this evaluation, Act 537 planning boundaries were developed. These boundaries are depicted in Exhibit 1. Additionally, each municipality identified proposed and active subdivisions within their political boundary including a development schedule. These subdivisions are depicted in Exhibit 3. This Member Municipality Act 537 Plan uses the 1995 data for the base year. The five year projection is 2000 and the ten year projection is 2005. Because of the varying time tables in which the three member plans were prepared, some adjustments to the growth projections were necessary for consistency.

Charlestown Township

Charlestown Township designated all property within its entire Act 537 sewer service boundary for public sewage service within a 10 year horizon. Figure 2 herein is a copy of Figure 15 of the April 1989 Official Plan Under the Pennsylvania Sewage Facilities Act prepared for Charlestown Township. The ten (10) year horizon depicted thereon is 1989-1999, basically the five year horizon of this document. Therefore, to be consistent with the time frame of the Member Municipality Act 537 Plan, the Township's projections are designated as a 5 year projection on Table No. 4. The developments which are indicated with an asterisk on Table No. 4 are already in some stage of planning or construction and the EDUs are based on approved planning module documentation. The remaining development EDUs were calculated by applying the Township's maximum zoning criteria to the developable acreage within the 537 sewerage boundary defined by the Township. Although there was considerable development planning activity in 1989, the momentum of some of the identified developments has slowed down. Therefore, this plan modifies growth projection to reflect the current development activity.

FIGURE 2



PROPOSED COMMUNITY SEWERAGE SYSTEM

APRIL 1989

CHARLESTOWN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

THOMAS COMITTA ASSOCIATES
PLANNING & DESIGN CONSULTANTS
WEST CHESTER, PENNSYLVANIA 19380

Figure: 15

TABLE NO. 4
COMPARISON OF GROWTH PROJECTIONS
FOR CHARLESTOWN TOWNSHIP

	VFSA/BH Projections			Charlestown Projections[1]
	5 Year	10 Year	Ultimate	5 Year
Charlestown Hunt[2]	105	244		349
Charlestown Hunt Growth	0	0	80	80
Across from Forestas	0	0	5	5
Charlestown Meade[2]	3			3
Commons at Great Valley[2]	66			66
Spring Oak Business Center[2]	73			73
DeVault Meats[2]	73			73
Laura Brooke[2]	20			20
Charlestown Oaks[2]	95	193		288
Charlestown Meadows[2]	0	0	241	241
Along Buckwalter	0	0	5	5
Behind Spring Oak	0	0	21	21
Across from Spring Oak	0	0	9	9
Yellow Springs Road	0	0	10	10
Rte. 29 & Charles Road	0	0	50	50
N. Side of the school	0	0	7	7
Farm Residence	0	0	1	1
Adj. To Laura Brooke	0	0	35	35
Adj. To Charlestown Oaks	0	0	46	46
	435	437	510	1,382
Existing EDUs (1/1/95)	345.5			345.5
Five Year EDUs	435			1,382
Ten Year EDUs	437			
Ultimate EDUs	510			____
Total	**1,727.5**			**1,727.5**

1 Charlestown Township projected all growth within its Act 537 boundary to occur by 1999 (5 year horizon for this plan). The number of EDUs is based on the Township's zoning criteria.

2 Developments in some stage of planning or construction.

East Pikeland Township

The growth projections provided in the East Pikeland Township Act 537 Wastewater Facilities Plan, Phase III, dated August 26, 1991 are based on the 1989 Wasteload Management Report - Chapter 94. The Member Municipality portion of the Chapter 94 for 1989 is furnished in whole as Appendix A to East Pikeland Township's plan. Per page 43 of East Pikeland Township's Act 537 Plan, 800 EDUs were projected to develop within the Township from 1989-1994. Due to a slow down in growth, only 321 of these EDUs were developed by 1994. Although most of the projects identified in 1989 have not developed as planned, they are still active viable projects. This plan updates the East Pikeland Township growth projections based on the Act 537 sewer service boundary defined by the Township and current zoning criteria to create 5 year, 10 year and ultimate growth projections. See Table No. 5.

The East Pikeland Township Act 537 Plan also refers to an 850,000 gpd ultimate growth projection from the 201 Study, prepared in the early 1970's. The ultimate projection used in this Plan considers all potential growth in the remaining developable areas within the 537 boundary set forth by East Pikeland Township.

TABLE NO. 5
GROWTH PROJECTIONS FOR EAST PIKELAND TOWNSHIP

	VFSA/BH Projections		
	5 Year	10 Year	Ultimate
Kimberton Square	10		
Maple Lawn	76		
Huntfield	45		
Kimberbrae	4		
Kimberton Knoll	33		
Kimberton Valley Homes	21		
Deer Run Lane	3		
Townhomes @ Kimberton	150	86	
Brimful Farms	0	50	
Senior Life Choice	0	28	
Spring House Deli	2		
Barley Farms	0	43	
Rte 113 @ Huntfield			81
Rte 113 @ Shelly's			6
Rte 724 @ Rte 23			40
E. 7 Stars @ Kimberton TH			27
E. 7 Stars off Hartman			12
Frog Hollow @ Miller Rd. N.			38
Hares Hill @ Ruth			5
Hares Hill @ Camp Council			8
Hares Hill @ Prizer			15
Hares Hill @ Kimberbrae			52
Total EDUs	344	207	284

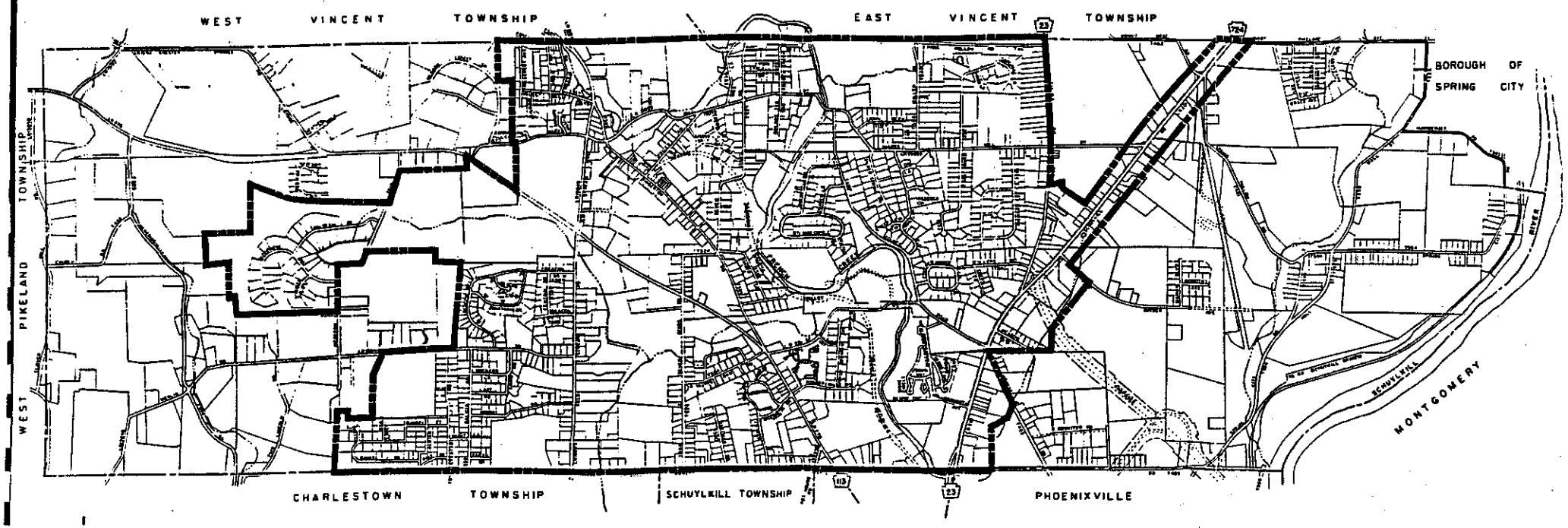
Existing EDUs (1/1/95)	1,927.5
5 Year EDUs	344
10 Year EDUs	207
Ultimate EDUs	284
TOTAL	**2,762.5**

FIGURE 3

EAST PIKELAND TOWNSHIP WASTEWATER FACILITIES PLAN

EAST PIKELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

SCALE IN FEET



MAP V-1

SEWER SERVICE AREA

PROPOSED VALLEY FORGE SEWER AUTHORITY SERVICE AREA BOUNDARY

Schuylkill Township

Schuylkill Township's Act 537 Plan Update includes a Table of Anticipated Development on page 1 of the Plan Summary. It includes projections for both a five year (1995-1999) and ten year (2000-2004) planning horizon. The Township's Plan and this Plan differ by one year in their time table. Therefore, the Township's information has been updated to coincide with the planning period of this Plan. See Table No. 6. Additionally, the time frame for the MacAvoy, Rhinehart and Maisfield projects were extended to a 10 year duration due to the slow down in growth experienced in recent years.

Schuylkill Township's Act 537 boundary map titled "Act 537 Comprehensive Wastewater Plan Showing Development - 1993 - 2002, Exhibit No. 1" is included herein as Exhibit No. 5.

TABLE NO. 6
COMPARISON OF GROWTH PROJECTIONS
FOR SCHUYLKILL TOWNSHIP

	VFSA/BH Projections			Schuylkill Projections		
	5 Year	10 Year	Ultimate	5 Year	10 Year	Ultimate
Chapel View Estates	12			24		
Rte 23 Comm. (Alpha Rlty)	6			15		
Buono Tract	12			0		
MacAvoy	0	274		137	137	
Valley Forge Woods	240	85		240	85	
Rhinehart	0	130		80	95	
Maisfield	0	48		48		
French Creek - misc. (Ind.)	0	0		10	10	
Along Charlestown Hunt Inter	5			5		
Health Care Jordon	0	0		44		
Valley Creek	2			0	0	10
Miscellaneous	0	0		25	25	
Showalter Farm		0			80	
Meadowbrook Golf Course		0			58	
Mainwaring		5			5	
Thompson Tract						10
Thompson/Gold						10
Univ. Of PA						5
Misc. Resubdiv-Jug Hollow						25
Rte 23 North Corridor			29			
N. Side of Pawling Rd.			80			
North of Conrail			196			
Intersection @ Maisfield			6			126
Bull Tavern			3			
RR Tracks			36			
East Phillip			28			
By Valley Forge Woods			6			
Total EDUs	277	542	384	628	495	186
Existing EDUs	1,789	(1/1/95)		1,666	(1/1/94)	
Five Year EDUs	277			628		
Ten Year EDUs	542			495		
Ultimate EDUs	384			186		
TOTAL	**2,992**			**2,973**		

Basis of EDU Growth Projections

Table No. 7 presents the basis for the EDU growth projections developed in this report.

TABLE NO. 7
EDU GROWTH PROJECTIONS

	1994 Existing EDUs	5 Year	10 Year	Ultimate
French Creek P. S.				
Drainage Basin				
Stony Run	0	0	0	20
Kimbel Dr. P.S.	99	99	142	142
French Creek P.S.	1,922.5	2,275.5	2,439.5	2,703.5
Subtotal	2,021.5	2,374.5	2,581.5	2,865.5
Pothouse Rd. P.S.				
Drainage Basin				
Sandra Lane P.S.	23	23	23	23
Charlestown Rd. P.S.	119.5	122.5	122.5	127.5
Pothouse Rd. P.S.	391	391	391	396
Subtotal	533.5	536.5	536.5	546.5
Whitehorse Rd. P.S.				
Drainage Basin				
Whitehorse Rd. P.S.	435.5	545.5	789.5	869.5
Subtotal	435.5	545.5	789.5	869.5
Pickering Creek P.S.				
Drainage Basin				
Country Club Rd. P.S.	27	267	352	358
Pickering Creek P.S.	652	684	947	1,020
Subtotal	679	951	1,299	1,378
Perkiomen				
Drainage Basin				
Perkiomen P.S.	207.5	207.5	401.5	706.5
Subtotal	207.5	207.5	401.5	706.5
Valley Creek				
Drainage Basin				
Valley Creek P.S.	53	55	55	55
Subtotal	53	55	55	55
Valley Creek Trunk				
Sewer Drainage Basin				
Lee Tire Blvd.				
metering station	154	386	386	519
Route 401	0	0	0	241
Sidley Rd.	0	95	288	334
Subtotal	154	481	674	1,094
TOTAL	**4,084**	**5,151**	**6,337**	**7,515**

Future Flows

Appendix B provides the backup for these projections. Looking at the first page in Appendix B, the year end connected EDUs are as furnished from the VFSA billing department. The EDU count used was prepared as of 1/1/95, see Appendix A.

The second column in Appendix B, "remaining plotted EDUs" is EDUs predicted to develop within the next five (5) years and establish the five (5) year planning horizon.

The column titled "proposed EDUs" includes specific projects that have been identified and are in some stage of the subdivision approval process. It also includes portions of previously identified projects not expected to fully develop in the next five years. These EDUs establish the t%n (10) year planning horizon utilized in this report.

Finally, the "undeveloped land" column was created by determining developable acreage. Various maps were reviewed and site views accomplished to confirm pockets of developable land within the Act 537 sewer service boundaries designated by the Member Municipalities. The areas are identified on the second page of Appendix B. The maximum allowed zoning condition was used to quantify the development in these areas.

Each subdivision and tract of land identified was assigned an anticipated point of connection to the sewage collection network in order to analyze its impact to the system through the computer model. Identified subdivisions are depicted on Exhibit 3.

NEEDS ANALYSIS

Existing Flows

VFSA flows from the Member Municipality network over the last three years and the GPD/EDU are listed in Table No. 8.

TABLE NO. 8
MEMBER MUNICIPALITY SYSTEM FLOWS

Year	Average Daily Flow (MGD)	GPD/EDU
1995	0.815	201
1994	0.879	226
1993	0.855	223

Infiltration and Inflow

The average GPD/EDU for the entire Member Municipality system indicates flows attributed to infiltration and inflow (I/I) are minimal. Field experience, however, finds that there is still considerable inflow in the system. In 1994, the maximum day flow for French Creek Pump Station (PS) was 3.5 times the annual average daily flow; 5.3 times at Pothouse Road PS; 5.7 times at Whitehorse Rd. PS; 3.3 times at Pickering Creek PS; 3.8 times at Perkiomen PS; and 5.5 times at Valley Creek PS. These peaks are based on daily flows. Hourly peaks may be considerably greater.

During a previous review of the collection system, Buchart-Horn noted several manhole lids that were not properly bolted down and/or missing the gasket. In 1995, VFSA staff corrected many of these deficiencies in the French Creek Drainage Basin. The remainder of the system should be inspected and further corrections made.

Other inflow reduction efforts are much more difficult to implement. These include inspecting existing services for connection of sumps, roof drains and/or floor drains. At this time, effort should be concentrated on manhole repairs and sewer and lateral inspection and testing.

As previously indicated, VFSA has dedicated resources to ensure the proper upkeep of the Member Municipality collection system. With time, however, system deficiencies which lead to excessive infiltration and inflow, I/I must be expected. A cursory review of the collection system by drainage basin was performed to determine where excessive I/I might be entering the system.

Appendix C provides the tables and graphs used to evaluate the collection system. The graphs compare maximum day flows by month specified as gpd/in-dia-mi to the average, 3 month maximum, and 3 month minimum gpd/in-dia-mi for each pump station drainage basin. The

following table lists the number of months by pump station drainage basin where the gpd/in-dia-mi exceeded 3,500 gpd/in-dia-mi.

TABLE NO. 9
NUMBER OF MONTHS WHERE FLOW RATES EXCEEDED 3,500 GPD/IN-DIA-MI

	1993	1994	1995	Total
French Creek	2	1	1	4
Pothouse	4	5	2	11
Whitehorse	3	2	1	6
Pickering	2	0	1	3
Perkiomen	2	2	1	5
Valley Creek	2	1	0	3

Pothouse Road Pump Station has experienced the most flow events in excess of 3,500 gpd/in-dia-mi. It has also experienced the highest gpd/in-dia-mi flow rates; 9,854 gpd/in-dia-mi in December 1993 and 11,323 gpd/in-dia-mi in March 1994.

Whitehorse Road Pump Station and Perkiomen have the next highest quantity of flow events in excess of 3,500 gpd/in-dia-mi. I/I reduction efforts should be concentrated in these three pump station drainage basins based on average gpd/in-dia-mi flow rates as well as monthly maximum flow rates with the following priority:

1. Pothouse Rd. Pump Station
2. Perkiomen Pump Station
3. Whitehorse Rd. Pump Station

A considerable amount of I/I reduction effort has been put forth in the Pothouse Road Pump Station drainage basin and is reflected in the decrease of months with high gpd/in-dia-mi flow rates in 1995. The success of these efforts should be determined by evaluating the 1996 data for the recent wet months.

VFSA performs an annual I/I analysis of various parts of the collection system which includes flow monitoring. Where flow data indicates a high level of inflow in a particular drainage basin, a more concentrated effort to reduce inflow ***is*** accomplished with night weiring and televising.

Table No. 7 lists the projected number of EDUs for the Member Municipalities by various growth horizons. Table No. 10 provides average daily wastewater flow projections for the member municipalities.

TABLE NO. 10
WASTEWATER FLOW PROJECTIONS
FOR THE MEMBER MUNICIPALITIES

Growth Horizon	Total EDUs	Flow * Projection (MGD)
Existing	4,084	1.123
5 Yr.	5,151	1.417
10 Yr.	6,337	1.743
Ultimate	7,515	2.067

* flows based on 275 GPD/EDU

Since the creation of the Valley Forge Sewer Authority, the Member and Partner Municipalities have used 275 gallons per day as the base flow for an EDU. The historic GPD/EDU factor for VFSA has been well below 275 GPD/EDU since 1985. The ten year average, 1985-1994, is 218 GPD/EDU. Therefore, the 275 GPD/EDU flow rate is considered conservative when computing flow projections for the Member Municipality collection system and is used throughout this planning document.

The flow allocation of 2.124 MGD assigned to the Member Municipalities is adequate for all growth horizons.

Sewers

In 1986, Buchart-Horn developed nine models which analyze the member municipality collection system by pump station drainage basin. The data from upstream pump stations is incorporated into the downstream pump station's model. The model is used to simulate a "worst case" wet weather scenario. The model then identifies which sewer segments would become surcharged and by how much under this scenario.

The model was developed by entering defining data for each sewer segment. Data entry included upstream and downstream manhole number and invert, pipe diameter and slope, and the number of equivalent dwelling units connected to each pipe section.

The manhole numbering was established by subdrainage basin. There are four major drainage basins within the three municipalities, numbered 1 through 4. Each of the major drainage basins is subsequently divided into subdrainage basins. These drainage division identifications form the first three numbers of any manhole. Each manhole with a subdrainage basin is then numbered beginning with 100. Therefore, manhole 2.16-100 is manhole 100 in drainage basin 2, subdrainage basin 16.

Table No. 11 provides the drainage and subdrainage basin assignment by pump station.

TABLE NO. 11
DRAINAGE AND SUBDRAINAGE BASIN ASSIGNMENT BY PUMP STATION

Pump Station	Associated Subdrainage Basins
French Creek	2.01, 2.02, 2.03, 2.04 2.05, 2.06, 2.07, 2.08 3.02, 3.06
Pothouse Road	2.09
Whitehorse Road	3.04
Pickering Creek	2.00, 3.01, 3.02, 3.03
Perkiomen	4.02
Valley Creek	4.05
Kimbel Drive	3.07
Charlestown Road	3.06
Sandra Lane	3.05
Country Club Road	3.15

The sewer model is updated to reflect new connections and new sewer segments added to the collection system. Buchart-Horn uses a spreadsheet to track projects proposed in the VFSA system. Appendix A includes a table of connections by pump station drainage basin. This data, in conjunction with the quarterly listing of EDUs prepared by the Authority, also furnished in Appendix A, is used to establish the existing conditions for the model.

To simulate the worst case scenario, the lowest monthly average daily flow and maximum day flow in the analysis year are determined by pump station drainage basin. The lowest month average daily flow, considered the dry weather flow, is subtracted from the maximum day flow. The difference is then divided by the linear feet of sewer in the pump station drainage basin to develop an infiltration/inflow, I/I, factor expressed in gallons per day per linear feet, GPD/LF. The I/I factor and lowest monthly average daily flow are compared to the values used for the previous year's model and the highest of each of these is entered into the computer model; thus establishing the wettest event that might be seen in a 24 hour period. This event could occur once a year or might not occur for several years. This worst case scenario is used to evaluate available capacity of each sewer segment within the collection system.

Once the existing conditions are evaluated, the model is then used to determine the impact of new connections to the collection system. The model was used to evaluate the available capacity within the collection system over the 5 and 10 year growth horizons and ultimately. For each analysis period, the projected growth was entered into the computer model at the expected point of connection. The projected growth was expressed as a peak flow value and was based on the number of EDUs multiplied by 275 GPD/EDU and a peaking factor of 2.5.

Sewer segments which will surcharge under the worst case scenario were identified by drainage basin and growth horizon. Table Nos. 12A through D identify those segments. The tables also provide a conceptual construction estimate to increase the sewer capacity by planning horizon. The costs listed are construction costs only and do not include additional project costs such as engineering and legal fees. Where applicable, the future development which causes the surcharge is also identified. Appendix D provides a detailed description of the sewer segments including length, slope, diameter, capacity, and basis for the cost estimate.

Exhibit 4 depicts the sewer segments predicted to surcharge. It also identifies the planning horizon that will cause the surcharge.

TABLE NO. 12A
SEWER SECTIONS PREDICTED TO SURCHARGE
BASED ON CURRENT WET WEATHER CONDITIONS

Drainage Basin	Surcharged Section		Enlargement Detail on Exhibit 4	Conceptual Construction Est. (Present yr cost)
French Creek	2.08	118-102	3	$ 39,500
	2.04	109-108	4	24,900
	2.04	106-105	4	26,500
Pothouse Rd.	2.09	105-104	5	$ 54,500
Whitehorse Rd.	none		---	----
Pickering Creek	3.03	353-352	8	$ 19,200
	3.03	317-358	9	29,000
	3.15	104-103	10	①

① The identified surcharge at this sewer segment is minimal. The sewer should be monitored periodically under wet weather conditions. Upgrade will be necessary under the ultimate growth projection scenario.

TABLE NO. 12B
SEWER SECTIONS PREDICTED TO SURCHARGE BASED ON THE FIVE YEAR PLANNING HORIZON

Drainage Basin	Surcharged Section		Enlargement Detail on Exhibit 4	Conceptual Construction Est. (Present yr cost)
French Creek	2.06	102-101	1	$ 22,700
	2.04	110-122	4	7,700
	2.04	122-109	4	18,500
Pothouse Rd.	none		---	---
Whitehorse Rd.	3.04	446a-446	7	$ 29,700
Pickering Creek	3.03	353a-353	8	$ 11,700

TABLE NO. 12C
SEWER SECTIONS PREDICTED TO SURCHARGE BASED ON THE TEN YEAR PLANNING HORIZON

Drainage Basin	Surcharged Section		Enlargement Detail on Exhibit 4	Conceptual Construction Est. (Present yr cost)
French Creek	2.05 101 2.04 110		4	$ 29,700
Pothouse Rd.	① 2.09	102-100a	5	$ 23,300
Whitehorse Rd.	none		---	---
Pickering Creek	none		---	---

① Due to known surcharged conditions in this area, these sewer segments will be evaluated for correction now rather than in the 10 year planning horizon.

TABLE NO. 12D
SEWER SECTIONS PREDICTED TO SURCHARGE BASED ON ULTIMATE GROWTH CONDITIONS

Drainage Basin	Surcharged Section		Enlargement Detail on Exhibit 4	Development Causing Surcharge
French Creek	2.07	107-106	2	Rte. 113 @ Huntfield & @ Shellys
	2.06	105-104	1	Rte. 113 @ Huntfield & @ Shellys Hares Hill Rd. by Kimberbrae
Whitehorse Rd.	3.04	460-457	6	---
	3.04	453-452	7	---
Pickering Creek	3.03	325-324	9	---
	① 3.15	108-106	10	---

① Surcharge under ultimate scenario is minimal. Recommend monitoring prior to upgrade.

A list of the sewer segments identified in Table Nos. 12A through D were submitted to VFSA for field verification. VFSA identified known problems near Pothouse Rd. Pump Station, (segments 2.09 105-104 and 2.09 102-100a).

VFSA questioned the validity of the surcharge prediction of section 3.03 325-324. This sewer is identified for surcharge under ultimate conditions only. It appears that the slope may be steeper than that noted on the as-built plans. Before any action is taken on this section, the slope should be field verified.

Where there is no visible indication of surcharging, VFSA should monitor the identified segments during wet weather conditions. This may be accomplished by installing surcharge indicators in each manhole. It is recommended that indicators be installed in all segments identified in Table Nos. 12A through C. For estimating purposes, it is assumed that 10 indicators will be purchased allowing 5 segments to be monitored at a time. The indicators would be relocated after a significant wet weather event. Based on the extent of the surcharge identified, the sewer upgrade projects may then be prioritized. Cost $1,100. Currently, VFSA is making their own surcharge indicators for use in the system.

For the purpose of this study, it is assumed that all of the sewer segments identified as surcharging under current wet weather scenario, Table No. 12A, will require upgrade. The new pipe diameters recommended in Appendix D are sized to ensure the ultimate flow projection can be accommodated. Appendix B lists the developments predicted to occur in the five (5) and ten (10) year planning horizon and their associated drainage basin. As these developments commence, the sewer segments identified in Table Nos. 12B and C should be equipped with surcharge indicators. When surcharging is noted, a priority may be assigned for upgrading the sewer segments. In some instances, the extent of the surcharging may be insignificant compared to the cost of upgrading. The surcharge indicators will allow this to be determined. Decisions to upgrade sewer segments will be based on the field conditions observed.

The VFSA, in their field observations, has indicated that the sewer segments in the Pothouse Rd. drainage basin; 2.09 105-104 and 2.09 102-101-100a require upgrade. Simultaneously, the sharp change in flow direction at manhole 102 should be corrected. See enlargement detail 5 on Exhibit 4. It is recommended that manhole 2.09-102 be relocated 35 LF upstream of its current position for a smoother transition at both manhole 2.09-102 and 2.09-101 on the pump station site. Upgrading sewer section 2.09 105-104 would be accomplished as a part of the same project, conceptual construction cost in 1996 dollars - $77,800.

Similarly, when designed, the routing of sewer segments 2.04 110-122-109 should be evaluated to see if a smoother transition may be accomplished. See enlargement detail 4 on Exhibit 4. Manhole 2.04-110 could possibly tie directly into manhole 2.04-109 instead of 2.04-122. Sewer segment 2.04-122 would continue to flow to 2.04-109. Under the 10 year planning horizon, sewer section 2.05-101-2.04-110 is identified for potential surcharge. Although not considered a necessary project at this time, the segment should be closely monitored in conjunction with the 2.09 110-122-109 series. It could be beneficial to combine these projects if the surcharge indicators do not identify an immediate need to upgrade the 2.09 110-122-109 series.

The conceptual construction estimate to resolve the existing sewer capacity problems as well as the problems just prior to Pothouse Road pump station is $216,900 in 1996 dollars. Project costs, those additional costs required to accomplish a project including administrative, engineering and legal fees are discussed under the implementation section of this report and are not included in the conceptual construction estimate.

Metered Pump Stations

As previously stated, the flows developed in the computer model are used to predict a worst case scenario in order to ensure adequate carrying capacity within each sewer segment. These flows are considered excessive for the evaluation of pump station capacity. Therefore, a computation was developed to predict a reasonable peak flow condition for each pump station. The flow projections are presented in Tables Nos. 13-18. The methodology developed to

project pump station flows requires flow meter records. Therefore, the unmetered pump stations will be discussed separately.

For each metered pump station, the maximum GPD/EDU rate experienced within any day over the past three years was determined. See the column titled MAX GPD/EDU on Table Nos. 13-18. As previously stated, a three year analysis is being performed. The 1991 and 1992 flow data would skew the analysis due to drought conditions experienced in the region. Where available, the flow data from the flood of 1996 was incorporated into the analysis. (Note: This data was used for Perkiomen and Valley Creek pump stations only. There were several circumstances which invalidated the flow data for the four major pump stations.)

The second value necessary for the flow projections is the GPD/EDU rate for the annual average daily flow. See the column titled AVG GPD/EDU.

Existing wet weather flow conditions were established by multiplying the current EDUs by the MAX GPD/EDU. (Note: The net maximum GPD/EDU factor was used for Pothouse, Whitehorse and Pickering Pump Stations since there is a considerable flow contribution from the upstream pump stations.)

The pump station flows for the planning horizons were calculated by multiplying the EDU growth projection by the AVG GPD/EDU and by a peaking factor of 2.5. This flow was then added to the current flow calculation. Where upstream pump stations are involved, two flow projections were developed. The first projection was developed by adding the flow projection from the upstream pump station to the flow projection developed for the specific pump station. The second projection was developed by adding the actual pump rate of the upstream pump station to the projection for the specific pump station. Where the projected flow exceeds the rated capacity of the upstream pump station, the projected flow was added to the downstream pump station. Both individual pump station and cumulative EDU counts are provided for those pump stations which operate in series on Table Nos. 14-16.

To allow comparison, the flow projections developed by the computer model are presented in each table. These values were compared to the drawdown capability of the pump station, if known as a second comparison.

TABLE NO. 13
FRENCH CREEK PUMP STATION
(all flows in MGD)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	MAX GPD/EDU
	2.88	3.57				
1993			0.440	223	1.759	892
1994			0.475	239	1.642	826
1995			0.455	223	1.858	919

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate
Computer Model - Worst Case Scenario		3.121	3.380	3.490	3.794
Computation based on max day gpd/edu for existing edus and 239 gpd/edu peaked 2.5 times for future edus.	FC @ 919 gpd/edu	1.858	2.069	2.192	2.362

1996 flood -
In 1996 the wet well flooded to approximately 2' below the top of the wet well structure, however the meters were not working and the actual flow is unknown. This event occured when several manhole watertight inserts in the drainage basin had been removed. Therefore, the flow data from this event has not been used for any of the four major pump stations.

1994 -
The maximum day flow data was considered invalid because high flow and moving ice sheared off a manhole in the drainage basin on that day. The second highest flow day in 1994 was used for the four major pump stations.

	FUTURE FC EDUS	TOTAL
CURRENT		2021.5
5 YEAR	353	2374.5
10 YEAR	560	2581.5
ULTIMATE	844	2865.5

TABLE NO. 14
POTHOUSE ROAD PUMP STATION
(all flows in MGD)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	NET MAX DAY FLOW	MAX GPD/EDU
	3.17	3.96					
1993			0.592	237	2.522	0.763	1436
1994			0.641	254	2.519	0.877	1650
1995			0.585	226	2.317	0.459	847

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate
Computer Model - Worst Case Scenario		4.317 (fc@3.12)	4.575 (fc@3.38)	4.821 (fc@3.57)	4.989 (fc@3.794)
Computation based on max day gpd/edu for existing edus and 254 gpd/edu peaked 2.5 times for future edus. French Creek flow rate based on rated capacity and actual flow projections, see Table 13	PH @ 1650 gpd/edu & FC @	3.760 2.88 mgd	3.762 2.88 mgd	3.762 2.88 mgd	3.769 2.88 mgd
	PH @ 1650 gpd/edu & FC @	2.738 1.858 mgd	2.951 2.069 mgd	3.075 2.193 mgd	3.251 2.362 mgd

	FUTURE PH EDUS	TOTAL PH EDUS	TOTAL
CURRENT		533.5	2555
5 YEAR	3	536.5	2911
10 YEAR	3	536.5	3118
ULTIMATE	13	546.5	3412

TABLE NO. 15
WHITEHORSE ROAD PUMP STATION
(all flows in mgd)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	NET MAX DAY FLOW	MAX GPD/EDU
	4.61	6.39					
1993			0.681	238	3.050	0.528	1458
1994			0.724	250	2.991	0.472	1271
1995			0.660	223	2.540	0.223	607

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate
Computer Model - Worst Case Scenario		4.731 (ph@4.32)	5.099 (ph@4.58)	5.345 (ph@4.69)	5.642 (ph@4.989)
Computation based on max day gpd/edu for existing edus and 250 gpd/edu peaked 2.5 times for future edus. Pothouse flow rate based on actual flow projections and flow projections with a pump station upgrade to 2600 gpm or 3.75 mgd	WH @ 1458 gpd/edu & ph @	4.385 3.75 mgd	4.454 3.75 mgd	4.606 3.75 mgd	4.675 3.769 mgd
	WH @ 1458 gpd/edu & ph @	3.373 2.738 mgd	3.655 2.951 mgd	3.931 3.075 mgd	4.156 3.250 mgd

	FUTURE WH EDUS	TOTAL WH EDUS	TOTAL
CURRENT	.	435.5	2990.5
5 YEAR	110	545.5	3456.5
10 YEAR	354	789.5	3907.5
ULTIMATE	434	869.5	4281.5

TABLE NO. 16
PICKERING CREEK PUMP STATION
(all flows in mgd)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	NET MAX DAY FLOW	MAX GPD/EDU
	5.62						
1993			0.780	223	3.393	0.343	536
1994			0.793	224	3.217	0.226	347
1995			0.729	199	2.828	0.288	405

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate	drawdown
Computer Model - Worst Case Scenario		5.674 (wh@4.73)	6.068 (wh@5.1)	6.534 (wh@5.35)	7.019 (wh@5.642)	7.768 (wh@6.39)
Computation is based on max day gpd/edu for existing Pickering edus and 224 gpd/edu peaked 2.5 times for future edus. Whitehorse P.S. flows based on rated capacity or greater, see Table No. 15	PI @ 536 gpd/edu & WH @	4.974 4.61 mgd	5.126 4.61 mgd	5.321 4.61 mgd	5.430 4.675 mgd	7.145 6.39 mgd
	PI @ 536 gpd/edu & WH @	3.737 3.373 mgd	4.171 3.655 mgd	4.642 3.931 mgd	4.911 4.156 mgd	7.145 6.39 mgd

	FUTURE PI EDUS	TOTAL PI EDUS	TOTAL
CURRENT		679	3669.5
5 YEAR	272	951	4407.5
10 YEAR	620	1299	5206.5
ULTIMATE	699	1378	5659.5

TABLE NO. 17
PERKIOMEN PUMP STATION
(all flows in mgd)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	MAX GPD/EDU
	0.216					
1993			0.049	236	0.186	894
1994			0.048	230	0.166	795
1995			0.046	221	0.117	564
1996					0.280	1346

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate
Computer Model -		0.226	0.226	0.362	0.569
Computation is based on max day gpd/edu for existing Perkiomen edus and 236 gpd/edu peaked 2.5 times for future edus.	PE @ 1346 gpd/edu	0.279	0.279	0.394	0.574

	FUTURE PE EDUS	TOTAL
CURRENT		207.5
5 YEAR	0	207.5
10 YEAR	194	401.5
ULTIMATE	499	706.5

TABLE NO. 18
VALLEY CREEK PUMP STATION
(all flows in mgd)

	RATED CAPACITY	DRAW-DOWN	ADF	ADF GPD/EDU	MAXIMUM DAY FLOW	MAX GPD/EDU
	0.144					
1993			0.013	260	0.107	2120
1994			0.013	253	0.071	1369
1995			0.011	192	0.038	725
1996					0.140	2634

FLOW PROJECTIONS

		Current	5 yrs	10 yrs	ultimate
Computer Model -		0.103	0.103	0.103	0.103
Computation is based on max day gpd/edu for existing Valley Creek edus and 260 gpd/edu peaked 2.5 times for future edus.	VC @ 2634 gpd/edu	0.140	0.141	0.141	0.141

	FUTURE VC EDUS	TOTAL
CURRENT		53
5 YEAR	2	55
10 YEAR	2	55
ULTIMATE	2	55

As discussed previously, two flow projections were developed for each pump station. The first is considered more realistic based on existing pump station flow data and field observations by VFSA staff. For example, although French Creek Pump Station may be pumping at 2.88 mgd, all of the maximum day flows for Pothouse Road pump station are less than 2.88 mgd, see Table No. 14. Additionally, it was reported by VFSA operations staff that the lag pump at Pothouse Road pump station turns on approximately once a year.

Based on this discussion and the data from Table Nos. 13-18, the following statements may be made.

1. **French Creek Pump Station** is not projected to exceed its rated capacity for any of the planning horizons, see Table No. 13.

2. **Pothouse Road Pump Station** is not projected to exceed its rated capacity until the ultimate growth planning horizon. When French Creek Pump Station is in operation at 2.88 mgd, even the current wet weather flow scenario projects flows in excess of the pump station rated capacity. However, Pothouse Road Pump Station can apparently handle the extreme wet weather events. The increase in flows projected from the current scenario has minimal impact to the flow projections. All of the flow projections are less than the drawdown capacity of the pump station, see Table No. 14.

3. **Whitehorse Road Pump Station** is not projected to exceed its rated capacity at all under the first projection scenario and not until the ultimate planning horizon for the second growth scenario, see Table No. 15.

4. **Pickering Creek Pump Station** is not projected to exceed its rated capacity under either growth scenario. It may experience flow problems when Whitehorse Road Pump Station operates at drawdown, see Table No. 16.

5. **Perkiomen Pump Station** could actually exceed its rated capacity based on current wet weather conditions. The majority of the additional capacity problem will be caused by the proposed MacAvoy development, the Meadows at Valley Forge, see Table No. 17.

6. **Valley Creek Pump Station** will not reach its rated capacity under any of the planning horizons presented herein, however, the projections are very close to the rated capacity, see Table No. 18.

Both Pothouse Rd. and Perkiomen Pump Stations require further evaluation to address potential capacity problems during wet weather flow conditions. Valley Creek Pump Station must also be considered as the pump station flows almost reached the rated capacity in 1993.

The Country Club Road Pump Station serves the new Valley Forge Woods and Fernleigh Townhomes project. The pump station was completed in 1994 and currently has 120 connections. Although the pump station will be metered, good meter data is not available at this time. The pump station's rated capacity of 0.454 MGD was established to serve the ultimate growth projected for the subdrainage basin. No action is required for this pump station.

The drawdown capacity of some of the pump stations was recently computed by VFSA staff. This data is included where known on Table Nos. 13-18. It is recommended that VFSA conduct additional drawdown tests at Pothouse Rd. and Valley Creek pump stations before any upgrade activities are implemented. Procedures for performing the drawdown tests are provided in Appendix E.

Unmetered Pump Stations

The three unmetered pump stations are small tributaries to the major pump stations. Kimbel Drive Pump Station feeds the French Creek Drainage Basin. Sandra Lane and Charlestown Road Pump Stations feed the Pothouse Road drainage basin. These smaller pump stations were evaluated based on same conditions as the drainage basin which they are a part of. The computer model was run for each pump station and no surcharged sewer sections were identified.

As presented in Table Nos. 13 through 18, the available capacity for each tributary pump station was calculated. See Table No. 19.

TABLE NO. 19
EXISTING AND PROJECTED FLOWS FOR UNMETERED PUMP STATIONS

(all flows in MGD)

Pump Station	Rated Capacity	Basis of Current Flows of Projections	Flow Projections Current	5 yr	10 yr	Ultimate
Kimbel Dr.	0.144	Current: 919 GPD/EDU Future: 239 GPD/EDU Peaked 2.5 times	0.091	0.091	0.117	0.117
Sandra La.	0.288	Current: 1,650 GPD/EDU Future: 254 GPD/EDU Peaked 2.5 times	0.038	0.038	0.038	0.038
Charlestown Rd.	0.288	Current: 1,650 GPD/EDU Future: 254 GPD/EDU Peaked 2.5 times	0.197	0.199	0.199	0.202

PUMP STATION ALTERNATIVES

Perkiomen Pump Station

Perkiomen pump station is located just outside of the VFSA wastewater treatment plant in the parking lot for the administration building. The pumps discharge to the Pickering Creek force main. The 7.5 HP pumps are rated for 150 GPM at 64 ft. TDH. The pumps were replaced in 1993 to facilitate pumping against a higher head.

The pump station is completely below the ground and is located within the floodway or flood fringe of the Schuylkill River. The Schuylkill River floodway was reevaluated due to the replacement of the Pawling Rd. bridge, just downstream of the site. In a conversation with the firm who prepared the hydrologic and hydraulic report for the bridge replacement, it was learned that the new bridge caused no change to the water surface elevations at the site.

It is anticipated from field observation that the first floor elevation of any above ground structure will have to be raised several feet to keep it from flooding.

The Perkiomen Pump Station has experienced surcharge conditions in the past. The pump station meter bypass had to be opened three times in 1993, five times in 1994, once in 1995 and four times as of May 1996 due to the flood conditions. The pump station capacity needs to be increased based on existing wet weather conditions experienced at the pump station.

Approximate 194 EDUs from the proposed MacAvoy Subdivision, the Meadows at Valley Forge are scheduled for connection to this pump station. A preliminary sewer layout for the subdivision was submitted to VFSA for review in 1995. In a recent conversation with the developer, VFSA learned that the developer hopes to receive final subdivision approval by the summer of 1996. VFSA signed Section H, Chapter 94 consistency determination for the Meadows at Valley Forge planning module in May 1995. The module predicts flows in excess of the Perkiomen Pump Station's rated capacity. The developer was notified that the final design of the sanitary sewer must include an upgrade of the Perkiomen Pump Station. VFSA intends to model the pump station upgrade after the recent Country Club Rd. (Fernleigh) pump station design. The pump station should be designed to accommodate at least the projected flows from the 10 year planning horizon. The design must also incorporate the ability to expand to the ultimate design flow. Most specifically, power, emergency power, wet well volume and force main diameter should be based on the ultimate flows. The pumps and remaining equipment may be based on the 10 year flows.

The details of the pump station upgrade will be handled as a part of the Meadows at Valley Forge project. The implementation will be based on the implementation schedule of the subdivision. **No connections to this pump station should be allowed until the upgrade is accomplished.**

Valley Creek Pump Station

Valley Creek Pump Station appears to be adequate for the flow projections developed herein. Two issues, however, must be noted.

1. There is a discrepancy in the EDU growth projections developed by VFSA and Schuylkill Township. There are several tracts of land in this area noted by Schuylkill Township for public sewer service, that if connected will cause a capacity problem at the Valley Creek Pump Station. As with any other development within the Member Municipality Collection System, the downstream facilities, specifically Valley Creek Pump Station, will have to be upgraded by the development causing the capacity problem. The tracts of land identified by Schuylkill Township should be reviewed so that a proper ultimate flow projection may be developed for this pump station. These discrepancies, once resolved, will not alter the conclusions and long-term recommendations of this plan.

2. In August of 1995, VFSA collection personnel noted that it may, on occasion, take considerable time (almost 15 minutes) to discharge the wet well volume through the force main. The Valley Creek force main running at 100 GPM rated capacity discharges into the Wilson Rd. force main. The Wilson Rd. Pump Station includes three (3) 250 HP pumps with a design point of 16.3 MGD; two pumps operating at 5,650 GPM each. When the three Wilson Rd. pumps and the two Valley Creek pumps are operating, the line pressure on the Valley Creek pumps increases and the check valves shut. There does not appear to be a problem when one pump from each pump station operates; the typical mode of operation. Based on existing conditions and future conditions at Valley Creek, this mode of operation does not present a problem, however, this does not consider any upgrade that may be under #onsideration for the Wilson Rd. Pump Station. Should an upgrade at Wilson Rd. be considered, the new head conditions on the Valley Creek pumps must be evaluated to ensure they will be capable of discharging to the Wilson Rd. force main.

   An appropriate evaluation of the Valley Creek Pump Station cannot be performed until an analysis of the Wilson Road Pump Station is accomplished. On April 11, 1996, the engineer for the Regional Act 537 indicated an analysis cannot be completed until the Partner Municipalities finalize their flow requirements, due by the end of April. Once this data is received, several alternatives must be evaluated should the Wilson Road Pump Station require upgrade. These alternatives may include:

   - redirecting some flow away from the Pump Station and VFSA WWTP
   - expanding Wilson Road Pump Station thus increasing the head in the force main
   - constructing a parallel force main

If an upgrade is not required or if either the first or third option is implemented, there should not be an operational problem with the Valley Creek Pump Station exclusive of increased flows to the pump station (see item *1* above). Should the second alternative be selected, an evaluation of the Valley Creek Pump Station pumps will be necessary. It must be determined whether the pumps will be capable of operating against increased head conditions in the force main.

Pothouse Road Pump Station

The Pothouse Pump Station is a wet well/dry well sewage pumping station. The station was built in 1977. The dry well portion of the pump station has three levels. Two sewage pumps, sewage piping and a seal water system are located on the lowest level. The pump electrical control panel and the discharge flow meter are located on the intermediate level. The upper level contains a lavatory and auto dialer panel. The three levels are interconnected with stairs.

The wet well consists of two hopper shaped tanks. A comminutor was originally installed in the influent channel but was later removed. The influent channel contains two bar screen racks. Originally, a blower was used to supply air to the wet well to prevent the sewage from going septic. The blower has since been removed.

The pumps are manufactured by Fairbanks Morse. They are vertical centrifugal pumps with a design point of 2200 gallons per minute (GPM) at 130 feet of head (TDH). The two pumps have 8 inch diameter suction flanges and a 5 inch diameter discharge flanges. The motors are manufactured by Continental and are 125 horsepower (HP). The motors have a totally enclosed drip proof housing.

The pumps were designed to be controlled by variable speed adjustments based on the influent flow rate. The controller is a liquid rheostat manufactured by "Flowmatcher". The "Flowmatcher" has recently been rebuilt. The pumps motors are the heavy duty slip ring wound rotor type.

The seal water system located in the lower level of the dry well consists of two pumps with a water storage tank. The seal water pumps are manufactured by Aurora and are of the centrifugal type.

Flows

The Pothouse Pump Station has a rated capacity (one pump operating) of 3.17 MGD and a drawdown capacity (two pumps operating) of 3.96 MGD. As discussed previously, the drawdown capacity must be field verified.

The flow projections developed in Table 14 are summarized in Table No. 20.

TABLE NO. 20
WET WEATHER FLOW PROJECTIONS
AT POTHOUSE ROAD PUMP STATION

Typical Wet Weather Flow	Current	5 Years	10 Years	Ultimate
MGD	2.738	2.951	3.075	3.250
GPM	1,901	2,049	2,135	2,257
Wet Weather Flow With FC P.S. in Operation				
MGD	3.760	3.762	3.762	3.769
GPM	2,611	2,613	2,613	2,617

Under a typical wet weather scenario, Pothouse Road Pump Station will be capable of accommodating the projected daily flow. It is anticipated, however, that there will be instances when the incoming flow will exceed the pump station rated capacity. Two pumps operating will accommodate these instances. As previously noted, the VFSA operators indicate the lag pump in Pothouse Road pump station turns on approximately once a year. VFSA continues to implement I/I reduction programs which should reduce the severity of the wet weather events previously experienced and predicted herein.

Further field analysis of the pump station should be accomplished to verify the conclusions drawn herein. Specifically, the impact of French Creek Pump Station flows should be evaluated by monitoring Pothouse Road Pump Station flows in 15 minute intervals over an extended wet weather period.

Upgrade of the Pumps

Should the evaluation warrant, additional capacity may be gained by upgrading the pumps. The existing Fairbanks Morse Pumps have 14.68 inch diameter impellers with a design point of 2,200 GPM at 130 ft TDH. These pumps can accept, larger impellers that would increase the pump capacity to 2,350 GPM at 150 ft TDH.

The construction cost to install the larger impellers is estimated at $9,200 in 1996 dollars.

Before the option of larger impellers would be implemented, a field study should verify the actual system curve and actual pump rate of the existing pumps with the existing impellers. The reason for this study is to identify whether or not pump cavitation would occur with the larger impellers. Based on the calculated system curve, the pumps using the existing impellers and larger impellers operate very near the end of the pump curve raising a concern for possible cavitation.

The field work requires the isolation of a pump to one of the two wet wells and a timed volume drawdown test conducted at known pump speeds. From discharge pressure readings, pump speed and calculated pump rate, the actual system curve would be determined. This actual system curve would then be used in verifying the design condition for the larger impeller.

Generator

The existing generator is a Fremont DCA, 305 KW, 480/277 volt, 3 phase diesel generator. It has an Allis-Chalmers engine. This manufacturer is no longer making engines and there is no technical information readily available for this generator.

The present wiring from the generator is eight 350 MCM wires in a 3 ½ inch conduit. This installation does not meet current code requirements and the wires should be split between two 3 ½ inch conduits. The approximate cost for this is $1,800.

EVALUATION OF ALTERNATIVES

Upon completion of the needs analysis, a draft Act 537 Plan for the Member Municipality collection system was submitted to the Authority for review. Table No. 21 was submitted to the Authority staff to facilitate an evaluation of the alternatives available for the needs identified in this plan.

TABLE NO. 21
ALTERNATIVES FOR VFSA CONSIDERATION

Issue	Alternatives
Sewer segment with existing capacity issues.	1. Upgrade all at once. 2. Upgrade by drainage basin. 3. Monitor for surcharge and meter flows.
Five Year sewer segments.	1. Monitor for surcharge now. 2. Meter flows. 3. Monitor for surcharge after development occurs.
I/I reduction efforts.	1. Determine areas of concentration. 2. Work on the sewers themselves. 3. Work on illegal connections (drains/pumps). 4. Upgrade current programs i.e. more monitoring/televising.
Install telemetry for pump station flow meters.	1. Complete all or individual pump stations. Receiver will be for all pump stations. 2. Complete major or minor pump stations. 3. Include Pothouse telemetry with pump station project.
Pothouse Change impellers.	1. Field test pumps, first. 2. Skip and perform an upgrade. 3. Intensify I/I reduction efforts.
Pothouse Upgrade.	1. Evaluate capacity - field test pumps (with new impellers if applicable). 2. Accomplish design now and hold until upgrade is absolutely necessary. (Must determine the criteria.)

Valley Creek	1. Field test pumps. 2. Wait for Gannett Fleming evaluation of Wilson Road Pump Station. 3. Resolve EDU discrepancies (developer issue).
Perkiomen	Developer issue.

Based on the alternatives presented, the Authority staff is planning the following:

1. Existing Sewer Segments with capacity issues - upgrade over the next five years. The Pothouse Road pump station segments will be first.

2. Five Year Sewer Segments - build surcharge indicators and begin to monitor these segments.

3. I/I reduction efforts - Agree on areas of concentration. (Pothouse Road, Perkiomen and Whitehorse Road pump station drainage basins are recommended.) Concentrate on those portions of the sewer within VFSA ownership.

4. Install flow meter telemetry for pump stations over the next five years.

5. Pothouse Road pump station - perform field testing of pump operation/capacity. Determine I/I reduction that can be accomplished in the drainage basin. Based on field testing, possibly upgrade pumps with larger impellers.

6. Valley Creek Pump Station - evaluate further if Wilson Road pump station is to be expanded. Confirm Schuylkill Township future growth projections in this drainage basin.

CONCLUSIONS AND RECOMMENDATIONS

This plan reviewed the operation and capacity of the Valley Forge Sewer Authority Member Municipality collection system. The overall system was found to be properly maintained by the Authority. Operation and maintenance efforts are well planned and ongoing training enhances operations. Annual contracts allow Authority staff to properly maintain the collection network and I/I studies target noted problem areas. Preventive maintenance at the pump stations keeps downtime to a minimum.

Overall, the system capacity is adequate to meet the wastewater flows projected in this report. The ultimate flow projection developed for the Member Municipalities is 2.120 mgd as stated in Table No. 10. This flow is just below the 2.124 mgd flow allocated to the Member Municipalities. Therefore, the Member Municipalities do not require any change to their flow allocation.

The majority of the pump stations have adequate capacity to handle the flow projections developed herein. Perkiomen Pump Station is operating at its capacity and will require upgrade in conjunction with the Meadows at Valley Forge Project. No connections should be allowed at this pump station until the upgrade is complete. Valley Creek may need further evaluation should Wilson Road Pump Station in Tredyffrin Township require upgrade. Pothouse Road Pump Station should be further evaluated through field flow tests prior to implementing any upgrade activities.

Some sewer segments require upgrade to accommodate the projected flows, as identified by the computer model. Surcharges should be field confirmed with surcharge indicators prior to implementing any upgrade projects. VFSA staff are in the process of making surcharge indicators for this activity.

This report includes the following specific recommendations. Note: All construction costs are listed in 1996 dollars. The implementation schedule identifies the anticipated action year and Appendix F develops the project costs.

1. Provide flow meter telemetry at each of the pump stations.
   Conceptual construction cost = $9,000 for first installation, $6,500 for subsequent installations

2. Continue the annual I/I reduction program with efforts concentrated in Pothouse Road and Perkiomen drainage basins. Evaluate the success of existing I/I efforts in Pothouse Road pump station by calculating maximum month gpd/in-dia-mi factors over the wet events experienced in 1996 and in subsequent years. Whitehorse Road pump station drainage basin is the third priority area for I/I reduction efforts. Gpd/in.dia.mi factors should be calculated over the next several years to monitor the situation. An I/I

reduction program for this drainage basin should be scheduled toward the end of the next five years.

3. Make and/or procure several surcharge indicators for use in the collection system.

4. Upgrade the following sewer segments:

	Drainage Basin	MH Segment	Projects Costs
- French Creek Drainage Basin:	2.08	118-102	$ 53,325
	2.08	109-108	33,615
	2.04	106-105	35,775
- Pothouse Road Drainage Basin:	2.09	105-104	73,575
	2.09	102-100A	31,455
- Pickering Creek Drainage Basin:	3.03	353-352	25,920
	3.03	317-358	39,150
Total - including 35% associated project costs			**$ 292,815**

5. Ensure Perkiomen pump station is appropriately upgraded as a part of the Meadows at Valley Forge development project.

6. Reevaluate Valley Creek pump station if the Wilson Road pump station is to be upgraded. Perform pump tests to verify capacity. Confirm Schuylkill Township future growth projections in this drainage basin.

7. Field verify Pothouse Road pump station operation when French Creek is in operation. Based on the field test results, consider installing larger impellers on the pumps to gain additional capacity. Conceptual construction cost $9,200.

8. Upgrade the wiring for the Pothouse Road pump station generator Conceptual construction cost $1,800.

IMPLEMENTATION

The Valley Forge Sewer Authority maintains a comprehensive plan for the member municipality collection system which plans specific maintenance and construction activities over the upcoming five years. The comprehensive plan includes system enhancements which are not a part of this Act 537 Plan; however, the projects set forth in the following implementation schedule will be incorporated into the Comprehensive Plan for budgeting and implementation. Projects are budgeted annually. The projects noted herein will be funded by the Authority from the Bond Redemption Improvement Fund.

All estimates developed in this report were based on the work being accomplished in the current year, (1996). Appendix F develops the project costs based on the year of implementation.

IMPLEMENTATION PLAN FOR PROPOSED IMPROVEMENTS
TO THE VFSA SEWER NETWORK

1996

1. Build surcharge indicators and install in the following sewer segments:

   - 2.08 118-102
   - 2.04 106-105
   - 2.04 109-108
   - 3.03 353-352
   - 3.03 317-358

2. Perform pump testing at Pothouse Road Pump Station in accordance with the procedures set forth in Appendix E.

3. Perform I/I reduction in Pothouse Road and Perkiomen pump station drainage basins:

   - Main line and manhole testing and inspection
   - Lateral testing and inspection
   - Install water tight lids
   - Flow metering
   - Televising
   - Grouting & repairs

4. Calculate and evaluate 1996 gpd/in.dia.mi data for Pothouse Road pump station.

1997

1. Subject to the results of the pump tests, upgrade Pothouse Road pump station by increasing the impeller size. Change the generator wires.

2. Upgrade the following sewer segments:

   - 2.09 105-104
   - 2.09 120-100A

3. Continue I/I reduction in Pothouse and Perkiomen pump station drainage basins.

4. Perform pump testing at Valley Creek Pump Station and reevaluate based on the outcome of the Wilson Road Pump Station Study.

2000

1. Install flow meter telemetry at all of the pump stations.

2. Upgrade the following sewer segments:

   - 2.08 118-102
   - 2.04 106-105
   - 2.04 109-108
   - 3.03 353-352
   - 3.03 317-358

3. Initiate I/I reduction efforts in Whitehorse Road pump station.

4. Install surcharge indicators in the following sewer segments:

   - 2.06 102-101
   - 2.04 110-102
   - 2.04 122-109
   - 3.04 446A-446
   - 3.03 353A-353
   - 2.05 101 - 2.04 110

APPENDIX A

VFSA EDU Count – Sewer Model EDU Count

EDU COUNT

		Total EDU	Schuylkill	E. Pikeland	Charlestown	W. Vincent
1/1/96		4,096.0				
1001	Valley Cr.		55.0			
1002	Perkiomen		201.0			
1003	Pickering		650.0			
1004	Whitehorse		325.0			
1005	Sandra Ln.		22.0			
1006	Pothouse		392.0			
1007	Country Club		72.0			
2008	Kimbel			77.0		
3008	Kimbel				22.0	
2009	French Cr.			1,898.0		
3009	French Cr.				53.0	
3004	Whitehorse				5.0	
3007	Charlestown				128.0	
3010	Lee Tire Blvd.				169.0	
4009	French Cr.					27.0
Total		**4,096.0**	**1,717.0**	**1,975.0**	**377.0**	**27.0**
1/1/95		4,084.0				
1001	Valley Cr.		53.0			
1002	Perkiomen		207.5			
1003	Pickering		652.0			
1004	Whitehorse		435.5			
1005	Sandra Ln.		23.0			
1006	Pothouse		391.0			
1007	Country Club		27.0			
2008	Kimbel			77.0		
3008	Kimbel				22.0	
2009	French Cr.			1,850.5		
3009	French Cr.				50.0	
4009	French Cr.					22.0
3007	Charlestown				119.5	
3010	Lee Tire Blvd.				154.0	
Total		**4,084.0**	**1,789.0**	**1,927.5**	**345.5**	**22.0**
1/1/94		3,852.5				
1001	Valley Cr.		50.0			
1002	Perkiomen		207.5			
1003	Pickering		641.0			
1004	Whitehorse		351.5			
1005	Sandra Ln.		23.0			
1006	Pothouse		391.0			
2008	Kimbel			77.0		
3008	Kimbel				21.0	
2009	French Cr.			1,809.0		
3009	French Cr.				50.0	
3007	Charlestown				115.5	
3010	Lee Tire Blvd.				116.0	
Total		**3,852.5**	**1,664.0**	**1,886.0**	**302.5**	

FRENCH CREEK DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
Adams D. Retail	Adams, Dorthy	2.02	7	7				7
Applewood	Apple Hill Developers	2.02.113/4	25	0	25			25
Barley Farms		2.07	43	0				0
Brimful Farms	Estelle Solomon	2.04.110	50					0
Burger King		2.01.109	6		6			6
Carraige Hill	Valley Hill Develop.	2.06.144/125	18	0	18			18
Coccia, Eugene		2.05.132	7	7				7
Deer Run Lane		2.05.123	9			6		6
Didomenico, Leonard	Didomenico, Leonard	2.03.191	3	3				3
Dungee	Coccia, Eugene	2.05.142	8		8			8
Edgehill Crossing	Kimberton Hunt	2.06.161	28	28				28
French Creek Estates	South Hill Dev	2.03.132/9/143	73	73				73
French Creek Manor		2.03.114/20/201	51		51			51
Frog Hollow		2.02.132	34	34				34
Hollingsworth		2.01.211	36	36				36
Hopkins & Scott Apts		2.06.147	6	6				6
Huntfield		2.06.219	51			6		6
Kimberbrae		2.06.105	48			37	1	38
Kimberton Country House		2.06.112	17	17				17
Kimberton Knoll		2.04.110	120			87		87
Kimberton Square		2.01.105	30			20		20
Kimberton Valley Homes		2.03.125/205	43	43				43
Kimberton Valley Homes		2.03.125/205	22				1	1
Macarevich		2.02.106	4	1	3			4
Maple Lawn		2.01.212	97			21		21
Minter		2.08.138	93	93				93
Monsey Products	Monsey Products	2.08.102	8	8				8
NPC Trucking Bldg	Monsey Products	2.05.135	2	2				2
Phnx Area HS E Pike		2.03.153	14	14				14
Pikeland Place		2.04.119	25	15	10			25
Powder Mill		2.03.106/4.115	143			143		143
Rapps Damm Covered		2.03.105	197	197				197
Rapps Dam Goppa		2.05.123	24			24		24
Ridge Road	Nuber, Joe	2.01.126	4	1	3			4
Senior Life Choice	Greg Stevens	2.04.110	28					0
Spring House Dell		2.03.115	9			4		4
Townhomes at Kimberton		2.05.123	236					0
West Vincent		WV101-2.06.105	31				22	22
TOTAL			1,650	585	124	348	24	1,081
VFSA REPORTED EDUS						1,874	1,923	
MODEL EDUS					1,419	1,743	1,941	

CHARLESTOWN ROAD DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
Pannilquin	Oak Tree	3.06.122	13				10	10
Resturant & Apts.	Smith, Robert	3.06.174	7	7				7
TOTAL			20	7	0	0	10	17
VFSA REPORTED EDUS						116	121	
MODEL EDUS					111	111	121	

POTHOUSE ROAD DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
McClaskey Place		2.09	5			5		5
McCann Trailer Park	Hoffman	2.09.171	32	32				32
Phnx Mobile Homes		2.09.110	47	47				47
TOTAL			84	79	0	5	0	84
VFSA REPORTED EDUS						392	391	
MODEL EDUS					338	343	363	

WHITEHORSE ROAD DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
Charlestown Hunt		3.04.400	349					0
Overstreet, James MHP	Adjusted in 1994	3.04.449	123	123			(40)	83
Phnx Area School		3.04.599	22	22				22
YMCA - needs to be adjusted anually		3.04.444	26	26			28	54
TOTAL			520	171	0	0	-12	159
VFSA REPORTED EDUS						362	436	
MODEL EDUS					379	379	367	

PICKERING DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
Bull Tavern		3.01.113	9		9			9
Buono Tract			16				5	5
Chapel View Estates		3.03.306/320	20			7	1	8
Charlestown Crossing		3.03.306	23					0
Commons at VF - Phase 1		3.01.142A	48	48				48
Commons at VF - Phase 2		3.01.146	44		44			44
Dogwood Estates		3.01.134	45	45				45
Hideaway Mobile Home		3.02.213	11	11				11
Lafayette Road		3.01.147	4	4				4
Maisfield	Westover Companies	3.15.101	48					0
McAvoy		3.01.142A	80					0
Puleo		3.01.156	4		4			4
Rhinehart	Rouse Chamberlin	3.03.306	195					0
Route 23 Commercial			6					0
South Forge Manor		3.01.130A	30	30				30
Sunwood		3.15.112	130			128		128
White Horse Farms		3.03.351	8	8				8
TOTAL			721	146	57	135	6	344
VFSA REPORTED EDUS						640	652	
MODEL EDUS					564	699	721	

PERKIOMEN DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
American Inn		4.02	9	9				9
Ferry Lane		4.02.119	7	7				7
Ferry Lane Extd.		4.02.119	3	3				3
Forge Hill		4.02.107/8	5	5				5
McAvoy		4.02.104	194					0
NCCC		4.02.149	13	1	12			13
Ozoroski		4.02.105	7	7				7
Pawling Wood		4.02.134	19		19			19
Weyhill		4.02.154	36		36			36
TOTAL			293	32	67	0	0	99
VFSA REPORTED EDUS						208	208	
MODEL EDUS					214	214	210	

VALLEY CREEK DRAINAGE BASIN

NAME OF PROJECT	APPLICANT NAME	RECEIVING MANHOLE	ULTIMATE EDUS	EXISTING EDUS AS OF 1987	1990 EDUS	1993 EDUS	1994 EDUS	TOTAL BUILT
Ironmaster Partners		4.05.110	14	14				14
Freedom View		4.05.126	14			9		9
TOTAL			28	14	0	9	0	23
VFSA REPORTED EDUS						50	53	
MODEL EDUS					58	67	70	

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APPENDIX B

Basis of EDU Growth Projections

RAINAGE BASIN	1994 YR END CONNECTED EDUS	REMAINING PLATTED EDUS AS OF 12/94		PROJECTED EDUS PROPOSED EDUS		UNDEVELOP LAND	TOTAL EST. EDUS
TE 724 NORTH OF RTE 23	0.0		0		0	40	40
RENCH CREEK BASIN							
KIMBEL DRIVE (2/3008)	99.0		0	Barley Farms	43	0	142
FRENCH CREEK (2/3009)		Deer Run Lane	3	Brimful Farm	50		
		Huntfield	45	Senior Life Choice	28		
		Kimberbrae	4	TH @ Kimberton	86		
		Kimberton Knoll	33				
		Kimberton Square	10				
		Kimberton Valley	21				
		Maple Lawn	76				
		Spring Hse. Dell	2				
		West Vincent	9				
		TH @ Kimberton	150				
			357		164		
	1,922.5					244	2,684
CHARLESTOWN ROAD (3007)	119.5	Charlestown Meade	3		0	5	128
SANDRA LANE (1005)	23.0		0		0	0	23
POTHOUSE (1006)	391.0		0		0	5	396
ICKERING CREEK BASIN							
WHITEHORSE (1004)	435.5	Charlestown Hunt & homes along Creek	110	Charlestown Hunt	244	80	870
COUNTRY CLUB (1007)	27.0	Valley Forge Woods	240	Valley Forge Woods	58	6	331
PICKERING CREEK (1003)		Buono Tract	12	Maisfield Farm	48		
		Chapel View	12	Rhinehart Tract	195		
		Route 23 Commercial	6	The Meadows @ VF (MacAvoy)	80		
		Sunwood	2				
			32		323		
	652.0					234	1,241
PERKIOMEN (1002)	207.5		0	The Meadows @ VF	194	305	707
ALLEY CREEK BASIN							
VALLEY CREEK (1001)	53.0	Freedom View	2		0	0	55
LEE TIRE BLVD (3010)		Commons at G.V.	66				
		Devault Meats	73				
		Laurabrooke	20				
		Spring Oak Bus. Cen.	73				
			232				
	154.0				0	133	519
ROUTE 401	0.0		0		0	241	241
SIDLEY ROAD	0.0	Charlestown Oaks	95	Charlestown Oaks	193	46	334
OTALS	4,084.0		1,067		1,219	1,339	7,709

ESTIMATE OF UNDEVELOPED LAND IN THE 537 BOUNDARY

	Manhole no.		Edus
VALLEY CREEK (1001)			
PERKIOMEN (1002)	4.02.229	Rte. 23 Corridor	29
	4.02.167	N. Side Pawling Rd.	80
	P.S.	N. of Conrail	196
			305
PICKERING (1003)	3.15.101	Inter. @ Maisfield	6
	3.01.113	Bull Tavern	3
	3.03.342	Reeves Property	114
3.03.301 or	3.01.111	By RR Tracks	36
	3.03.338	End of E. Phillip	28
	3.15.164	Patrick Henry Dr.	47
			234
WHITEHORSE (1004)		PRD 1 growth area by Charlestown Hunt	80
SANDRA LANE (1005)			0
POTHOUSE (1006)		Across fm Forestas	5
CIMBEL (2/3008)			
CHARLESTOWN (3007)	3.06.174A	Along Buckwalter Rd	5
COUNTRY CLUB (1011)	P.S.	By VF Woods	6

	Manhole no.		Edus
FRENCH CREEK (2/3009)	2.06.202	Rte 113 - Huntfield	81
	2.04.113	Rte 113 (Shelly's)	6
	2.05.123	E Seven Stars - TH @ Kimberton	27
	2.05.107	E Seven Stars - off Hartman Dr	12
	2.02.123	Frog Hollow Miller Rd (north)	38
	2.02.132	Hares Hill @ Ruth	5
	2.02.102	Hares Hill along Camp Council	8
	2.06.161	Hares Hill - Prizer Rd/Jugan's	15
	2.06.105	Hares Hill - Adj to Kimberbrae	52
			244
LEE TIRE (3010)		Behind Spring Oak Business Cen	21
		Across Fm Spring Oak	9
		Yellow Spring's Rd	10
		Rte 29 & Charles Rd	50
		North Side of School	7
		Farm Residence	1
		Adj to Laurab. (Phoenix Pike)	35
			133
SIDLEY RD.		Adj. to Charlestown Oaks	46
ROUTE 401		Charlestown Meadows	241
RTE 724 NORTH OF ROUTE 23	2.01.120	Rte 724 - @ Rte 23	20
	2.01.119	Rte 724 - Above Snyder	20
			40

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APPENDIX C

I/I Analysis (1993-1995)

PUMP STATION		FLOW	1995 IN-DIA-MI	GPD/ IN-DIA-MI	FLOW	1994 IN-DIA-MI	GPD/ IN-DIA-MI	FLOW	1993 IN-DIA-MI	GPD/ IN-DIA-MI	THREE YR AVERAGE
FRENCH CREEK	AVG	0.455	376.9	1,207	0.475	374.97	1,267	0.440	374.43	1,175	1,216
	3 MO. MAX	0.526	376.9	1,396	0.612	374.97	1,632	0.577	374.43	1,541	1,523
	3 MO. MIN	0.414	376.9	1,098	0.403	374.97	1,075	0.349	374.43	932	1,035
POTHOUSE RD	AVG	0.130	78.19	1,663	0.166	77.45	2,143	0.152	77.43	1,963	1,923
	3 MO. MAX	0.143	78.19	1,829	0.271	77.45	3,499	0.229	77.43	2,958	2,762
	3 MO. MIN	0.077	78.19	985	0.110	77.45	1,420	0.117	77.43	1,511	1,305
WHITEHORSE RD	AVG	0.075	65.2	1,150	0.083	65.32	1,271	0.089	65	1,369	1,263
	3 MO. MAX	0.097	65.2	1,488	0.124	65.32	1,898	0.151	65	2,323	1,903
	3 MO. MIN	0.069	65.2	1,058	0.070	65.32	1,072	0.058	65	892	1,007
PICKERING CREEK	AVG	0.069	175.99	392	0.069	135.5	509	0.099	135.09	733	545
	3 MO. MAX	0.073	175.99	415	0.158	135.5	1,166	0.211	135.09	1,562	1,048
	3 MO. MIN	0.073	175.99	415	0.040	135.5	295	0.025	135.09	185	298
PERKIOMEN	AVG	45,839	34.12	1,343	48,020	34.16	1,406	48,941	34.14	1,434	1,394
	3 MO. MAX	49,954	34.12	1,464	61,116	34.16	1,789	60,921	34.14	1,784	1,679
	3 MO. MIN	41,569	34.12	1,218	40,790	34.16	1,194	42,460	34.14	1,244	1,219
VALLEY CREEK	AVG	10,540	12.08	873	13,160	11.97	1,099	12,616	11.9	1,060	1,011
	3 MO. MAX	12,889	12.08	1,067	19,865	11.97	1,660	17,987	11.9	1,512	1,413
	3 MO. MIN	9,035	12.08	748	9,927	11.97	829	9,674	11.9	813	797
LEE TIRE (two year average)	AVG	29,536	11.77	2,509	25,536	10.59	2,411				2,460
	3 MO. MAX	38,000	11.77	3,229	34,850	10.59	3,291				3,260
	3 MO. MIN	26,226	11.77	2,228	19,521	10.59	1,843				2,036

TABLE NO. 1
VALLEY FORGE SEWER AUTHORITY
LF of sewer - 1993

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		118	155,610	2,320	8,312	4,333	325		4,639	480	10		176,147
Pot House			18,113	1,709	1,946	1,123		438			10		23,339
Whitehorse			18,894						6,042				24,938
Pickering	1115		41,644	4,266	1,013	3,056		1,155		5,960		10	57,104
Perkiomen	2077		17,851										17,851
Valley Creek			6,732										6,732
Sandra Lane			2,684										2,684
Charlestown			8,244	1,529				10					9,783
Kimbel			9,259										9,259
Lee Tire Blvd.			2,539	1,319									3,858
Country Club													0
TOTAL													331,693

Table 1 based on additional footage noted on Attachment B
New projects include: McClaskey Place
Fernleigh

VALLEY FORGE SEWER AUTHORITY
Inch -dia-miles of sewer

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		0.13	235.77	4.39	18.89	12.31	0.98		18.45	2.18	0.06		293.18
Pot House			27.44	3.24	4.42	3.19		1.49			0.06		39.84
Whitehorse			28.63						24.03				52.66
Pickering	0.42		63.10	8.08	2.30	8.68		3.94		27.09		0.08	113.27
Perkiomen	0.79		27.05										27.05
Valley Creek			10.20										10.20
Sandra Lane			4.07										4.07
Charlestown			12.49	2.90				0.03					15.42
Kimbel			14.03										14.03
Lee Tire Blvd.			3.85	2.50									6.35
Country Club													0.00
TOTAL													576.05

SUMMARY - IN-DIA-MILES OF SEWER

	Sewer In-Dia-Mi	1995 EDUs	Lateral In-Dia-Mi	Total In-Dia-Mi
Kimbel	14.03			
French Creek	293.18			
Subtotal	307.20	1972	67.23	374.43
Charlestown	15.42			
Sandra	4.07			
Pothouse	39.84			
Subtotal	59.33	531	18.10	77.43
Whitehorse	52.66	362	12.34	65.00
Country Club	0.00			
Pickering	113.27			
	113.27	640	21.82	135.09
Perkiomen	27.05	208	7.09	34.14
Valley Creek	10.20	50	1.70	11.90
Lee Tire Blvd	6.35			

Laterals =((30' * 4")+(10 * 6"))/5280 = 0.03

VFSA - MAXIMUM DAY FLOW BY MONTH - 1995

MONTH	FRENCH CREEK (MGD)	GPD/ INDIA-MI (376.90)	POTHOUSE (MGD)	POTHOUSE ALONE	GPD/ INDIA-MI (78.19)	WHITE-HORSE (MGD)	WHITE-HORSE ALONE	GPD/ INDIA-MI (65.20)	PICKERING (MGD)	PICK. ALONE	GPD/ INDIA-MI (175.99)	PERKIOMEN (GPD)	GPD/ INDIA-MI (34.12)	VALLEY CREEK (GPD)	GPD/ INDIA-MI (12.08)
1/95	0.870	2,308	0.874	0.004	54	1.109	0.235	3,601	1.315	0.206	1,173	85,960	2,519	17,600	1,457
2/95	0.655	1,738	0.950	0.295	3,773	1.071	0.121	1,859	1.209	0.138	783	65,610	1,923	13,800	1,142
3/95	1.858	4,928	2.317	0.460	5,877	2.540	0.223	3,420	2.828	0.288	1,636	148,717	4,359	38,440	3,182
4/95	0.461	1,223	0.664	0.203	2,596	0.753	0.089	1,365	0.690	-0.063	-358	53,390	1,565	15,070	1,248
5/95	0.470	1,247	0.666	0.196	2,507	0.772	0.106	1,626	0.705	-0.067	-381	58,480	1,714	15,294	1,266
6/95	0.513	1,361	0.630	0.117	1,496	0.705	0.075	1,150	0.697	-0.008	-48	50,810	1,489	14,854	1,230
7/95	0.475	1,260	0.583	0.108	1,381	0.670	0.087	1,334	0.736	0.066	375	44,200	1,295	14,481	1,199
8/95	0.505	1,340	0.590	0.085	1,087	0.720	0.130	1,994	0.749	0.029	165	53,100	1,556	14,949	1,238
9/95	0.535	1,419	0.709	0.174	2,225	0.834	0.125	1,917	0.853	0.019	108	51,170	1,500	12,000	993
10/95	OUT	OUT	1.265	1.265	2,781	1.455	0.190	2,914	1.620	0.165	938	89,140	2,613	28,670	2,373
11/95	OUT	OUT	1.194	1.194	2,625	1.251	0.057	874	1.519	0.268	1,523	71,210	2,087	28,700	2,376
12/95	OUT	OUT	0.815	0.815	1,792	0.856	0.041	629	1.944	1.088	6,182	49,450	1,449	16,003	1,325
MAXIMUM	1.858	4,928	2.317		5,877	2.540		3,601	2.828		6,182	148,717	4,359	38,440	3,182
PEAKING FACTOR	4.03		3.49			3.37			4.10			2.79		2.55	

1. Rothouse (10/95-12/95) gpd/in-dia-mi based on 455.09 in-dia-mi
2. Perkiomen (3/95) max day flow = 117,100 * 1.27 based on pump operation when bypass is open - 260 gpm/205 gpm.

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TABLE NO. 1
VALLEY FORGE SEWER AUTHORITY
LF of sewer - 1994

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		118	155,610	2,320	8,312	4,333	325		4,639	480	10		176,147
Pot House			18,113	1,709	1,946	1,123		438			10		23,339
Whitehorse			18,894						6,042				24,936
Pickering	1115		41,644	4,266	1,013	3,056		1,155		5,960		10	57,104
Perkiomen	2077		17,851										17,851
Valley Creek			6,732										6,732
Sandra Lane			2,684										2,684
Charlestown			8,244	1,529				10					9,783
Kimbel			9,259										9,259
Lee Tire Blvd.			2,539	1,319									3,858
Country Club													0
TOTAL													331,693

VALLEY FORGE SEWER AUTHORITY
Inch -dia-miles of sewer

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		0.13	235.77	4.39	18.89	12.31	0.98		16.45	2.18	0.06		293.18
Pot House			27.44	3.24	4.42	3.19		1.49			0.06		39.84
Whitehorse			28.63						24.03				52.66
Pickering	0.42		83.10	8.08	2.30	8.68		3.94		27.09		0.08	113.27
Perkiomen	0.79		27.05										27.05
Valley Creek			10.20										10.20
Sandra Lane			4.07										4.07
Charlestown			12.49	2.90				0.03					15.42
Kimbel			14.03										14.03
Lee Tire Blvd.			3.85	2.50									6.35
Country Club			0.00										0.00
TOTAL													576.05

SUMMARY - IN-DIA-MILES OF SEWER

	Sewer In-Dia-Mi	1994 EDUs	Lateral In-Dia-Mi	Total In-Dia-Mi
Kimbel	14.03			
French Creek	293.18			
Subtotal	307.20	1988	67.77	374.98
Charlestown	15.42			
Sandra	4.07			
Pothouse	39.84			
Subtotal	59.33	531.5	18.12	77.45
Whitehorse	52.66	371.5	12.66	65.32
Country Club	0.00			
Pickering	113.27			
	113.27	652	22.23	135.50
Perkiomen	27.05	208.5	7.11	34.15
Valley Creek	10.20	52	1.77	11.97
Lee Tire Blvd	6.35	124.5	4.24	10.59

Laterals =((30' * 4")+(10 * 6"))/5280 = 0.03

VFSA - MAXIMUM DAY FLOW BY MONTH - 1994

MONTH	FRENCH CREEK (MGD)	GPD/ INDIA-MI (374.97)	POTHOUSE (MGD)	POTHOUSE ALONE	GPD/ INDIA-MI (77.45)	WHITE-HORSE (MGD)	WHITE-HORSE ALONE	GPD/ INDIA-MI (65.32)	PICKERING (MGD)	PICK. ALONE	GPD/ INDIA-MI (135.5)	PERKIOMEN (GPD)	GPD/ INDIA-MI (34.16)	VALLEY CREEK (GPD)	GPD/ INDIA-MI (11.97)
1/28/94	2.550	6,801	3.200	0.650	8,393	3.449	0.249	3,812	3.235	-0.214	-1,472	210,452	6,161	***	
1/94	1.014	2,704	1.166	0.152	1,963	1.359	0.193	2,955	1.523	0.164	1,128	210,452	6,161	***	
2/94	0.970	2,587	1.302	0.332	4,287	1.570	0.268	4,103	1.505	-0.065	-447	98,000	2,869	36,050	3,012
3/94	1.642	4,379	2.519	0.877	11,323	2.991	0.472	7,226	3.217	0.226	1,554	166,929	4,887	71,200	5,948
4/94	0.887	2,366	1.241	0.354	4,571	1.416	0.175	2,679	1.669	0.253	1,740	92,400	2,705	39,525	3,302
5/94	0.496	1,323	0.758	0.262	3,383	0.800	0.042	643	0.838	0.038	261	51,380	1,504	20,127	1,681
6/94	0.428	1,141	0.996	0.568	7,334	0.672	-0.324	-4,960	0.668	-0.004	-28	50,050	1,465	13,220	1,104
7/94	0.573	1,528	0.829	0.256	3,305	0.784	-0.045	-689	0.796	0.012	83	52,800	1,546	16,990	1,419
8/94	1.101	2,936	1.302	0.201	2,595	1.457	0.155	2,373	1.778	0.321	2,207	87,237	2,554	18,905	1,579
9/94	0.490	1,307	0.599	0.109	1,407	0.755	0.156	2,388	0.776	0.021	144	49,200	1,440	18,680	1,561
10/94	0.514	1,371	0.720	0.206	2,660	0.862	0.142	2,174	0.776	-0.086	-591	47,230	1,383	24,558	2,052
11/94	0.603	1,608	0.728	0.125	1,614	0.879	0.151	2,312	0.890	0.011	76	92,550	2,709	16,500	1,378
12/94	0.655	1,747	0.857	0.202	2,608	1.030	0.173	2,648	1.027	-0.003	-21	53,500	1,566	16,050	1,341
MAXIMUM	1.642		2.519			2.991			3.217			210,452		71,200	

Notes:

1. Perkiomen flows adjusted due to by pass being open: 1/94, 3/94, & 8/94
   Factor = 1.27 - based on pump operation when bypass is open - 260 gpm/205 gpm.
2. FC, PH, WH, & PI data for 1/28/94 considered invalid due to sheared off manholes in French Creek contributing considerable amounts of water.

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TABLE NO. 1
VALLEY FORGE SEWER AUTHORITY
LF of sewer - 1995

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		118	156,610	2,320	8,312	4,333	325		4,639	480	10		176,147
Pot House			18,373	1,709	1,946	1,123		438			10		23,599
Whitehorse			18,894						6,042				24,936
Pickering	1115		41,644	4,266	1,013	3,056		1,155		5,960		10	57,104
Perkiomen	2077		17,851										17,851
Valley Creek			6,732										6,732
Sandra Lane			2,684										2,684
Charlestown			8,244	1,529				10					9,783
Kimbel			9,259										9,259
Lee Tire Blvd.			2,539	1,319									3,858
Country Club			25,390										25,390
TOTAL													357,343

Table 1 based on additional footage noted on Attachment B
New projects include: McClaskey Place
Fernleigh

VALLEY FORGE SEWER AUTHORITY
Inch -dia-miles of sewer

DRAINAGE BASIN	PIPE DIAMETER 2	6	8	10	12	15	16	18	21	24	30	42	TOTAL
French Creek		0.13	235.77	4.39	18.89	12.31	0.98		18.45	2.18	0.06		293.18
Pot House			27.84	3.24	4.42	3.19		1.49			0.06		40.24
Whitehorse			28.63						24.03				52.66
Pickering	0.42		63.10	8.08	2.30	8.68		3.94		27.09		0.08	113.27
Perkiomen	0.79		27.05										27.05
Valley Creek			10.20										10.20
Sandra Lane			4.07										4.07
Charlestown			12.49	2.90				0.03					15.42
Kimbel			14.03										14.03
Lee Tire Blvd.			3.85	2.50									6.35
Country Club			38.47										38.47
TOTAL													614.92

SUMMARY - IN-DIA-MILES OF SEWER

	Sewer In-Dia-Mi	1996 EDUs	Laterat In-Dia-Mi	Total In-Dia-Mi
Kimbel	14.03			
French Creek	293.18			
Subtotal	307.20	2044.5	69.70	376.90
Charlestown	15.42			
Sandra	4.07			
Pothouse	40.24			
Subtotal	59.73	541.5	18.46	78.19
Whitehorse	52.66	368	12.55	65.20
Country Club	38.47			
Pickering	113.27			
	151.74	711.5	24.26	175.99
Perkiomen	27.05	207.5	7.07	34.12
Valley Creek	10.20	55	1.88	12.08
Lee Tire Blvd	6.35	159	5.42	11.77

Laterals =((30' * 4")+(10 * 6"))/5280 = 0.03

MAXIMUM DAY FLOW BY MONTH

MONTH	FRENCH CREEK (MGD)	GPD/ INDIA-MI (374.43)	POTHOUSE (MGD)	POTHOUSE ALONE	GPD/ INDIA-MI (77.43)	WHITE-HORSE (MGD)	WHITE-HORSE ALONE	GPD/ INDIA-MI (65)	PICKERING (MGD)	PICK. ALONE	GPD/ INDIA-MI (135.09)	PERKIOMEN (GPD)	GPD/ INDIA-MI (34.14)	VALLEY CREEK (GPD)	GPD/ INDIA-MI (11.90)
1/93	0.504	1,346	0.626	0.122	1,576	0.800	0.174	2,677	0.845	0.045	333	69,762	2,043	14,941	1,256
2/93	0.781	2,086	0.897	0.116	1,498	0.970	0.073	1,123	1.292	0.322	2,384	61,210	1,793	15,130	1,271
3/93	1.513	4,041	2.064	0.551	7,116	2.554	0.490	7,538	3.359	0.805	5,959	172,870	5,064	60,581	5,091
4/93	1.084	2,895	1.513	0.429	5,540	1.915	0.402	6,185	2.166	0.251	1,858	98,550	2,887	32,700	2,748
5/93	0.494	1,319	0.718	0.224	2,893	0.870	0.152	2,338	0.969	0.099	733	48,470	1,420	15,064	1,266
6/93	0.407	1,087	0.579	0.172	2,221	0.679	0.100	1,538	0.671	-0.008	-59	49,590	1,453	13,022	1,094
7/93	0.417	1,114	0.580	0.163	2,105	0.655	0.075	1,154	0.663	0.008	59	47,000	1,377	13,200	1,109
8/93	0.444	1,186	0.526	0.082	1,059	0.621	0.095	1,462	0.680	0.059	437	57,400	1,681	17,100	1,437
9/93	0.446	1,191	0.588	0.142	1,834	0.697	0.109	1,677	0.747	0.050	370	53,650	1,571	19,040	1,600
10/93	0.528	1,410	0.707	0.179	2,312	0.846	0.139	2,138	1.776	0.930	6,884	49,810	1,459	17,714	1,489
11/93	0.776	2,072	1.164	0.388	5,011	1.386	0.222	3,415	1.508	0.122	903	104,775	3,069	40,767	3,426
12/93	1.759	4,698	2.522	0.763	9,854	3.046	0.524	8,062	3.393	0.347	2,569	236,411	6,925	106,305	8,933
MAXIMUM	1.759		2.522			3.046			3.393			236,411		106,305	

Note: Perkiomen bypass opened 1/93, 11/93, & 12/93
This table assumes the bypass was open on the max day reading.
Therefore the Perkiomen max day flowsfor Jan, Nov, & Dec have been multiplied by 1.27 (260 GPM/205 GPM based on pump operation when bypass is open).

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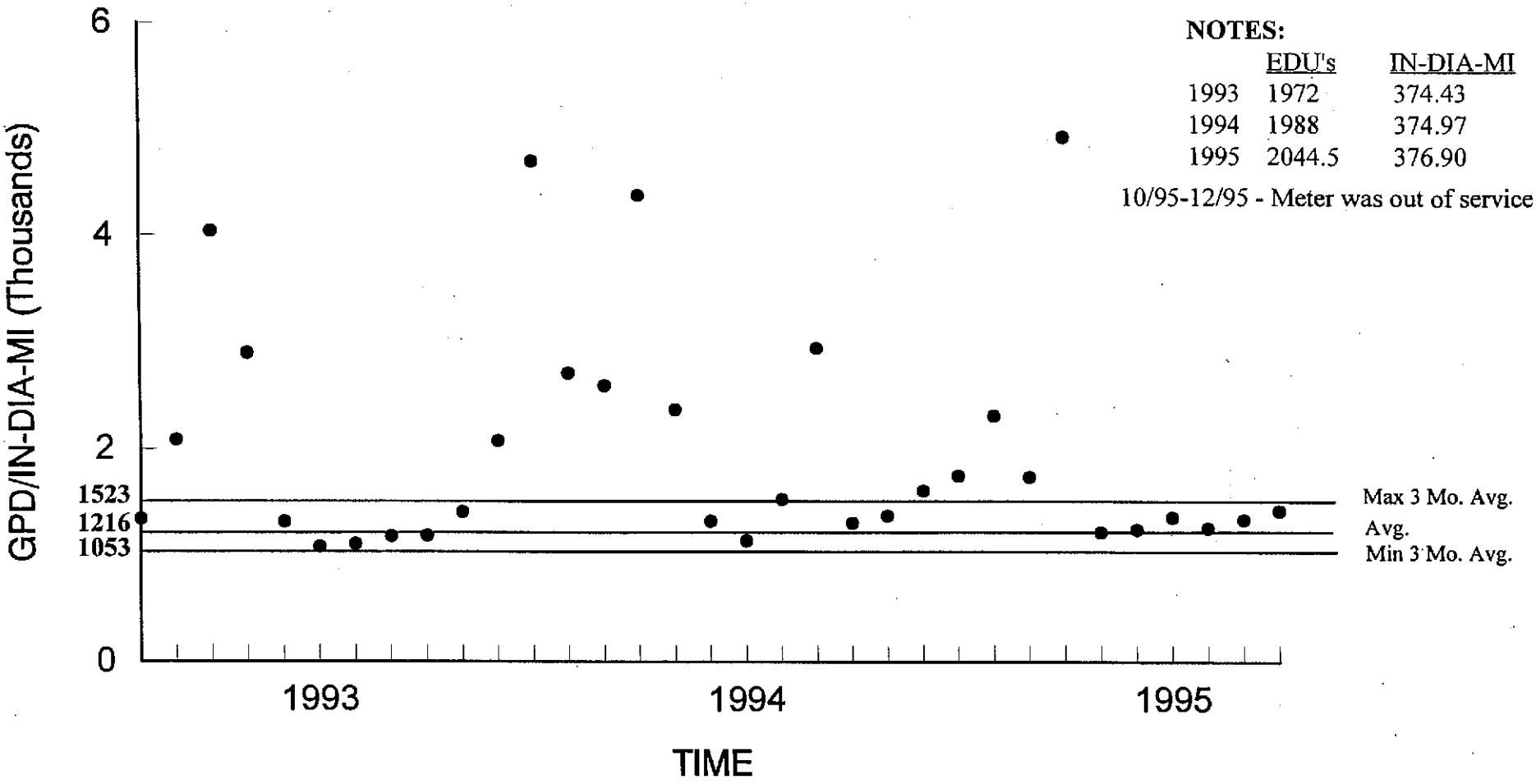
VFSA

French Creek Pump Station

Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

	EDU's	IN-DIA-MI
1993	1972	374.43
1994	1988	374.97
1995	2044.5	376.90

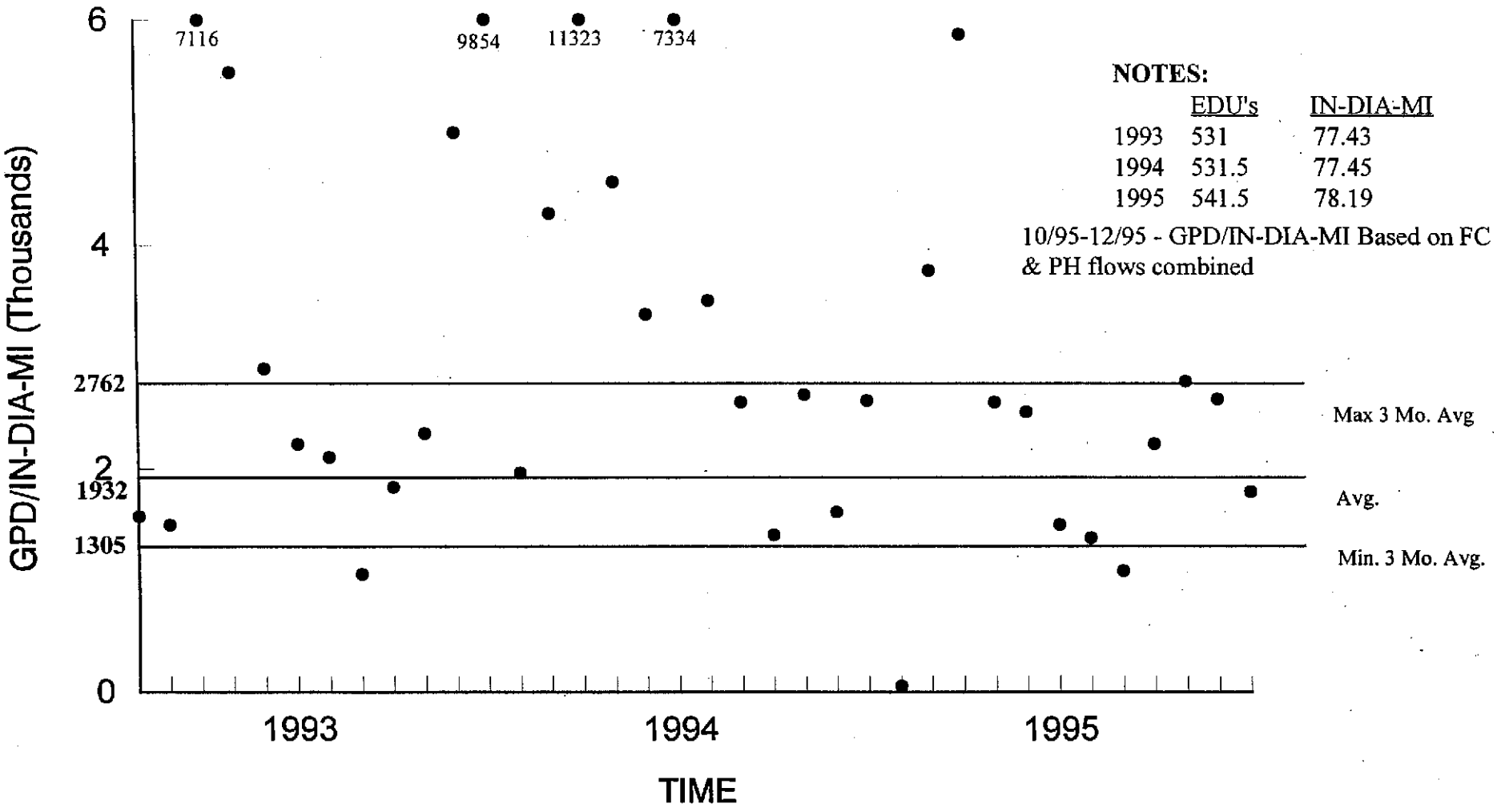
10/95-12/95 - Meter was out of service

JULY 26, 1996

VFSA

Pothouse Road Pump Station

Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

	EDU's	IN-DIA-MI
1993	531	77.43
1994	531.5	77.45
1995	541.5	78.19

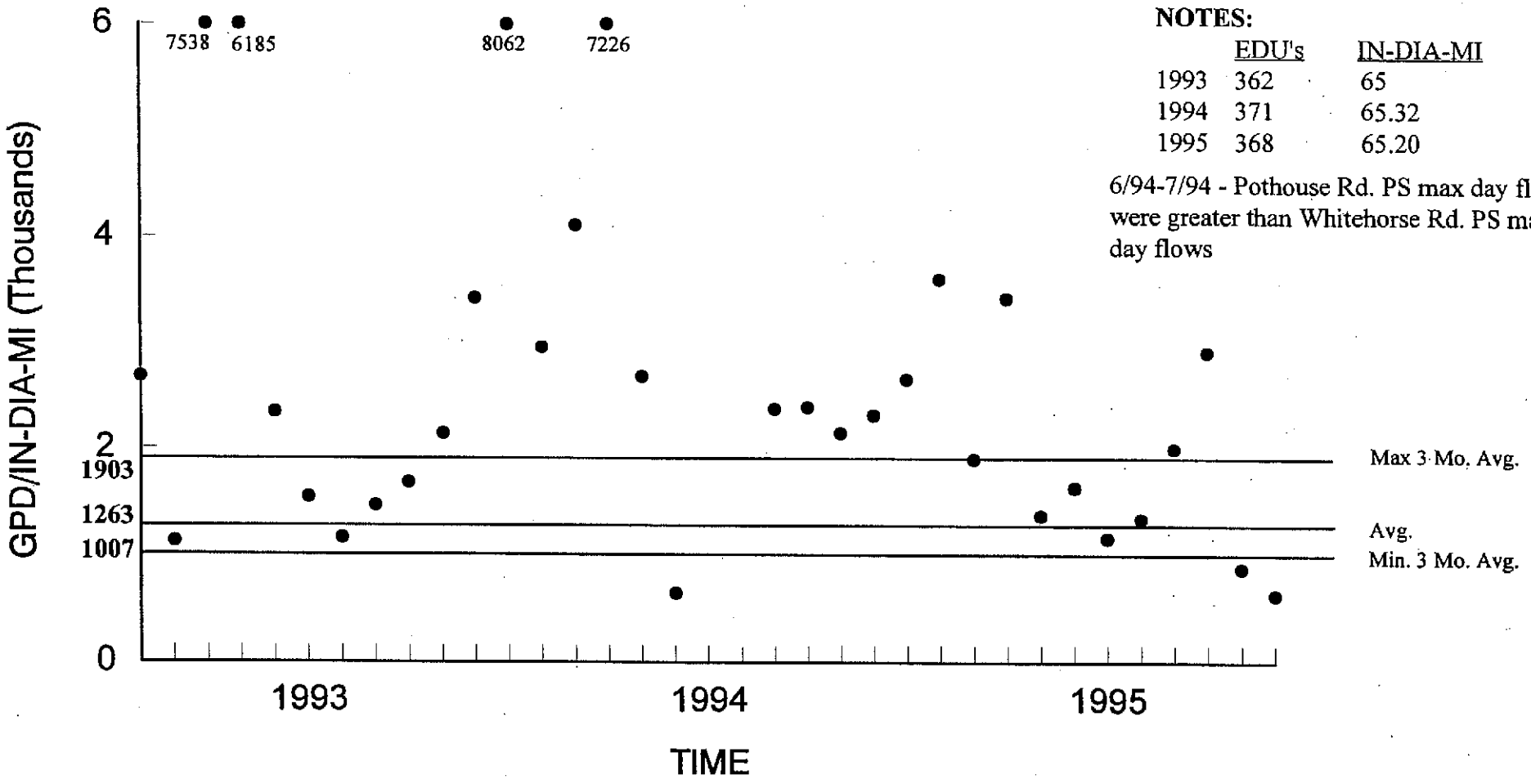
10/95-12/95 - GPD/IN-DIA-MI Based on FC & PH flows combined

JULY 26, 1996

VFSA

Whitehorse Road Pump Station

Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

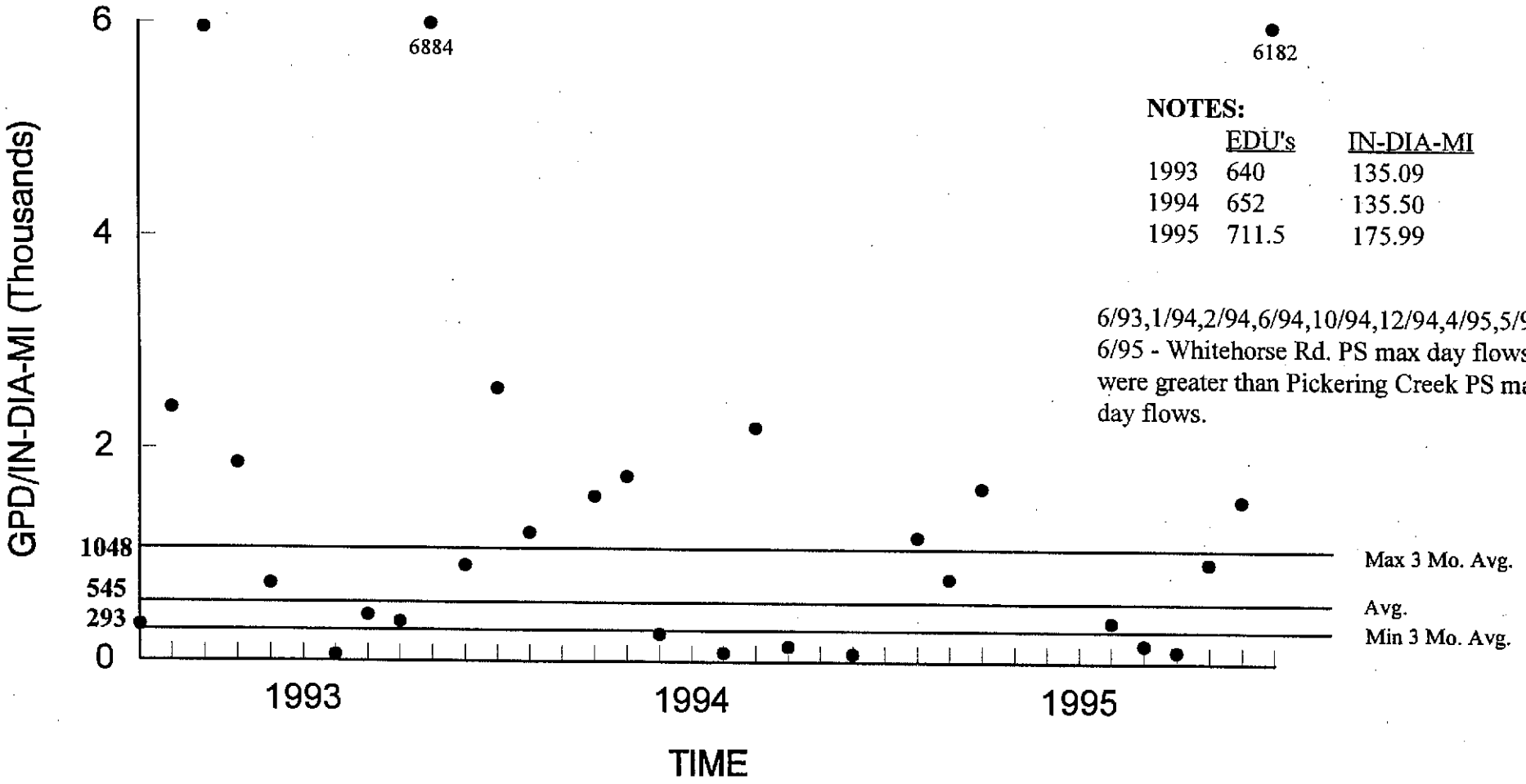
	EDU's	IN-DIA-MI
1993	362	65
1994	371	65.32
1995	368	65.20

6/94-7/94 - Pothouse Rd. PS max day flows were greater than Whitehorse Rd. PS max. day flows

JULY 26, 1996

VFSA

Pickering Creek Pump Station
Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

	EDU's	IN-DIA-MI
1993	640	135.09
1994	652	135.50
1995	711.5	175.99

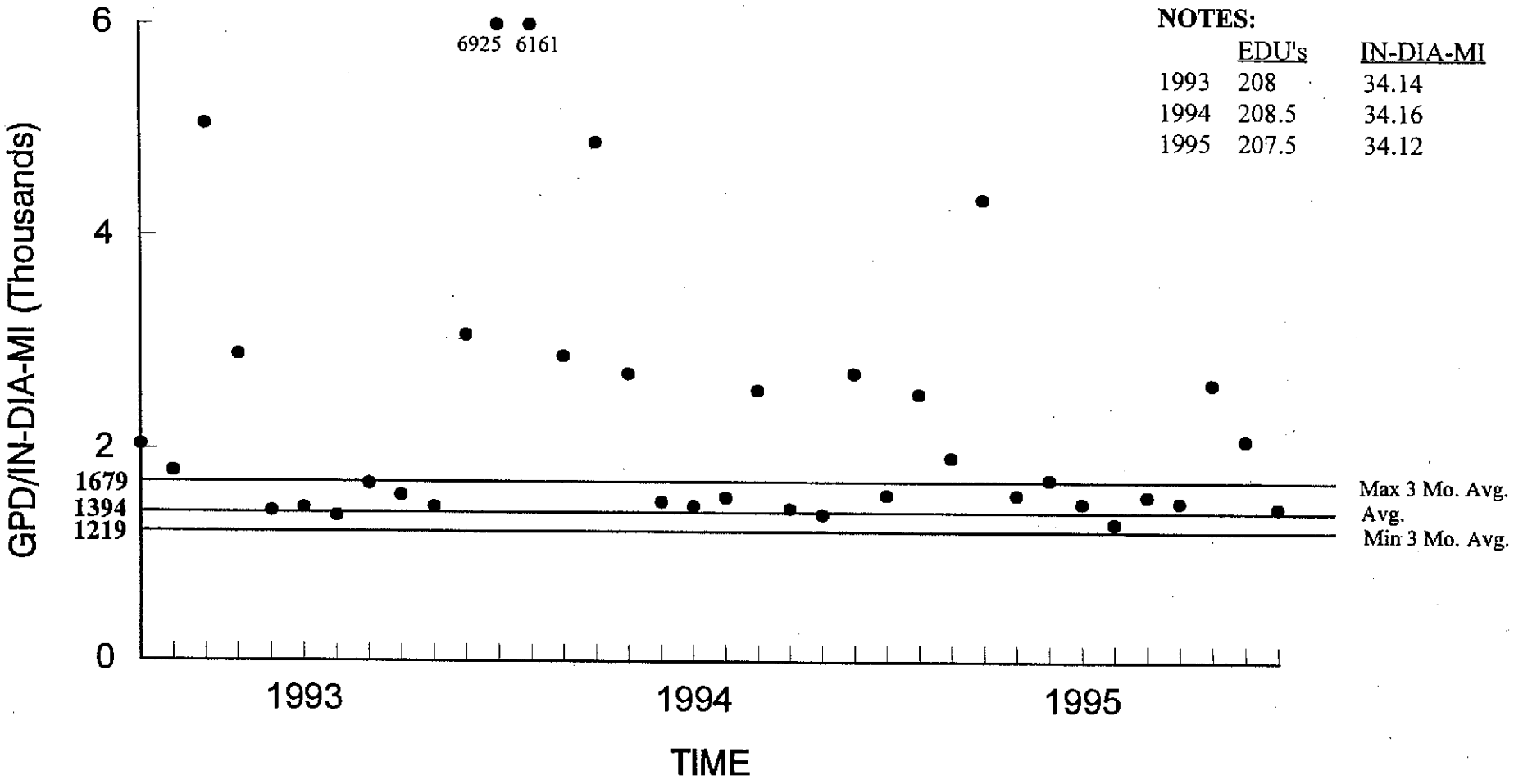
6/93,1/94,2/94,6/94,10/94,12/94,4/95,5/95, 6/95 - Whitehorse Rd. PS max day flows were greater than Pickering Creek PS max day flows.

JULY 26, 1996

VFSA

Perkiomen Pump Station

Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

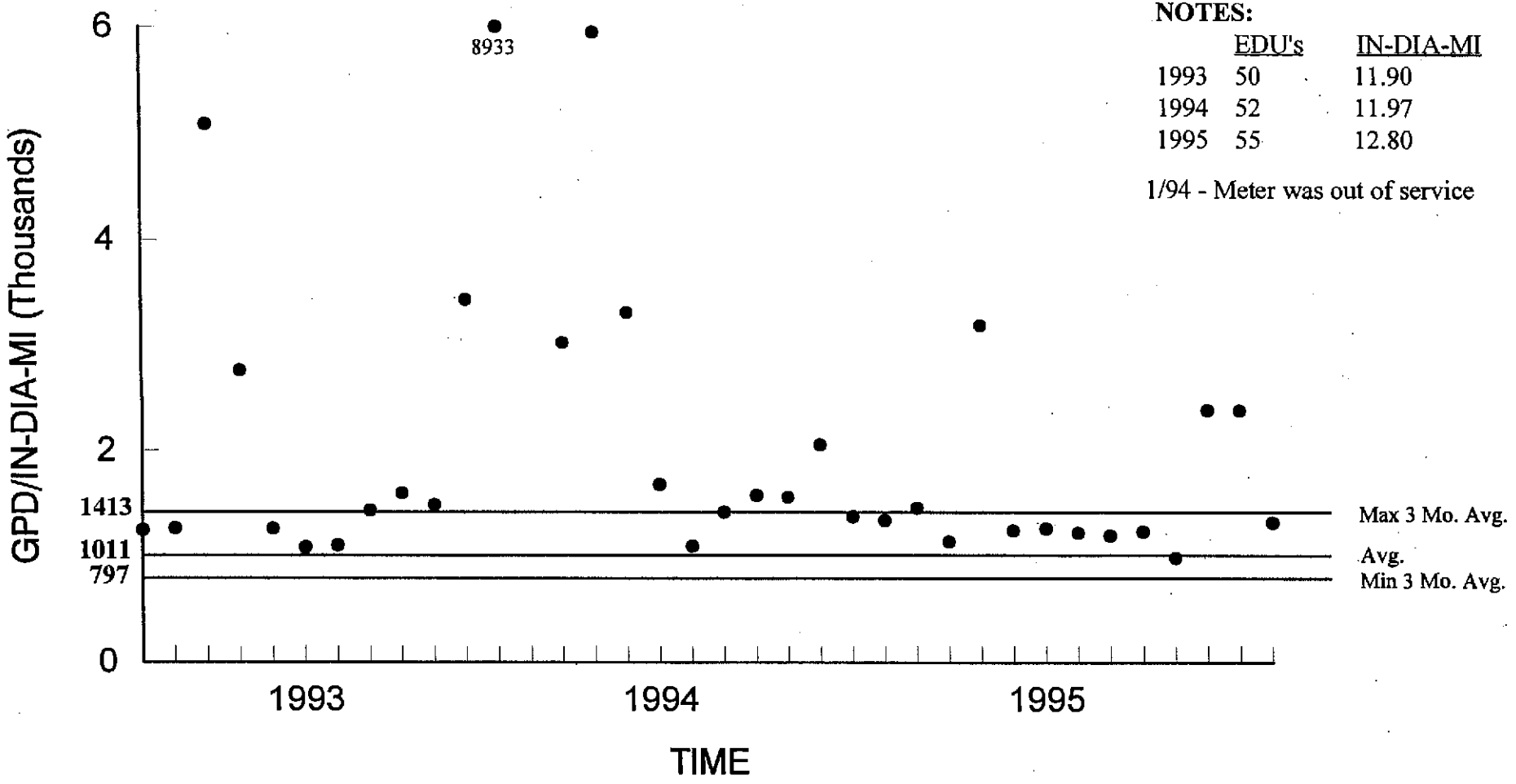
	EDU's	IN-DIA-MI
1993	208	34.14
1994	208.5	34.16
1995	207.5	34.12

JULY 26, 1996

VFSA

Valley Creek Pump Station

Comparison of Avg. GPD/IN-DIA-MI to Maximum Day GPD/IN-DIA-MI



NOTES:

	EDU's	IN-DIA-MI
1993	50	11.90
1994	52	11.97
1995	55	12.80

1/94 - Meter was out of service

JULY 26, 1996

APPENDIX D

Surcharged Sewer Data

Pump Station	Projection	Manhole Section			dia	slope	existing flow mgd	10yr flow mgd	ult flow	futr dia	futr capacity mgd
French Creek	Existing	2.08	118 -	102	8	0.004	0.49	.59	0.63	10	0.898
		2.04	109 -	108	12	0.002	1.21	1.42	1.49	14	1.558
		2.04	108 -	1.05	12	0.0022	1.22	1.44	1.51	14	1.634
	Five years	2.06	102 -	101	8	0.004		0.5	0.63	10	0.898
		2.04	110 -	122	12	0.0023		1.29	1.35	14	1.671
		2.04	122 -	109	12	0.0028		1.42	1.48	14	1.843
	ten years	2.05	101 -								
		2.04	110		12	0.0022		1.11	1.18	14	1.634
	ultimate	2.07	107 -	106	12	0.004			1.5	14	2.203
		2.06	105 -	104	8	0.0022			0.58	10	0.666
Pothouse	existing	2.09	105 -	104	18	0.0022	3.44	3.98	4.12	20	4.228
	Five years			none							
	Ten yeers	2.09	101 -	100a	15	0.008		3.97	4.13	18	6.089
	ultimate			none							
White Horse	existing			none							
	five years	3.04	446a	446	21	0.0019		4.83	5.13	24	6.389
	ten years			none							
	Ulitmate	3.04	460	459	21	0.0023			5	24	7.030
		3.04	459	458	21	0.0022			5.02	24	6.875
		3.04	458	457	21	0.0022			5.02	24	6.875
		3.04	453	452	21	0.0022			5.03	24	6.875
Pickering	existing	3.03	353	352	24	0.001		5.37	5.66	27	6.345
		3.03	117	358	24	0.001		5.75	6.14	27	6.345
		3.15	104	103	8	0.0042		0.52	0.59	10	0.921
											0.000
	five years	3.03	353a	353	24	0.0011		5.36	5.65	27	6.655
	ten years			none							
	Ultimate	3.03	325	324	24	0.0014			5.83	27	7.508
		3.15	108	107	8	0.0044			0.87	10	0.942
		3.15	107	106	8	0.0047			0.54	10	0.974
	Drawdown Whitehorse	3.03	352	346	24	0.0015			6.41	27	7.771
		3.03	359	360	24	0.0021			6.89	27	9.195
		3.03	360	360a	24	0.002			6.89	27	8.973
		3.03	328	327	24	0.0016			6.57	27	8.026
		3.03	327	326	24	0.0016			6.58	27	8.026
		3.03	326	325	24	0.0017			6.58	27	8.273
		3.03	324	323	24	0.0017			6.58	27	8.273
		3.03	323	322	24	0.0016			6.58	27	8.026
		3.03	322	321	24	0.0016			6.59	27	8.026

Description	Proj	Manhole	Section		Future Size	length LF	Existing Cost $	Five Year Cost $	Ten Year Cost $	Ultimate Cost $	manhole $2,400 each	pipe 10 in $65.00	pipe 14 in $70.00	pipe 20/21 in $85.00	pipe 18 in $75.00	pipe 24 in $100.00	pipe 27 in $110.00	bypass pumping $700.00 each	temp pav local rd $10.00 LF	Perm Pav local rd $20.00 LF	Temp Pav State Rd $22.00 LF	Perm Pav State Rd $30.00 LF	Shoulder State $1500 each	Highway Stream Crossing $400	Total
Pick.	exist	3.03	353	352	27	98	$19,220				$4,800						$10,780	$700	$980	$1,960					$18,220
		3.03	117	358	27	145	$28,990				$4,800						$15,950	$700			$3,190	$4,350			$28,990
		3.01	163	162	10	344	$38,180				$4,800	$22,360						$700	$3,440	$8,880					$38,180
	five years	3.03	353a	353	27	38		$11,656			$4,800						$4,180	$700			$836	$1,140			$11,656
	ten years								$0																
	ult	3.03	325	324	27	112				$17,820	$4,800						$12,320	$700							$17,820
		3.15	108	107	10	250				$29,250	$4,800	$16,250						$700	$2,500	$5,000					$29,250
		3.15	107	106	10	234				$25,330	$2,400	$15,210						$700	$2,340	$4,680					$25,330
	WH @ draw down	3.03	352	346	27	498				$86,176	$4,800						$54,780	$700			$10,956	$14,940			$86,176
		3.03	359	360	27	226				$30,360	$4,800						$24,880	$700							$30,360
		3.03	360	360a	27	40				$23,500	$2,400						$4,400	$700						$16,000	$23,500
		3.03	328	327	27	350				$44,000	$4,800						$38,500	$700							$44,000
		3.03	327	326	27	384				$45,340	$2,400						$42,240	$700							$45,340
		3.03	326	325	27	140				$18,500	$2,400						$15,400	$700							$18,500
		3.03	324	323	27	180				$22,900	$2,400						$19,800	$700							$22,900
		3.03	323	322	27	188				$23,780	$2,400						$20,680	$700							$23,780
		3.03	322	321	27	213				$26,530	$2,400						$23,430	$700							$26,530
	TOTALS:						**$231,811**	**$90,219**	**$61,230**	**$652,748**															

Total: $1,036,008

Descript.	Proj.	Manhole	Section	Future Size	Length	Existing Cost	Five Year Cost	Ten Year Cost	Ultimate Cost	manhole	pipe 10 in	pipe 14 in	pipe 20/21 in	pipe 18 in	pipe 24 in	pipe 27 in	bypass pumping	temp pav local rd	Perm Pav local rd	Temp Pav State Rd	Perm Pav State Rd	Shoulder State	Highway Stream Crossing	Total
				inch	LF	$	$	$	$	$2,400 each	$65.00	$70.00	$95.00	$75.00	$100.00	$110.00	$700.00 each	$10.00 LF	$20.00 LF	$22.00 LF	$30.00 LF	$15.00 each	$400 LF	
French Creek	Exist	2.08 118 - 102		10	383	$39,485				$2,400	$24,895						$700	$3,830	$7,660					$39,485
		2.04 109 - 108		14	277	$24,890				$4,800		$19,390					$700							$24,890
		2.04 106 - 1.05		14	300	$26,500				$4,800		$21,000					$700							$26,500
	five years	2.06 102 - 101		10	285		$22,725			$4,800	$17,225						$700							$22,725
		2.04 110 - 122		14	66		$7,720			$2,400		$4,620					$700							$7,720
		2.04 122 - 109		14	185		$18,450			$4,800		$12,950					$700							$18,450
	ten years	2.05 101 - 2.04 110		14	155			$37,950		$2,400		$10,850					$700						$24,000	$37,950
	ult.	2.07 107 - 106		14	215				$31,730	$4,800		$15,050					$700			$4,730	$6,450			$31,730
		2.06 105 - 104		10	174				$19,420	$4,800	$11,310						$700					$2,610		$19,420
Pot-house	exist	2.09 105 - 104		20	358	$54,546				$4,800			$30,430				$700			$7,876	$10,740			$54,546
	five years																							
	ten years ult.	2.09 102 - 100a		18	140			$23,280		$4,800				$10,500			$700			$3,080	$4,200			$23,280
White-horse	exist					$0																		
	five years	3.04 448a	446	24	159		$29,668			$4,800					$15,900		$700			$3,498	$4,770			$29,668
	ten years							$0																
	ult.	3.04 460	459	24	307				$52,164	$4,800					$30,700		$700			$6,754	$9,210			$52,164
		3.04 459	458	24	360				$57,820	$2,400					$36,000		$700			$7,920	$10,800			$57,820
		3.04 458	457	24	310				$50,220	$2,400					$31,000		$700			$6,820	$9,300			$50,220
		3.04 453	452	24	279				$47,908	$4,800					$27,900		$700			$6,138	$8,370			$47,908

APPENDIX E

Pump Drawdown Test Procedures

PUMP DRAWDOWN TEST PROCEDURE

A. PREPARATION

1. Measure inside dimensions of wet well and calculate gallons per inch of drawdown that wet well provides.

$$\text{Gal/In} = \frac{\text{Lgth (ft)} \times \text{Width (Ft)} \times \text{1 Ft Depth} \times 7.48\ \text{Gal/Ft}^3}{12\text{"/Ft}}$$

2. Install pressure gauges on pump suction and discharge lines and measure vertical distance between centerline of gauges and the floor. Also, record static pressure on discharge gauge with pumps off.

3. Choose reference point for measuring sewage level in wet well. Usually edge of hatch opening or grating frame. Determine the elevation of this point relative to gauges and pump room floor. Obtain this from pump station drawings or measure it.

4. Flow matcher panel usually has a wet well level gauge. This level gauge could be used during test if the relationship of level gauge reading to the wet well level measuring reference point described in Item 3 above is determined. This relationship can be determined by measuring from reference point to the sewage level and at the same time have someone record the level gauge reading. Then record this relationship. Example: "37.5" on level gauge = 87.5" to W.L. from reference point". You will then be able to calculate actual wet well level relative to the pump suction and discharge pressure gauge centerlines and will be able to calculate drawdown during testing. However, the accuracy of the level gauge will now come into play. It is best to use a tape measure for calculating drawdowns, however, by checking the level gauge reading versus taped measurements at several wet well levels the level gauge accuracy can be determined.

5. Overfill the side of the wet well to be tested several feet above the pumps maximum speed operating level. The feet required is equal to the pumps theoretical capacity times two (2) minutes divided by the wet well capacity in gallons per inch. The two (2) minute run time is preferred, if available. The run time should be at least one (1) minute minimum.

6. Run several preliminary tests to:

   a. Check how long it takes from time pump is turned on to reach its maximum speed.

   b. Check pump actual maximum obtainable speed with a tach and record it. Record measured speed versus percent speed being indicated on the flow matcher panel.

   c. To verify how far the wet well must be filled to obtain the 1-2 minute run time at maximum speed required.

d. Time required to fill and isolate one of the wet wells to run the test.

e. To check pump shutoff head, slowly close its discharge valve when operating at maximum speed and record the suction pressure gauge, discharge pressure gauge and wet well level gauge readings. Make sure pump is at maximum speed.

7. Hopefully, pump will only require 10-20 seconds to reach maximum speed from a dead stop. It if takes several minutes, there may not be enough wet well volume to run the test.

B. RUNNING DRAWDOWN TESTS

1. Two or three drawdown tests should be performed. If one looks way off from the others, discard it and run another.

2. Testing:

a. Fill wet well to be tested to level that will provide sufficient run time and close influent gate. Also, isolate common suction line from the other wet well.

b. Measure distance from reference point to wet well level.

c. Start pump and stop watch.

If pump comes up to maximum speed in several seconds, continue test.

If pump takes more than 5 seconds to come up to speed, do not take initial reading and do not start the stop watch when starting pump. Wait until pump reaches 100% speed then take a level reading. Once a level is established, immediately start the stop watch.

d. Allow pump to run for 1-2 minutes, if possible, while watching pump speed making sure its always at maximum speed.

e. Record with pump running:

1) Suction Pressure
2) Discharge Pressure
3) Flow Meter Reading

f. After 1-2 minutes run time, take a level reading. Once you get a solid level reading, immediately record the stop watch reading. If you stopped the pump, it will slowly decelerate before turning off and, therefore, will affect the accuracy of the test.

g. Calculate the volume of drawdown that occurred and pump capacity =

$$GPM = \frac{\text{Wet Well Cap (Gal/In) [2nd reading (Inches)-1st reading (Inches)]}}{\text{Stop Watch Reading (Total Seconds)} \over \text{60 Sec/Min}}$$

h. Calculate pump TDH.

TDH = (Disch. press.-Suct. Press.) (2.31 Ft/PSI) + (Elev. Diff. suct. & Disch. Press. Gauges)

i. Adjust TDH by adding friction losses through pump suction piping and discharge piping up to the point where discharge gauge is mounted (This friction loss will have to be calculated).

TEST NO. _____

1. Wet Well Level at Test Stop - _____ In.
2. Wet Well Level at Test Start- _____ In.

Drawdown- _____ In.

Volume = _____ Gal/In x _____ In Drawdown = _____ Gal

3. Testing Duration: Minutes _____
   Seconds _____

$$\text{Pumping Rate} = \frac{\text{\_\_\_\_\_ Gal \_\_\_\_\_}}{\text{\_\_\_\_\_ Min} + \frac{\text{\_\_\_\_\_ Sec}}{60 \text{ Sec/Min}}} = \text{\_\_\_\_\_ GPM}$$

4. Discharge Pressure _____ PSI
   minus
   Suction Pressure _____ PSI

   Theoretical TDH = _____ PSI x 2.31 = _____

   Theoretical TDH _____
   Diff. Gauge Elev. + _____
   Frict. Losses + _____
   Pump THD _____

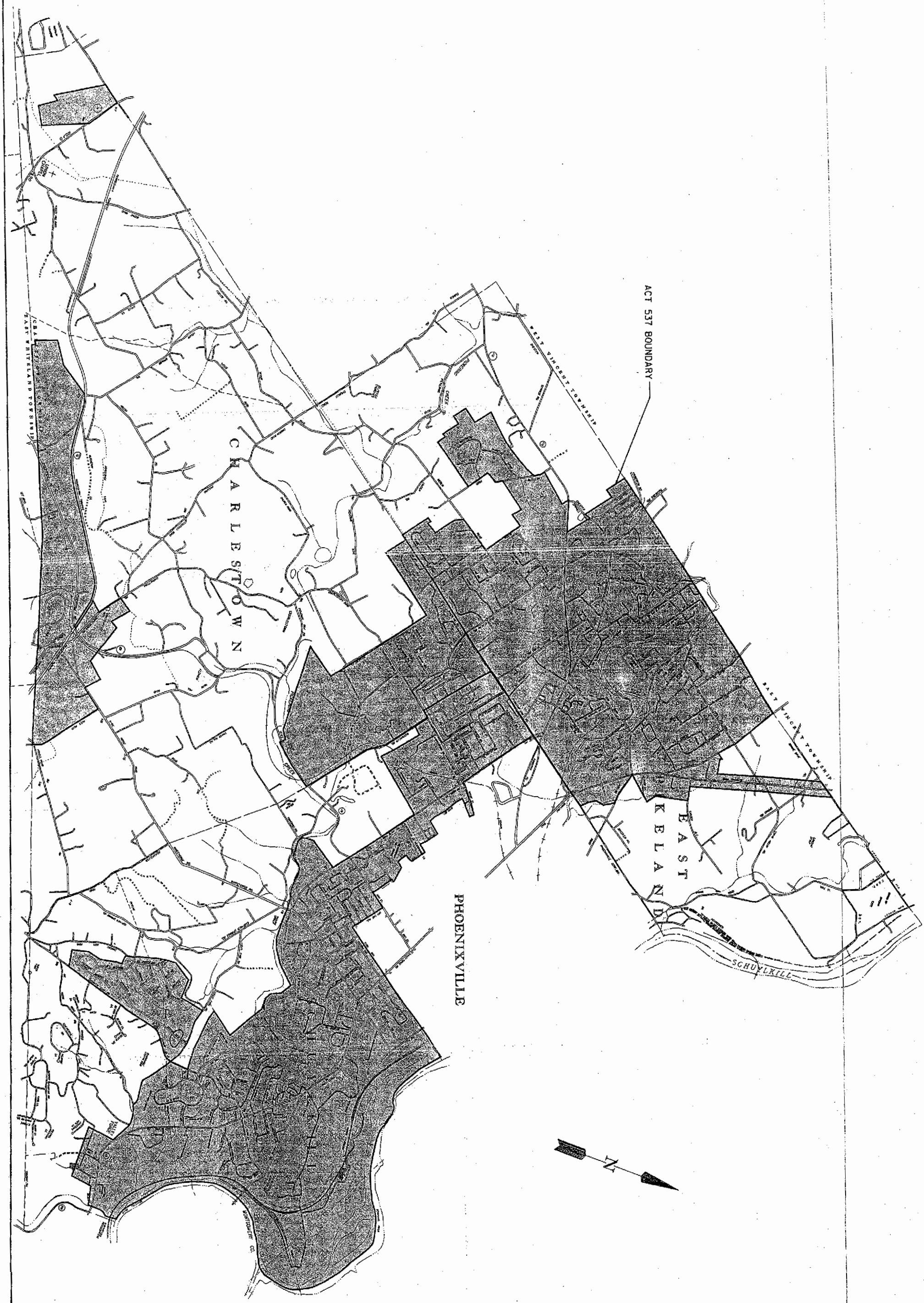
5. Flow Meter Reading (Used to check meter accuracy)

APPENDIX F

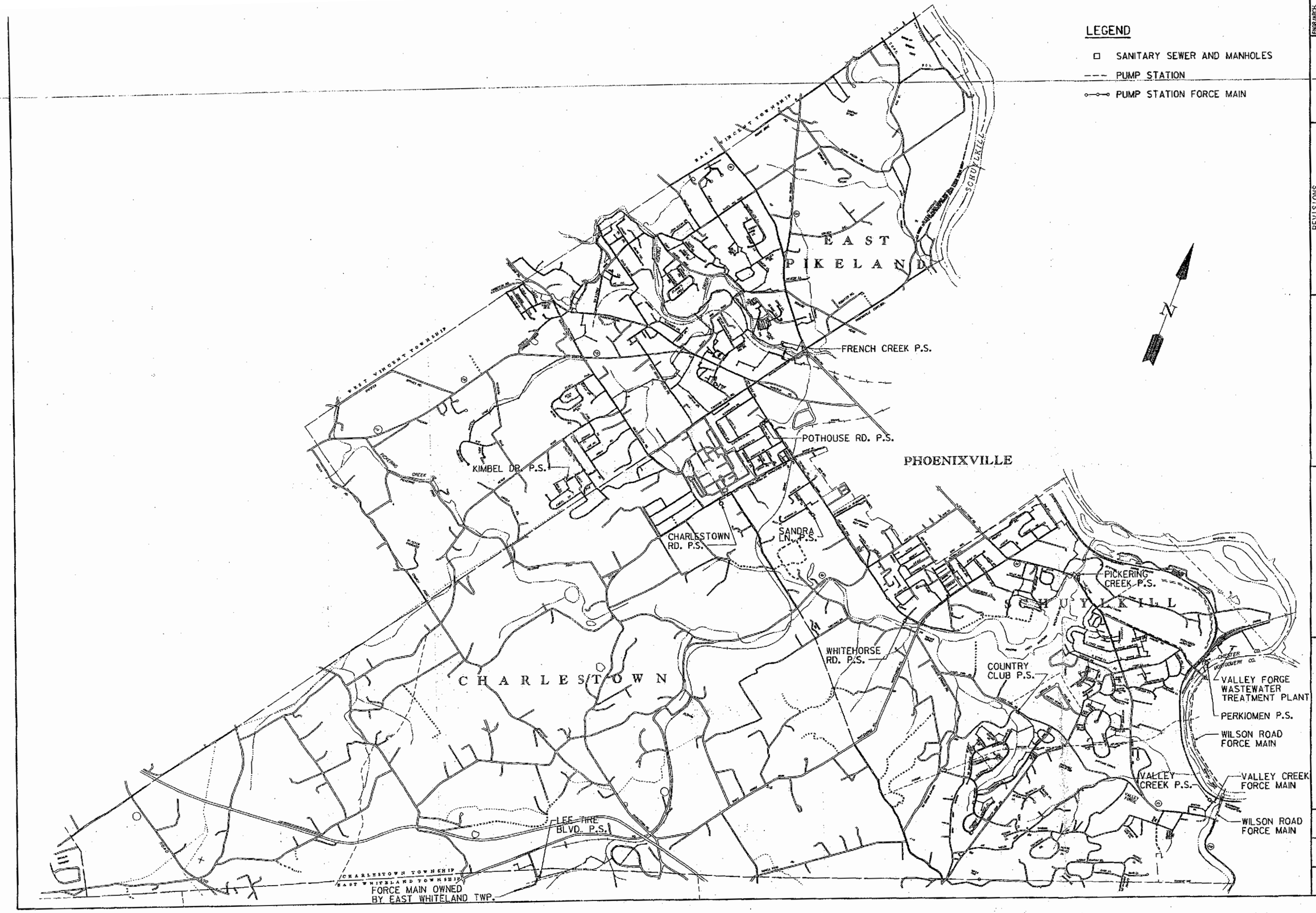
Implementation Costs

	1996 Dollars	1997 Dollars	1998 Dollars	1999 Dollars	2000 Dollars	Project Costs
1996						
1. Purchase surcharge indicators	$1,100					$1,100
TOTAL						**$1,100**
1997						
1. Pothouse Road Pump Station						$14,300
Change impellars	9,200					
Change generator wires	$1,800					
	11,000					
		11,440				
Engineering (in house 25%)		2,860				
		$14,300				
2. Upgrade sewer segments						$109,231
2.09 105-104	54,500					
2.09 102-100A	23,300					
	$77,800	80,912				
Project Costs (35%)		28,319				
		$109,231				
TOTAL						**$123,500**
2000						
1. Telemetry - flow data -	67,500					$106,603
All pump statons					78,965	
Project Costs (35%)					27,638	
					106,603	
2. Upgrade sewer segments						$219,682
2.08 118-102	39,500					
2.04 106-105	24,900					
2.04 109-108	26,500					
3.03 353-352	19,200					
3.03 317-358	29,000					
	$139,100				162,727	
Project Costs (35%)					56,955	
					$219,682	
TOTAL						**$326,300**

FIGURES



PROJECT NO. 71565	SHEET NO. —	EXHIBIT NO.	SEWER SERVICE BOUNDARY	VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITY COLLECTION SYSTEM ACT 537	BUCHART HORN, INC. Engineers, Architects and Planners	REVISIONS NO. / DESCRIPTION / BY / DATE	DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGRAMMATIC. DRAWING SHALL NOT BE SCALED. ©Buchart-Horn, Inc.	ENGR./ARCH. DESIGN BY DRAWN BY CHECK BY DATE



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REVISIONS

NO.	DESCRIPTION	BY	DATE

BUCHART HORN, INC.
Engineers, Architects and Planners

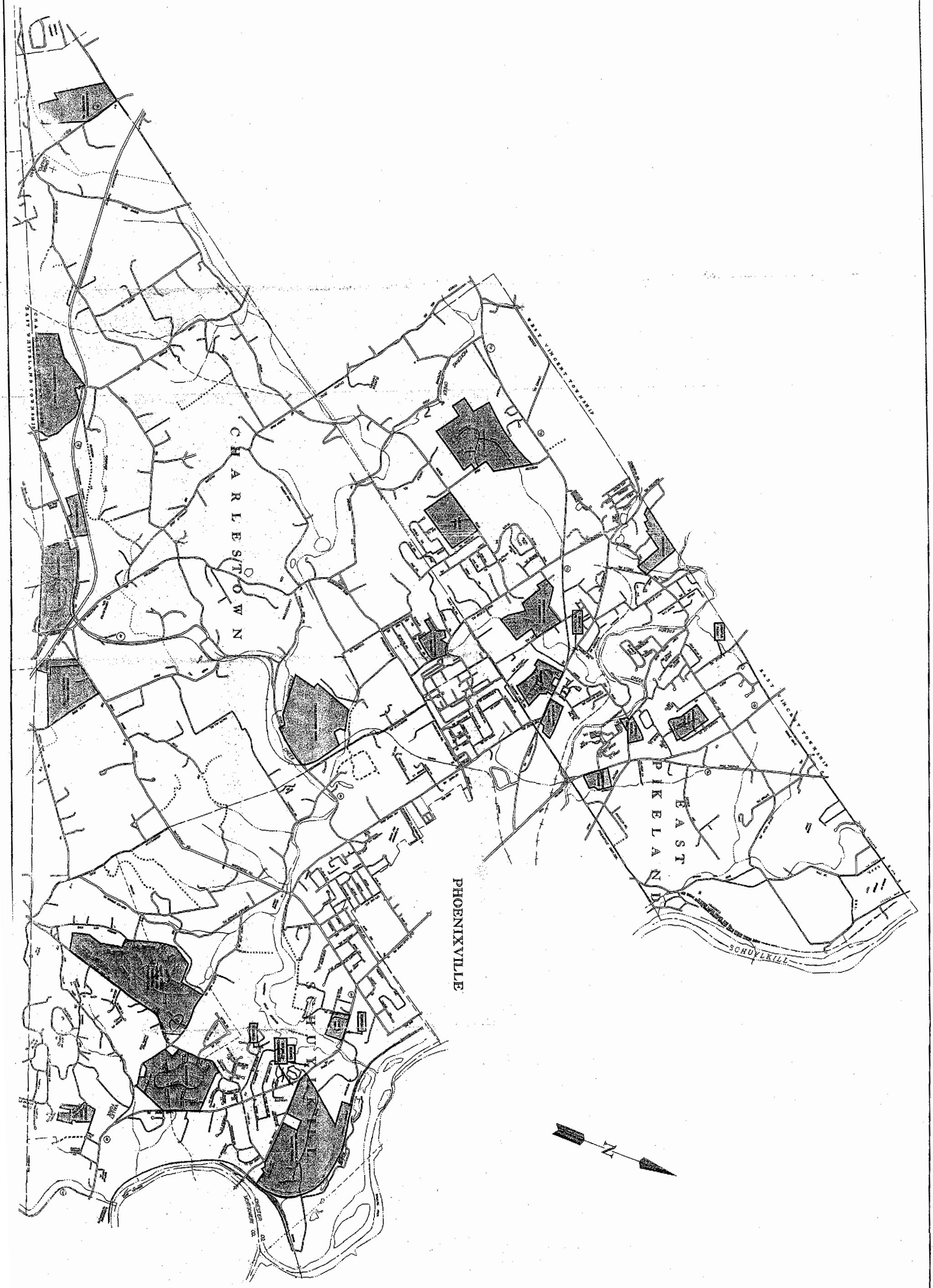
VALLEY FORGE SEWER AUTHORITY
MEMBER MUNICIPALITY COLLECTION SYSTEM
ACT 537

SEWAGE COLLECTION SYSTEM

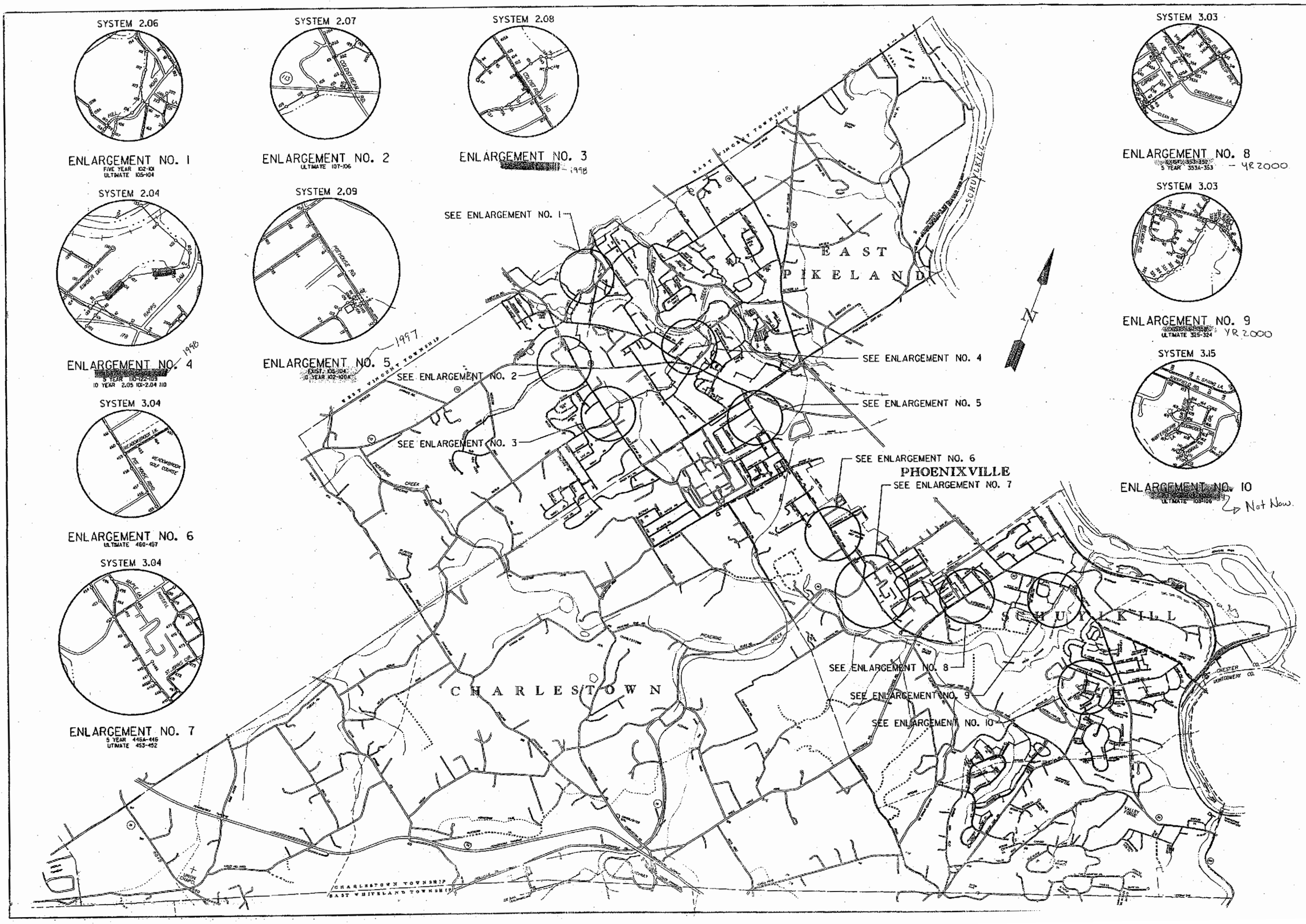
EXHIBIT NO. 2

SHEET NO.

PROJECT NO. 71565



71565 PROJECT NO.	3 SHEET NO.	EXHIBIT NO.	SUBDIVISION MAP	VALLEY FORGE SEWER AUTHORITY MEMBER MUNICIPALITY COLLECTION SYSTEM ACT 537	BUCHART HORN, INC. Engineers, Architects and Planners	REVISIONS NO. / DESCRIPTION / BY / DATE	DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGRAMMATIC. DRAWING SHALL NOT BE SCALED. ©Buchart-Horn, Inc.	ENGR./ARCH. DESIGN BY DRAWN BY CHECK BY DATE



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REVISIONS

NO.	DESCRIPTION	BY	DATE

BUCHART HORN, INC.
Engineers, Architects and Planners

VALLEY FORGE SEWER AUTHORITY
MEMBER MUNICIPALITY COLLECTION SYSTEM
ACT 537

SEWER SEGMENTS PROJECTED TO SURCHARGE

EXHIBIT NO. 4

SHEET NO.

PROJECT NO. 71565

Revisions made to the VFSA Member Municipality Act 537 Plan
as approved by the Authority April 14, 1997

1. Revised text on pages 8, 9, 11, 12 and 15.

2. Table No. 6, page 16, to VFSA BH/Projections

   - added Reeves-Mainwaring 5 EDUs to 10 yr. projection
   - deleted Patrick Henry - 47 EDUs
   - adjusted Rhinehart to 130 EDUs

3. The revisions to Table No. 6 on page 16 result in changes to:

   page 17, Table No. 7 - 10 yr. & ultimate EDUs for Pickering Creek P.S. and tot totals

   page 21, Table No. 10 - 10 yr. & ultimate EDUs and Flow Projections.

   page 25, Table No. 12D - Deleted reference to Patrick Henry Drive.

   page 31, Table No. 16 - revised 10 yr., ultimate and drawdown flow projections. Revised 10 yr. and ultimate EDUs.

   Appendix A, page 3, Pickering Creek Drainage Basin
   - deleted Charlestown Crossing
   - adjusted Rhinehart EDUs to 130

   Appendix B, page 1, Pickering Creek - Adjusted Rhinehart to 130 EDUs. Added Reeves-Mainwaring - 5 EDUs, adjusted undeveloped land to 73 EDUs.

   Appendix B, page 2 - deleted Reeves property and Patrick Henry Drive from Pickering (1003)

4. Added Schuylkill Township's Act 537 planning map as Exhibit No. 5. It is referenced on page 15 of the Plan.

The number of EDUs is also reported by member municipality. The number of EDUs connected by municipality for 1993 through 1995 is listed in Table No. 3.

TABLE NO. 3
YEAR END EDUs BY MEMBER MUNICIPALITY

	1993 EDUs	1994 EDUs	1995 EDUs
Charlestown Township	302.5	345.5	377.0
East Pikeland Township	1,886.0	1,927.5	1,975.0
Schuylkill Township	1,664.0	1,789.0	1,717.0
West Vincent Township	0.0	22.0	27.0
Total	**3,852.5**	**4,084.0**	**4,096.0**

FUTURE CONNECTIONS

Each of the member municipalities and the Valley Forge Sewer Authority have carefully monitored development within the sewer service area. To ensure an orderly growth, sewage facilities proposed to serve new developments are sized to consider the ultimate needs of the area which the members have designated to be served. The proposed sewer routing must be situated to serve the overall sewerage objective of the Township within which the project is located. New development is typically evaluated by drainage basin. An analysis of the proposed routing is performed to determine whether adjacent properties within the Township's designated sewer service area may ultimately obtain public sewerage service through the proposed sewer. This determination may require the construction of a deeper sewer or provisions for future sewer connections, however, the intent is to eliminate the need for pump station construction in the future. Whenever possible, gravity alternatives are pursued. The Valley Forge Sewer Authority has had considerable success in evaluating proposed sewer extensions by drainage basin rather than just individual developments. Only one additional pump station has been required within the member municipality collection system since the original collection system construction.

Each of the Member Municipalities evaluated the future wastewater disposal needs of its community. As a result of this evaluation, Act 537 planning boundaries were developed. These boundaries are depicted in Exhibit 1. Additionally, each municipality identified proposed and active subdivisions within their political boundary including a development schedule. These subdivisions are depicted in Exhibit 3. This Member Municipality Act 537 Plan uses the 1995 data for the base year. The five year projection is 2000 and the ten year projection is 2005. Because of the varying time tables in which the three member plans were prepared, some adjustments to the growth projections were necessary for consistency.

Charlestown Township

Charlestown Township designated all property within its entire Act 537 sewer service boundary for public sewage service within a 10 year horizon. Figure 2 herein is a copy of Figure 15 of the April 1989 Official Plan Under the Pennsylvania Sewage Facilities Act prepared for Charlestown Township. The ten (10) year horizon depicted thereon is 1989-1999, basically the five year horizon of this document. Therefore, to be consistent with the time frame of the Member Municipality Act 537 Plan, the Township's projections are designated as a 5 year projection on Table No. 4. The developments which are indicated with an asterisk on Table No. 4 are already in some stage of planning or construction and the EDUs are based on approved planning module documentation. The remaining development EDUs were calculated by applying the Township's maximum zoning criteria to the developable acreage within the 537 sewerage boundary defined by the Township. Although there was considerable development planning activity in 1989, the momentum of some of the identified developments has slowed down. Therefore, this plan modifies growth projection to reflect the current development activity.

TABLE NO. 4
COMPARISON OF GROWTH PROJECTIONS
FOR CHARLESTOWN TOWNSHIP

	VFSA/BH Projections			Charlestown Projections[1]
	5 Year	10 Year	Ultimate	5 Year
Charlestown Hunt[2]	105	244		349
Charlestown Hunt Growth	0	0	80	80
Across from Forestas	0	0	5	5
Charlestown Meade[2]	3			3
Commons at Great Valley[2]	66			66
Spring Oak Business Center[2]	73			73
DeVault Meats[2]	73			73
Laura Brooke[2]	20			20
Charlestown Oaks[2]	95	193		288
Charlestown Meadows[2]	0	0	241	241
Along Buckwalter	0	0	5	5
Behind Spring Oak	0	0	21	21
Across from Spring Oak	0	0	9	9
Yellow Springs Road	0	0	10	10
Rte. 29 & Charles Road	0	0	50	50
N. Side of the school	0	0	7	7
Farm Residence	0	0	1	1
Adj. To Laura Brooke	0	0	35	35
Adj. To Charlestown Oaks	0	0	46	46
	435	437	510	1,382
Existing EDUs (1/1/95)	345.5			345.5
Five Year EDUs	435			1,382
Ten Year EDUs	437			
Ultimate EDUs	510			
Total	**1,727.5**			**1,727.5**

[1] Charlestown Township projected all growth within its Act 537 boundary to occur by 1999 (5 year horizon for this plan). The number of EDUs is based on the Township's zoning criteria.

[2] Developments in some stage of planning or construction.

East Pikeland Township

The growth projections provided in the East Pikeland Township Act 537 Wastewater Facilities Plan, Phase III, dated August 26, 1991 are based on the 1989 Wasteload Management Report - Chapter 94. The Member Municipality portion of the Chapter 94 for 1989 is furnished in whole as Appendix A to East Pikeland Township's plan. Per page 43 of East Pikeland Township's Act 537 Plan, 800 EDUs were projected to develop within the Township from 1989-1994. Due to a slow down in growth, only 321 of these EDUs were developed by 1994. Although most of the projects identified in 1989 have not developed as planned, they are still active viable projects. This plan updates the East Pikeland Township growth projections based on the Act 537 sewer service boundary defined by the Township and current zoning criteria to create 5 year, 10 year and ultimate growth projections. See Table No. 5.

The East Pikeland Township Act 537 Plan also refers to an 850,000 gpd ultimate growth projection from the 201 Study, prepared in the early 1970's. The ultimate projection used in this Plan considers all potential growth in the remaining developable areas within the 537 boundary set forth by East Pikeland Township.

Schuylkill Township

Schuylkill Township's Act 537 Plan Update includes a Table of Anticipated Development on page 1 of the Plan Summary. It includes projections for both a five year (1995-1999) and ten year (2000-2004) planning horizon. The Township's Plan and this Plan differ by one year in their time table. Therefore, the Township's information has been updated to coincide with the planning period of this Plan. See Table No. 6. Additionally, the time frame for the MacAvoy, Rhinehart and Maisfield projects were extended to a 10 year duration due to the slow down in growth experienced in recent years.

Schuylkill Township's Act 537 boundary map titled "Act 537 Comprehensive Wastewater Plan Showing Development - 1993 - 2002, Exhibit No. 1" is included herein as Exhibit No. 5.

TABLE NO. 6
COMPARISON OF GROWTH PROJECTIONS
FOR SCHUYLKILL TOWNSHIP

	VFSA/BH Projections			Schuylkill Projections		
	5 Year	10 Year	Ultimate	5 Year	10 Year	Ultimate
Chapel View Estates	12			24		
Rte 23 Comm. (Alpha Rlty)	6			15		
Buono Tract	12			0		
MacAvoy	0	274		137	137	
Valley Forge Woods	240	85		240	85	
Rhinehart	0	130		80	95	
Maisfield	0	48		48		
French Creek - misc. (Ind.)	0	0		10	10	
Along Charlestown Hunt Inter	5			5		
Health Care Jordon	0	0		44		
Valley Creek	2			0	0	10
Miscellaneous	0	0		25	25	
Showalter Farm		0			80	
Meadowbrook Golf Course		0			58	
Mainwaring		5			5	
Thompson Tract						10
Thompson/Gold						10
Univ. Of PA						5
Misc. Resubdiv-Jug Hollow						25
Rte 23 North Corridor			29			
N. Side of Pawling Rd.			80			
North of Conrail			196			
Intersection @ Maisfield			6			126
Bull Tavern			3			
RR Tracks			36			
East Phillip			28			
By Valley Forge Woods			6			
Total EDUs	277	542	384	628	495	186
Existing EDUs	1,789	(1/1/95)		1,666	(1/1/94)	
Five Year EDUs	277			628		
Ten Year EDUs	542			495		
Ultimate EDUs	384			186		
TOTAL	**2,992**			**2,973**		

Basis of EDU Growth Projections

Table No. 7 presents the basis for the EDU growth projections developed in this report.

TABLE NO. 7
EDU GROWTH PROJECTIONS

	1994 Existing EDUs	5 Year	10 Year	Ultimate
French Creek P. S.				
Drainage Basin				
Stony Run	0	0	0	20
Kimbel Dr. P.S.	99	99	142	142
French Creek P.S.	1,922.5	2,275.5	2,439.5	2,703.5
Subtotal	2,021.5	2,374.5	2,581.5	2,865.5
Pothouse Rd. P.S.				
Drainage Basin				
Sandra Lane P.S.	23	23	23	23
Charlestown Rd. P.S.	119.5	122.5	122.5	127.5
Pothouse Rd. P.S.	391	391	391	396
Subtotal	533.5	536.5	536.5	546.5
Whitehorse Rd. P.S.				
Drainage Basin				
Whitehorse Rd. P.S.	435.5	545.5	789.5	869.5
Subtotal	435.5	545.5	789.5	869.5
Pickering Creek P.S.				
Drainage Basin				
Country Club Rd. P.S.	27	267	352	358
Pickering Creek P.S.	652	684	947	1,020
Subtotal	679	951	1,299	1,378
Perkiomen				
Drainage Basin				
Perkiomen P.S.	207.5	207.5	401.5	706.5
Subtotal	207.5	207.5	401.5	706.5
Valley Creek				
Drainage Basin				
Valley Creek P.S.	53	55	55	55
Subtotal	53	55	55	55
Valley Creek Trunk				
Sewer Drainage Basin				
Lee Tire Blvd.				
metering station	154	386	386	519
Route 401	0	0	0	241
Sidley Rd.	0	95	288	334
Subtotal	154	481	674	1,094
TOTAL	**4,084**	**5,151**	**6,337**	**7,515**

Future Flows

Table No. 7 lists the projected number of EDUs for the Member Municipalities by various

growth horizons. Table No. 10 provides average daily wastewater flow projections for the member municipalities.

TABLE NO. 10
WASTEWATER FLOW PROJECTIONS
FOR THE MEMBER MUNICIPALITIES

Growth Horizon	Total EDUs	Flow * Projection (MGD)
Existing	4,084	1.123
5 Yr.	5,151	1.417
10 Yr.	6,337	1.743
Ultimate	7,515	2.067

* flows based on 275 GPD/EDU

Since the creation of the Valley Forge Sewer Authority, the Member and Partner Municipalities have used 275 gallons per day as the base flow for an EDU. The historic GPD/EDU factor for VFSA has been well below 275 GPD/EDU since 1985. The ten year average, 1985-1994, is 218 GPD/EDU. Therefore, the 275 GPD/EDU flow rate is considered conservative when computing flow projections for the Member Municipality collection system and is used throughout this planning document.

The flow allocation of 2.124 MGD assigned to the Member Municipalities is adequate for all growth horizons.

Sewers

In 1986, Buchart-Horn developed nine models which analyze the member municipality collection system by pump station drainage basin. The data from upstream pump stations is incorporated into the downstream pump station's model. The model is used to simulate a "worst case" wet weather scenario. The model then identifies which sewer segments would become surcharged and by how much under this scenario.

The model was developed by entering defining data for each sewer segment. Data entry included upstream and downstream manhole number and invert, pipe diameter and slope, and the number of equivalent dwelling units connected to each pipe section.

APPENDIX C

Member Municipality Validation Report

VALLEY FORGE SEWER AUTHORITY

VALIDATION OF THE MEMBER MUNICIPALITY COLLECTION SYSTEM PORTION OF THE REGIONAL ACT 537 PLAN

NOVEMBER 2005

Prepared by:
BUCHART-HORN, INC.
CONSULTING ENGINEERS AND PLANNERS
445 WEST PHILADELPHIA STREET
YORK, PA 17405-7040

Valley Forge Sewer Authority
Validation of the Member Municipality
Portion of the Regional Act 537 Plan

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Introduction and Summary of Findings	1
Section 1 Summary of Flow Projections & Review of the 1997 Report	3
Section 2 Improvements & Changes to the VFSA Collection System Since 1997	4
Section 3 EDU Growth & Resulting Flow Projections	4
Section 4 Wet Weather Analysis of the Member Municipality Collection System	8

EXHIBITS:
4.1 Capacity Issues – Small Rain Event
4.2 Capacity Issues – Average Rain Event
4.3 Capacity Issues – Large Rain Event
4.4 Capacity Issues – Small Rain Event / French Creek Pump Station At Capacity

INTRODUCTION AND SUMMARY OF FINDINGS

The purpose of this report is to develop current 5 and 10 year flow projections based on updated member municipality growth projections and validate / update the ultimate flow projections established in the previous 1997 Report.

On April 14, 1997, the Valley Forge Sewer Authority (VFSA) approved the "Member Municipality Collection System Supplement to the VFSA Regional Act 537 Plan." The purpose of the plan was to evaluate the portion of the VFSA collection system that supports the three member municipalities, Charlestown Township, East Pikeland Township and Schuylkill Township. Additionally, the plan presented the future growth projections of the member municipalities as documented within the individual municipal Act 537 Plans and the calculated wastewater flow projections based on the 5 year, 10 year and ultimate growth horizons. The 5 and 10 year planning horizons developed in the 1997 plan were for the years 2000 and 2005 and based on year-end 1994 data.

The following summarizes the recommendations resulting from this study:

1. Sewer expansions or upgrades are **not** recommended as a result of this analysis.
2. Ongoing monitoring of key system locations is recommended.
3. Address project pump station capacity issues as the pump stations are modernized.
4. Identify and elevate all manholes located in or beside creeks.

This Plan Validation is divided into five sections:

- Section 1 summarizes the flow projections and recommendations presented in the 1997 Report.
- Section 2 describes improvements and changes to the VFSA collection system since the 1997 Report.
- Section 3 presents updated EDU and resulting flow projections for the 5 year, 10 year, 15 year and ultimate growth scenarios.
- Section 4 presents the computer results of wet weather flow analysis for the VFSA collection system based on the 10-year and ultimate growth scenarios.

Based on the evaluation performed the following summarizes the overall findings:

Future average daily flow projections for the member municipalities are: (correct per new table).

- 5 year flow: 1.651 MGD
- 10 year flow 1.780 MGD
- 20 year flow 1.916 MGD
- Ultimate flow (30-yr) 1.916 MGD

The flow projections do not exceed the Member Municipalities' flow allocation of 2.124 MGD.

Flow Projections do not exceed Flow Allocation

Wet weather flow analysis identified sewer segments that will be at or approaching capacity based on a desk top static model for three different rain event scenarios: small, average, and large. However, the VFSA staff has visited and evaluated the portions of the system where the static model indicates the potential for flows that are greater than 100% of design capacity and has found no evidence of surcharging. The field installation of surcharge indicators is recommended to monitor the extent of any potential sewer surcharging in these areas over a long term period of time.

As growth occurs and if / when surcharging or sewer capacity issues are identified, then it is recommended that the affected areas be evaluated in more detail. Where necessary, appropriate sewer capacity upgrades should be provided before service is adversely affected.

According to the model, all four major pump stations, French Creek, Pothouse Road, Whitehorse Road and Pickering Creek, already experience some minor capacity issues under average and very heavy rain/wet weather conditions. Conditions where a second (lag) pump kicked on have been confirmed in VFSA's flow records. However, for the most part, flow rates just exceed the pump station capacity with one pump operating. Yet strict adherence to PADEP regulations indicates that pump stations must be adequately sized to transfer the expected flows without requiring a standby (in this case, the lag) pump.

Both Pothouse Road and Pickering pump stations are predicted to exceed the overall pump station capacity with two pumps running under the ultimate growth scenario during heavy rain events and/or snow melts. Although this condition is well beyond the growth horizons that apply to this 537 Plan, these projections should be considered when the applicable pump stations are upgraded. Buchart-Horn understands that VFSA is considering modernizing their pump stations from existing Flow Matcher controls to variable frequency drives (VFD) and VFD-rated motors Buchart-Horn, Inc. (B-H) concurs with this long-term strategy and recommends that the PADEP capacity requirements be incorporated into the pump station modernization projects as they occur.

SECTION 1
SUMMARY OF FLOW PROJECTIONS & REVIEW OF THE 1997 REPORT

The April 1997 report projected an ultimate average daily flow (ADF) of 2.120 MGD compared to the Member Municipalities Allocated Capacity of 2.124 MGD. Therefore, no change in the Allocated Capacity was proposed.

VFSA has been actively executing the recommendations from the 1997 Plan.

The 1997 plan also reported that the majority of the pump stations had adequate capacity to handle the projected flows. The following recommendations were made:

- Perkiomen P.S. to be upgraded in conjunction with the Meadows Subdivision construction
- Valley Creek P.S. to be evaluated in light of a potential upgrade to the Wilson Road Pump Station
- Pothouse Road P.S. to be field-tested to determine capacity prior to implementing any upgrading activities.

The pump stations were evaluated based on the maximum daily GPD/EDU measured in each pump station drainage basin with future flows based on a long term average GPD/EDU peaked 2.5 times. Table 1.1 summarizes the maximum day and average daily flow rates utilized in the 1997 pump station and collection system analysis.

Table 1.1
PUMP STATION FLOWS
for analysis per the1997 Member Report

Pump Station	Max Day Flowrate	Average Daily Flowrate
French Creek	919	239
Pothouse	1650	254
Whitehorse	1458	250
Pickering	536	224
Perkiomen	1346	236
Valley Creek	2635	260
Kimble	919 (based on FC)	
Charlestown	1650 (based on PH)	

* Maximum average daily flow – applied to existing system EDUs
** Average daily flow – multiplied by 2.5 and applied to future system EDUs

The collection system was evaluated using the Authority's original computer model. The wet weather analysis was based on the same flowrates calculated for the various pump station drainage basins listed in Table 1.1. The model identified specific sewer segments for monitoring.

An implementation plan was developed by B-H and executed as appropriate by VFSA.

Upgrades to the VFSA collection system have been documented by B-H in the respective yearly Engineer's Reports for the VFSA system. The improvements that have been accomplished since 1997 are summarized in Section 2. The remainder of this report addresses updated 5 year, 10 year, and ultimate flow projections and provides recommendations for system monitoring activities in the future.

SECTION 2
IMPROVEMENTS & CHANGES TO THE VFSA COLLECTION SYSTEM SINCE 1997

Improvements to the VFSA collection system, primarily associated with capacity issues, that have occurred since the original Member Municipality Act 537 Plan was approved include:

- Prior to 2000 - Expanded and realigned sewer feeding Pothouse Road Pump Station
- 2000 – Performed Drawdown Testing of Pickering Creek Pump Station
- 2001 – Decommissioned Sandra Lane Pump Station. This area is now served by gravity sewers
- 2001 – Replaced pump #1 impeller – Pothouse Road Pump Station
- 2001 –2003 Performed aggressive I/I reduction in the Sandra Lane / Pothouse Road Pump Station drainage basins.
- 2002 - Upgraded Perkiomen Pump Station, which was required to accommodate additional EDU connections from the Meadows Subdivision. (Primarily Developer Funded)
- 2002 – Replaced French Creek P.S. – Pump No. 1
- 2003 – Upgraded Valley Creek Pump Station. Replaced both pumps with higher head pumps which was required to allow flow to enter the Wilson Road force main
- 2004 - Replaced Pump No.2 - Pothouse Road Pump Station

SECTION 3
EDU GROWTH & RESULTING FLOW PROJECTIONS

Table 3.1 provides an historic summary of EDU growth and corresponding flows. The table also presents the 5 year and 10 year connection and flowrate averages. These averages were utilized to develop the growth and flow projections presented herein.

Table 3.1
Historic summary of EDU Growth and Corresponding Flows

Year	Year-end EDUs	No. of Connections	Average Flow (MGD)	Flowrate GPD/EDU
1993	3852		0.855	223
1994	4084	232	0.879	226
1995	4096	12	0.815	201
1996	4231	135	1.210	286

Year	Year-end EDUs	No. of Connections	Average Flow (MGD)	Flowrate GPD/EDU
1997	4383	152	1.030	235
1998	4624	241	1.290	279
1999	4959	336	1.220	246
2000	5546	587	1.346	249
2001	5672	126	1.226	216
2002	5893	221	1.186	201
2003	5985	92	1.707	285
2004	6160	175	1.480	240
5 yr avg.		240		238
10 yr. avg.		207		253

Table 3.2 is an update to the 1997 Member Municipality Report, Appendix B, Basis of EDU Growth Projections. This table is presented by pump station drainage basin to facilitate further evaluation of the Member Municipality Collection System and Pump Stations which is discussed in Section 4. The Table provides the following information:

- 2004 year-end EDUs as reported by the VFSA billing department.
- 2009 (5-year) EDU growth projection as reported in the Member Municipality Act 537 Plan. This projection is at a growth rate of 142 EDUs per year.
- 2014 (10 year) EDU growth projection based on an annual average growth rate of 101 EDUs per year.
- 2024 (20 year & Ultimate) EDU growth projection based on an annual average growth rate of 91 EDUs per year. The ultimate growth projection is based on the current Act 537 Sewer Service Boundary, developable land and expanding industry, and vacant land reviewed per Member Municipality zoning.

Table 3.2
Basis of EDU Growth Projections

Drainage Basin	2004 Yr. End EDUs	Platted EDUs as of 12/2004	5 Yr Proj.	Proposed EDUs	10 Yr. Proj.	Undeveloped Land	20 Yr. Proj.	Total EDUs
Rte 724 North of Rte 23 - New Act 537 Service Area – added by East Pikeland Twsp		Kimberton Meadows	23	Phoenixville Crossing Schuylkill Rd. Corp.	112 2	Rte 724 @ Rte 23	20	
Kimble Drive (2008)	77	Barn at		Miatolia	7	Croft	3	
Kimble Drive (3008)	22	Kimberton	2	Campbell Tract	14.0	Davis / PASD	22	
French Creek (2009)	2,384	Brimful Farm	2	Cornerstone Bank	1.0	Emery Oil Co.	3	
French Creek (3009)	88	Coldstream		Fitzsimmons	1.0	Fish & Game	0	
West Vincent (4009)	27	Crossing	141	French Creek Inn	6	Frog Hollow Miller Rd N.	20	
		CVS Pharmacy	3			Hares Hill @ Camp Council	8	
		Deer Run Lane	3			Intersection of 7 Stars & Rte 113	2	
		FC Bus. Park	25			Rte 113 - Shelly's	6	
		Henry Co.	3			Stimer	5	
		Heritage Corcia	25			Weinstein	45	
		Kimberbrae	3					
		Kimberton Square	10					
		Kimberton Valley Homes	6					
		St. Basil	1					
		Yentis	6					
FRENCH CREEK PS	**2,578**		**307**		**143**		**139**	**3,167**

Drainage Basin	2004 Yr. End EDUs	Platted EDUs as of 12/2004	5 Yr Proj.	Proposed EDUs	10 Yr. Proj.	Undeveloped Land	20 Yr. Proj.	Total EDUs
Charlestown Rd. (3007)	132					Along Buckwalter Rd.	5	
Pothouse Road (1006)	430	Potters Pond	35			Across from Forestas	5	
POTHOUSE ROAD PS								
-excludes FC	**562**		**35**		**0**		**10**	607
Sandra Lane (1005)	23	Pickering Glen	1					
Whitehorse Rd. (1004)	363	Schuylkill Elem.	5					
Whitehorse Rd. (3004)	336					PRD 1 by Chas. Hunt	80	
WHITEHORSE RD. PS								
-excludes FC & PH	**722**		6		**0**		**80**	**808**
Country Club (1007)	325					By VF Woods	6	
Pickering Creek (1003)	944	Buono Tract	4			Inters. @ Maisfield	6	
		Chapel View	5			Bull Tavern (adjacent)	3	
		G.S. Council	4			End of E. Phillip	28	
		Mill Lane	3			End of E. Phillip (Reeves)	30	
		Moorehall @ VF	1			RR.Tracks (@ 2nd Ave.)	36	
		Reeves Property	3					
		Rte 23 Comm.	2					
		Second Ave.	4					
		Sunwood	0					
		WaWa - to Phoenixville	0					
PICKERING CREEK PS – excl. FC, PH & WH	**1,269**		**26**		**0**		**109**	**1,404**
Perkiomen (1002)	426					Rte. 23 Corridor (Jordan Tract)	10	
						N. Side of Pawling Rd.	80	
PERKIOMEN	**426**		**0**		**0**		**90**	**516**
Valley Creek (1001)	54							
Lee Tire Blvd. (3010)	301	Commons @ GV	28	Volpi	60	Behind Spring Oak	15	
		DeVault Meats	34	Griffin	33	Across from Spring Oak	6	
		Late Spring Dev.	10	Cellucci	11	Yellow Spring's Road	7	
		Laurabrooke	20	Warner Lane	12	Rte 29 & Chrlstwn. Rd	35	
		Spring Oak Bus. Center	53	Charlestown Saloon	10	North Side of School Farm Residence	1	
				Charlestown Elementary	13	Adj. To Laurabrooke-Phoenix Pike	25	
				20 Single Family	20	DeVault Meats (add'l)	65	
						Remaining Acreage throughout basin	198	
		Charlestown						
Route 401		Meadows	191					
Sidley Road	248					Adj. To Chas. Oaks	32	
VALLEY CREEK DB	603		336		159		389	1,487

Drainage Basin	2004 Yr. End EDUs		5 Yr Proj.		10 Yr. Proj.		20 Yr. Proj.	Total EDUs
FRENCH CREEK PS	2,578		307		143		139	3,167
POTHOUSE RD PS	562		35		0		10	607
WHITEHORSE RD PS	722		6		0		80	808
PICKERING CR. PS	1,269		26		0		109	1,404
PERKIOMEN P.S.	426		0		0		90	516
VALLEY CREEK	603		336		159		389	1,487
TOTALS	**6,160**		**710**		**302**		**817**	**7,989**

Table 3.2 presents a slower growth than has been experienced in previous years but is considered reasonable based on the current development activity and the reduced creation of new developments. However, should an acceleration of growth be experienced, it is expected that it will be contained within the total number of EDUs identified in Table 3.2. Therefore the flow projections and wet weather analysis consider not only the 10-year EDU growth projection, but also the 20-year / ultimate growth projection, so that the necessary collection / conveyance facilities may be constructed where required as the development occurs.

The ultimate growth projection of 7,989 EDUS is approximately 470 EDUs greater than that projected in the 1997 Member Municipality Plan and in general is attributed to the following:

- The inclusion of the Route 724 area north of Route 23 in the 537 Boundary covering Phoenixville Crossing and Kimberton Meadows *+ 200 EDUS*
- Greater industrial growth within the Lee Tire Drainage Basin *+ 110 EDUs*
- Christopher Crossing & Heritage Coricia *+ 160 EDUs*

The ultimate growth projection presented herein is not expected be exceeded unless one of the Member Municipalities would elect to revise their established sewer service boundary. Should this occur, a Revision to the Act 537 Plan would be required to accommodate such changes.

As presented in Table No. 3.1, the 5-year and 10- year average flow rates are 238 gpd/edu and 253 gpd/edu respectively. Since 1993, the highest average daily flowrate has been 286 gpd/edu experienced in 1996 and 2003. The lowest flowrate, 201 gpd/edu, was experienced in 1995 and 2002. Table 3.3 presents future ultimate average daily flow projections within the Member Municipality Act 537 Plan Drainage basin based on the 10-year average 253 gpd/edu flowrate and the more conservative highest annual average flowrate of 286gpd/edu. These flowrates have been applied to the projected EDUs and then added to the current 2004 average flow.

Table 3.3
Ultimate Flow Projections in Million Gallons per Day (MGD)

Year	Total EDUs	ADF based on 253 gpd/edu	ADF based on 286 gpd/edu
Current - 2004	6,160	1.480	1.480
2009 – 5 year	6,870	1.651	1.683
2014 – 10 year	7,172	1.780	1.769
2024 – 20 year & Ultimate	7,989	1.916	2.003

In either instance, the ultimate flow projection remains within the VFSA member municipality flow allocation of 2.124 MGD, concluding that additional capacity is not required.

SECTION 4
WET WEATHER ANALYSIS OF THE MEMBER MUNICIPALITY COLLECTION SYSTEM

Section 3 of this report projects future average daily flows within the VFSA collection system for the established growth horizons. The evaluation is appropriate to establish the overall capacity required by the Member Municipalities for Wastewater Treatment Capacity. The flow projections however are based on system averages and the overall collection system will experience flow rates much greater and much less that these averages based on a number of factors, primarily diurnal flows and wet weather / high ground water conditions. The collection system (pipe network and pump stations) must be capable of transmitting these higher flows at any time to avoid possible overflows within the system. Therefore, this section evaluates the wet weather capacity of the collection system based on the 10-year and ultimate growth data developed within Section 3.

In 1999, VFSA performed a detailed analysis of the collection system utilizing a computer model of the system. Although the Authority has been evaluating the collection system using a computer model for over 10 years, the installation of telogers has allowed the VFSA to capture detailed flow data of the system at the various pump stations throughout the collection system. Based on the data that was available at that time, a rain event that occurred in 1999 provided good meteromg data to allow a wet weather analysis of the collection system. Based on an analysis of wet weather in the region, the March 1999 rain event appeared to represent a 10-year storm event. This analyzed rain event indicated that the collection system needed to be able to transmit approximately 900 gpd/edu during the storm event.

To support this Plan Validation, the Authority's 2003 and 2004 flow data was analyzed. Based on the rain gage data as well as the peak hourly and peak daily flows that have been experienced in 2003 and 2004, it is apparent that the March 1999 rain event previously studied is more representative of a typical rain event which will be experienced by the VFSA system on a regular basis. Over the past 2 years, 12 rain events were analyzed. The Large Pump Stations chart on the following page depicts the recorded flows at the 4 major pump stations during these 12 rain events. As depicted, Pickering Creek Pump Station experienced 4 rain events during which its discharge rate was approximately 7 MGD for several hours. There are 4 more rain events where Pickering Creek Pump Station discharged at a rate over 5 MGD. The three largest wet weather events where Pickering Creek Pump Station exceeded a pumping rate of 7 MGD were not utilized in the system analysis because:

- Extenuating circumstances impacted one of these excessive rain events. This occurred when French Creek exceeded the rim elevation of an interceptor manhole allowing Creek water to enter the system. The rim elevation of manholes located in and beside Creeks should be reviewed and elevated to avoid this type of occurrence.
- Two of the rain events occurred in hurricane weather conditions which the system could not be expected to handle.

Four flow scenarios were developed for wet weather system analysis utilizing both 10-year and ultimate EDU growth projections. For each event described, the flowrate experienced by Pickering

Creek Pump Station was applied to all four major pump stations (Pickering Creek, Whitehorse Road, Pothouse Road and French Creek) and the two minor pump stations feeding that system(Charlestown Road and Kimble Drive). The flowrates for each scenario are:

- Small rain event experienced in March 1999 – 900 gpd/edu.
- Average rain event based on Pickering Creek Pump Station operating at 5.6 MGD (occurring 7 times in past 2 years) – 1090 gpd/edu
- Large Rain event based on Pickering Creek Pump Station operating at 6.8 MGD (occurring 4 times in past 2 years) – 1314 gpd/edu
- Small rain event with French Creek Pump Station operating at capacity (4.65 MGD).

Perkiomen and Valley Creek pump station were evaluated separately as they do not contribute flows to the Pickering Creek drainage basin and due to location appear to be influenced by other rain events than those affecting the eastern portion of the system. Again, based on a review of the flow data, flowrates were assigned to these pump stations for three types of rain events. The flowrates used are as follows:

Perkiomen Pump Station

- Small rain event (average of data from 2/22/03, 10/29/03, 11/28/04 rain events)– 943 gpd/edu
- Average rain event (average data from 6/20/2003 rain event) – 1200 gpd/edu
- Large rain event (average data from, 9/28/2004 rain event) – 1507 gpd/edu

Valley Creek Pump Station

- Small rain event (average of data from 12/14/03 & 12/17/03 rain events)– 343 gpd/edu
- Average rain event (average of data from 12/11/03 & 11/28/04 rain events) – 537 gpd/edu
- Large rain event – (average data from 9/28/04 rain event - 722 gpd/edu

Note: Valley Creek pump station flowrates are less than other system flows. As noted in Section 2, the Valley Creek pump station pumps were replaced in 2003 with higher head pumps allowing the flow to overcome high head from the Wilson Road pump station. Since the pumps have been replaced, a drastic reduction in flows has been noted. Therefore, all data prior to the pump replacement was excluded from this evaluation.

In all instances, the future EDUs are assumed to not contribute further system inflow, and therefore only a diurnal flow has been projected for these EDUs. Since 1993, the maximum annual system wide average daily flowrate of about 285 gpd/edu occurred twice. This flowrate, peaked 2.5 times, (712.5 gpd/edu) was therefore applied to all future EDUS in these wet weather analyses.

The Tables 4.1, 4.2 and 4.3 summarize the results of this analysis for a small rain event, an average rain event and a large rain event respectively. Exhibits 4.1, 4.2 and 4.3 depict the information presented in these tables. The tables provide a summary of those pipe segments that, according to the sewer model are at capacity now under the described wet weather condition or that will exceed the theoretical capacity under the 10 year and ultimate EDU growth scenarios. Hydraulically a pipeline is flowing full when it reaches 80% of its design capacity and therefore, all segments at greater than 80% capacity are included in the tables. Several points must be made prior to reviewing and discussing the results in these tables.

Insert Pickering 12 rain event flow chart here – see PDF file forwarded with e-mail

- According to the static model, a sewer segment that is over its capacity may experience some surcharging within the manhole; however this does not mean that the manhole is overflowing its rim. A "capacity" condition is established as a pipe flowing full according to the static model.
- The desk top analysis was performed using a static sewer model which cannot evaluate flows as they move through a dynamic network of gravity sewers.
- VFSA staff has inspected the manholes identified to be greater than 100% of their design capacity as indicated by the static model and has observed no signs of surcharging. This confirms the results obtained by the VFSA staff using surcharge indicators over the last few years.
- The model, however, does identify the segments within the system that, as a result of anticipated growth, warrant attention in the context of long-term facilities planning.

Table 4.1
Sewer Segments at or Approaching Capacity During a SMALL RAIN EVENT - Per Static Model

General Area	Manhole Run	Dia. (inches)	Percent of Capacity
SEGMENTS @ CAPACITY NOW			
None			
SEGMENTS @ CAPACITY WITH 10 YEAR EDU GROWTH			
None			
SEGMENTS @ GREATER THAN 80% CAPCITY WITH 10 YR GROWTH Note: Segments in bold text will be at capacity with ultimate EDU Growth			
Pickering Creek West Interceptor	3.03.317-358	24	91%
	3.03.353-352	24	83%
	3.03.353A-353	24	82%
Pickering Creek East (Dogwood)	3.15.104-103	8	82%
Pothouse Road	2.09.105-104	18	84%
FC Tributary Trunk Sewer	2.04.109-108	12	95%
	2.04.106-105	12	90%
	2.04.110-122	12	81%
	2.04.122-109	12	80%
FC Interceptor	**2.06.102-101**	**8**	**89%**
	2.06.105-104	8	81%
	2.06.108-107	8	80%

Table 4.2
Sewer Segments at or Approaching Capacity During an AVERAGE RAIN EVENT - Per Static Model

General Area	Manhole Run	Dia. (inches)	Percent of Capacity
SEGMENTS @ CAPACITY NOW			
Pickering Creek West Interceptor	3.03.317-358	24	102%
FC Tributary Trunk Sewer	2.04.109-108	12	110%
	2.04.106-105	12	105%
SEGMENTS @ CAPACITY WITH 10 YEAR EDU GROWTH			
Pothouse Road	2.09.105-104	18	101%
FC Interceptor	2.06.102-101	8	103%
SEGMENTS @ GREATER THAN 80% CAPCITY WITH 10 YR GROWTH Note: Segments in bold text will be at capacity with ultimate EDU Growth			
Pickering Creek West Interceptor	**3.03.353-352**	**24**	**98%**
	3.03.353A-353	**24**	**96%**
	3.03.325-324	24	84%
Pickering Creek East (Dogwood)	**3.15.104-103**	**8**	**99%**
	3.15.107-106	8	90%
	3.15.109-108	8	85%
	3.15.108-107	8	82%
Pickering Creek East (Sunwood)	3.15.112-111	8	93%
	3.15.111-110	8	93%
	3.15.110-109	8	81%
Whitehorse Road West	3.04.446A-446	21	87%
FC Tributary Trunk Sewer	2.04.110-122	12	97%
	2.04.122-109	12	95%
FC Interceptor	**2.06.105-104**	**8**	**94%**
	2.06.108-107	8	93%
	2.06.106-105	8	89%
	2.06.109-108	8	83%

Table 4.3
Sewer Segments at or Approaching Capacity During a LARGE RAIN EVENT – Per Static Model

General Area	Manhole Run	Dia. (inches)	Percent of Capacity
SEGMENTS @ CAPACITY NOW			
Pickering Creek West Interceptor	3.03.317-358	24	122%
	3.03.353-352	24	112%
	3.03.353A-353	24	110%
Pickering Creek East (Dogwood)	3.15.104-103	8	120%
	3.15.107-106	8	109%
	3.15.109-108	8	103%
Pickering Creek East (Sunwood)	3.15.112-111	8	112%
	3.15.111-110	8	112%
Pothouse Road	2.09.105-104	18	114%
FC Tributary Trunk Sewer	2.04.109-108	12	133%

General Area	Manhole Run	Dia. (inches)	Percent of Capacity
SEGMENTS @ CAPACITY NOW - Continued			
FC Tributary Trunk Sewer	2.04.106-105	12	126%
	2.04.110-122	12	114%
	2.04.122-109	12	112%
SEGMENTS @ CAPACITY WITH 10 YEAR EDU GROWTH			
Pickering Creek West Interceptor	3.03.325-324	24	100%
Whitehorse Road West	3.04.446A-446	21	103%
FC Interceptor	2.06.102-101	8	120%
	2.06.105-104	8	109%
	2.06.108-107	8	108%
	2.06.106-105	8	103%
SEGMENTS @ GREATER THAN 80% CAPCITY WITH 10 YR GROWTH Note: Segments in bold text will be at capacity with ultimate EDU Growth			
Pickering Creek West Interceptor	**3.03.352-346**	**24**	**96%**
	3.03.323-322	**24**	**95%**
	3.03.322-321	**24**	**95%**
	3.03.327-326	**24**	**94%**
	3.03.328-327	**24**	**94%**
	3.03.324-323	24	93%
	3.03.326-325	24	92%
	3.03.360-360A	24	92%
	3.03.359-360	24	89%
	3.03.339-338	24	85%
	3.03.338-337	24	84%
Pickering Creek West	3.03.304-305	10	90%
Pickering Creek East (Dogwood)	**3.15.108-107**	**8**	**99%**
	3.15.110-109	8	98%
	3.15.102-101	8	91%
	3.15.106-105	8	90%
Country Club	3.15.302-301	8	85%
	3.15.303-302	8	85%
Whitehorse Road West	3.04.453-452	21	93%
	3.04.458-457	21	92%
	3.04.459-458	21	92%
	3.04.460-459	21	90%
	3.04.447-446B	21	86%
	3.04.444-443	21	84%
	3.04.446-445	21	83%
FC Tributary Trunk Sewer	2.04.107-106	12	96%
	2.05.101-2.04.110	12	91%
	2.05.123-122	8	81%
	2.05.102-101	12	81%
FC Interceptor	**2.06.109-108**	**8**	**96%**
	2.03.143A-143	**15**	**91%**
	2.06.104-103	8	83%
FC East Basin	**2.01.101-100**	**8**	**88%**
FC Cold Stream Road	2.08.118-102	8	81%

Table 4.4 and accompanying Exhibit 4.4 summarize a fourth flow scenario that was evaluated. In this instance, the system was analyzed based on French Creek pump station operating at capacity during a small rain event. This scenario has occurred on several occasions and identifies some additional interceptor segments where the static model indicates flows may exceed their theoretical design capacity. Again, system inspections of actual field conditions suggest that manhole surcharging **does not** occur.

Table 4.4
Sewer Segments at or Approaching Capacity During a SMALL RAIN EVENT
With French Creek Pump Station Operating @ Capacity
10 Year Growth Scenario – Per Static Model

General Area	Manhole Run	Dia. (inches)	Percent of Capacity
SEGMENTS @ CAPACITY WITH 10 YEAR HDU GROWTH			
Pickering Creek West Interceptor	3.03.317-358	24	135%
	3.03.353-352	24	127%
	3.03.353A-353	24	125%
	3.03.325-324	24	109%
	3.03.352-346	24	105%
	3.03.323-322	24	103%
	3.03.322-321	24	103%
	3.03.327-326	24	102%
	3.03.328-327	24	102%
	3.03.324-323	24	101%
Whitehorse Road West	3.04.446A-446	21	120%
	3.04.453-452	21	110%
	3.04.458-457	21	109%
	3.04.459-458	21	109%
	3.04.460-459	21	107%
Pothouse Road	2.09.105-104	18	149%
SEGMENTS @ GREATER THAN 80% CAPCITY WITH 10 YR GROWTH			
Pickering Creek West Interceptor	3.03.326-325	24	99%
	3.03.360-360A	24	97%
	3.03.359-360	24	94%
	3.03.339-338	24	92%
	3.03.338-337	24	92%
Pickering Creek East (Dogwood)	3.15.104-103	8	82%
Whitehorse Road West	3.04.447-446B	21	100%
	3.04.444-443	21	96%
	3.04.446-445	21	96%
FC Tributary Trunk Sewer	2.04.109-108	12	95%
	2.04.106-105	12	90%
	2.04.110-122	12	81%
	2.04.122-109	12	80%
FC Interceptor	2.06.102-101	8	89%
	2.06.105-104	8	81%
	2.06.108-107	8	80%

No sewer upgrades or expansions are recommended as a result of this analysis. As previously noted, VFSA staff has inspected most of the segments that have been identified as having flows of greater than 100% of their design capacity according to the static model and has found no signs of surcharging. It is therefore recommended that those segments identified as "at capacity now" under all types of wet weather events should either have surcharge indicators placed in the upstream manhole or be inspected during a significant rain event. In addition, monitoring of these segments is recommended as the anticipated growth occurs. Upgrade of the larger diameter interceptor pipes is a costly endeavor and could have significant impact on the surrounding community. Therefore these activities should be planned well in advance. Proper monitoring of the sewer segments of concern as well as reevaluating the sewer system when new developments are constructed will facilitate the planning and implementation process.

Dynamic modeling of the system interceptors could also be accomplished as a part of the monitoring process. The model would calculate the hydraulic grade line depicting the liquid level in the manholes under various rain events. The modeling effort would also require extensive system flow monitoring to validate flows entering the various portions of the interceptor. Because of the significant time, effort and costs required to validate these models, it is recommended that system surcharge indicators and inspections be implemented as the first step in monitoring any areas of concern. If surcharges are noted, dynamic sewer modeling would be performed as the next step to determine the extent of surcharging and the effect of anticipated future growth. The data collected from the surcharge indicators would be used to help calibrate the dynamic sewer model. The modeling would also assist in determining the necessary pipe diameter for any sewer line expansions if any are required.

The affect of system flows (from the various rain events under the 10 year and ultimate growth scenarios) on the major pump station was also evaluated. Table 4.5 summarizes this information. Under average and heavy rain and snow melt events, existing EDUs, all four of the major pump stations have some capacity concerns with 1 pump operating. VFSA data indicates that the lag pump has been required during significant rain events. Per PADEP requirements, a pump station must be adequately sized to be able to pump the expected flows without the operation of the standby (in this case, the lag) pump. As a practical matter, VFSA's current routine practice of assuring that both lead and lag pumps are serviceable 100% of the time should be continued. During major maintenance events, VFSA's practice of renting a back up pump assures that adequate and uninterrupted service is provided to its customers at all times.

Both Pothouse Road and Pickering pump stations are predicted to exceed the overall pump station capacity with two pumps running under the ultimate growth scenario during large rain events. Although this is well beyond the growth horizons that apply to this 537 Plan, these projections should be considered when the applicable pump stations are upgraded and/or modernized. It is recommended that VFSA begin to plan / budget for the upgrade of each of the four major pump stations within the next 10 years. These upgrade recommendations are focused on the system pumps only. Other upgrades / improvements, such as those to improve energy usage, monitoring, and controls could be accomplished simultaneously.

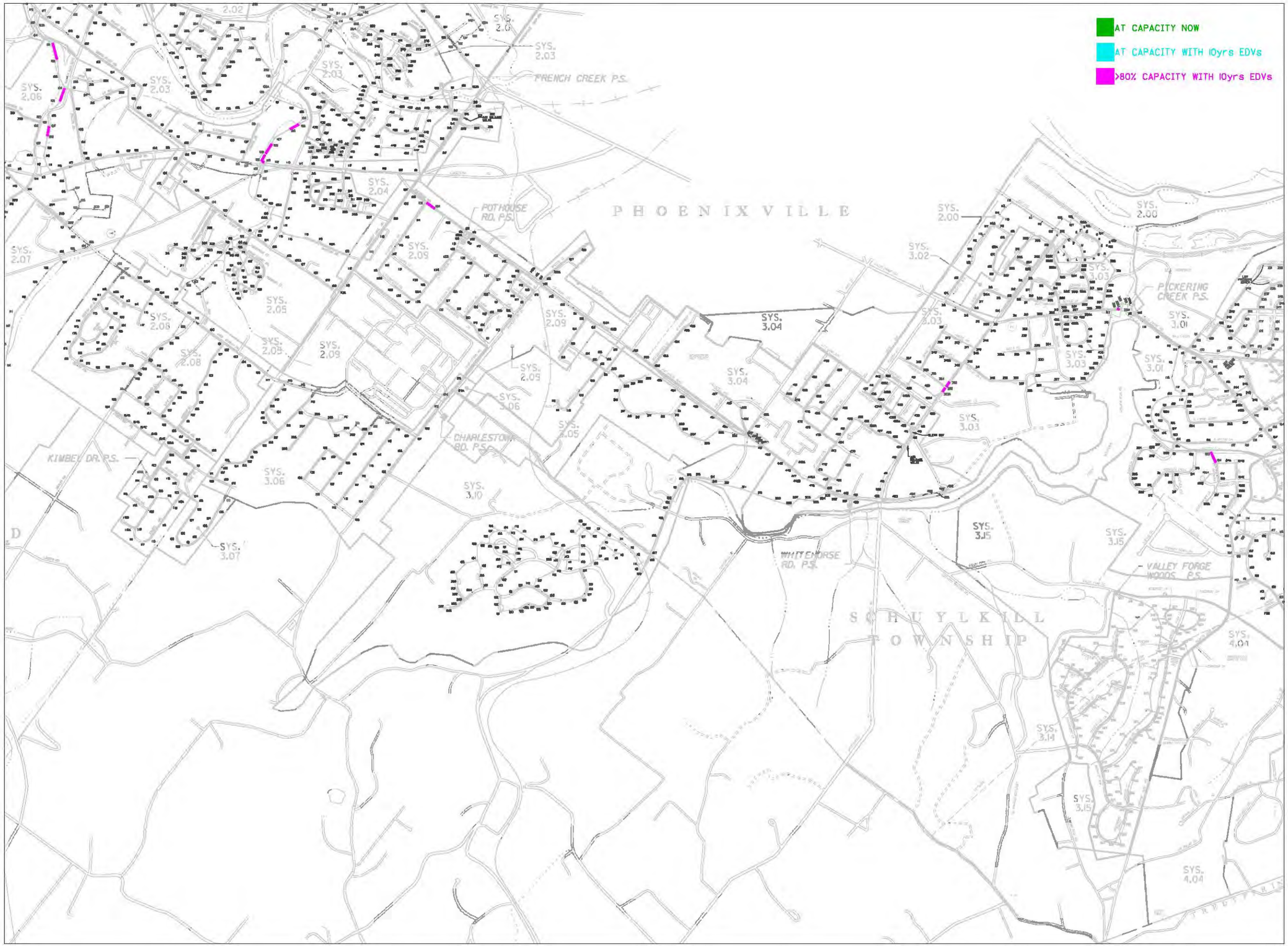
Table 4.5
Pump Stations with Capacity Concerns

	Station Capacity *		Observed Peak Hourly		Flows From Model Runs (MGD)									
			(2003-2004)		Small Rain Event			Average Rain Event			Large Rain Event			FC @ 2-pump on
	1-pump (MGD)	2-pump (MGD)	Flow MGD	Date	Ex. EDU	10-yr	Ultimate	Ex. EDU	10-yr	Ultimate	Ex. EDU	10-yr	Ultimate	Small Rain 10-yr.EDU
French Creek	2.86	4.65	4.43	6/03	2.356	2.580	2.804	2.877	3.082	3.306	3.468	3.673	3.897	4.649
Pothouse Road	3.20	4.39	4.71	9/04	2.845	3.090	3.321	3.470	3.694	3.926	4.183	**4.408**	**4.639**	**5.154**
Whitehorse Rd.	4.08	6.78	6.57	6/03	3.545	3.792	4.081	4.317	4.545	4.834	5.204	5.432	5.721	5.856
Pickering Creek	4.75	7.41	7.41	9/04	4.691	4.953	5.320	5.706	5.947	6.315	6.878	7.120	**7.487**	7.017
Perkiomen	0.86	**	1.02	9/04	0.389	0.389	0.607	0.496	0.496	0.713	0.622	0.622	0.840	n/a
Valley Creek	0.27	**	0.15	6/03	0.023	0.023	0.023	0.035	0.035	0.035	0.048	0.048	0.048	n/a
Kimble Drive	0.15	.017	0.18	2/03	0.089	0.094	0.094	0.108	0.113	0.113	0.130	0.135	0.135	n/a
Charlestown	0.37	0.46	0.44	9/04										n/a
Country Club	0.45				0.292	0.292	0.296	0.353	0.353	0.357	0.426	0.426	0.430	n/a

All station capacity values are from drawdown tests except:

- Pickering Pump Station – Two pump capacity is from measured peak pumping rates during several rain events.
- Country Club, Perkiomen and Valley Creek Pump Stations - capacity based on design curves. Drawdown testing has not been performed

Note: Shaded values indicate those flows in excess of pump station capacity (1 pump operating). Shaded values with bold text indicate those flows that are in excess of the pump station 2-pump operating flow rates.



VALLEY FORGE SEWER AUTHORITY

MEMBER MUNICIPALITY COLLECTION SYSTEM

ACT 537 PLAN VALIDATION

NO.	REVISION	BY	DATE

PROJECT NO.:

CAD FILE:

ENGR./ARCH.:

DESIGN BY:

DRAWN BY:

CHECKED BY:

DATE: 11/05

DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGRAMMATIC.

DRAWING SHALL NOT BE SCALED.

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SHEET TITLE

CAPACITY ISSUES

SMALL RAIN EVENT

EXHIBIT NO. 4.1

SHEET 1 OF 4

10/20/2006
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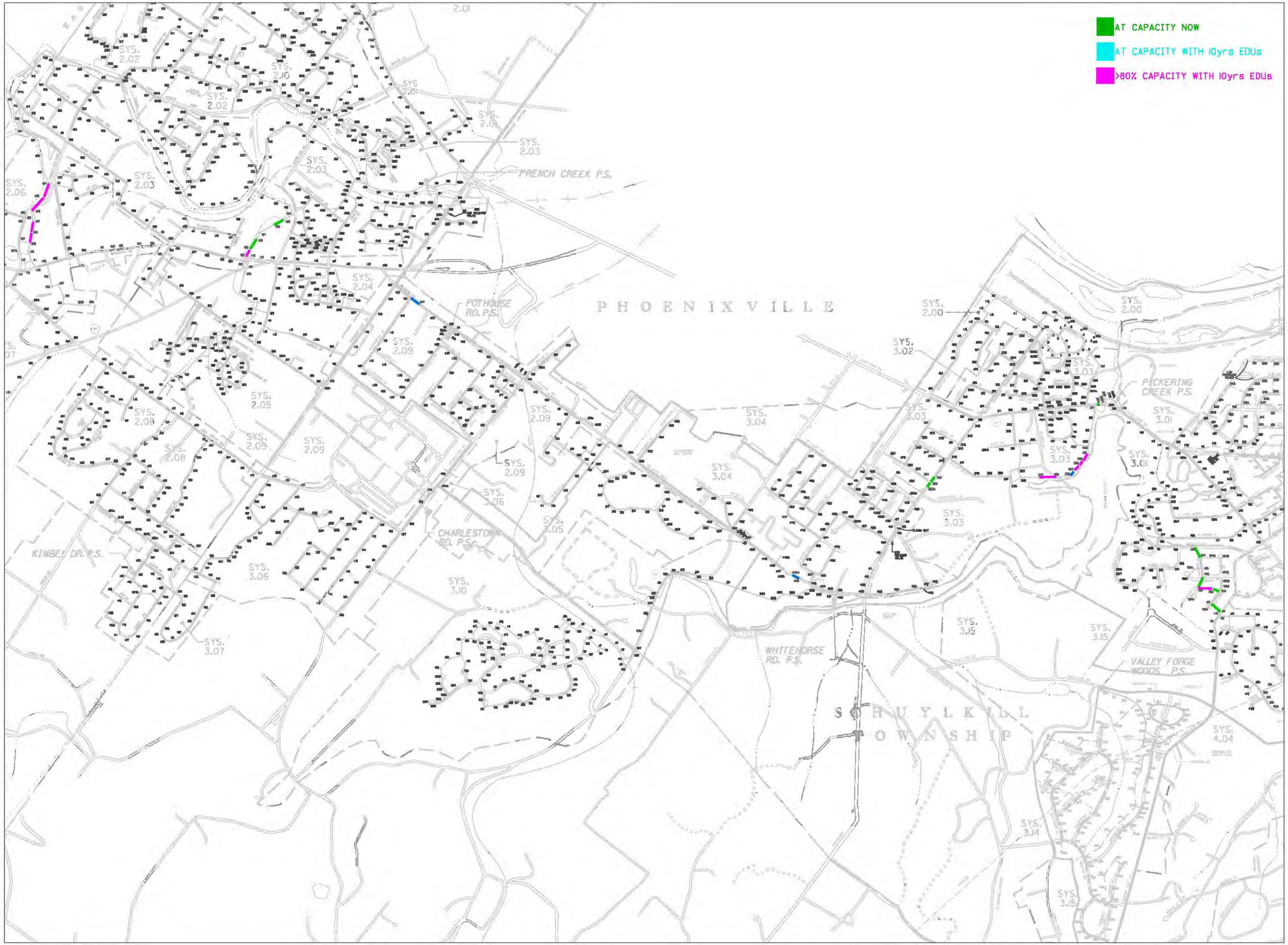

VALLEY FORGE SEWER AUTHORITY

MEMBER MUNICIPALITY
COLLECTION SYSTEM

ACT 537 PLAN VALIDATION

NO.	REVISION	BY	DATE

PROJECT NO.:
CAD FILE:
ENGR./ARCH.:
DESIGN BY:
DRAWN BY:
CHECKED BY:
DATE: 11/05

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SHEET TITLE

CAPACITY ISSUES

AVERAGE RAIN EVENT

EXHIBIT NO.
4.2

SHEET 2 OF 4

10/20/2006
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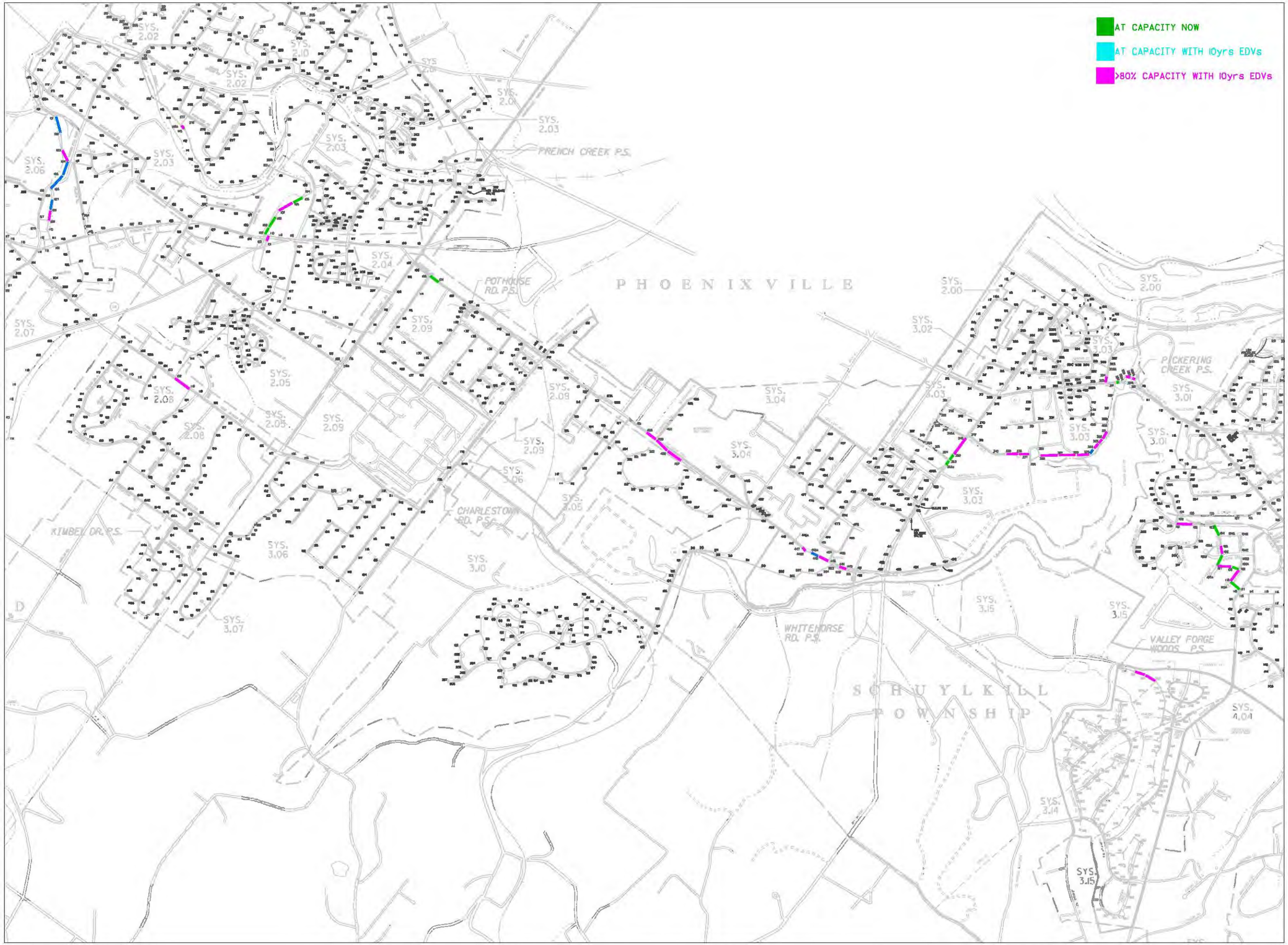

VALLEY FORGE SEWER AUTHORITY

MEMBER MUNICIPALITY COLLECTION SYSTEM

ACT 537 PLAN VALIDATION

NO.	REVISION	BY	DATE

PROJECT NO.:

CAD FILE:

ENGR./ARCH.:

DESIGN BY:

DRAWN BY:

CHECKED BY:

DATE: 11/05

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SHEET TITLE

CAPACITY ISSUES

LARGE RAIN EVENT

EXHIBIT NO. 4.3

SHEET 3 OF 4

10/20/2006

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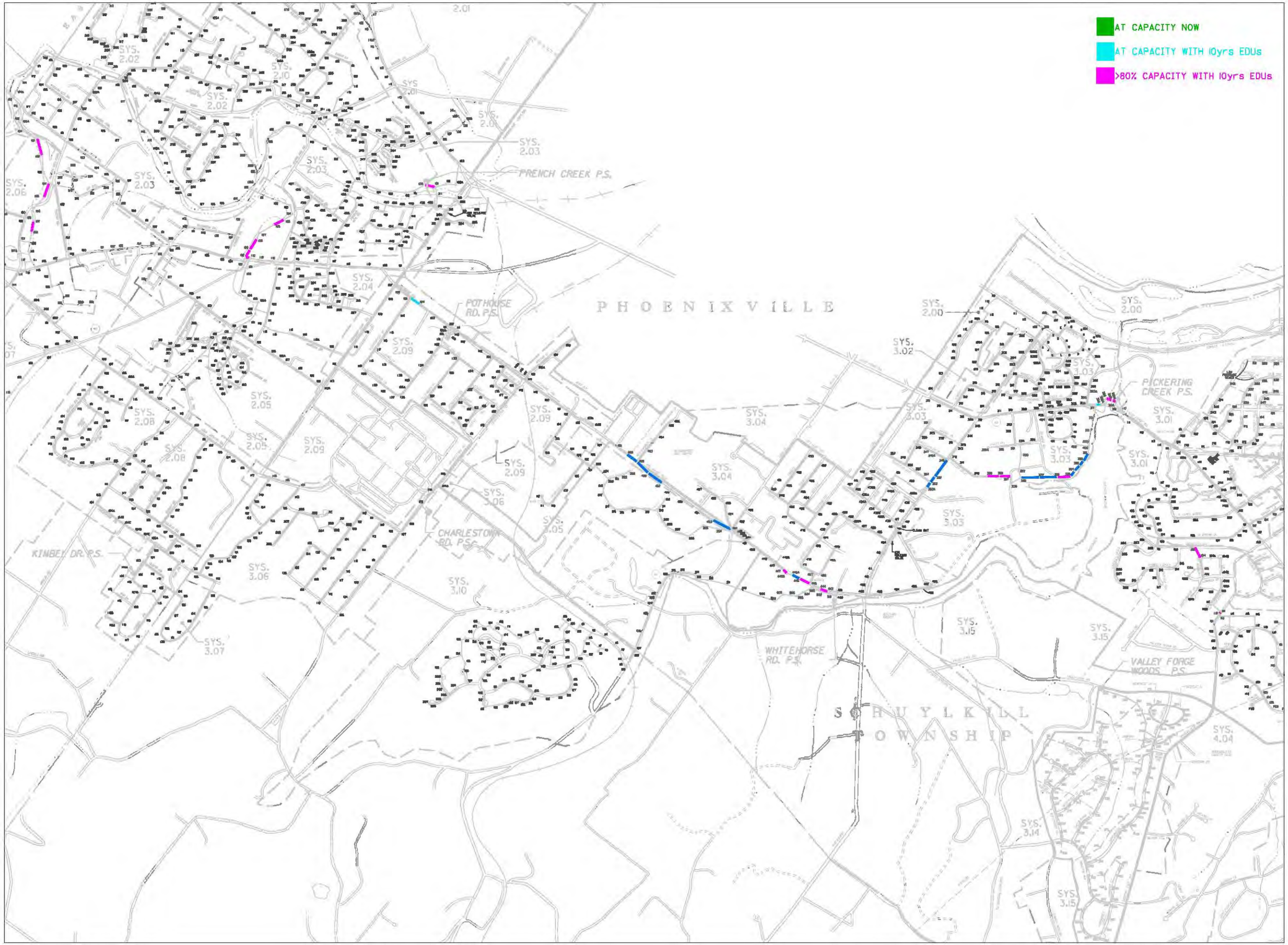

10/20/2006
K:\PROJ\00001\07\VFSA\env\FCatCapacityBorder.dgn

BUCHART HORN INC.
Engineers, Architects and Planners

VALLEY FORGE SEWER AUTHORITY

MEMBER MUNICIPALITY
COLLECTION SYSTEM

ACT 537 PLAN VALIDATION

NO.	REVISION	BY	DATE

PROJECT NO.:
CAD FILE:
ENGR./ARCH.:
DESIGN BY:
DRAWN BY:
CHECKED BY:
DATE: 11/05

DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGRAMMATIC.
DRAWING SHALL NOT BE SCALED.
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SHEET TITLE

CAPACITY ISSUES

SMALL RAIN EVENT AND FRENCH CREEK PUMP STATION AT CAPACITY

EXHIBIT NO.
4.4
SHEET 4 OF 4

APPENDIX D

Preliminary Effluent Criteria

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401

July 25, 2006

Southeast Regional Office

Phone: 484-250-5970
Fax: 484-250-5971

Mr. Edward L. Woyden
Gannett Fleming, Inc.
P.O. Box 80794
Valley Forge, PA 19484-0794

Re: Preliminary Treatment Requirements
Valley Forge Sewer Authority
Schuylkill Township
Chester County

Dear Mr. Woyden:

This is in reply to your May 12, 2006, request for Preliminary Treatment Requirements for a discharge of expanded flow of 11.3 MGD from 9.2 MGD to the Schuylkill River, with a proposed expansion of the treatment plant on 333 Pawling Road, Phoenixville, PA.

NPDES Permit PA0043974 was issued on July 19, 2004, for the flow of 9.2 MGD. Effluent limits were calculated based on "the Schuylkill River Reallocation Study" for POTWs in the reach from Black Rock Dam to Norristown Dam stream segment of the Schuylkill River.

A summary of the Department of Environmental Protection's (Department) preliminary treatment requirements for flow of 11.3 MGD are as follows:

$CBOD_5$ (05/01-10/31) = 19.3 mg/l
$CBOD_5$ (11/01-04/30) = 25 mg/l
TSS = 30 mg/l
NH_3-N (05/01-10/31) = 7.7 mg/l
NH_3-N (11/01-04/30) = 16.0 mg/l
DO – 5 mg/l, minimum
Fecal Coliform = 200/100 ml geometric mean
Total Residual Chlorine = 0.5 mg/l

RECEIVED
JUL 28 2006
GANNETT FLEMING
ENGINEERS & PLANNERS

Note: All limits above are monthly average limits, unless otherwise noted.

Please note that these limits are preliminary in a nature and are subject to review based on a detailed review of the information provided in a formal application for an NPDES permit.

If you have any questions, please call Mr. Ketan Thakor at 484-250-5193. You may also wish to contact the Sewage Planning Specialist for information on Act 537 sewage facilities planning requirements for this project.

Sincerely,

Sohan L. Garg, P.E.
Chief, Permits Section
Water Management

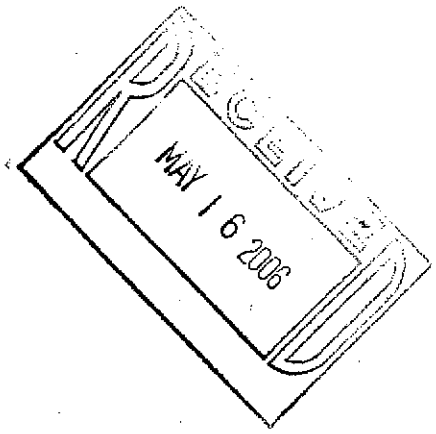
cc: Schuylkill Township
Planning Section
Re 30 (GJE06)139-15

Gannett Fleming

GANNETT FLEMING, INC.
P.O. Box 80794
Valley Forge, PA 19484-0794
Location:
Valley Forge Corporate Center
1010 Adams Avenue
Audubon, PA 19403-2402
Office: (610) 650-8101
Fax: (610) 650-8190
www.gannettfleming.com

May 12, 2006

Sohan Garg P.E., Chief
Water Management Permits Section
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401



RE: Valley Forge Sewer Authority
Wastewater Treatment Plant – Act 537
Preliminary Discharge Criteria

Dear Sohan:

The Valley Forge Sewer Authority has been in the process of preparing a regional Act 537 Plan. The Plan is nearing completion and submission to the PADEP. One of the short listed options being investigated is expansion of the existing facility. Based on the projected flows, we anticipate that the plant will have to be expanded to increase the capacity from 9.2 MGD to approximately 11.3 MGD (AADF). This corresponds to the AADF capacity projected to be needed in approximately 20 years. The plant's hydraulic capacity is currently 10.4 MGD.

We are writing this letter to request preliminary discharge criteria for the expanded plant. The outfall discharges to the Schuylkill River at Latitude 40°07'05" and Longitude 75°27'56". We have attached a portion of the Valley Forge USGS quadrangle with the outfall location indicated.

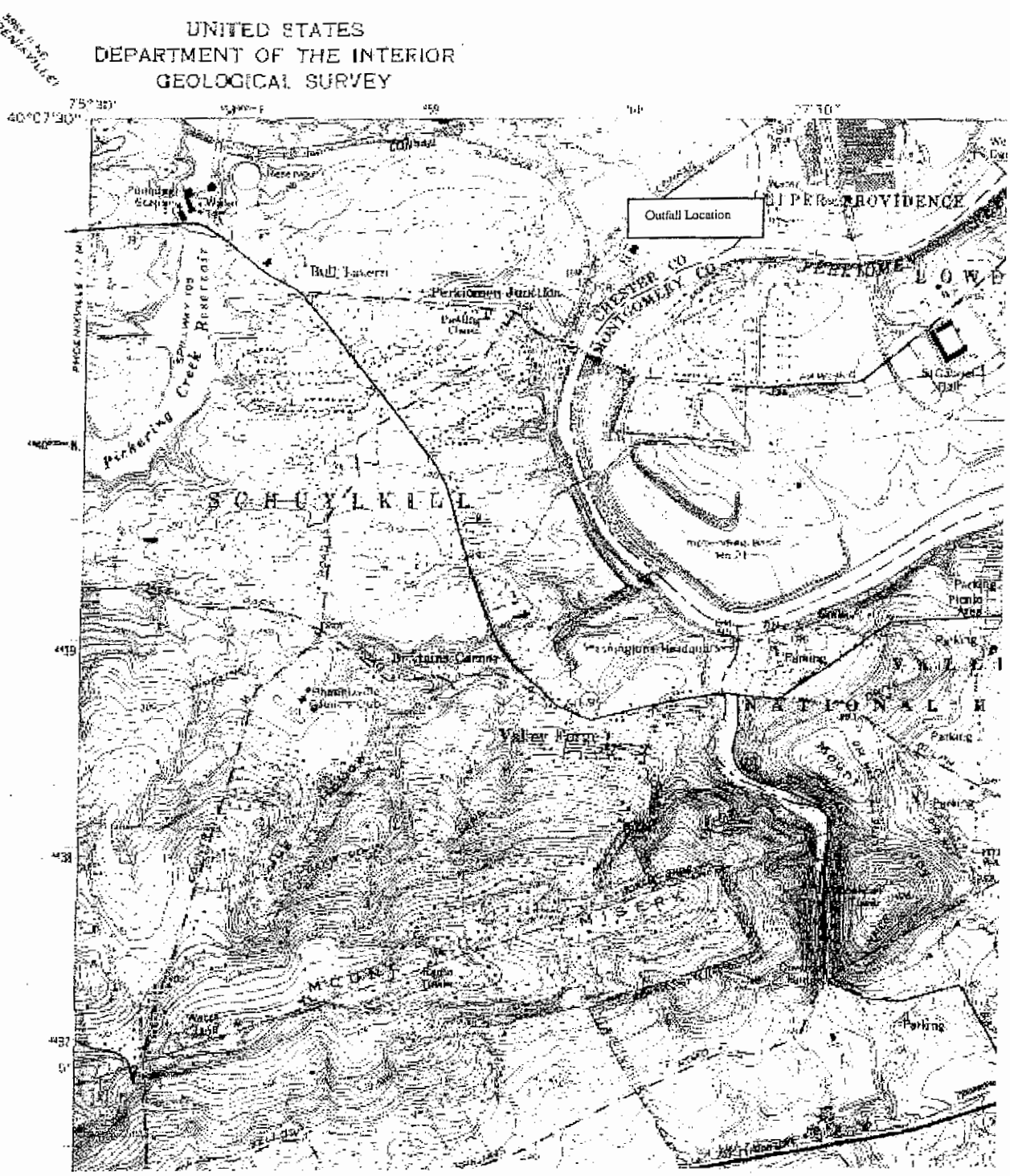
If you have any questions or require any additional information, please contact me.

Very truly yours,

GANNETT FLEMING, INC.

Edward L. Woyden

ELW:PLK
C: M. Goldberg - VFSA



Valley Forge USGS quadrangle

APPENDIX E

Detailed Cost Breakdown of Alternatives

Item	Estimated Construction Cost	Estimated Associated Project Cost 25%	Estimated Total Project Cost
Site Work Allowance	$ 559,000	$ 139,750	$ 698,750
Yard Piping Allowance	$ 955,200	$ 238,800	$ 1,194,000
Improved Recycle Stream Handling	$ 183,100	$ 45,775	$ 228,875
Upgrade Operations Building			
Lunch Room	$ 29,238	$ 7,309	$ 36,547
Restroom/Showers	$ 26,145	$ 6,536	$ 32,682
Control Room	$ 21,077	$ 5,269	$ 26,347
Upgrade Maintenance Shop	$ 74,052	$ 18,513	$ 92,565
Upgrade Lighting	$ 92,565	$ 23,141	$ 115,706
Upgrade HVAC	$ 462,825	$ 115,706	$ 578,531
Painting	$ 15,428	$ 3,857	$ 19,284
Door Replacement	$ 20,828	$ 5,207	$ 26,034
Subtotal:	$ 742,158	$ 185,539	$ 927,697
Chlorine Building Renovations	$ 66,000	$ 16,500	$ 82,500
Plant Automation	$536,200	$ 134,050	$ 670,250
Utility Water System	$ 259,500	$ 64,875	$ 324,375
Total:	**$ 3,301,158**	**$ 825,289**	**$ 4,126,447**

k:\proj\7529761\cost estimates\Additional 537 Cost Est. May 2006

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: SITE WORK ALLOWANCE - 537

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

05/01/06

Approx. cost = $559,000

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
Site Work Allowance				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
stormwater system	1	ls		$0		$0		$0	35,000.00	$35,000	$53,996
				$0		$0		$0		$0	$0
erosion and control	1	ls		$0		$0		$0	8,000.00	$8,000	$12,342
				$0		$0		$0		$0	$0
earthwork				$0		$0		$0		$0	$0
excavation	25000	cy		$0	2.62	$65,500	4.60	$115,000		$0	$334,044
backfill	12000	cy		$0	1.00	$12,000	1.00	$12,000		$0	$47,208
				$0		$0		$0		$0	$0
finish grading and seeding	10000	sy	0.36	$3,600	1.39	$13,900	0.23	$2,300		$0	$42,674
				$0		$0		$0		$0	$0
pavement	700	sy		$0		$0		$0	30.00	$21,000	$32,398
				$0		$0		$0		$0	$0
fencing	600	lf	31.00	$18,600	3.66	$2,196	0.75	$450		$0	$36,362
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$22,200		$93,596		$129,750		$64,000	$559,024
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$22,200		$93,596		$129,750		$64,000	
Taxes & Insurance				$1,332		$51,478		n/a		n/a	
				==========		==========		==========		==========	
				$23,532		$145,074		$129,750		$64,000	

ESTIMATE SUMMARY:

MATERIAL:		$23,532
LABOR:		$145,074
EQUIPMENT:		$129,750
SUBCONTRACTS:		$64,000
		==========
ADD-ONS:		$362,356
GEN. CONDITIONS & OVERHEAD:	10%	$36,236
		==========
		$398,591
PROFIT:	10%	$39,859
		==========
		$438,451
BONDING & INSURANCE:	2%	$8,769
		==========
		$447,220
CONTINGENCY:	25%	$111,805
		==========
		$559,024
INFLATION - ONE YEAR:	0%	$0
		==========
		$559,024
OPINION OF PROBABLE CONSTRUCTION COST		**$559,000**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: YARD PIPING ALLOWANCE - 537

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

05/01/06

Approx. cost = $955,200

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
Yard Piping Allowance				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
36" PCCP	2000	lf	85.00	$170,000	18.00	$36,000	10.00	$20,000		$0	$394,944
excavation/backfill	2000	lf		$0		$0		$0	40.00	$80,000	$123,420
fittings	1	ls		$0		$0		$0	100,000.00	$100,000	$154,275
				$0		$0		$0		$0	$0
14" DIP	500	lf	37.00	$18,500	14.00	$7,000	5.50	$2,750		$0	$51,235
excavation/backfill	500	lf		$0		$0		$0	35.00	$17,500	$26,998
fittings	1	ls		$0		$0		$0	2,500.00	$2,500	$3,857
				$0		$0		$0		$0	$0
12" DIP	500	lf	29.00	$14,500	13.00	$6,500	5.00	$2,500		$0	$43,112
excavation/backfill	500	lf		$0		$0		$0	35.00	$17,500	$26,998
fittings	1	ls		$0		$0		$0	2,500.00	$2,500	$3,857
				$0		$0		$0		$0	$0
10" DIP	500	lf	24.00	$12,000	12.00	$6,000	5.00	$2,500		$0	$37,828
excavation/backfill	500	lf		$0		$0		$0	35.00	$17,500	$26,998
fittings	1	ls		$0		$0		$0	2,500.00	$2,500	$3,857
				$0		$0		$0		$0	$0
6" DIP	500	lf	16.00	$8,000	9.00	$4,500	4.00	$2,000		$0	$26,929
excavation/backfill	500	lf		$0		$0		$0	35.00	$17,500	$26,998
fittings	1	ls		$0		$0		$0	2,500.00	$2,500	$3,857
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$223,000		$60,000		$29,750		$260,000	$955,163
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$223,000		$60,000		$29,750		$260,000	
Taxes & Insurance				$13,380		$33,000		n/a		n/a	
				==========		==========		==========		==========	
				$236,380		$93,000		$29,750		$260,000	

ESTIMATE SUMMARY:

MATERIAL:		$236,380
LABOR		$93,000
EQUIPMENT:		$29,750
SUBCONTRACTS:		$260,000
		==========
ADD-ONS:		$619,130
GEN. CONDITIONS & OVERHEAD:	10%	$61,913
		==========
		$681,043
PROFIT:	10%	$68,104
		==========
		$749,147
BONDING & INSURANCE:	2%	$14,983
		==========
		$764,130
CONTINGENCY:	25%	$191,033
		==========
		$955,163
INFLATION - ONE YEAR:	0%	$0
		==========
		$955,163

OPINION OF PROBABLE CONSTRUCTION COST **$955,200**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: IMPROVE RECYCLE STREAM HANDLING - 537

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

05/01/06

Approx. cost = $183,100

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
Mixing System				$0		$0		$0		$0	$0
pumps	1	ls		$0		$0		$0	40,000.00	$40,000	$61,710
nozzles and piping	1	ls		$0		$0		$0	23,000.00	$23,000	$35,483
electrical	1	ls		$0		$0		$0	9,000.00	$9,000	$13,885
				$0		$0		$0		$0	$0
Rehab Tank				$0		$0		$0		$0	$0
clean tank	1	ls		$0		$0		$0	4,000.00	$4,000	$6,171
hatches 4' x 4'	2	ea	1,025.00	$2,050	213.00	$426		$0		$0	$4,371
ladders	24	vlf	92.00	$2,208	26.00	$624	1.79	$43		$0	$5,169
coating inside of tank no 1	3900	sf		$0		$0		$0	3.00	$11,700	$18,050
remove concrete slab	1100	sf		$0	1.82	$2,002	0.20	$220		$0	$5,127
disposal	1	ls		$0		$0		$0	500.00	$500	$771
new concrete slab	30	cy		$0		$0		$0	700.00	$21,000	$32,398
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$4,258		$3,052		$263		$109,200	$183,135
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$4,258		$3,052		$263		$109,200	
Taxes & Insurance				$255		$1,679		n/a		n/a	
				==========		==========		==========		==========	
				$4,513		$4,731		$263		$109,200	

ESTIMATE SUMMARY:

MATERIAL:		$4,513
LABOR:		$4,731
EQUIPMENT:		$263
SUBCONTRACTS:		$109,200
		==========
ADD-ONS:		$118,707
GEN. CONDITIONS & OVERHEAD:	10%	$11,871
		==========
		$130,578
PROFIT:	10%	$13,058
		==========
		$143,636
BONDING & INSURANCE:	2%	$2,873
		==========
		$146,508
CONTINGENCY:	25%	$36,627
		==========
		$183,135
INFLATION - ONE YEAR:	0%	$0
		==========
		$183,135
OPINION OF PROBABLE CONSTRUCTION COST		**$183,100**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: UPGRADE OPERATIONS BUILDING - 537

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

05/01/06

Approx. cost = $742,200

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS	
Lunch Room				$0		$0		$0		$0	$0	$29,238
demolition	2	days		$0	1,112.00	$2,224		$0		$0	$5,318	
disposal	1	ls		$0		$0		$0	250.00	$250	$386	
				$0		$0		$0		$0	$0	
new ceiling	490	sf	2.20	$1,078	1.03	$505		$0		$0	$2,970	
new floor - tile	490	sf	1.50	$735	0.55	$270		$0		$0	$1,846	
paint walls	850	sf	0.09	$77	0.29	$247		$0		$0	$715	
cabinets	20	lf	250.00	$5,000	23.00	$460		$0		$0	$9,277	
sink	1	ea	480.00	$480	128.00	$128		$0		$0	$1,091	
plumbing	1	ls		$0		$0		$0	1,000.00	$1,000	$1,543	
tables	4	ea	250.00	$1,000		$0		$0		$0	$1,635	
chairs	16	ea	45.00	$720		$0		$0		$0	$1,177	
oven	1	ea	450.00	$450	75.00	$75		$0		$0	$915	
refrigerator	1	ea	1,000.00	$1,000	25.00	$25		$0		$0	$1,695	
microwave	1	ea	300.00	$300	75.00	$75		$0		$0	$670	
				$0		$0		$0		$0	$0	
Restroom/Showers				$0		$0		$0		$0	$0	$26,145
demolition	2	days		$0	1,112.00	$2,224		$0		$0	$5,318	
disposal				$0		$0		$0	250.00	$0	$0	
				$0		$0		$0		$0	$0	
redo restroom	450	sf		$0		$0		$0	30.00	$13,500	$20,827	
2 toilets				$0		$0		$0		$0	$0	
2 urnials				$0		$0		$0		$0	$0	
2 sinks				$0		$0		$0		$0	$0	
shower				$0		$0		$0		$0	$0	
18 lockers				$0		$0		$0		$0	$0	
bench				$0		$0		$0		$0	$0	
				$0		$0		$0		$0	$0	
Control Room				$0		$0		$0		$0	$0	$21,077
demolition	1	day		$0	1,112.00	$1,112		$0		$0	$2,659	
disposal				$0		$0		$0	250.00	$0	$0	
				$0		$0		$0		$0	$0	
lab bench	15	lf	300.00	$4,500	30.00	$450		$0		$0	$8,435	
chairs	3	ea	200.00	$600		$0		$0		$0	$981	
desks	3	ea	850.00	$2,550		$0		$0		$0	$4,170	
new floor - tile	970	sf	1.50	$1,455	0.55	$534		$0		$0	$3,655	
paint walls	1400	sf	0.09	$126	0.29	$406		$0		$0	$1,177	
				$0		$0		$0		$0	$0	
				$0		$0		$0		$0	$0	
Upgrade Maintenance Shop	3200	sf		$0		$0		$0	15.00	$48,000	$74,052	$74,052
				$0		$0		$0		$0	$0	
Upgrade Lighting	30000	sf		$0		$0		$0	2.00	$60,000	$92,565	$92,565
				$0		$0		$0		$0	$0	
Upgrade HVAC	30000	sf		$0		$0		$0	10.00	$300,000	$462,825	$462,825
				$0		$0		$0		$0	$0	
Painting	1	ls		$0		$0		$0	10,000.00	$10,000	$15,428	$15,428
				$0		$0		$0		$0	$0	

Door Replacement				$0		$0		$0		$0	$0	$20,828
				$0		$0		$0		$0	$0	
mandoors	3	ea	1,000.00	$3,000	185.00	$555		$0		$0	$6,233	
				$0		$0		$0		$0	$0	
garage doors - 12' wide	2	ea	3,000.00	$6,000	1,000.00	$2,000		$0		$0	$14,594	
				$0		$0		$0		$0	$0	
				$0		$0		$0		$0	$0	
				==========		==========		==========		==========	==========	
				$29,071		$11,288		$0		$432,750	$742,158	$742,158
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a		
				==========		==========		==========		==========		
				$29,071		$11,288		$0		$432,750		
Taxes & Insurance				$1,744		$6,209		n/a		n/a		
				==========		==========		==========		==========		
				$30,815		$17,497		$0		$432,750		

ESTIMATE SUMMARY:

MATERIAL:		$30,815
LABOR:		$17,497
EQUIPMENT:		$0
SUBCONTRACTS:		$432,750
		==========
ADD-ONS:		$481,061
GEN. CONDITIONS & OVERHEAD:	10%	$48,106
		==========
		$529,168
PROFIT:	10%	$52,917
		==========
		$582,084
BONDING & INSURANCE:	2%	$11,642
		==========
		$593,726
CONTINGENCY:	25%	$148,432
		==========
		$742,158
INFLATION - ONE YEAR:	0%	$0
		==========
		$742,158
OPINION OF PROBABLE CONSTRUCTION COST		**$742,200**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA Estimate No.: **75297 61** **27-Oct-06**
Location: VALLEY FORGE, PENNA. Estimator: EGW
Subject: DAY BIN FOR BIOSOLIDS STAGING AND TRUCK LOADING Checker: LAL

Burdens:
State Sales Tax: 6.0% 04/05/06 **Approx. cost = $820,000**
Labor Burden (Payroll Taxes & Insur.): 55%

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
Day bin	1	ls	300,000.00	$300,000	70,000.00	$70,000	30,000.00	$30,000		$0	$704,265
				$0		$0		$0		$0	$0
Electrical	1	ls		$0		$0		$0	75,000.00	$75,000	$115,706
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$300,000		$70,000		$30,000		$75,000	$819,972
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$300,000		$70,000		$30,000		$75,000	
Taxes & Insurance				$18,000		$38,500		n/a		n/a	
				==========		==========		==========		==========	
				$318,000		$108,500		$30,000		$75,000	

ESTIMATE SUMMARY:

MATERIAL:		$318,000
LABOR:		$108,500
EQUIPMENT:		$30,000
SUBCONTRACTS:		$75,000
		==========
ADD-ONS:		$531,500
GEN. CONDITIONS & OVERHEAD:	10%	$53,150
		==========
		$584,650
PROFIT:	10%	$58,465
		==========
		$643,115
BONDING & INSURANCE:	2%	$12,862
		==========
		$655,977
CONTINGENCY:	25%	$163,994
		==========
		$819,972
INFLATION - ONE YEAR:	0%	$0
		==========
		$819,972
OPINION OF PROBABLE CONSTRUCTION COST		**$820,000**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA Estimate No.: **75297 61** **27-Oct-06**
Location: VALLEY FORGE, PENNA. Estimator: EGW
Subject: CONTROL BUILDING ODOR CONTROL SYSTEM REPLACEMEI Checker: LAL

Burdens:
State Sales Tax: 6.0% 05/01/06 **Approx. cost = $1,723,400**
Labor Burden (Payroll Taxes & Insur.): 55%

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
blowers and accessories	1	ls	500,000.00	$500,000	50,000.00	$50,000		$0		$0	$937,221
diffusers	1	ls	80,000.00	$80,000	16,000.00	$16,000		$0		$0	$169,085
air mains	1	ls		$0		$0		$0	125,000.00	$125,000	$192,844
				$0		$0		$0		$0	$0
building - 30' x 40'	1200	sf		$0		$0		$0	125.00	$150,000	$231,413
				$0		$0		$0		$0	$0
electrical	1	ls		$0		$0		$0	125,000.00	$125,000	$192,844
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$580,000		$66,000		$0		$400,000	$1,723,406
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$580,000		$66,000		$0		$400,000	
Taxes & Insurance				$34,800		$36,300		n/a		n/a	
				==========		==========		==========		==========	
				$614,800		$102,300		$0		$400,000	

ESTIMATE SUMMARY:

MATERIAL:		$614,800
LABOR:		$102,300
EQUIPMENT:		$0
SUBCONTRACTS:		$400,000
		==========
ADD-ONS:		$1,117,100
GEN. CONDITIONS & OVERHEAD:	10%	$111,710
		==========
		$1,228,810
PROFIT:	10%	$122,881
		==========
		$1,351,691
BONDING & INSURANCE:	2%	$27,034
		==========
		$1,378,725
CONTINGENCY:	25%	$344,681
		==========
		$1,723,406
INFLATION - ONE YEAR:	0%	$0
		==========
		$1,723,406
OPINION OF PROBABLE CONSTRUCTION COST		**$1,723,400**

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OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: RENOVATIONS - CHLORINE BUILDING - 537

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

05/01/06

Approx. cost = $66,000

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
demolition	5	days		$0	800.00	$4,000	456.00	$2,280		$0	$13,083
disposal	1	ls		$0		$0		$0	500.00	$500	$771
				$0		$0		$0		$0	$0
install liquid chlorine				$0		$0		$0		$0	$0
tank - 1200 gallon	1	ls	800.00	$800	250.00	$250	200.00	$200		$0	$2,215
pumps	2	ea	2,000.00	$4,000	200.00	$400	75.00	$150		$0	$7,729
piping and valves	1	ls	750.00	$750	500.00	$500		$0		$0	$2,422
				$0		$0		$0		$0	$0
electrical	1	ls		$0		$0		$0	10,000.00	$10,000	$15,428
				$0		$0		$0		$0	$0
yard piping - replace existing pipe				$0		$0		$0		$0	$0
PVC - pipe	400	lf	2.00	$800	1.50	$600		$0		$0	$2,743
trenching/backfill	400	lf		$0		$0		$0	35.00	$14,000	$21,599
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$6,350		$5,750		$2,630		$24,500	$65,989
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$6,350		$5,750		$2,630		$24,500	
Taxes & Insurance				$381		$3,163		n/a		n/a	
				==========		==========		==========		==========	
				$6,731		$8,913		$2,630		$24,500	

ESTIMATE SUMMARY:

MATERIAL:		$6,731
LABOR:		$8,913
EQUIPMENT:		$2,630
SUBCONTRACTS:		$24,500
		==========
ADD-ONS:		$42,774
GEN. CONDITIONS & OVERHEAD:	10%	$4,277
		==========
		$47,051
PROFIT:	10%	$4,705
		==========
		$51,756
BONDING & INSURANCE:	2%	$1,035
		==========
		$52,791
CONTINGENCY:	25%	$13,198
		==========
		$65,989
INFLATION - ONE YEAR:	0%	$0
		==========
		$65,989
OPINION OF PROBABLE CONSTRUCTION COST		**$66,000**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA Estimate No.: **75297 61** **27-Oct-06**
Location: VALLEY FORGE, PENNA. Estimator: EGW
Subject: PLANT AUTOMATION - 537 Checker: LAL

Burdens:
State Sales Tax: 6.0% 05/01/06 **Approx. cost = $536,200**
Labor Burden (Payroll Taxes & Insur.): 55%

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
PLC Hardware											
Controllogix Processor 4 M Memory	1	ea	4,300.00	$4,300		$0		$0		$0	$7,594
Ethernet Module	1	ea	1,050.00	$1,050		$0		$0		$0	$1,854
Controlnet Bridge Module	2	ea	800.00	$1,600		$0		$0		$0	$2,826
24 VDC Digital Input Modules	13	ea	200.00	$2,600		$0		$0		$0	$4,592
I/O Terminal Block	13	ea	30.00	$390		$0		$0		$0	$689
120 VAC Digital Output Modules	7	ea	350.00	$2,450		$0		$0		$0	$4,327
I/O Terminal Block	7	ea	30.00	$210		$0		$0		$0	$371
Analog Input - 16 Channel Single Ended	5	ea	900.00	$4,500		$0		$0		$0	$7,948
I/O Terminal Block	5	ea	40.00	$200		$0		$0		$0	$353
Analog Output - 8 Channel	5	ea	1,100.00	$5,500		$0		$0		$0	$9,714
I/O Terminal Block	5	ea	30.00	$150		$0		$0		$0	$265
17 Slot CLX Chassis	2	ea	500.00	$1,000		$0		$0		$0	$1,766
Power Supply	2	ea	600.00	$1,200		$0		$0		$0	$2,119
Controlnet Taps	2	ea	70.00	$140		$0		$0		$0	$247
Tools, Software, Misc											
RS Logix 5000 - Professional Edition Include: RS Linx - Professional, RS Emulate 5000, RS Test Stand Lite, PIDE Autotune, RS Networx, Function Block, Sequencial Function Charts, Structured Text, and Ladder Logic	1	ea	5,400.00	$5,400		$0		$0		$0	$9,537
RS-LOGIX 5000 Function Block Editor	1	ea	700.00	$700		$0		$0		$0	$1,236
RS View SE Server 100 Display	1	ea	4,200.00	$4,200		$0		$0		$0	$7,418
RS View SE Client	2	ea	2,000.00	$4,000		$0		$0		$0	$7,065
RS Studio	1	ea	1,800.00	$1,800		$0		$0		$0	$3,179
Controlnet Modules for SLCs	2	ea	600.00	$1,200		$0		$0		$0	$2,119
Controlnet Taps	2	ea	70.00	$140		$0		$0		$0	$247
Spare Parts											
Controlnet Bridge Module	1	ea	800.00	$800		$0		$0		$0	$1,413
Controlnet Taps	2	ea	70.00	$140		$0		$0		$0	$247
24 VDC Digital Input Modules	2	ea	200.00	$400		$0		$0		$0	$706
I/O Terminal Block	2	ea	30.00	$60		$0		$0		$0	$106
120 VAC Digital Output Modules	2	ea	350.00	$700		$0		$0		$0	$1,236
17 Slot CLX Chassis	1	ea	500.00	$500		$0		$0		$0	$883
Power Supply	1	ea	600.00	$600		$0		$0		$0	$1,060
Analog Input - 16 Channel Single Ended	2	ea	900.00	$1,800		$0		$0		$0	$3,179
Spring Terminal Block	2	ea	40.00	$80		$0		$0		$0	$141
Analog Output - 8 Channel	2	ea	1,100.00	$2,200		$0		$0		$0	$3,886
Controllogix Processor 4 M Memory	1	ea	4,300.00	$4,300		$0		$0		$0	$7,594
Industrial Compact Flash Card	1	ea	70.00	$70		$0		$0		$0	$124
Space Fillers	6	ea	12.00	$72		$0		$0		$0	$127
				$0		$0		$0		$0	$0
Construction Costs (wire, conduit, modifications to existing equipment and duct banks as required)											

				$0		$0		$0		$0	$0
Costs per I/O point	350	per unit	200.00	$70,000	250.00	$87,500		$0		$0	$349,604
				$0		$0		$0		$0	$0
Programming and Graphics Development											
Costs per I/O point	350	per unit		$0	100.00	$35,000		$0		$0	$90,390
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: HEADWORKS WITH SCREENING AND GRIT REMOVAL

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

04/05/06

Approx. cost = $1,905,300

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
headworks building	2000	sf		$0		$0		$0	200.00	$400,000	$617,100
				$0		$0		$0		$0	$0
bar screen	1	ls		$0		$0		$0	300,000.00	$300,000	$462,825
				$0		$0		$0		$0	$0
grit removal	1	ls		$0		$0		$0	130,000.00	$130,000	$200,558
				$0		$0		$0		$0	$0
odor control system	1	ls		$0		$0		$0	100,000.00	$100,000	$154,275
				$0		$0		$0		$0	$0
electrical	1	ls		$0		$0		$0	150,000.00	$150,000	$231,413
				$0		$0		$0		$0	$0
site work	1	ls		$0		$0		$0	80,000.00	$80,000	$123,420
				$0		$0		$0		$0	$0
miscellaneous	1	ls		$0		$0		$0	75,000.00	$75,000	$115,706
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$0		$0		$0		$1,235,000	$1,905,296
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$0		$0		$0		$1,235,000	
Taxes & Insurance				$0		$0		n/a		n/a	
				==========		==========		==========		==========	
				$0		$0		$0		$1,235,000	

ESTIMATE SUMMARY:

MATERIAL:		$0
LABOR:		$0
EQUIPMENT:		$0
SUBCONTRACTS:		$1,235,000
		==========
ADD-ONS:		$1,235,000
GEN. CONDITIONS & OVERHEAD:	10%	$123,500
		==========
		$1,358,500
PROFIT:	10%	$135,850
		==========
		$1,494,350
BONDING & INSURANCE:	2%	$29,887
		==========
		$1,524,237
CONTINGENCY:	25%	$381,059
		==========
		$1,905,296
INFLATION - ONE YEAR:	0%	$0
		==========
		$1,905,296
OPINION OF PROBABLE CONSTRUCTION COST		**$1,905,300**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: UTILITY WATER SYSTEM

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

04/05/06

Approx. cost = $259,500

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
utility water system	1	ls		$0		$0		$0	90,000.00	$90,000	$138,848
				$0		$0		$0		$0	$0
8" DIP	400	lf	17.00	$6,800	10.00	$4,000	4.00	$1,600		$0	$23,154
excavation/backfill	400	lf		$0		$0		$0	32.00	$12,800	$19,747
paving restoration	150	lf		$0		$0		$0	36.00	$5,400	$8,331
				$0		$0		$0		$0	$0
electrical	1	ls		$0		$0		$0	25,000.00	$25,000	$38,569
				$0		$0		$0		$0	$0
miscellaneous	1	ls		$0		$0		$0	20,000.00	$20,000	$30,855
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$6,800		$4,000		$1,600		$153,200	$259,503
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$6,800		$4,000		$1,600		$153,200	
Taxes & Insurance				$408		$2,200		n/a		n/a	
				==========		==========		==========		==========	
				$7,208		$6,200		$1,600		$153,200	

ESTIMATE SUMMARY:

MATERIAL:		$7,208
LABOR:		$6,200
EQUIPMENT:		$1,600
SUBCONTRACTS:		$153,200
		==========
ADD-ONS:		$168,208
GEN. CONDITIONS & OVERHEAD:	10%	$16,821
		==========
		$185,029
PROFIT:	10%	$18,503
		==========
		$203,532
BONDING & INSURANCE:	2%	$4,071
		==========
		$207,602
CONTINGENCY:	25%	$51,901
		==========
		$259,503
INFLATION - ONE YEAR:	0%	$0
		==========
		$259,503
OPINION OF PROBABLE CONSTRUCTION COST		**$259,500**

OPINION OF PROBABLE CONSTRUCTION COST

Client: VFSA
Location: VALLEY FORGE, PENNA.
Subject: HEADWORKS WITH SCREENING ONLY

Estimate No.: **75297 61**
Estimator: EGW
Checker: LAL

27-Oct-06

Burdens:
State Sales Tax: 6.0%
Labor Burden (Payroll Taxes & Insur.): 55%

04/05/06

Approx. cost = $1,550,500

DESCRIPTION OF WORK	QUANTITY	UNIT	UNIT PRICE MATERIAL	TOT. EST. MATERIAL	UNIT PRICE LABOR	TOT. EST. LABOR	UNIT PRICE EQUIPMENT	TOT. EST. EQUIPMENT	UNIT PRICE SUBCONT.	SUBCONT.	TOTAL W/ BURDENS
				$0		$0		$0		$0	$0
headworks building	1500	sf		$0		$0		$0	200.00	$300,000	$462,825
				$0		$0		$0		$0	$0
bar screen	1	ls		$0		$0		$0	300,000.00	$300,000	$462,825
				$0		$0		$0		$0	$0
odor control system	1	ls		$0		$0		$0	100,000.00	$100,000	$154,275
				$0		$0		$0		$0	$0
electrical	1	ls		$0		$0		$0	150,000.00	$150,000	$231,413
				$0		$0		$0		$0	$0
site work	1	ls		$0		$0		$0	80,000.00	$80,000	$123,420
				$0		$0		$0		$0	$0
miscellaneous	1	ls		$0		$0		$0	75,000.00	$75,000	$115,706
				$0		$0		$0		$0	$0
				$0		$0		$0		$0	$0
				==========		==========		==========		==========	==========
				$0		$0		$0		$1,005,000	$1,550,464
Mean's Local Cost Adjustment			0.00%	$0	0.00%	$0	0.00%	$0		n/a	
				==========		==========		==========		==========	
				$0		$0		$0		$1,005,000	
Taxes & Insurance				$0		$0		n/a		n/a	
				==========		==========		==========		==========	
				$0		$0		$0		$1,005,000	

ESTIMATE SUMMARY:

MATERIAL:		$0
LABOR:		$0
EQUIPMENT:		$0
SUBCONTRACTS:		$1,005,000
		==========
ADD-ONS:		$1,005,000
GEN. CONDITIONS & OVERHEAD:	10%	$100,500
		==========
		$1,105,500
PROFIT:	10%	$110,550
		==========
		$1,216,050
BONDING & INSURANCE:	2%	$24,321
		==========
		$1,240,371
CONTINGENCY:	25%	$310,093
		==========
		$1,550,464
INFLATION - ONE YEAR:	0%	$0
		==========
		$1,550,464

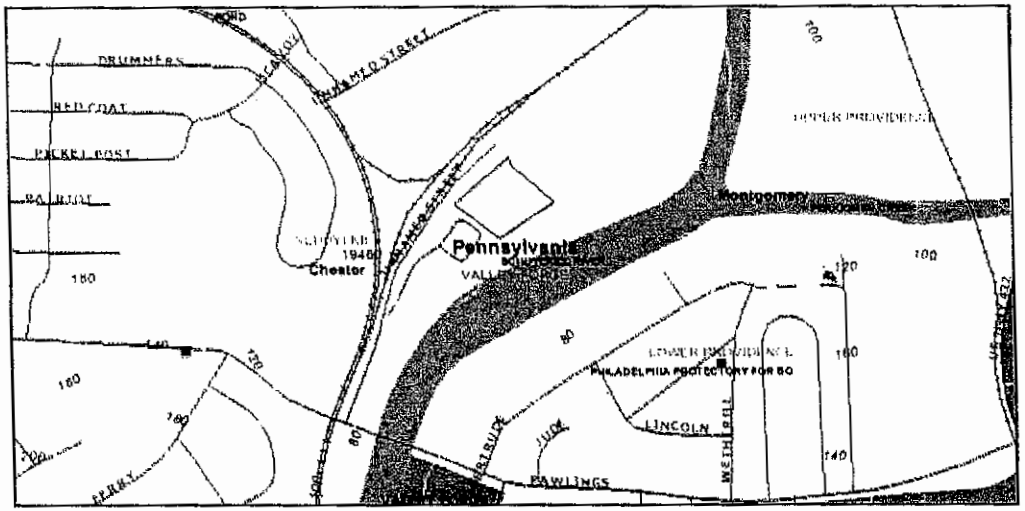
OPINION OF PROBABLE CONSTRUCTION COST **$1,550,500**

APPENDIX F

PNDI Correspondence

PNDI Project Environmental Review Receipt
Project Search ID: 20060327026464
Project Name: VFSA Regional Act 537 Plan
Date: 3/27/2006 8:58:28 AM

Project Location



Location Accuracy

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

Project Name: VFSA Regional Act 537 Plan
On behalf of: County Agency
Project Search ID: 20060327026464
Date: 3/27/2006 8:57:21 AM
# of Potential Impacts: 3
Jurisdictional Agency: US Fish and Wildlife Service,Pennsylvania Department of Conservation and Natural Resources,Pennsylvania Fish and Boat Commission
Project Category: Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewage module/Act 537 plan
Project Coordinates (Lambert): 708184.59903173, 418196.00480814 ft

ZIP Code: 19460
Township/Municipality: SCHUYLKILL
County: Chester
USGS 7.5 Minute Quadrangle ID: 287
Quadrangle Name: VALLEY FORGE
Project Size: 4.962 ac

3 Potential Impacts

Under the Following Agencies' Jurisdiction: US Fish and Wildlife Service,Pennsylvania Department of Conservation and Natural Resources,Pennsylvania Fish and Boat Commission

 APPLICANT INITIALS: MMG

PNDI Project Environmental Review Receipt

Project Search ID: 20060327026464
Project Name: VFSA Regional Act 537 Plan
Date: 3/27/2006 8:58:28 AM

Project Name: VFSA Regional Act 537 Plan
On behalf of: County Agency
Project Search ID: 20060327026464
Date: 3/27/2006 8:57:21 AM
# of Potential Impacts: 3
Jurisdictional Agency: US Fish and Wildlife Service,Pennsylvania Department of Conservation and Natural Resources,Pennsylvania Fish and Boat Commission
Project Category: Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Sewage module/Act 537 plan
Project Coordinates (Lambert): 708184.59903173, 418196.00480814 ft

ZIP Code: 19460
Township/Municipality: SCHUYLKILL
County: Chester
USGS 7.5 Minute Quadrangle ID: 287
Quadrangle Name: VALLEY FORGE
Project Size: 4.962 ac

Pennsylvania Natural Diversity Inventory (PNDI) records indicate there are potential impacts on special concern species and resources within the project area. If the project is pursued, the jurisdictional agency/agencies indicated require that the instructions below regarding potential impacts and/or avoidance measures be followed in their entirety.

Q1: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats
Your answer is: **1. Yes**
Please initial here signifying that you have provided the most accurate answer to the question as possible.

APPLICANT INITIALS: _____

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .
Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**
Please initial here signifying that you have provided the most accurate answer to the question as possible.
APPLICANT INITIALS: _____

These determinations were based on the project-specific information you provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the information you provided does not accurately reflect this project, or if project plans change, DEP and the jurisdictional agencies require that another PNDI review be conducted.

This response represents the most up-to-date summary of the PNDI data files and is <u>good for one(1) year</u> from the date of this PNDI Project Environmental Review Receipt.

 APPLICANT INITIALS: _____

1 potential impact
The Applicant should MAIL a copy of this Project Environmental Review Receipt, a cover letter with project narrative, acreage to be impacted, how construction/maintenance activity is to be accomplished, township/municipality and county where project is located, and a USGS 7.5 minute quadrangle with project boundary and quad name marked on the map.

US Fish and Wildlife Service.
Endangered Species Biologist
315 South Allen Street,Suite 322.
State College, PA 16801

1 potential impact
The Applicant should MAIL/FAX a copy of this Project Environmental Review Receipt, a cover letter with project narrative, acreage to be impacted, how construction/maintenance activity is to be accomplished, township/municipality and county where project is located, and a USGS 7.5 minute quadrangle with project boundary and quad name marked on the map.

Ecological Services Section
Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
P.O. Box 8552
Harrisburg, PA 17105-8552
Review Coordinator: (717) 772-0258
FAX Number: (717) 772-0271

1 potential impact
The Applicant should MAIL/FAX a copy of this Project Environmental Review Receipt, a cover letter with project narrative, acreage to be impacted, how construction/maintenance activity is to be accomplished, township/municipality and county where project is located, and a USGS 7.5 minute quadrangle with project boundary and quad name marked on the map.

Natural Diversity Section
Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
FAX Number: (814) 359-5175

Please mail only one (1) copy of the project review request. Do not email the project information. Allow 30 days for completion of the project review from the date of PFBC receipt of the project review request.

DISCLAIMER

The PNDI environmental review website is a preliminary environmental screening tool. It is not a substitute for information obtained from a field survey of the project area conducted by a biologist. Such surveys may reveal previously undocumented populations of species of special concern. In addition, the PNDI only contains information about species occurrences that have actually been reported to the Pennsylvania Natural Heritage Program.

Pennsylvania State Programmatic General Permit (PASPGP)

Please note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) are required by DEP to comply with the bog turtle habitat screening requirements of the PASPGP.

 APPLICANT INITIALS: _____

PNDI Project Environmental Review Receipt
Project Search ID: 20060327026464
Project Name: VFSA Regional Act 537 Plan
Date: 3/27/2006 8:58:28 AM

TERMS OF USE

Upon signing into the PNDI environmental review website, and as a condition of using it, you agreed to certain terms of use. These are as follows:

The web site is intended solely for the purpose of screening projects for potential impacts on resources of special concern in accordance with the instructions provided on the web site. Use of the web site for any other purpose or in any other way is prohibited and subject to criminal prosecution under federal and state law, including but not limited to the following: Computer Fraud and Abuse Act of 1986, as amended, 18 U.S.C. § 1030; Pennsylvania Crimes Code, § 4911 (tampering with public records or information), § 7611 (unlawful use of computer and other computer crimes), § 7612 (disruption of service), § 7613 (computer theft), § 7614 (unlawful duplication), and § 7615 (computer trespass).

The PNHP reserves the right at any time and without notice to modify or suspend the web site and to terminate or restrict access to it.

The terms of use may be revised from time to time. By continuing to use the web site after changes to the terms have been posted, the user has agreed to accept such changes.

This review is based on the project information that was entered. The jurisdictional agencies and DEP require that the review be redone if the project area, location, or the type of project changes. If additional information on species of special concern becomes available, this review may be reconsidered by the jurisdictional agency.

PRIVACY and SECURITY

This web site operates on a Commonwealth of Pennsylvania computer system. It maintains a record of each environmental review search result as well as contact information for the project applicant. These records are maintained for internal tracking purposes. Information collected in this application will be made available only to the jurisdictional agencies and to the Department of Environmental Protection, except if required for law enforcement purposes—see paragraph below.

This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system consents to such monitoring and is advised that if such monitoring reveals evidence of possible criminal activity, system personnel may provide the evidence to law enforcement officials. See Terms of Use.

In order for this project to be considered for subsequent review, a signed and initialed copy of this receipt is required by the agency or agencies indicated. DEP requires that a signed and initialed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted in applications for permits requiring PNDI review. See DEP PNDI policy at www.naturalheritage.state.pa.us or visit the following websites for further information.

Regional Offices
Http://www.dep.state.pa.us/dep/deputate/fieldops/map.pdf

District Mining Operations
Http://www.dep.state.pa.us/dep/deputate/minres/Districts/homepage/Default.htm

 APPLICANT INITIALS: MK

PNDI Project Environmental Review Receipt
Project Search ID: 20060327026464
Project Name: VFSA Regional Act 537 Plan
Date: 3/27/2006 8:58:28 AM

Oil and Gas Management
Http://www.dep.state.pa.us/dep/deputate/minres/OILGAS/CustomerNeeds.htm

Print this Project Review Receipt using your Internet browser's print function and keep it as a record of your search.

Signature: Martin L Goldberg

Date: _____

Project applicant on whose behalf this search was conducted:

APPLICANT

Contact Name: Valley Forge Sewer Authority Martin Goldberg

Address: 333 Pawling Rd.

City, State, Zip: Phoenixville, PA 19460

Phone: 610-935-1553

Email: mgoldberg@VFSA.com

PERSON CONDUCTING SEARCH (if not applicant)

Contact Name: Diane Vesely

Address: 445 W. Philadelphia St. PO Box 15040

City, State, Zip: York, PA 17405-7040

Phone: 717-852-1340

Email: dvesely@bh-bc.com

The following contact information is for the agencies involved in this Pennsylvania Natural Diversity Inventory environmental review process. Please read this entire receipt carefully as it contains instructions for how to contact these agencies for further review of this particular project.

US Fish and Wildlife Service.
Endangered Species Biologist
315 South Allen Street,Suite 322.
State College, PA 16801

Ecological Services Section
Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
P.O. Box 8552
Harrisburg, PA 17105-8552
Review Coordinator: (717) 772-0258
FAX Number: (717) 772-0271

Natural Diversity Section
Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
FAX Number: (814) 359-5175

 APPLICANT INITIALS: MFJ

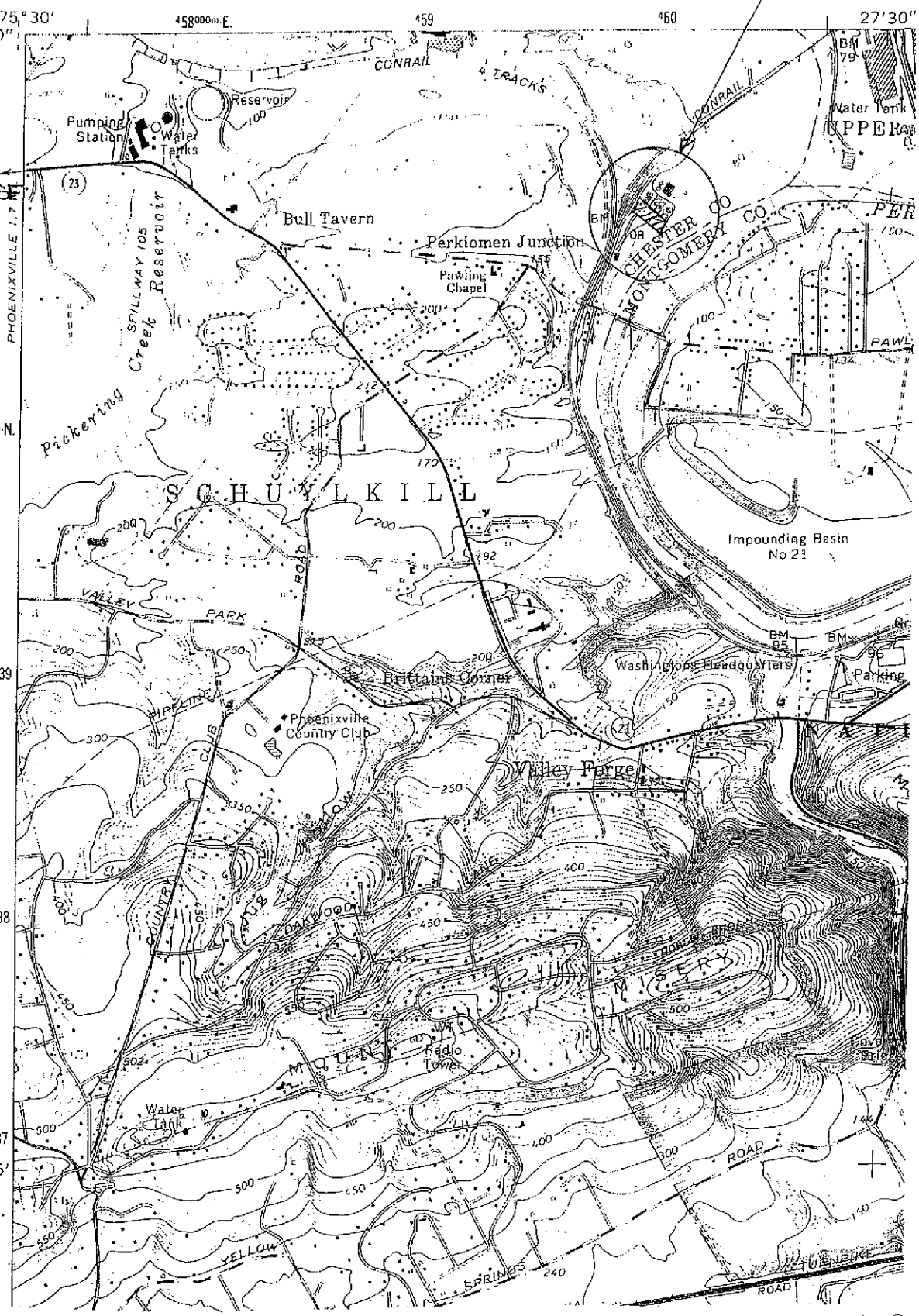
PROJECT NARRATIVE

Valley Forge Sewer Authority is in the process of updating its Regional Act 537 Sewage Facilities Plan. The Authority's existing treatment facilities which are located in Schuylkill Township, Chester County along the Schuylkill River serve 8 surrounding Townships and Boroughs. Several of the alternatives presently under evaluation include the potential for constructing additional treatment tanks on the existing site in an area situated between the existing tankage and the Authority's administrative facilities. Should all of the tankage need to be constructed, it is anticipated that the disturbed area will be a 350' x 1100' area just southwest of the existing tankage as depicted on the attached USGS quad (Valley Forge) and site plan.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Project Site

Max. area to be disturbed 385,000SF (350'x1100') SW of existing tankage



VALLEY FORGE, PA.

N4000—W7522.5/7.5

1966
PHOTOREVISED 1981
DMA 5964 III SW—SERIES V831

SCALE 1:24 000

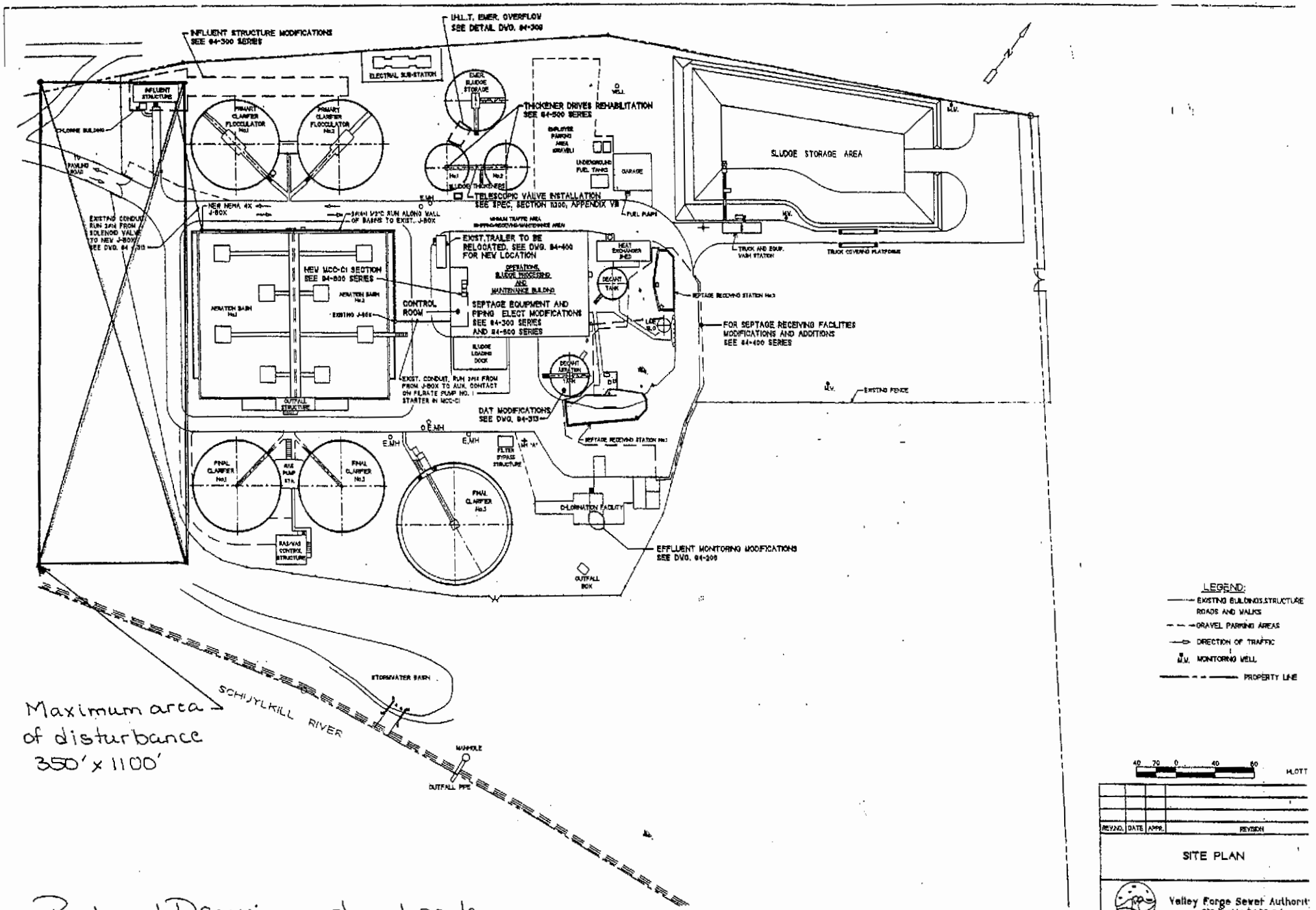
1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

RCHANGE 23



Maximum area of disturbance 350' x 1100'

Reduced Drawing - do not scale

Item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

X Pamela Shellenberger ☐ Agent ☐ Addre

B. Received by (Printed Name) Pamela Shellenberger

C. Date of Deli 3/31/

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

1. Article Addressed to:

U.S. FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES BIOLOGIST
315 SOUTH ALLEN ST., SUITE 322
STATE COLLEGE PA 16801

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchan
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7004 2510 0004 7530 9722

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-

7004 2510 0004 7530 9722

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Post...	$ 5.12

D. Vesely

Postmark Here

YORK, PA
MAR 29 2005
USPS 17404-0109

Sent To
Street, Apt or PO Box
City, State

U.S. FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES BIOLOGIST
315 SOUTH ALLEN ST., SUITE 322
STATE COLLEGE PA 16801

PS Form 3...

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5147 Fax: (814) 359-5175
April 21, 2006

IN REPLY REFER TO:
SIR# 22400

BUCHART HORN
DIANE VESELY
445 W PHILADELPHIA ST
P.O. BOX 15040
YORK, PA 17405

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search Number: 20060327026464
VALLEY FORGE SEWER AUTHORITY REGIONAL ACT 537 PLAN
SCHUYLKILL Township, CHESTER County, Pennsylvania

Dear Ms. VESELY:

I have reviewed the maps for the above-referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the bog turtle (*Glyptemys muhlenbergii*, state endangered, federal threatened) and red-bellied turtle (*Pseudemys rubriventris*, state threatened) are known from the vicinity of the proposed project site.

The bog turtle (*Glyptemys muhlenbergii*) is a small (up to a 4 inch carapace) semi-aquatic, omnivorous turtle that prefers open marshy wetlands associated with springs and groundwater, specific vegetative communities and mucky soils for burrowing. This species is restricted to the southcentral and southeast portions of Pennsylvania. However, due to the lack of pristine habitat found in its range from disturbance and successional processes, the bog turtle has had in some case become accustomed to disturbed, low quality wetland complexes often with semi-closed canopies. Bog turtles are also known to be transients in forested habitat that are associated with springs and small streams leading to more open marshes. They use these habitats as dispersal corridors to other wetlands. The bog turtle is threatened by habitat destruction, poor water quality and poaching.

Based on the proximity of your proposed project to known bog turtle habitat, there may also be suitable bog turtle habitat on the proposed project site. **Therefore, if there will be *any* direct (e.g., filling; earth disturbance) or indirect (e.g., runoff) impacts to any wetlands within or adjacent to the project area (including access roads), we request that a habitat suitability assessment (Phase 1 survey) for bog turtles be conducted by a qualified herpetologist.** A list of qualified surveyors is enclosed for your convenience. Bog turtle habitat surveys are to be conducted in accordance with the methods outlined in the enclosed "*Guidelines for Bog Turtle Surveys*."

Upon completion of the Phase 1 bog turtle survey, the herpetologist is to send a report documenting the survey results to this office (Natural Diversity Section) for our review and comment. The report should include the following information: descriptions of the wetland vegetation, soils, and hydrology on the site; color photographs and maps of suitable habitat; and a list of all herpetofauna observed during the survey. If

any bog turtles are observed during the survey, their location(s) should be mapped, and they should be photographed, aged, sexed, and measured. Following our review of the habitat survey, an additional biological survey to determine bog turtle presence (Phase 2) may be required. **However, if there will be no direct or indirect impacts to wetlands from the proposed project, then I do not foresee any adverse impacts to the bog turtle.**

Due to the federal status of the bog turtle, future correspondence should also be directed to the Endangered Species Biologist of the U.S. Fish and Wildlife Service at their field office in State College, Pennsylvania. Also, please note that the Pennsylvania Fish & Boat Commission conducts Species Impact Reviews only for reptiles, amphibians, fishes and aquatic invertebrates. Reviews concerning other natural resources should be directed to the appropriate agencies.

The PNDI and file search of rare species in the project vicinity also detected the red-bellied turtle (PA threatened) in the vicinity of the proposed project. The red-bellied turtle is one of Pennsylvania's largest native aquatic turtles. This turtle species is known to inhabit relatively large, deep streams, rivers, ponds, lakes and marshes with permanent water and ample basking sites. Red-bellied turtles are restricted to the southcentral and southeastern regions of the Commonwealth. The existence of this turtle species is threatened by habitat destruction, poor water quality, and competition with aggressive non-native turtle species that share its range and habitat (e.g., red-eared slider, *Trachemys scripta elegans*).

Red-bellied turtles are known from near the project area. It is possible that they could also occur in any wetlands and water bodies on-site. **Therefore, if wetlands with open water areas, streams or ponds are to be disturbed from the project activity, we will need to conduct a more thorough evaluation of the potential adverse impacts to the red-bellied turtle.** Items including detailed project plans, project narrative, aerial photographs of the general area, general habitat descriptions, and color photographs of the project area, wetlands identification and delineation, stream characterization (flow velocity, width, depth, substrate type, pools and riffles, identification of basking areas, logs, woody debris, presence of aquatic vegetation) would expedite our review process. Pending the review of this information, a survey targeting the presence of the species of concern may be warranted.

However, if wetlands or water bodies are not to be disturbed in any way by the proposed activity, and provided that best management practices are employed and strict erosion and sedimentation measures are maintained, I do not foresee any adverse impacts to red-bellied turtle or any other rare or protected species under Pennsylvania Fish & Boat Commission jurisdiction. If no wetlands or waterways will be disturbed, no further action on your part will be necessary.

Note that this office performed no field inspection of the project area. Consequently, comments in this letter are not meant to address other issues or concerns that might arise concerning matters under Pennsylvania Fish and Boat Commission jurisdiction or that of other authorities. If you have any questions regarding this response, please contact Nevin Welte at 814-359-5234 and refer to the SIR number at the top of this letter. Thank you for your cooperation and attention to this matter of endangered species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/NW/dmc
c: B. Dershem, USFWS
Enclosures (3)

U.S. FISH AND WILDLIFE SERVICE
& PENNSYLVANIA FISH AND BOAT COMMISSION

QUALIFIED BOG TURTLE SURVEYORS

The following list includes persons known by the U.S. Fish and Wildlife Service and Pennsylvania Fish and Boat Commission to have the skills and experience to search for and successfully find bog turtles and their habitat. Any individuals handling or conducting surveys for bog turtles must first obtain a Scientific Collector's Permit from the Commission. All permitted collector's encounters with bog turtles must be reported in writing to the Commission and Service within 48 hours. Bog turtle surveys and research should be overseen by a qualified surveyor, who should be present in the field at all times during the investigation. Surveys should be carried out in accordance with the Service's *Guidelines for Bog Turtle Surveys* (dated May 2001); exceptions should be reviewed and approved by the Service and Commission.

This information is not to be construed as an endorsement of individuals or firms by the Service, Commission, or any of their employees. Persons not on this list, but who have documented experience in conducting scientific studies of, or successful searches for, bog turtles and their habitat may submit their qualifications to the Service and Commission for review. The submission must include documentation that the requestor has experience successfully locating and identifying bog turtle habitat, and successfully locating and identifying bog turtles in their wetland habitat. Additions to and deletions from this list are at the sole discretion of the Service and Commission. This list is subject to revision at any time without prior notice.

Andrew Brookens, Teresa Amitrone & Ben Berra
Skelly and Loy, Inc.
2601 North Front Street
Harrisburg, PA 17110-1185
717-232-0593 or 800-892-6532
tamitrone@skellyloy.com
bberra@skellyloy.com
abrookens@skellyloy.com

Gian L. Rocco
509 Orlando Avenue
State College, PA 16803
814-237-2313 (home)
814-883-8635 (cell)
gxr124@psu.edu

David S. Lee
1612 Bayleaf Trail
Raleigh, NC 27614
(H) 919-715-2605
torresinc@aol.com

Scott E. Bush
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610-280-0277, ext 11
610-960-5631 (cell)
610-280-0278 (fax)
sbush@craworld.com

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Department of Biology
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110 Brandywine Ave.
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P.O. Box 4099
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610-374-7500; fax 610-374-7480
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31 Boulder Drive, Suite A
Sellersville, PA 18960
215-258-2862 ; (cell) 609-457-1370
AMT_Inc@comcast.net

Jessica Morrow
A.D. Marble & Company
10989 Red Run Blvd., Suite 209
Owings Mills, MD 21117
410-902-1421; fax: 410-902-8856
jmorrow@admarble.com

Scott Angus
Amy S. Greene Environmental Consultants, Inc.
1981 Lake Minsi Drive
Bangor, PA 18013
Tel.: 610-250-0773, ext. 22
Fax: 908-788-6788
sangus@amygreene.com

GUIDELINES FOR BOG TURTLE SURVEYS[1]

(revised April 2006)

RATIONALE

A bog turtle survey (when conducted according to these guidelines) is an attempt to determine presence or probable absence of the species; it does not provide sufficient data to determine population size or structure. Following these guidelines will standardize survey procedures. It will help maximize the potential for detection of bog turtles at previously undocumented sites at a minimum acceptable level of effort. Although the detection of bog turtles confirms their presence, failure to detect them does not absolutely confirm their absence (likewise, bog turtles do not occur in all appropriate habitats and many seemingly suitable sites are devoid of the species). Surveys as extensive as outlined below are usually sufficient to detect bog turtles; however, there have been instances in which additional effort was necessary to detect bog turtles, especially when habitat was less than optimum, survey conditions were less than ideal, or turtle densities were low.

PRIOR TO CONDUCTING ANY SURVEYS

If a project is proposed to occur in a county of known bog turtle occurrence (see attachment 1), contact the U.S. Fish and Wildlife Service (Service) and/or the appropriate State wildlife agency (see attachment 2). They will determine whether or not any known bog turtle sites occur in or near the project area, and will determine the need for surveys.

- If a wetland in or near the project area is *known* to support bog turtles, measures must be taken to avoid impacts to the species. The Service and State wildlife agency will work with federal, state and local regulatory agencies, permit applicants, and project proponents to ensure that adverse effects to bog turtles are avoided or minimized.

- If wetlands in or adjacent to the project area are *not* known bog turtle habitat, conduct a bog turtle habitat survey (Phase 1 survey) if:

  1. The wetland(s) have an emergent and/or scrub-shrub wetland component, or are forested with suitable soils and hydrology (see below), *and*

  2. Direct and indirect adverse effects to the wetland(s) cannot be avoided.

  See *Bog Turtle Conservation Zones*[2] for guidance regarding activities that may affect bog turtles and their habitat. In addition, consult with the Fish and Wildlife Service and/or appropriate State wildlife agency to definitively determine whether or not a Phase 1 survey will be necessary.

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[1] These guidelines are a modification of those found in the final "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001). Several minor revisions were made to facilitate survey efforts and increase searcher effectiveness. As additional information becomes available regarding survey techniques and effectiveness, these survey guidelines may be updated and revised. Contact the Fish and Wildlife Service or one of the state agencies listed in Attachment 1 for the most recent version of these guidelines.

[2] See Appendix A of the "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001).

however, that one or more of these criteria may be absent from portions of a wetland or wetland complex supporting bog turtles. Absence of one or more criteria does not preclude bog turtle use of these areas to meet important life functions, including foraging, shelter and dispersal.

- If these criteria (suitable soils, vegetation and hydrology) are present in the *wetland*, then the *wetland* is considered to be potential bog turtle habitat, regardless of whether or not that portion of the wetland occurring within the project boundaries contains all three criteria. If the *wetland* is determined to be potential habitat and the project will directly or indirectly impact *any portion* of the wetland (see *Bog Turtle Conservation Zones*), then either:
  - Completely avoid all direct and indirect effects to the wetland, in consultation with the Service and appropriate State wildlife agency, OR
  - Conduct a Phase 2 survey to determine the presence of bog turtles.
- The Service and appropriate State wildlife agency (see list) should be sent a copy of survey results for review and comment including: a USGS topographic map indicating location of site; project design map, including location of wetlands and stream and delineation of wetland type (PEM, PSS, PFO, POW) and "designated survey areas"[3]; color photographs of the site; surveyor's name; date of visit; opinion on potential/not potential habitat; a description of the hydrology, soils, and vegetation. A phase 1 report template and field form are available from the States and Service.

BOG TURTLE SURVEY (= Phase 2 survey)

If the wetland(s) are identified as potential bog turtle habitat (see Phase 1 survey), and direct and indirect adverse effects cannot be avoided, conduct a bog turtle survey in accordance with the specifications below. Note that this is *not* a survey to estimate population size or structure; a long-term mark/recapture study would be required for that.

Prior to conducting the survey, contact the appropriate State agency (see attached list) to determine whether or not a scientific collector's permit valid for the location and period of the survey will be required.

The Phase 2 survey will focus on the areas of the wetland that meet the soils, hydrology and vegetation criteria, as defined under the Phase 1 survey guidelines. Those areas that meet the criteria are referred to as "designated survey areas" for Phase 2 and Phase 3 survey purposes.

I. Surveys should only be performed during the period from April 15-June 15. For the Lake Plain Recovery Unit (see Recovery Plan), surveys should only be performed during the period from May 1 to June 30. This coincides with the period of greatest annual turtle activity (spring emergence and breeding) and before vegetation gets too dense to accurately survey. While turtles may be found outside of these dates, a result of no turtles would be considered inconclusive. Surveys beyond June also have a higher likelihood of disruption or destruction of nests or newly hatched young.

[3] "Designated survey areas" are those areas of the wetland that meet the soils, hydrology and vegetation criteria for potential bog turtle habitat. These areas may occur within the emergent, scrub-shrub or forested parts of the wetland.

8. Walk quietly through the wetland. Bog turtles will bask on herbaceous vegetation and bare ground, or be half-buried in shallow water or rivulets. Walking noisily through the wetland will often cause the turtles to submerge before they can be observed. Be sure to search areas where turtles may not be visible, including under mats of dead vegetation, shallow pools, underground springs, open mud areas, vole runways and under tussocks. Do not step on the tops of tussocks or hummocks because turtle nests, eggs and nesting microhabitat may be destroyed. Both random opportunistic searching and transect surveys should be used at each wetland.

   The following survey sequence is recommended to optimize detection of bog turtles:

   - Semi-rapid walk through the designated survey area using visual encounter techniques.
   - If no bog turtles are found during visual survey, while walking through site identify highest quality habitat patches. Within these highest quality patches, begin looking under live and dead vegetation using muddling and probing techniques.
   - If still no bog turtles are found, the rest of the designated survey area should be surveyed using visual encounter surveys, muddling and probing techniques.

9. Photo-documentation of each bog turtle located will be required; a macro lens is highly recommended. The photos should be in color and of sufficient detail and clarity to identify the bog turtle to species and individual. Therefore, photographs of the carapace, plastron, and face/neck markings should be taken of each individual turtle. Do not harass the turtle in an attempt to get photos of the face/neck markings; if gently placed on the ground, most turtles will slowly extend their necks if not harassed. If shell notching is conducted, do the photo-documentation after the notching is done.

10. The following information should be collected for each bog turtle: sex, carapace length-straight line and maximum length, carapace width, weight, and details about scars/injuries. Maximum plastron length information should also be collected to differentiate juveniles from adults as well as to obtain additional information on recruitment, growth, and demography.

11. Each bog turtle should be marked (*e.g.*, notched, PIT tagged) in a manner consistent with the requirements of the appropriate State agency and/or Service. Contact the appropriate State wildlife agency prior to conducting the survey to determine what type of marking system, if any, should be used.

12. All bog turtles must be returned to the point of capture as soon as possible on the same day as capture. They should only be held long enough to identify, measure, weigh, and photograph them, during which time their exposure to high temperatures must be avoided. No bog turtles may be removed from the wetland without permission from the Service and appropriate State agency.

13. The Fish and Wildlife Service and appropriate State agency should be sent a copy of survey results for review and concurrence, including the following: dates of site visits; time spent

Attachment 1

CONTACT AGENCIES - BY STATE

(April 2006)

STATE	FISH AND WILDLIFE SERVICE	STATE AGENCY
Connecticut	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Department of Environmental Protection Env. & Geographic Information Center 79 Elm Street, Store Floor, Hartford, CT 06106 *(info about presence of bog turtles in or near a project area)* Department of Environmental Protection Wildlife Division, Sixth Floor 79 Elm Street, Store Floor, Hartford, CT 06106 *(to get a Scientific Collectors Permit or determine what type of marking system to use)*
Delaware	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Nongame & Endangered Species Program Delaware Division of Fish and Wildlife 4876 Hay Point Landing Road Smyrna, DE 19977
Maryland	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Maryland Department of Natural Resources Wildlife & Heritage Division PO Box 68, Main Street Wye Mills, MD 21679
Massachusetts	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Division of Fisheries and Wildlife Dept. Fisheries, Wildlife and Env Law Enforcement Rt. 135 Westboro, MA 01581
New Jersey	U.S. Fish and Wildlife Service New Jersey Field Office 927 North Main Street, Bldg. D-1 Pleasantville, NJ 08232	New Jersey Division of Fish and Wildlife Endangered and Nongame Species Program 143 Van Syckels Road Hampton, NJ 08827
New York	U.S. Fish and Wildlife Service 3817 Luker Road Cortland, NY 13045	New York Natural Heritage Program Department of Environmental Conservation 700 Troy-Schenectady Road Latham, NY 12110-2400 *(info about presence of bog turtles in or near a project area)* NY Department of Environmental Conservation Special Licenses Unit 50 Wolf Road, Albany, NY 12233 *(for endangered species permit applications)*
Pennsylvania	U.S. Fish and Wildlife Service Pennsylvania Field Office 315 South Allen Street, Suite 322 State College, PA 16801	Natural Diversity Section Pennsylvania Fish and Boat Commission 450 Robinson Lane Bellefonte, PA 16823

PENNSYLVANIA FISH & BOAT COMMISSION
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620

QUALIFIED RED-BELLIED TURTLE BIOLOGISTS

The following list includes persons known to the Pennsylvania Fish and Boat Commission whom possess skills and have experience in properly searching for and finding red-bellied turtles (*Pseudemys rubriventris*) and in identifying their critical habitat. This information is not to be construed as an endorsement of individuals or firms by the Pennsylvania Fish and Boat Commission or any of its employees. Persons not on this list but who have documented experience in conducting scientific studies of, or successful searches for, red-bellied turtles and their critical habitat may submit their qualifications to the Natural Diversity Section for review and possible inclusion as a recognized biologist/surveyor. Each person added to or deleted from this list shall be at the sole discretion of the Pennsylvania Fish and Boat Commission. This list is subject to revision at any time without prior notice. Any individuals handling, collecting, or otherwise removing red-bellied turtles from their natural habitat, even if on a temporary basis for relocation, must first obtain a Scientific Collector's Permit from the Pennsylvania Fish and Boat Commission. All permitted collector's encounters with red-bellied turtles must be reported in writing to the Pennsylvania Fish and Boat Commission's Natural Diversity Section.

Dr. Rudolf G. Arndt
Richard Stockton College of New Jersey
Jim Leeds Road, P.O. Box 195
Pomona, NJ 08240-0195
(609) 652-4432

Mr. Gian Rocco, Ph.D. Candidate
509 Orlando Avenue
State College, PA 16803
(814) 237-2313
E-mail: gxr124@psu.edu

Mr. Scott E. Bush
Mr. Donald F. Knorr
Conestoga Rovers & Associates
Route 113
559 West Uwchlan Avenue, Suite 120
Exton, PA 19341
(610) 280-0277
FAX (610) 280-0278

Ms. Andrea M. Teti
ANDREA M. TETI, Inc
31 Boulder Drive, Suite A
Sellersville, PA 18960
Office: (215) 258-2862
Cell for Andrea: (609) 457-1370
E-mail: AMT_Inc@comcast.net

Ms. Deborah Poppel
ENSR
2005 Cabot Boulevard West
Langhorne, PA 19047
(215) 757-4900
E-mail: dpoppel@ensr.com

Mr. Robert Zappalorti
Mr. Raymond Farrell
Herpetological Associates, Inc.
575 Toms River Road
Jackson, NJ 08527 (732) 833-8600
E-mail: Rzappalort@aol.com

Marlin Corn, Bucks County Naturalist
315 Swamp Rd.
Newtown, PA 18940
(215) 357-4005, ext. 10
Cell: (215) 869-0482
Email: mdcorn@co.bucks.pa.us

PNDI # 20060327026464 USFWS Project # 2006-1528

U.S. FISH AND WILDLIFE SERVICE

315 South Allen Street, Suite 322, State College, PA 16801

This responds to your inquiry about a PNDI Internet Database search that resulted in a potential conflict with a federally listed, proposed or candidate species.

PROJECT LOCATION INFORMATION

County: Chester

Township: Schuylkill

Quad: Valley Forge

MISC INFORMATION

Date of PNDI search: 3-27-06

Date received by FWS: 3-31-06

Project Type (FWS code #): NT - sewer lines

Status: ☑ IC ☐ IP FA: ☐ none ☑ UND ☐ _____

USFWS COMMENTS ☐ FAXED ☑ MAILED

To: Martin Goldberg

Fax #: _____

Affiliation: Valley Forge Sewer Authority

SPECIFIC PROJECT: VFSA Regional Act 537 Plan

FISH AND WILDLIFE SERVICE COMMENT(s):

√ ***NOT LIKELY TO ADVERSELY AFFECT***

The federally listed bog turtle occurs or may occur in or near the project area. However, based on our review of the information provided, including the project description and location, no adverse effects to this species are likely to occur if the following recommendations are implemented:

- No wetland impacts

If there is any change in the location, scale, scope, layout or design of the project, further consultation or coordination with the Service will be necessary.

___ This response supersedes our comments of _____, based on our review of the additional project information that was submitted to us on _____.

The above determination is valid for two years from the date of this letter. In addition, this response relates only to federally listed, proposed, and candidate species under our jurisdiction, based on an office review of the proposed project's location and anticipated impacts. No field inspection of the project area has been conducted by this office. Consequently, comments on this form are not to be construed as addressing other Service concerns under the Fish and Wildlife Coordination Act or other authorities. *Please reference the above PNDI # and USFWS Project # in any future correspondence regarding this project.*

This review was conducted by the biologist listed below. He/she can be contacted at 814-234-4090.

√ Pamela Shellenberger (x241) ___ Jennifer Dombroskie (x 242) ___ Bonnie Dershem (x 234)
___ Robert Anderson (x 228)

SIGNATURE: Cindy L. Tibbott DATE: 4-20-06

Asst. Supervisor, Pennsylvania Field Office

Pennsylvania Department of Conservation and Natural Resources

Bureau of Forestry

July 26, 2006

Diane C. Vesely
Buchart-Horn, Inc.
FAX: 717-852-1615 (hard copy will NOT follow)

***Pennsylvania Natural Diversity Inventory Review, PNDI* Number**	**20060327026464**
VSFA Regional Act 537 Plan Schuylkill Twp; Chester County	

Dear Ms. Vesely,

This responds to your request about a Pennsylvania Natural Diversity Inventory (PNDI) ER Tool "Potential Impact" or a species of special concern impact review. **We screened this project for potential impacts to species and resources of special concern under the Department of Conservation and Natural Resources' responsibility, which includes plants, natural communities, terrestrial invertebrates and geologic features only.**

☒ ***NO PROJECT IMPACT ANTICIPATED***

☐ PNDI records indicate that no known occurrences of species or resources of special concern under DCNR's jurisdiction occur in the vicinity of the project. Therefore, we do not anticipate the project referenced above will impact plants, natural communities, terrestrial invertebrates and geologic features of special concern. No further coordination with DCNR is needed for this project.

☒ PNDI records indicate special concern species or resources are located in the vicinity of the project. However, based on the information submitted to us concerning the nature of the project, the immediate location, and our detailed resource information, we determined that no impact is likely. No further coordination with DCNR is needed for this project.

☐ ***POTENTIAL PROJECT IMPACT - UNDER FURTHER REVIEW***

Based on our PNDI map review we determined potential impacts to species and/or resources of special concern. This project has been passed on to our review committee. The committee will contact the applicant/consultant directly if more information is needed to assess the project's potential impacts. Response time is typically less than a month after the date on this notification.

COMMENTS:

This response represents the most up-to-date summary of the PNDI data files and is good for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. A field survey of any site may reveal previously unreported populations. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

This finding applies to impacts to plants, natural communities, terrestrial invertebrates and geologic features only. To complete your review of state and federally-listed species of special concern, please be sure the U.S. Fish and Wildlife Service, the PA Game Commission and the Fish and Boat Commission has been contacted regarding this project either directly or by performing a search with the online PNDI ER Tool found at www.naturalheritage.state.pa.us

Ellen Shultzabarger, Environmental Review Specialist FOR Chris Firestone, Plant Program Mgr
DCNR/BOF/PNDI, PO Box 8552, Harrisburg, PA 17105 ~ Ph: 717-772-0258 ~ F: 717-772-0271 ~ c-eshultza@state.pa.us

APPENDIX G

PHMC Correspondence

0120-PM-PY0003 Rev. 6/2002

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP USE ONLY
Date Received

CULTURAL RESOURCE NOTICE

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name	Valley Forge Sewer Authority
Street Address	333 Pawling Road
City	Phoenixville State PA Zip 19460
Telephone Number	610-935-1553
Project Title	Regional Act 537 Plan - Valley Forge Sewer Authority

SECTION B. LOCATION OF PROJECT

Municipality: Schuylkill Township | County Name: Chester | DEP County Code: 15

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537 Sewage Facilities Plan Approval

Anticipated federal permits:

- ☐ Surface Mining
- ☐ Army Corps of Engineers
- ☐ 401 Water Quality Certification
- ☐ 404 Water Quality Permit
- ☐ Federal Energy Regulatory Commission
- ☒ Other: NPDES

SECTION D. GOVERNMENT FUNDING SOURCES

- ☐ State: (Name)
- ☐ Federal: (Name)
- ☐ Local: (Name)
- ☐ Other: (Name) None

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☒ Southeast Regional Office (Conshohocken)
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Southcentral Regional Office (Harrisburg)
- ☐ Northcentral Regional Office (Williamsport)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ Northwest Regional Office (Meadville)
- ☐ District Mining Office:
- ☐ Oil & Gas Office:

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District	Telephone Number, if known
Chester	

SECTION G. CONSULTANT

Consultant, if applicable	Buchart-Horn, Inc.
Street Address	445 West Philadelphia St. PO Box 15040
City	York State PA Zip 17405
Telephone Number	717-852-1340

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

Applicant's Signature

Date of Submission of Notice to PHMC

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

PA HISTORICAL &
MUSEUM COMMISSION
BUREAU OF HISTORIC PRESERVATION
400 NORTH ST., 2nd FLOOR
HARRISBURG PA 17120-0093

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7004 2510 0004 7530 9739

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE
CERTIFIED MAIL™

7004 2510 0004 7530 9739

7004 2510 0004 7530 9739

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com®
OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To
Street, Apt. N
or PO Box N
City, State, Z

PA HISTORICAL &
MUSEUM COMMISSION
BUREAU OF HISTORIC PRESERVATION
400 NORTH ST., 2nd FLOOR
HARRISBURG PA 17120-0093

PS Form 3800

PROJECT NARRATIVE

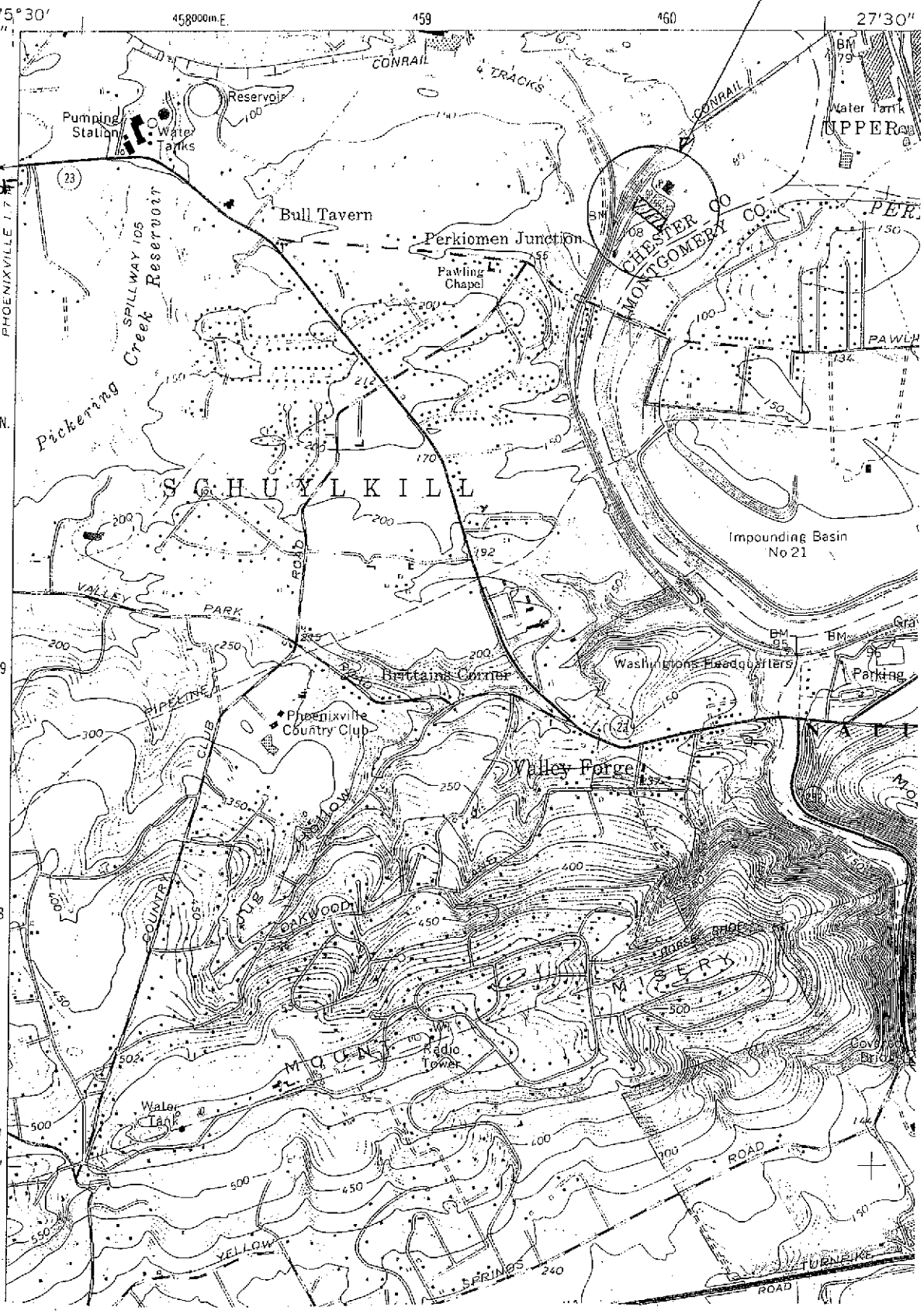
Valley Forge Sewer Authority is in the process of updating its Regional Act 537 Sewage Facilities Plan. The Authority's existing treatment facilities which are located in Schuylkill Township, Chester County along the Schuylkill River serve 8 surrounding Townships and Boroughs. Several of the alternatives presently under evaluation include the potential for constructing additional treatment tanks on the existing site in an area situated between the existing tankage and the Authority's administrative facilities. Should all of the tankage need to be constructed, it is anticipated that the disturbed area will be a 350' x 1100' area just southwest of the existing tankage as depicted on the attached USGS quad (Valley Forge) and site plan.

5964 II NE
(PHOENIXVILLE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Project Site

Max. area to be disturbed 385,000 SF (350' x 1100') SW of existing tankage



VALLEY FORGE, PA.

N4000—W7522.5/7.5

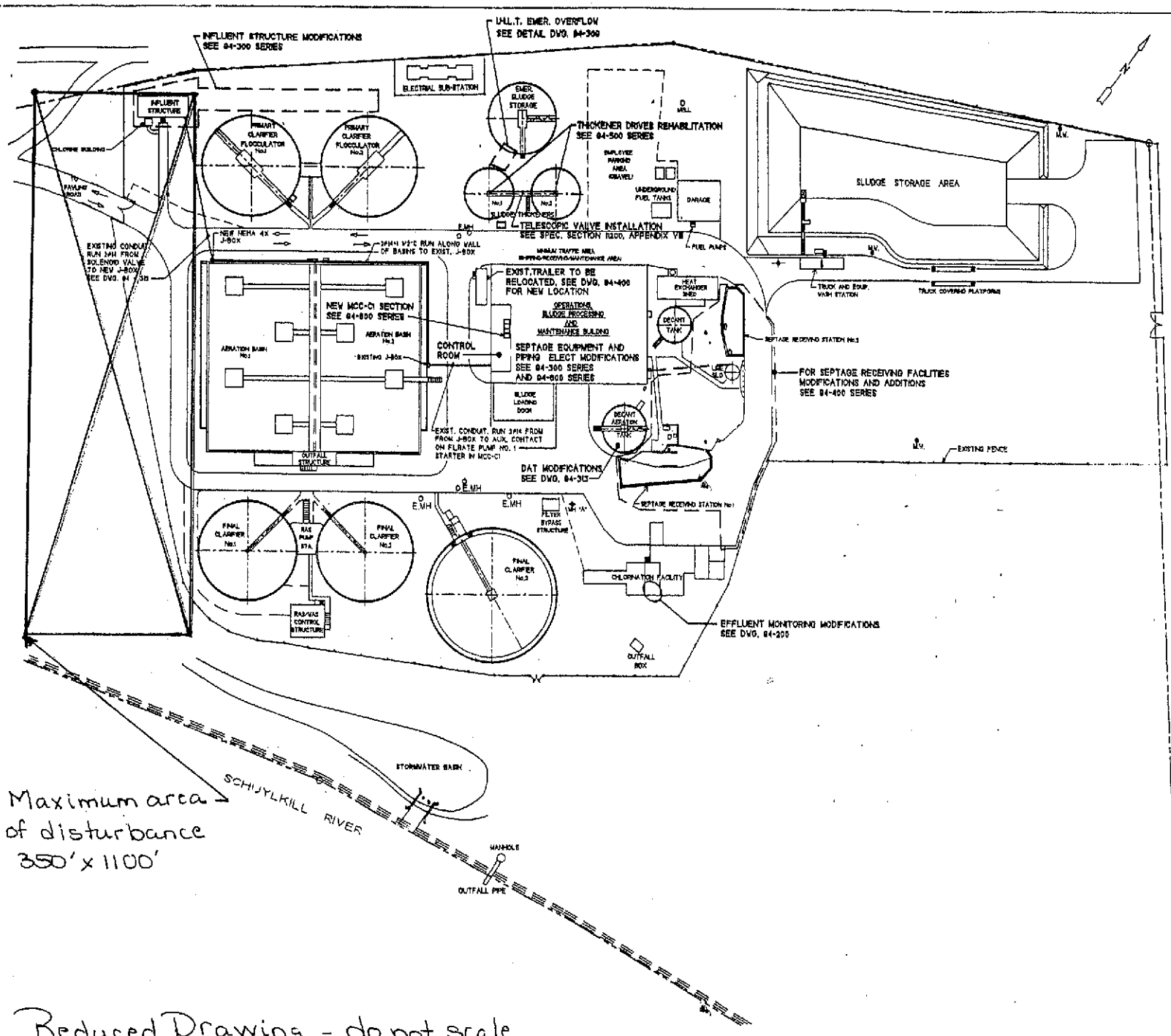
1966
PHOTOREVISED 1981
DMA 5964 III SW—SERIES V831

SCALE 1:24000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

CHANGE 23



Maximum area of disturbance 350' x 1100'

Reduced Drawing - do not scale

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

A. Signature

X [signature] ☐ Agent ☐ Addres

B. Received by (Printed Name) C. Date of Deli

MAR 31 200

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

1. Article Addressed to:

PA HISTORICAL &
MUSEUM COMMISSION
BUREAU OF HISTORIC PRESERVATION
400 NORTH ST., 2nd FLOOR
HARRISBURG PA 17120-0093

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchanc
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7004 2510 0004 7530 9739

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-

7004 2510 0004 7530 9739

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Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

May 2, 2006

Buchart-Horn, Inc.
445 West Philadelphia Street
PO Box 15040
York, PA 17405

Re: File No. ER 06-1641-029-A
DEP 537 PROGRAM: Act 537 Sewage Facilities Plan Approval, Regional Act 537 Plan-Valley Forge Sewer Authority, Schuylkill Twp., Chester Co.

Dear Sir:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

A HIGH PROBABILITY EXISTS THAT ARCHAEOLOGICAL RESOURCES MAY OCCUR WITHIN THE PROPOSED PERMIT AREA

Based on an evaluation by our staff, there is a high probability that significant archaeological sites are located in this project area and could be adversely affected by project activities. Although there are no recorded archaeological sites within the project boundaries, the soil type, topographic setting, slope direction, and distance to water of the project area are similar to the settings of known archaeological sites in the vicinity. A Phase I archaeological survey of the project area to locate potentially significant archaeological resources is recommended but not required.

If a survey is not conducted and you encounter archaeological resources during construction, you must stop the project, notify the Pennsylvania Historical and Museum Commission's Bureau for Historic Preservation and the Department of Environmental Resources and allow the Bureau for Historic Preservation 60 days to conduct a survey to determine the significance of the archaeological resources. If the Bureau determines that the resources are significant, you must submit a mitigation plan to protect the significant resources on the site. We will review the plan within 30 days.

There may be historic buildings and/or structures eligible for the National Register of Historic Places located in the project area. However, due to the nature of the activity, it is our opinion that there will be no effect on these properties. Should the applicant become aware, from any source, that unidentified historic resources are located at the project site, or that the project activities will have an effect on these properties, the Bureau for Historic Preservation should be contacted immediately.

FOR YOUR INFORMATION

Pennsylvania Historical and Museum Commission will keep the Determination Notice and the materials you submitted in its files. Please attach this letter to your copy of the Notice and materials then submit the entire package of materials to DEP.

If this project will require any federal permits or will receive federal funding, the federal agency, under the National Historic Preservation Act of 1966, may require the appropriate surveys to be conducted. If the project will need an Army Corp of Engineers permit, this would be a **Category III** activity. We suggest that you consider conducting the survey early in the development or planning process to avoid delays in the future. Guidelines and instructions for conducting Phase I surveys are available from our office upon request.

Thank you for notifying us of your proposed activity.

If you need further information in this matter please consult Mark Shaffer at (717) 783-9900.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology &
Protection

Cc: DEP, Southeast Regional Office

DCM/tmw

APPENDIX H

Partner Municipality Flow Projections

Easttown Township

October 3, 2006

Mr. Martin Goldberg, P.E.
VALLEY FORGE SEWER AUTHORITY
333 Pawling Road
Phoenixville, PA 19460

Mr. Thomas S. Brown
GANNETT FLEMING, INC.
P. O. Box 80794
Valley Forge, PA 19484-0794

Re: **Valley Creek Trunk Sewer Act 537 Planning**
Waste Water Flow Projections
Easttown Township

Revised – 10/23/06

Dear Mr. Goldberg and Mr. Brown:

In accordance with your letter request dated September 7, 2006, herein please find the flow projections which shall be used in both the VSFA Act 537 Plan and the Tredyffrin Township Wilson Road Pump Station.

Year 2005	-	1.357 MGD	3510.83 EDUs
Year 2010	-	1.423 MGD	3750.83 EDUs
Year 2015	-	1.443 MGD	3823.56 EDUs
Year 2025	-	1.484 MGD	3972.65 EDUs
Year 2035	-	1.523 MGD	4114.50 EDUs

If you have any further questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
Easttown Township

SSK:cpw

cc: Gene R. Williams
Paul A. Dorais

East Whiteland Township

October 3, 2006

Mr. Martin Goldberg, P.E.
VALLEY FORGE SEWER AUTHORITY
333 Pawling Road
Phoenixville, PA 19460

Mr. Thomas S. Brown
GANNETT FLEMING, INC.
P. O. Box 80794
Valley Forge, PA 19484-0794

Re: **Valley Creek Trunk Sewer Act 537 Planning**
Waste Water Flow Projections
East Whiteland Township

Revised – 10/23/06

Dear Mr. Goldberg and Mr. Brown:

In accordance with your letter request dated September 7, 2006, herein please find the flow projections which shall be used in both the VSFA Act 537 Plan and the Tredyffrin Township Wilson Road Pump Station.

Year 2005	-	1.963 MGD	5393.10 EDUs
Year 2010	-	2.409 MGD	7014.91 EDUs
Year 2015	-	2.809 MGD	8469.45 EDUs
Year 2025	-	3.309 MGD	10,287.63 EDUs
Year 2035	-	3.909 MGD	12,469.45 EDUs

If you have any further questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Township

SSK:cpw

cc: Terry H. Woodman
William H. Steele

Malvern Borough

EDWARD B. WALSH & ASSOCIATES, INC.
Complete Civil Engineering Design / Consultation Services
Lionville Professional Center
125 Dowlin Forge Road
Exton, PA 19341

October 10, 2006

Mr. Thomas S. Brown
Gannett Fleming, Inc.
PO Box 80794
Valley Forge, PA 19484-0794

Re: Malvern Borough
Wastewater Flow Projections - Act 537 Planning

Dear Mr. Brown,

As per your September 7, 2006 letter to Malvern Borough, I have reviewed the Malvern Borough Wastewater Flow Projections indicated on Table 6 of the letter. The flows projections provided to Gannett Fleming on June 21, 2006 for the Wilson Road Pump Station Act 537 Planning are the flows that should be utilized for Malvern Borough in the Valley Creek Trunk Sewer Act 537 Planning.

If you should have any questions or require additional information, please do not hesitate to contact me.

Very truly yours,
EDWARD B. WALSH & ASSOCIATES, INC.
Malvern Borough Engineers

Daniel H. Daley, P.E.

cc: Sandra L. Kelley, Malvern Borough
Martin Goldberg, Valley Forge Sewer Authority

MALVERN
Borough

October 28, 2004

Joseph S. Bateman
General Manager
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Dear Mr. Bateman:

Please be advised that the Borough of Malvern has reviewed the information contained in the April 2003 version of the Draft Regional Act 537 Plan as it pertains to our municipality. We are satisfied with this information and with the flow projections contained in this draft and do not wish to make any additions or corrections.

We look forward to completion and adoption of the Regional Act 537 Plan.

Sincerely,

Sandra L. Kelley
Borough Manager

One East First Avenue ■ Suite 3 ■ PO Box 437 ■ Malvern, Pennsylvania 19355
Phone 610.644.2602 Facsimile 610.644.4504 Email malvern@malvern.org

TABLE 2.0

BOROUGH OF MALVERN 30-YEAR FLOW PROJECTIONS February-05

VALLEY FORGE SEWER AUTHORITY

2004 CHAPTER 94 REPORT

WASTEWATER FLOW PROJECTIONS

	PRESENT 2004	5-YEAR 2009	10-YEAR 2014	20-YEAR 2024	ULTIMATE 30-YEAR 2034
GPD	346,797	357,797	360,547	393,547	427,372
EDUs	1658	1698	1708	1828	1951

NOTES:

1. **Includes unmetered flow into Willistown Township** and excludes 2 EDU's from East Whiteland Twp and Erin Glen Flow from East Whiteland Twp.
   Malvern Borough has 27 EDUs that flow unmetered into Willistown Twp.
   15 EDUs - Malvern Prep= 4,125 gpd
   12 EDUs - Vintage Development = 3,300 gpd
   Total = 7,425 gpd
2. Projected flows based upon a flow of 275 gallons per day (gpd) per equivalent dwelling unit (EDU).

Tredyffrin Township

BOARD OF SUPERVISORS
TREDYFFRIN TOWNSHIP

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Paul W. Olson, *Vice Chairman*
Guy L. Ciarrocchi
Bill DeHaven
Warren E. Kampf
E. Brooks Keffer
Robert W. Lamina

CHESTER COUNTY
1100 DuPortail Road
Berwyn, PA 19312

(610) 644-1400 FAX (610) 993-9186
Email: *tredyffrin@tredyffrin.org*
Website: *www.tredyffrin.org*

Joseph A. Janasik
Township Manager

Lamb McErlane PC
Solicitor

RECEIVED
FEB 18 2005

February 17, 2005

Mr. Joseph Bateman, Manager
Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA 19460

Re: Tredyffrin Township Flow Estimates through 2036

Dear Mr. Bateman:

The flow estimates, including EDU counts, through 2039, are as follows:

	2009	**2019**	**2929**	**2039**
MGD (AADF)	1.54	1.84	1.97	2.10
EDU's	6853	7849	8432	8904

2004 reported EDU's: 5973.3

Based on yesterday's conversation, the estimated EDU requirement does not match the estimated flow, based on an EDU equivalent of 275 gpd. This is due to the method used in calculating Tredyffrin Township's annual flow, among other factors. As stated yesterday, if this discrepancy between EDU's and AADF causes a problem in your submission to DEP, let me know and I can re-evaluate the estimates.

Sincerely,

Stephen F. Norcini
Director of Authority Operations

Cc: Joseph A. Janasik
Mimi Gleason
William J. Bryant, P.E.
Tom Brown, P.E.
File

BOARD OF SUPERVISORS
TREDYFFRIN TOWNSHIP

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Judy L. DiFilippo, *Chairman*
Paul W. Olson, *Vice Chairman*
Guy L. Ciarrocchi
Bill DeHaven
Warren E. Kampf
E. Brooke Keffer
Robert W. Lamina

CHESTER COUNTY
1100 DuPortail Road
Berwyn, PA 19312

(610) 644-1400 FAX (610) 993-9186
Email: tredyffrin@tredyffrin.org
Website: www.tredyffrin.org

Joseph A. Janasik
Township Manager

Lamb McErlane PC
Solicitor

February 4, 2005

Mr. Joseph Bateman, Director
Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA 19460

Re: Valley Forge Sewer Authority Regional Act 537
Flow Estimates

Dear Mr. Bateman:

Our studies have indicated Tredyffrin Township's estimated flows to the VFSA STP are as follows:

2009 - 1.54 MGD (AADF)
2019 - 1.84 MGD (AADF)
2029 - 1.97 MGD (AADF)

The Township's current treatment plant capacity allocation of 2.01 MGD (AADF) is adequate for the time period through construction of the plant expansion and beyond. We will not purchase additional capacity through the plant expansion.

It is my understanding that in the event of a plant upgrade, the Township is contractually bound to pay for our proportional share of that upgrade. Subsequently, we will receive our proportional share of additional capacity acquired through the upgrade.

I can be reached at 610-408-3623 with any questions.

Sincerely,

Stephen F. Norcini
Director of Authority Operations

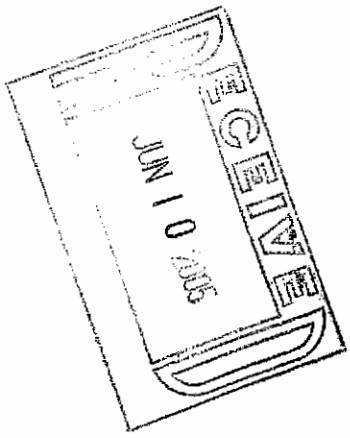
Cc: Joseph A. Janasik
Mimi Gleason
William J. Bryant, P.E.
Tom Brown

F:\wpdata\COMMON\Municipal Authority\V F S A\2005 Flow Project.doc

Willistown Township

Board of Supervisors of Willistown Township
Chester County

688 Sugartown Road Malvern, PA 19355
(610) 647-5300 Fax (610) 647-8156
www.willistown.pa.us



June 7, 2005

Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA. 19460

Attn: Mr. Joseph Bateman, Manager

Dear Joe,

After reviewing the draft of the regional 537 plan, I see no area where comments are needed from Willistown Township.

Thank you for your work on this.

Sincerely,

Hugh J. Murray Sr.

Hugh J. Murray, Sr.
Township Manager

File

APPENDIX I

Planning Agencies and Municipalities

Correspondence

BUCHART HORN,INC.

March 12, 2007

Buchart-Horn, Inc
445 W Philadelphia St.
York, PA 17401-3383
(717)852-1400
FAX#717-852-1401
www.bh-ba.com

York, PA
Coatesville, PA
Harrisburg, PA
Hershey, PA
King of Prussia, PA
New Cumberland, PA
Pittsburgh, PA
State College, PA
Stroudsburg, PA
Baltimore, MD
Marlton, NJ
Charleston, WV
Morgantown, WV
Memphis, TN
Nashville, TN
Baton Rouge, LA
New Orleans, LA
Olive Branch, MS
Pensacola, FL
Frankfurt/Main, Germany
Kaiserslautern, Germany

Mr. Martin Goldberg
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Reference: **Act 537 Sewage Facilities Plan Update**
BH #75297-61

Dear Mr. Goldberg:

Provided are the comments received from the Chester County Planning Commission, East Whiteland, Charlestown, Schuylkill, and Tredyffrin Townships, and the corresponding responses prepared by Buchart-Horn on behalf of the Authority. These comments and responses are to be inserted into Appendix I of the Act 537 Sewage Facilities Plan Update. The comments and responses are organized as follows:

1. Chester County Planning Commission comments
2. Chester County Planning Commission responses to comments
3. East Whiteland Township comments
4. Charlestown Township comments
5. Schuylkill Township comments
6. Tredyffrin Township comments
7. Response to all municipalities comments

Respectfully yours,

BUCHART-HORN, INC.

Lawrence A. Lutter, P.E.
Vice President

BLB
Enclosures

cc: All Plan Holders

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THE COUNTY OF CHESTER

COMMISSIONERS
Carol Aichele
Donald A. Mancini
Patrick C. O'Donnell

RONALD T. BAILEY, AICP
Executive Director

PLANNING COMMISSION
Government Services Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990
610-344-6285
Fax: 610-344-6515

February 15, 2007

Martin Goldberg
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Re: Valley Forge Sewer Authority Regional Act 537 Plan

Dear Mr. Goldberg:

The Chester County Planning Commission (CCPC) has reviewed the Draft 537 Plan dated November 2006, as required by Section 71.31 (b) of the Pennsylvania Sewage Facilities Act (Act 537). The Plan was prepared by Buchart Horn, Inc. and Gannett Fleming. The Plan was received on December 15, 2006.

This Plan was prepared to identify and select an appropriate alternative to increase the wastewater disposal capabilities of the Valley Forge Sewer Treatment Plant (VFSTP), Schuylkill Township, to meet the long-term growth needs of the communities Valley Forge Sewer Authority (VFSA) serves.

The CCPC supports the corrective measures of this Plan as they relate to the Treatment Plant expansion to accommodate the needs of the Service Area Municipalities. The CCPC would like to commend both the VFSA and its Service Area Municipalities for satisfying the requirements of Act 537, by requiring municipalities to initiate service area revisions through the municipal planning process and needs analysis evaluations. The CCPC recommends the Plan be adopted after addressing comments in this letter.

The following comments are offered based on review of the draft Plan:

A. Consistency with the County Plan – ***Landscapes***:

1. ***Landscapes***, through use of the *Livable Landscapes Map*, identifies four general land patterns, or Landscapes, of future development in the County – urban, suburban, rural and natural. The Suburban Landscape, in which the Service Area Municipalities and the VFSTP are located, is to contain a mix of uses and higher densities of development than those found in the Rural Landscape. In order for this pattern to occur, ***Landscapes*** supports the provision of infrastructure and public services, such as public sewer systems. VFSA's draft Regional Plan supports ***Landscapes*** Policies:

6.1.1 Encourage coordination between municipalities and authorities to ensure consistency with land use plans.

6.1.2 Maintain or expand existing sewer and water facilities to support development in Urban and Suburban Landscapes.

2. ***Watersheds***, through its goals and objectives, identifies Part 6, *Planning for Future Water and Wastewater Needs*, as a means to assist municipalities and utilities providers to consider and develop Integrated Water Resources Planning to more effectively integrate infrastructure and land use planning. Objective 6-9 of ***Watersheds*** states, "Locate large water withdrawals and wastewater effluent disposal facilities where they provide the greatest benefit and least impact to watershed aquifers and streamflows." The VFSA Service Area is located in portions of the Valley Creek and Pickering Creek, and tributaries to the Schuylkill River, where the treated effluent for the VFSA is disposed of through stream discharge. Though it is unclear in the Plan where water is being drawn from, the CCPC recommends that the VFSA discharge only the amount of treated effluent equivalent to the amount of water drawn from any one watershed to maintain the stream flow and water balance for that watershed, through groundwater recharge of the aquifer, where possible.

B. Selection of Alternative:

1. We commend the VFSA and its member municipalities for addressing the need for increased capacity at the VFSTP to the year 2025, and beyond. In June 1999, the CCPC supported the re-rating of the VFSTP from 8.0 million gallons per day (mgd) to 9.2 mgd, just as we support the expansion of the treatment plant (Alternative 3e) to accommodate 11.52 MGD, to meet the needs of the VFSA municipalities and their partner municipalities, as outlined in section 4 "Future Growth and Land Development."

C. General Comments

1. For clarity, please include in the Plan Summary what the existing capacity of the VFSA treatment plant is, as well as what the proposed capacity will be.

2. Please include information as to the location of the discharge point into the Schuylkill and its proximity to both the Philadelphia Water Department's drinking water intake.

3. If applicable, please include information as to the VFSA withdrawal point and its relationship to the Aqua PA intake.

4. Please include in the Appendices the actual sections of the municipal Act 537 Plans that outlines their Needs Analysis that is included in Section 3 of the Regional Plan.

5. Page E-1. Plan Summary. Please clarify the difference between the VFSA Townships and the Member Municipalities, as they relate to the overall Service Area Municipalities.

6. Page E-1. Plan Summary. While the CCPC is aware that the planning efforts for this regional plan began in 1994, and that projections are considered up-to-date, please include any information as to the sources and dates that information was obtained for clarity and correctness.

7. Page E-2. Plan Summary. Please provide any information from DEP, as to why the first four sections did not require revision. The CCPC feels that population projections as well as additional needs and up-to-date information on on-lot systems on behalf of the Service Area Municipalities should have been considered in this portion of the plan where information available is more recent than 1994.

8. Page E-2. Associated Planning. The Plan states that Tredyffrin Township is conducting Act 537 Planning for the Valley Creek Trunk Sewer (VCTS) to determine if the conveyance facilities have adequate capacity to convey the projected wastewater flows to the VFSA treatment plant. Has the VFSA considered how the selected alternative will be affected if this planning effort shows that the conveyance facilities cannot handle the proposed capacity? If so, please include this information in the body of the Plan.

9. Page E-2. Associated Planning. The Plan states that Act 537 planning for the Wilson Road pumping station and the VCTS are near completion and expected to be approved in March of 2007. The CCPC has not reviewed this Plan to date. If there is a delay in the approval process, is the VFSA in a position to wait for the planning efforts to come to a close before needing additional capacity in these systems, and how will this planning effort be incorporated into the Regional Plan?

10. Page E-4. Cost of Implementation. The Plan states that the Partners will share the cost of the expansion and improvements; please clarify whether the Partners are the VFSA municipalities, the Member municipalities, or both.

11. Page E-5. The text specifies that the partner and member municipalities were provided the opportunity to review and adopt the recommendations of the Update. For clarity, CCPC recommends changing the text to read the Service Area Municipalities.

12. Page 1-2. The Regional Planning Process. The CCPC would like to commend the VFSA for satisfying the requirements of Act 537, by requiring municipalities to initiate service area revisions through the planning process and needs analysis evaluations.

13. Page 1-3. Table 1-1 Please include the date that this table was compiled to ensure that the most up-to-date information has been included for review in the development of this Regional Act 537 Plan.

14. Page 1-4. Previous Wastewater Planning. The CCPC would like to commend the VFSA for examining ways to reduce I/I in the system.

15. Page 1-7. Individual Act 537 Sewage Facilities Plans – Summary of VFSA Participation Information. The text states that "as of this writing; only three of the VFSA Service Area Municipalities have plans approved by PADEP." However, Table 1-1 shows that all of the municipalities have full or conditional approval from DEP, with dates ranging from 1994-2002. Please clarify this discrepancy.

16. Pages 1-7 to 1-11. Individual Act 537 Sewage Facilities Plans – Please include the dates of the municipal plans as they were approved by DEP for reference and clarity.

17. Page 1-9. Individual Act 537 Sewage Facilities Plans – The information for Malvern Borough does not reflect that the Plan was adopted in 1995 as Table 1-1 shows. Please clarify this discrepancy.

18. Page 1-10. Individual Act 537 Sewage Facilities Plans – Schuylkill Township. This section states that the Plan describes the number of EDU's expected to be added to the VFSA system, in the 1996 DEP approved plan, but does not clearly state how many EDU's it expects the Authority to treat. Please clarify this information, as it affects the total flows to the VFSA treatment plant.

19. Page 1-13. County Planning Documents. For reference purposes, the Livable Landscapes map was last updated in 2003. Please update the text to reflect this change.

20. Page 1-13. County Planning Documents. ***Watersheds***, through its goals and objectives, identifies Part 6, *Planning for Future Water and Wastewater Needs*, as a means to assist municipalities and utilities providers to consider and develop Integrated Water Resources Planning to more effectively integrate infrastructure and land use planning. Please include consistency information with ***Watersheds*** in this section of the Plan.

21. Page 1-14. Sewage Facilities Inventory 1991. Please clarify in the 2nd paragraph as to what the VFSA is equating 1 EDU to, in gallons per day, so that it is clear what the gallons per day is for the 25,540 EDU's being served by the VFSA.

22. Page 2-4. Major Drainage Basins. Please include text stating that the Darby Creek has a DEP approved Act 167 Plan for the watershed.

23. Page 2-8. Potable Water Supplies. ***Watersheds*** Objective 3-2 deals with natural instream resources and includes key strategies regarding base stream flow and the impacts of withdrawals and discharges. Please include information on the overall water balance and how both the receiving waters as well as the source waters, if not public water, will be affected by the discharge and withdrawal of an additional 2.3 MGD.

24. Page 3-1. VFSA Wastewater Treatment System. The text states that effluent is discharged into the Schuylkill River upstream from Pawling Road. For clarity, please include language stating that Pawling Road is where the VFSA treatment plant is located.

25. Page 3-1. VFSA Wastewater Treatment System. Please include text that states where the water that is being used for the system is being drawn from.

26. Page 3-7. Major VFSA Service Area Sewer System Components. Please include additional text outlining how the funding for the proposed expansion will be divided amongst the Service Area Municipalities.

27. Pages 3-10 to 3-13. For clarity, please include the adoption dates for all municipal plans or their approval dates from DEP.

28. Pages 3-10 to 3-13. For clarity, please include the total EDU's that each municipality is currently using.

29. Page 3-10. Charlestown Township. The text states that the Tyrone Farms neighborhood was served by a community sewer system. Please clarify how this neighborhood is currently being treated, whether it is through a replacement system, through a tie-in to the VFSA system, or otherwise.

30. Page 3-11. East Whiteland Township. Please include in the text the number of failing systems reported by the Chester County Health Department, as well as whether these two areas are planned for connection to the VFSA system.

31. Page 3-12. Malvern Borough. Although there are no current developments planned for the latter two parcels of land, please include any information as to what will be required if these parcels are ever planned for development. If public sewer connections will be required, please include information as to how that connection will be funded.

32. Page 3-12. Schuylkill Township. Please include any additional information on the holding tank ordinance that the Township is intending to adopt, as well as which year the on-lot management program is to be implemented. The CCPC recommends that all municipalities adopt an ordinance requiring regular management, inspection and pump-out of individual sewage systems, established in a legally enforceable manner.

33. Page 3-13. Willistown Township. Please include the number of failing systems, as well as the date the information was obtained. If this information is outdated, it is possible that the systems have since been repaired.

34. Page 3-14. The text states that VFSA has its own landfill disposal approvals. Please include any agreements or permitting information in the Appendix.

35. Page 4-1. Please include information as to what the VFSA is using as 1 EDU in gallons per day, so that it is clear what the gpd is for the 25,511 EDU's being served by the VFSA at the end of 2005.

36. Page 4-2 to 4-4-7. Please define what the VFSA defines "build out" to be. Is this the total capacity allocated to the municipalities before the VFSA would need to explore additional capacity and expansion option? Or is this build out for municipalities? Please clarify.

37. Page 4-2 to 4-4-7. For clarity, please format this section to have the EDU projections and the associated narrative for the municipalities appear together on the same page.

38. Page 4-3. Malvern Borough. For clarity, please include information on the most recent Chapter 94 Report submitted by the Borough and any information on its approval.

39. Page 4-7. Summary. Please clarify the discrepancy between the use of 2025 and 2035 as the end point of this study. This summary identifies 2035 as the end point of this study, but earlier points use the date of 2025.

40. Page 5-2. The Plan states that an Ad Hoc committee was formed for the purpose of reviewing and assisting the VFSA in establishing future needs. Please include information concerning the members of this committee and what their affiliations are - to the Authority, the Service Area Municipalities, or other groups.

41. Page 5-3. This draft Regional Plan lists the option of spray irrigation and satellite facilities as an eliminated alternative. While the CCPC realizes the associated issues with constructing a land disposal facility, we feel that further consideration should be given to drip irrigation, if not for all the additional flows, for new developments that are being proposed, where conditions are appropriate. We understand the need to provide additional sewage treatment capacity to meet future needs, and support your efforts in this regard. The CCPC realizes that this draft Regional Plan has been under development for over 10 years and that the Service Area Municipalities would like to see the completion of the Plan, however, we feel that further consideration should be given to this alternative. Not only has the technology and understanding of land application of wastewater progressed in the 11 years since VFSA sent out letters to municipalities assessing the viability of obtaining lands for spray irrigation, there have been changes in the members of the municipal boards and current board members may be more open to the idea of land application of wastewater, especially with the option of drip irrigation versus spray irrigation.

42. Page 5-12. Alternative 3. The CCPC would like to commend the VFSA for examining additional denitrification measures, even though they have not been imposed. We recommend that the VFSA continue to explore these options for Total Maximum Daily Load (TMDL) purposes.

43. Page 5-13. Existing Wastewater Treatment Plant Capacity. The text states that there was an assessment of the capacity and recommended upgrades of each individual component of the existing plant. Please provide information on who assessed the system.

44. Page 6-1. Table 6-1. Consistency Evaluation of Selected Alternative from Section 5. Please update the table to include consistency with ***Watersheds***.

45. Page 6-1. Table 6-1. Consistency Evaluation of Selected Alternative from Section 5. Please update the table to include the adoption/approval dates of the municipal comprehensive plans.

46. Page 6-2. Table 6-1. Consistency Evaluation of Selected Alternative from Section 5. Under the Evaluation Category for Antidegradation requirements, no information is provided as to the source of water supplied to the VFSA for their system. If it is Valley Creek or French Creek, then an HQ/EV stream is being impacted and this information should be included.

47. Page 6-2. Table 6-1. Consistency Evaluation of Selected Alternative from Section 5. Under the Evaluation Category for Chester County Stormwater Management Plans (Act 167). At the current time, Chester County Act 167 Plans have been prepared and adopted by the Chester County Commissioners for the Chester Creek Watershed Stormwater Management Plan, the Darby-Cobbs Creek Watershed Stormwater Management Plan, and the Conestoga River Watershed Stormwater Management Plan, and Act 167 Plans are underway for the Valley Creek Watershed and the Crum Creek Watershed. Portions of the Service Area lie within the Darby Creek watershed. The CCPC recommends referring to municipal documents to ensure that all up-to-date stormwater ordinances are being followed.

48. Page 6-6. Table 6-3. Estimated 2006 Annual Operating Costs. The Plan states that no operating costs for alternative 3d were developed. Please explain why no estimates were prepared for this alternative.

49. Page 6-8. Table 6-4. 2006 Present Worth Analysis. The Table shows that a present worth analysis was not created for alternative 3a. Please explain why an analysis was not prepared for this alternative.

50. Page 6-12. Table 6-7 Project Cost Sharing Based on 2006 Dollars. Please include in this section any letters of agreement from the municipalities, in particular East Whiteland Township, to show that they agree and are willing to fund their portion of the expansion, at approximately $12.4 million.

We trust that these comments will be of assistance to you as you prepare the final document for submission to PADEP. Thank you for the opportunity to offer comments on this plan.

Sincerely,

Ronald T. Bailey, AICP
Secretary

RTB/CJC/kp

cc: Clinton Cleaver, PADEP
Ralph DeFazio, CCHD
Linda Csete, Township Administrator, Charlestown Township
Kimberly Moretti, Manager, East Pikeland Township
Gene R. Williams, Manager, Easttown Township
Terry Woodman, Manager, East Whiteland Township
Sandra Kelley, Manager, Borough of Malvern
Mary R. Bird, Secretary, Schuylkill Township
Mimi Gleason, Manager, Tredyffrin Township
Hugh Murray, Manager, Willistown Township

Responses to Chester County Planning Commission General Comments

Comment 1. The existing plant capacity is 9.2 MGD, and the proposed capacity is 11.52 MGD.

Comment 2. The Philadelphia Water Department's intake for the Queen Lane Plant is on the Schuylkill River approximately 0.5 miles below the confluence with the Wissahickon Creek and on the bank of the same side of the Schuylkill River as the Wissahickon Creek. The Belmont Plant is located in Wynnefield and its water also comes from the Schuylkill River. Its intake is located along Martin Luther King, Jr. Drive (formerly West River Drive).

The WWTP's discharge to the Schuylkill River is at:
Latitude - 40° 07' 05" Longitude - 75° 27' 56"

Comment 3. See Table 2-1, page 2-9 for information on withdrawl points.

Comment 4. The Valley Forge Sewer Authority's (VFSA) Act 537 Plan Update is a compilation of the Service Area Municipalities (SAM) individual Act 537 Plans. For information from the SAM 537 plans, see the approved plans.

Comment 5. The member municipalities are: Charlestown, East Pikeland, and Schuylkill Township. The partner municipalities are: Easttown, East Whiteland, Malvern, Tredyffrin, and Willistown. The SAM's are the combination of the member and partner municipalities.

Comment 6. The flow projections for this Act 537 Plan were validated by the individual municipalities as included in Appendix H.

Comment 7. This Act 537 Plan is based solely on information from the individual SAM Act 537 Plans, so the information in this plan is updated based on information provided by the individual municipalities.

Comment 8. See information related to the Valley Creek Trunk Sewer (VCTS) and Wilson Road Pump Station on page E-2.

Comment 9. The VFSA is in a position to wait for the planning efforts to come to a close before needing additional capacity in these systems. The VFSA's 537 Plan Update addresses treatment of the wastewater once it reaches the WWTP. The individual municipalities are responsible for the planning for the system.

Comment 10. Both the partner municipalities and the member municipalities will share the cost of the expansion and improvements. The Partners requiring additional capacity will share in the cost of the expansion.

Comment 11. This recommendation is accepted.

Comment 12. No response is required.

Comment 13. The table is current as of November 2006.

Comment 14. No response is required.

Comment 15. The table was updated to show the approval dates, but the text of the section was not updated.

Comment 16. See Table 1-1 for the dates that the municipal plans were approved by the Pennsylvania Department of Environmental Protection (PADEP).

Comment 17. Section one was not updated per PADEP, and at the time of the initial writing, the Malvern Borough plan was submitted and under review. The Borough's plan was then later approved after the VFSA's plan was written.

Comment 18. Schuylkill Township expects a growth of 357 EDU's between 2005 and 2035.

Comment 19. The comment that the Livable Landscapes map was last updated in 2003 is noted.

Comment 20. The Act 537 Plan Update is consistent with the County planning document, Watersheds.

Comment 21. The sentence is referring to the number of billing records for EDU count as opposed to actually flows.

Comment 22. The comment that Darby Creek has a PADEP approved Act 167 Plan for the watershed is so noted.

Comment 23. The water balance will stay consistent with the amount of water withdrawn and the amount discharged.

Comment 24. For clarification, the VFSA WWTP is located on Pawling Road.

Comment 25. The water that is being used for the system is drawn from locations throughout the VFSA service area as identified in Table 2-1.

Comment 26. See Section 6 of the Act 537 Plan Update for information on how the funding for the proposed expansion will be divided amongst the Service Area Municipalities.

Comment 27. See Table 1-1 for the individual Act 537 Plan approval dates by PADEP.

Comment 28. See Table 4-8 for the total EDU's that each municipality is currently using.

Comment 29. Tyrone Farms is not serviced by a community service system. The Charlestown Road and Coldstream area have their sewer linked to the Charlestown Road Pump Station in Schuylkill Township. The sewer servicing the dwellings in the Maryhill Road and Pine Drive neighborhoods are linked to the Kimble Drive Pump Station in East Pikeland Township.

Comment 30. East Whiteland Township does not know the number of failing onlot systems. However, due to the age of systems and soils, the area adjacent to Bacton Hill Road, Planebrook area, and areas around the intersection of Rt. 352 and King Road are susceptible to failure. There were five (5) onsite replacements and 13 onsite repairs between June 2002, and July 2006, within the above noted areas.

Comment 31. The developer will be required to connect the sewer system of the development to the existing conveyance system.

Comment 32. Schuylkill Township does not have a holding tank ordinance. With regard to on-lot sewage disposal, the Township has always deferred to the Chester Co. Health Department concerning permitting and enforcement of on-lot systems. The Township does get involved with making sure that the pump & haul systems that are used in the winter by developers meets all the necessary requirements.

Comment 33. Failing connections in Willistown Township is estimated at between 10 and 20 according to Ross Fisher, of the Chester Co. Health Dept.

Comment 34. As of last year, the VFSA was approved for disposal at the following landfills, but please note the VFSA has not disposed of biosolids in any landfill since the May-June reporting period of 1998:

A) Chester County Solid Waste Authority (Lanchester Landfill), PO Box 476, Honey Brook, PA, 19344.
B) BFI-Conestoga Landfill, 420 Quarry Road, PO Box 128, Morgantown, PA, 19543.
C) Waste Management (G.R.O.W.S. Landfill, Pottstown Landfill), 1000 New Ford Mill Road, Morrisville, PA, 19067.

Comment 35. Each municipality uses billing records for their EDU counts, as the actual flow the WWTP is approximately 300 gpd/EDU. Each municipality is responsible for their own flow projections.

Comment 36. The VFSA defines "build out" in terms of build out of the Act 537 service area in each municipality, not in regard to the total capacity allocated to the municipalities at the WWTP.

Comment 37. The comment is noted about formatting, see Table 4-8 for the overall projections.

Comment 38. At the time of this Act 537 Plan Update, the most recent information from Malvern Borough's Chapter 94 Report is included.

Comment 39. 2025 projections were prepared for the study, but design of the WWTP upgrade and expansion, and cost breakdown is based on 2035 projections.

Comment 40. The committee consisted of representatives of Schuylkill Twp, the VFSA, and their engineer of record, Buchart-Horn Inc.

Comment 41. Comment and suggestions noted.

Comment 42. Comment noted, as no response is required.

Comment 43. The assessment of the capacity and recommended upgrades of each individual component of the existing plant was completed by Buchart-Horn, Inc. of York, PA.

Comment 44. The Act 537 Plan Update is consistent with the concepts of the County document, Watersheds.

Comment 45. The individual Act 537 Plan's for the Service Area Municipalities are consistent with their comprehensive plans, therefore the VFSA Act 537 Plan Update is consistent with the comprehensive plans as it is a compilation of all the individual plans.

Comment 46. The water systems that feed the VFSA system is provided in Table 2-1.

Comment 47. The comment is noted.

Comment 48. No operation costs were developed for alternative 3d, because it would be difficult to assess the costs for innovative alternatives that are still in developmental stages. Insufficient information is available on their systems to make a reasonable cost estimation.

Comment 49. The present worth of alternative 3a is the same as 3b without adding the cost of the 4th secondary clarifier.

Comment 50. Municipalities have agreed to pay their portion of the upgrade and expansion, and no comments were received from the municipalities in regard to this question during their review of the Plan.

KOHLI AND ASSOCIATES, INC.

49 LLOYD AVENUE MALVERN, PA 19355 (610) 644-5591 FAX (610) 647-9212

CONSULTING ENGINEERS

SURINDER S. KOHLI, P.E.
PRESIDENT

January 8, 2007

Terry H. Woodman
Township Manager
EAST WHITELAND TOWNSHIP
209 Conestoga Road
Frazer, PA 19355

Re: **Regional Act 537 Plan for**
Valley Forge Sewer Authority
Dated November, 2006

Dear Terry:

I have reviewed the above referenced document and found that the EDU/Flow Growth Estimates as noted in Table 4-2 are in compliance with our projected flows submitted with my letter dated October 3, 2006, and are satisfactory. The Plan notes (see Page E-2 – Associated Planning) that Act 537 planning for the Valley Creek Trunk Sewer and the Wilson Road Pumping Station is a critical component of the VCTS, to determine if the conveyance facilities have adequate capacity to convey the projected wastewater flows to the Valley Forge Sewer Authority wastewater treatment plant.

It is further noted that Act 537 planning for the Wilson Road Pumping Station and VCTS is nearing completion and is expected to be approved in March, 2007. As conveyance is a critical component, it is important that the 537 Plan for VFSA and VCTS be reviewed simultaneously. No information regarding the VCTS Act 537 Plan has been submitted.

Table 1-1, Page 1-3, under Municipal Adoption for East Whiteland Township, shall be revised to note the adopted date of June 12, 1995.

Page 4-2, 4th line under "East Whiteland," shall be revised to read, East Whiteland latest Chapter 94, In lieu of Easttown.

Under Eliminated Alternatives, Alternate 1 on Page 5-3 shall be revised to note Alternative 1 was eliminated in lieu of Alternative 4. I would recommend that you review the Project Cost Sharing as shown on Table 6-7, Institutional Evaluation Section 7, and Capitol Financing Plan Section 8 for their acceptability.

If you have any further questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
East Whiteland Township

SSK:cpw

KOHLI AND ASSOCIATES, INC.

42 LLOYD AVENUE MALVERN, PA 19355 (610) 644-5591 FAX (610) 647-9212

CONSULTING ENGINEERS

SURENDER S. KOHLI, P.E.
PRESIDENT

January 8, 2007

Mr. Kevin R. Kuhn, Chairman
BOARD OF SUPERVISORS
CHARLESTOWN TOWNSHIP
P. O. Box 547
Devault, PA 19432

Re: **Regional Act 537 Plan**
For Valley Forge Sewer Authority

Dear Kevin:

I have reviewed the Charlestown EDU projections by subdivision as noted on Table 4-5 and found that the EDU numbers are consistent with the information previously reviewed and transmitted to the Valley Forge Sewer Authority in September, 2006 and are satisfactory.

If you have any further questions, please contact me.

Very truly yours,

Surender S. Kohli, P.E.
Township Engineer
Charlestown Township

SSK:cpw

cc: Martin Goldberg, P.E. – V.F.S.A.

Bakner, Brent

From: Martin Goldberg [mgoldberg@vfsa.com]
Sent: Friday, February 16, 2007 3:13 PM
To: Bakner, Brent
Subject: FW: Act 537 Comments

From: SCHUYLKILLOFFICE@aol.com [mailto:SCHUYLKILLOFFICE@aol.com]
Sent: Thursday, February 15, 2007 4:44 PM
To: Martin Goldberg
Subject: Re: Act 537 Comments

Marty:

I just unearthed the message that you called. Sorry. Dealing with snow issues today. To date, I do not have any comments from the Supervisors regarding the Act 537.

Mary

Gannett Fleming

GANNETT FLEMING, INC.
P.O. Box 80794
Valley Forge, PA 19484-0794
Location:
Valley Forge Corporate Center
1010 Adams Avenue
Audubon, PA 19403-2402
Office: (610) 650-8101
Fax: (610) 650-8190
www.gannettfleming.com

March 12, 2007

Mr. Martin Goldberg, P.E.
Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA 19460

Re: VFSA Regional Act 537 Plan

Dear Mr. Goldberg:

On behalf of Tredyffrin Township, we have reviewed the referenced Act 537 Plan. We have the following comments:

1. On page 1-3, Table 1-1, on the Tredyffrin Township line, add Willistown Township as one of the municipalities with which Tredyffrin maintains an agreement.

2. On page 3-9, the Force Main paragraph: The design capacity of the Wilson Road force main is as follows:

    a. Instantaneous peak flow rate = 20.2 mgd

    b. Equivalent average daily flow = 8.78 mgd

3. Tredyffrin and Gannett Fleming have revised Tredyffrin's flow projection from what is shown in the Act 537 Plan. The anticipated 2035 wastewater flow is 2.3 mgd, rather than 2.1 mgd. The revised flow projection table is attached.

If you have any questions about our comments, please contact me.

Very truly yours,
GANNETT FLEMING, INC.

Thomas S. Brown, P.E.
Senior Project Manager

Cc: Stephen Norcini

TABLE A

Future Connections and Flows
Service Areas A and B

Location	Total EDUs	Total Flows (gpd)	2010 EDUs	2015 EDUs	2025 EDUs	2035 EDUs
Paoli Transportation District (Amtrak)	200	55,000	100	100	-	-
Paoli Town Center District	250	68,750	100	100	50	
O'Neil Property	200	55,000	200	-	-	-
Atwater	766	210,650	250	250	266	-
Liberty Ridge	69	18,975	69	-	-	-
Vanguard (80 acres)	35	9,625	-	35	-	-
Unsewered Area A - Commercial	110	30,250	50	50	10	-
Fox Properties (Chesterbrook)	60	16,500	60	-	-	-
Redevelopment	150	41,250	50	100	-	-
Northwest Portion of Twp. (Shadow Oak & vicinity)	320	88,000	-	160	160	-
Misc. - 15 EDUs/year	450	123,750	75	75	150	150
Change of Use -10 EDUs/year	300	82,500	50	50	100	100
Totals	2,910	800,250	1004	920	736	250

Estimated Flow Increase (gpd)		800,250	276,100	253,000	202,400	68,750

Total Estimated Flow (gpd)		Base Flow 1,500,000	1,776,100	2,029,100	2,231,500	2,300,250

Rounded Flow (gpd)		Base Flow 1,500,000	1,776,000	2,029,000	2,232,000	2,300,000

TABLE B

Tredyffrin Township Flows to Valley Forge Sewer Authority

Year	AADF
1995	1.44
1996	2.03
1997	1.61
1998	1.31
1999	0.99
2000	1.21
2001	1.20
2002	1.48
2003	1.50
2004	1.10
2005	1.13
2006 (to date)	1.17

Tredyffrin Township current treatment plant capacity = 2.001 mgd

Tredyffrin Township's Base Flow = Highest annual flow since 2000 = 1.50 mgd

Gannett Fleming

GANNETT FLEMING, INC.
P.O. Box 80794
Valley Forge, PA 19484-0794

Location:
Valley Forge Corporate Center
1010 Adams Avenue
Audubon, PA 19403-2402

Office: (610) 650-8101
Fax: (610) 650-8190
www.gannettfleming.com

March 12, 2007

Mr. Martin Goldberg, P.E.
Valley Forge Sewer Authority
333 Pawlings Road
Phoenixville, PA 19460

Re: Wilson Road Pumping Station and
Valley Creek Trunk Sewer
Act 537 Plans
Charlestown Township Flows

Dear Mr. Goldberg:

We are incorporating Tredyffrin Township's comments into the Wilson Road Pumping Station Act 537 Plan. The revised Plan will be distributed to the Valley Forge Sewer Authority (VFSA) and the Valley Creek Trunk Sewer (VCTS) municipalities within the next few weeks.

We are still uncertain, however, as to how much of Charlestown's wastewater flow is expected to be conveyed through the VCTS. Charlestown's ultimate wastewater flow projection to the Valley Forge Wastewater Treatment Plant will be approximately 404,000 gallons per day (gpd) by 2035, according to information contained in VFSA's Regional Act 537 Plan. We understand that part of the flow is and will be conveyed through the East Whiteland Trunk Line to the VCTS and the remainder will be conveyed to the Valley Forge WWTP by other means.

Please provide an estimate of the projected Charlestown wastewater flow that is to be conveyed through the VCTS for the years 2010, 2015, 2025, 2035. This is needed for the refinement of the Wilson Road Pumping Station and VCTS capacity evaluations.

If you have any questions about our data request, please contact me.

Very truly yours,
GANNETT FLEMING, INC.

Thomas S. Brown, P.E.
Senior Project Manager

Cc: Stephen Norcini

Comment from Municipalities Review

East Whiteland Township – Kohli and Associates, Inc.

1. Table 1-1, Page 1-3, under Municipal Adoption for East Whiteland Township, shall be revised to note the adopted date of June 12, 1995.
2. Page 4-2, 4th line under "East Whiteland," shall be revised to read, East Whiteland's latest Chapter 94, in lieu of Easttown.
3. Under Eliminated Alternatives, Alternative 1 on Page 5-3 shall be revised to note Alternative 1 was eliminated in lieu of Alternative 4. Project cost sharing, institutional evaluation, and capital financing have all be reviewed for acceptability.

Charlestown Township – Kohli and Associates, Inc.

Comment noted that Charlestown Township accepts the EDU numbers presented in Table 4-5.

Schuylkill Township – Mary Bird

Email received On February 15th stating that no comments are made by the Supervisors of Schuylkill Township.

Tredyffrin Township - Gannett Fleming, Inc.

1. On page 1-3, Table 1-1, on the Tredyffrin Township line, add Willistown Township as one of the municipalities with which Tredyffrin maintains an agreement.
2. On page 3-9, add the design capacity of the Wilson Road force main is as follows:
    a. Instantaneous peak flow rate = 20.2 mgd
    b. Equivalent average daily flow = 8.78 mgd
3. The revised flow projection for Tredyffrin affects the cost sharing for the plant expansion. See revised Table 6-7 attached for the updated cost sharing.

Wilson Road Pumping Station and Valley Creek Trunk Sewer - Gannett Fleming, Inc.

The projected wastewater flow from Charlestown Township that is to be conveyed through the VCTS in gpd is listed below. It is clarified that 578 existing EDUs allocated to East Pikeland and Schuylkill Townships are actually Charlestown Township EDUs. The correction to Table 4-8 as presented below does not impact the flow projections or cost allocation to the Member Municipalities.

Table 4-8 EDU and flow projection (Present – 2035) as revised

Municipality	Current Reserved Capacity	Present (2005)		5-Year (2010)		10-year (2015)		20 & 30 Year (2025 / 2035)	
		gpd	EDU	gpd	EDU	gpd	EDU	gpd	EDU
Member Municipalities									
Charlestown	n/a		1,127	351,120	1,463	449,280	1,872	542,640	2,261
East Pikeland	n/a		2,488	659,520	2,748	697,200	2,905	721,680	3,007
Schuylkill	n/a		2,590	657,360	2,739	689,040	2,871	707,280	2,947
VFSA Subtotal	2,128,000	1,479,635	6,205	1,668,000	6,950	1,835,520	7,648	1,971,600	8,215
Member flow to VCTS			549	212,400	885	310,560	1,294	403,920	1,683

Table 6-7. Project Cost Sharing Based on 2006 Dollars

Plant expansion

Estimated total	$13,970,000		
	MGD *	Percent of expansion	Est. $ share expansion cost
Easttown	0.000	0.00	$0
East Whiteland	1.969	73.99	$10,336,403
Malvern	0.000		
Tredyffrin	0.299	11.24	$1,570,228
Valley Forge	0.000		
Willistown	0.393	14.77	$2,063,369
	2.661	100.00	$13,970,000

Plant upgrade

Estimated total	$5,909,000		
		Percent of upgrade	Est. $ share upgrade cost
Easttown	1.523	0.1655	$978,196
East Whiteland	1.940	0.2109	$1,246,028
Malvern	0.544	0.0591	$349,402
Tredyffrin	2.001	0.2175	$1,285,208
Valley Forge	2.128	0.2313	$1,366,777
Willistown	1.064	0.1157	$683,389
	9.200		$5,909,000

Grand total	**Upgrade**	**Expansion**	**Total Contribution**	**Overall Percent of the Project**
Easttown	$978,196	$0	$ 978,196	0.049
East Whiteland	$1,246,028	$10,336,403	$ 11,582,431	0.583
Malvern	$349,402		$ 349,402	0.018
Tredyffrin	$1,285,208	$1,570,228	$ 2,855,436	0.144
Valley Forge	$1,366,777		$ 1,366,777	0.069
Willistown	$683,389	$2,063,369	$ 2,746,758	0.138
	$5,909,000	$13,970,000	$ 19,879,000	1

1. MGD* = Projected ultimate capacity less current owned

Example: East Whiteland projected need 3.909 less current reserved capacity 1.940 equals 1.969 mgd

2. Overall percent of the project is to be utilized in calculating planning and engineering expenses
3. The cost estimates presume that the existing treatment plant is expanded and upgraded utilizing existing technology

BUCHART HORN,INC.

March 15, 2007

Buchart-Horn, Inc
445 W. Philadelphia St.
York, PA 17401-3383
(717)852-1400
FAX#717-852-1401
www.bh-ba.com

Mr. Martin Goldberg
Valley Forge Sewer Authority
333 Pawling Road
Phoenixville, PA 19460

Reference: **Act 537 Sewage Facilities Plan Update**
BH #75297-61

Dear Mr. Goldberg:

Provided are the comments received from Malvern Borough, and the corresponding responses prepared by Buchart-Horn on behalf of the Authority. These comments and responses are to be inserted into Appendix I of the Act 537 Sewage Facilities Plan Update. These comments and responses should be inserted behind the comments and responses with a cover letter dated March 12, 2007.

Respectfully yours,

BUCHART-HORN, INC.

for

Lawrence A. Lutter, P.E.
Vice President

BLB
Enclosures

cc: All Plan Holders

York, PA
Coatesville, PA
Harrisburg, PA
Hershey, PA
King of Prussia, PA
New Cumberland, PA
Pittsburgh, PA
State College, PA
Stroudsburg, PA
Baltimore, MD
Marlton, NJ
Charleston, WV
Morgantown, WV
Memphis, TN
Nashville, TN
Baton Rouge, LA
New Orleans, LA
Olive Branch, MS
Pensacola, FL
Frankfurt/Main, Germany
Kaiserslautern, Germany

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EDWARD B. WALSH & ASSOCIATES, INC.
Complete Civil Engineering Design / Consultation Services
Lionville Professional Center
125 Dowlin Forge Road
Exton, PA 19341

MEMORANDUM

DATE: March 14, 2007 (revised)

TO: Martin Goldberg, VFSA

CC: Sandra Kelley, Malvern Borough Manager
Lawrence Lutter, P.E., Buchart-Horn

FROM: Daniel H. Daley, P.E.
E. B. Walsh & Associates, Inc.
Malvern Borough Engineers

SUBJECT: VFSA Regional Act 537 Plan

As requested, the Borough and my office has reviewed the Regional Act 537 Plan for the Valley Forge Sewer Authority, dated November 2006, prepared by Buchart Horn, Inc. and Gannett Fleming. As requested by Malvern Borough, the following minor comments are offered for your consideration:

- Page 1-3: Malvern Township should be Malvern Borough.
- Page 1-9: 5th paragraph indicates the PADEP is currently reviewing the Borough's 537 plan. In accordance with Page 1-3, the Borough's 537 plan was approved in May of 1995.
- Page 2-9: Reference to Philadelphia Suburban Water Co. should be changed to Aqua Pennsylvania, Inc.
- Page 3-12: Paragraph #1 indicates the Malvern Prep and Malvern Retreat do not have public sewer. Both sites have connected to public sewers within the last ten years or so. Malvern Prep has 15 EDU's that flow into Willistown Township and Malvern Retreat has 19 EDU's that connect into the Borough's sewer system. Page 1-9 also references these two parcels as being served by on-lot facilities.
- As an FYI, a developer is currently considering a significant amount of condominium units on a four lot parcel that originally had 5 EDU's. We will know by mid-week next week how many units they will be proposing. These additional units were not included in our original flow estimates.

If you require any additional information, please do not hesitate to contact me.

Responses to Municipalities Comments

Malvern Borough - Edward B. Walsh & Associates, Inc.

1. On page 301, Malvern Township shall be revised to be Malvern Borough.
2. In relation to page 1-9, 5th paragraph, the Borough's plan was approved in May of 1995 as seen in Table 1-1, but the text of Section 1 was not updated per PADEP.
3. The reference to Philadelphia Suburban Water Co. on page 2-9 shall be revised to Aqua Pennsylvania, Inc.
4. It is recognized that Malvern Prep and Malvern Retreat are connected to public sewers, and that their flows have been accounted for in the projections approved by Malvern Borough.
5. It is noted that a developer is currently considering a significant amount of condominium units on a four lot parcel that originally consisted of 5 EDU's, and that these additional EDU's were not included in the original flow estimates. Even with these additional units, Malvern Borough will remain within their reserved capacity.

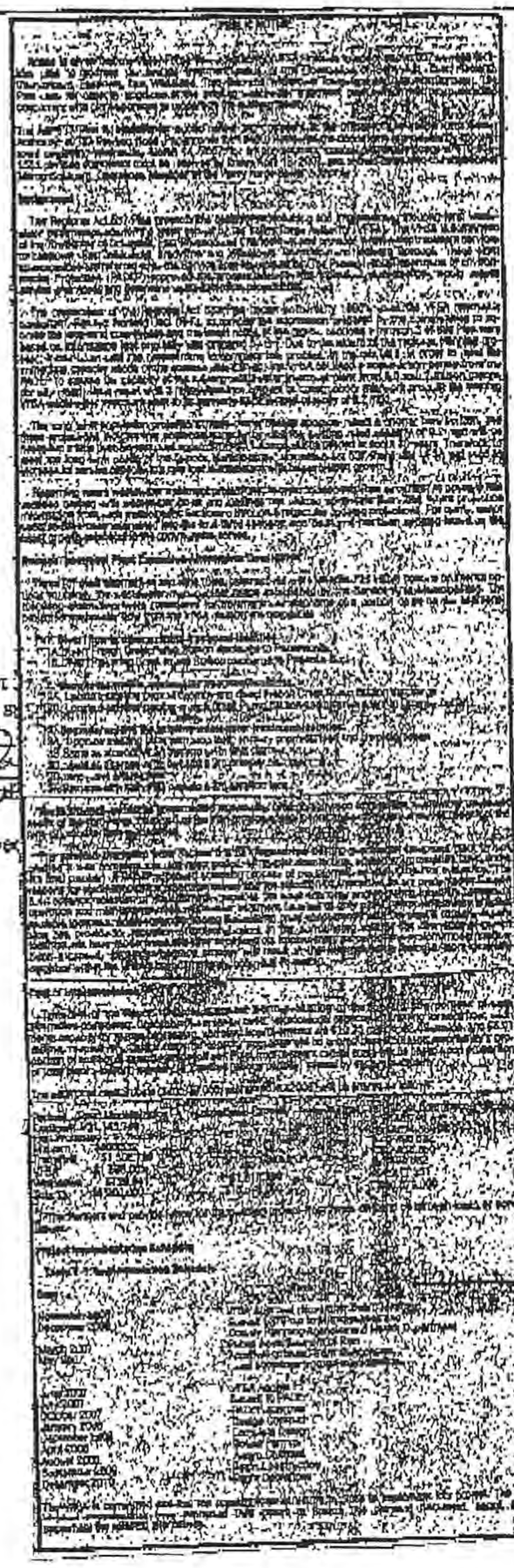
APPENDIX J

Proof of Public Notice and Comments

Phoenixville Newspapers
225 Bridge Street
PO Box 689
Phoenixville, PA 19460
(610) 933-8926

State of Pennsylvania
County of Chester SS:
Michael Doyle

Being duly affirmed according to law, declares and says that he is the Advertising Director of The Phoenix, a daily publication established in 1888, printed and published in the Borough of Phoenixville, in the said County and State, that the printed notice, a copy of which is securely attached hereto, was published in said paper on the following dates. 3/10/2007



That your affiant is not ...ished and that all of the allegations of this s...ication are true.

Michael Doyle, Advert...

Affirmed and subscribed ... of March 2007
...LTH OF PENNSYLVANIA
Notarial Seal
... Notary Public
Boro., Chester County
...n Expires Feb. 27, 2011
Association of Notaries

APPENDIX K

Member and Partner Municipalities Plan

Adoptions

RESOLUTION NO. 2007-01

RESOLUTION OF THE BOARD OF VALLEY FORGE SEWER AUTHORITY, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Authority").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted hereunder, Chapter 71 of Title 25 of the **Pennsylvania Code,** requires municipalities to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, Schuylkill Township is the host community since it contains the wastewater treatment plant which meets wastewater treatment needs of Malvern Borough, and Charlestown, East Pikeland, Tredyffrin, Easttown, East Whiteland, Schuylkill and Willistown Townships, and;

WHEREAS, Malvern Borough, and Charlestown, East Pikeland, Tredyffrin, Easttown, East Whiteland, Schuylkill and Willistown Townships agreed to a two-part regional planning process whereby the municipalities each prepared and adopted an individual municipal Act 537 Plan and then charged the authority to develop a regional wastewater facilities plan that would be adopted by each of the municipalities and the authority; and

WHEREAS, the authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 which provides conceptual descriptions for sewage facilities in Malvern Borough, and Charlestown, East Pikeland, Tredyffrin, Easttown, East Whiteland, Schuylkill and Willistown Townships, and;

WHEREAS, the Plan includes expansion, additions and improvements to an existing wastewater treatment plant located in Schuylkill Township, and;

WHEREAS, the alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 2nd aeration basin, and;.

WHEREAS, the authority finds that the Facility Plan described above conforms to a comprehensive program of pollution control and water quality management, and;

WHEREAS, the authority has agreed that the facilities will comply with all zoning, subdivision, and other ordinances, not withstanding any exemptions in Act 167 or otherwise;

NOW, THEREFORE, BE IT RESOLVED that the Board of the Valley Forge Sewer

Authority hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the authority, the above referenced Facilities Plan provided such plan provides for compliance with all municipal ordinances. The authority hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

RESOLUTION NO. 2007-**01**

ADOPTED this 9th day of July, 2007.

VALLEY FORGE SEWER AUTHORITY

Attest:

Authority Secretary

, Chairperson

Daniel M. Roese

(SEAL)

CERTIFICATION

I, Michael Rodgers, Secretary, Valley Forge Sewer Authority hereby certify that the foregoing is a true and correct copy of Resolution No.2007-**01** duly adopted at a regular meeting of the Board held on 7-9-07, 2007.

(SEAL)

By: _____
, Authority Secretary

Date: July 9, 2007

RESOLUTION

Tredyffrin Township
Chester County, Pennsylvania

RESOLUTION OF THE BOARD OF SUPERVISORS OF TREDYFFRIN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the municipality"),

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvania Code**, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 5357 Sewage Facilities Plan Update dated November 2006 which provides for sewage facilities in a portion of Tredyffrin Township, and

The alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin.

WHEREAS, Tredyffrin Township finds that the Facility Plan described above conforms to the applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of Tredyffrin hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Mimi Gleason, Secretary, Township Board of Supervisors, hereby certify that the foregoing is a true copy of the Township's Resolution, adopted May 7, 2007.

AUTHORIZED SIGNATURE

TOWNSHIP SEAL

Judy L. DiFilippo
Chairman

Secretary

WILLISTOWN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

RESOLUTION 22 OF 2007

RESOLUTION OF THE BOARD OF SUPERVISORS OF WILLISTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvania Code,** requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 which provides for sewage facilities in a portion of Willistown Township, and

The alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin.

WHEREAS, Willistown Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of Willistown Township hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Dorothy E. McClintock, Secretary, Willistown Township Board of Supervisors, hereby certify that the foregoing is a true copy of the Willistown Township's Resolution Number 22 of 2007 adopted June 25, 2007 .

AUTHORIZED SIGNATURE

Dorothy E McClintock

TOWNSHIP SEAL



Easttown Township

RESOLUTION OF ADOPTION 06.18A.07

RESOLUTION OF THE BOARD OF SUPERVISORS OF EASTTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvanin Code,** requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 which provides for sewage facilities in a portion of Easttown Township, and the alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin, and

WHEREAS, Easttown Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Easttown Township hereby adopts and submits to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Gene R. Williams, Secretary, Easttown Township, hereby certify that the foregoing is a true copy of the Township's Resolution No. 06.18A.07, adopted June 18, 2007.

EASTTOWN TOWNSHIP
BOARD OF SUPERVISORS

William F. Connor, III, Chairman

Richard T. Frazier, Vice Chair

James G. Spofford

Edward M. Strogen, Jr.

Vincent J. Rogusky

Attest:

Gene R. Williams, Secretary

RESOLUTION NO. 567

RESOLUTION TO ADOPT THE OFFICIAL SEWAGE FACILITIES PLAN
REGIONAL ACT 537 PLAN

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and,

WHEREAS, Buchart-Horn, Inc., has prepared an Act 537 Sewage Facilities Plan Update for the Valley Forge Sewer Authority dated November 2006, which provides for sewage facilities in a portion of the Borough of Malvern; and,

The alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 5th clarifier and a 3rd aeration basin

WHEREAS, the Borough of Malvern finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Council of the Borough of Malvern hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law (Section 5, Pennsylvania Sewage Facilities Act as amended).

Passed by Borough Council this 5th day of June, 2007.

Henry Briggs
President, Borough Council

(signatures continued on next page)

EAST WHITELAND TOWNSHIP

CHESTER COUNTY, PA

RESOLUTION NO. 21-2007

VALLEY FORGE SEWER AUTHORITY REGIONAL ACT 537

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 which provides for sewage facilities in a portion of East Whiteland Township, and

The alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin.

WHEREAS, East Whiteland Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of East Whiteland hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality herby assures the Department of the complete and timely implementation of

the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

John A. Mott, Chair

P. Joseph Corrigan

Virginia McMichael

ATTEST:

Township Secretary

CHARLESTOWN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

RESOLUTION 2007- 683

1. Section 5 of the Pennsylvania Sewage Facilities Act , Act of January 24, 1966, P.L. 1535, No. 537, as amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code requires municipalities to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of any municipality; and

2. Charlestown Township has enacted an Official Sewage Facilities Plan under the Pennsylvania Sewage Facilities Act dated June 5, 1989, as revised (the "Township Act 537 Plan"); and

3. Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 (the "Authority's Act 537 Sewage Facilities Plan Update"), which provides for sewage facilities in a portion of Charlestown Township and implements an update and expansion of the Authority's existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin.

4. Charlestown Township is a member municipality of the Valley Forge Sewer Authority; and

5. Charlestown Township has determined that the Authority's Act 537 Sewage Facilities Plan Update is consistent with and conforms to the Township Act 537 Plan, the Charlestown Township Zoning Ordinance, the Charlestown Township Subdivision Ordinance and all other applicable ordinances and plans of the Township.

BE IT AND IT IS HEREBY RESOLVED that the Board of Supervisors of Charlestown Township, Chester County, Commonwealth of Pennsylvania, adopts and submits to the DEP the Authority Act 537 Sewage Facilities Plan Update and submits the same to the DEP as a revision to the Charlestown Township Act 537 Plan. The Township hereby assures the DEP of the complete and timely implementation of the said Plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act, as amended)

BE IT FURTHER RESOLVED that this Resolution shall be effective immediately upon adoption.

ADOPTED this 7th day of May, 2007.

BOARD OF SUPERVISORS

Kevin R. Kuhn, Chairman

Michael J. Rogers, Vice Chairman

Paul J. Hogan, Member

Hugh D. Willig, Member

Charles Philips, Member

ATTEST

Linda Csete, Secretary

EAST PIKELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

RESOLUTION 2007-09

RESOLUTION OF THE BOARD OF SUPERVISORS OF EAST PIKELAND TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvania Code,** requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 ("Facility Plan") which provides for sewage facilities in a portion of East Pikeland Township, and

The alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin. If this alternative of choice cannot be implemented, Valley Forge Sewer Authority shall present an alternate Facility Plan to East Pikeland Township for approval.

WHEREAS, East Pikeland Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of East Pikeland hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended). If the Facility Plan cannot be implemented, the Valley Forge Sewer Authority shall present an alternate Facility Plan to the Township for approval.

BOARD OF SUPERVISORS OF
EAST PIKELAND TOWNSHIP

Russell L...

RUSSELL L. STRAUSS, Chairman

J. BENSON CAMPBELL, Vice Chairman

MARK W. BROOKS, Member

I, Kimberly Moretti, Secretary to the East Pikeland Township Board of Supervisors hereby certify that the foregoing is a true copy of the Township's Resolution No.2007-09, adopted May 15, 20 07.

Attest: Kimberly Moretti, Township Manager

Kimberly Moretti

RESOLUTION OF ADOPTION

RESOLUTION NO. 2007-04

RESOLUTION OF THE BOARD OF SUPERVISORS OF SCHUYLKILL TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the **Pennsylvania Code,** requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, Schuylkill Township is also the host community since it contains the wastewater treatment plant which meets wastewater treatment needs of Charlestown, East Pikeland, Tredyffrin, Easttown, East Whiteland, Malvern, and Willistown Townships, and;

WHEREAS, the Valley Forge Sewer Authority has prepared an Act 537 Sewage Facilities Plan Update dated November 2006 which provides conceptual descriptions for sewage facilities in a portion of Schuylkill Township, and;

WHEREAS, the Plan includes expansion, additions and improvements to an existing wastewater treatment plant located in Schuylkill Township, and;

WHEREAS, the alternative of choice to be implemented is an upgrade and expansion of the existing wastewater treatment plant including primary chemical feed, UV disinfection, and the addition of a 4th clarifier and a 3rd aeration basin, and;.

WHEREAS, Schuylkill Township finds that the Facility Plan described above conforms to a comprehensive program of pollution control and water quality management, and;

WHEREAS, the Authority has agreed that the facilities will comply with all zoning, subdivision, and other ordinances, not withstanding any exemptions in Act 167 or otherwise;

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of Schuylkill hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facilities Plan provided such plan provides for compliance with Schuylkill Township Ordinances. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

RESOLUTION NO. 2007-04

ADOPTED this 6th day of June, 2007.

SCHUYLKILL TOWNSHIP
BOARD OF SUPERVISORS

Attest:

Mary R. Bird, Twp. Secretary

(SEAL)

Norman Vutz, Chairman

Marietta M. Marquart, Vice-Chair

Lee Ledbetter

Daniel Keogh

Sandra Henzie

CERTIFICATION

I, Mary R. Bird, Secretary, Schuylkill Township Board of Supervisors hereby certify that the foregoing is a true and correct copy of Resolution No.2007-04 duly adopted at a regular meeting of the Board of Supervisors held on June 6, 2007.

(SEAL)

By:

Mary R. Bird, Twp. Secretary

Date: 6/25/07

EXHIBIT P8

EAST GOSHEN TOWNSHIP
ACT 537 PLAN DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Southeast Regional Office

(610) 832-6130
FAX: (610) 832-6259

JUN 30 1995

RECEIVED
JUN 30 1995

Louis Smith
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Re: Act 537 Plan Update
East Goshen Township
Chester County

Dear Mr. Smith:

We have completed our review of your municipality's updated official sewage facilities plan entitled East Goshen Township Act 537 Plan Update as prepared by SMC Environmental Services Group, dated December 1992, Revised June 1994. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the plan is hereby granted.

1. Implementation of the on-lot and community sewage system management program

2. Diversion of sewages flows for New Kent Apartments from the Ridley Creek sewage treatment plant to the West Goshen sewage treatment plant.

3. Immediate initiation of further planning in conjunction with West Goshen for the "West Goshen Alternative". A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

4. Initiation of further planning to evaluate the need for the proposed Line Road Interceptor. A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

5. Initiation of further planning to evaluate the possible connection of the Bryn Mawr Rehabilitation Hospital tot he Ridley Creek sewage treatment plant. A plan of study must be submitted that outlines the study area and proposed plan content and that includes an Task Activity Report or equivalent cost document.

6. Utilization of new EDU wastewater ratings:

Single family detached dwellings	- 275 gpd
Townshouses	- 225 gpd
Apartments	- 200 gpd

7. Initiation of further planning to further evaluate other alternatives if the "West Goshen Alternative" does not meet East Goshen Township needs. The spray irrigation alternative would have to be evaluated in more detail. A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

If you have any questions regarding this matter, please feel free to contact me at the above number.

Sincerely,

Joseph A. Feola

Joseph A. Feola
Water Management Program Manager

cc: Chester County Health Department
Chester County Planning Commission
Planning Section
West Goshen Township
SMC Environmental Services Group
Division of Municipal Facilities and Grants
Re 30 (RN)153

AREA CODE 610
692-7171

BOARD OF SUPERVISORS
EAST GOSHEN TOWNSHIP

CHESTER COUNTY
1580 PAOLI PIKE, WEST CHESTER, PA. 19380

CERTIFIED

October 13, 1994

rec'd. at DER on 10/17/94
120 days 2/17/95

Joseph A. Feola
Department of Environmental Resoureces
Regional Water Quality Manager
Lee Park, Suite 6010
555 North Lane
Conshohocken, Pa 19428

Attention: Charles Rehm, Jr.
Planning, Section Chief

Re: Act 537 Plan Update
East Goshen Township
Chester County, Pennsylvania

Dear Mr. Rehm:

East Goshen Township and SMC Environmental Services Group have completed the Township's 537 Plan Update and enclose three (3) copies with this letter.

You will see that the format is somewhat different than the current format dictates. This plan was 98-99% complete when the Township and SMC were advised of the revised format and checklist. A June 30, 1993 meeting between Glenn Stinson and John Veneziale of your office and Fred Turner, SMC, Sue Fish, and myself resulted in agreement that our plan could be submitted as it was as long as the check list was completed and made reference to the location of the required material. All new material and addenda are shown on the blue and yellow pages; text highlighting indicates 1994 changes.

Please contact this office if you have any questions.

Very truly yours,

Louis F. Smith, Jr.
Township Manager

LFS/skf
enclosures
cc: Frederick J. Turner, A.I.C.P.
Board of Supervisors
Municipal Authority
File

...tems 1 and/or 2 for additional services.
... items 3, and 4a & b.
...our name and address on the reverse of this form so that we can ...his card to you.
...ach this form to the front of the mailpiece, or on the back if space ... not permit.
... Write "Return Receipt Requested" on the mailpiece below the article number.
... The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

JOSEPH A. FEOLA, D.E.R.
REG. WATER QUAL. MANAGER
LEE PARK, SUITE 6010
555 NORTH LANE
CONSHOHOCKEN, PA 19428

ATTN: CHARLES REHM

4a. Article Number
P875 873 174

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 DOMESTIC RETURN RECEIPT

...is your RETURN ADDRESS completed...

Thank you for using Return Receipt Service.

ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

For specific details covering the ACT 537 Planning Requirements, refer to Chapters 71 and 73 of the Department's Regulations.

A COPY OF THIS COMPLETED CHECKLIST MUST BE INCLUDED WITH YOUR ACT 537 PLAN. THE DEPARTMENT WILL USE THE "DER USE ONLY" COLUMN DURING THE COMPLETENESS EVALUATION OF THE PLAN. THIS COLUMN MAY ALSO BE USED BY THE DEPARTMENT DURING THE PREPLANNING MEETING WITH THE MUNICIPALITY TO IDENTIFY PLANNING ELEMENTS WHICH WILL NOT BE REQUIRED TO BE INCLUDED IN THE PLAN. ALL THE PLANNING ELEMENTS REQUIRED BY THE DEPARTMENT MUST BE ADDRESSED IN YOUR PLAN OR THE PLAN WILL BE RETURNED AS INCOMPLETE. THE PAGE NUMBER OR OTHER REFERENCE MUST BE LISTED IN COLUMN 2 OF THE CHECKLIST PRIOR TO PLAN SUBMITTAL. IF THE MUNICIPALITY DETERMINES THAT ANY ITEMS LISTED IN THIS CHECKLIST DO NOT APPLY, OR CONDITIONS STATED IN A CERTAIN PART OF THIS CHECKLIST DO NOT EXIST IN AN AREA, A COMMENT MUST BE INCLUDED IN COLUMN 2 WHICH STATES THAT THE PARTICULAR CHECKLIST ITEM WILL HAVE NO IMPACT ON THE PLAN OR THAT IT DOES NOT EXIST IN THE PLANNING AREA. WHEN INFORMATION REQUIRED AS PART OF AN OFFICIAL PLAN UPDATE REVISION HAS BEEN DEVELOPED SEPARATELY OR IN A PREVIOUS UPDATE REVISION, INCORPORATE THE INFORMATION BY REFERENCE TO THE PLANNING DOCUMENT AND PAGE. THREE COPIES OF THE COMPLETED PLAN WITH ALL ATTACHMENTS MUST BE SUBMITTED TO THE DEPARTMENT.

Municipality: East Goshen County: Chester

Local Municipal Contact Official: Louis F. Smith, Jr. Township Manager Telephone Number of Official: 610-692-7171

Consultant: SMC Environmental Services Consultant's Telephone Number: 610-265-2700

Consultant's Contact Person: Frederick J. Turner, Vice President

Title of Submission: Act 537 Plan Update-1994 Date Submitted: _____

☐ 3 copies of Plan submitted to the Department (including supporting documentation)

COMPLETENESS CHECKLIST

DER Use Only	Indicate Page #(s) in Plan	Item Required
_____	A-1 & B-1 to B-7	1. Table of Contents
		2. Plan Summary
_____	A-2 to A-4	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference-Title 25, § 71.21.a.7.i)
_____	A-4 to A-6	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference-Title 25, § 71.21.a.7.ii)
_____	A-6 to A-8	C. Include the cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference-Title 25, § 71.21.a.7.ii)
_____	A-8	D. Identify the municipal commitments necessary to implement the plan. (Reference-Title 25, § 71.21.a.7.iii)

DER Use Only	Indicate Page #(s) in Plan	Item Required
	A-8	E. Provide a schedule of implementation for the project which identifies the major milestones with dates necessary to accomplish the project to the point of operational status. Other milestones in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, § 71.21.a.7.iv)
	A-9	F. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference-Title 25, § 71.21.b)
	A-9-A	3. Original, signed and sealed Resolution of Adoption by the Municipality which contains, at a minimum, alternatives chosen and a commitment to implement plan as stated in the implementation schedule. (Reference-Title 25, § 71.31.f) Section V.F of Guidance.
	A-9 to A-12	4. Evidence that the municipality has requested, reviewed, and considered comments by appropriate official: planning agencies of the municipality, planning agencies of the county, planning agencies with areawide jurisdiction (where applicable), and existing county or joint county departments of health. (Reference-Title 25, § 71.31.b) Section V.E.1. of guidance.
	A-12-A	5. Proof of Public Notice which documents proposed plan adoption, plan summary, and the establishment of a 30 day comment period. (Reference-Title 25, § 71.31.c) Section V.E.2 of guidance.
	FOLLOWING A-	6. Copy of ALL written comments received and municipal response to each comment in relation to the proposed plan. (Reference-Title 25, 71.31.c) Section V.E.2 of guidance.
	A-8 to A-9	7. Project Implementation Schedule. (Provide projected milestone dates and be detailed for each existing and future needs area). (Reference - Title 25, § 71.31.d) Section F of Guidance.
	FOLLOWING A-13	8. Project Implementation Ordinances (Provide existing ordinances or include the development of new ordinances in the schedule of implementation.) (Reference-Title 25, § 71.21.a.5.vi.D) Section V.F of guidance.
	FOLLOWS COVER SHEET	9. Written documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i)-(iii). (Reference-Title 25, § 71.31.e) Appendix B of guidance.

GENERAL PLAN

I. Previous Wastewater Planning

A. Identify and analyze all existing wastewater planning that:

	A-1 to A-3	1. Has been previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5, § d.1)
	ALL 1981-1985 PLANS EXECUTED	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, § 71.21.a.5.i.A - D) Section V.F of Guidance.

DER Use Only	Indicate Page #(s) in Plan	Item Required
	2-2 & 3-17 & 3-20	3. Is anticipated or planned by applicable sewer authorities. (Reference-Title 25, § 71.21.a.5.i.A) Section V.D. of Guidance.
	ALL	4. Has been done through official plan revisions (planning modules) and addenda. (Reference-Title 25, § 71.21.a.5.i.A)
		B. Identify all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
	3-6 to 3-14	1. All land use plans and zoning maps which identify residential, commercial, industrial, agricultural, recreational, and open space areas. (Reference-Title 25, § 71.21.a.3.iv)
	3-6 to 3-14	2. A comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, § 71.21.a.3.iv)
	3-9 to 3-14	3. Zoning or in the absence of zoning subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference-Title 25, § 71.21.a.3.iv)
	3-8, 3-13, top of p. 1-7	4. All limitations and plans related to floodplain and stormwater management and special protection areas. (Reference-Title 25, § 71.21.a.3.iv) Appendix B, Section II.F.
	1-6 to 1-14, 1-18 to 1-19 AND 1-17. ALSO SEE 3-1, 3-8 AND 3-9,	5. An analysis of land use planning and zoning and its consistency with protecting environmentally sensitive areas, with special attention to: (Reference-Title 25, § 71.21.a.3.iv) - public ground/surface water supply sources - recreational water use areas - groundwater recharge areas - industrial water use - wetlands
		II. Pbysical and Demographic Analysis utilizing written description and mapping:
		A. Base line mapping (All maps should show all current lots and structures).
	1-4 to 1-6	1. Identification of Planning Area(s), Municipal Boundaries, Sewer Authority/ Management Agency service area boundaries. (Reference-Title 25, § 71.21.a.1.i)
	1-6 to 1-14 & 3-1 to 3-5	2. Identification and Mapping of Physical Characteristics (streams, lakes, impoundments, natural conveyance channels, drainage basins in the planning area). (Reference-Title 25, § 71.21.a.1.ii)
	1-7 to 1-14	3. Soils - Analysis with description by soil type and soils mapping (with any topographic limitations) showing areas suitable for conventional on-lot systems, elevated sand mounds, and areas unsuitable for on-lot systems. (Reference-Title 25, § 71.21.a.1.iii). Mapping of Prime Agricultural Soils and locally protected agricultural soils. (Reference - Title 25, § 71.21.a.5.i.K)
	1-7 to 1-9	4. Geologic Features - Identification through analysis, mapping and their relation to existing (including areas where existing nitrate-nitrogen levels are in excess of 5 mg/l) or potential nitrate-nitrogen pollution and drinking water sources. (Reference-Title 25, § 71.21.a.1.iii)

DER Use Only	Indicate Page #(s) in Plan	Item Required
_____	1-6A & 3-13	5. Topography - Showing slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for on-lot systems. (Reference-Title 25, § 71.21.a.1.ii)
_____	1-18 to 1-20 & 3-9 (5th para.)	6. Potable Water Supplies - Identification through mapping, description and analysis to include available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25, § 71.21.a.1.vi) Section V.C. of the Guidance.
_____	1-17 to 1-18 & 1-8	7. Wetlands - Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, § 71.21.a.1.v) Appendix B, Section II.I.
_____	1-15 to 1-17 3-14 to 3-15	8. Population - List historical, current and future population figures and projections of the municipality. Discuss and evaluate any discrepancies between municipal, county, state (DER), and federal population projections as they relate to sewage facilities. (Reference-Title 25, § 71.21.a.1.iv)

III. Existing Sewage Facilities in the Planning Area.

A. Identify, map and describe municipal and nonmunicipal, individual and community sewerage systems in the planning area including:

_____	2-1 to 2-6	1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, § 71.21.a.2.i.A)
_____	2-1 to 2-6 2-6 to 2-12 2-23 to 2-29	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, any remaining reserve capacity and the policy concerning the allocation of reserve capacity. (Reference-Title 25, § 71.21.a.2.i)
_____	2-6, 3-25 to 3-26,	3. A description of problems with existing facilities, including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of a national pollutant discharge elimination system (NPDES) permit, Clean Streams Law permit, or other permit, rule or regulation of the Department. (Reference-Title 25, § 71.21.a.2.i.B)
_____	3-14 to 3-26	4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, § 71.21.a.4.i & ii)
_____	2-1 to 2-13 2-23 to 2-32	5. A detailed description of operation and maintenance requirements and the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, § 71.21.a.2.i.C)
_____	4-1 to 4-28 3-25 & 3-26 A-2 to A-6	6. Ultimate disposal areas, if other than stream discharge (land application) and any applicable groundwater limitations. (Reference-Title 25, § 71.21.a.4.i & ii)

DER Use Only	Indicate Page #(s) in Plan	Item Required
		B. Identify, map and describe areas that utilize individual and community on-lot sewage disposal and retaining tank systems in the planning area including:
	2-21 & 2-22	1. The type of systems in use. (Reference-Title 25, § 71.21.a.2.ii.A)
	2-15 - 2-21	2. A description of documented and potential public health pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Streams Law or regulation promulgated thereunder. (Reference-Title 25, § 71.21.a.2.ii.B)
	2-15 to 2-23 2-30 to 2-32	3. A comparison of the types of on-lot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations, sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, § 71.21.a.2.ii.C)
	NOT APPLICABLE	4. Conducting a well water survey to identify possible contamination by malfunctioning on-lot sewage disposal systems. Approximately 15% of the wells in the study area should be sampled. (Reference-Title 25, § 71.21.a.2.ii.B)
		C. Identify wastewater sludge and septage generation, transport, and disposal methods as it relates to sewage facilities alternative analysis including:
	2-3	1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25, § 71.71)
	2-3 to 2-6	2. Quantities of the types of sludges or septage generated. (Reference-Title 25, § 71.71)
	2-3	3. Present disposal methods, locations, capacities, and transportation methods. (Reference-Title 25, § 71.71)
	NONE	D. Identify, map and describe areas in the municipality where unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) are in use. (Reference-Title 25, § 71.21.a.2.i.B)
		IV. Future Growth and Development
		A. Delineate and describe the following through map, text and analysis:
	3-1 to 3-15 3-16 to 3-26	1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed, and total number of Equivalent Dwelling Units (EDUs) remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, § 71.21.a.3.i)
	3-2 & 3-6 to 3-9	2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25, § 71.21.a.3.ii)
	3-14 to 3-26	3. Future growth areas and population and EDU projections for these areas. (Reference-Title 25, § 71.21.a.3.iii)

DER Use Only	Indicate Page #(s) in Plan	Item Required
	3-9 to 3-14	4. Zoning, subdivision regulations; local, county or regional comprehensive plans; and existing plans of a Commonwealth agency relating to the development, use and protection of land and water resources. (Reference-Title 25, § 71.21.a.3.iv)
	3-7 & 3-20 3-14 to 3-26 4-1 to 4-16	5. Sewage planning required to provide adequate wastewater treatment for areas of the municipality and related to: a. Five-year population and growth impacts on existing and proposed wastewater collection and treatment facilities which support the need for expansions of facilities within the five-year time frame. (Reference-Title 25, § 71.21.a.3.v)
	3-7 & 3-20 3-14 to 3-26 4-16 to 4-20	b. Ten-year population and growth impacts on existing and proposed wastewater collection and treatment facilities which support the need for expansions of facilities within the ten-year time frame. (Reference-Title 25, § 71.21.a.3.v)

V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Identify alternatives available to provide for new or improved sewage facilities for each area of need including, but not limited to: (Reference-Title 25, § 71.21.a.4)

	A-3 & A-4 3-25 to 3-26	1. Regional Wastewater Treatment Concepts. (Reference-Title 25, § 71.21.a.4)
	4-1 to 4-27	2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, § 71.21.a.4.i)
		3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, § 71.21.a.4.ii)
	4-19 to 4-24	a. Repair. (Reference-Title 25, § 71.21.a.4.ii.A)
	4-19 to 4-24	b. Upgrading. (Reference-Title 25, § 71.21.a.4.ii.B)
	2-3 to 2-6 & 4-19 to 4-24	c. Improved operation and maintenance. (Reference-Title 25, § 71.21.a.4.ii.C)
	A-1 to A-5	d. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, § 71.21.a.4.ii.D)
	4-1 to 4-18	4. The need for new community sewage systems. (Reference-Title 25, § 71.21.a.4.iii)
	6-1 to 6-14	5. The construction of new wastewater treatment facilities. (Reference-Title 25, § 71.21.a.4.iii)
	2-12 & 6-1 to 6-14	6. Repair or replacement of collection and conveyance system components. (Reference-Title 25, § 71.21.a.4.ii.A)
	6-1 to 6-16 & A-1 to A-7	7. Use of alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, § 71.21.a.4.ii.B)

DER Use Only	Indicate Page #(s) in Plan	Item Required
		8. The continual and future use of individual and community subsurface sewage disposal system alternatives based on:
	1-9 to 1-14 2-23 & 6-14	a. Soil suitability. (Reference-Title 25, § 71.21.a.2.ii.C)
	NOT APPLICABLE	b. Preliminary hydrogeological evaluation. (Reference-Title 25, § 71.21.a.2.ii.C)
	A-8 & A-11 & 4-21	c. The establishment of a sewage management program. (Reference-Title 25, § 71.21.a.4.iv)
		9. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for on-lot disposal considering: (Reference-Title 25, § 71.21.a.4)
	4-20 to 4-24	a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, § 73.31 - 73.72)
	2-27, 2-31, 2-32 4-21 & 4-22	b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, § 73.16)
	3-9 - 5th para.	c. Use of water conservation devices. (Reference-Title 25, § 71.73.b.2.iii)
		10. The use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes based on: (Reference-Title 25, § 71.21.a.4)
	A-4 PRIORITY 6	a. Discharge Requirements. (Reference-Title 25, § 71.64.d)
	N. A.	b. Soil Suitability. (Reference-Title 25, § 71.64.c.1)
	N. A.	c. Preliminary Hydrogeologic Evaluation. (Reference-Title 25, § 71.64.c.3)
	A-8	d. Agency or other controls over operation and maintenance requirements. (Reference-Title 25, § 71.64.d)
		11. The use of retaining tank altornatives including: (Reference-Title 25, § 71.21.a.4)
	A-4 - PRIORITY 7	a. Commercial, residential and industrial use. (Reference-Title 25, § 71.63.e)
	ORDINANCE # 105	b. Designated conveyance facilities (pumper trucks). (Reference-Title 25, § 71.63.b.2)
	ORDINANCE # 105	c. Designated treatment facilitiee or disposal site. (Reference-Title 25, § 71.63.b.2)
	ORD. # 105	d. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, § 71.63.c.3)
	ORD # 105	e. Financial guarantaee when retaining tanks are used ae an interim sewage disposal measure. (Reference-Title 25, § 71.63.c.2)
	ORD # 105	f. Temporary or permanent use.

DER Use Only	Indicate Page #(s) in Plan	Item Required
	NOT ADDRESSED	12. A no-action alternative which includes both short-term and long-term impacts on: (Reference-Title 25, § 71.21.a.4)
		a. Water Quality/Public Health. (Reference-Title 25, § 71.21.a.4)
		b. Growth potential (residential, commercial, industrial). (Reference-Title 25, § 71.21.a.4)
		c. Community economic conditions. (Reference-Title 25, § 71.21.a.4)
		d. Recreational opportunities. (Reference-Title 25, § 71.21.a.4)
		e. Drinking water sources. (Reference-Title 25, § 71.21.a.4)
		f. Other environmental concerns. (Reference-Title 25, § 71.21.a.4)
	4-20 to 4-24	13. Discuss the need for and implementation of a sewage management program to assure the future operation and maintenance of existing and proposed sewage facilities through:
	4-21	a. Municipal ownership or other management control over the operation and maintenance of individual on-lot sewage disposal systems, small flow treatment facilities, or other non- municipal treatment facilities. (Reference-Title 25, § 71.21.a.4.iv)
	ORDINANCE # 105	b. Requiring scheduled inspection of on-lot sewage disposal systems. (Reference-Title 25, § 71.73.h.1)
	4-20 to 4-24	c. Requiring scheduled maintenance of septic and aerobic treatment tanks and associated system components. (Reference-Title 25, § 71.73.b.2)
	ORDINANCE # 105 & 4-21	d. Aggressive enforcement of ordinances which require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, § 71.73.b.5)
	A-5 to A-8	e. Repair, replacement or upgrading of malfunctioning on-lot sewage systems. (Reference-Title 25, § 71.21.a.4.iv)
	6-7 & 6-8	f. Establishment of joint municipal sewage management programs. (Reference-Title 25, § 71.73.b.8)
	4-22 & ORD. # 105	g. Reduction of organic or hydraulic loading to existing wastewater treatment facilities. (Reference-Title 25, § 71.71)
		h. Requirements for bonding, escrow accounts, management agencies or associations to assure proper operation and maintenance for non-municipal facilities. (Reference-Title 25, § 71.71)
		14. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, § 71.21.a.4)
	NEW (1992) 3-6 to 3-9	a. Modification of existing comprehensive plans involving:
		1. Land use designations. (Reference-Title 25, § 71.21.a.4)

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	3-6	2. Densities. (Reference-Title 25, § 71.21.a.4)
	3-9 to 3-14	3. Municipal ordinances and regulations. (Reference-Title 25, § 71.21.a.4)
	3-1 to 3-14	4. Improved enforcement. (Reference-Title 25, § 71.21.a.4)
	1-18 & 1-19	5. Protection of drinking water sources. (Reference-Title 25, § 71.21.a.4)
	3-6 to 3-14	b. Need for a comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, § 71.21.a.4)
	ORD. # 105	c. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal. (Reference-Title 25, § 71.21.a.4)
	4-23 & 4-24	d. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, § 71.21.a.4)

VI. The Evaluation of Alternatives

A. Each technically feasible alternative identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, § 71.21.a.5.i)

	5-1 to 5-3	1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act (33 U.S.C.A. 1288). (Reference-Title 25, § 71.21.a.5.i.A) Appendix B, Section II.A.
	5-3	2. Municipal wasteload management plans developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, § 71.21.a.5.i.B) The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. (Appendix B, Section II.B.
	5-4 & 5-5	3. Plans developed under Title II of the Clean Water Act (33 U.S.C.A. 1281-1299) or Titles II and VI of the Water Quality Act of 1987 (33 U.S.C.A. 1251-1376). (Reference-Title 25, § 71.21.a.5.i.C) Appendix B, Section II.E.
	5-5	4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, § 71.21.a.5.i.D) The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II, D.
	5-5 to 5-6	5. Antidegradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, § 71.21.a.5.i.E) Appendix B, Section II, F.
	5-4 & 5-5	6. State water plans developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, § 71.21.a.5.i.F) Appendix B, Section II, C.

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	5-6	7. Pennsylvania Prime Agricultural Land Policy contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference-Title 25, § 71.21.a.5.i.G) Appendix B Section II.G.
	5-6	8. County Stormwater Management Plans approved by the Department under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, § 71.21.a.5.i.H) Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the County Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H.
	5-6 & 5-7	9. Wetland Protection under PA Code, Title 25, Chapter 105. Map wetland areas using Federal National Wetlands Inventory Mapping and Soils Mapping. (Reference-Title 25, § 71.21.a.5.i.I) Identify and provide mitigative measures for any encroachments on wetlands from the construction or operation of any wastewater facilities proposed by the alternative. Appendix B, Section II.I.
	5-7	10. Protection of rare, endangered or threatened plant and animal species as identified by the Pennsylvania National Diversity Inventory (PNDI). (Reference-Title 25, § 71.21.a.5.i.J) Provide the Department with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department's Bureau of Forestry regarding the findings of the PNDI search. Appendix II. J.
	5-7	11. Historical and Archaeological Resource Protection under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, § 71.21.a.5.i.K) Provide the Department with a completed copy of Form "A" and its attachments requesting the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II. K.
	5-7 to 5-10	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting written documentation that the appropriate agency has received, reviewed, and concurred with the method proposed to resolve identified inconsistencies. (Reference-Title 25, § 71.21.a.5.ii) Appendix B
	5-9 & 5-10	C. Evaluate each alternative identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, § 71.21.a.5.iii)
	5-10 to 5-14	D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, operation and maintenance and user fees for each alternative identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference-Title 25, § 71.21.a.5.iv)
	5-14 to 5-16	E. Provide an analysis of the funding methods available to finance each of the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, § 71.21.a.5.v)

DER Use Only	Indicate Page #(s) in Plan	Item Required
		F. Analyze the ability of the municipality to implement each alternative proposed in Section V of this report including: (Reference-Title 25, § 71.21.a.5.vi)
	4-23 & 4-24	1. The activities necessary to abate critical public health hazards pending completion of sewage facilities or sewage management programs. (Reference-Title 25, § 71.21.a.5.vi.A)
	A-7 to A-9	2. The phased development of the facilities or sewage management program. (Reference-Title 25, § 71.21.a.5.vi.B)
	A-8 & A-9	a. Provide time schedules for implementing each phase. (Reference-Title 25, § 71.21.a.5.vi.C)
	4-21 & 5-14	3. The administrative organization and legal authority necessary for plan implementation. (Reference-Title 25, § 71.21.a.5.vi.D)
		VII. Institutional Evaluation
		A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
	5-14 & 5-15 & 5-16	1. Financial & debt status. (Reference-Title 25, § 71.61.d.2.)
	4-23 & 4-24	2. Available staff and administrative resources. (Reference-Title 25, § 71.61.d.2.)
	SEC. 5, ACT 537	3. Existing legal authority to:
	A-9-A & 5-14	a. Implement wastewater planning recommendations. (Reference-Title 25, § 71.61.d.2.)
	4-23 & 5-14	b. Implement system-wide operation and maintenance activities. (Reference-Title 25, § 71.61.d.2.)
	5-14 - 5-15	c. Set user fees and take purchasing actions. (Reference-Title 25, § 71.61.d.2.)
	ORD # 105 - SEC. VII	d. Take actions against adopted ordinance violators. (Reference-Title 25, § 71.61.d.2.)
	SECOND CLASS TWSP. CODE	e. Negotiate agreements with other parties. (Reference-Title 25, § 71.61.d.2.)
	SECOND CLASS TWSP. CODE & PA. MUNICIPAL AUTH. ACT	f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, § 71.61.d.2.)
		B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed alternative including:
	NONE	1. Need for new authorities. (Reference-Title 25, § 71.61.d.2.)
	4-23 & 4-24, 5-10	2. Functions of existing and proposed organizations (sewer authorities, etc.). (Reference-Title 25, § 71.61.d.2.)
	5-10	3. Cost of administration, implementability, and the capability of the authority to react to future needs. (Reference-Title 25, § 71.61.d.2.)

DER Use Only	Indicate Page #(s) in Plan	Item Required
		C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
	NOT APPLICABLE - EXISTING	1. All legal authorities of incorporation. (Reference-Title 25, § 71.61.d.2.)
	ORD # 105 ADOPTED	2. All required ordinances, regulations, standards, and inter-municipal agreements. (Reference-Title 25, § 71.61.d.2.)
	A-1 TO A-7	3. Activities to provide rights-of-way, easements, and land transfers. (Reference-Title 25, § 71.61.d.2.)
	N.A.	4. Other municipal sewage facilities plan adoptions. (Include the development of Items 1-4 on the project's schedule of implementation). (Reference-Title 25, § 71.61.d.2.)
	A-8	5. Any other legal documents. (Reference-Title 25, § 71.61.d.2.)
	A-1 to A-8	D. Identify the chosen institutional alternative for implementing the chosen wastewater disposal alternative. Provide justification for choosing the specific alternative. (Reference-Title 25, § 71.61.d.2.)

VIII. Selected Wastewater Treatment & Institutional Alternatives

		A. Select one technical wastewater disposal alternative which best meets the wastewater treatment needs of each area of the municipality studied. Justify the choices by providing documentation which shows that they are the best alternative(s) based on:
	A-2 to A-7	1. Wastewater disposal needs. (Reference-Title 25, § 71.21.a.6.)
	4-23 to 4-24	2. Technical and administrative needs. (Reference-Title 25, § 71.21.a.6.)
	5-10 to 5-16 A-7 & A-8	3. Cost-effectiveness. (Reference-Title 25, § 71.21.a.6.)
	4-23 & 4-24	4. Management and administration systems available. (Reference-Title 25, § 71.21.a.6.)
	5-10 to 5-16	5. Financing methods available. (Reference-Title 25, § 71.21.a.6.)
	6-1 to 6-16	6. 5 and 10 year planned growth areas. (Reference-Title 25, § 71.21.a.6.)
	5-1 to 5-10	7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, § 71.21.a.6.)
	5-10 to 5-16 A-7 to A-8	B. Describe the capital financing plan chosen to implement the selected alternative(s).

EAST GOSHEN TOWNSHIP

ACT 537 PLAN UPDATE

DECEMBER 1992

REVISED JUNE 1994

SMC Environmental Services Group

P.O. Box 859

Valley Forge, PA 19482

September 14, 1994

FINAL ADDENDUM TO THE EAST GOSHEN TOWNSHIP ACT 537 PLAN UPDATE AS A RESULT OF THE MOST RECENT CHESTER COUNTY PLANNING AGENCY REVIEWS

As a result of the Chester County Planning Commission and Health Department reviews and the comments received from adjacent municipalities, the East Goshen Township Act 537 Plan was substantially revised in several ways. First, Addenda reports were prepared and attached to selected sections of the original report. The Plan Summary and the various Addenda are printed on yellow paper in this report. Further text modifications are "highlighted" to show the various response items and text changes required by comments from the Planning agencies.

A meeting with the County agencies was held at the East Goshen Township building on July 7, 1994 to review the basic plan addenda, text changes, and changes in concept.

The Chester County Health Department responded under date of August 11, 1994. This latest review requires three basic comments. First, the reported "confusion" regarding text/tables has been eliminated. Within this addendum, Table 3.6a, Table 3.7a, and Table 3.8 have been prepared to address the County Health Department's comment regarding text/table confusion.

The second comment regards this submission to PaDER as being premature since West Goshen Township has not yet amended their Act 537 Plan to accommodate the plant expansion. Further, the Health Department points out that there is no commitment from West Goshen to accept the additional flows from the Township. The County Health Department clearly indicates that it would support East Goshen's first selected alternative should West Goshen complete their planning and gain approval from PaDER.

The final comment from the County Health Department review addresses a pro-active role in the management of the Willow Pond COLDS. The adoption of Ordinance 105 during June 1994 now fully involves East Goshen Township in the monitoring/management of the Willow Pond COLDS. Monthly monitoring reports are now received and reviewed by East Goshen Township.

East Goshen Township fully concurs with the comments contained in the County Health Department letter.

The Chester County Planning Commission responded to the latest revised plan on August 19, 1994. The basic position of the County Planning Commission is the same as that of East Goshen Township. The Planning Commission points out that "The Township will find itself in a difficult position if the West Goshen Alternative cannot be implemented." The County also believes that this submission to PaDER is premature without West Goshen concurrence. East Goshen Township is fully aware that agreements must be reached with West Goshen in order to properly effectuate this updated 537 Plan.

As in the County Health Department review, the County Planning Commission specifically requested an updating of the Tables 3.6 and 3.7. The Township has responded in part by preparing the aforementioned Table 3.6a, Table 3.7a, and Table 3.8. The additional mapping requested by the County Planning Commission cannot be prepared until East Goshen agrees with West Goshen as to the specific service areas within East Goshen Township and possibly East Whiteland Township which would be served under an agreement between the two Townships. The Township will respond to the request for additional mapping after reaching some form of agreement with West Goshen Township.

The Township is in agreement with the County Planning Commission's suggestion as to the minor modification in the rank order of priority of treatment methods selected by East Goshen Township. The Township has already expressed within this plan a requirement that the developers of the Woods/Sherman property will be required to exhaust prioritized alternatives before the consideration of public sewer extensions to this area is approved.

In summary, East Goshen Township feels that it has adequately responded to both of the County agency review letters.

New Tables 3.6a, 3.7a, and 3.8

The Township has prepared new allocation tables dated August 30 and August 31, 1994 which reflect a number of changes. Table 3.6a (which is a facsimile of Table 3.6), now utilizes the updated 1993 average daily flow. In addition, the new EDU daily flow figures recommended in the plan have been utilized in lieu of the higher previous figures. Further, all of the projects indicated under the column "GPD Committed or in Process" in the prior Table 3.6 have been updated and incorporated in the column related to "online facilities."

Table 3.6a still shows a distinct difference between the 937,274 gpd based on expected theoretical flows and the 1993 average daily flow of 815,192 gpd which was based on actual recorded figures. In essence, this means that there is still a

TABLE 3.6 a
ALLOCATION OF SEWAGE FLOW TO
WEST GOSHEN SEWAGE TREATMENT PLANT

AREA TO BE SERVED	ZONED	GPD ON LINE	GPD COMMITTED IN PROCESS	1993–1997 PROBABLE	1998–2002 PROBABLE	POTENTIAL 2002 >
EIGH ESTATES (6 SFD)	R–2	550	1,650			
BITTERSWEET (49 SFD)	R–2	13,475				
GRAND OAK (141 SFD)	R–2	38,775				
MARYDELL (159 SFD)	R–2	43,725				
MILLCREEK ESTATES(33 SFD)	R–2	9,075				
PIN OAKS (112 SFD)	R–2	30,800				
MISAK DR EXTENSION (8 SFD)	R–2	2,200				
MEADOWS (35 SFD)	R–2	9,625				
ROCKLAND VILLAGE (74 SFD)	R–2	20,350				
SUPPLEE VALLEY (98 SFD)	R–2	26,950				
HICKORY GLEN (9 SFD)	R–2	2,475				
WATERVIEW (66 SFD)	R–2	18,150				
RESERVOIR ROAD (2 SFD)	R–2	550	550			14,575
PRICE PROPERTY (129.6 ACRES)	R–2				13,750	21,725
STRASBURG ROAD	R–2	11,825				
ELLIS LANE	R–2	1,100	1,375			
STURBRIDGE	R–2	2,475				
BRANDOLINI/MORSTEIN RD. (KILLERN – 9 SFD)	R–3	2,475				
HILLOCH MANOR (7 SFD)	R–2	1,925				
WHITE CHIMNEYS(CHESTER HOLLOW–71 SFD)	R–2	19,525				
WENTWORTH (12 SF)	R–2	3,300				
GOSHEN HEIGHTS (70 SFD)	R–2	19,250				
PARK AVENUE	R–3	9,625				
FIRE HOUSE (13 ACRES)				5,500	7,425	
FEDOR (175 APTS)	R–4			35,000		
TREE TOPS (200 APTS)	R–4	40,000				
HIGHSPIRE (78 TOWNHOUSES)	R–4	17,550				
DUTT'S MILL (33 UNITS & 15 FUTURE)	R–5	7,425	3,375			
GOSHEN VALLEY (656 APTS/TH)	R–5	147,600				
RIDGEWOOD APTS (60 UNITS)	R–5	13,500				
WALNUT HILL ROAD (4 SFD)	R–5	1,100				
AUDUBON (35 TOWNSHOUSE UNITS)	R–5	7,875				
SMITHFIELD APTS. (198 UNITS)	R–5	39,600				
MISCELLANEOUS (7.3 ACRES)	R–5			4,950		
W.C. PIKE (9)	C–1	3,150				
STEEPLECHASE (81 TOWNHOUSES)	C–1	18,225				
ROSE HILL APTS (166 UNITS)	C–4	33,200				
OSE HILL COMMERCIAL	C–4	8,000				
QUET CLUB APTS (71 UNITS)	C–4	14,200				
ERVIEW APTS (203 UNITS)	C–4	40,600				
MMERCIAL ((3)	C–4	7,000				
W. C. PIKE (12.9 ACRES)	C–4	6,875		7,500		
GOSHEN CORP. PARK*	BP/I–1	30,609	9,391			
GOSHEN OFFICE ASSOCIATES	BP/I–1	3,000				
HICKS ***(GOSHEN CORP PARK WEST)						
93.3 ACRES	I–1	4,913	22,192			
13.5 ACRES (53–3–1.2)COMMONS @ GOSHEN	I–1	4,200				
14.9 ACRES (53–3–1.2B)	I–1			4,544		
11.8 ACRES (53–3–1.7/MILKSTORE)*	BP	573	3,026			
HICKS – BALANCE (34.8 & 36.7 ACRES)	BP				21,807	
BRANDYWINE INDUSTRIAL PARK						
MARS*	BP/I–1	13,114	9,386			
CALECO*	BP/I–1	615				
(BRANDYWINE PLAZA) WILSON PROPERTY	BP/I–1		10,800			
STS PETER AND PAUL CHURCH	R–2				1,150	
GREEN ACRES (3 SFD)	R–2				825	
STRASBURG RD/ROUTE 352 (20 SFD)	R–2				5,500	
PUMPED FROM RIDLEY CREEK						
NEW KENT APTS (384 APTS)	R–5	76,800				
HERSHEY MILL ESTATES (142 SFD)	R–2	39,050				
FAIRWAY VILLAGE (38 SFD)	R–2	10,450				
ASHBRIDGE/FIRETHORNE (170 SFD)	R–2	46,750				
WYLLPEN (17 SFD)	R–2	550	4,125			
HUNTER'S RUN (6 SFD)	R–2	550	1,650			
WINDERMERE (60 APT.)	R–4	12,000				
CHARTER CHASE (98 SFD)	R–2					26,950
MILL VALLEY (25 SFD)	R–2					6,875
MILLSTREAM DRIVE (25 SFD)	R–2					6,875
GOSHEN DOWNS (12 SFD)	R–2					3,300
TOTAL		937,274	67,520	57,494	50,457	80,300

1993 AVERAGE DAILY FLOW (W.G. NUMBER) 815,191

% TOTAL ON–LINE VS ACTUAL GPD = 87%

)JECTED ON LINE/COMMITTED &)BABLE 1,193,045

FACTORS USED:
SFD = 275 GPD
TOWNHOUSE = 225 GPD
APARTMENTS = 200 GPD

daily flow difference of 122,000 gpd between theoretical and actual flow, and the ratio for total online sewage flow is 87 percent of project theoretical flow.

Table 3.6a also contains a figure for the conversion of daily flow from the New Kent Apartments (76,800 gpd) showing removal from the Ridley Creek Watershed and being diverted to Chester Creek Watershed.

With regard to Table 3.7a, which is a facsimile of the original Table 3.7, the reduced daily flows for each type of EDU have now been incorporated for use in this table. The New Kent Apartments, currently connected to the Ridley Creek plant, have been removed from Table 3.7a and now appear in Table 3.6a. Also, those projects or properties previously reflected as being "committed and/or in process" have now been properly shown in the column where online conditions have been established.

It is noteworthy that the gpd online is very consistent with the average 1993 plant flow. In addition, certain projects shown in Table 3.7a have been shifted to the future connections considered necessary beyond the year 2002. This has been done based upon the adoption of Ordinance 105 which may remove the future need for public sewers for the four projects or properties depicted.

Although 40,000 gpd is still shown for future connection for the Bryn Mawr Rehabilitation facility, a recent letter from that agency requested only 25,000 gpd for future treatment at the Ridley Creek STP.

West Goshen Alternative

Table 3.8 has been developed as a new allocation alternative which would be based on primarily on approval of the "West Goshen Alternative" described in this plan update. The distinct difference between Table 3.8 and Table 3.6a is that approximately 231,000 gpd in additional flows would be added which is directly related to facilities currently located in East Whiteland Township (William Henry Apartments and Immaculata College). Again, as in Table 3.6a, the reduced EDU daily flow factors have been utilized.

It should be noted that Tables 3.6a, 3.7a, and 3.8 were actually published in September 1994. Most of the text material contained in this 1994 Plan was developed during 1992 through 1994. There will now be some differences in text as compared with the newly-updated tables. With this in mind, the new tables contained in this addendum will govern the current estimates or allocations of flows to Ridley Creek and to Chester Creek.

TABLE 3.7a
ALLOCATION OF SEWAGE FLOW TO
RIDLEY CREEK SEWAGE TREATMENT PLANT
AUGUST 31, 1994

AREA TO BE SERVED	ZONED	GPD ON-LINE	GPD COMMITTED &/OR IN PROCESS		1993-1997 PROBABLE	1998-2002 PROBABLE	POTENTIAL 2002>
BOW TREE FARMS - 480 SFD	R-2	90,750	41,250	*			
VISTA FARMS - 65 SFD	R-2	17,875					
HUNT COUNTRY - 71 SFD	R-2	19,525					
WENTWORTH - 65 SFD	R-2	17,875	6,875	*			
E.G. ELEMENTARY SCHOOL	R-2	10,000					
S.K. BEECHAM	I-2	10,000	30,000	*			
GOSHEN VILLAGE COMMERCIAL	C-5	13,000					
HANCOCK BUILDING (FUCHS)	C-2	3,600					
PHASE II- HANCOCK BLDG			2,400	*			
PAOLI PIKE	C-5	5,950	350	*			
(352/PAOLI CORNER)							
TAYLOR/HIGHLAND (64 EDU)	R-2	17,600					
SPINOZZI & MCCLOSKEY (10 EDU)	R-2		1,375	*		1,375	
COVENTRY WOODS (16 EDU)	R-2		4,400	*			
WATERFORD (26 EDU)	R-2	7,150					
MEADOWBROOK/CORNWALLIS AREA	R-2		20,900				
BELLINGHAM LIFE CARE	I-2	28,000					
BENTLEY CONSTRUCTION	C-5	900					
PHILA SUB. - HUNT COUNTRY		157					
==========							
WOODS PROPERTY (85.9 ACRES)	R-2					23,650	
SHERMAN PROPERTY (37.8 ACRES)	R-2					10,175	
WILLOW POND (28 SFD)**	R-2						7,700
INDIAN HILLS **	R-2						11,825
OLD ORCHARD/IVY/RAEWYCK**	R-2						7,975
N. CHESTER RD MISC (82 SFD)**	R-2						22,550
==========							
WILLISTOWN TOWNSHIP							
BRYN MAWR REHAB					40,000		
AL ON LINE		242,382	107,550		40,000	35,200	50,050

TOTAL ON LINE/COMMITTED/PROBABLE 425,132

AVG 1993 PLANT FLOW = 246,178
246,178/242,382 = 98.46%

* COMMITTED AND PAID FOR
** MOVED TO THE 2002> BECAUSE IT IS HOPED THAT THE ON-LOT MANAGEMENT ORDINANCE WILL DELAY OR NEGATE ANY NEED FOR PUBLIC SEWERS
FACTORS USED: SFD = 275 GPD/UNIT
APTS = 200 GPD/UNIT

TABLE 3.8
WEST GOSHEN ALTERNATIVE
WEST GOSHEN SEWAGE TREATMENT PLANT
AUGUST 30, 1994

AREA TO BE SERVED	ZONED	GPD ON LINE	GPD COMMITTED IN PROCESS	1993–1997 PROBABLE	1998–2002 PROBABLE	POTENTIAL 2002 >
ARDLEIGH ESTATES (8 SFD)	R–2	550	1,650			
BITTERSWEET (49 SFD)	R–2	13,475				
GRAND OAK (141 SFD)	R–2	38,775				
MARYDELL (159 SFD)	R–2	43,725				
MILLCREEK ESTATES(33 SFD)	R–2	9,075				
PIN OAKS (112 SFD)	R–2	30,800				
MISAK DR EXTENSION (8 SFD)	R–2	2,200				
MEADOWS (35 SFD)	R–2	9,625				
ROCKLAND VILLAGE (74 SFD)	R–2	20,350				
SUPPLEE VALLEY (98 SFD)	R–2	26,950				
HICKORY GLEN (9 SFD)	R–2	2,475				
WATERVIEW (66 SFD)	R–2	18,150				
RESERVOIR ROAD (2 SFD)	R–2	550	550			14,575
PRICE PROPERTY (129.6 ACRES)	R–2				13,750	21,725
STRASBURG ROAD	R–2	11,825				
ELLIS LANE	R–2	1,100	1,375			
STURBRIDGE	R–2	2,475				
BRANDOLINI/MORSTEIN RD. (9 SFD)	R–3	2,475				
HILLOCH MANOR (7 SFD)	R–2	1,925				
WHITE CHIMNEYS(CHESTER HOLLOW–71 SFD)	R–2	19,525				
WENTWORTH (12 SF)	R–2	3,300				
GOSHEN HEIGHTS (70 SFD)	R–2	19,250				
PARK AVENUE	R–3	9,625				
FIRE HOUSE (13 ACRES)				5,500	7,425	
FEDOR (175 APTS)	R–4			35,000		
TREE TOPS (200 APTS)	R–4	40,000				
HIGHSPIRE (78 TOWNHOUSES)	R–4	17,550				
DUTT'S MILL (33 UNITS & 15 FUTURE)	R–5	7,425	3,375			
GOSHEN VALLEY (656 APTS/TH)	R–5	147,600				
RIDGEWOOD APTS (60 UNITS)	R–5	13,500				
WALNUT HILL ROAD (4 SFD)	R–5	1,100				
AUDUBON (35 TOWNSHOUSE UNITS)	R–5	7,875				
SMITHFIELD APTS. (198 UNITS)	R–5	39,600				
MISCELLANEOUS (7.3 ACRES)	R–5			4,950		
W.C. PIKE (9)	C–1	3,150				
EEPLECHASE (61 TOWNHOUSES)	C–1	16,225				
E HILL APTS (166 UNITS)	C–4	33,200				
E HILL COMMERCIAL	C–4	8,000				
QUET CLUB APTS (71 UNITS)	C–4	14,200				
WATERVIEW APTS (203 UNITS)	C–4	40,600				
COMMERCIAL ((3)	C–4	7,000				
W. C. PIKE (12.9 ACRES)	C–4	6,875		7,500		
GOSHEN CORP. PARK*	BP/I–1	30,609	9,391			
GOSHEN OFFICE ASSOCIATES	BP/I–1	3,000				
HICKS ***(GOSHEN CORP PARK WEST)						
93.3 ACRES	I–1	4,913	22,192			
13.5 ACRES (53–3–1.2)COMMONS @ GOSHEN	I–1	4,200				
14.9 ACRES (53–3–1.2B)	I–1			4,544		
11.8 ACRES (53–3–1.7/MILKSTORE)*	BP	573	3,026			
HICKS – BALANCE (34.8 & 36.7 ACRES)	BP				21,807	
BRANDYWINE INDUSTRIAL PARK						
MARS*	BP/I–1	13,114	9,386			
CALECO*	BP/I–1	615				
(BRANDYWINE PLAZA) WILSON PROPERTY	BP/I–1		10,800			
STS PETER AND PAUL CHURCH	R–2				1,150	
GREEN ACRES (3 SFD)	R–2				825	
STRASBURG RD/ROUTE 352 (20 SFD)	R–2				5,500	
PUMPED FROM RIDLEY CREEK						
NEW KENT APTS (384 APTS)	R–5	76,800				
HERSHEY MILL ESTATES (142 SFD)	R–2	39,050				
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WYLLPEN (17 SFD)	R–2	550	4,125			
HUNTER'S RUN (6 SFD)	R–2	550	1,650			
WINDERMERE (60 APT.)	R–4	12,000				
CHARTER CHASE (98 SFD)	R–2					26,950
MILL VALLEY (25 SFD)	R–2					6,875
MILLSTREAM DRIVE (25 SFD)	R–2					6,875
GOSHEN DOWNS (12 SFD)	R–2					3,300
EAST WHITELAND TOWNSHIP						
WM HENRY APTS					59,000	37,000
IMMACULATA COLLEGE						135,000
TOTAL		937,274	67,520	57,494	109,457	252,300

93 AVERAGE DAILY FLOW — 815,191
(W.G. NUMBER)
% TOTAL ON–LINE VS ACTUAL GPD = — 87%

PROJECTED ON LINE/COMMITTED & PROBABLE — 1,424,045

FACTORS USED
SFD = 275 GPD
TOWNHOUSE = 225 GPD
APARTMENT = 200 GPD

THE COUNTY OF CHESTER

Commissioners:
Joseph J. Kenna, Chairman
Karen L. Martynick
Andrew E. Dinniman

CHESTER COUNTY HEALTH DEPARTMENT
Chester County Government Services Center
601 Westtown Road, Suite 295
West Chester, PA 19382-4543
(610) 344-6237
FAX (610) 344-6727

August 11, 1994

Louis F. Smith, Jr. Township Manager
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380-6199

RE: East Goshen Township Act 537 Plan Update

Dear Mr. Smith:

The Chester County Health Department has reviewed the document entitled "East Goshen Township Act 537 Plan Update" as prepared by SMC Environmental Services Group last revised June 1994. The plan proposes to utilize the West Goshen wastewater treatment plant to serve the majority of the sewage needs of East Goshen Township. This involves re-routing of some flows which presently flow into the East Goshen Ridley Creek wastewater plant. Additionally, the township has adopted an ordinance requiring routine maintenance of individual and community on-lot sewage disposal systems.

The document as presented is very confusing and unclear as text has been changed but corresponding figures and tables have not. It would be beneficial to update the tables and provide a clear graphic interpretation on the areas to be serviced by the respective wastewater plants.

It appears that this submission may be premature as the selected alternative does not seem to be implementable as West Goshen has not amended their 537 plan to accommodate the plant expansion necessary to implement the recommendations of this planning document. Additionally, there is not a commitment from West Goshen to accept the additional flows from the township.

Should West Goshen complete their planning and gain approval from DER to expand the plant, then this Department would support East Goshen's choice of the selected alternative. However, we still feel it should be necessary for the developers of the larger tracts of land to explore the possible use of spray irrigation when these areas are developed.

East Goshen Township should also take a proactive role in the management of the Willow Pond COLDS which is presently being operated by the homeowner's association. It is unclear in this report exactly what East Goshen is doing in regards to overseeing that this system is being properly operated. Additionally it appears the township misinterpreted the recommendations concerning this issue in our previous review. It is this Department's view that the township should become a partner in the operation of this community system. This does not necessarily mean that we feel it should be connected to the municipal sewerage system. In fact, with proper operation and maintenance this system may not need to be connect to the municipal system at all.

Should you have any questions concerning this review, please feel free to contact me at 344-6239 or the above address.

Sincerely,
Maria T. Goman

Maria T. Goman

Environmental Health Supervisor

cc: SMC Environmental Services Group
Chester County Planning Commission
PA Department of Environmental Resources
File (2)

THE COUNTY OF CHESTER

PLANNING COMMISSION
Government Services Center · Suite 270
601 Westtown Road
West Chester, PA 19382-4537

COMMISSIONERS
Joseph J. Kenna, Chairman
Karen L. Martynick
Andrew E. Dinniman

George W. Fasic, Executive Director

(610) 344-6285 · FAX: (610) 344-6515

August 19, 1994

Joseph M. McDonough, Chairman
East Goshen Township
Board of Supervisors
1580 Paoli Pike
West Chester, PA 19380

Re: Revisions to the Act 537 Sewage Facilities Plan Update

Dear Mr. McDonough:

The Chester County Planning Commission has completed its review of the above referenced revisions to the revised Sewage Facilities Plan of the Township as required by Act 537, the Pennsylvania Sewage Facilities Act. We offer the following comments for your consideration.

The County Planning Commission believes that the Township Board of Supervisors and their engineering consultant have adequately addressed, with a few minor exceptions, our comments of May 1993. Most notable are the Individual On-lot and Community On-lot System Management Ordinances adopted by the Township Board of Supervisors this past June. We commend you for committing to this program.

We believe that, while a considerable amount of time and effort have been devoted to this revised Plan, the Township will find itself in a difficult position if the "West Goshen Alternative" can not be implemented. The submittal of this Plan is premature in that is difficult see how PaDER could approve the Plan of East Goshen without first reviewing the Plan of West Goshen. Since your Plan is heavily dependent upon the plans and actions of West Goshen Township, it is better to wait until you are able to execute an agreement with West Goshen for the additional treatment plant capacity before submitting this Plan to PaDER. Alternately, East Goshen could wait to submit their plan until West Goshen has completed their Plan Update, and then submit both plans to PaDER together as a regional plan.

The revisions to the Plan Update as prepared are somewhat confusing. We feel this may be due to the fact that while the text of the Plan was modified, certain key graphic elements were not. It would very helpful to update the tables (Tables 3.6 and 3.7) which indicate the allocation of sewage flows from various areas in the Township to the two treatment facilities under the "West Goshen Alternative". Additionally, a map similar to Exhibit II which indicates the areas of the Township to be served by the facilities in the designated time frames should be included. This map could be keyed or coded to the areas listed in Tables 3.6 and 3.7, and would greatly clarify the intent of the Plan.

A third issue that the County Planning Commission feels should be clarified in the Plan is the overall priority for types of sewerage systems preferred by the Township to be used in new land developments. The third priority listed is "Public sewer connections where **feasible**". Some type of public sewer system is technically feasible in almost all areas. There may be cost, environmental, or other reasons that would make a public system **undesirable**; this distinction should be made in the Plan. We suggest this priority statement could be amended to state: "Public sewer connections in service areas described in this official municipal document".

Related to this issue is the selection of sewerage facilities for the two large undeveloped properties in the northeast section of the Township, the Woods and the Sherman properties. The Plan states that at the time of any development proposals for these properties the developers will first be **encouraged** to utilize community-type spray irrigation systems as the preferred alternative. We believe that the one way to "encourage" this is for the Township is to state, as part of the official Plan, the type of system desired and leave it to a developer to show that this type of system is not technically feasible on the property. Another method would be to amend the municipal zoning ordinance so that a density bonus could be granted the developer if this type of system is technically feasible and incorporated into the site design.

These comments are offered by staff prior to formal action by the Planning Commission. If the Commission should have additional comments on the revised Plan Update, their comments will be forwarded to you.

If you have any questions regarding this review, please call me at 344-6285.

Very truly yours,

George W. Fasic
Secretary

CC: Glenn Stinson, PaDER
Maria Goman, CC Health Department
Suzanne Fish, Township Director of Utility Administration
Frederick J. Turner, SMC Environmental Services Group

EAST GOSHEN TOWNSHIP
ACT 537 PLAN UPDATE

PLAN SUMMARY

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2. PLAN SUMMARY

A. Proposed Service Area and Major Problems Evaluated in this Plan

1. Chester Creek Watershed. Within the Chester Creek Watershed, all projects and properties depicted in Table 3.6, as contained on page 3-17, will be connected to the West Goshen Sewage Treatment Plant (STP). The one major subdivision of concern, the Charter Chase subdivision, was reevaluated in the field during 1993. As a result of the additional field survey, ten residential properties reflected current malfunctions out of a total of 98 dwelling units. It is the Township's conclusion that this subdivision can be adequately managed by the newly-adopted Sewage Management Program Ordinance for East Goshen Township without any connection to the public sewer system prior to the year 2002.

Other reported, scattered malfunctions within the Chester Creek Watershed will be monitored under the newly-adopted Sewage Management Program Ordinance with mandatory three-year septic tank pumping cycles. In the event that the Charter Chase subdivision shows a need for public sewer connections after 2002, these units would be connected to the West Goshen STP.

The New Kent Apartments, which is partially located within the Chester Creek Watershed, but which is currently connected to the Ridley Creek STP, will be shifted to the West Goshen STP during the period 1995-1996.

In addition, East Goshen Township is now carefully evaluating the "West Goshen Alternative" which involves the potential availability of 780,000 gpd in additional treatment capacity at the West Goshen STP. As noted in the following section, the "West Goshen Alternative" has been selected for the Ridley Creek Watershed which in turn may cause additional connections to the West Goshen STP.

2. Ridley Creek Watershed. Within the Ridley Creek Watershed, all existing onlot systems and any future subdivisions developed with onlot systems will be managed under the Township's new Sewage Management Ordinance. The properties identified in Table 3-7 on page 3-20 of this Updated Act 537

Plan will continue to be considered for direct connection to the Ridley Creek STP.

The December 1992 draft of the East Goshen Act 537 Plan Update called for an expansion of the Ridley Creek STP from 0.4 MGD to 0.7 MGD. Based upon potential difficulties in such plant expansion with direct stream discharge to Ridley Creek, other alternatives have been evaluated including the possibility of a municipal spray irrigation system on nearby properties. Because of cost factors, potential wetland encroachment, and for other valid reasons, the municipal spray irrigation alternative is no longer considered viable since it is not cost effective and available land would require condemnation of a substantial estate.

A new alternative identified in this study as the "West Goshen Alternative" will involve a considerable number of changes to the Township's December 1992 draft Act 537 Plan Update. Specifically, if the Ridley Creek STP cannot be expanded as a stream discharge facility, then the following changes would occur:

- New Kent Apartments - transfer 84,420 gpd to the West Goshen STP

- The Immaculata College flow at 137,000 gpd, the William Henry Apartments at 96,000 gpd, and possibly the Bryn Mawr Rehabilitation Hospital at 40,000 gpd would all be transferred to the West Goshen STP <u>if</u> the West Goshen Municipal Authority accepts these facilities and if East Goshen agrees to construct the "pass-through" conveyance facilities. The balance of the properties identified as future problem areas as reflected in Table 3-7 would be handled at the Ridley Creek STP without creating an overload of this facility. It should be noted that Christ Memorial Lutheran Church, a previous requestor of sewage service, has indicated by way of a recent letter that such service is no longer required.

- In addition, regarding the SmithKline Beecham property, the future reservation for 55,000 gpd would be canceled and Beecham would be required to provide on-site sewage disposal for any future development extending

beyond the present 40,000 gpd which has been committed and paid by Beecham.

In summary, the current commitments to the Ridley Creek STP would be continued without the exclusions and transfers noted above. If the "West Goshen Alternative" is not capable of being executed for numerous reasons, then East Goshen Township must commence the socio-economic study immediately for the expansion of the Ridley Creek STP.

B. Selected Alternatives and Institutional Arrangements Required for the Chosen Alternatives

The wastewater alternatives chosen to solve the various problems within the Chester Creek Watershed and the Ridley Creek Watershed are identified below. The preferred priority of type of system to be used in both watersheds throughout East Goshen Township is as follows:

1. Individual onlot systems
2. Individual elevated sand mound systems
3. Public sewer connections where feasible
4. Community-type spray irrigation systems
5. Community-type in-ground disposal systems
6. Individual stream discharge systems
7. Retaining tanks

ALTERNATIVES CHOSEN FOR THE CHESTER CREEK WATERSHED

Charter Chase Subdivision

After further field work was conducted in 1993, it was determined that seven existing malfunctions and three graywater discharge violations out of 98 existing residential units did not warrant further pursuit at this time for public sewers. Charter Chase will remain with individual onlot systems throughout the 5-year and 10-year planning cycles. This subdivision will be carefully monitored under the newly-adopted Sewage Management Ordinance to assure that an increase in violations does not occur. Individual lot owners will be directed to correct malfunctioning systems. Future public sewer availability will be reserved at the West Goshen STP should it become necessary to connect this subdivision to public sewers after 2002.

For all remaining existing individual onlot systems, the Township's 1994 Sewage Management Ordinance will be utilized to constantly monitor such systems.

The remaining properties listed on Table 3-6 (reference page 3-16 of General Plan text) will be connected to the West Goshen STP generally in accordance with the time scheduled listed within said table.

New Kent Apartments

The 84,420 gpd now on-line at the Ridley Creek STP will be switched to the West Goshen STP when necessary to make additional capacity available at the Ridley Creek STP. This project sits on the ridge line and is partially in the Chester Creek Watershed and partially within the Ridley Creek Watershed.

Ridley Creek Watershed

The primary chosen alternative for the Ridley Creek Watershed is to execute the West Goshen Alternative for required sewage commitments and service areas which exceed the 0.4 MGD permit capacity at the Ridley Creek STP. The West Goshen Alternative will involve the construction of gravity conveyance systems to transport wastewater from East Whiteland Township to Greenhill Road and a new pumping station which will discharge to West Goshen and be treated at the West Goshen STP.

Facilities such as Immaculata College (137,000 gpd) and the William Henry Apartments (96,000 gpd) would be handled by such a conveyance system. The facilities would be located partially in East Whiteland Township and fall within the Act 537 responsibility of that Township to work jointly with East Goshen should these conveyance facilities be required. West Goshen Township will require a binding sewer services agreement with East Whiteland prior to the design of such facilities.

On June 8, 1994, the Christ Memorial Lutheran Church and School located on Line Road indicated in a letter to the East Goshen Township Manager that they have solved their problem and they are not interested in public sewer connections at this time. Recent letters directed to the Bryn Mawr Rehabilitation Hospital regarding their continued interest in connecting 40,000 gpd to the East Goshen system have not been answered. If the Bryn Mawr Rehabilitation Hospital decides later to connect with the East Goshen system, either a method of conveying to West Goshen will be considered or a reevaluation of connecting at the Ridley Creek plant will be made.

SmithKline Beecham

Beecham has purchased and paid for 40,000 gpd at the Ridley Creek plant which will be reserved for that property. The 55,000 gpd listed in Table 3.7 of the General Plan (refer to page 3-20) will now be removed from further consideration. Beecham has demonstrated the ability to handle additional wastewater discharge within its property limits, possibly utilizing spray irrigation. Beecham has indicated no development is contemplated until well after the year 2000.

The Woods Property/Sherman Property

When the Woods property (86 acres) and the Sherman property (38 acres) are developed, the developers of these properties will be directed to explore community-type systems utilizing spray irrigation which might be possible because of the sizable acreage related to each site. If community-type systems cannot be approved for these properties, the need for the Line Road interceptor will be instituted by the Township which would connect the Woods/Sherman properties and the Willow Pond community system to the Ridley Creek STP. The reservations for wastewater treatment will continue to be shown at the Ridley Creek STP in accordance with Table 3.7 to assure that these sites are not denied access to public sewers.

All other property subdivisions and facilities listed in Table 3.7 will be connected to the Ridley Creek STP.

Reduction in EDU Ratings for both Chester Creek and Ridley Creek Watersheds

East Goshen Township will immediately commence to use the following new EDU wastewater flow generation standards for residential units which are much closer to "actual" rather than continuing the use of "theoretical" EDU flow rates which distort estimated flows at both the West Goshen STP and the Ridley Creek STP:

Single-family detached dwellings -	275 gpd
Townhouses or townhomes -	225 gpd
Apartments -	200 gpd

C. Cost of Implementing the Proposed Alternatives

Table 5.1 (refer to page 5-12 of General Plan text) lists and discusses all costs related to providing public sewer facilities discussed under this report.

When and if applicable, the cost of connecting the Charter Chase community to the public sewers via a gravity collection system and a force main is estimated at $925,000.

Appropriate construction costs only are also shown for future connections for the Mill Valley subdivision and the Millstream subdivision. The construction cost for the Line Road interceptor is estimated at $395,000 to eventually connect Willow Pond/Woods property/Sherman property to the Ridley Creek STP.

The Township conducted an alternative analysis for spray irrigation related to the treatment costs for the additional 0.3 MGD at the Ridley Creek STP in lieu of stream discharge for the additional effluent. The resulting estimated cost of $5,125,000 (in excess of $17/per gallon) was deemed far too expensive to be considered further. In addition, the use of the Grace Estate would involve partial and probable total condemnation driving the cost to even higher levels per gallon of wastewater treated.

Estimated Costs for the West Goshen Alternative

East Goshen Township has decided not to spend substantial dollars in designing a collection system for potential customers located in East Whiteland Township. Specifically, to service the Immaculata College facilities and the William Henry Apartments would require a gravity sewer extending from King Road to Hersheys Mill Road at a nominal estimated cost of $614,000. In addition, a pumping station located at Greenhill Road and Hersheys Mill Road with a force main extending approximately 10,000 linear feet into West Goshen would cost an additional $804,000 to $1,074,000. In summary, a conveyance system to service two external facilities having daily wastewater flows of 233,000 gpd would cost between $1,418,000 to $1,688,000. This cost would represent the conveyance cost only. In addition, the treatment cost would require negotiation with West Goshen Township, and it is estimated that such cost will range between $5 to $6/gallon of wastewater treated. These tentative estimated costs may prove to be too costly for these external facilities.

Any user fees related to the West Goshen Alternative would be borne solely by the users, i.e., Immaculata College and the William Henry Apartments. The only East Goshen subdivision which could possibly be served by a gravity sewer for these external users would be the Millstream Drive residential area containing

25 EDUs. It would be more cost effective to connect the Millstream Drive units to nearby existing gravity sewers.

There is no estimated cost for switching the New Kent Apartments from the Ridley Creek STP to the West Goshen STP since these connections already exist.

D. Municipal Commitments Necessary for Plan Implementation

The first major commitment has been made by the adoption of the 1994 Municipal Sewage Management Ordinance which was adopted on June 7, 1994. This Ordinance will adequately control existing and future individual onlot and community-type systems within East Goshen Township.

The next major municipal commitment required is to enter negotiations with West Goshen Township regarding the "West Goshen Alternative." To date, East Goshen Township has officially responded to West Goshen Township by requesting the entirety of 780,000 gpd in possible available capacity. As of June 1994, no official response had been received from West Goshen Township. New agreements must be arranged including all cost factors related to expansion of the West Goshen STP. East Goshen Township is prepared to commence these negotiations during 1994.

E. Schedule for Implementation

1. Adopt Township-Wide Sewage Management Ordinance - Completed June 7, 1994 and now in effect.

2. Enter negotiations with West Goshen Township to implement the "West Goshen Alternative" - estimated date September 1994.

3. Switch New Kent Apartments from Ridley Creek STP to West Goshen STP - estimated target date Fall 1995.

4. Conduct additional walk-through inspections on a property-by-property basis within the Charter Chase subdivision during the spring of 1996 and 1998.

F. Future Initiation of Feasibility Evaluation

Evaluate the need for the Line Road Interceptor and authorize further studies during 1997-1998, or at the time of any development proposal for the Woods property and/or Sherman property. (The developers of the Woods property and/or Sherman property will first be encouraged to utilize community-type spray irrigation as a preferred alternative to connecting with the Ridley Creek STP.)

Reevaluate the Possibility of Connecting the Bryn Mawr Rehabilitation Hospital to the Ridley Creek STP in 1998 should this Willistown Township facility express a need for such connection, and if capacity is available.

3. RESOLUTION OF ADOPTION BY EAST GOSHEN TOWNSHIP

This resolution is now being prepared for Board of Supervisors' approval and incorporation on the following page.

4. TOWNSHIP EVALUATION OF COMMENTS BY COUNTY AGENCIES AND ADJACENT MUNICIPALITIES

East Goshen Township has responded to the best of its ability to the Municipal and County Agency review letters which are attached in Section 6 below. Specifically, Willistown Township requested that further consideration be given to spray irrigation and to elimination of any additional discharge to Ridley Creek. The Township has accomplished this request by all of the foregoing changes to the December 1992 Act 537 Plan Update.

East Whiteland Township requested consideration for serving Immaculata College, the William Henry Apartments, and other nearby facilities. The West Goshen Alternative is the response to this request.

With respect to the Chester County Health Department review letter dated April 15, 1993, the Township has responded as follows:

a) The County suggested an additional walk-through evaluation of the Charter Chase community. This was accomplished and the actual results depict little if any need for providing public sewers at this time.

Charter Chase will be constantly monitored under the 1994 Sewage Management Ordinance. In addition, the details requested by the Health Department regarding the Township-wide onlot management program are clearly expressed in the adopted Ordinance No. 105, enclosed herein.

b) It is the Township's position that they will not take over the Willow Pond community system until the newly-constructed system exhibits that it cannot be successfully operated as a community in-ground system. The Township engineer and Municipal Authority engineer are constantly advised of the status of this privately-operated system and this is sufficient for the time being. It is the Township's position that the construction cost of the Line Road Interceptor cannot be justified solely on the basis of taking over the Willow Pond community system. This community, located partly in Willistown Township, will continue to be monitored annually. The new community Sewage Management Ordinance also addresses COLDS responsibilities on the part of the Township. This Ordinance and other legal documentation will allow a takeover at any time deemed necessary by East Goshen Township.

c) With respect to the social and economic justification for the increased discharge at the Ridley Creek STP, East Goshen Township believes that this is not necessary if the West Goshen Alternative is pursued and approved.

With respect to the Chester County Planning Commission comments as expressed in a letter dated May 10, 1993, the following response comments are considered appropriate:

a) As noted above, the Township will not conduct the social and economic justification study for the Ridley Creek STP expansion at this time. This will be done only if the West Goshen Alternative is not capable of implementation and the Township is forced to return to its former primary alternative of expanding the Ridley Creek STP as a stream discharge facility. This is not likely.

b) The goals and action plans of East Goshen Township are clearly expressed in this Plan Summary and the various amendments to the appropriate sections of the General Plan.

c) This Plan Summary states the Township's position with respect to the use of various types of systems and the preferred ranking order for use of those systems.

d) The individual onlot System Management Ordinance and the COLDS Management Ordinance has been adopted by way of Ordinance No. 105 dated June 7, 1994.

e) The table of contents has been expanded to add a list of figures, exhibits, and tables. In addition, Exhibit 2 in the General Plan was not revised since this was an historical document developed from a prior Act 537 Plan Update. The Ashbridge Firethorne (170 EDUs) is appropriately as shown in Table 3.6 as being on-line and "pumped" from Ridley Creek to the West Goshen STP (refer to page 3-17).

f) The Township appreciates the advice of the County Planning Commission regarding the proportion of wastewater being applied to the ground water system. It must be recognized that the entirety of the Hersheys Mill Village and the Lockwood Chase subdivision currently utilize spray irrigation. In addition, the Willow Pond community utilizes a community in-ground system which is currently functioning. The Township's adopted preference for future subdivisions relies on a number one priority for individual onlot systems, where feasible. Many new subdivisions in future years will be built utilizing such systems. In addition, the Township has expressed a preference for community-type spray irrigation systems for the Woods property and the Sherman property as a first alternative followed by a second preferred alternative (a connection to the public sewers).

g) East Goshen Township is aware of the inter-basin transfer of wastewater. Since a predominant part of the Township is serviced by the Philadelphia Suburban Water Company and the West Chester Area Municipal Authority, a concern over the inter-basin transfers of wastewater may not be difficult to achieve. There may be some future concern on the part of DRBC with respect to transferring the Immaculata College wastewater flow (137,000 gpd) from Valley Creek to Chester Creek. This concern will have to be addressed by East Whiteland Township as the responsible party.

h) The external facilities in East Whiteland and Willistown Townships have been thoroughly evaluated. The Township has communicated (in writing) with Immaculata College, the William Henry Apartment owners or operators, the Christ Memorial Lutheran Church, and

the Bryn Mawr Rehabilitation Hospital. Only the Christ Memorial Lutheran Church has responded indicating no further needs.

i) The Township has thoroughly evaluated the possibility of designing a municipal spray irrigation alternative for the 0.3 MGD in additional capacity originally determined as being necessary for the Ridley Creek STP. This alternative would have involved in excess of $5,000,000 in cost and the possible condemnation of a major parcel within the Township. The extent of wetland intrusions and the high estimated condemnation cost for part or all of this parcel led to a determination that municipal spray irrigation is not feasible.

In addition, an analysis was made to utilize a part of the Beecham property. The extraordinary conveyance cost and purchase cost for land dictated that this alternative could not be made cost effective.

Further, the Township has prioritized the Woods and Sherman properties as an expressed first alternative for community-type spray irrigation before any possible connection to the public sewer system could be made.

j) The Township has fully and thoroughly explored the Hersheys Mill spray irrigation system including its operating, maintenance, and capital budgets and its management system. While it might be desirable ten years hence to utilize any remaining capacity at this facility, it is the Township's position that this is a well-managed, well-operated facility which needs no Township interference at this point. In summary, the Township believes it has fully responded to the County Planning Commission comment.

5. PROOF OF PUBLIC NOTICE

Attached is a copy of the public notice originally advertised in the Chester County Daily Local news for public comment regarding this plan.

6. WRITTEN COMMENTS RECEIVED FROM COUNTY REVIEW AGENCIES AND ADJACENT MUNICIPALITIES

Attached hereto are each of the comments received from West Goshen Township, Willistown Township, Westtown Township, East Whiteland Township, the Chester County Health Department, and the Chester County Planning Commission. These letters are all attached in this section.

7. PROJECT IMPLEMENTATION SCHEDULE

The Township's project implementation schedule is appropriately covered in Sections 2.E and 2.F above.

8. PROJECT IMPLEMENTATION ORDINANCES

Attached following this page is the "Sewage Management Program Ordinance for East Goshen Township" adopted June 7, 1994.

9. REVIEW AGENCY RESPONSES

Attached hereto are the updated Chester County Health Department and the Chester County Planning Commission response letters regarding revisions and amendments to this Updated Act 537 Plan. (To be added when received.)

EAST GOSHEN TOWNSHIP
ACT 537 - SEWAGE FACILITIES PLAN UPDATE
DEC. 1992
REVISED JUNE 1994

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1.0 INTRODUCTION AND PHYSICAL DESCRIPTION OF PLANNING AREA AND DEMOGRAPHICS

1.1 Introduction and Political and Planning Area Boundaries

East Goshen Township has a long history of sewage facilities planning. At the time of publication of the Chester County Master Sewer Plan dated September 1970, as prepared by Roy F. Weston Environmental Scientists and Engineers, East Goshen Township was treated almost solely as a contributor to the West Goshen Regional Sewage Treatment Plant.

The County Sewer Master Plan reported in 1968 that 500 persons were being served by a private treatment facility which was in the process of being phased out with anticipated connections to the West Goshen STP. The County study further projected that by 1978, East Goshen Township would have 6,500 persons serviced by the West Goshen facility with an estimated flow of 650,000 gpd. The study further projected that by 1988 12,600 persons would be served requiring 1.26 MGD at the West Goshen facility. Ultimately, East Goshen Township received only 1.0 MGD in its agreement with West Goshen Township. The County study proposed to serve most areas within the Chester Creek Watershed by gravity connections and pumping to the West Goshen system. The study also showed a proposed 16-inch interceptor extending along Ridley Creek to a major pumping station located on Ridley Creek just below Strasburg Road and east of Dutton Mill Road with a force main extending back to Reservoir Road.

Appropriate references to East Goshen's sewage needs are contained on page 53 of the County study, and graphics depicting the service area are listed under the "West Chester Area Existing and Proposed Sewage Systems."

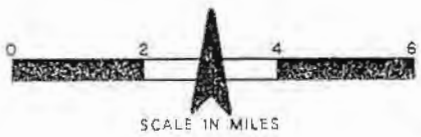
COWAMP/208 WATER QUALITY MANAGEMENT PLAN

The COWAMP/208 Regional Water Quality Management Plan was published by the Delaware Valley Regional Planning Commission on April 30, 1978. This regional study treated both East Goshen and West Goshen Townships as a part of the Delaware County Subbasin. Figure J18, as extracted from the COWAMP study shows four major areas of East Goshen Township with reported major areas of septic tank malfunctions and one area of surface water quality problems adjacent to Ridley Creek. This figure is reproduced on the following page for historical purposes.

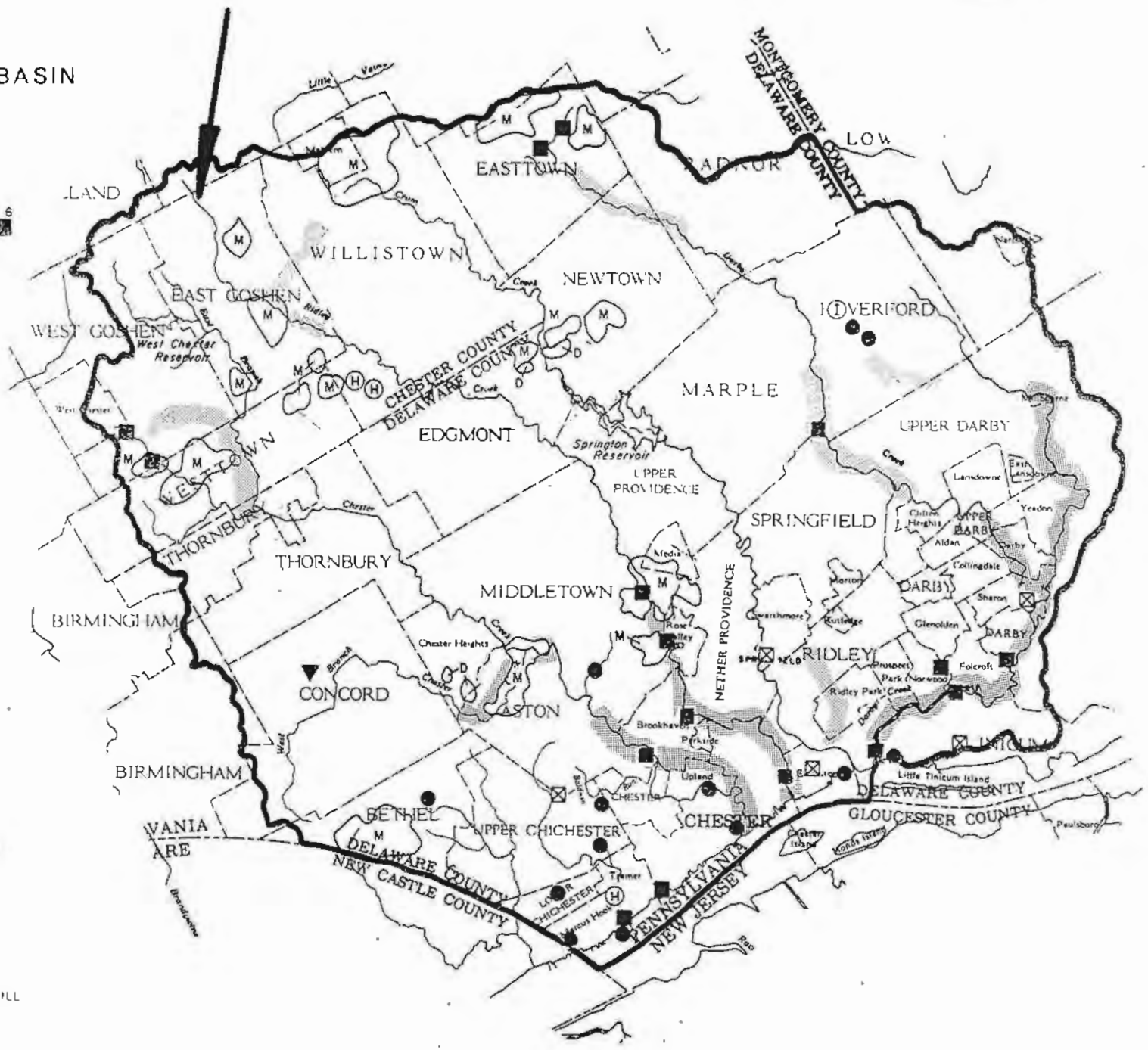
Figure J-18

DELAWARE COUNTY SUB-BASIN

SEPTEMBER, 1977







The only other relevant reference to East Goshen Township appears in Appendix Table D-2 which lists East Goshen Township as being a contributor to the West Goshen STP. There is no breakdown for the East Goshen contribution to the West Goshen system.

One other reference which appears on Appendix Table C-3 of the COWAMP study includes East Goshen Township as being a part of the 31,743 persons to be served by the West Goshen STP with a rated sewage flow of 4.045 MGD. In summary, the COWAMP/208 study did not specifically call out the water quality management needs for East Goshen Township.

1978 WASTEWATER FACILITY PLANNING STUDY

The first major effort at local wastewater planning was completed in 1978. The purpose of this study was to develop and initiate an environmental monitoring program within the Ridley Creek Watershed in anticipation of the design and construction of a Ridley Creek wastewater facility.

1981 REVISED SEWAGE FACILITIES PLAN FOR EAST GOSHEN TOWNSHIP

In March 1981, the Township published first a comprehensive major update of the Act 537 Plan which was prepared by Walter B. Satterthwaite Associates, Inc. The 1981 study followed closely on the heels of a study identified as the Ridley Creek Sewerage Study prepared by Yerkes Associates, Inc., in 1980. The Satterthwaite plan, which is cited frequently in this 1992 update, concentrated on a prime objective in developing and evaluating alternative wastewater treatment approaches for the Ridley Creek Watershed. The 1981 study concentrated on sewage service for the following areas:

- Ashbridge Firethorne Area
- Vista Farms
- Highland-Taylor Area
- Warrior-Raewyck Area
- Boot Road and Route 352
- Township Building and Elementary School
- New Kent Apartments
- Colonial and Cornwallis Drive Areas
- Meadowbrook Drive Area

The 1981 Act 537 Plan Update also contained extensive discussion of low pressure grinder pump installations. The primary areas resolved as a result of the 1981 update study included resolutions for the Ashbridge Firethorne area, the Vista Farms area, and the Elementary School property.

1985 ACT 537 REVISION

Another revision to the Township's Act 537 Plan was concluded in November 1985 as prepared by Yerkes Associates. This particular update noted that the Ridley Creek Treatment Plant was about to be placed on line in August 1985 and addressed the following subdivisions or facilities in the Township which were to be served by the new Ridley Creek system:

- Bow Tree Farms Subdivision - 460 single family units
- Smith-Kline-Beckman (now Beecham) - 40,000 gpd
- Vista Farms
- Ashbridge Firethorne Area
- Hunt Country Subdivision
- Albrecht Land (under study)
- Elementary School Site

The 1985 study also contained references to the following community on-site systems:

- Hersheys Mill Village
- Lockwood Chase Subdivision
- Fairway Village Subdivision
- The Willow Ponds Subdivision

The 1985 Act 537 Plan Update also discussed several miscellaneous sewage systems including the New Kent Apartments (90,000 gpd) and the Hersheys Mill Estates development comprising 143 units under construction. At the time of this report (November 1985), the Hersheys Mill Estates area was in the process of being connected to a new pump station and force main connected to the West Goshen system.

Attached following this page is an exhibit prepared by Yerkes Associates in July 1985 which summarized sewage facilities planning considerations through that data. This exhibit is also discussed in several sections of this Plan.

POLITICAL AND PLANNING AREA BOUNDARIES FOR THE 1992 ACT 537 PLAN UPDATE

Following this page is Exhibit 1 (which has been updated through February 1992) reflecting the political and planning area boundaries for areas discussed in this 1992 update of the Act 537 Plan. Sections 3.3 through 3.5 of this report discuss certain areas which are external to East Goshen Township and are discussed for possible inclusion for sewage treatment by East Goshen Township at the Ridley Creek Treatment Plant. These additional facilities are located on the periphery of the East Goshen Municipal boundaries. This plan update discusses expansion of the Ridley Creek Treatment Plant and other

CHESTER CREEK BASIN — RIDLEY CREEK BASIN

WEST WHITELAND TOWNSHIP

EAST WHITELAND TOWNSHIP

LOCKWOOD CHASE
(Spray Irrigation)

WILLOW PONDS
(Proposed
Community On-site)

FAIRWAY VILLAGE
(Community On-Site)

ALBRECHT PROPERTY

HERSHEYS MILL ESTATES
(Pumped to Chester Creek Basin)

HERSHEYS MILL VILLAGE
(Spray Irrigation)

NEW KENT APARTMENTS

VISTA FARMS

CHESTER CREEK BASIN
AREA PRESENTLY SEWERED,
TREATMENT BY WEST GOSHEN TWP.

SMITH KLINE BECKMAN, INC.

SCHOOL

HUNT COUNTRY

BOW TREE FARMS

RIDLEY CREEK SEWAGE
TREATMENT PLANT
400,000 G.P.D.

ASHBRIDGE - FIRETHORN AREA

WEST GOSHEN TOWNSHIP

WILLISTOWN TOWNSHIP

WESTTOWN TOWNSHIP

CHESTER CREEK BASIN — RIDLEY CREEK BASIN

LEGEND

- SPRAY IRRIGATION TREATMENT AREAS
- RIDLEY CREEK SEWAGE TREATMENT PLANT SERVICE AREA
- CHESTER CREEK BASIN SERVICE AREA

Note: Other non-designated areas in Ridley Creek Basin to be served by community on-site or individual on-site sewage systems.

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PA.

REVISED ACT 537 PLAN
EXHIBIT II

YERKES ASSOCIATES, INC.
101 CHARLES DRIVE
BRYN MAWR • PA.
CONSULTING ENGINEERS
SITE PLANNERS

JULY, 1985
scale: 1"=2400'

north

UPDATED ACT 537 WASTEWATER
FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP



EAST GOSHEN TOWNSHIP

CHESTER COUNTY **PENNSYLVANIA**

EXISTING DEVELOPMENT - 1992/PLANNING AREA BOUNDARIES

EXHIBIT 1

alternatives to accommodate new Township growth and existing problem areas located on the periphery of the Township boundaries.

For example, consideration is being given for the possible inclusion of sewage flow from the Bryn Mawr Rehabilitation Hospital located in Willistown Township. Other external facilities located in East Whiteland Township, which are being considered under this plan, include the William Henry Apartments and portions of the Immaculata College Complex.

1.2 Physical Characteristics of Planning Area

East Goshen Township, in late 1992, is approaching the point wherein reasonably accurate build-out forecasts can be made. A new updated Comprehensive Plan for the Township was adopted in October 1992 and reflects in Appendix Table A-1 that 67 percent of the land area within the Township is developed, another 12 percent is committed for development, and only 21 percent of the remaining area of the Township (1,321 acres) remains for future development. More than half of this remaining undeveloped 1,321 acres is expected to be developed during the time frame of this Act 537 Plan Update (1993 to 2002).

Two of the exhibits contained in the preceding section clearly identify the physical characteristics of the planning area comprising all of East Goshen Township. First, the 1985 exhibit prepared by Yerkes Associates clearly shows how the Township is divided into the Chester Creek Watershed and the Ridley Creek Watershed including the respective streams and natural conveyance channels. The 1992 updated development plan for the Township also contained in Section 1.1 shows the extent of development through early 1992. In addition, the Natural Areas and Constraints to Development Exhibit published as page 26 of the new 1992 Comprehensive Plan clearly depicts all remaining areas of the Township which are subject to major development constraints including floodplain areas, areas containing alluvial soils, the areas of the Township which are subject to steep slopes, and the major woodlands.

There are two water bodies located within the Township, including the Township owned Reservoir Road recreation facility comprising approximately seven acres. This facility is located south of Strasburg Road and north of West Chester Pike and is not impacted in any way by this Act 537 Plan Update. The other former water body (now drained) is located on the Grace Estate property and is situated north of Strasburg Road and west of Line Road. There are other smaller water bodies within the Township including farm ponds and small privately-owned ponds similar to the facility owned by the Charter Chase community located west of Waterford Road and to the west of Wexford Circle.

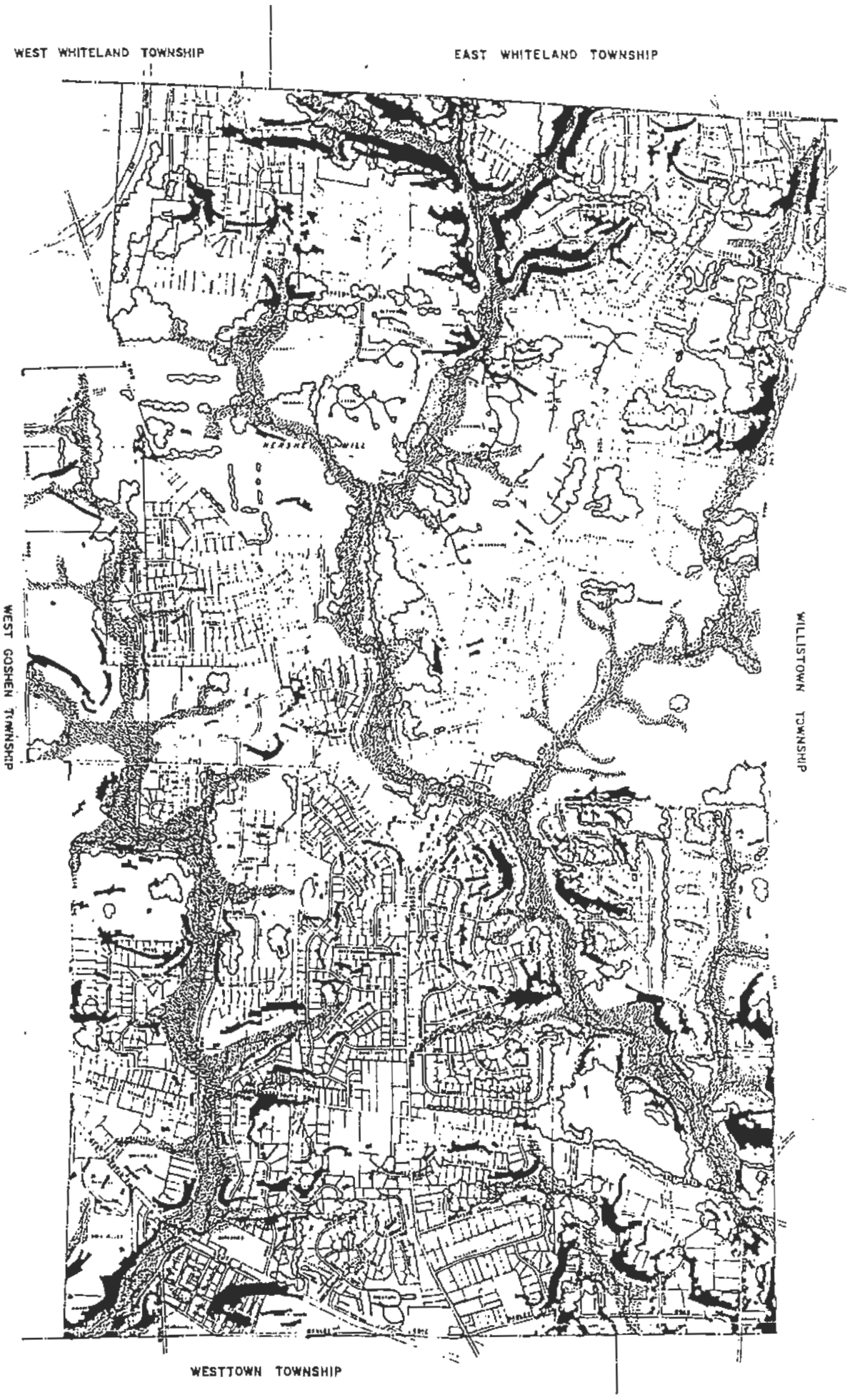
NATURAL AREAS & CONSTRAINTS TO DEVELOPMENT

FLOOD PLAIN AREAS

ALLUVIAL SOILS

STEEP SLOPES (15% AND OVER)

WOODLANDS



EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

COMPREHENSIVE PLAN

0 800 1600 2400 4000
SCALE IN FEET

NORTH

Thomas Comitta Associates Inc
Planning & Design Consultants

EXHIBIT 1A

None of the farm pond and privately owned water facilities will be impacted by this Act 537 Plan Update.

These physical characteristics are all acknowledged in the new 1992 Comprehensive Plan which serves as the basis for regulatory controls adopted in the Township Zoning Ordinance and the Township Subdivision and Land Development Ordinance. It is estimated that 35 percent of the remaining undeveloped land in the Township (1,321 acres) will be subject to such natural constraints as floodplains, wetlands, areas containing alluvial soils or soils with high seasonal ground water, and areas of steep slopes. Thus, it is estimated that of the remaining undeveloped ground within the Township only about 860 acres will be subject to any form of new development as controlled by present zoning.

1.3 Description of Geology and Soils Within the Planning Area

The March 1, 1981 Act 537 Plan Revision contained an excellent description of the Township geology and the Township soils characteristics. This information prepared by Satterthwaite Associates is still relevant and is incorporated herein. In addition, Exhibit 2 depicting the detailed soils classification for the entire Township has been prepared and incorporated on the following page. The following descriptions of the existing geology and existing soils are credited to Walter B. Satterthwaite Associates.

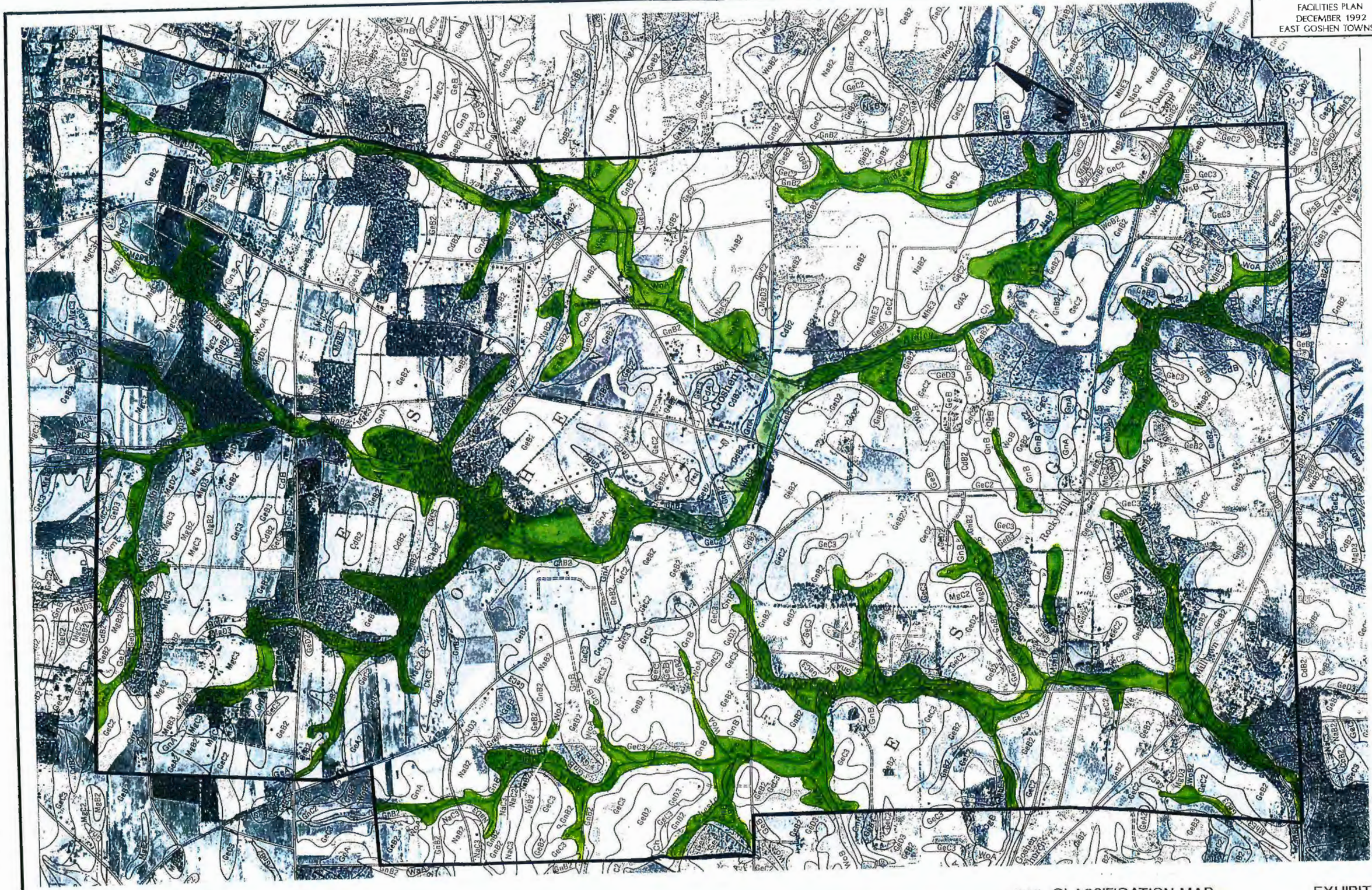
TOWNSHIP GEOLOGY

East Goshen Township is underlain by a series of igneous and metamorphic rocks which are pre-existing rocks (sedimentary and igneous) which have been altered by exposure to intense heat and pressure. Igneous rocks are formed under high temperature and pressure in a molten or partially molten state. All of these rocks have been deeply weathered and dissected by streams to form a generally rolling topography.

There are five different rock formations in the Township: Gabbro, Gabbroic Gneiss, Serpentine, Peters Creek Schist, and the Wissahickon Schist. There is also a small area consisting of Matadiabase/Pegmatite dike within the Township.

Most of the southern portion of the Township is underlain by gabbroic gneiss and gabbro. Gabbro is a medium grained igneous rock with a high percentage of dark minerals giving the stone an overall gray to black color. Gabbroic gneiss is distinctly marked by alternating light and dark bands. This formation covers the entire width of the Township and extends northward to a point above Cornwallis Drive where a discontinuous band of

UPDATED ACT 537 WASTEWATER
FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP



HYDRIC SOILS

SOIL CLASSIFICATION MAP

EXHIBIT 2

Serpentine rock crosses the length of the Township in an east-west direction.

Serpentine is a fibrous to massive magnesium rich igneous rock. This rock is easily identified by its dark to light green color. This formation has been intruded along a fault trending in the same direction across the Township, and occurs as ridges which form minor topographic highs. Associated with the Serpentine formation are two dikes or intrusive layers of rock. One dike is pegmatite, the other a metadiabase. In the Township, these dikes are very narrow and of limited length.

Extending northward above the Serpentine ridge is a metamorphic series of rocks consisting of two phases of the Wissahickon schist. The mica phase occupies the area just north of the Serpentine ridge and is comprised of schist and gneiss of bluish-gray to gray color. A schist is a well-foliated metamorphic rock with visible mica (muscovite), a thin clear shiny sheet-like mineral.

The second phase of the Wissahickon formation, the chlorite phase, occupies the very northern and northwest corners of the Township. The chlorite phase, containing phyllite and schist, appears as a bluish or greenish gray rock with a satiny luster produced by the minerals chlorite and mica.

The rocks in the Township have been deeply weathered and altered from their original character. Although the structural geology of the Township is complex, there are several important factors that should be reviewed. The major bedding planes and foliations are oriented in an east-west to northeast-southwest direction. While major joint sets are oriented in the same direction as bedding and/or foliation, a secondary joint set extends nearly perpendicular to bedding. These joints (secondary openings) dip at nearly vertical angles extending to the base of the weathered zone. Each of the rock types are structural conditions resulting in a variable surface expression which can be observed in East Goshen Township.

Soils in East Goshen Township

While many soil series exist in nature, the rates and patterns of soil development are all dependent on a number of interrelated factors which include parent materials, climate, organisms/vegetation, and relief.

The mineralogical composition of the soil profiles or its soil texture is directly related to the parent material that underlies the soil, as well as how easily this material weathers or breaks down. For example, in East Goshen Township the unaltered igneous rocks of gabbro, quartz, and serpentine weather down to form silt loams and silty clay loams. The metamorphoses

rocks consisting mostly of schist and gneiss, form thick silt loam profiles, usually five to ten feet or greater. Finally, the materials laid down along streams are geologically recent alluvial deposits. They are usually deep soils that show very little profile development.

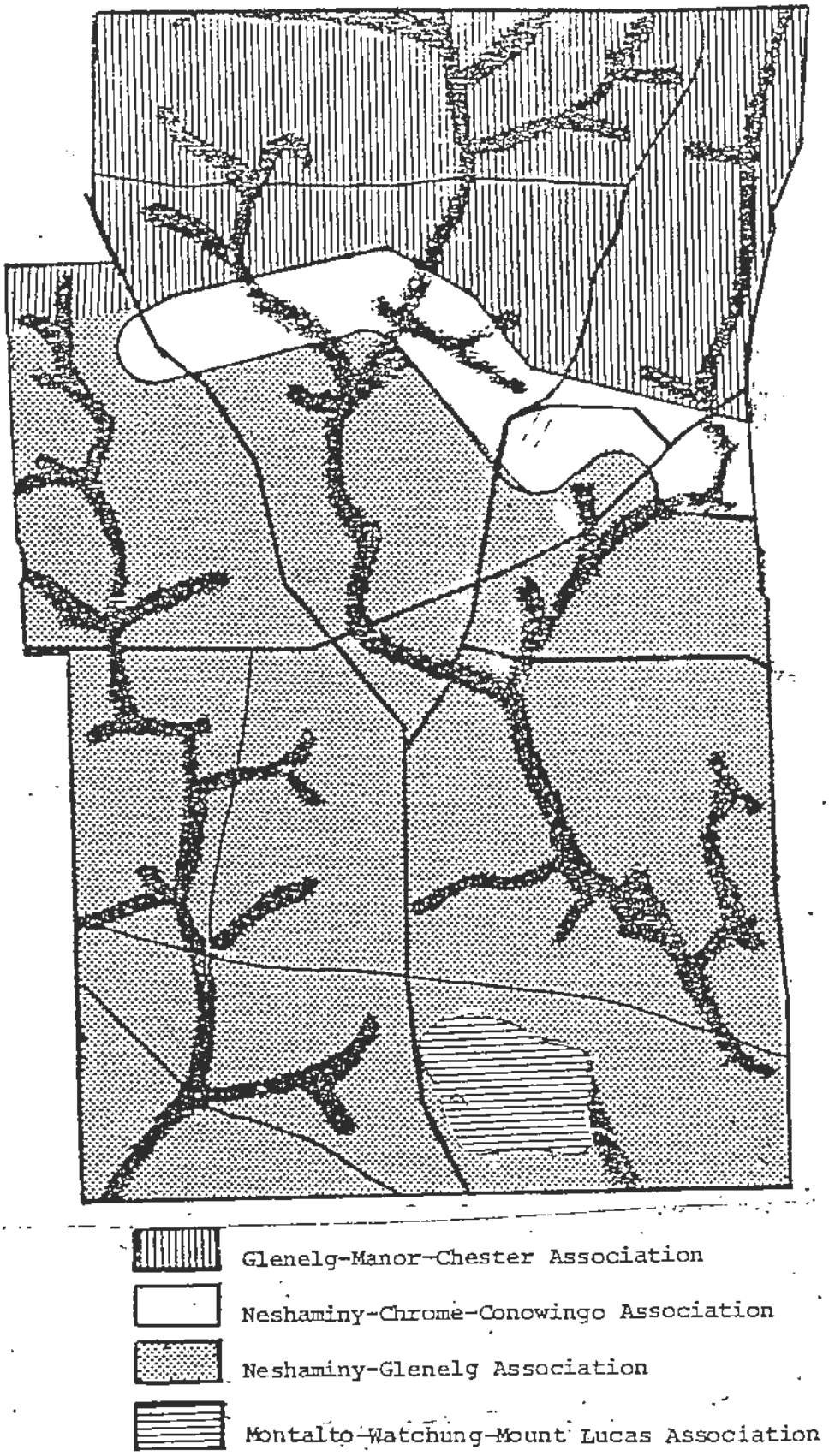
An influential factor regarding soil development is climate. Chester County has a humid temperature climate with an average annual temperature of 50°F and 46 inches of precipitation. Soils in this area are generally moist with seasonal variations. Temperature and precipitation have the ability to alter the physical and chemical weathering processes of the parent materials. The accumulation of organic matter also is affected by climate. Where low temperatures and high moisture percentage occur, the organic matter content is increased. As an example, soils formed under a forest cover have a more defined horizon development than soils formed under a grass cover. Also, they have only half as much organic matter content, are more acidic, and have more downward movement of clay particles.

The relief of slope of the land governs the direction and rate of water moving through the soil profile. This, in turn, affects soil drainage characteristics, soil weathering, soil depth, and a leaching of soil minerals.

In East Goshen Township, the soils on gentle slopes are considered to be mature and old because of their stabilized state, thick organic layer, and heavy clay movement down through the profile. In contrast, the floodplain soils and soils located on steep slopes are considered young because they have not yet developed well-drained profiles.

The above factors interact in varying degrees to produce different soils with different final characteristics. The present soil conditions have been summarized on Figure 2.

To identify the soils in any area, a soil association map is generally used as a preliminary guide. A soil association represents a grouping of a few major soils found in particular locations and is then named after the most prevalent soil series. The soils in an association are generally weathered from the same type of underlying materials, and therefore, their soil textures may be similar due to their characteristics concerning depth, stoniness, and natural drainage. The soils found in East Goshen Township can be classified into four soil associations: 70 percent as Neshaminy-Glenelg Association, 25 percent as Glenelg-Manor-Chester Association, and 5 percent as the Neshaminy-Chrome-Conowingo Association, and Montaldo-Watshung-Mount Lucas Association combined (see Figure 2).



SHADED AREAS SHOW THE LOCATION OF FLOODPLAIN SOILS

Soil Association Map of East Goshen Township

FIGURE 2
Soil Characteristics - East Goshen Township

SOIL SERIES	PARENT MATERIAL	DEPTH TO SEASONALLY HIGH WATER TABLE (FT.)	DEPTH TO ROCK (FT.)	SUTABILITY FOR ON-SITE DISPOSAL
Aldino (Silt Loam)	Serpentine	½ - 1'	1½ - 2½	Slowly Permeable
Brandywine (Loam)	Baltimore Gneiss	10'+	3' - 4'	Well Suited
Calvert (Silt Loam)	Serpentine	0 - 1'	3'+	Seasonal High Water Table
Chester (Silt Loam)	Wissahickon Schist	5'+	5' - 6'	Well Suited
Chewacla (Silt Loam)	Upland Alluvium	0 - 1'	3' - 6'	Seasonal High Water Table and Flooding
Chrome (Gravelly Silty Clay Loam)	Serpentine & Chlorite Schist	5'+	1' - 2½'	Shallow Soil
Congaree (Silt Loam)	Upland Alluvium	3'+	3' - 6'	Well Suited Dependent on Location
Conowingo (Silt Loam)	Serpentine	1' - 2'	3'- 4'	Shallow Depth & Seasonal High Water Table
Glenelg (Channery Silt Loam)	Wissahickon Schist	5'+	3' -5'	Well Suited
Glenville (Silt Loam)	Baltimore Gneiss Wissahickon Schist	1' - 1½	3' - 6'	Limited by Clay-pan & Seasonal Water Table
Manor (Loam)	Baltimore Gneiss	5'+	2' - 7'	Well Suited
Neshaminy (Gravelly Silt Loam)	Baltimore Gneiss	5'+	4' - 6'	Well Suited
Wehadkee (Silt Loam)	Upland Alluvium	0' - 1'	5' - 8'	High Water Table
Worsham (Silt Loam)	Baltimore Gneiss Wissahickon Schist	0' - 1'	3' - 5'	Slow Permeabil-ity & Seasonal Water Table
Montalto (Channery Silt Loam)	Triassic Diabase	5'+	3' - 5'	Slow Permeability

Neshaminy-Glenelg Association. The Neshaminy-Glenelg Association includes soils that are deep to moderately deep, moderately permeable, well-drained, and located on gentle to steep slopes. The Neshaminy soils developed mainly from weathered Gabbro and Granodiorite. The presence of igneous rock produces a bright reddish coloration in the subsurface horizons.

Also included in this association are the Glenville, Worsham, Chewacla, and the Wehadkee soils. The Glenville and Worsham soils are developed mainly from granite,schist, and gneiss. They are deep, moderately well-drained and poorly-drained, respectively. These soils occur in low-lying areas, in depressions, and at the bases of slopes. The Worsham can also be found in seepy areas and along streams. The Chewacla and Wehadkee are also floodplain soils developed in alluvium materials from upland soils. The Chewacla are deep soils, moderately permeable, and moderately well-drained. Mottling typically occurs between 12 and 30 inches from the surface. The Wehadkee are poorly-drained soils, and their surface layer is dark and mottled.

Glenelg-Manor-Chester Association. The principal soils in the association are the Glenelg, Manor, Chester, Brandywine, Worsham, and Glenville. There are also less extensive areas which include the Wehadkee, Chewacla, and Congaree floodplain soils. This association basically consists of soils that are moderately deep to deep, are well-drained, and have developed from weathered igneous bedrock of schist and gneiss.

The Glenelg soils are moderately deep, moderately permeable upland soils. The Glenelg soils are similar to Chester soils, but are more shallow with generally shallow depths to rock. The Chester soils are usually deep, well-drained and shallow soils. They are generally located on hilly or steep areas with 15-20% slopes. The slope and porous structure causes the soils to have moderately rapid permeability and become droughty.

The Worsham and Glenville soils are deep, and poorly-drained and moderately-drained, respectively. These soils generally occur in low-lying areas, in depressions and at the base of slopes. The Worsham soils can be found in seepy areas and along streams.

The Congaree, Chewacla, and Wehadkee are all floodplain soils developed from upland alluvium materials. The Congaree soils have a thick silty surface horizon, and a deep profile that is well-drained and is moderately permeable. Mottling typically occurs between 30 and 60 inches below the surface, and these soils are occasionally flooded. The Chewacla are better drained, more permeable, and deeper than the Wehadkee with mottling 12 to 30 inches below the surface.

Neshaminy-Chrome-Conowingo Association. The Neshaminy-Chrome-Conowingo Association are soils developed mainly over formations of serpentine and from Gabbro and Granodiorite. These soils are predominantly located on moderate slopes, however, the Chroma soils have been found on very steep grades.

The Neshaminy soils are deep, well-drained, moderately permeable and their subsurface horizons are reddish colored from the weathered Gabbro. The Chrome soils range from shallow to moderately deep and are well-drained. They range from a dark, gravelly silty clay loam to a dark yellowish-brown clay. The soils are developed from acid rocks, and depth to bedrock is quite variable. The soils are free of mottling, but the heavy texture and shallow profile tend to restrict drainage. In the steep areas, the soils are severely eroded.

Similar to the Chrome soils, the Conowingo soils are developed in materials weathered from igneous rocks. Their profile ranges from deep to moderately deep, and they are moderately well-drained to somewhat poorly-drained soils. Typically, mottling occurs in the subsoil at about 15 to 25 inches from the surface.

Montaldo-Watshung-Mount Lucas Association. The soils in this association have been typically developed on igneous rocks. These soils are described as being deep, silty and channery soils as found in other part of Chester County. The Montaldo channery silt loams, however, which are found in the southern part of the Township, exhibit a severely eroded profile. This soil has lost nearly all of its original surface layers to the point where the underlying subsoil is now exposed. The silty clay loam subsoil contains more clay than the soils in the Neshaminy-Glenelg Association. (The presence of this soil in Ashbridge-Firethorne area explains the unusually high failure of onlot systems within this area which resulted in the provision of public sewers for the homes in this vicinity in 1986.)

Soils Renovation Ability

The effective operation of a subsurface sewage disposal system is dependent on proper installation, site selection, and more specifically, on good soil characteristics. The criteria used to judge the suitability of a site includes the size of the area, the slope, the soil properties and soil depth, permeability. texture and structure. A verification of these soil properties is necessary to insure the satisfactory renovation of the sewage effluent physically, chemically and biologically, and to prevent the hazards of system malfunction or ground water contamination.

Soil permeability affects the rate of water movement through the soil. The factors that affect permeability are soil texture and structure.

Soil texture factors include the mineralogical composition and physical size distribution of sand, silt or clay-sized particles. A soil with a high percentage of coarse sands is rapidly permeable, so that water drains quickly through the profile. Conversely, if the soil has a high percentage of clay, the water becomes perched in the soil at shallow depths. In an on-site disposal system, such soils may result in surface outbreaks around the system, causing the disposal area to be saturated and marshy.

The physical renovation of sewage optionally occurs in a soil with moderate depth and permeability as well as gently sloped. The ability to chemically renovate sewage is dependent on soils with a proper clay content in as much as the clay particles will attract and react with the chemicals in the effluent to cleanse it. The majority of biological renovation is performed by the organic matter and by the micro-organisms that occur in the top 18 inches of the soil.

Suitable Soils in East Goshen Township

The soils in East Goshen Township that meet all of the criteria to suitably renovate sewage include the following series: Chester, Glenelg, Manor, and Neshaminy. Although there may be some exceptions due to specific site characteristics, for the most part, these soils have an appropriate depth, slope, permeability, texture, and structure, and are capable of supporting the physical, chemical, and biological activities that will insure the satisfactory renovation of sewage effluent.

In general, the majority of the upland soils in the northern portion of the Township are well suited to long-term use of on-site systems for single family units, community systems, and spray irrigation. To define feasibility of any site, a detailed evaluation is necessary since soils, slope, texture, and evidence of seasonal high water table are variable.

The area which is underlain by and/or adjoins the serpentine typically has shallow soil depths, tight rock and shallow water tables which make it unsuitable for on-site disposal options. The southern area of the Township displays a much more varied soils sequence which is often characterized by heavier soils, shallow depth to mottling and water table. It is recommended that all future investigations to define soil suitability for on-site disposal must be more carefully evaluated since the soils exhibit this degree of variability.

1.4 Existing and Projected Population Data

East Goshen Township has grown from a population of 1,039 persons in 1950 to 15,138 persons in 1990 according to the US Census results. The growth since 1970 has averaged a 5,000-person increase during each of the 10-year periods. The Township adopted a new Comprehensive Plan in October 1992, which contains all relevant data regarding historical population growth and projected ultimate population at the time of build-out for all uncommitted land development as of 1992. Table 1.1 depicts the Population Change between 1950 and 1990. Table 1.2, Population Characteristics, depicts all relevant factors in the population characteristics as measured between 1980 and 1990.

Table 1.1

POPULATION CHANGE
1950-1990

YEAR	TOTAL POPULATION	POPULATION CHANGE	
		NUMERICAL INCREASE	AVG. ANNUAL CHANGE
1950	1,039	---	---
1960	1,694	655	66
1970	5,138	3,444	344
1980	10,021	4,883	488
1990	15,138	5,177	538

POPULATION CHARACTERISTICS

EAST GOSHEN TWP.	1990	1980	Percent Change
TOTAL POPULATION	15,138	10,021	51.1
SEX			
Male	7,354	4,918	49.5
Percent of total population	48.6	49.1	
Female	7,784	5,103	52.5
Percent of total population	51.4	50.9	
AGE			
Under 5 years	944	621	52.0
Percent of total population	6.2	6.2	
5 to 17 years	2,528	2,247	12.5
Percent of total population	16.7	22.4	
18 to 20 years	531	440	20.7
Percent of total population	3.5	4.4	
21 to 24 years	837	788	6.2
Percent of total population	5.5	7.9	
25 to 44 years	5,176	3,566	45.1
Percent of total population	34.2	35.6	
45 to 54 years	1,857	1,056	75.9
Percent of total population	12.3	10.5	
55 to 59 years	677	460	47.2
Percent of total population	4.5	4.6	
60 to 61 years	306	120	155.0
Percent of total population	2.0	1.2	
62 to 64 years	464	168	176.2
Percent of total population	3.1	1.7	
65 to 74 years	1,232	364	238.5
Percent of total population	8.1	3.6	
75 to 84 years	505	145	248.3
Percent of total population	3.3	1.4	
85 years and over	81	46	76.1
Percent of total population	0.5	0.5	
Median age	35.7	29.5	
Under 18 years	3,472	2,868	21.1
Percent of total population	22.9	28.6	
18 to 64 years	9,848	6,598	49.3
Percent of total population	65.1	65.8	
65 years and over	1,818	555	227.6
Percent of total population	12.0	5.5	
RACE AND HISPANIC ORIGIN			
White	14,504	9,682	49.8
Percent of total population	95.8	96.6	
Black	399	236	69.1
Percent of total population	2.6	2.4	
American Indian, Eskimo, or Aleut	18	6	200.0
Percent of total population	0.1	0.1	
Asian and Pacific Islander	185	61	203.3
Percent of total population	1.2	0.6	
Other race	32	36	-11.1
Percent of total population	0.2	0.4	
Hispanic origin (of any race)	45	70	-35.7
Percent of total population	0.3	0.7	

	1990	1980	Percent Change
HOUSEHOLDS BY TYPE			
Total households	6,119	3,736	63.8
Family households (families)	4,135	2,600	59.0
Percent of total households	67.6	69.6	
Married-couple households	3,635	2,300	58.0
Percent of total households	59.4	61.6	
Other family, male householder	139	83	67.5
Percent of total households	2.3	2.2	
Other family, female householder	361	217	66.4
Percent of total households	5.9	5.8	
With related children	185	138	34.1
Percent of total households	3.0	3.7	
Persons per family	3.05	3.30	
Nonfamily households	1,984	1,136	74.6
Percent of total households	32.4	30.4	
Householder living alone	1,637	919	78.1
Percent of total households	26.8	24.6	
Persons in households	15,122	10,015	51.0
Persons per household	2.47	2.68	
MARITAL STATUS (Persons 15 years +)			
Persons 15 years +	3,337	7,679	-56.5
Never married	750	1,999	-62.5
Percent of persons 15 years +	22.5	26.0	
Now married, except separated	2,198	4,670	-52.9
Percent of persons 15 years +	65.9	60.8	
Separated	55	193	-71.5
Percent of persons 15 years +	1.6	2.5	
Widowed	170	342	-50.3
Percent of persons 15 years +	5.1	4.5	
Divorced	164	475	-65.5
Percent of persons 15 years +	4.9	6.2	
GROUP QUARTERS			
Persons living in group quarters	16	6	76.5
Percent of total population	0.1	0.1	
Institutionalized persons	16	2	200.0
Percent of group quarters pop.	100.0	33.3	
Other persons in group quarters	0	4	-100.0
Percent of group quarters pop.	0.0	66.7	
Group quarters population under 18	0	0	0.0
Percent of group quarters pop.	0.0	0.0	
Group quarters population 18 to 64	0	5	-100.0
Percent of group quarters pop.	0.0	83.3	
Group quarters population 65 +	16	1	500.0
Percent of group quarters pop.	100.0	16.7	
LAND AREA AND POPULATION DENSITY			
Total population	15,138	10,021	
Square miles	10.1	10.1	
Persons per square mile	1,498.8	992.2	

TABLE 1.2

Based on the 1990 population of 15,138 persons, the 1992 Township Comprehensive Plan projects further population growth which should reach an ultimate projected population of 21,434 persons. This would include projected and estimated growth for uncommitted land, land currently under construction, and committed population in approved subdivisions but not yet under construction. These figures are shown in Table 1.3.

Table 1.3

ESTIMATE OF ULTIMATE POPULATION

CATEGORY	POPULATION	% OF ULTIMATE POPULATION
1980 Population	10,021	
Population increase - 1980 to 1990	5,117	
1990 POPULATION	15,138	71%
Estimated Population in Committed Residential Developments But Not Under Construction	576	3%
Estimated Population of Residential Developments Under Construction	1,101	5%
Estimated Population on Uncommitted Land	4,619	21%
PROJECTED ULTIMATE POPULATION	21,434	100%

The 1992 Comprehensive Plan also notes that if East Goshen Township continues to grow at the same rate as measured between 1979 and 1990, then population build-out could occur within approximately nine years or the year 2001.

1.5 Wetlands Identification

Enclosed in Section 1.3 is Exhibit 2 which is taken directly from the Chester County Soils Map for East Goshen Township and shows separately the hydric soils. The hydric soils are identified on Exhibit 2 as follows:

- CH - Chewacla silt loam
- CAA & CAB - Calvert silt loam
- GNA & GNB - Glenville silt loam

- WE - Wehadkee silt loam
- WOA & WOB - Worsham silt loam

As a part of the routine Township planning process, all wetlands must be delineated and shown on any land development plan and/or subdivision plan submitted to East Goshen Township. Wetlands must be excluded from development unless permits are obtained under the joint permit process administered by PaDER. There are exceptions which may be permitted for utility crossings, minor road crossings, and for wetlands intrusions for which mitigation plans are submitted and approved by permit. Generally, intrusion into wetlands, other than as permitted by law, is not expected to be a major problem within East Goshen Township.

1.6 Public Water Services and Other Potable Water Supplies

Exhibit 3 depicts areas located within East Goshen Township which are provided with public water service by the West Chester Area Municipal Authority and by the Philadelphia Suburban Water Company. Table 1.4 incorporates an estimate of the number of customers or connections served by the WCAMA and the Philadelphia Suburban Water Company. However, the two public water companies or authorities could not provide an accurate estimate of the number of EDUs served or the specific number of residential units for which public water is provided. (The estimated range was 95 to 89 percent residential units as being customers.)

The balance of potable water utilized within East Goshen Township is provided by private wells. The general quality of ground water resources serving private dwellings, commerce and industry is excellent within East Goshen Township. A complete summary of the ground water resources of East Goshen Township is already documented on pages 23 to 26 of the 1981 Act 537 Plan Update prepared by Walter B. Satterthwaite Associates and has not changed substantially since 1981.

It is expected that Philadelphia Suburban Water Company will gradually expand its public water service similar to expansions which have occurred since 1980.

TABLE 1.4

PUBLIC WATER SERVICE - 1992

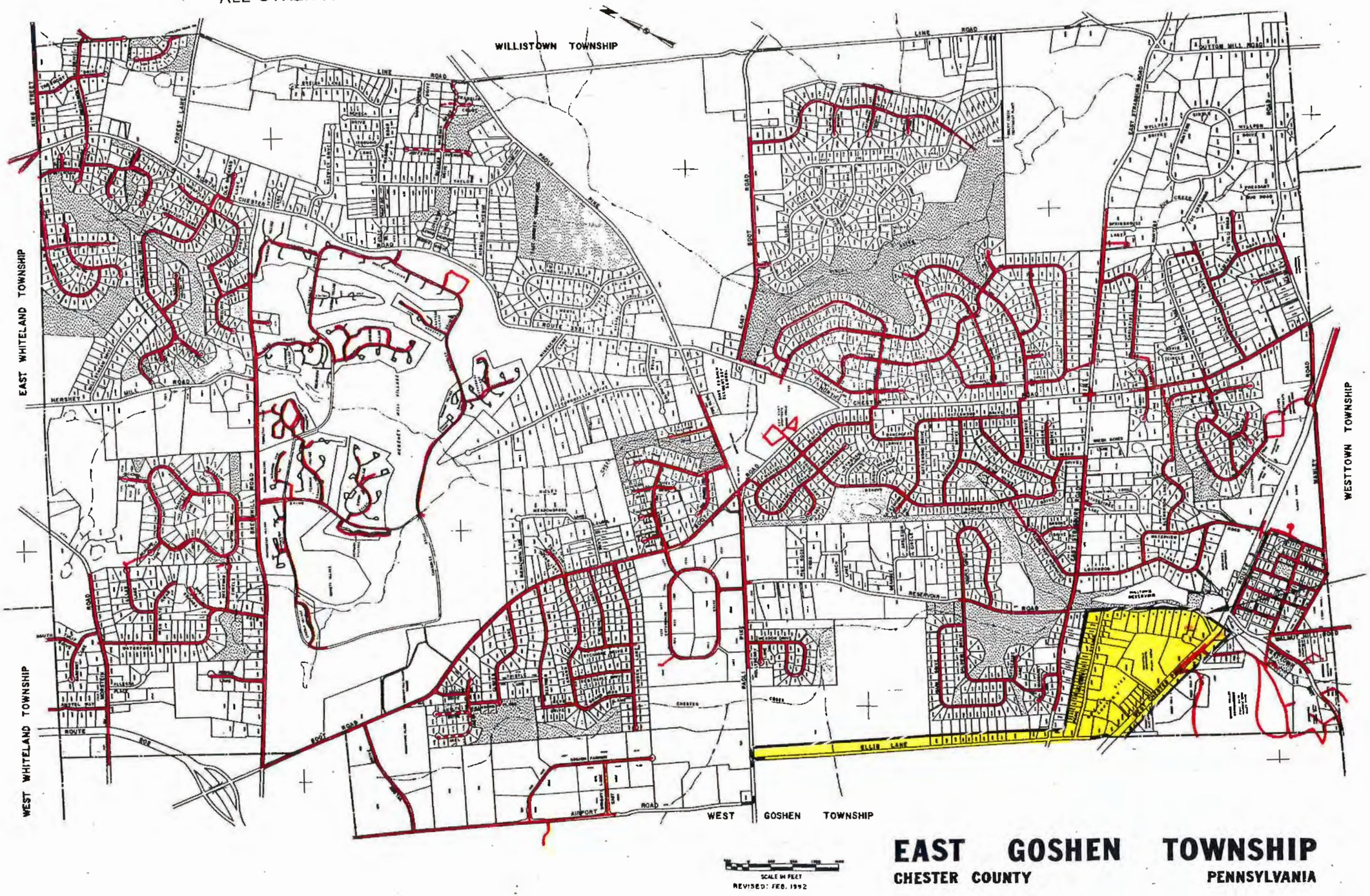
West Chester Area Municipal Authority	40 customers
Philadelphia Suburban Water Company	2,300 customers

The West Chester Area Municipal Authority expects to extend service along Park Avenue beyond the Goshen Fire Company building in 1993-1994.

The PSWCO does not have an available forecast for the precise number of new connections to be made during each of the five-year planning cycles covered by this Act 537 Plan Update. However, it is expected that all new residential units constructed after 1992 will be provided with public water service.

UPDATED ACT 537 WASTEWATER
FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP

P.S.W.C. FRANCHISE COVERS
ALL OTHER AREAS OF TOWNSHIP



W.C.A.M.A.
FRANCHISE
AREA

EAST GOSHEN TOWNSHIP

CHESTER COUNTY PENNSYLVANIA

AREAS SERVED BY PUBLIC WATER

EXHIBIT 3

2.0 EVALUATION OF EXISTING SEWAGE TREATMENT FACILITIES/SYSTEMS

2.1 Evaluation of Ridley Creek Wastewater Treatment Facility

The need for a sewage treatment facility located along Ridley Creek within East Goshen Township was first discussed in the mid-1960s with serious planning efforts made during the 1970s. During 1978, an update of the Township's Act 537 Plan studied the environmental concerns along Ridley Creek.

The first site chosen for the location of the Ridley Creek STP was located on the Grace Estate property just north of Strasburg Road and along the stream valley. The initial application for capacity for the Ridley Creek STP was 1.2 MGD. Challenges to the location and proposed capacity of this STP eventually led to relocation just north of the Grace Estate property to a site within the Bow Tree Development. The design capacity for the STP was also scaled back from 1.2 MGD to 0.4 MGD although portions of the STP were initially designed to handle up to 0.7 MGD

The treatment plant was designed during 1983-1984 and was built in 1984-1985 with the first units going on-line during 1985.

The Township and the Municipal Authority participated heavily in the design, construction, and inspection of the new Ridley Creek STP which was offered to East Goshen Township as its first public wastewater treatment facility. The STP was dedicated to and accepted by East Goshen Township during 1990. The Township and its Municipal Authority have operated the facility since that date. Many of the initial properties considered for connection to the STP have been designed and constructed. The Bow Tree Farms development has 338 EDUs connected to the STP with guaranteed or committed future EDU connections totalling 166. Another initial participant in the reduced 0.4 MGD STP plant construction was SmithKline Beecham with direct connection rights totalling 40,000 GPD and an option to purchase an additional 12,000 GPD within the remaining capacity of the plant (the option has now expired).

The various developments which were connected by 1992 and those for which commitments were made by the Township for connection to the Ridley Creek STP appear in Table 2.1.

Table 2.1 shows that the Ridley Creek STP (up to October 1992) had a hydraulic flow loading of 333,127 GPD in theoretical sewage flow. However, the average 1992 plant flow of 230,475 GPD (through October 1992) shows that only 69.19 percent of the theoretical flow actually reaches the treatment facility. In

TABLE 2.1

COMMITTED AND ON-LINE SEWAGE FLOWS TO
RIDLEY CREEK SEWAGE PLANT
AS OF OCTOBER 28, 1992

Area to be Served	GPD On-Line	GPD Committed Or In Progress
Bow Tree Farms	115,500	52,200*
Vista Farms - 65 SFD	22,750	0
Hunt Country - 71 SFD	24,850	0
Wentworth - 65 SFD	14,000	8,750*
East Goshen Elementary School	10,000	0
SmithKline Beecham	10,000	30,000*[1]
Goshen Village Commercial	13,000	0
Hancock Building - Phases I & II	3,600	2,400*
Paoli Pike - 352 - Paoli Pike Corner	5,950	350*
Taylor/Highland Area - 64 EDUs	0	22,400
Spinozzi & McClosky - 10 EDUs	0	3,500
Coventry Woods - 16 EDUs	0	5,600
Waterford - 26 EDUs	0	9,100
Meadowbrook/Cornwallis Area	0	26,600
Bellingham Life Care Facility	28,000	0
Bentley Construction	900	0
Philadelphia Suburban Water Company	157	0
New Kent Apartment Complex	84,420	0
Totals	333,127	160,900

Note: Average 1992 (to October) Plant flow = 230,475 GPD which equals 69.19% of theoretical EDU flow

Note: * = Committed and paid for

Note (1)= SKB also has an option to purchase an additional 12,000 GPD (now expired).

Factors used: SFD = 350 GPD/unit and Apt. (apartment) = 200 GPD/unit.

addition to the theoretical gallons per day actually on line, the Township has made commitments as depicted in Table 2.1 for an additional 160,900 GPD (theoretical flow) which would bring the total sewage flow at the STP to 494,027 GPD (351,113 GPD actual flow) when these committed connections are made. The actual flow is substantially below the 0.4 MGD reflected on the PaDER permit for this facility. If the New Kent Apartment Complex is shifted to Chester Creek, the above figures are reduced by 84,420 gpd.

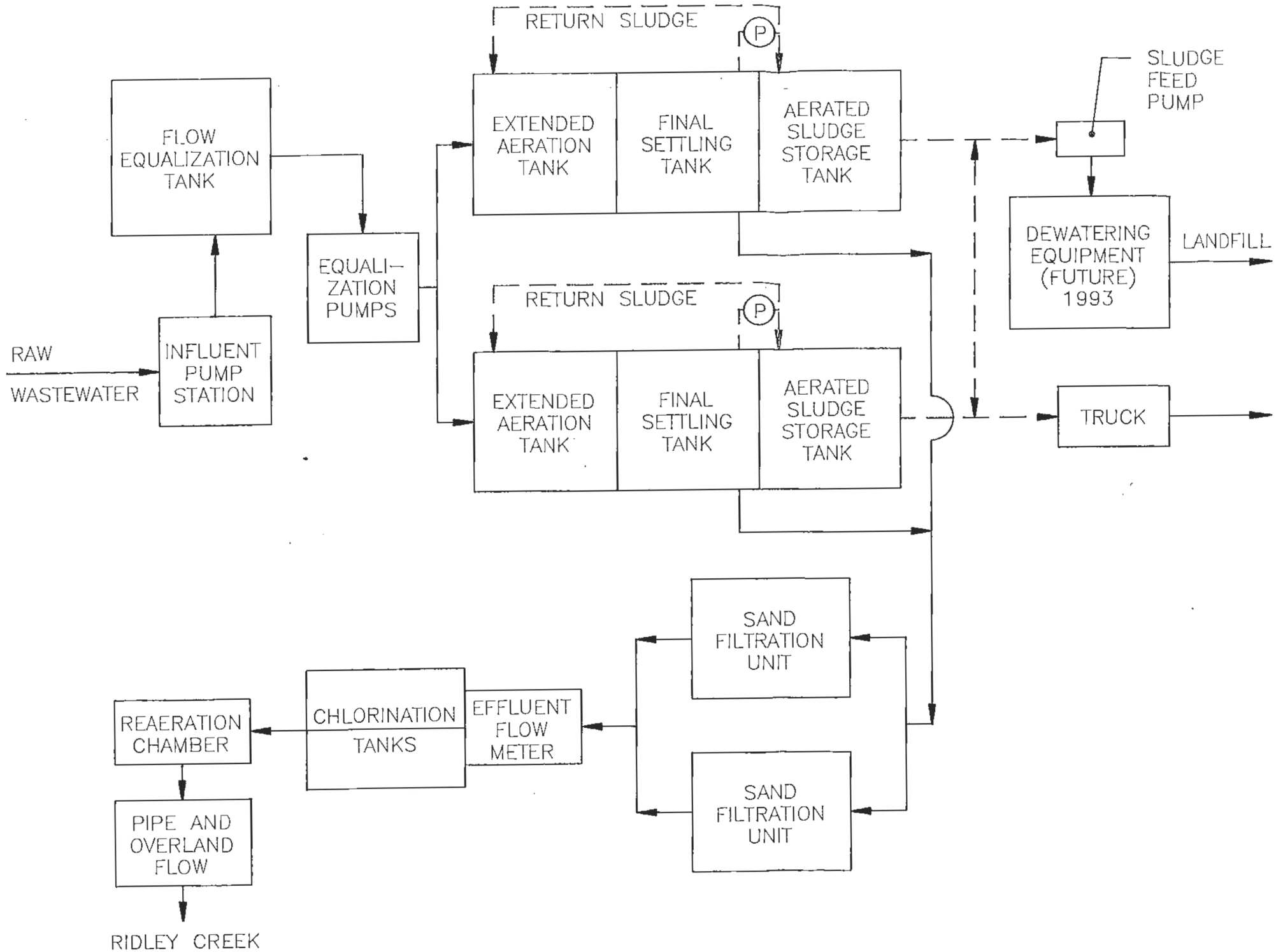
Wastewater Treatment Facility

The treatment plant site is located below the Bow Tree Subdivision, Section IV, and primarily provides capacity for developments located within the Ridley Creek drainage area. The treatment plant is nominally designed to handle 400,000 gallons per day (gpd) and discharges to Ridley Creek. It is currently operated under an NPDES permit which expires in October 1995.

The treatment plant is an extended aeration system followed by filtration, chlorination, and reaeration prior to discharge to the Ridley Creek. A schematic flow diagram of the facility is enclosed as Figure 2-1. The facility consists of an influent pumping station pumping with flow directed to a flow equalization tank (120,000 gallons) which is then pumped to two packaged-steel (DAVCO) aeration systems each having 250,000 gallons of aeration capacity. This is followed by clarification with each unit having a 25,000-gallon aerated storage tank with the effluent from the clarifiers going through two sand filtration units rated at two gallons per square foot per day. This is followed by chlorination, reaeration, and discharge. The treated wastewater discharges via header pipes into a wetland for overland flow prior to discharge to the creek.

The sludge is currently trucked off site. In 1993, dewatering equipment (a belt filter press) is scheduled to be installed which will permit the future option of land application or landfill disposal. The Authority has requested a long-term commitment from the Chester County Solid Waste Authority for dewatered sludge disposal at the Lanchester Landfill.

The treatment plant discharge criteria are enclosed as Figure 2-2, which is a copy of the Part A, NPDES permit for this facility. Effluent standards differ dependent upon the period of the year. From May 1 to October 31, the $CBOD_5$ monthly average is 10 mg/l in conjunction with 30 mg/l suspended solids, and 4 mg/l of ammonia as nitrogen. In the winter months (November 1 through April 30), the $CBOD_5$ is 20 mg/l with suspended solids of 30 mg/l, and ammonia at 12 mg/l.



LEGEND

FORWARD FLOW

SLUDGE FLOW

(P) PUMP (AIR LIFT)

N

EAST GOSHEN TOWNSHIP
SEWAGE FACILITY PLAN

FIGURE NO. 2.1
RIDLEY CREEK SEWAGE
TREATMENT PLANT
SCHEMATIC FLOW
DIAGRAM

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: NONE | DATE: 11/6/92

031 9000 6.

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR DISCHARGE 001; LOCATED AT LATITUDE 39°59'10", LONGITUDE 75°31'43"

A. During the period beginning at issuance and lasting through expiration, the Permittee is authorized to discharge.
B. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 400,000 gallons per day.
C. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

DISCHARGE PARAMETER	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS		
	MASS UNITS (lbs/day)		CONCENTRATIONS (mg/l)						
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE ANNUAL	AVERAGE MONTHLY	AVERAGE WEEKLY	INSTANTANEOUS MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE	24 HOUR REPORT UNDER PART A.II.D
FLOW (MGD)							Continuous	Recorded	
CBOD-5 (5-1 to 10-31)	33	50		10	15	20	1/Week	24 HC	
CBOD-5 (11-1 to 4-30)	67	100		20	30	40	1/Week	24 HC	
SUSPENDED SOLIDS	100	150		30	45	60	1/Week	24 HC	
AMMONIA as N (5-1 to 10-31)	13	20		4	6	8	1/Week	24 HC	
AMMONIA as N (11-1 to 4-30)	40	60		12	18	24	1/Week	24 HC	
FECAL COLIFORM (5-1 to 9-30)			See Footnote (2)				1/Week	Grab	
FECAL COLIFORM (10-1 to 4-30)			Same Limits as in Footnote (2) for Period 5-1 to 9-30				1/Week	Grab	
DISSOLVED OXYGEN			Minimum of 5 mg/l at all times				Daily	Grab	
pH	Within limits of 6 to 9 Standard Units at all times						Daily	Grab	

FOOTNOTES: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

(NPDW).4

BK 2232 PG 582

FIGURE 2.2

Presented in Table 2.2 is the average monthly flow to the treatment plant for the years 1988, 1989, 1990, through 1991. This table indicates that the flow to the treatment plant averages 220,000 gpd to 240,000 gpd, which is well below its hydraulic capability. Table 2.3 presents the influent BOD_5 and suspended solids averages for the years 1990 and 1991. Table 2.4 provides the effluent results for the period 1988 to September 1991. These results indicate that the treatment plant is providing a significantly higher degree of treatment with typical BODs being less than 5, suspended solids less than 5, and ammonia less than 1 mg/l.

The plant appears in excellent operating condition and, based upon the 1991 Chapter 94 Report, is not anticipated to reach capacity until the mid to late 1990s. The plant has experienced only two minor violations over the last several years related to electrical malfunctions of the equalization tank and transfer pumps. According to modifications made, this problem of tank overflow has apparently been corrected. This STP was initially overdesigned and most components have the capability of expansion to 0.7 mgd utilizing the A/O process.

2.2 West Goshen (Chester Creek) Treatment Facility

During the period 1991/1992, an average of approximately 974,599 GPD in theoretical sewage flow from East Goshen Township properties was treated at the West Goshen Wastewater Treatment facility under a long-standing municipal agreement with West Goshen Township. However, the above figure is based upon theoretical flows for each type of unit (SFD = 350 GPD - Apt = 200 GPD - TH = 250 GPD), and the actual monitored sewage flow was 754,769 GPD or 77.44 percent of the theoretical flow.

TABLE 2.2

RIDLEY CREEK SEWAGE TREATMENT PLANT
ANNUAL FLOWS FOR YEARS 1988-1991 (GPD)

	1988	1989	1990	1991
JAN.	151,737	172,625	237,835	239,748
FEB.	168,751	173,718	234,993	222,414
MAR.	148,632	179,990	217,284	228,435
APR.	142,167	171,337	233,450	236,020
MAY	159,323	195,813	227,813	216,617
JUNE	121,540	196,610	226,337	223,610
JULY	141,429	198,765	216,229	229,158
AUG.	149,155	200,300	210,419	220,445
SEPT.	155,083	220,833	222,593	227,147
OCT.	150,297	209,132	221,203	227,229
NOV.	170,737	212,197	215,507	223,103
DEC.	167,236	264,519	232,274	232,574
YEARLY AVE.	152,174	199,653	224,661	227,208

TABLE 2.4

RIDLEY CREEK SEWAGE TREATMENT PLANT
EFFLUENT MONTHLY AVERAGES (lb/day)

1988

	BOD_5	SUSPENDED SOLIDS	AMMONIA
JAN.	1.62	6.78	0.20
FEB.	2.47	6.18	0.12
MAR.	1.4	5.68	0.114
APR.	1.3	6.0	0.13
MAY	1.74	4.14	0.083
JUNE	0.994	4.25	0.169
JULY	1.94	4.84	0.097
AUG.	0.86	3.59	0.072
SEPT.	1.43	6.11	0.12
OCT.	1.19	5.92	0.12
NOV.	2.04	6.30	0.13
DEC.	1.72	7.03	0.14
YEARLY AVERAGE	1.56	5.57	0.12

1989

	BOD_5	SUSPENDED SOLIDS	AMMONIA
FEB.	1.65	6.66	0.13
JUNE	1.64	8.29	0.26
AUG.	1.9	8.14	0.16
SEPT.	1.9	9.38	0.19
OCT.	1.8	8.89	0.18
NOV.	1.6	9.50	2.1
DEC.	2.97	16.6	0.17
YEARLY AVERAGE	1.92	9.64	0.46

TABLE 2.4 - Continued

1990

	BOD_5	SUSPENDED SOLIDS	AMMONIA
JAN.	5.09	24.5	0.22
FEB.	5.4	11.3	0.20
MAR.	2.0	8.94	4.6
APR.	4.5	9.53	0.19
MAY	3.7	10.8	0.19
JUNE	4.4	91.7	0.22
JULY	1.9	9.74	0.19
AUG.	1.6	8.55	0.16
SEPT.	2.0	8.41	0.16
OCT.	1.5	7.56	0.15
NOV.	4.3	7.22	0.16
DEC.	2.6	8.80	0.17
YEARLY AVERAGE	3.25	17.25	0.55

1991

	BOD_5	SUSPENDED SOLIDS	AMMONIA
JAN.	4.2	9.51	0.19
FEB.	2.3	8.00	0.16
MAR.	2.4	9.19	
APR.	3.0	8.00	0.16
MAY	2.5	10.00	0.20
JULY	1.9	9.36	0.19
AUG.	1.5	7.32	0.15
SEPT.	2.7	12.1	0.17
YEARLY AVERAGE	2.6	9.2	0.17

The relative importance of the daily volume of actual sewage treated during 1991 is reflected in Table 2.5.

TABLE 2.5

COMPARISON OF 1991 THEORETICAL AND ACTUAL SEWAGE FLOWS BETWEEN RIDLEY CREEK STP AND WEST GOSHEN STP

Treatment Facility	Theoretical Flow in GPD	Actual Monitored Flow in GPD
Ridley Creek STP	333,127	230,475 (69.2%)
West Goshen STP	974,599	754,769 (77.4%)
Totals	1,307,726	985,244

Source: Township 1991 Sewage Flow Records

Therefore, approximately 76.6 percent of the actual daily sewage flow from East Goshen Township (in 1991) was treated at the West Goshen Wastewater Treatment facility (refer to 1993 Chapter 94 Report for updated flow records).

The West Goshen STP was constructed as a secondary treatment plant during the early 1960s. During 1977 and 1978, the STP was upgraded to a tertiary treatment level. East Goshen has been a participant with West Goshen Township in supporting the operation of this facility and since 1977 as a direct financial participant in the expansion construction related to the tertiary level of treatment.

It is important to note that the actual agreement with West Goshen Township calls for West Goshen to treat up to 1.0 MGD in actual sewage effluent and not 1.0 MGD in theoretical sewage flow. There are several intra-municipal connections where physical areas of West Goshen Township flow into East Goshen and thence sewage flows are rerouted to either gravity or pump station connections leading to the West Goshen STP.

There are actually 49 developments or facilities located in East Goshen Township which are serviced by the West Goshen Wastewater Treatment facility. These individual connections and their theoretical rated sewage flows are contained in Section 3 of this report in Table 3.6. In addition, East Goshen Township has made commitments for 15 properties or developments which will eventually contribute an additional 88,295 GPD in future theoretical sewage flows to be treated at the West Goshen facility. It should be noted that the above additional 88,295 gpd could be substantially increased if East Goshen

Township accepts a possible offer made in late 1993 by the Consultant to West Goshen Municipal Authority to treat up to 780,000 gpd at the expanded West Goshen STP.

The West Goshen Wastewater Treatment facility is located near South Concord Road and discharges into Goose Creek. The West Chester Borough Goose Creek treatment plant also discharges to this same tributary to Chester Creek. The West Goshen STP is operated under a PaDER permit for treatment of up to 4.5 MGD. Of this permitted treatment capacity, 1.0 MGD in actual flow is reserved for exclusive East Goshen Township use.

During the course of preparation of this updated Act 537 Study, telephone interviews were conducted with various West Goshen Township officials including the Township Manager, the West Goshen Sewage Treatment Plant operator, and the consulting engineer to West Goshen Township and its Municipal Authority. These interviews provided the source of the following information.

PaDER has notified West Goshen Township that it must commence planning for future expansion of the West Goshen STP. The plant has a current permit for 4.5 MGD. An Act 537 Plan Update for West Goshen Township is in the process of completion and may be completed during December 1992. The latest target date for completion of the West Goshen Act 537 Plan Update is May 1994.

Typical flows for the West Goshen STP ranged between 4.0 to 4.1 MGD during 1988. Substantial infiltration and inflow (I&I) remediation between 1988 and 1992 has substantially reduced the average daily flow at this STP to 3.5 to 3.8 MGD. East Goshen Township has also conducted extensive I&I remediation for sewer lines and manholes which lead to the West Goshen STP. Jointly, the two townships and other municipalities have reduced the average daily flow by nearly 0.5 MGD in four years. Officials from both West Goshen Township and East Goshen Township estimate that the average actual flow per EDU in West Goshen Township is approximately 334 gallons per EDU and for East Goshen Township the average daily flow is 218 gallons per EDU. It was also estimated that more than 75 percent of the constructed dwelling units in West Goshen Township are connected to the public sewer system. West Goshen Township has cooperative sewage treatment agreements with other adjacent townships including a current agreement with West Whiteland Township for treatment of up to 420,000 GPD and a similar agreement with Westtown Township for treatment of up to 230,000 GPD.

In the current Act 537 Update Study for West Goshen Township consideration is being given to expanding the plant under two options. The first option would expand the rated capacity of the plant from 4.5 MGD to 6.0 MGD at an estimated cost of $6,700,000.

Under this option, the entire 1.5 MGD in additional capacity would be reserved for exclusive use within West Goshen Township.

The second option being studied by West Goshen Township would extend the rated capacity of the STP to 7.0 MGD at a total estimated cost of $7,700,000. This option would allow 1.0 MGD in additional capacity for surrounding townships, including East Goshen Township, if additional capacity was required. In August 1993, East Goshen Township received correspondence from the Consultant representing West Goshen Township stating that "approximately up to 780,000 gpd in reserve capacity...could be allocated to West Whiteland and/or East Goshen Township." East Goshen Township responded, by letter, in September 1993 requesting that the entire 780,000 gpd of additional capacity be reserved for East Goshen Township. Some of this capacity would be utilized to serve properties outside of East Goshen Township. In March 1994, East Goshen Township has not received a response to the request for this allocation.

Table 3.6 which appears in the next section of this Plan depicts 49 developments or facilities located within East Goshen Township which are currently served by the West Goshen STP. The 1991/1992 average daily flow for the 49 developments totals 974,599 GPD (theoretical flow) and 754,769 GPD in actual average daily flow.

There are six existing subdivisions/developments where sewage flow is treated at the West Goshen STP where such effluent is being pumped from locations within the Ridley Creek Watershed. As depicted in the next section of this plan in Table 3.6, the developments include: Hershey Mill Estates; Fairway Village; the Ashbridge/Firethorne Area; Hunters Run; and the Windermere Apartments with such units averaging 136,200 GPD in theoretical flow.

In summary, the West Goshen STP will continue to provide sewage treatment services to East Goshen Township to the extent of 1.0 MGD in actual flow which includes the 49 existing developments which are on-line or committed and three additional developments (Ardleigh Estates, the Brandolini development, and the Wilson property) which are not currently on-line but are committed for connections. As noted above, East Goshen Township has requested in writing a reservation of up to 780,000 gpd at the West Goshen STP based on current expansion plans identified by West Goshen Township.

2.3 Existing Individual Onlot Systems

East Goshen Township has expended considerable funds and effort in constantly monitoring the status of existing onlot systems located within the Township boundaries. The Township has computer files for all known addresses for each onlot system.

This is an on-going process in East Goshen Township although the Township has not yet adopted an ordinance mandating minimum pumping cycles for existing onlot systems. However, the Township frequently publishes educational information regarding the proper maintenance of individual onlot systems in the Township newsletters.

Recent History Regarding Malfunctioning Onlot Systems

The last major Township-wide study of malfunctioning onlot sewage disposal systems was conducted by Walter B. Satterthwaite Associates, Inc., and was published in March 1981. At that time infrared aerial photography was used to screen on-site malfunction areas which was followed by field investigations of suspicious areas.

Table 2.6 below depicts the summary of results of the 1981 survey which can be used to show a correlation with the reported number of malfunctioning onlot systems in 1991.

TABLE 2.6

1981 SURVEY OF Onlot SYSTEM MALFUNCTIONS

	Homes Surveyed	Observed Surface Failures	%	Other Possible Failures
Ashbridge-Firethorne	125	36*	29	1
Vista Farms	58	13	22	--
Charter Chase	98	1	1	4
Brookmont-Tremont Drives	41	1	2	1
Indian Hills	95	3	3	1
Cornwallis & Colonial Drives	28	2	7	--
Grand Oak (Bittersweet)	65	8	12	1
Totals/Percentage	510	64	12.5%	8

* Including community system connections

Source: 1981 Act 537 Plan Revision Study, Page 39

Many of the reported surface failures and potential failures identified in Table 2.6 have now been connected to public sewers including the Ashbridge-Firethorne area, the Vista Farms area, and the Grand Oak (Bittersweet) area. However, there are still a number of existing malfunctioning systems noted during 1991 for which no public sewer systems have yet been constructed. For example, in 1981, within the Charter Chase subdivision, there was one observed surface malfunction and four additional potential malfunctions. During the November 1991 Township-wide survey, there were 11 self-reported current or prior malfunctioning systems with one additional graywater discharge for a total of 12 prior or current malfunctions. This represents a very substantial increase during the intervening 10-year period. Please refer to Addendum at the end of this section regarding 1993 updated information for the Charter Chase subdivision.

Another interesting comparison involves the Cornwallis Drive-Colonial Drive area where in 1981 two onlot malfunctions were reported, or a seven percent failure rate. By 1991, the Meadowbrook/Cornwallis area had eight malfunctioning onlot systems reported with four additional onlot graywater discharges noted representing a substantial increase in failed systems during the 10-year period.

In contrast, the 1981 survey of 95 dwellings in the Indian Hills area reflected three observed failures and one additional possible failure. During the 1991 survey, 38 remaining dwellings not served by public or private sewers were surveyed with no reported malfunctions or other onlot discharges.

1991 Onlot Sewage Facilities Survey

As a part of the 1992 update for the Township's Act 537 Plan, a Township-wide survey was prepared for all known remaining dwelling units within the Township which currently have onlot sewage disposal means. The questionnaires were prepared jointly by SMC staff and the Township staff and were mailed in early November 1991 to 699 residential or institutional units. A 20 to 25 percent response was expected. A 69 percent response was received, which represents one of the highest return mail response levels of this type achieved in recent years. The summary results of the findings for the 1991 survey are depicted in Table 2.7.

The overall results depicted in the Township-wide survey of 1991 reflect 55 malfunctioning onlot systems with 14 of the same properties affected also showing additional graywater surface discharge violations. In addition, 19 residential units reported separate graywater discharge violations only. This represents a total of 74 dwellings with known malfunctions and/or separate washing machine/dishwater discharges to the ground surface, or 15 percent of the total responses received.

TABLE 2.7

1991 SURVEY OF ON-LOT SYSTEM MALFUNCTIONS AND GRAYWATER DISCHARGES

Development/Area	Surveys Mailed	Number of Responses	% Response	Malfunctioning Systems	% Violations	Other Discharges on Same Property Malfunction	%	Graywater Discharge Violation Only
Charter Chase Number of Surveys	98	76	77.55%	11	14.47%	1	1.32%	1
Mill Valley Number of Surveys	25	16	64.00%	1	6.25%	0	0.00%	1
Meadowbrook/Cornwallis Number of Surveys	73	48	65.75%	8	16.67%	3	6.25%	4
Goshen Downs Number of Surveys	73	52	71.23%	3	5.77%	1	1.92%	1
Wyllpen Number of Surveys	42	22	52.38%	3	13.64%	1	4.55%	0
Indian Hills Number of Surveys	38	6	15.79%	0	0.00%	0	0.00%	0
Taylor/Highland Number of Surveys	62	49	79.03%	9	18.37%	4	8.16%	5
Miscellaneous Number of Surveys	288	213	73.96%	20	9.39%	4	1.88%	7
Totals	699	482	68.95%	55	11.41%	14	2.90%	14

Source: Township Survey November, 1991.

9829:FTTB32J.WP

The highest number of reported onlot malfunctions occurred in the Charter Chase subdivision where 11 owners reported current and prior system failures with one additional graywater discharge. Please refer to the 1993 Addendum at the end of this section regarding the Charter Chase subdivision.

The area reflecting the second highest number of malfunctions is the Taylor Avenue/Highland Avenue area with nine malfunctions (four of which had additional surface water discharges) and five individual residential properties showing separate surface graywater discharges. When combined, this represents 28 percent of the responding homeowners reporting either a malfunction or a graywater discharge.

As expected, the Meadowbrook/Cornwallis area reflected eight malfunctioning systems (with three graywater discharges on the same properties) plus four additional separate graywater discharges or a 25 percent rate of violation using the combined reported rates.

The Wyllpen subdivision reported three malfunctions and reflected an approximate 14 percent rate of failed systems.

The miscellaneous area surveys reported in Table 2.7 involved 288 residential units and generated 213 returned survey forms indicating a response rate of 74 percent. There were 20 random malfunctioning systems (four of which also reported graywater discharges) and an additional seven reports of separate graywater discharge violations only. The malfunctioning systems and separate graywater violations constitute approximately 13 percent of the responding residential units.

The miscellaneous surveys were distributed to all known units having on-lot disposal systems on the following streets or roads: Atlee Drive; Boot Road; East Boot Road; Bramble Lane; Brookmont Drive; East Strasburg Road; Ellis Lane; Forest Lane; Gates Drive; Greenhill Road; Green Acres Lane; Hershey Mill Road; Ivy Lane; King Road; Larch Lane; Line Road; Manley Road; Mill Stream Drive; Morstein Road; North Chester Road; North Dutton Mill Road; Old Orchard Lane; West Chester Pike; Paoli Pike; Pine Rock Road; Raewyck Drive; Reservoir Road; and Tremont Drive.

The 20 reported malfunctions for the miscellaneous surveys are quite scattered and do not constitute any particular concentration or pattern of serious malfunctions except in the vicinity of North Chester Road south of Atlee Drive.

Exhibit 3-A reflects the generalized locations of the malfunctioning on-lot systems and the additional graywater discharge violations reported in the 1991 survey. These locations correspond with the data reflected in Table 2.7.

UPDATED ACT 537 WASTEWATER FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP

HIGHLAND/ TAYLOR
9 - MAL.
5 - DIS. VIOL.

WYLLPEN FARMS
3 - MAL.

BROOKMONT-TREMONT
2 - MAL.
1 - DIS. VIOL.

MILLSTREAM DRIVE
1 - MAL.
1 - DIS. VIOL.

GOSHEN DOWNS
3 - MAL.
1 - DIS. VIOL.

CHARTER CHASE
11 - MAL.
1 - DIS. VIOL.

MILL VALLEY
1 - MAL.
1 - DIS. VIOL.

GREEN ACRES
1 - MAL.

MILLTOWN
1 - DIS. VIOL.

PAOLI & RESERVOIR
3 - MAL.

BRAMBLE / RESERVOIR ROAD
1 - MAL.
1 - DIS. VIOL.

MEADOWBROOK/ CORNWALLIS
8 - MAL.
4 - DIS. VIOL.

WENTWORTH
2 - MAL.
(EXIST. D.U.s)

WILLISTOWN TOWNSHIP
EAST WHITELAND TOWNSHIP
WEST WHITELAND TOWNSHIP
WESTTOWN TOWNSHIP
WEST GOSHEN TOWNSHIP

SCALE IN FEET
REVISED: FEB 1992

EAST GOSHEN TOWNSHIP

CHESTER COUNTY PENNSYLVANIA

NOVEMBER 1991 ON-LOT MALFUNCTIONS

EXHIBIT 3-A

LEGEND

MAL. - MALFUNCTION
DIS. VIOL. - DISCHARGE VIOLATION (GRAYWATER)

Field Surveys Conducted in March 1991

During late March 1991, members of the Township administration, a member of the Meadowbrook/Cornwallis Homeowners Association, and a representative of the Chester County Health Department conducted field surveys within the Meadowbrook/ Cornwallis community to determine the extent of visible malfunctions and the graywater discharges visible on the ground. This survey involved a total of 36 properties along Meadowbrook Lane and Boot Road and 41 additional properties in the Cornwallis Drive/Colonial Drive area. A total of 77 properties were viewed in the field.

The categories for field classification of violations/non-violations are listed below:

1) Not Surfacing - No evidence of septic tank overflow or existing evidence of surfacing.

2) Washwater Discharge - Visible current evidence that graywater was being discharged on the ground.

3) Must Pump - Homeowner verified that frequent pumping was required to prevent sewage from backing up into the dwelling or overflowing onto the ground.

4) Surfacing in the Past - Visible field evidence that the wastewater system had overflowed recently. Also includes property where waste remnants were found at the cleanout or on the ground around the septic tank cleanout.

5. Surfacing Now - Visible evidence of sewage effluent running onto and across the ground surface.

Table 2.8 indicates the results of the Meadowbrook/ Cornwallis field survey.

TABLE 2.8

1991 FIELD SURVEY - MEADOWBROOK/CORNWALLIS

	Meadowbrook Lane/Boot Road	Cornwallis Area	Combined
Not Surfacing	24	25	44
Washwater Discharge	2	5	7
Must Pump	1	0	1
Surfacing past	4	7	11
Surfacing	5	4	9
TOTAL	36	41	77

This field study indicated a total of nine dwelling units depicting current wastewater surfacing and seven additional washwater or graywater discharges. A comparison with the results of the mail survey depicted in Table 2.7 for the Meadowbrook/ Cornwallis area reflects eight malfunctioning systems (compared with nine in the field survey) and four separate graywater violations (compared with seven similar violations noted in the March 1991 field survey).

By carefully comparing the results of the field survey on a lot-by-lot basis with the responses received in the November 1991 mail survey, it is noted that five of the properties reflecting malfunctions or discharge violations did not respond to the survey. This adds considerable weight to the field survey results depicted in Table 2.8.

In summary, there are probably four or five additional residential properties in the Meadowbrook/Cornwallis area which have current malfunctioning sewage systems or graywater discharge violations which were not reflected by the current owners. This is attributable to no response to the mail survey and/or ignorance of what constitutes a graywater discharge violation.

The property-by-property comparison of the Meadowbrook/ Cornwallis area further confirms that: the field survey showed nine current malfunctions whereas the mail survey respondents reported only eight such violations; the field survey detected seven graywater discharge violations whereas the mail survey disclosed only four such violations; of 16 properties with

definite field surveyed violations, five of such property owners did not respond to the survey; and only one homeowner reported a definite current malfunction which was not detected in the March 1991 field survey. This adds substantial credence to the accuracy of the field survey and also gives a general level of comfort that the mail survey results are reasonably accurate for sewage facility planning purposes.

It is the opinion of SMC, the consultant, that if field surveys were conducted for all 699 dwelling units having on-lot disposal systems, the results would indicate wastewater system malfunctions approximately ten percent higher than reflected in Table 2.7 and that the graywater discharges for the same number of dwelling units would be approximately 15 percent higher than reported in the mail survey.

Reported Type of System Installed for Survey Respondents

Table 2.9 depicts the type of onlot system installed based upon the 483 respondents to the mail survey of November 1991. The primary importance for the information depicted in Table 2.9 is that at least ten percent (and possibly more) of the 483 residents responding, do not know what type of onlot disposal system serves their property. Further, of the 483 persons responding to the survey, 33 residential occupants reported that they had "never pumped their system." This means seven percent of the reporting owners are not aware that they have to pump or alternatively they have lived in the residential unit for a short period of time. These specific dwelling units can be monitored by the Township staff for future potential onlot malfunctions. Hopefully, the public educational program and proposed onlot management system will alert the residential owners as to the frequency of need for pumping their conventional septic tanks and/or cesspools to avoid failures.

TABLE 2.9

SUMMARY - TYPE OF SYSTEM INSTALLED

	# of DUs	%
Conventional/Septic Tank	253	53%
Cesspools	171	35%+
Unknown	48	10%
Sand Mound	7	1%
Aerobic Tank	3	1%
Conventional Trenches	1	---
TOTAL	483	

Follow-up Field Study - Charter Chase Area

As a result of the November 1991 township-wide survey results, the Charter Chase Subdivision was subjected to a walkthrough field survey which was conducted on April 13 and April 20, 1992. Included in the field survey team were one member of the Township Public Works staff, two members of the Chester County Health Department staff, and two representatives from SMC Environmental Services Group, the consultants for the Act 537 Plan Update. Three Sewage Enforcement Officers (SEOs) were present during the two days of field investigation.

The results of the November 1991 mail survey depicted eleven malfunctioning systems and one separate graywater discharge for a total of 12 dwelling units with prior or current violations out of 76 mail responses.

The actual April 1992 field investigation depicted ten additional prior or current malfunctioning units not previously reported in the mail survey and three additional suspected graywater discharges not previously noted in the mail response survey. Therefore, based upon a combination of the self-reported malfunctioning and separate graywater discharges, and the field investigation conducted in April 1992, it is evident that there are 21 existing or past malfunctioning systems and four additional graywater violations within the 98 individual single family detached dwellings located in this area of the Township. Please refer to Addendum at the end of this section regarding a 1993 update for the Charter Chase subdivision.

As a result of the April 1992 field survey, seven letters were forwarded by the Township on April 28, 1992 to various homeowners where additional violations were noted. These notification letters included three residential units where cesspool and/or septic tank covers were considered to be unsafe; two additional graywater discharges; and two homeowners where raw sewage was noted as flowing across the ground surface. The owners of two of the residential units where the additional graywater discharges were noted promptly notified the Township that these were "sump pump discharges" and did not contain any wastewater.

Also as a result of the survey, the Chester County Health Department inspection team members were to follow-up immediately with two homeowners where suspected replacement systems had been installed without a valid County Health Department permit. Of major concern regarding the 97 residential units surveyed (one dwelling was missed in the survey) was the fact that approximately 35 percent of the existing homes within the area showed definite evidence of past overflows or cesspools/septic tanks which were full to near ground level on the dates of the survey. This is indicative of homeowner negligence regarding proper pumping of tanks for existing onlot systems and does not necessarily imply that the systems were malfunctioning.

As a result of the above surveys and other surveys conducted by the Township during the past three years, a Township-wide onlot sewage management program is being recommended as a part of this Act 537 Plan Update. Such a management system will hopefully be adopted by ordinance during late 1994 and will apply to all existing onlot systems regardless of type. In view of the 25 percent prior and current malfunction/graywater problems noted, the Charter Chase area will be analyzed further for possible public sewer needs during the 1998-2002 time period.

2.4 Existing Community-Type and Spray Irrigation Systems

There are several community-type onlot discharge systems and/or spray irrigation systems located in East Goshen Township. Listed below is a discussion of each.

Lockwood Chase Treatment Facility

In February 1981, PaDER issued Permit #1580430 for the construction and operation of a sewage treatment facility and spray irrigation system serving the Malvern Golf Club subdivision now known as the Lockwood Chase subdivision. The permit was issued for the construction of a sewage treatment facility and spray irrigation system for 103 total EDUs, 23 of which are located in East Whiteland Township. This subdivision is located along the northerly border of East Goshen Township to the west of North Chester Road and to the west and north of Fairway Village.

The treatment and spray irrigation system was designed by Tatman & Lee Associates for Ferguson & Flynn Enterprises, the developers of Lockwood Chase.

The treatment system consists of an influent 8-inch ductile iron pipe (D.I.P.) to a bar screen and comminutor; this then feeds to an aerated lagoon with 8-inch D.I.P. influent and effluent lines. The effluent then feeds to a polishing pond thence to a chlorine contact tank, and thence to a discharge pump located within the control building. The final effluent is then pumped to the numerous spray irrigation fields some of which are open areas and some of which are in the wooded areas to the west of the treatment facility.

The permit, as originally issued, requires the following condition which now applies to the East Goshen Municipal Authority which acquired title to this system on January 25, 1988. The restriction, among others, is as follows:

> "The proposed application rates for the spray irrigation areas have been approved based on the assumption of an annual average of 11 mg/l of total nitrogen in the polishing pond effluent which results in the nitrogen loading applied to the wooded area being within the required 200 lbs. N/acre/year. The reason for this restricted nitrogen loading is to insure that the nitrate/nitrogen (NO_3N) level in the ground water does not exceed 10 mg/l. If actual data indicates that the total nitrogen concentration in the effluent is greater than assumed and the (NO_3N) concentration in the ground water is approaching or exceeding 10 mg/l, provisions must be made to reduce the application rates and expand the spray irrigation area to lower the nitrogen loading in the wooded area."

In order to support the above condition, PaDER restricted the use and sale of Lots #52, #53, #54, and #55 for two years or until the above operating conditions were achieved. These lots have now been sold and built upon and thus the spray irrigation areas are limited to those in the original design concept.

Since the East Goshen Municipal Authority acquired ownership and operational responsibility for the Lockwood Chase treatment system, monthly laboratory samples have been provided by the operator for both influent and effluent flows. Although numerous operational problems occurred during the period 1990 to early 1992, it appears that these problems have been resolved and the facility is now being operated within permitted standards.

Table 2.10 depicts the pumped effluent flows for the Lockwood Chase treatment facility for 1991 and for most of 1992. Table 2.10 shows that the peak month for pumped effluent during

TABLE 2.10

TREATED EFFLUENT FLOWS (GPD)
LOCKWOOD CHASE TREATMENT FACILITY
1991-1992

1991 MONTH	EFFLUENT PUMPED	MONTH	EFFLUENT PUMPED
JAN.	21,597	JULY	26,545
FEB.	28,518	AUG.	15,516
MAR.	29,419	SEPT.	20,785
APRIL	20,563	OCT.	20,652
MAY	14,648	NOV.	28,880
JUNE	20,750	DEC.	16,784
		PEAK MONTH -	29,419

1992 MONTH	EFFLUENT PUMPED	MONTH	EFFLUENT PUMPED
JAN.	23,712	JULY	23,648
FEB.	25,603	AUG.	24,529
MARCH	24,694	SEPT.	22,380
APRIL	18,703	OCT.	24,258
MAY	25,006		
JUNE	21,087		
		PEAK MONTH -	25,603

Source: Township/Authority Records

1991 was 29,419 GPD average and for 1992, a peak month discharge of 25,603 GPD average daily flow is shown. Numerous pump failures and electrical failures occurred between January 1991 and February 1992 which were all corrected in a timely fashion.

On June 30, 1991, the comminutor pit was discovered as being in an overflow condition because a large broken piece of PVC lateral vent cap had worked its way through the collection system

to the comminutor. TMH Environmental Services, Inc., the operator of the facility for the Municipal Authority, reported the spillage to PaDER.

One of the vital components of this facility is the final effluent spray pump. Based on one failure, the Authority now maintains a spare pump to assure that effluent can be discharged without excessive pond overloading.

It is the opinion of SMC, the consultants for this Act 537 Plan Update, that the Lockwood Chase treatment facility should not receive any additional effluent from surrounding or nearby areas. The treatment facility operation is now stabilized and is working well and within permit limits. If one or two emergency malfunctions of nearby onlot systems were to occur, it would be appropriate to consider the use of the Lockwood Chase system. However, to assure against overloading of this facility, it is recommended that this plant remain at its current service use of 103 EDUs without additional effluent being introduced.

It should be noted that the average daily flow for a given month from each EDU includes approximately 243 GPD which is higher than the daily flow for equivalent EDUs connected to the West Goshen STP and the Ridley Creek STP. For example, in May 1992, the average daily effluent treated was 25,006 GPD which equates to 243 GPD per connected EDU.

Now that the treatment facility is under a routine maintenance program, the operation should continue smoothly for many years. No extended useful life for this facility has been published, but it is the consultant's best estimate that this facility should provide at least 20 to 25 years of adequate treatment for the Lockwood Chase area.

Willow Pond Community Onlot Treatment System

The Willow Pond treatment facility is a privately-owned treatment plant located to the north of Forest Lane and to the west of Line Road. The treatment facility serves 28 dwellings or EDUs, 15 of which are located in East Goshen Township and 13 being located in Willistown Township. The treatment facility is maintained solely by the Willow Pond Homeowners Association.

This treatment facility was designed by Momenee-King Associates in September 1984. The design flow for this treatment facility is based upon 28 EDUs at 3.2 persons per unit at 75 gal/day/person, or 6,720 GPD. This equates to 240 GPD per dwelling unit. The peak design flow, according to the engineer's report is 56 GPM compared with the engineer's estimated 4.67 GPM in average flow. The system uses two aerobic tanks for treatment which provides assumed tertiary level treatment before pumping to an inground absorption bed area located north of Forest Lane.

During 1991, the original absorption beds failed because excess solids had entered the inground absorption area. A new sewage bed area was installed in mid-1992. The useful life of this new absorption bed is unknown. It is assumed by the owners that the original bed may be returned to service within one to two years after self-renovation.

Several engineering evaluations of the Willow Pond system suggest that the sewage effluent absorption beds are more than adequate, but the treatment tanks tend to introduce excess solids into the effluent. It is doubtful that the homeowners association could or would afford the cost of a replacement treatment plant facility (estimated at $200,000 in 1991 by Yerkes Associates). Therefore, it is assumed that this system may suffer additional malfunctions during the 10-year planning cycle 1993-2002. Although it may be possible to again install replacement or alternate inground sewage absorption areas, this will be a very costly process for the homeowners association.

It is also assumed that the homeowners association will eventually approach the East Goshen Municipal Authority with a request for a Township takeover of this existing community onlot system. A reference to Table 3.7 in the following section of this report indicates that the Willow Pond subdivision is being considered for possible connection to the Ridley Creek STP during the period 1998-2002. However, this can only occur if gravity sewers are extended 4,600 L.F. to the Saddlebrook Farm subdivision at a cost in excess of $400,000.

2.5 Hersheys Mill Spray Irrigation System

The Hersheys Mill development represents one of the largest land areas in East Goshen Township now being developed under a unified plan or planned residential development. The land area comprising Hersheys Mill Village generally extends from Boot Road to North Chester Road and is bounded on the north by Green Hill Road and on the south by the Meadowbrook/Cornwallis area.

The ultimate permitted density for Hersheys Mill Village is 2,032 EDUs. As of August 1992, there were 1,155 occupied dwelling units, which implies there will be an additional 877 units to ultimate build out. However, due to changes in market conditions, the style and type of unit now being marketed and other factors, it is expected that the ultimate EDUs will be slightly less than 2,032 occupied units.

During February 1992, there were 1,133 occupied EDUs with an estimated 1.6 persons per unit contributing approximately 115 GPD per EDU or 130,295 GPD in sewage flow. In addition, it was estimated that the various community facilities at Hersheys Mill contributed an additional 5,000 GPD for an approximate total of

135,000 GPD in average daily influent. The supervisor and plant operator for Hersheys Mill Village estimated that infiltration and inflow (I&I) constituted less than three percent per day of the daily effluent treated. The existing PaDER permit for the entire sewage treatment and spray irrigation system is limited to 325,000 GPD which included 50,800 GPD for Hersheys Mill Estates which has been taken off-line via the Hersheys Mill Village pump station, and this effluent is now treated at the West Goshen STP.

The lagoon system for the Hersheys Mill Village treatment system was designed in the mid-1970s and reportedly the first units were placed on-line during 1976 and 1977. During 1991, a new commercial center was approved for the Hersheys Mill Village complex which will also be connected to the Hersheys Mill treatment facility. However, a November 1993, letter from Wooldridge Construction of Pennsylvania, Inc. expressed interest in reserving 15,000 gpd should additional capacity at West Goshen (or some other source) become available.

Until January 1, 1994, the treatment facility will continue to be owned and operated by Wooldridge Construction, the current developer. In 1994, the Hersheys Mill Homeowners Association will take over the entire system. The current monthly fees charged include $16.50 per EDU which produces an estimated 1992 annual operating budget of $230,000. Of this amount, $47,000 or 20 percent is reserved for capital improvements which is used for lagoon sludge removal, new lagoon liners and normal replacement for pumps and operating equipment. It is the opinion of the consultant and the Township Sewage Administrator that this system is in excellent condition both physically and financially, and there is little need for Township intervention in a system which operates with few, if any, problems.

It is noteworthy that there has not been a PaDER violation in almost 13 years of continuous operation. During 1991, BFI removed 280,000 gallons of sludge/slurry from one lagoon which was trucked to Wilmington, Delaware for disposal. This was the first time that sludge removal had been required since the sewage system was placed in operation. The other lagoons are scheduled for similar sludge removal by 1995-1996. One lagoon is scheduled for installation of a new liner during 1993. Although no liner failures have been noted, this is considered to be a routine replacement.

The three lagoons within the treatment system have a total storage capacity of 40,000,000 gallons. The facility operators have experienced no problems in applying the effluent by spray irrigation for 365 days per year. The spray irrigation area includes 100 acres of which 70 acres of the existing golf course is used for spray fields and 30 acres of permanent open space outside of the golf course is used for winter spraying only. An additional 6.5 acres is reserved for expanded spray areas if

outside of the golf course is used for winter spraying only. An additional 6.5 acres is reserved for expanded spray areas if required at any time in the future. All facilities within the plant operation are served by emergency generators and all pumps and aerating equipment are dual facilities or have backup systems on-line. The plant operators currently apply the treated effluent at a rate of approximately two inches per week which is carefully monitored.

In summary, this treatment plant is operating at 41 percent of its permitted treatment capacity. The current population and/or EDUs during August 1992 constitutes 57 percent of the build out capacity at Hersheys Mill Village. Therefore, it is estimated that there will be some reserve capacity in the treatment system when build out occurs (70,000 to 85,000 GPD), which is estimated to be in eight to ten years.

This is a facility which the East Goshen Municipal Authority could take over at any time should there be a need for such. There is no evidence or desire on the part of the ownership and management of Hersheys Mill Village and the directors of the Hersheys Mill Homeowners Association to have public participation in its sewage treatment system or operations at this time.

Within the 10-year planning cycle, 1993-2002, there is no apparent need for intervention on the part of East Goshen Township or its Municipal Authority. At the estimated time of build out, which could be as early as the year 2000, there should be a remaining unused treatment capacity of 70,000 to 85,000 gallons per day. If at that time there is a need for public ownership, the Township and the Authority could certainly take a look at a possible takeover of the system. If the Hersheys Mill treatment system was publicly owned in the future, the additional unused treatment capacity could be used to serve the adjacent Charter Chase community and other nearby subdivisions if such needs were apparent at that time.

1994 ADDENDUM
AMENDING SECTION 2.3 EXISTING INDIVIDUAL ONLOT SYSTEMS
CHARTER CHASE SUBDIVISION REVISED SUMMARY

Section 2.3 of the preceding text describes the existing status of individual onlot systems in various areas of the Township. The only existing subdivision within East Goshen Township which was scheduled for additional field walk-through surveys was the Charter Chase Subdivision. As a result of the Chester County Health Department review of the December 1992 final draft of this Act 537 Plan Update, strong recommendations were made by the Health Department that an additional walk-through be conducted to confirm the status of onlot malfunctions and graywater discharges.

In compliance with the County Health Department request, additional field walk-through surveys were scheduled and conducted on July 23 and July 27, 1993. A representative of the County Health Department participated in this study which included the Township Manager and a representative of the consultant. The same physical observation process was utilized as in the April 1992 field walk-through surveys. The following information represents a comparison of the 1992 and the 1993 field surveys for the Charter Chase Subdivision:

RESULTS OF APRIL 1992 WALK-THROUGH

a.	Lots malfunctioning - 1992 or reported malfunctioning prior to 1992	21
b.	Lots showing evidence of graywater - 1992	4
c.	Lots reported with no current or prior malfunction or current or prior graywater discharge	73
	Total	98

The following information summarizes the July 1993 walk-through results:

RESULTS OF JULY 1993 WALK-THROUGH

a.	Lots malfunctioning now (1993)	7
b.	Lots with 1993 graywater discharge	3
c.	Lots showing evidence of prior overflow, prior malfunction, or prior graywater discharge, but now renovated	25
	Total	35
d.	Lots which never experienced any problem	63
	Total Lots	98

There are several final conclusions drawn from a careful analysis of the Township-wide 1991 mail survey, the April 1992 field walk-through survey, and the identical 1993 field walk-through survey.

The first conclusion is that many of the people who responded to the Township-wide 1991 mail survey apparently misinterpreted the wording in the survey which related to "discharge on the ground" when the homeowners apparently interpreted the question as being "discharged into the ground." This became evident when comparing the actual returned field surveys for specific dwellings or specific street addresses in Charter Chase where a reported "prior malfunction" had occurred when in fact almost brand-new systems were evident in the field for newly-occupied units and no field malfunctions were evident in either walk-through. Therefore, greater credibility is attached to the 1993 and the prior 1992 walk-through surveys.

The summary of the 1993 field survey depicted seven widely scattered malfunctioning systems and three additional graywater discharge violations representing a total of ten dwelling units with sewage discharge problems as based on a total of 98 residential units surveyed. This represents an approximate ten percent malfunction rate and is considered the most credible evidence to date for this area of the Township.

In addition to the ten percent of widely scattered malfunctioning units, most of the evidence related to the 25 dwelling units reported above for the 1993 survey as "showing evidence of overflow, prior malfunction or prior graywater discharge, but not renovated" should not be considered as current malfunctions. Further, the field surveys indicated conditions where the homeowner simply failed to pump the cesspool or septic

system in a timely fashion. Even though prior evidence of an overflow existed, there was no physical evidence whatever which would show that these units are in violation of current standards.

It is very evident that the Township's administrative staff effort to inform all homeowners in the Charter Chase area of the need for frequent pumping of onlot systems has substantially diminished the reported problems in the Charter Chase Subdivision. There was also ample evidence that many homeowners have responded by having replacement systems installed which have cured or corrected previously reported malfunctions.

In summary, it is the opinion of the Township that there are currently ten widely scattered malfunctioning onlot conditions in the Charter Chase Subdivision. This does not warrant further consideration for providing public sewers at this time. The Charter Chase Subdivision will be kept under scrutiny with suggested follow-through field surveys in 1995 and 1997. It is not expected that there will be any major changes for deterioration of onlot sewage disposal conditions in this area so long as the homeowners continue appropriate and timely pumping and maintenance of their onlot systems.

3.0 EXISTING DEVELOPMENT, PROPOSED LAND USE, FUTURE GROWTH, ZONING, AND FIVE AND TEN-YEAR SEWAGE EXPANSION PLANS

3.1 Existing Developed Areas

Exhibit 1 contained in Section 1.1 of this report depicts the extent of existing development in 1992 including some lots which are committed for development but not yet fully built. The majority of the developed land area within East Goshen Township involves single family detached housing. However, there is a good mix of multi-family development along the West Chester Pike corridor and the new Kent Apartment Complex at Boot Road and North Chester Road.

In terms of extent of development, approximately 67 percent of the 6,400 acres comprising the Township land area is now developed for residential, industrial, commercial, and public purposes. This is reflected in Table 3.1 which appears as Table A-1 in the newly adopted 1992 Comprehensive Plan for the Township. With 4,318 acres developed as of 1990 and an additional 761 acres committed to various developments, this represents 79 percent of the total land area of East Goshen Township. Table 3.1 also depicts approximately 1,321 acres of undeveloped land, or 21 percent of the land area which is subject to future development. An estimate contained within the Comprehensive Plan suggests that approximately one-third of the undeveloped land will not be capable of supporting development due to environmental constraints. A maximum of approximately 65 percent of this land can be expected in the future land development mix, or approximately 860 acres.

TABLE 3.1

LAND DEVELOPMENT CHARACTERISTICS
EAST GOSHEN TOWNSHIP, 1990

CATEGORY	ACRES	PERCENT
Developed Land	4,318	67
Committed for Development	761	12
Undeveloped Land	1,321	21
Township Total:	6,400	100

Source: 1992 Comprehensive Plan

Another important forecast is the probable distribution of future land uses based upon current or 1990 zoning for the Township. This information was also obtained from the 1992 Comprehensive Plan Update. In Table 3.2, the remaining undeveloped land has been incorporated in a development scenario as if the Township was fully and completely developed. This analysis was based upon the 1990 zoning which has not been changed substantially and is not likely to change in the near future.

TABLE 3.2

DISTRIBUTION OF LAND USES
AS CURRENTLY ZONED
EAST GOSHEN TOWNSHIP, NOVEMBER 1990

LAND USE	ACRES	% OF AREA
Single-Family Residential*	4,351	68
Multi-Family Residential	999	16
Commercial	58	1
Industrial	600	9
Business Park	113	2
Public Open Space	206	3
Churches/Schools	73	1
	6,400	100

* Includes privately owned open space.

Source: 1992 Comprehensive Plan

Table 3.2 gives an excellent breakdown of the percentages of Township area which will be devoted to each major use group including 68 percent for single family residential and 16 percent of the land area for multi-family residential. The remaining 16 percent of the Township land area will, at some future date, be developed in accordance with Table 3.2 for various commercial, industrial, public and semi-private uses.

The 1992 Comprehensive Plan also contains an Existing Land Use Map which is reproduced here as Exhibit 4. The Existing Land Use Map describes November 1990 existing land use conditions. The existing multi-family residential units in the West Chester Pike corridor are clearly shown as are the other multi-family

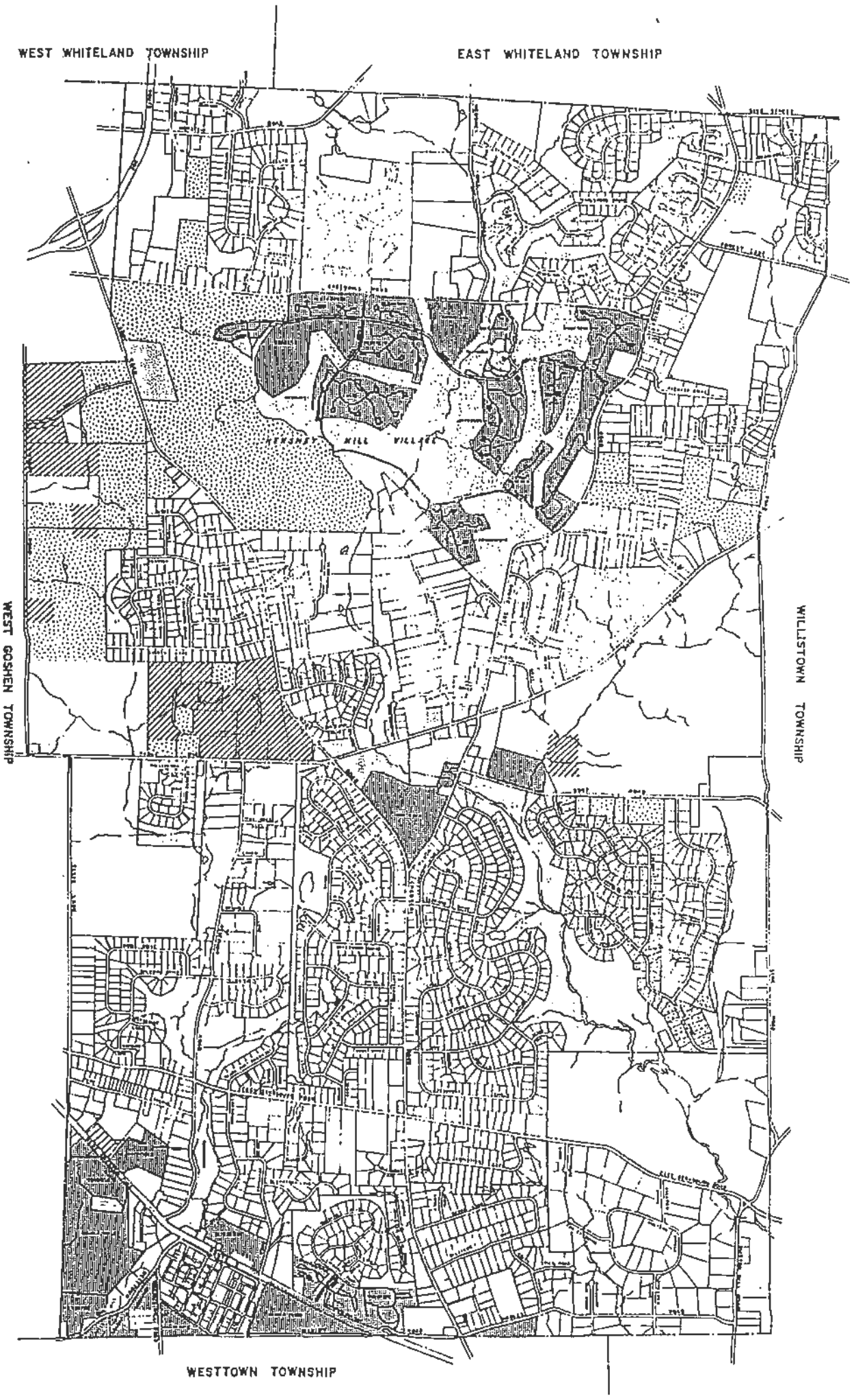
FIGURE A-1.

EXISTING LAND USE

- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC/QUASI-PUBLIC
- RECREATION and OPEN SPACE*
- UNDEVELOPED
- COMMITTED for DEVELOPMENT

*(INCLUDES TOWNSHIP AND PRIVATELY, i.e. HOME OWNERS ASSOCIATIONS OWNED LAND)

SOURCE: EAST GOSHEN TOWNSHIP
NOTE: EXISTING LAND USE BASED ON 1990 CONDITIONS.



EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA	COMPREHENSIVE PLAN	0 800 1600 2400 4000 SCALE IN FEET	NORTH	Planning Consultant URBAN RESEARCH AND DEVELOPMENT CORPORATION 28 BETHLEHEM PLAZA BETHLEHEM, PENNSYLVANIA

EXHIBIT 4

developments within the Township. Hersheys Mill Village is depicted as a multi-family residential community even though most of the units developed there are attached single family dwellings. The present developed area of Hersheys Mill Village, one of the most predominant residential developments within the Township, shows the extent of development representing approximately 1,100 occupied units as compared with a projected total number of 2,032 dwelling units at the time of build-out or completion. The existing land use map is very helpful in depicting where those additional units might be located.

The industrial developed areas of the Township are also clearly shown with the Goshen Corporate Center, located north of Paoli Pike, being closest to a built-out condition. The Goshen Corporate Park West, located generally along Airport Road, is not yet fully developed but is expected to achieve build-out within ten years or less. Another vital source of information as contained in the 1992 Comprehensive Plan appears in Table 3.3.

TABLE 3.3

COMMITTED DEVELOPMENTS AS OF 1992
UNDER CONSTRUCTION BUT NOT FULLY OCCUPIED/BUILT OUT

DEVELOPMENT	ACRES	UNITS	ESTIMATED POPULATION
Waterford	33	26	64
Shassian	10	6	15
Wentworth	85	48	119
Mill Creek	35	33	82
Windermere	6	60 Apts.	148
Bellingham	15	209	334
Hersheys Mill			
(Lincoln)	7	25	62
(Merrifield)	7	27	67
(Newbury)	4	16	40
(Princeton)	17	69	170
	219	519	1,101

Source: 1992 Comprehensive Plan

This Table depicts developments which are committed by the Township as of 1992 and are under construction but are not fully occupied or built-out. These various developments include approximately 219 acres which represents 519 new dwelling units with an estimated population of 1,101 persons. Of the 519 proposed new dwelling units contained in Table 3.3, the Windermere development, the Bellingham development, and the Hersheys Mill developments listed would total 406 of the 519 dwelling units which are not single family detached dwellings.

Table 3.4 depicts five pending developments which have been committed as of 1992 but are not yet under construction. The source of this table is the 1992 Comprehensive Plan.

TABLE 3.4

COMMITTED DEVELOPMENTS AS OF 1992
NOT UNDER CONSTRUCTION

DEVELOPMENT	ACRES	UNITS	ESTIMATED POPULATION*
Bow Tree IV	213	169	417
Hayes/Blair	19	16	40
Saddlebrook	5	5	12
Miscellaneous	18	18	45
Hersheys Mill			
(Oakmont)	5	25	62
	260	233	576

* Based on 2.47 people per dwelling unit

Source: 1992 Comprehensive Plan

All of the units depicted in Table 3.4 represent single family detached dwellings except for the Hersheys Mill (Oakmont) development. According to this table, another 233 dwelling units will be added in the foreseeable future consuming an additional 260 acres of currently undeveloped land.

In summary, expected new development within the Township will affect approximately 65 percent of the remaining undeveloped land as depicted in Table 3.1 or about 860 acres. The future land use plans and the appropriate zoning requirements are discussed in the following section for this remaining undeveloped land.

3.2 Proposed Land Use and Zoning

East Goshen Township spent almost two years in developing the new 1992 Comprehensive Plan for the Township. This plan is well thought out and does not represent any radical departures from the existing zoning intentions which have been in effect for many years. Frequently, a Comprehensive Plan Update makes drastic changes and causes major changes in the Township's build-out potential. There are some innovative features of the new Comprehensive Plan which, in overlay format, will cause better development patterns for the remaining undeveloped land within the Township.

Exhibit 5, as taken from the 1992 Comprehensive Plan, describes A Plan for Future Land Use which appropriately balances an excellent mix of residential, commercial, industrial, and public/semi-public uses.

The following classes of use are recommended on Exhibit 5 for the future land use development of East Goshen Township:

Residential

- Low density suburban residential (one DU per acre)
- Low density open space suburban residential (1-3 DUs per acre)
- Medium density suburban residential (2-3 DUs per acre)
- High density suburban residential (4-14 DUs per acre)
- Urban residential (7-14 DUs per acre)

These five classes of recommended residential use compare favorably with the present zoning categories for the Township and are consistent with the build-out densities discussed in this report. The following commercial and office categories have been adopted within the 1992 Comprehensive Plan:

Commercial and Office

- Community commercial and local convenience commercial
- Planned highway commercial and business
- Government, finance, and office

These commercial and office uses are generally confined to the West Chester Pike corridor and to the Paoli Pike frontage between Boot Road and North Chester Road. The 1992 Comprehensive Plan recognizes that the predominant supporting commercial needs

FIGURE 1.

PLAN FOR FUTURE LAND USE

RESIDENTIAL

- LOW DENSITY SUBURBAN RESIDENTIAL (1 DU/AC)
- LOW DENSITY OPEN SPACE SUBURBAN RESIDENTIAL (1-3 DU/AC)
- MEDIUM DENSITY SUBURBAN RESIDENTIAL (2-3 DU/AC)
- HIGH DENSITY SUBURBAN RESIDENTIAL (3 - 14 1/2 DU/AC)
- URBAN RESIDENTIAL (3 - 14 1/2 DU/AC)

COMMERCIAL & OFFICE

- COMMUNITY COMMERCIAL and LOCAL CONVENIENCE COMMERCIAL
- PLANNED HIGHWAY COMMERCIAL and BUSINESS
- GOVERNMENT, FINANCE and OFFICE

INDUSTRIAL

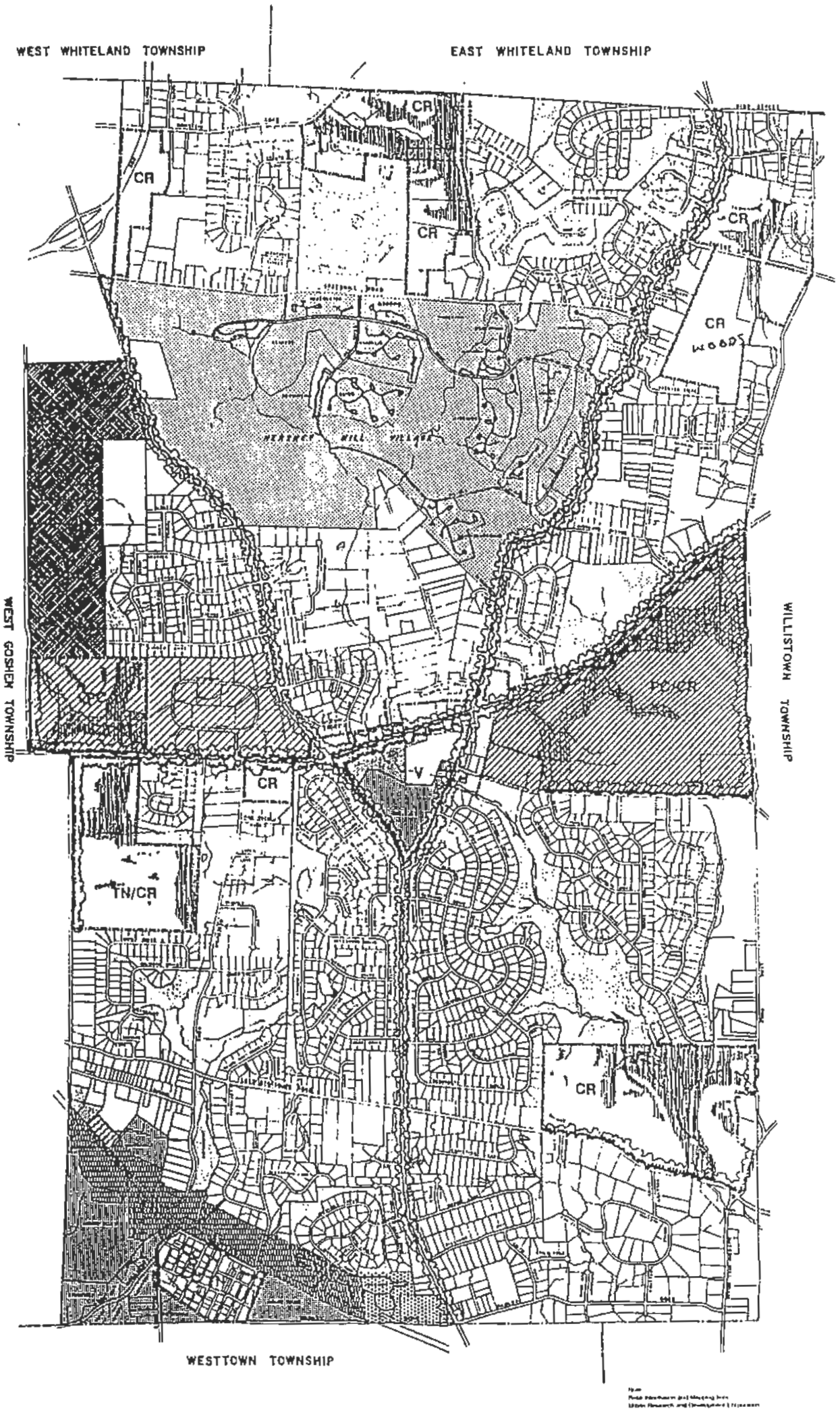
- PLANNED BUSINESS, RESEARCH, LIMITED INDUSTRIAL PARK, and RESIDENTIAL
- BUSINESS PARK
- LIGHT INDUSTRIAL

COMMUNITY FACILITIES

- OPEN SPACE CONSERVATION
- PARKLAND

OVERLAY AREAS

- CR — CLUSTER SINGLE-FAMILY RESIDENTIAL DEVELOPMENT
- TN — TRADITIONAL NEIGHBORHOOD
- PC — PLANNED CAMPUS DEVELOPMENT
- V — VILLAGE
- NATURAL RESOURCE PROTECTION AREAS ON UNDEVELOPED TRACTS
- GREENWAY BUFFER



EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

COMPREHENSIVE PLAN
Date 6 12 92
Revised 7 10 92

0 800 1600 2400 4000
SCALE IN FEET

NORTH

Thomas Comitta Associates, Inc.
Planning & Design Consultants
18 W. Chestnut Street, West Chester, Pennsylvania 19380

EXHIBIT 5

of the Township will continue to be served by the commercial corridor located in West Goshen Township extending west from the West Goshen Shopping Center. The following industrial uses have been adopted for both local and regional employment purposes:

Industrial

- Planned business, research, limited industrial park, and residential
- Business park
- Light industrial

The planned business, research, limited industrial park, and residential area is limited to the SmithKline Beecham property located south of Paoli Pike, north of Boot Road, and west of Line Road. This 312-acre parcel may be developed in the future for a combination of the above uses and cluster residential development the details of which are currently under study between the Township and SmithKline Beecham. Business park use is partially developed and consists primarily of the Goshen Corporate Park and the Hicks property. The balance of the light industrial uses planned for future growth in the Township include the Goshen Corporate Park West as depicted along Airport Road. The Comprehensive Plan also recommends the following open space and parkland uses:

Community Facilities

- Open space conservation
- Parkland

The Comprehensive Plan also recommends several unique Land Use Planning overlays which will be very helpful in achieving conservation oriented land use patterns as the Township approaches its potential ultimate build-out:

Overlay Areas

- CR - Cluster single family residential development
- Traditional neighborhoods
- Planned campus development
- Village development
- Natural resource protection areas on undeveloped tracts
- Greenway buffer

The above overlays must now be translated into a zoning format in order to preserve the remaining environmentally constrained areas not yet developed.

In summary East Goshen Township has adopted a forward thinking Comprehensive Plan which will allow ultimate build-out of remaining undeveloped areas in a most orderly fashion. Fortunately, the extent of resulting zoning changes required to implement the above Land Use Plan are minimal since the land use classes recommended are very consistent with present zoning except for the adoption of the above overlay districts.

EXISTING ZONING

East Goshen Township has followed a rigorous program of zoning implementation since the mid-1950s by carefully correlating the zoning classifications with the most recent Comprehensive Plan Land Use Updates. This has resulted in a high degree of land use/zoning conformity with minimal non-conforming development. The Township has continually updated or amended its Zoning Ordinance in accordance with changing conditions and changing needs for its residents.

Exhibit 6 depicts the official Zoning Map of East Goshen Township as last revised in October 1986. Two minor zoning district changes have occurred as follows:

- Expansion of the C2 Local Convenience Commercial District to include newly acquired land for the Township Municipal Building expansion.

- Rezoning from R2 to R3 Residential District for a small parcel located south of Morstein Road and west of U.S. Route 202.

The various classes of existing zoning districts are clearly depicted on Exhibit 5. With regard to permitted development densities, there are numerous options available within several of the districts depending upon the availability of public water and/or sewage facilities. The Township has recently adopted a new ordinance requiring that all residential construction (other than single family detached dwellings located on a lot of one acre or larger) be connected to a central, public water system.

Table 3.5, Summary of Existing Zoning Density Requirements, provides an overview of how the Township manages and regulates its existing and future development. It should be noted that there are provisions within the Ordinance, as amended, which allow for different area and bulk regulations which cannot be expressed in a summary table such as Table 3.5.

TABLE 3.5

SUMMARY OF EXISTING ZONING DENSITY REQUIREMENTS

ZONING DISTRICT	TYPE OF USE	MIN. LOT SIZE PER DU OR MAX. DENSITY	EQUIVALENT RESIDENTIAL DENSITY AND/OR MAX. BUILDING COVERAGE PERCENTAGE
RESIDENTIAL			
R-1	SFA/SFD/PRD	1.5-3.5 DUs/Acre	1.5-3.5 DUs/Acre
R-2	SFD	1.0 Acre	1.0 DUs/Acre
	SF Cluster(1)	25,000 sq. ft.	1.74 DUs/Acre(3)
	Other Uses	1.0 to 2.0 Acres	2.0 Acres/25%
	School	10.0 Acres	10.0 Acres/25%
R-3	SFD/Other(1)	18,000 sq. ft.	2.4 DUs/Acre
	SFSD	12,000 sq. ft.	3.6 DUs/Acre
	School	10.0 Acres	10.0 Acres/25%
	Church	2.0 Acres	2.0 Acres/25%
R-4	SFD	14,500 sq. ft	3.0 DUs/Acre
	SFSD	10,000 sq. ft.	4.3 DUs/Acre
	TH	5 DUs Acre	5 DUs/Acre
	APT	3,000 sq. ft/	14.5 DUs/Acre
	Other(1)	2.0 Acres	2.0 Acres/25%

TABLE 3.5 - Continued

ZONING DISTRICT	TYPE OF USE	MIN. LOT SIZE PER DU OR MAX. DENSITY	EQUIVALENT RESIDENTIAL DENSITY AND/OR MAX. BUILDING COVERAGE PERCENTAGE
RESIDENTIAL			
R-5	APT	3,000 sq. ft.	14.5 DUs/Acre
	TH	7 DUs/Acre	7 DUs/Acre
	SFSD	19,000 sq. ft.	4.3 DUs/Acre
	SFD	14,000 sq. ft.	3.1 DUs/Acre
	Other	14,000 sq. ft or 2 Acres	25%
COMMERCIAL	Gas Station	25,000 sq. ft.	20%
	All Other	18,000 sq. ft.	25%
C-2	All Uses	18,000 sq. ft.	30%
C-4	Offices/Banks	2.0 Acres	20%
	Other Uses	4.0 Acres	20%
	APT[1]	3,000 sq. ft.	14.5 DUs/Acre
C-5	All Uses	40,000 sq. ft.	25%

TABLE 3.5 - Continued

ZONING DISTRICT	TYPE OF USE	MIN. LOT SIZE PER DU OR MAX. DENSITY	EQUIVALENT RESIDENTIAL DENSITY AND/OR MAX. BUILDING COVERAGE PERCENTAGE
INDUSTRIAL			
I-1	Restaurant/Bank	2 Acres	30%
	Other Uses	4 Acres	30%
I-R[4]	SF Residential All Other Uses	1 Acre 10 Acres[2]	25% 25%
BP	All Uses	4 Acres	30%

SFD = Single Family Detached
SFSD = Single Family Semi-Detached
TH = Townhouse
APT = Apartments
(1) Refer to Conditional Use or Single Family Cluster Development
(2) Life Care Units at 2,500 sq. ft/unit permitted by Conditional Use
(3) The requirement for 40% open space will substantially reduce the 1.74 DUs/Acre to 1.0 DUs/Acre, or less.
(4) Amended by Ordinance No. 67-E-91

OFFICIAL ZONING MAP AMENDMENTS

JULY 30, 1985 - CHANGED C-4 AND R-4 BOUNDARY LINES ALONG ROUTE 3 EAST OF WATERVIEW ROAD. See Ordinance 87-8-85

OCTOBER 21, 1985 - ADDED R-4 DISTRICT ALONG SOUTH SIDE OF MANLEY ROAD EAST OF NORTH CHESTER ROAD. See Ordinance 87-0-85

BASE MAP ADDITIONS/REVISIONS			
5/6/87	ADDED SUBDIVISIONS, ROADS, AND ROAD NAMES. DELETED NON-ALLUVIAL SOILS ON VALLEY VIEW ROAD.	MPDC	
6/23/87	ADDED SUBDIVISIONS, ROADS, ROAD NAMES, AND APARTMENT/CONDOMINIUM COMPLEX NAMES	MPDC	
9/2/87	ADDED LOT LINES	MPDC	

OFFICIAL ZONING MAP

ZONING DISTRICTS

- **R-1** LOW DENSITY OPEN SPACE SUBURBAN RESIDENTIAL
- **R-2** LOW DENSITY SUBURBAN RESIDENTIAL
- **R-3** MEDIUM DENSITY SUBURBAN RESIDENTIAL
- **R-4** HIGH DENSITY SUBURBAN RESIDENTIAL
- **R-5** URBAN RESIDENTIAL
- **C-1** COMMUNITY COMMERCIAL
- **C-2** LOCAL CONVENIENCE COMMERCIAL
- **C-4** PLANNED HIGHWAY COMMERCIAL and BUSINESS
- **C-5** GOVERNMENT, FINANCE, and OFFICE
- **I-1** LIGHT INDUSTRIAL
- **I-R** PLANNED BUSINESS, RESEARCH, and LIMITED INDUSTRIAL PARK AND RESIDENTIAL
- **BP** BUSINESS PARK

ALLUVIAL SOILS (Approximate Locations Only)*

100 YEAR FLOOD AREA (Approximate Locations Only)*

*Sources of Alluvial Soils and 100 Year Flood Area

Flood Insurance Study
Township of East Goshen
Chester County, Pennsylvania
by
U. S. Department of Housing and Urban Development
Federal Insurance Administration
January, 1977

Chester and Delaware Counties Soil Survey
U. S. Department of Agriculture
May, 1963

THE OFFICIAL ZONING MAP IN THE TOWNSHIP BUILDING SHALL BE THE FINAL AUTHORITY REGARDING THE CURRENT ZONING STATUS OF LAND, BUILDINGS AND OTHER STRUCTURES.

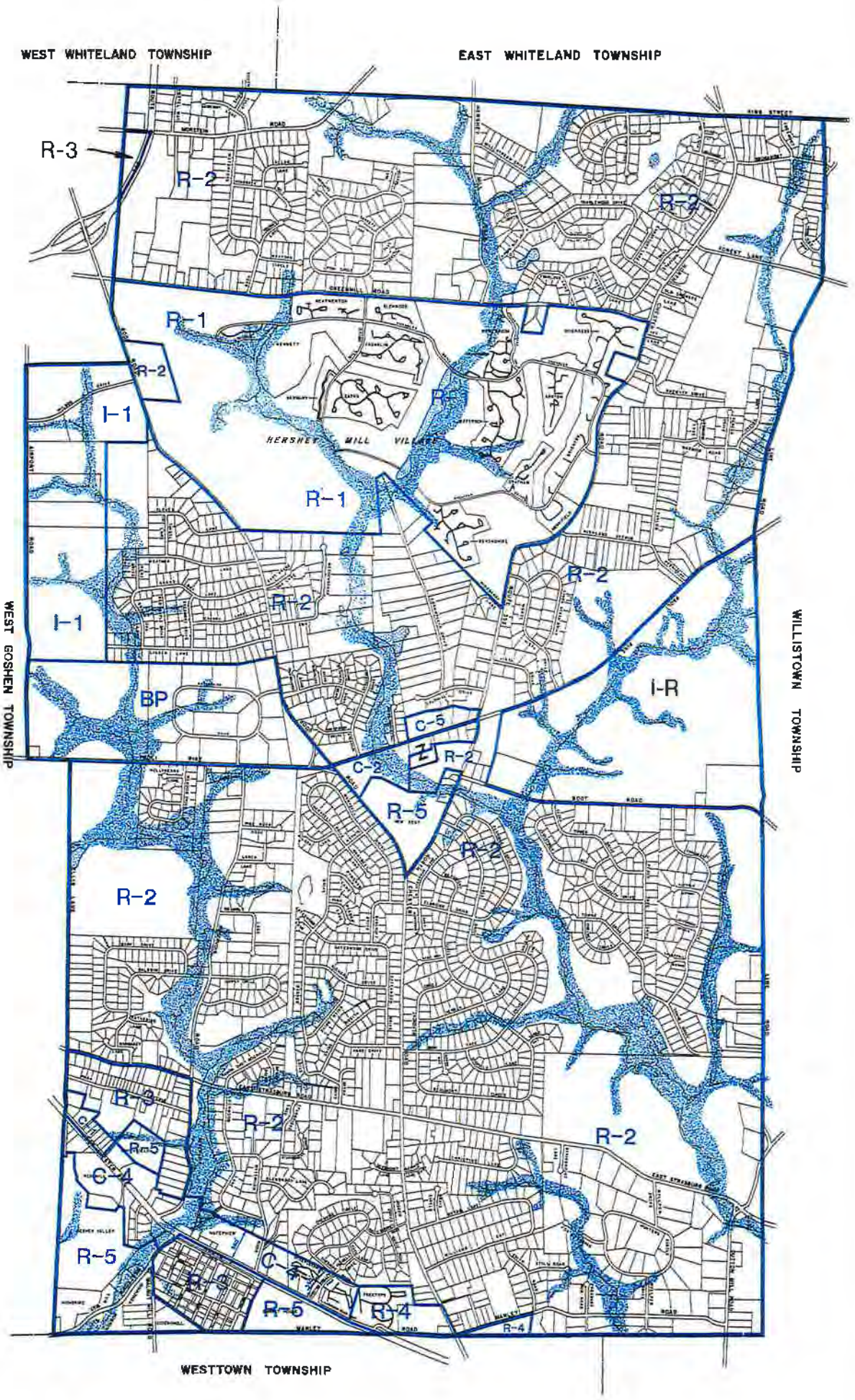
THIS IS TO CERTIFY THAT THIS IS THE OFFICIAL ZONING MAP

TOWNSHIP SEAL

CHAIRMAN, BOARD OF SUPERVISORS — DATE

SECRETARY - TREASURER — DATE

ADOPTED SEPTEMBER 20, 1983



EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

0 800 1600 2400 4000
SCALE IN FEET

NORTH

Planning Consultant
URBAN RESEARCH AND DEVELOPMENT CORPORATION
25 BETHLEHEM PLAZA
BETHLEHEM, PENNSYLVANIA

EXHIBIT 6

Virtually all development contemplated by or covered by the Township Zoning Ordinance is expressed in Table 3.5 either by a stipulated density of dwelling units per acre, or by the minimum lot size established. Where possible, the equivalent number of residential dwelling units per acre have been listed in the last column of Table 3.5 to bring all residential development to one common denominator expressed in dwelling units per acre.

Single family detached residential cluster options are available in both the R2 and the R4 Residential Districts. This option can be useful in the R2 District but not necessarily as useful in the R4 District where the basic minimum lot size of 14,500 square feet per DU is substantially less than the 25,000-square foot minimum lot area for single family cluster developments.

The density and development parameters shown in the last column of Table 3.5 have been used in forecasting EDUs for future growth area. it is expected that there will be future amendments to the Zoning Ordinance to accommodate the new overlay areas recently adopted as a part of the 1992 Comprehensive Plan.

3.3 Growth Areas and Population Projections

The future growth areas within East Goshen Township include numerous projects which have already commenced development but which are not yet complete and future developments which have not yet been submitted to the Township for purposes of subdivision or land development approval and/or for the purposes of sewage facilities planning. For example, Bow Tree Farms, Section IV, is already approved and sewage treatment commitments have been made; therefore, projects which have been committed are not discussed in this section.

The locations within the Township where new growth or expansion of present growth can occur are listed below:

- Price Property - 130 acres - Paoli Pike at Ellis Lane
- Reservoir Road Vicinity - approximately 53 new dwelling units possible from subdivided properties
- Fire House Property Development - 13 acres for development
- Fedor Property - West Chester Pike - approximately 175 apartments or townhouses
- Miscellaneous West Chester Pike Properties - 12.9 acres
- Balance of the Hicks Property including the milk store - approximately 76 acres

- o SmithKline Beecham Property - preliminary subdivision plan approval granted August 1991 - plan withdrawn
- o The Woods Property near Forest Lane - approximately 86 acres
- o The Sherman Property near Forest Lane - approximately 38 acres
- o The Grace Estate Property at Strasburg and Line Roads - development intentions not identified

As noted in the 1992 Comprehensive Plan, there may also be additional "infilling" of existing properties which because of their present size are capable of further subdivision and development activity. The Updated Act 537 Plan has attempted to recognize such development potential except for the Grace Estates for which there is no known development intention.

Population Projections

The projected ultimate population for the Township has been previously discussed in Section 1.4 of this report. Specifically, Table 1.4.3 describes an estimated projected ultimate population of 21,434 persons of which 4,619 persons would ultimately reside on land parcels which are not yet committed for development or subdivision activity. It is most likely that East Goshen Township will reach its ultimate population during the time frame 2001-2010. The rate of future Township growth and the expansion of the present population will be dependent in part on economic conditions, the market absorption rate for new dwelling units within the Township and, to some degree, the ability to expand existing sewage treatment facilities.

3.4 Five-Year (1993-1997) Sewage Expansion Areas

This section covers the anticipated sewage needs and the areas requiring expansion of sewage service for East Goshen Township during the period 1993 to 1997 (the five-year planning area). The sewage treatment needs are broken down into the two separate watersheds. The first is the Chester Creek Watershed where all existing and projected sewage needs are treated at the West Goshen Sewage Treatment Plant.

Chester Creek Sewage Flows (West Goshen Sewage Treatment Plant)

The long-standing agreement between East Goshen Township and West Goshen Township allows 1.0 MGD of actual sewage flow to be treated by West Goshen. During 1991 and 1992, all such sewage flow has been carefully monitored and checked by each Township. The results indicate that approximately 77.4 percent of

theoretical flow (based on EDU allocations) actually reaches the West Goshen STP.

Table 3.6, Allocation of Sewage Flow to West Goshen Sewage Treatment Plant, dated October 28, 1992, describes the status of theoretical sewage flows which are on-line as of the date of this report. In addition, the estimated sewage flows which are now committed but in the process of being connected are also depicted in column 2 of Table 3.6.

The third column 2 of Table 3.6 describes the probable connections to be made during the period 1993 to 1997.

It must be noted that the East Goshen Township Sewage Administration Office carefully monitors the status of all sewage connections including the comparison of actual on-line flows versus the theoretical flows and any variations in this ratio to assure that the daily flow to the West Goshen STP does not exceed the 1.0 MGD agreement factor.

The existing areas of the Township which have been provided with reserved sewage capacity and which might be developed within the five years include the following:

o	Park Avenue - Goshen Fire Company - 13 acres -	7,000 gpd
o	Fedor Property West Chester Pike - 175 apartments -	35,000 gpd
o	West Chester Pike - miscellaneous R5 connections - 7.3 acres -	7,700 gpd
o	West Chester Pike - C4 Commercial area - 12.9 acres -	7,500 gpd
o	Hicks Property - 14.9 acres - Tax Parcel 53 - 3-1.2B -	4,544 gpd
	Total	61,744 gpd

Careful comparison of the current theoretical gallons per day on-line to the West Goshen STP reflects a total of 974,599 gallons and an additional 88,295 gpd committed and in progress for connections. With the addition of 61,744 gallons expected during the period 1993-1997, the aggregate daily theoretical flow would be 1,124,638 gpd. However, it is expected that the continued monitoring of the above aggregate flows would be approximately 79 percent or approximately 884,306 gpd at the end of the 1997 planning cycle. The increased ratio between current theoretical and real flow will be increased because of

TABLE 3.6
ALLOCATION OF SEWAGE FLOW TO
WEST GOSHEN SEWAGE TREATMENT PLANT
OCTOBER 28, 1992

AREA TO BE SERVED	ZONED	GPD ON LINE	GPD COMMITTED & IN PROGRESS	1993–1997 PROBABLE	1998–2002 PROBABLE	POTENTIAL 2002 >
ARDLEIGH ESTATES (8 SFD)	R–2		2,800			
BITTERSWEET	R–2	17,150				
GRAND OAK	R–2	49,350				
MARYDELL	R–2	55,650				
MILLCREEK ESTATES	R–2	2,450	9,100			
PIN OAKS	R–2	39,200				
MISAK DR. EXTENSION	R–2	1,400	1,400			
MEADOWS	R–2	12,250				
ROCKLAND VILLAGE	R–2	25,900				
SUPPLEE VALLEY	R–2	34,300				
HICKORY GLEN	R–2	3,250				
WATERVIEW	R–2	23,100				
RESERVOIR ROAD	R–2	700	700			18,600
PRICE PROPERTY (129.6 ACRES)	R–2				17,500	27,650
STRASBURG ROAD	R–2	14,875				
ELLIS LANE	R–2	1,400	1,750			
STURBRIDGE	R–2	3,150				
BRANDOLINI/MORSTEIN RD. (9 SFD)	R–3		3,150			
HILLOCH MANOR (7 SFD)	R–2	2,450				
WHITE CHIMNEYS (CHESTER HOLLOW – 71 SFD)	R–2	24,850				
WENTWORTH (12 SFD)	R–2	700	3,500			
GOSHEN HEIGHTS	R–2	24,500				
PARK AVENUE	R–3	12,250				
FIRE HOUSE (13 ACRES)				7,000	9,517	
FEDOR (175 APTS.)	R–4			35,000		
TREE TOPS (200 APTS.)	R–4	40,000				
HIGHSPIRE (78 TOWNHOUSES)	R–4	19,500				
DUTT'S MILL (33 UNITS)	R–5	4,500	3,750			
GOSHEN VALLEY (656 APTS/TH)	R–5	171,500				
RIDGEWOOD APTS (60 UNITS)	R–5	12,000				
WALNUT HILL ROAD (4 SFD)	R–5	1,400				
AUDUBON (35 UNITS)	R–5	8,750				
SMITHFIELD APTS. (198 UNITS)	R–5	39,600				
MISCELLANEOUS (7.3 ACRES)	R–5			7,700		
WEST CHESTER PIKE (9)	C–1	3,150				
STEEPLECHASE (81 TOWNHOUSES)	C–1	20,250				
ROSE HILL APTS (166 UNITS)	C–4	33,200				
ROSE HILL COMMERCIAL	C–4	8,000				
RACQUET CLUB APTS. (71 UNITS)	C–4	14,200				
WATERVIEW APTS. (203 UNITS)	C–4	40,600				
COMMERCIAL (3)	C–4	7,000				
WEST CHESTER PIKE (12.9 ACRES)	C–4	8,850		7,500		
GOSHEN CORPORATE PARK *	BP/I–1	30,609	9,391			
GOSHEN OFFICE ASSOCIATES	BP/I–1	3,000				
HICKS *** (GOSHEN CORP. PARK WEST) 93.3 ACRES	I–1	4,913	22,192			
13.5 ACRES (53–3–1.2) COMMONS AT GOSHEN	I–1	4,200				
14.9 ACRES (53–3–1.2B)	I–1			4,544		
11.8 ACRES (53–3–1.7/MILKSTORE)	BP	573	3,026			
HICKS – BALANCE (34.8 & 36.7 ACS.)	BP				21,807	
BRANDYWINE INDUSTRIAL PARK						
MARS*	BP/I–1	13,114	9,386			
CALECO*	BP/I–1	615				
(BRANDYWINE PLAZA) WILSON PROP.	BP/I–1		10,800			
STS. PETER AND PAUL CHURCH	R–2				1,150	
GREEN ACRES (3 SFD)	R–2				1,050	
STRASBURG/ROUTE 352 (20 SFD)	R–2				7,000	
PUMPED FROM RIDLEY CREEK						
HERSHEY MILL ESTATES	R–2	50,000				
FAIRWAY VILLAGE	R–2	13,300				
ASHBRIDGE/FIRETHORNE (170 SFD)	R–2	59,500				
WYLLPEN (17 SFD)	R–2	700	5,250			
HUNTER'S RUN (8 SFD)	R–2	700	2,100			
WINDEREMERE (60 APTS.)	R–4	12,000			—	
CHARTER CHASE	R–2				32,550	
MILL VALLEY	R–2				8,750	
MILLSTREAM DRIVE	R–2				8,750	
TOTALS		974,599	88,295	61,744	108,074	46,250

1991 AVERAGE DAILY FLOW (W.G. NUMBER) 754,769

% TOTAL ON–LINE VS. ACTUAL GPD = 77.44%

FACTORS USED:
SFD = 350 GPD/APT. = 200 GPD/T.H. = 250 GPD

certain commitments made by the Township which are based on gallons and not standard EDU flows. Please note that the potential additional connections for the next five-year planning cycle (1998 to 2002) are discussed in the next section of this plan but utilizing the same information as depicted on Table 3.6. Please refer to 1994 Addendum at the end of this section which refers to a new "West Goshen Alternative" not previously discussed or analyzed in this section.

Expected New Service Areas for the Ridley Creek Sewage Treatment Plant

Table 3.7 depicts the allocation of sewage flow to the Ridley Creek Sewage Treatment Plant as of October 28, 1992. The East Goshen Township Sewage Administration also monitors on a monthly basis all connections which have been placed on-line and those which are committed and in progress or various stages of construction.

As of October 28, 1992, the theoretical flow connected to the Ridley Creek Plant totaled 333,127 gpd. Other commitments which have been made by the Township, which are in the process of being constructed, or consist of future construction approved by the Township includes a total of 157,400 gpd reflected in column 2 of Table 3.7 (plus the Spinozzi and McCloskey reserved connections which are committed but not paid).

It must be noted that the monitored daily/monthly average flows reflect approximately 69.2 percent of the theoretical on-line flows. Accordingly, the on-line flows and the committed flows in progress for connection would total 490,527 gpd (theoretical flow) whereas the estimated actual flow, when such connections are completed, will be approximately 349,363 gpd, based upon actual gallons committed and EDUs committed. If the new Kent Apartment connection is removed from the Ridley Creek STP and redirected to the West Goshen STP, this would reduce the Ridley Creek STP flow noted above by 84,420 gpd.

The areas of the Township and areas external to the Township which might be connected to the Ridley Creek Plant during the five-year sewage planning cycle (1993-1997) include the following:

- Spinozzi & McCloskey Properties - 5 EDUs - connections can be made only when Taylor Highland receives public sewers — 1,750 gpd
- Bryn Mawr Rehabilitation Hospital - Willistown Township - — 40,000 gpd

- Christ Memorial Lutheran Church - Willistown Township - 1,000 gpd

Total 42,750 gpd

Based on the above possible additions, the aggregate on-line sewage flow in combination with the committed additional sewage flow and the probable 1993-1997 flow total 533,277 gpd (theoretical) and an estimated true flow of approximately 391,573 gpd. There are two other areas of the Township depicted in Table 3.7 within the column noting committed sewage capacity in progress. These areas include the Meadowbrook/Cornwallis area which is being designed for 76 EDUs and an estimated theoretical flow of 26,600 gpd. The other area scheduled for the design of public sewer extensions is the Taylor Highland area covering 64 EDUs which committed are at 22,400 gpd. Section 2.3 of this plan and Section 4.5 of this plan cover the urgency of need regarding these areas of East Goshen Township.

Also shown in the committed and in progress column of Table 3.7 is a 30,000 gpd reservation for SmithKline Beecham. It must be noted that SmithKline Beecham (SKB) has already purchased 40,000 gpd in sewage treatment capacity at the Ridley Creek plant and SKB also has an option to purchase 12,000 gpd in additional capacity. This option has now expired. The inclusion of the 30,000 gpd and the status of the future dates of connection will be totally dependent upon future development plans to be formulated and submitted to East Goshen Township. At the time of publication of this report, there are no pending construction plans for any sewage capacity beyond the existing 10,000 gpd now on-line. Since SmithKline Beecham has withdrawn its approved subdivision plan, the 55,000 gpd shown in Table 3.7 could be eliminated at this time for treatment at the Ridley Creek STP.

Subsequent to the publication of the original draft of this Act 537 Update, Immaculata College directed a letter to East Goshen Township requesting that the Township consider sewage treatment for approximately 137,000 gpd (with 132,000 gpd of this projected flow being in the Valley Creek Watershed) to service major portions of the college facilities. Immaculata College is located in the Valley Creek Watershed in East Whiteland Township. Table 3.7 in this report shows a future reservation of only 5,000 gpd for Immaculata College which would occur after the year 2002. Apparently, East Whiteland Township has indicated to Immaculata College that it cannot handle the college's wastewater needs. Although it would be very costly to divert the Immaculata College wastewater flows to East Goshen Township, this may be a need which must be recognized under the new "West Goshen Alternative" discussed as an Addendum to this section.

TABLE 3.7
ALLOCATION OF SEWAGE FLOW TO
RIDLEY CREEK SEWAGE TREATMENT PLANT
OCTOBER 28, 1992

AREA TO BE SERVED	ZONED	GPD ON LINE	GPD COMMITTED & IN PROGRESS	1993–1997 PROBABLE	1998–2002 PROBABLE	POTENTIAL 2002 >
BOW TREE FARMS (496 SFD)	R–2	115,500	52,200	*		
VISTA FARMS (65 SFD)	R–2	22,750				
HUNT COUNTRY (71 SFD)	R–2	24,850				
WENTWORTH (65 SFD)	R–2	14,000	8,750	*		
E.G. ELEMENTARY SCHOOL	R–2	10,000				
S.K. BEECHAM	I–2	10,000	30,000	*	55,000	**
GOSHEN VILLAGE COMMERCIAL	C–5	13,000				
HANCOCK BUILDING (FUCHS)	C–2	3,600				
PHASE II – HANCOCK BUILDING			2,400	*		
PAOLI PIKE – 352/PAOLI CORNER	C–5	5,950	350	*		
TAYLOR/HIGHLAND (64 EDU)	R–2		22,400			
SPINOZZI & MCCLOSKEY (10 EDU)	R–2			1,750	1,750	
COVENTRY WOODS (16 EDU)	R–2		5,600			
WATERFORD (26 EDU)	R–2		9,100			
MEADOWBROOK/CORNWALLIS AREA	R–2		26,600			
BELLINGHAM LIFE CARE	I–2	28,000				
BENTLEY CONSTRUCTION	C–5	900				
PHILA. SUB. – HUNT COUNTRY		157				
NEW KENT		84,420				
WOODS PROPERTY (85.9 ACRES)	R–2				30,100	
WILLOW POND (28 SFD)	R–2				9,800	
INDIAN HILLS ***	R–2					15,050
SHERMAN PROPERTY (37.8 ACRES)	R–2				12,950	
BROOKMONT/TREMONT	R–2					15,400
N. CHESTER RD. MISC. (82 SFD)	R–2					28,700
OLD ORCHARD/IVY/RAEWYCK						10,150
WILLISTOWN TOWNSHIP						
BRYN MAWR REHABILITATION				40,000		
CHRIST MEMORIAL LUTHERAN CHURCH				1,000		
EAST WHITELAND TOWNSHIP						
WM. HENRY APTS.					59,000	11,000
IMMACULATA COLLEGE						5,000
TOTALS		333,127	157,400	42,750	168,600	85,300

TOTAL ON LINE/COMMITTED/PROBABLE 701,877

AVG. 1992 PLANT FLOW = 230,475
230,475/333127 = 69.19%

* COMMITTED AND PAID FOR

** INCLUDES 12,000 GPD OPTION

*** IF WOODS/WILLOW POND AREAS ARE CONNECTED

FACTORS USED:
SFD = 350 GPD/UNIT
APT = 200 GPD/UNIT

Summary of Sewage Expansion Plans for 1993-1997

Most of scheduled "committed and in progress" connections will probably be made during the 1993 to 1997 planning cycle. In addition, approximately 61,744 gallons of new sewage flow could be generated for the West Goshen Treatment Plant. Please refer to 1994 Addendum contained at the end of this section.

Regarding the Ridley Creek Sewage Treatment Plant, most of the "committed and in progress" connections will probably be made during the five-year planning cycle 1993-1997. However, the EDUs reserved for Spinozzi and McCloskey will be made only upon need. Further, any external connections made for facilities located in Willistown Township will be considered when approval is received to expand the Ridley Creek Treatment Plant beyond its present committed capacity of 400,000 gpd.

3.5 Ten-Year (1998-2002) Sewage Expansion Areas

Again, referencing Table 3.6 which describes the allocation of sewage flows to the West Goshen STP, the fourth column of this table describes potential properties which might be connected during the next five-year planning cycle. These areas include:

o	The Price Property - 129.6 acres - approximately 50 EDUs now and 79 EDUs at a later date	17,500 gpd
o	Park Avenue - Goshen Fire Company Property	9,517 gpd
o	Hicks Property - The balance of 34.8 and 36.7 acre parcels	21,807 gpd
o	Sts. Peter and Paul Church (upon need)	1,150 gpd
o	Green Acres - 3 EDUs	1,050 gpd
o	Strasburg/Route 352 - approximately 20 EDUs	7,000 gpd
o	Charter Chase Subdivision - 93 EDUs	32,550 gpd
o	Mill Valley Area - 25 EDUs	8,750 gpd
o	Mill Stream Drive - 25 EDUs	8,750 gpd
	Total	108,074 gpd

Ridley Creek Sewage Treatment Plant

The fourth column of Table 3.7 describes the probable expansion of public sewers and or new connections to the Ridley Creek STP during this five-year planning cycle as follows:

o	SmithKline Beecham - estimated 55,000 gpd (estimated by SKB consultants). This need can now be eliminated.	55,000 gpd
o	Spinozzi & McCloskey - balance of 5 EDUs - upon need	1,750 gpd
o	The Woods Property - 85.9 acres - dependent on new sewer construction for adjacent areas	30,100 gpd
o	Willow Pond - 28 EDUs - existing community system - dependent on other area sewer extensions	9,800 gpd
o	The Sherman Property - 37.8 acres - dependent on new sewer construction on adjacent areas	12,950 gpd
o	William Henry Apartments - East Whiteland Township - totally dependent upon approval to expand Ridley Creek STP or divert to West Goshen STP	59,000 gpd
	Total	168,600 gpd
	(less SKB)	-55,000 gpd
		113,600

Summary

The probable connections during the period 1998 to 2002 for the West Goshen Sewage Treatment Plant total 108,074 gpd and the probable expansion areas and/or new connections for the Ridley Creek Sewage Treatment Plant total 168,600 gpd for the same five-year planning cycle. The above figures could be substantially revised based upon the new "West Goshen Alternative" discussed in the Addendum at the end of this section.

It must be noted that the expansion areas discussed in this section for the year 1998 to the year 2002 could move forward by five years based upon need, or could be delayed beyond the year 2002 if the anticipated needs do not develop. For example, the immediate development of the 129.6-acre Price property at Paoli Pike and Ellis Lane could result in the immediate need for

approximately 129 EDUs or 45,150 gpd for the Chester Creek/West Goshen STP.

In a similar fashion, the existing onlot conditions within the Charter Chase subdivision may actually improve under the Township Onlot Sewage Facility Management Program which could delay public sewer connections for Charter Chase beyond the year 2002 or if conditions improve sufficiently could negate the need for extending public sewers to Charter Chase. A constant monitoring of on-going sewage needs for the municipality and the urgent needs within areas immediately adjacent to the Township boundaries is required.

3.6 Sewage Expansion Areas Beyond Year 2002

Table 3.6 also contains a fifth column which depicts two possible sewage service areas beyond the five and ten-year planning cycles. For the Chester Creek/West Goshen STP, there are approximately 53 EDUs along Reservoir Road which might require eventual public sewer connections if existing onlot systems exhibit malfunctions over the next ten years. In addition, the balance of the development of the Price property located at Paoli Pike and Ellis lane would probably be developed beyond the five-year and ten-year planning cycles. A reservation of 79 EDUs or 27,650 gpd has been noted for such potential future development. These two areas would add approximately 46,250 gpd to the West Goshen STP.

With regard to ultimate future sewage treatment at the Ridley Creek STP as shown in Table 3.7, appropriate reservations have been made in future years for the Indian Hills area of the Township containing approximately 43 EDUs. However, this would be totally dependent upon sewer connections being made to the Willow Pond area and adjacent properties which may or may not occur. In addition, the Brookmont/Tremont area contains approximately 44 EDUs which should be considered for future sewer service when and if public sewers are needed in this area.

Along North Chester Road, the are approximately 82 miscellaneous single family detached EDUs which could be considered for future sewer service and totalling an addition of 28,700 gpd to the Ridley Creek Treatment Plant. Also, the Old Orchard/Ivy/Raewyck area has approximately 29 EDUs which should be considered for extension of public sewers if the existing onlot systems exhibit malfunctions.

In correspondence with the Township, the management of the William Henry apartment complex has indicated that if the Ridley Creek STP is allowed to expand and if the apartment complex is permitted to connect to the East Goshen Sewer system, then additional land at the apartment complex could be developed

contributing an additional 11,000 gpd over and above the 59,000 gpd previously requested in writing from this group.

Also, Immaculata College has indicated to East Goshen Township that it might have future sewage treatment needs comprising approximately 5,000 gpd which could be considered if the above stated assumptions for Ridley Creek STP expansion and external Township service are approved.[1]

The above areas, if ultimately approved for connection to the Ridley Creek STP, would contribute an additional 85,300 gpd. The bottom line totals for sewage flow to the West Goshen STP including on-line, committed, the two five-year planning cycles extending from 1993 to the year 2002, and, the future potential connections beyond 2002 would bring the total theoretical flow to Chester Creek to a figure of 1,278,962 gpd. If the same ratio of actual flow versus theoretical flow is maintained for residential EDUs (77.4 percent), and the gallons of sewage treated are maintained per the developer agreements, the ultimate aggregate flow to the West Goshen STP would be 1,008,994 gpd. Please refer to 1994 Addendum contained at the end of this section.

In a similar calculation for the Ridley Creek STP, and assuming that approvals are received to expand this plant to 700,000 gpd, the aggregate flows at present and into the 21st century would be 787,177 gpd (theoretical flow) with an estimated actual flow of 607,299 gpd. If further consideration is given to the November 1992 request from Immaculata College for an additional 132,000 gpd to be treated at the Ridley Creek STP, the ultimate total for the estimated actual flow could be as high as 739,299 gpd.

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[1] Correspondence received by East Goshen Township in November 1992 suggests that the total request for Immaculata College sewage treatment is 137,000 gpd and not 5,000 gpd as previously reported.

1994 ADDENDUM
AMENDING SECTION 3.0, FUTURE GROWTH,
AND 5- AND 10-YEAR SEWAGE EXPANSION PLANS

After completion of the East Goshen Act 537 Plan Update dated December 1992, copies of this document were circulated to each surrounding Township and to the Chester County Planning Commission and Chester County Health Department. During the spring of 1993, both County agencies suggested further exploration of a spray irrigation alternative to the proposed expansion of the Ridley Creek STP using stream discharge methods. Willistown Township, in its review of the same draft, strongly urged that East Goshen Township look at other alternatives to the proposed 0.3 MGD expansion of the Ridley Creek STP, using stream discharge.

During late June 1993, a meeting was convened at the PaDER offices regarding a number of matters. At this time, the PaDER representatives also suggested to the East Goshen officials present that stream discharge of any additional effluent at the Ridley Creek STP would be difficult if not impossible to obtain. A spray irrigation alternative was again suggested.

The Township has investigated a spray irrigation alternative for the 0.3 MGD discharge at the Ridley Creek STP as reported in the Addendum to Section 4 of this updated plan. The cost factors and other problems related to major wetland intrusions makes spray irrigation an unacceptable alternative for East Goshen Township.

In August 1993, the Consultant to the West Goshen Municipal Authority and West Goshen Board of Supervisors provided a letter to the Manager of East Goshen Township outlining the availability of all or portions of up to 780,000 gpd in future sewage treatment capacity. This offer was predicated upon current expansion plans now contemplated by West Goshen Township and its Municipal Authority.

In September 1993, a letter was directed from East Goshen Township to the Consultant for West Goshen Township expressing interest in all of the available 780,000 gpd in future capacity. No written response has been received as of May 1994. However, this offer and this possibility presents a new alternative which is hereafter identified in this Updated Plan as the "West Goshen Alternative." The letter from East Goshen Township to the West Goshen Consultant accepting all of a major part of the 780,000 gpd was predicated upon: 1) confirming the interest of potential users by way of detailed discussions; 2) developing the cost feasibility of the transfer of the wastewater to the Chester Creek basin; 3) developing specific cost factors for the additional capacity which would be cost effective; and

4) verifying that East Goshen's trunklines would be capable of handling the additional wastewater flows.

East Goshen Township is anxious to conclude its Act 537 Plan update and without further commitment from West Goshen Township will not spend additional funds to develop any feasibility studies for the West Goshen Alternative. If and when a commitment is received from West Goshen Township, a supplement to the Act 537 Plan Update will be submitted to PaDER.

4.0 PLANNING AND FACILITIES ALTERNATIVES, EXPANDED FACILITIES, AND SEWAGE MANAGEMENT OPTIONS

4.1 Areas Requiring Public Sewer Connections - 1993 to 2002

4.1.1 Chester Creek Drainage Area (West Goshen STP) Alternatives for the Five-Year Planning Period 1993-1997

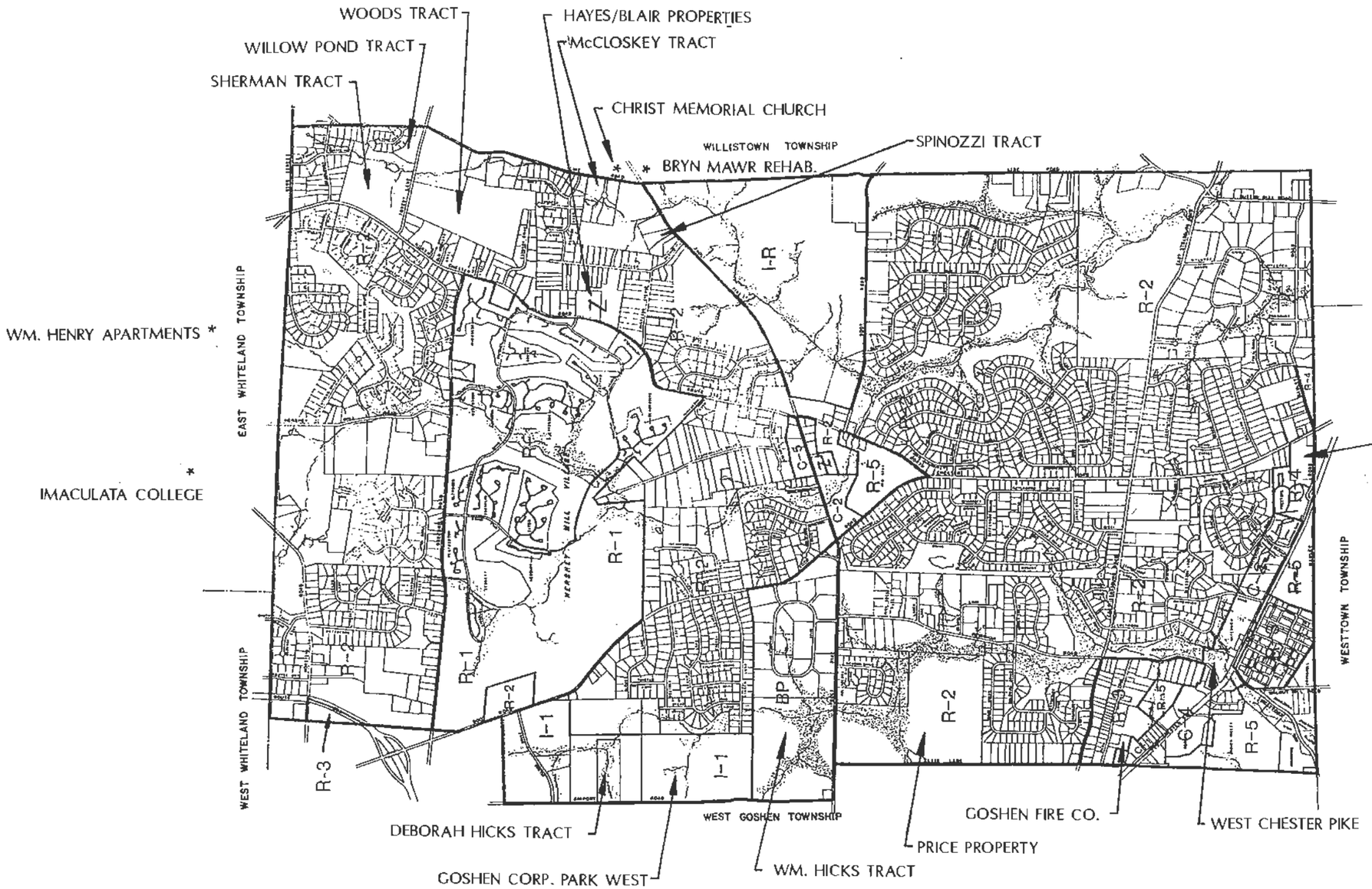
Table 3.6 in the preceding section identifies 15 existing developments, or areas titled "Committed/In Progress", which were previously committed for connection to the West Goshen STP. These facilities are expected to be connected to the public sewer system during the period 1993-1997 and are not subject to any further alternative sewage facility analysis.

Table 3.6 also identifies five additional areas titled "Probable" which represent future potential public sewer connections during the period 1993-1997. The alternatives for these five areas are discussed immediately below:

Park Avenue - Goshen Fire Company Property. This property contains 13 acres, is zoned for R-3 Residential use, and has a future potential under present zoning for the generation of 16,517 gpd in sewage flow. There are no immediate plans for development of this property which is currently used as open space and is used as the site of the Goshen Country Fair. Onlot sewage disposal is not recommended as a viable alternative in view of the permitted density available under the R-3 zoning options. Approximately 7,000 gpd in sewage flow has been reserved for the period 1993-1997 with the balance representing 9,517 gpd in future sewage flow being reserved for the period 1998-2002.

Fedor Property - West Chester Pike Corridor. This property is currently zoned R-4 Residential and has the maximum potential for approximately 175 apartments. There are no pending development plans for this site. However, it is expected that the property could be developed prior to 1997, and thus 35,000 gpd in sewage flow is reserved to service the facility when developed. The permitted density under the R-4 zoning district would mandate connection to public sewers. Therefore, onlot sewage facility alternatives are not feasible for the subject property.

UPDATED ACT 537 WASTEWATER
FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP



AREAS DISCUSSED FOR PUBLIC SEWER NEEDS

1993-2002

EXHIBIT 4-0

Miscellaneous High-Density Residential. Within the West Chester Pike Corridor, there are 7.3 acres of miscellaneous land zoned for R-5 Urban Residential use which mandates connection to a public sewer system. Therefore, 7,700 gpd in sewage flow has been reserved for such development which is expected to occur prior to 1997. The permitted density and the location of this property indicate that onlot sewage alternatives would not be feasible if the property is developed as zoned. Therefore, a public sewer connection appears to be the only realistic alternative.

West Chester Pike Commercial Properties. There are 12.9 acres of undeveloped property in the C-4 Commercial district along the West Chester Pike Corridor. It is estimated that these properties would contribute approximately 7,500 gpd in sewage flow when developed. It is expected that the majority of this property would be developed prior to 1997. Onlot sewage management alternatives do not appear to be feasible and public sewer connections are available within the vicinity.

Deborah Hicks Property. It is estimated that this 14.9 acres of the Hicks property could be developed during the period 1993-1997 which would require approximately 4,544 gpd in additional sewage flow. This property is zoned I-1 Light Industrial and would require connection to the public sewer system.

Summary. In addition to the 15 properties or developments already committed and in progress, as reflected on Table 3-6, if the above five areas are developed prior to 1998, they would contribute 61,744 gpd in new, theoretical sewage flow during the period 1993-1997. In addition, it should be noted that any decision by property owners to develop other parcels depicted in Table 3-6 could accelerate the need for additional public sewer connections which is discussed in Section 4.1.2 below.

4.1.2 Planning Alternatives for Areas Requiring Connections to the Chester Creek (West Goshen STP) Sewage System - 1998-2002

Table 3.6 in the preceding section shows nine additional areas of the Township which could require connection to public sewers during the period 1998-2002. These nine areas are discussed below:

Price Property. The Price property, currently in agricultural use, contains 129.6 acres and is located south of Paoli Pike and east of Ellis Lane. There are no pending plans for development of this tract although development pressures are increasing along the Paoli Pike Corridor. The new 1992 Comprehensive Plan recommends that the developable portion of this tract be considered as a traditional neighborhood with possible cluster single-family residential development. Large portions of the property are affected by the Worsham and Wehadkee hydric soils with substantial flood plain areas in the center of the tract. The balance of the site is affected by the Glenville and Glenelg soils. It is expected that the property would be developed in accordance with R-2 zoning requirements with a cluster residential overlay applied which could produce 129 dwelling units or less.

It is projected during the period 1998-2002 that approximately 50 EDUs could be developed within the Price property. It is not likely that community onlot sewage systems would be proposed for reduced lot sizes under the cluster residential development concept although the Glenelg soils in the northwest corner of the property are appropriate for such sewage disposal methods. The balance of the Price property, which is capable of containing an additional 79 EDUs, would probably be developed after the year 2002. However, this potential for 27,650 gpd in additional sewage flow could be realized during the ten-year planning cycle if development pressures along Paoli Pike continue.

Park Avenue - Goshen Fire Company Property. The ultimate development of the Goshen Fire Company property was discussed in Section 4.1.1 above. No development plans are pending for this property. However, an additional 9,517 gpd in sewage flow is reserved for the period 1998-2002 because the R-3 Zoning District requires connection to public sewers.

Hicks Property - Balance of Land Including 34.8- and 36.7-Acre Properties. The aggregate 71.5 acres within the Hicks property is currently zoned for BP-Business Park Use and would generate the need for 21,807 gpd in new sewage flow when developed. It should be noted that the committed sewer connections for this property could be accelerated to the 1993-1997 five-year planning cycle if development pressures required earlier development. Although this property is seriously affected by flood plain and hydric soil/potential wetlands, the property does have reasonable access from Airport Road and from Paoli Pike

to each developable portion of the site. Public sewer connections would be mandated due to the current zoning requirements. Therefore, 21,807 gpd in potential new sewage flow is anticipated for connection to the West Goshen STP by the year 2002.

Saints Peter & Paul Church. It is very likely that the existing onlot sewage disposal system for Saints Peter & Paul Church can be continued indefinitely. However, in the 1991 township-wide survey of all facilities served by onlot systems, prior problems were reported for this facility. The entire property is zoned for R-2 Residential use. There are ample areas within the 30-acre site to allow a continuation of onlot disposal. Public sewers are available on Wilson Drive immediately opposite the Church's location on Boot Road. Another alternative would involve a grinder pump connection to the existing gravity sewer located in Windsor Drive in West Goshen Township to the west of Boot Road, but again opposite the Church property. It is most likely that the Church will continue to be served by its present onlot system subject to any future renovations required. However, the reservation for 1,150 gpd will be kept within the future public sewer service needs, and this site will be monitored periodically under the Township's onlot management program.

Green Acres Area and Strasburg Road - Route 352 Vicinity. In the vicinity of the Green Acres subdivision along Strasburg Road, there are three single-family detached dwellings which could be connected by gravity to the Chester Creek Sewage System. These units are currently served by onlot systems. In addition, along Strasburg Road in the vicinity of Route 352, there are 20 additional single-family detached units which may require connections to the Chester Creek (West Goshen STP) system during the next ten years. These units are currently served by existing onlot systems. Several nearby properties have been connected by low-pressure grinder pump connections to the public sewers. Although it is possible that many of these dwellings can continue with individual onlot systems, the possibility exists that many of the total 23 units will be connected to public sewers over the next ten-year period.

Charter Chase Subdivision. The 1991 survey of onlot system conditions showed a 14.5 percent malfunction rate for this area (refer to Table 2.7 in Section 2.3 of this report). The actual responses showed 11 prior or current malfunctions and one additional graywater

discharge. A separate walk-through field survey conducted in the Charter Chase area during April 1992 revealed a total of 21 existing or past malfunctioning systems and four additional graywater violations within 98 individual single-family detached dwellings located in this area of the Township. Many of the prior malfunctions reflected evidence of correction by the construction of new seepage beds and other remedial efforts.

Since the Charter Chase area, which contains 98 single-family detached dwellings, reflects a very high percentage (25 percent) of past and prior malfunctions, it must be monitored continuously over the next ten years. There are a number of alternatives available for the Charter Chase subdivision which are briefly discussed below:

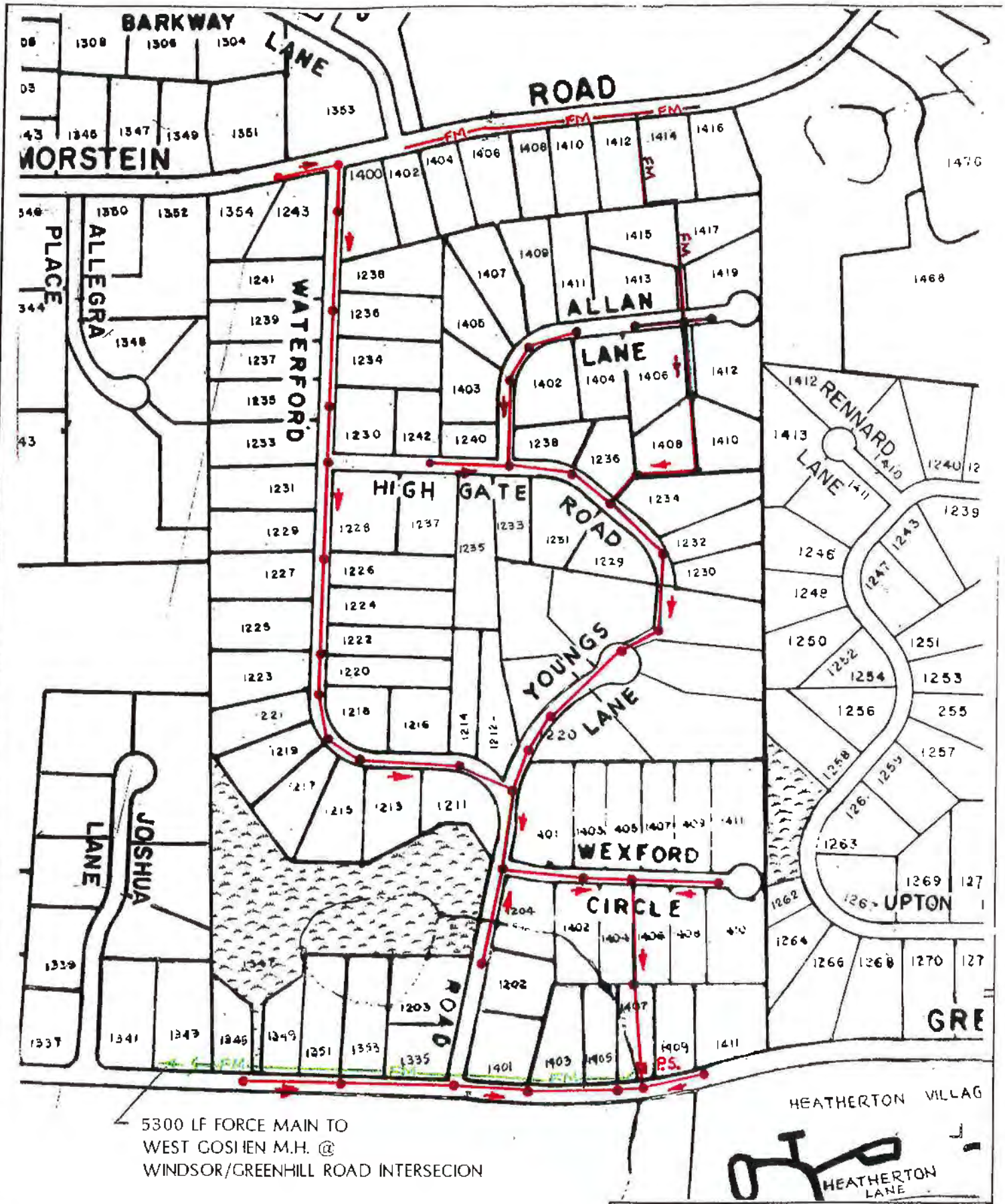
- Allow the onlot systems to remain while applying a rigorous inspection system of constant monitoring of pumping cycles and rehabilitation of failed systems.

- Analyze the possibility of utilizing sand mounds for the three to five dwelling units which have already received new seepage beds but which appear to be not working.

- Connect the entire subdivision to public sewers by the year 2002 using a combination of gravity sewers for 87 dwellings and grinder pump/low pressure installations for 11 additional dwellings. The wastewater would be collected at a pump station located on Greenhill Road where sewage would be pumped west along Greenhill Road across Boot Road to the first existing manhole in West Goshen Township at Windsor Drive.

It appears that the Charter Chase area can be stabilized and that the number of malfunctioning systems can be reduced with more frequent pumping, and repair of the existing systems and the removal, relocation or reconstruction of five to eight seepage beds currently located in the Worsham soil series.

The Charter Chase subdivision will continue to be shown in Table 3.6 with a future anticipated sewage flow of 32,550 gpd for the 98 dwelling units located in this area of the Township. Exhibit 4-1 depicts a feasible combination gravity/grinder pump/pumping station scenario for providing public sewers for the entire



CHARTER CHASE

SEWER DESIGN

UPDATED ACT 537 WASTEWATER
FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP

SMC ENVIRONMENTAL
SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1" = 400'

EXHIBIT 4-1

Charter Chase area which would be pumped to the West Goshen STP. Please refer to the 1994 Addendum amending Section 2.3 of this report related to the Charter Chase subdivision.

Mill Valley Area. The Mill Valley area, including Barkway Lane and South Tulip Drive, is located adjacent to the West Whiteland Township municipal boundary north of Morstein Road. This area has existing capped sewers. This area contains 25 single-family detached units all served by onlot systems. During the 1991 survey of onlot systems, 16 of the 25 EDU owners responded to the survey, and only one prior malfunction was noted. There is no long history of malfunction or problems in this sector of the Township. However, a long-term reservation has been made for 8,750 gpd to assure that the Mill Valley subdivision could be served by public sewers and connected to the West Goshen STP if required. If this happened, this area would be connected near the year 2002 or possibly beyond the year 2002.

Another possible option or alternative for the Mill Valley area would be that West Whiteland Township would ultimately provide public sewers for the portion of Mill Valley located within their Township. If this alternative occurs, the 25 residential units located within East Goshen Township could be considered for connection to West Whiteland's sewer system.

Mill Stream Drive Area. The Mill Stream Drive area also contains 25 single-family detached residential units served by onlot systems. During the 1991 mail survey, there was one reported malfunctioning system and one graywater discharge or a total of two past or present violations. Mill Stream Drive should also be carefully monitored under the Township's onlot sewage facility monitoring program. The most appropriate way to provide public sewer service to the Mill Stream Drive area would be a gravity collection system to the Hersheys Mill Estates collection system where the sewage effluent would be pumped to West Goshen Township. A long-term potential reservation has been noted for this area should the need arise to provide public sewers.

In summary, the above nine described areas, if all connected to the West Goshen Sewage Treatment Plant, would add a theoretical daily flow of 108,074 gpd by the year 2002, or an expected 88,872 gpd in actual daily flow.

4.1.3 Areas Within the Ridley Creek Drainage Basin Requiring Possible Sewage Service During the Period 1993-1997

Sections 3.4 and 3.5 of this report indicate the urgent need to expand the existing Ridley Creek STP beyond its present permitted capacity of 400,000 gpd. Table 3.7 in the prior section of this report indicates the current projects, subdivisions, or facilities which are on-line to the Ridley Creek STP as of October 1992. These 13 facilities have a connected on-line use of 333,127 gpd in theoretical flow and a metered actual daily flow of 230,490 gpd. In addition, the Township has committed nine additional projects, areas, or facilities for connection to the Ridley Creek STP most of which will probably occur during the period 1993-1997. The nine additional connections would total 157,400 gpd in theoretical flow which, if all connected, would add approximately 109,000 gpd in actual flow during the five-year planning period. It should be noted within Table 3.7 of this report that the diversion of 84,420 gpd from the New Kent Apartments to the West Goshen STP would substantially reduce the above wastewater flows.

There are two particular areas of the Township which must be discussed in this Act 537 Plan Update although planning modules have been submitted and approved for public sewer connections for both areas. These are the Meadowbrook/Cornwallis area and the Highland/Taylor area which are discussed below.

Meadowbrook/Cornwallis Area. East Goshen Township previously reserved 26,600 gpd for the eventual connection of the Meadowbrook/Cornwallis area. This area of the Township first exhibited sewage malfunctions as recorded in the 1981 Act 537 Plan Update. The area was further noted as having increased sewage malfunctions in the 1985 Act 537 Plan Update. The results of the 1991 Township-wide survey of onlot system malfunctions, as reported in this report in Table 2.7, reflected eight malfunctioning systems, three other illegal discharges on the same property, and four graywater discharge violations or 31 percent violations reported by 48 homeowners.

In a 1991 field survey conducted within the Meadowbrook/Cornwallis area, members of the Township staff, the Chester County Health Department, and a representative of the homeowners' association completed a survey of 77 dwelling units within the area. The results are depicted in Table 2.8 of this report. Thirty-six percent of the 77 dwelling units reflect current or past sewage system malfunction and combined graywater discharge. In 1992, the Board of Supervisors approved the planning modules for the Meadowbrook/

Cornwallis area and directed the Municipal Authority to proceed with the design and construction of public sewers for the area.

A great deal of controversy has been generated by residents in the area who would prefer to have an all gravity sewer system instead of the proposed low pressure sewer system. Six years of engineering study resulted in a conclusion by the Board of Supervisors in 1992 that the area should be connected to the Ridley Creek STP as soon as possible. An outside engineering consultant was retained by the Civic Association to study the alternative cost formulas for the gravity system versus the low pressure sewer system. In addition, a third independent engineering consultant was selected by the Municipal Authority to study each of the proposals. It was clear that the low pressure system represented the most cost effective public sewer system for the area.

The low pressure sewer system for the Meadowbrook/ Cornwallis area is currently under design by the Authority Consulting Engineer. Therefore, detailed final plans are not available to depict the exact location of the low pressure sewer pipes which will serve the Meadowbrook/Cornwallis area. However, a reasonable facsimile of the low pressure sewer system design which is to be built for the Meadowbrook/ Cornwallis area is depicted in the recently approved planning module as Exhibit B24. Also a Plot Plan contained as the last page of the recently approved planning module depicts in greater detail all topographic details for both subdivisions and the intended pressure sewer system. Exhibit 4-2 is a reproduction of this Plot Plan.

For the Meadowbrook portion of the proposed new pressure system, the pressure sewer will discharge into an existing gravity sewer line located at the end of East Grand Oak Lane. The proposed pressure system for the Cornwallis Drive/Colonial Drive/Wineberry Lane area will discharge to an existing gravity sewer located between Colonial Drive and Paoli Pike.

The planning modules approved by PaDER on July 2, 1992 include provisions for providing public sewer service via the pressure sewer method for 73 single-family homes or 25,550 gpd, which is three dwelling units less than the reservation for sewage flow for this area as depicted in Table 3.7.

ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES ON STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK, AS PER ACT 187.

NOTES

1. Existing topography on this plan is prepared by Air-Cography, Inc., by aerial means and is not by Yerkes Associates, Inc. Contours and elevations in areas of dense vegetation may not be to National Map Accuracy standards. It is recommended that field checks be made of contours and elevations prior to start of construction.
2. Existing houses are served by individual on-site sanitary systems and individual wells.
3. Floodplain from U.S. Department of Housing and Urban Development Flood Hazard Boundary Map H-01, July 8, 1977.
4. Wetlands from U.S. Inventory Maps.
5. Proposed sanitary sewer system is a low pressure system, each home to connect to system by a simplex grinder pump.
6. Location of proposed Low Pressure System is preliminary. Final location will be determined in the field to avoid trees, shrubs, and roadway paving. Final design will be submitted with Part 31 - Water Quality Management Permit. Estimated sewer length is 9,750 Feet.

EXISTING EAST GOSHEN MUNICIPAL AUTHORITY SEWER SYSTEM

PROPOSED POINT OF CONNECTION

PROPOSED LOW PRESSURE SEWER

LIMIT OF PROJECT

CORNWALLIS AREA

MEADOWBROOK AREA

100 YEAR FLOOD ZONE

COLONIAL

ROUTE 352

EAST GOSHEN

GOSHENVILLE

LOCATION MAP

UPDATED ACT 537 WASTEWATER FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP

PROPOSED LOW PRESSURE SEWER

EXISTNG EAST GOSHEN MUNICIPAL AUTHORITY SEWER SYSTEM

GRAPHIC SCALE

Dwg. # W-8438
Drawn By DWJ
Checked By DWJ
Approved By DWJ

YERKES ASSOCIATES, INC.
1444 PHOENIXVILLE PIKE • P.O. BOX 1389 • WEST CHESTER, PA 19380 • (215) 644-4254
CONSULTING ENGINEERS LANDSCAPE ARCHITECTS
SITE PLANNERS ARCHITECTS SURVEYORS

PROPOSED SANITARY SEWER
PLAN PREPARED FOR
EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

PRELIMINARY
PLOT PLAN

DATE: 2-8-90
53-101
SCALE: 1" = 200'

EXHIBIT 4

The recent appeal by the Meadowbrook/Cornwallis Civic Association to the Pennsylvania Environmental Quality Board is based upon the PaDER approval of the planning modules for a low pressure grinder pump system and the decision of the Municipal Authority to proceed with the installation of the pressure sewer system versus an all gravity system desired by the residents. Table 4.1 depicts a summary of estimated costs or expenses per unit as prepared by Yerkes Associates, Inc., as extracted from a memorandum to the East Goshen Municipal Authority from John B. Yerkes, Jr., dated January 31, 1992.

This table depicts the estimated cost per dwelling unit for the low pressure sewer system as compared with the Yerkes Associates' estimate for a gravity system serving both neighborhoods. Also incorporated in Table 4.1 is an estimate utilizing actual bid prices for a similar low pressure system now under construction in Wallace Township.

TABLE 4.1

MEADOWBROOK/CORNWALLIS AREA
SUMMARY OF EXPENSES PER UNIT

ITEMS	AUTHORITY	HOMEOWNER	TOTAL
Grinder Pump*	$ 1,820		
Pump Installation		$ 350	
House Lateral		872	
Electrical Installation		510	
Septic Tank Fill		220	
Authority Force Main	3,357		
Engineering	671		
Tapping Fee	(1,500)	1,500	
LOW PRESSURE SYSTEM ESTIMATE USING WALLACE TOWNSHIP PRICING	$ 4,348	$3,452	$ 7,800
YERKES ASSOCIATES, INC. ESTIMATE FOR GRAVITY SYSTEM (1990)	$14,700	$3,680	$18,380
YERKES ASSOCIATES, INC. ESTIMATE FOR LOW PRESSURE SYSTEM	$ 4,650	$3,780	$ 8,430

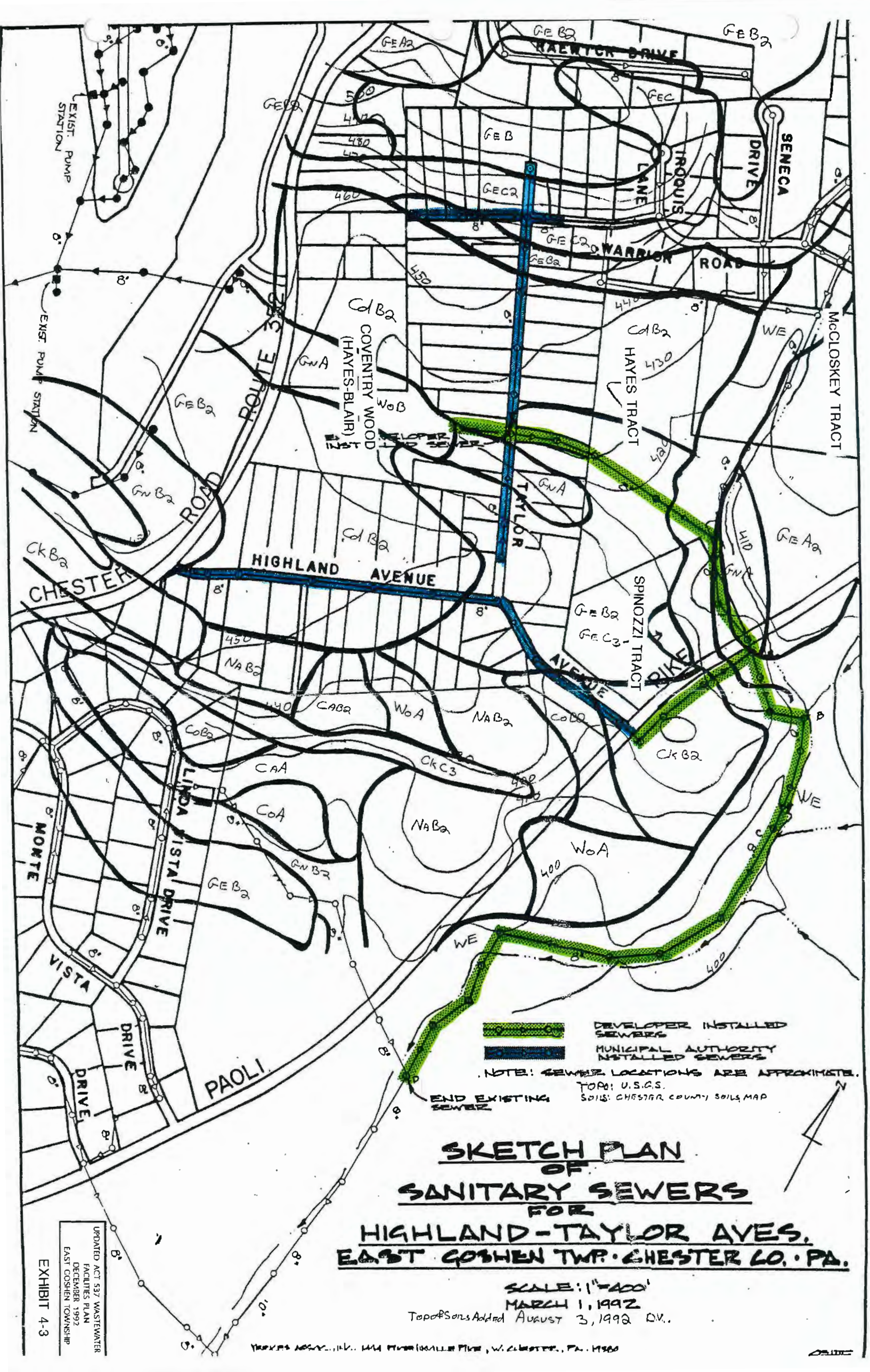
* Assumes that the $2,170 grinder pump costs break down to $350 for installation and $1,820 for pump unit cost.

In summary, SMC acting as Consultants for the Act 537 Plan Update, concurs with Yerkes Associates that the low pressure system is by far the most cost effective and that this system should be fully designed and constructed as planned.

Highland/Taylor Area. The Highland/Taylor area, containing 62 dwelling units has one of the highest reported rates of malfunctioning systems as determined in the 1991 survey of Township-wide onlot systems. Table 2.7 of this report depicts a response of 49 of 62 homeowners or 79 percent. Nine prior or present malfunctioning systems and four additional graywater discharge problems were reported representing more than 26 percent of the residential owners responding to the survey. This area has been under study by the Township and the Municipal Authority for almost ten years. The revised planning modules for providing gravity sewer service to 64 existing single-family dwellings was resubmitted to PaDER on August 4, 1992 and was approved by PaDER in January 1993. Attached on the following page as Exhibit 4-3 is a sketch plan for the proposed gravity sanitary sewer system for the Highland/Taylor area. The system, which is now under design by the Authority consulting engineer, will have minor modifications at the intersection of Warrior Road and Taylor Avenue, but otherwise will be constructed as depicted and connected to the SmithKline Beecham sewer extension now being constructed by Realen Homes, the developer of the Hayes tract.

Highland Avenue will be served by a basic gravity sewer system extending eastwardly to Taylor Avenue, thence across Paoli Pike and again eastwardly within the SmithKline Beecham property to the trunkline. Portions of Warrior Road and all of Taylor Avenue above Highland Avenue will be serviced by a gravity sewer system collecting at the streambed and flowing eastwardly to the Hayes property to Paoli Pike and thence into the SmithKline Beecham property.

The construction of public sewers in the Highland/ Taylor area will represent a significant improvement in public health and safety conditions in this vicinity of the Township. During 1991, one homeowner, whose onlot system could not be certified, working with the Township's cooperation, constructed a private sewer lateral to the existing gravity sewer in Linda Vista Drive in order to sell his dwelling. Other severe cases of continued onlot malfunctions will be cured with the construction of this new sewer system which is estimated to go on-line to the Ridley Creek Treatment plant during the period 1993-1997. Of all areas within East Goshen Township requiring immediate public sewers, the Highland/Taylor area is by far the most urgent.



SKETCH PLAN OF SANITARY SEWERS FOR HIGHLAND-TAYLOR AVES. EAST GOSHEN TWP. · CHESTER CO. · PA.

SCALE: 1"=400'

MARCH 1, 1992

Topo & Soils Added AUGUST 3, 1992 D.V.

UPDATED ACT 537 WASTEWATER FACILITIES PLAN
DECEMBER 1992
EAST GOSHEN TOWNSHIP

EXHIBIT 4-3

In addition to the nine properties or facilities depicted in Table 3.7 as being committed and in progress, there are three additional properties or facilities which may require connection to public sewers during the period 1993-1997. These three properties or facilities are discussed below:

Spinozzi and McCloskey Properties. Each of these properties has a future reservation for five EDUs each or a total of ten EDUs representing 3,500 gpd in future sewage flow. The connection of these properties would be dependent primarily upon need (which is not evident at this time) and the completed construction and availability of adjacent sewer connections between the Hayes/Blair property and within the Highland/Taylor area. A sewer easement is in place from the McCloskey property to the Hayes property. The Municipal Authority will construct a sewer line from the Hayes property to Highland Avenue and will be reimbursed when the Hayes/Blair property is developed. Five EDUs have been reserved for the 1993-1997 planning period and five additional EDUs have been reserved for the balance of the ten-year sewage planning cycle extending to the year 2002.

Bryn Mawr Rehabilitation Center. The Bryn Mawr Rehabilitation Hospital and Center has been on record for a number of years requesting the ability to connect to the Ridley Creek Treatment plant because of current problems being experienced at the Rehabilitation Center site. Although this facility is located in Willistown Township, this need for 40,000 gpd is considered to be extremely valid and necessary. In order to serve the Bryn Mawr Rehabilitation facility, a gravity sewer would be required along Paoli Pike connecting to the SmithKline Beecham sewer system extension now under construction. East Goshen Township can consider this request for external municipal sewage service only when approval has been received for the needed expansion of the Ridley Creek STP beyond its present limit of 400,000 gpd.

Christ Memorial Lutheran Church. The Christ Memorial Lutheran Church located on the east side of Line Road and north of Paoli Pike has been on record for several years requesting a connection to the Ridley Creek STP. This facility is also located in Willistown Township. Alternative sewage connections for this Church facility could occur as a result of a gravity sewer along Line Road, to Paoli Pike in connection with a future connection for the Bryn Mawr Rehabilitation Center, or another alternative is a connection through the Realen property currently being developed. Since this

facility is also located in Willistown Township and is external to the current service area of the Ridley Creek STP, this provision of requested sewer service can only be considered upon approval of expansion of the Ridley Creek STP, or other alternatives now under study by East Goshen Township.

The addition of the above properties, when and if needed and approved, would add a total of 42,750 gpd in theoretical sewage flow or approximately 42,210 gpd in estimated actual sewage flow.

4.1.4 Areas Within the Ridley Creek Drainage Basin Requiring Possible Sewage Service During the Period 1998-2002.

Table 3.7, contained in the prior section of this report, outlines six additional properties which could require connection to public sewers during the period 1998-2002. All of the connections would be totally dependent upon the expanded capacity of the Ridley Creek STP to 700,000 gpd. These facilities, areas, or developments are discussed below:

SmithKline Beecham. The SmithKline Beecham facility, known currently as the Applebrook Research facility, is the second largest land holding within East Goshen Township. SmithKline Beecham currently holds (and has paid for) 40,000 gpd in reserved capacity at the Ridley Creek STP. In addition, Beecham holds an option for purchase of a 12,000 gpd future connection when required.

SmithKline Beecham prepared its own Sewage Facilities Planning and Environmental Site Analysis for the entirety of its property under date of August 8, 1991. This study was prepared by Cahill Associates. Table 1 of the above cited study depicts a total project wastewater need for the SmithKline Beecham property as being 95,080 gpd at the time of ultimate development. Since 40,000 gpd has been reserved and is either on-line or committed and in progress, an additional 55,000 gpd is depicted as being needed during the period 1998-2002. A summary statement is contained in this report which indicates "If additional capacity in excess of the currently allocated 40,000 gpd becomes available in that (the municipal) system during the interim period, all wastewaters will be discharged to the public system." Although the SmithKline Beecham report indicates that total sewage needs would not occur until the year 2005, it is more expedient to assume that development will occur on this site during the next ten years and may be predicated in part upon the approval of an expanded Ridley Creek STP.

SmithKline Beecham does have an alternative to handle any excess wastewater flow beyond its present 52,000 gpd reservation and option which would involve land application of effluent within the 312-acre parcel. However, it is clearly stated that the preferred option is to discharge all wastewaters to the Ridley Creek STP. SmithKline Beecham and East Goshen Township recently settled litigation involving zoning matters resulting in SmithKline Beecham's withdrawal of their subdivision plan and sewer capacity reservation request. Based upon current information, it does not appear that SmithKline Beecham will need additional wastewater capacity beyond the 40,000 gpd currently reserved (and paid) at the Ridley Creek STP. The 12,000 gpd option for additional future wastewater service has expired.

Spinozzi and McCloskey. The balance of the Spinozzi and McCloskey five EDUs could require connection to the Ridley Creek STP during the five-year period ending in the year 2002. The need and timing of such connection was discussed in the prior section of this report.

Woods Property. This R2 zoned property is located south of Forrest Lane and west of Line Road. The site is currently undeveloped. No development plans have been submitted to the Township for this property which contains 85.9 acres. In order to provide public sewer service for this site when developed, a gravity sewer would have to be constructed south along Line Road possibly in conjunction with a future gravity sewer line serving the Willow Pond subdivision which currently utilizes a community onlot system. No studies have been worked out as to whether such a gravity system would follow the streambed or be constructed within the right-of-way of Line Road. This alternative to provide public sewers for this undeveloped property would have to be worked out by the Township in conjunction with the adjacent Sherman property (37.8 acres) which abuts the Willow Pond subdivision. A future sewer service need of 30,100 gpd is projected, assuming development will occur prior to the year 2002. A small portion of the Woods property is affected by hydric soils and flood plain, but the predominant part of the property contains the Glenelg soil series.

As an alternative, portions of the property might be developed with conventional onlot sewage disposal systems with capped sewers for future connection to the Ridley Creek STP. Community-type onlot wastewater disposal facilities are not recommended for this property in view of the failure of a similar system

immediately to the north of this site associated with the Willow Pond development.

Willow Pond Subdivision. This facility has 28 existing single-family detached dwellings (15 in East Goshen and 13 in Willistown) and has been discussed previously in Section 2.4 of this report. The 28 EDUs are currently served by a community onlot system. The initial sewage beds malfunctioned and were replaced during 1992 by the Homeowners Association. It is apparent that this community-type in-ground system may have to be ultimately replaced and connected to the Ridley Creek STP in conjunction with future potential development of the Woods property and possibly the adjacent Sherman property. A future projected need of 9,800 gpd is indicated for the ten-year planning period ending in the year 2002.

Sherman Property. This 37.8-acre tract zoned for R2 Residential Use has a potential, when developed, of producing 12,950 gpd. The Sherman property is affected by hydric soils and flood plain to a limited extent but has the similar soils associated with the Willow Pond development located to the east. The Sherman property is located just north of Forrest Lane and to the west of Willow Pond. If this property is developed prior to the availability of public sewer extensions to the area, it is recommended that capped sewers be installed because of anticipated poor soil conditions in this vicinity. A future public sewer service need for 12,950 gpd is depicted as being necessary prior to the year 2002.

William Henry Apartments. The William Henry apartment complex is currently located in East Whiteland Township. The facility currently has a wastewater treatment facility handling 59,000 gpd which discharges directly to Ridley Creek. In addition, adjacent zoned property would allow additional apartments contributing an additional 11,000 gpd. Since this facility is located outside of East Goshen Township, the requested sewage service needs would be considered only after the approval of the expansion of the Ridley Creek STP. In the alternative, the future connection for the William Henry apartments might be considered under the "West Goshen Alternative" now under study by East Goshen Township.

The above six facilities when and if approved for connection to the Ridley Creek STP would add approximately 168,600 gpd in theoretical sewage flow. One important addition has occurred just as this report was being published.

Previously, Immaculata College contacted East Goshen Township with a request interpreted as being a need to treat approximately 5,000 gpd in sewage flow from one facility at the college. This was based upon a returned onlot sewage disposal survey form related to the Villa Maria House which reflected average daily sewage generation of 5,000 gpd. Initial information suggested that a holding tank was in use but an NPDES Sewage Permit No. 0050423 was attached. The permit is for discharge into an unnamed tributary to Ridley Creek.

On November 6, 1992, the Township received a written request from legal counsel representing Immaculata College/ Camilla Hall/Villa Maria House of Studies requesting consideration of connecting 137,700 gpd in wastewater flow from the above facilities to the Ridley Creek STP. This additional external need from East Whiteland Township is being discussed by the Municipal Authority and East Goshen Township for possible inclusion in the Ridley Creek STP, as expanded. If expansion is not possible, the "West Goshen Alternative" must be considered. Please note that only 5,000 gpd is shown as a future need beyond the year 2002 for Immaculata College, and this may be subject to change if further studies warrant.

4.2 Areas to Remain with Individual Onlot Systems - 1993 to 2002

At the time of the 1991 Township-wide survey of onlot systems, 699 such systems were known to be in existence within the Township boundaries. The number of dwelling units which would be removed from the individual onlot disposal category would include the following over the next ten-year period:

Ridley Creek Drainage Area

o	Meadowbrook/Cornwallis Area -	73	dwellings
o	Highland/Taylor Area -	63	dwellings
o	Spinozzi-McCloskey -	10	dwellings
	Subtotal -	146	

Chester Creek

o	Charter Chase -	98	dwellings
	Total	244	Potential Conversions

Based upon 1993 field survey results, it does not appear necessary at this time to provide public sewers for the Charter Chase subdivision noted above.

It was previously noted that the Charter Chase subdivision may not require connection to public sewers if the Township-wide

onlot management program is successful. As a minimum, the 136 EDUs located within the Meadowbrook/Cornwallis area and the Highland/Taylor area will eventually be removed when served by public sewers. In addition, the Spinozzi and McCloskey property could also be connected in the next ten years. If all of the above dwelling units are connected, the remaining individual onlot sewage systems would total 455 dwellings, plus any additional dwellings which might be approved in the future for individual onlot systems.

4.3 Individual Onlot System Onlot Management

East Goshen Township has learned through experience and recent walk-throughs of major properties during the last two years that some homeowners within the Township totally neglect their onlot sewage disposal systems. The Township is in agreement that an onlot disposal system management program is vital and necessary to assure that widespread future malfunctions are diminished and/or eliminated where possible.

The need to monitor individual residential pumping cycles of septic tanks and cesspools has become very evident during the period 1989-1992. Many homeowners reported in the November 1991 Township-wide study that they had "never pumped" their septic system or cesspool. It was obvious from the returned survey forms that many people were not even aware that they were serviced by onlot systems.

This can be quickly corrected with a rigorous onlot management program supported by a proposed new ordinance to be adopted by the Township during 1994. The consultant has provided a draft copy of a model ordinance now in use in other municipalities and the Municipal Authority has obtained additional draft copies of similar ordinances which appear to be more suited to use within East Goshen Township.

It is also the consultant's recommendation that the Township adopt an ordinance requiring mandatory capped sewers for new construction in areas where poor soil conditions exist and where land owners/developers are currently entitled to the use of individual onlot sewage disposal facilities as a matter of law and PaDER regulation. It is strongly recommended that the capped sewer ordinance carry a ten-year time frame for anticipated connections to proposed public sewer extensions.

The consultant has also recommended that an increased public awareness program be instituted by the Township and the Municipal Authority providing the remaining owners of individual onlot systems with specific written and graphic information depicting the need to pump all systems and particularly failing systems, to limit the use of garbage grinders within the households where failures are apparent, and to secure professional design advice

regarding the rehabilitation of questionable onlot systems. All new incoming residents of the Township acquiring dwelling units served by onlot sewage disposal facilities must be placed on notice that they are not connected to a public sewer system and that their onlot system will require frequent attention and monitoring.

4.3.1 Areas Covered by East Goshen Onlot Management Program

The East Goshen Individual Onlot Management Program will cover the entire Township. However, the Township has previously identified the residential address for every known individual onlot system located within the Township. These addresses were used during the Township-wide mailing of the 1991 Sewage System Mail Survey. All such addresses for residential and other onlot systems will be monitored continuously.

4.3.2 Periodic Inspections and Maintenance Required

As a minimum the East Goshen Onlot Sewage Management Program will require pumping of all septic systems and all cesspools not less than once during each three-year period. The program will contain provisions for annual pumping for selected residential units identified as having prior malfunctions and periodic high-water levels in tanks or systems previously noted during field inspections or as reported in the 1991 Township-wide survey results. Septage haulers will be required to register with the Township Sewage Enforcement Office annually. Each authorized septage contractor will be required to report specific results of the condition of the system at the time of required pumping. The Township will require periodic inspections for properties having systems which report continued problems, malfunctions and/or violations.

4.3.3 Legal Authority for Enforcement

East Goshen Township will adopt, in 1994, a specific Onlot Sewage Management Ordinance which will establish the legal authority for the Township to execute this program. The Township will create the authority for issuing "warnings and potential violation notices." The legal authority for enforcement of violations will be delegated to the Chester County Health Department, the current agency having jurisdiction for violation enforcement.

4.3.4 Standards for Operation, Maintenance, Repair and Replacement

East Goshen Township will require, under the Onlot Sewage Management Program, that all existing septic systems, cesspools, and similar methods of sewage disposal be maintained without malfunctions or violations on a continuous basis.

Existing systems, which show continued potential for pollution and those systems which are classified as malfunctioning under current state regulations, will be required to be replaced.

4.3.5 Fee Schedules and Revenues

The Chester County Health Department has already established a fee schedule for permits related to systems requiring repair, renovation, or replacement. The Board of Supervisors of East Goshen Township will establish a uniform fee schedule to offset anticipated costs related to monitoring systems, maintenance of systems, and administrative fees for notices of violation referred to the Chester County Health Department. A separate fee schedule will be considered by the Township related to building permits and certificates of occupancy for all new EDUs having individual onlot systems. This fee will be related to notices attached to each certificate of occupancy requiring specific maintenance standards for the new onlot system.

4.3.6 Bonding or Financial Assurances

East Goshen Township has decided to adopt a new Individual Onlot Sewage Management Program which will also cover community onlot disposal systems (COLDS). This Ordinance may be adopted by June 1994. A copy of this Ordinance is incorporated in the Plan Summary.

4.3.7 Individual Onlot Sewage Management Program Ordinance

A copy of the draft Ordinance being considered for adoption by East Goshen Township is enclosed in Section 8 of the Plan Summary at the front of this document.

4.3.8 Other Factors Considered

East Goshen Township has already adopted appropriate building code requirements related to water conservation devices for all new construction. In addition, the Township will require appropriate storm water management diversions away from all new inground systems and appropriate remedies for similar storm water problems related to existing chronic malfunctioning systems. Where aerobic tanks are in use, appropriate maintenance and safety requirements will be regulated including alarms, electrical, mechanical, and chemical injection devices required. The Township will not attempt to regulate the location of septage disposal since most existing septage haulers have existing arrangements at local STPs.

4.4 Private Community Systems

As noted in Section 2.4 of this report, there are two remaining private community-type systems located within the Township. The Lockwood Chase facility is now under the ownership and operational control of the Municipal Authority.

The Willow Pond community onlot treatment system is fully discussed in Section 2.4. However, it is apparent that during the ten-year planning cycle 1993-2002, it may be necessary to connect this system to the Ridley Creek STP and place it under the operational control of the Municipal Authority. In the Willow Pond scenario, any decision to develop nearby undeveloped parcels may stimulate or cause an earlier connection to the public sewer system.

It is the opinion of the consultant and the administrative staff of East Goshen Township that the Hersheys Mill Village spray irrigation system is well designed, operating efficiently, is well funded with a more than adequate capital reserve budget, and need not be considered for take over by the municipality during the ten-year planning period 1993-2002. However, the Township will be prepared, by whatever form of legal agreement required, to consider a municipal takeover of this system if the Hersheys Mill Homeowners Association depicts any signs of change in attitude, which is currently to retain ownership and operational control of this sewage system. The Township will keep an open mind on the subject of a potential municipal takeover of the Hersheys Mill Village community system and will review this subject again in 1997 or sooner if warranted.

4.5 Sewage Facilities Management

East Goshen Township has one of the most efficient sewage facility management programs existing within Chester County. The Municipal Authority is a non-operating authority and all facilities are operated by East Goshen Township. The Board of Supervisors has always been responsive to major sewage facility planning needs as evidenced by its frequent investments in Act 537 Plan Updates and future sewage facilities planning.

The Municipal Authority engineer currently works directly for both the Municipal Authority and the Township Board of Supervisors. All capital needs are promptly addressed and requests for new sewage treatment service is considered fairly by the Township within its means to provide such service. The Township staff spends a considerable amount of time and effort in administering the sewage facilities program including monthly monitoring of public sewage flows and the status of cooperative agreements with adjacent townships. It is expected that this

method of management will continue through the sewage facilities planning period of 1993-2002.

It is recognized that the undertaking of the onlot individual sewage facilities monitoring program on a Township-wide basis may add the need for additional staff time in the monitoring of pumping records and the notification to residents for timing and follow-up based on sewage pumping record recommendations. There are no recommended major institutional changes to the sewage management program now in place within East Goshen Township.

4.6 Spray Irrigation Alternative for Ridley Creek STP

The Ridley Creek STP must be expanded to 0.7 MGD. An alternative involving spray irrigation of the additional 0.3 MGD shows that 65 acres of land would be required for spray fields and lagoons. An assumed cost of $55,000 per acre plus $400,000 for pumps, piping and lagoons would cost $3,975.000.

When added to the cost of the STP expansion ($1,200,000), the total cost for a spray irrigation option would be $5,175,000, or $17.25 per gallon of new treatment capacity. This could never be cost effective. In addition, there is no available land for consideration of the spray alternative. Please refer to the Addendum to Section 4.6 following this page.

ADDENDUM TO SECTION 4.6
SPRAY IRRIGATION ALTERNATIVE FOR RIDLEY CREEK STP

The December 1992 Final Draft for the Act 537 Plan Update was distributed to each adjacent municipality and to the County reviewing agencies during February 1993. The Chester County Planning Commission review as well as the Chester County Health Department review and the Willistown Township letter of comments all encouraged the possible use of a spray irrigation alternative for the estimated 300,000 gallons per day (gpd) in additional wastewater effluent projected for the Ridley Creek STP. The Township has investigated the possibility of the use of spray irrigation techniques with the following summary results.

Table 6.1 as contained on page 6-2 of Section 6.0 of this report clearly establishes an ultimate need for 670,299 gpd for potential wastewater treatment needs at the Ridley Creek plant. When the additional 132,700 gpd requested by Immaculata College is added, the actual anticipated wastewater flow under current plan update conditions would be approximately 740,000 gpd. For future design and discussion purposes only, a figure of 300,000 gpd has been utilized in this Plan Update as the need for expansion of treatment availability at the Ridley Creek STP.

Since a good part of the infrastructure and collection system is already in place for treatment at the Ridley Creek STP, it is logical to assume continued use of the expanded collection system and treatment at the STP. Other sections of this report discuss the viability of use of the A/O system as a means of expanding the current treatment capability from 400,000 gpd to 700,000 gpd. This option would continue to be utilized under a spray irrigation alternative at an estimated cost of $1,200,000 for the STP upgrading.

In lieu of stream discharge into Ridley Creek for the additional 300,000 gpd, a potential alternative would be to acquire nearby property, if available, for spray irrigation purposes.

Only two properties exist within the Ridley Creek watershed which contain sufficient acreage to handle the facilities and spray fields necessary for the discharge of 0.3 MGD. These include the SmithKline Beecham property located north of Boot Road and the additional possibility of use of all or part of the Grace Estate property located immediately adjacent to and south of the Ridley Creek STP.

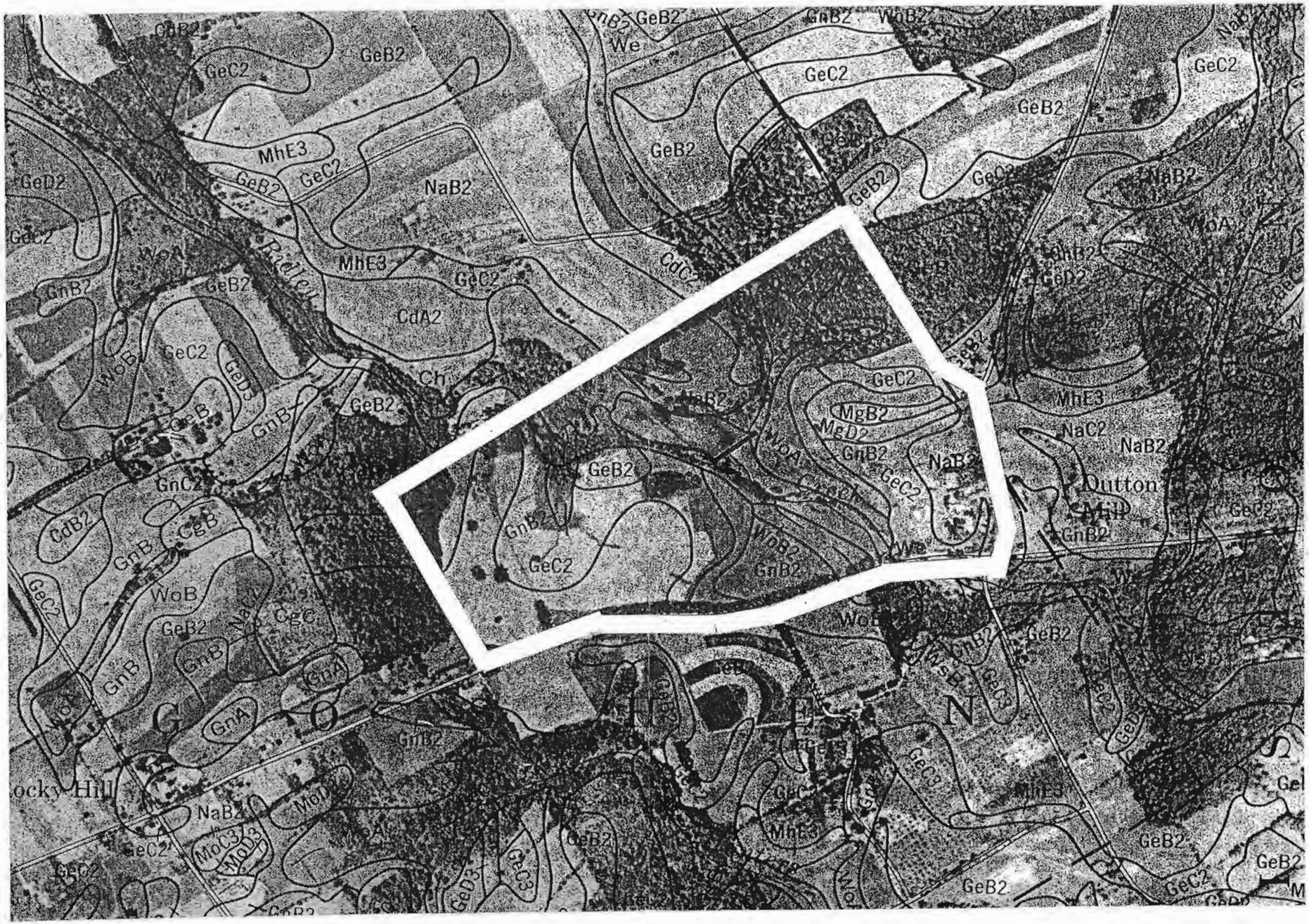
SmithKline Beecham Site

SmithKline Beecham (herein Beecham) currently owns 312 acres bounded by Paoli Pike, Boot Road, and Township Line Road. In August 1991, Beecham presented to the Township a Sewage Facilities Planning and Environmental Site Analysis for Land Application of Wastewater Effluent based on a proposed development of the entire site. The Land Development Plan that accompanied the Sewage Facilities Study was withdrawn. However, Sewage Facilities Study remains a valuable tool in the evaluation of the tract of land. Figure 13 contained in this study shows the proposed land application areas and winter storage lagoons for a spray irrigation alternative. This carefully prepared study documents by way of percolation tests and soil profiles the areas within the site which are suitable for spray irrigation. Such areas are depicted in Figure A-1 of the Beecham report. According to the report, Beecham could handle its ultimate wastewater generated on the site by using the effluent spray areas and the winter storage ponds depicted on Figure 13.

The Township recently reached a settlement with Beecham for the rezoning and future use of this tract for combined residential or office park purposes. The centroid of the Beecham effluent spray areas is located 1.1 miles north of the Ridley Creek STP. A pumping station located at the Ridley Creek STP conveying treated effluent 1.1 miles north to the Beecham property could never be cost-effective, particularly in view of the assumed necessary condemnation of approximately 75 acres of suitable effluent spray area and storage pond area. Therefore, the use of the Beecham property for future spray irrigation purposes is dismissed as a possible alternative because of the need to pump treated effluent more than 1.1 miles and the high expected cost of condemnation per acre (assumed to be in excess of $60,000 per acre) in addition to the burden of exceptionally high operating costs for future years.

Grace Estate

The Grace Estate property, comprising 182 acres, is located immediately south of the Ridley Creek STP and is bounded on the south by East Strasburg Road and on the east by Township Line Road. The site is currently undeveloped. It is possible that the entirety of this adjacent property (or major portions thereof) could be suitable for spray effluent areas. The attached exhibit depicting the soils for the entirety of the Grace Estate property is shown on the following page as Exhibit 4-4. The soils paralleling Ridley Creek are predominately Worsham series and Wehadkee series with Glenville silt loam and Glenelg silt loam occupying substantial portions of the property to the west of Ridley Creek. It is estimated that it would be necessary to acquire the entire westerly half of this property (west of Ridley Creek) and perhaps suitable portions of



GRACE ESTATE SOILS

EXHIBIT 4-4

the property east of Ridley Creek in order to meet the estimated physical area needs of 75 acres required for application of spray effluent for an additional 300,000 gpd.

The Township believes that the acquisition of any portion of this property would most likely involve condemnation procedures. The best available estimate is that this property would carry an approximate raw land value of $55,000 per acre since acquisition of these major portions of the site would destroy the utility of the balance of the site. Thus, the estimated cost for acquiring approximately 75 acres of the Grace Estate parcel would involve a cost of approximately $4,125,000 and possible additional consequential damages to the balance of the site.

Spray Irrigation Alternative Spatial Needs

The following alternative design assumptions have been utilized in determining the physical or spatial needs for spray field effluent involving 300,000 gpd. Assuming that soil testing would allow the discharge of the above amounts, the following data is relevant.

Land Area Required

- One inch of effluent/week equals 77.3 acres plus buffer and storage pond
- One and one-half inches of effluent/week equals 51.5 acres plus buffer and storage pond
- Three quarters of an inch of effluent/week equals 103.1 acres plus buffer and storage pond

Several design alternatives for an assumed required need for a 60-day winter storage pond are indicated below.

- Eight-foot deep pond equals 9 acres including slope limits
- Six-foot deep pond equals 12.2 acres including slope limits
- Ten-foot deep pond equals 7 acres including slope limits

An average 8-foot depth of pond was assumed for this design alternative. A 1-1/2-inch per week effluent application rate was selected (assuming this is possible) which would require 51.5 acres of spray field area plus a required 100-foot nominal buffer comprising 14.6 acres or a total of 66 acres for spray effluent use. When combined with the 9 acres required for a 60-day storage pond at a average depth of 8 feet, the resulting

required land area is 75 acres. Assuming that 75 acres represents the physical land area requirement at an average price of $55,000 per acre, this would result in an estimated $4,125,00 in costs. Under the Chester County Spray Irrigation Grant Program, utilizing Chester County Open-Space funding, the Township might be entitled to a maximum grant of $600,000 since multiple municipality involvement is anticipated.

Thus, the net cost of $3,525,000 plus an additional $400,000 of estimated cost for the spray field piping and pumping system, plus the $1,200,000 in estimated cost for expansion of the treatment plant would bring the total cost for this alternative to $5,125,000. When equated to the 300,000 gpd of anticipated new wastewater effluent, this results in an estimated cost in excess of $17 per gallon of wastewater treated as compared with the estimated $4.50 per gallon for expanding the STP and allowing stream discharge to Ridley Creek.

It is the Township's position that this spray irrigation alternative, under the above assumed conditions, is not a viable alternative from the initial cost factors and in view of the possibility that the land cost listed above could be higher (based on consequential damages).

5.0 EVALUATION OF EACH ALTERNATIVE PROPOSED

5.1 Evaluation of Consistency of Alternatives Proposed

The purpose for an Act 537 Plan Update is to provide a 10-year blueprint for upgrading existing areas of the Township which are experiencing or exhibiting both major and minor problems with respect to wastewater treatment. The ultimate goal is to make provisions for the safest possible wastewater treatment methods without ignoring the environmental standards already in effect at the local, county, state, and federal levels.

Another purpose of the Act 537 Plan Update is to evaluate the potential future development needs of the Township and to provide the best possible alternative for wastewater treatment facilities within such projected growth areas notwithstanding the existing environmental standards which are applicable including the water quality standards for Chester Creek and Ridley Creek extending to the Delaware River. It should be noted that the water quality standards for Chester Creek are controlled primarily by West Goshen Township for certain sewage treatment needs within East Goshen Township. East Goshen Township proposes no additional stream discharge requirement within the Chester Creek area.

There are numerous mandatory requirements for evaluation of each alternative proposed within this plan, only a few of which are impacted by the proposed new or extended public sewers recommended in this Act 537 Plan Update.

A. Plans Developed and Approved Under Sections 4 and 5 of the Clean Streams Law (35 P.S. Section 691.4 and 691.5) and Under Section 208 of the Clean Water Act (33 U.S.C.A Section 1288).

The primary water quality plan prepared under the provisions of the above statutes is the COWAMP 208 Water Quality Management Plan which was published in April 1978. A synopsis of the requirements of the COWAMP/208 Water Quality Management Plan is contained on pages 1-1 to 1-3 of this updated Act 537 Plan. The COWAMP/208 plan does not identify any wastewater treatment facility located within East Goshen Township. East Goshen Township is a part of the Delaware River Subbasin and occupies the uppermost headwaters of both Chester Creek and Ridley Creek.

Page J-40 of the COWAMP/208 plan describes in paragraph 2 the 1977 baseline conditions for water quality within Chester Creek and emphasizes that the nitrate-nitrogen levels are consistently predicted

above 10 mg/l which would be in excess of PaDER's proposed criteria throughout the 22-mile length of the stream. There are no STP discharge facilities existing or proposed into Chester Creek located within East Goshen Township. The expanded West Goshen STP must meet PaDER current water quality standards established for Chester Creek, including any major additional flow from East Goshen now being contemplated as the "West Goshen Alternative."

Page J-40 of the COWAMP/208 study describes the water quality in Ridley Creek as being "generally good to excellent above Media Borough." The dissolved oxygen violations noted and predicted for the year 2000 all occurred below the Media Borough treatment plant.

Since all of the proposed new sewer extensions and areas to be served within the Chester Creek (West Goshen) STP are within the 1.0 MGD allowed by present agreement with West Goshen Township, the water quality standards maintained within Chester Creek will be reflected in the stream discharge requirements for Chester Creek established by PaDER at the STP discharge point.

Within the Ridley Creek drainage basin, the Ridley Creek STP is operated under a current NPDES permit with discharge limitations depicted in Figure 2.2 of this updated Act 537 Plan. The plant is currently operated well below the discharge limitation. Through the end of the two 5-year planning cycles (1993-1997 and 1998-2002), the Ridley Creek treatment plant should be expanded to a range of 0.6 to 0.7 MGD by the year 2002. Ridley Creek was classified as a high quality stream after the original permit was issued for the STP in 1984. Therefore, the current (1992) water quality standards as established by PaDER must be accommodated in any stream discharge expansion for the Ridley Creek STP. In the alternative, if the Ridley Creek STP cannot be expanded due to stream discharge limitations, and since a spray irrigation alternative for the same discharge is not economically or environmentally feasible, then appropriate wastewater flows must be directed or diverted to the West Goshen STP under the "West Goshen Alternative."

The Bryn Mawr Rehabilitation Center, located in Willistown Township and the William Henry Apartments located in East Whiteland Township, are both currently serviced by existing package plants which discharge directly to Ridley Creek. The current level of discharge for these external facilities does not meet

the required treatment levels as established for the Ridley Creek STP. If these external facilities were eventually taken off-line and each facility was connected to the Ridley Creek STP, the water quality for Ridley Creek would be improved. If the expansion of the Ridley Creek STP is prohibited above 0.4 MGD, another alternative must be considered including the possibility of diverting these flows to the West Goshen STP.

Chester County Sewer Plan - Revised Edition - 1970

The above document is quite ancient and does not adequately describe present or projected conditions for East Goshen Township. Section 1.1 of this Act 537 Plan Update discusses the original county-wide wastewater treatment provisions through 1988. This study projected that by 1988, 12,600 persons residing in East Goshen Township would be served at the West Goshen facility requiring 1.26 MGD at that site. The County plan noted that most of East Goshen Township, including portions of the Ridley Creek drainage area, would be provided with wastewater service via pumping station to the West Goshen STP.

The Chester County master sewer plan is considered to be irrelevant because of its age and because East Goshen Township has provided at least three municipal updates superseding the 1970 Chester County document.

B. Consistency with Chapter 94 Municipal Wasteload Management Plans.

The projected public sewer needs for the Ridley Creek STP, as contained in Table 3.7 of this Act 537 Plan Update, will exceed the present permitted discharge capacity (0.4 MGD) for the STP. The most recent 1991 Chapter 94 report indicates that the existing and the projected connections would cause the plant to reach its hydraulic loading discharge capacity in the mid-1990s. The 1992 Chapter 94 report should reflect 5-year and 10-year additions for projected wastewater needs through the year 2002 and beyond. This will depict a possible need to expand the Ridley Creek STP to a minimum of 0.6 MGD and possibly 0.7 MGD. This would include all known facilities located within East Goshen Township requiring sewage service needs for the next ten years and four external facilities located in Willistown Township and East Whiteland Township which could be connected to the Ridley Creek STP provided the STP is allowed to expand as noted above.

C. State Plans developed Under Title II of the Clean Water Act (33 U.S.C.A. Sections 1281, 1299 or Title II and VI of the Water Quality Act of 1987 (33 U.S.C.A. Sections 1251-1376).

State Water Plan

The Pennsylvania State Water Plan--SWP4-Subbasin 3 for the Lower Delaware River strongly encourages and promotes the recharge of ground water and discourages the direct discharge of wastewater and surface waters. East Goshen Township is in compliance, in part, with the State Water Plan in that the Hersheys Mill Village development containing an ultimate 2,032 dwelling units at build-out will continue to utilize spray irrigation and ground water recharge. Similarly, the Lockwood Chase spray irrigation facility will continue as a municipally-operated facility for 103 total EDUs, 23 of which are located in East Whiteland Township. Therefore, approximately 2,135 ultimate dwelling units will be in compliance with State Water Plan SWP4 for Subbasin 3 in the Lower Delaware River.

The facilities scheduled for additional connections to the West Goshen STP located within the Chester Creek drainage area will continue to be discharged from the West Goshen STP which is currently a stream discharge facility. One of the possible options expected to be contained in the 1992-1993 update of the West Goshen Act 537 Plan is the possibility of spray irrigation for a portion of the effluent to be generated as a result of expansion of the West Goshen STP. It is not expected that any of the additional wastewater effluent (up to 1.0 MGD from East Goshen Township through the year 2002) would be other than direct stream discharge after tertiary treatment (under the present municipal agreement). If the "West Goshen Alternative" is selected by East Goshen Township and is approved by West Goshen Township, up to 1.78 MGD in wastewater flow could be directed to the West Goshen STP.

The possible expansion of the Ridley Creek STP involves increasing an existing point of discharge by up to 0.2 to 0.3 MGD at the site of the present STP. Report 4.0 contained in this ACT 537 Update shows that the spray irrigation of the above 0.2 to 0.3 MGD required at the Ridley Creek STP cannot be made cost effective under any spray irrigation alternative. Therefore, an additional stream discharge permit expansion could be required to accommodate existing developments and future developments within East Goshen Township and those previously identified facilities located outside

of East Goshen Township through the year 2002. If the Ridley Creek STP cannot be expanded beyond 0.4 MGD, a substantial portion of the wastewater flows previously contemplated at the Ridley Creek STP may require diversion under the "West Goshen Alternative."

Water Quality Act of 1987

It is not expected by East Goshen Township that any federal financial assistance will be available to the Township or to the Municipal Authority during the 10-year planning cycle ending in the year 2002. It is possible that some financial assistance may be available for the ultimate connection of facilities located external to the boundaries of East Goshen Township (such as Immaculata College, Bryn Mawr Rehabilitation Hospital, etc.) which are listed for possible ultimate connection at the Ridley Creek STP. It is assumed and expected that East Goshen Township will not qualify for direct Pennvest financial grant assistance but individual residents may qualify for future low interest loans related to connection of existing facilities.

D. East Goshen Township Updated Comprehensive Plan of 1992

All of the proposed additional properties, subdivisions and land developments contemplated within reports 3.0 and 4.0 of this Act 537 Plan are in compliance with the recently-adopted 1992 Comprehensive Plan for East Goshen Township. The existing and amended zoning requirements of East Goshen Township are consistent with the newly-adopted Comprehensive Plan, and this Act 537 Plan Update identifies the sewage facility needs through the estimated time period of Township build-out, currently estimated as being beyond the year 2000.

E. Anti-Degradation Requirements of Chapters 93, 95, and 102

The proposed new sewer service areas identified in Sections 3.0 and 4.0 of this report will be in compliance with the above chapters within the Chester Creek watershed. Any new development within East Goshen Township requires approval under the current Subdivision and Land Development Ordinance and the Chester County Conservation District approval regarding erosion and sediment control (Chapter 102).

Within the Ridley Creek drainage area there is no proposed new point of discharge for municipal or private wastewater treatment facilities. The only

element requiring extensive state approvals will involve the possible expansion of the existing stream discharge permit for the Ridley Creek STP to the extent of 0.2 MGD or 0.3 MGD at site of the present facility. This will not involve any construction external to the 1.0-acre site currently occupied by the STP.

If an application is made to expand the Ridley Creek facility, the current (or higher) stream discharge criteria will be met in the design of the expansion of the Ridley Creek STP. It is also expected that the ultimate future connection of four facilities which are external to the Township boundaries will improve the overall stream quality of Ridley Creek thus resulting in an improvement of the water quality below the Ridley Creek STP.

F. State Water Plans

The consistency requirement with the State Water Plan were discussed in paragraph C above.

G. Preservation of Prime Agricultural Lands Under Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W.

None of the development activities identified in this Act 537 Plan Update located within the Chester Creek drainage area or the Ridley Creek drainage area will affect prime agricultural lands as identified in the heading above and as reflected in the Chester County Soil Survey where such soils are depicted on Exhibit 1B of this Act 537 Update.

H. County/State Stormwater Management Plans

To date (December 1992), Chester County has not prepared or adopted a stormwater management plan for any portion of East Goshen Township. Therefore, this requirement is not applicable. However, the Township enforces rigorous stormwater management requirements in the administration of its Subdivision and Land Development Ordinance for all properties scheduled for development.

I. Wetland Protection Under Chapter 105

East Goshen Township has extensive wetlands as depicted by the hydric soil overlay shown on Exhibit 1B of this Updated Act 537 Plan. The expansion of the Ridley Creek STP will not involve any encroachment into existing wetlands since the stream discharge facilities are already constructed. However, a spray irrigation

alternative would cause wetlands encroachment on or adjacent to the Grace Estate property. East Goshen Township currently reviews each development proposal (including any proposed public sewer extensions) under the Chapter 105 requirements utilizing the current Joint Permit procedures established by PaDER.

Virtually all proposed future public sewer extensions aligned with tributaries of both Chester Creek and Ridley Creek will have some wetland intrusions which are permitted for municipal utility construction. All encroachments are designed as minimal encroachments under the Township's current wetland review process. At this point, it is the belief of East Goshen Township that its need to provide public waste water services to malfunctioning areas and to future development sectors of the Township outweighs any potential degradation.

J. Protection under the Pennsylvania Natural Diversity Inventory

Correspondence has been forwarded to the Bureau of Forestry, PaDER, requesting a PNDI search for the areas outlined under this Act 537 Plan Update in an attempt to provide protection for rare, endangered, or threatened plant and animal species. The response letter is contained in Appendix A. A supplemental request has been made for a PNDI search based on revisions to this Plan.

K. Pennsylvania Historic Preservation Act

It is not expected that any of the proposed public sewer extensions or expansion of the Ridley Creek STP will involve any impact regarding identified historical preservation requirements. Correspondence has been forwarded to the Pennsylvania Historic District Commission noting the recommendations contained in this Act 537 Plan Update. The response from the Commission in contained in Appendix B.

5.2 Resolution of Inconsistencies

It appears that there are two inconsistencies between the proposed public sewer service extensions listed in this updated Act 537 Plan and the regulatory or statutory requirements discussed in Section 5.1 of this report.

The first inconsistency will involve wetland encroachments to extend the public sewer system for certain areas of the Township. First, within the Chester Creek watershed, certain

portions of the recommended gravity sewer system for development of the two (2) Hicks properties in the I-1 and BP Zoning District will involve minor wetland encroachment for gravity sewers. This is permissible under a Section (12) nationwide permit for wetland encroachment or a BDWM-GP-5 permit where an absolute need exists for extension of municipal utility crossings and/or trunk sewer connections. Also, if the Charter Chase subdivision should require an extension of public sewers during the next ten years or beyond, the main pumping station at Green Hill Road and approximately 800 linear feet of gravity sewer to service this subdivision would be built in definite wetlands areas. This inconsistency would also be resolved by obtaining a Section (12) nationwide permit under the Joint Permit procedure.

In addition, when the 129-acre Price property is developed south of Paoli Pike, it is likely that minor sewer extensions will be required in a portion of wetland area in order to connect this property with the existing municipal sewer system. Further, if gravity sewers are provided for Mill Stream Drive along the streambed to Tanglewood Drive, a minor wetland encroachment for public sewer construction would be required and a Section (12) nationwide permit would be required under the Joint Permit procedure.

Ridley Creek Sewer Extensions

Table 3.7 contained in this report identifies several areas which are currently developed or will be developed in the future which may require public sewer extensions north of the Saddlebrook Farms subdivision. A 4,600-foot gravity sewer extension north of Saddlebrook Farms could be constructed in the extreme northeasterly quadrant of the Township and would be connected to the current Willow Pond existing community inground disposal system but would also provide future service connections, if needed, for the Woods property; the Sherman property; portions of the Indian Hills area, if required; the Brookmont/Tremont area; and portions of the miscellaneous areas along north Chester Road.

Portions of the 4,600-foot gravity sewer would necessarily be built within the tributary to Ridley Creek. Another possible alignment along Line Road would avoid extensive intrusions into the adjacent wetlands associated with Ridley Creek but would be less desirable. The resolution of this future wetland inconsistency requires the obtaining of a Section (12) nationwide permit for public sewer extensions.

The other major inconsistency identified in Section 5.1 of this report relates to the permitted stream discharge characteristics and requirements for Ridley Creek and the "protected stream status" of Ridley Creek which prohibits additional wastewater discharge within Ridley Creek unless justified by an

adequate socio-economic study and other factors. In 1992, East Goshen Township felt that a socio-economic study would justify the stream discharge expansion required for the Ridley Creek STP. After more than a year of local review with County agencies and adjacent Townships, it does not appear feasible to undertake the required studies to justify additional stream discharge at this STP.

5.3 Water Quality Standards

The present water quality standards for discharge at the Ridley Creek treatment facility are listed in Figure 2.2 as contained in Section 2.1 of this report. These are the discharge standards currently in effect and the monitoring requirements currently in effect based upon the renewal of the NPDES permit for this facility through October 1995. Generally, the effluent standards differ dependent upon the period of the year. From May 1 to October 31, the $CBOD_5$ monthly average is 10 mg/l in conjunction with 30 mg/l for suspended solids, and 4 mg/l of ammonia as nitrogen. During the winter months (from November 1 through April 30), the $CBOD_5$ is 20 mg/l with suspended solids of 30 mg/l and ammonia at 12 mg/l.

In anticipation of the possibility of expanding the Ridley Creek treatment facility, the Township directed a letter to PaDER during June 1990 requesting expansion discharge criteria. The PaDER response letter dated July 2, 1990 indicates the following information:

> "Preliminary treatment requirements for an increase of discharge (0.4 MGD to 0.7 MGD) into Ridley Creek from the Township's Bowtree facility have been developed.
>
> As per my letter of May 30, 1990, an increase in discharge to a stream designated as High Quality cannot be considered unless your report on necessary economic or social development of significant public value is approved. Given approval, the alternative of increased stream discharge can be reviewed.
>
> Tertiary treatment ($CBOD_5$ is 15 mg/l or less) with a high degree of nitrification (NH_3-N 5 mg/l or less) plus suspended solids of 10 mg/l are the estimates. Please note that these requirements are preliminary in nature. They are offered only to aid in the preparation of the required alternatives analysis."

In December 1992, it was considered possible by the Consultant, the Township administration and the Municipal Authority consulting engineer that the above quoted preliminary stream discharge standards could be obtained and maintained at

the time of expansion of the Ridley Creek treatment facility. However, based on later preliminary reviews with PaDER personnel and consultation with other review agencies and adjacent Townships, it now believed in 1994 that obtaining an additional stream permit for the Ridley Creek STP may not be feasible.

5.4 Preliminary Cost Estimates for New Construction, Authority Financing On-Going Administration, Operation and Maintenance

Attached hereto as Appendix C is a copy of the Municipal Authority's Operation and Maintenance budget for 1992 and for 1993. These budgets show that the Authority, working under the financial direction of the Township Administration, has ample revenues for continued operations of the municipal sewerage system. It can be expected that there will be a need for increased revenues during the two five-year planning cycles, 1993-1997 and again for 1998-2002.

The increased revenues will be required to support an increased operating budget expected as a result of the need to expand the Ridley Creek treatment plant or to direct flows to West Goshen Township, to monitor approximately 500 existing individual onlot systems, to monitor existing community onlot and spray irrigation systems, and to provide the design coordination and environmental studies required to provide appropriate wastewater treatment facilities for existing properties. Sections 3.4 and 3.5 of this report outline the future sewer needs for each of the five-year planning periods ending in the year 2002. Tables 3.6 and 3.7 depict the future probable public sewer connections for each five-year planning period and certain facilities which will have a need for access to public sewers beyond 2002.

It is the Township's policy that the design costs and construction costs for all public sewer extensions to service new land developments and new subdivisions will be totally paid by the respective developers of each such property. The Township provides assistance to the extent of local review and local approval of such public sewer extensions including the proper coordination of design to service future adjacent extensions.

For example, in reference to Table 3.6, when the Price property located at Paoli Pike and Ellis Lane is developed, the developer/applicant will bear all costs of design, permits, and construction including municipal escrow costs for proper inspection. The Township and Municipal Authority costs would be negligible for this type of development and for most of the extensions noted in Tables 3.6 and 3.7.

The same logic applies for existing developments which are located externally from the boundaries of East Goshen Township,

such as the Bryn Mawr Rehabilitation Hospital located in Willistown Township along Paoli Pike. If this facility is ultimately connected based on the approval of expansion of the Ridley Creek STP, the Bryn Mawr Rehabilitation Center will pay all design costs and construction costs for the necessary gravity sewer extension along Paoli Pike and connection to the extended SmithKline Beecham gravity sewer.

There are several existing developed properties within the Township where the Authority and the Township may have to pay for initial design and permit costs but subject to an appropriate reimbursable financial formula assessing the residents of that particular development for all costs directly related to the public sewer extensions. In other areas of the Township, particularly north of Oneida Lane up to and including the Brookmont/Tremont Drive area, there is a need for the Township to do some initial design and coordination with various property owners to assure that public sewers are extended when needed.

For example, a direct gravity extension from the existing Willow Pond community system along Forest Lane to the stream and along the stream paralleling Line Road to the Saddlebrook Farms gravity sewer would cost approximately $400,000. The 28 residents of the existing subdivision could not afford $14,285 per dwelling unit to make an immediate connection to the Ridley Creek STP facility. However, the cost for such a gravity sewer extension would be cost effective if the cost for such an interceptor sewer was paid proportionately by the future developers of the Woods property, the Sherman property, including a proportionate distribution for future connections to the Brookmont/Tremont Drive area of the Township. For future reference, this proposed gravity interceptor is called the "Line Road Interceptor" although the piping system would be closely aligned with the tributary of Ridley Creek crossing Forest Lane and extending in a northerly direction towards the Brookmont/Tremont Drive area.

Table 5.1 shows preliminary costs estimates for selected new public sewer extensions within the Chester Creek and Ridley Creek watersheds. Within Table 5.1, if the Millstream Drive area required public sewer connection during the next ten-year planning period, this all-gravity system would connect with existing gravity sewers within Tanglewood Drive above Bell Flower Lane and would service an estimated 25 EDUs at an estimated cost of $7,200 per unit (1992 dollars).

If the Mill Valley area of the Township required connection to the Chester Creek system in the next ten years, the estimated cost would be $110,000 using the existing (capped) gravity collection system and a pump station/force main at an estimated

TABLE 5.1

PRELIMINARY COST ESTIMATES FOR SELECTED
NEW PUBLIC SEWER EXTENSIONS

Chester Creek

Area	Total Cost No Tap Fee (Construction Costs Only)	Type of System	Timing
Charter Chase	$925,000[1]	Gravity/GP Force Main	1998-2002
Mill Valley	$110,000	Gravity/ Force Main	1998-2002
Millstream	$180,000	Gravity	1998-2002

(1) The cost of the total collection and force main system ($925,000), less the cost of pump station and force main ($270,000) plus the cost of a gravity sewer through Hersheys Mill ($528,000) would increase the cost to $1,183,000.

Ridley Creek

Willow Pond/ Woods Property/ Sherman Property (Line Road Interceptor)	$395,000	Gravity	1998-2002
Ridley Creek STP Expansion (Stream Discharge)	$1,200,000[2]	Convert to A/O Process	1998-2002 (start 1993)

(2) $5,175,000 if spray irrigation was possible using 65 acres for spray fields

cost of $4,400 per EDU (1992 dollars). However, this system could not be connected at this cost unless a force main system was designed and in place for the Charter Chase subdivision. If the Charter Chase area remains viable with continued use of onlot individual systems through the year 2002, the cost of providing sewers to the Mill Valley area of the Township would be increased since the force main would have to be extended westwardly to the Brandolini property now under development at the southwest corner of Route 202 and Morstein Road.

For the Charter Chase area, the estimated cost for a combined gravity/grinder pump collection system and a major pumping station with a 5,300-foot force main extending westwardly along Greenhill Road and across Boot Road to Windsor Drive in West Goshen Township would cost approximately $925,000 or approximately $9,500 per EDU. If in the alternative, a gravity sewer was designed through the Hersheys Mill area from Green Hill Road to a point located 600 feet east of the end of Meadowbrook Lane, the cost of such a gravity system would be approximately $528,000 (1992 costs) with no additional EDUs. With the cost of the major pumping station and 5,300 linear feet of force main deleted ($270,000) and with the cost of the gravity system added ($528,000), the estimated cost to service Charter Chase would be $1,183,000 (1992 costs) or $12,070 per EDU. This latter option is not economically feasible or cost effective.

Ridley Creek Watershed

Within the Ridley Creek watershed, there is one major need which will require an analysis by the Township and the Municipal Authority related to the proposed "Line Road Interceptor." Sewer extensions are planned for construction to service the Saddlebrook Farms subdivision. An interceptor paralleling Line Road but following the basic streambed alignment and extending to Forest Lane and into the Sherman property would be required to serve a number of future sewer service needs. First, it is desirable to consider connecting the Willow Pond system to the Ridley Creek STP during the next ten years. The Willow Pond community system malfunctioned during recent years and the absorption beds were rebuilt in 1992 by the Homeowners' Association. It cannot be determined at this time if this community-type system will remain viable for any extended period of time. Portions of the Woods property and the Sherman property may be proposed for development during the same ten-year time frame. A 4,600-linear foot Line Road interceptor could service all three properties and would allow for a future extension to service the Brookmont/Tremont Drive area if needed. The Line Road interceptor would require a cost of approximately $395,000 (1992 dollars) and it has the potential to service 151 potential EDUs, 28 of which are built within the Willow Pond community.

Also depicted in Table 5.1 is an estimate of the cost of increasing the capacity of the Ridley Creek STP from 0.4 MGD to 0.7 MGD, if permitted. This basic cost is estimated at $4/gallon although the cost of the mechanical conversion process is slightly over $3/gallon for the additional capacity. The conversion process from an extended aeration stream discharge plant facility to the anaerobic/oxic process requires a great deal of design which is proportionately higher than the design of a new system. In addition, the Township would be required to prepare and/or review extensive socio-economic benefit studies and analyses to qualify for any additional stream discharge capacity into Ridley Creek.

It should also be noted that if PaDER or any other agency required East Goshen Township to design the 0.3 MGD expansion of the Ridley Creek STP using the AO process but with the spray irrigation of the additional effluent, the cost could exceed $5,175,000 for this expansion. This additional cost is related to a need to purchase or condemn up to 75 acres of land (which is not available) at an estimated cost of $55,000 per acre plus the additional cost of $400,000 for spray field pumps and piping. Thus, a cost in excess of $17.25 per gallon of additional effluent treated could never be made cost effective.

5.5 Methods of Financing Alternatives

The East Goshen Township Municipal Authority is not an operating authority but has an Authority operating budget which is funded by various sources of revenue. The "Lease-Back Arrangement" with the East Goshen Township Board of Supervisors allows the Authority to conduct its operations without impacting upon the Township's revenues and expenditures. In short, the Municipal Authority's operating budget is totally offset by the revenues derived from tapping fees, sewer rental fees, and miscellaneous permit income sources.

Appendix C contains a summary of the revenues for 1991 and 1992 and the operating budgets for those years. Appendix C also depicts the projected 1993 revenue and 1993 operating budget.

The current (October 1993) sewer tapping fee is $2,113 per EDU except for pre-1991 agreement/commitments which will be collected at the rate of $1,500/EDU for the Chester Creek system and $2,975/EDU for the Ridley Creek system.

The source of revenue for the Township's sewer operating budget is the sewer rental charge of $54 per quarter for single-family DUs (or $216/DU per year) and $46 per quarter for apartment units ($184/DU per year).

The resulting total sewer revenue for 1991 and 1992 was $749,616 and $803,075, respectively.

The actual sewage facility operations expenditures for 1991 totalled $813,258 with a projected $1,036,450 for 1992. The projected operating budget for 1993 is reflected as $1,798,671. The Municipal Authority has a bonded indebtedness of $221,000 as of December 31, 1992, which requires annual debt service payment of approximately $(30,000+/-). In addition, the Authority has annual fixed payments based upon the amended agreement with West Goshen Township which requires annual payments of $20,472. Therefore, the Authority is in excellent operating financial condition.

Table 5.1 in this report lists five areas which have to be given consideration under financing alternatives available. Based upon the per capita income levels for various sectors of the Township and the entirety of East Goshen Township as established in 1990, it is not likely that the Municipal Authority will be able to take advantage of direct Pennvest grants and/or low interest loans. Therefore, all financing for future facilities during the period 1993-2002 must be based upon: a) increased sewer rentals if required; b) increased sewer tapping fees within the permitted limits of the Pennsylvania Statutes, as amended; and/or c) additional bond issues.

Chester Creek Sewer System

Table 5.1 lists three areas located in the northerly portion of the Township which may require public sewer construction between 1998 and 2002. Under current Township and Municipal Authority policies, the total cost of providing sewers, if required, to Charter Chase, Mill Valley, and the Mill Stream areas would be directly offset by assessments to each DU served, and based upon the most cost effective design achievable at the time of need.

It is now likely that East Goshen Township will need additional capacity at the West Goshen Treatment Plant. Section 2.2 of this report outlines estimated costs for the West Goshen STP expansion. If West Goshen opts to expand to 7.0 MGD (a 2.5 MGD expansion) and at an estimated cost of $7,700,000, this would equate to an approximate cost of $3.00/gallon. If the additional sewage treatment capacity need (possibly 100,000 to 780,000 gpd) should arise during 1993-1994 with all parties being agreeable as to need and timing, the Municipal Authority and the Township could contemplate an expenditure of $400,000 to $3,000,000 in the mid to late 1990s which could require a separate bond issue for financing in advance of construction.

Ridley Creek Treatment Plant

The expansion of the Ridley Creek STP would cost approximately $1,200,000. Since the asset comprising the expansion of the STP is not realized until completion of the project, this expansion will also have to be financed through a municipal bond issue with some advance funding for design, permits and environmental studies provided by the Authority.

The Line Road Interceptor which would eventually serve the Willow Pond Development, the Woods property, and the Sherman property, and other northerly areas of the Township is currently anticipated as being financed entirely by developer contributions and/or Homeowner Association contributions (Willow Pond). Some initial design expense, possibly $50,000 to $75,000, may have to be funded by the Municipal Authority which could be recovered in direct assessments to the ultimate users of the facility.

In summary, the East Goshen Township Municipal Authority's financing capabilities are adequate, and it is within the ability of the Authority to fund and carry the appropriate debt service.

6.0 SELECTED WASTEWATER TREATMENT ALTERNATIVES FOR THE PERIOD 1993-2002

6.1 Selected Alternatives Within the Ridley Creek Treatment Plant Expansion

All of the evidence collected and conclusions reached in the preceding sections of this 1992/1994 Act 537 Plan Update suggest that the Ridley Creek STP should be expanded beyond the present discharge permit requirements which now total 400,000 gpd. The STP has now been dedicated and accepted by the East Goshen Municipal Authority and has been under the operational control of the Township since 1985.

The wastewater treatment requirements within the Ridley Creek STP service area within East Goshen Township and including peripheral areas located adjacent to the Township boundaries in Willistown Township and East Whiteland Township show a need to expand to approximately 787,000 gpd in theoretical wastewater flow extending beyond the year 2002. Table 6.1 depicts the wastewater treatment needs within this entire wastewater service area up to the year 2002 and including potential needs beyond this period.

The individual areas of the Township and the future subdivisions, land developments, etc. are depicted in Table 3.7 which provides the basis for the information depicted in Table 6.1. As of October 1992, the Ridley Creek STP handled the wastewater needs totalling 333,127 gpd in theoretical effluent flow with actual estimated October 1992 wastewater flows of 230,475 gpd. Thus, the STP was operating at 83 percent of its permitted theoretical hydraulic flow and at a level of 58 percent of its permitted discharge limits at the end of 1992.

The "committed" additional flows depicted in Table 6.1 would account for an additional 157,400 gpd in theoretical EDU wastewater flow and approximately 118,888 gpd in projected actual committed additional treatment needs. It must be noted that 93,700 gpd of the committed 157,400 gpd is already pre-paid by the respective parties and/or property owners depicted in Table 3.7 of this report.

If the Township made no further commitments whatever, the theoretical hydraulic loading of the Ridley Creek STP would be 490,527 gpd and the estimated actual flow from connected and committed additional units would be 349,363 gpd. This would represent 123 percent of permitted theoretical daily flow and 87 percent of the maximum permitted discharge limit of 400,000 gpd.

TABLE 6.1

WASTEWATER TREATMENT NEEDS
RIDLEY CREEK STP SERVICE AREA
1992-2002 AND BEYOND

STATUS/NEED		THEORETICAL WASTEWATER FLOW	GPD ESTIMATED ACTUAL WASTEWATER FLOW
October 1992 On-Line Avg. Daily Treatment		333,127 GPD [1]	230,475
Committed additional flow	Subtotal	157,400 GPD 490,527 GPD	118,888 349,363 GPD
Probable New Needs 1993-1997	Subtotal	42,750 GPD[2] 533,277	42,210 391,573
Probable Additional Needs 1998-2002	Subtotal	168,600 GPD[2] 701,877 GPD	151,777 543,350
Potential Needs Beyond 2002	Total	85,300 GPD 787,177 GPD[3]	63,949 607,299[3] [4]

Notes:

(1) Theoretical Flow Based on 350 GPD for SF-EDUs and 200 GPD per Apartment EDU per Table 3.7

(2) SF and Apartment EDUs are Estimated at 69% of Theoretical GPD Flow. All Other Uses are 100% of GPD shown in Table 3.7.

(3) Does not Include Additional 132,700 GPD for Immaculata College Requested in November 1992.

(4) Does not Include 26,000 in additional capacity requested by William Henry Apartments on April 13, 1994.

The probable additional treatment needs for the period 1993-1997 would add an additional 42,750 gpd in theoretical flow and 42,210 gpd in estimated actual flow. This would extend the Ridley Creek STP to a level of 133 percent of its rated theoretical hydraulic capacity and 98 percent of its permitted hydraulic discharge capacity. This data will be altered based on the West Goshen Alternative.

Table 6.1 also projects the probable wastewater treatment needs for the period 1998-2002. The projected needs as derived from Table 3.7 of this report would add an additional 168,600 gpd in theoretical flow to the Ridley Creek STP and an estimated actual hydraulic loading of 151,777 gpd. In summary, by the year 2002, the Ridley Creek STP would be required to treat 701,877 gpd in theoretical flow and 543,350 gpd in estimated actual wastewater flow. These respective figures represent 175 percent of current permitted theoretical wastewater loading and 136 percent of the estimated actual discharge based on current discharge permit requirements.

In addition, the Township has opted to look at the wastewater treatment needs just beyond the 10-year planning cycle ending in the year 2002 with such needs also being portrayed in Table 6.1. If such facilities were needed, the Ridley Creek STP would have an additional 85,300 gpd in theoretical flow needs and 63,949 gpd in estimated actual wastewater flows. In summary, the final totals for the ultimate wastewater treatment needs in the Ridley Creek STP service area would approximate 787,000 gpd in theoretical wastewater flows and just over 600,000 gpd in actual wastewater flows. It is expected that current infiltration and inflow for the present and future sewer systems would increase slightly extending the needs well beyond 600,000 gpd in actual treatment capacity and discharge rating for this STP. In addition, footnote 3 to Table 6.1 clearly notes that the recently requested additional treatment availability for 132,700 gpd as received from Immaculata College in November 1992, is not included in Table 6.1. The above data will be altered by the West Goshen Alternative.

Based upon environmental concerns and possible PaDER rejection of the expansion of the Ridley Creek STP beyond its current permitted discharge of 4.0 MGD, the "West Goshen Alternative" must be given consideration at this point to avoid an overload at this STP. The figures shown in Table 6.1 were correctly stated for the period ending in 1992. Since 1992, Immaculata College, located in East Whiteland Township has confirmed its request for a total of 137,700 gpd in sewage treatment capacity. Also, the owners of the William Henry Apartments, located at King and Frazer Roads in East Whiteland Township have increased their requested total treatment from the current 59,000 gpd now being discharged to Ridley Creek to a total of 96,000 gpd (based on correspondence dated April 13,

1994). This would add approximately 158,200 gpd to the bottom line figures shown in Table 6.1. The Eryn Mawr Rehabilitation Hospital, located in Willistown Township, has not responded to recent requests from East Goshen Township as to their continued interest in connecting to the East Goshen facilities. However, this need still exists and will be carried forward.

However, if in fact, the Ridley Creek STP cannot and will not be expanded beyond 4.0 MGD, the 607,299 gpd reflected in the last column of Table 6.1, in addition to the additional 158,200 gpd expected from the William Henry Apartments and the Immaculata College complex, or 765,499 gpd could not be handled at the Ridley Creek facility. In summary, approximately 365,500 gpd in ultimate actual wastewater flow for the year 2002 and beyond would have to be diverted to West Goshen Township by the most appropriate conveyance means.

Regarding Table 3.7 in Section 3.0 of this report, there are a number of changes which could be made in transferring wastewater flows to Chester Creek. For example, the 84,420 gpd (New Kent Apartments) currently on line at Ridley Creek STP could be immediately transferred to the West Goshen STP with little additional cost and no major impact other than increasing the present 1.0 MGD limitation with West Goshen Township. In addition, the 55,000 gpd shown for SmithKline Beecham in Table 3.7 could be removed from future consideration for treatment at the Ridley Creek STP since Beecham has no building plans during this century. Beecham has already pre-paid for 40,000 gpd in reserved sewage capacity at the Ridley Creek STP. The above two facilities would result in a reduction of 55,000 gpd for Beecham, and an immediate transfer to Chester Creek of 84,420 gpd, or a total wastewater flow reduction of 139,420 gpd at the Ridley Creek STP. By deducting out the New Kent Apartments which could be transferred to Chester Creek, and eliminating the additional 55,000 gpd requested by Beecham, the resulting excess sewage flow to Ridley Creek as depicted in Table 6.1 would be approximately 226,000 gpd.

The Selected Alternative for Ridley Creek Wastewater Treatment Area

Based upon the above analyses and all preceding documentation contained in this report and the 1993-1994 changes noted herein, the primary selected alternative for the Ridley Creek wastewater treatment area is to:

A) Limit ultimate EDU connections to the Ridley Creek STP to an actual discharge limit of 0.4 MGD.

B) Convey all excess wastewater generated within the Ridley Creek Watershed (including East Whiteland and Willistown flows) to the West Goshen STP by way of new and future conveyance systems.

C) Consider the Ridley Creek STP expansion as the best secondary alternative in the event the West Goshen STP cannot be expanded for reasons not yet identified.

D) Retain a third preference alternative which would involve utilizing spray irrigation methods for all excess wastewater generated at the Ridley Creek STP beyond 0.4 MGD. This would represent the least cost effective method of wastewater treatment and could involve condemnation or purchase of the entire Grace Estate parcel.

Only the primary and secondary alternatives above are discussed further in this Section and in the Plan Summary.

PRIMARY SELECTED ALTERNATIVE - LIMITING RIDLEY CREEK STP TO 0.4 MGD

Under this primary selected alternative, the Ridley Creek STP would be voluntarily limited to 0.4 MGD using the figures depicted in Table 6.1 and Table 3.7 of this report. The following would also be required:

- Redirect the sewage flows from the New Kent Apartments to the West Goshen system (diverts 84,420 gpd).
- Eliminate the SmithKline Beecham "future probable flows" beyond present purchased and committed capacity (deletes 55,000 gpd).
- Continue to provide treatment service for all facilities shown in Table 3.7 including all committed and on-line (less New Kent Apartments), and all EDUs committed or in progress for connection containing an actual (not theoretical) daily flow of 264,943 gallons. In addition, the following properties listed below all located within the Township would be provided future service at the Ridley Creek STP:

- Committed	264,943 gpd
- Spinozzi and McCloskey -	3,500 gpd
- The Woods Property -	30,100 gpd
- Willow Pond -	9,800 gpd
- Indian Hills -	15,050 gpd
- Sherman Property -	12,950 gpd
- Brookmont/Tremont -	15,400 gpd
- North Chester Road - 82 miscellaneous EDUs	28,700 gpd
- Old Orchard/Ivy/Raewyck -	10,150 gpd
Total Future Flow -	390,593 gpd

- o Retain the "Line Road Interceptor" as a conveyance method for connecting the Northeast Quadrant of the Township to the Ridley Creek STP.

- o Require East Whiteland Township as the sponsor and Immaculata College (137,200 gpd) and the William Henry Apartments (96,000 gpd) to collectively design, fund, and construct a gravity sewer extending from King Road near Frazer Road along the Ridley Creek tributary which crosses Mill Stream Drive to Hershey Mill Road and thence along Hershey Mill Road to Greenhill Road.

- o At Hershey Mill Road and Greenhill Road, construct a major new pumping station adjacent to the Hersheys Mill Estates pumping station with a force main extending westwardly along Greenhill Road, across Boot Road and to the most appropriate gravity connection where 233,000 gpd or more can be handled by the existing gravity system. This pump station force main option would allow for future service from both Immaculata College, the William Henry Apartments, as expanded, and other East Whiteland Township EDUs which may be identified in the future to be conveyed directly to the Chester Creek STP. There is a distinct advantage in that should public sewers be needed within Charter Chase or Goshen Downs, pressure connections could be made from future gravity sewers for either subdivision. This would also allow for a future interconnection with the Hersheys Mill Estates pumping facility should there be a need for temporary alternative pumping.

If all of the above options are executed, substantial additional flows would be conveyed to the West Goshen STP. However, should West Goshen Township be prevented for any reason from expanding the Chester Creek STP based on a change in stream quality discharge criteria within Chester Creek, then East Goshen Township should be prepared to look carefully at its second selected alternative.

THE SECOND SELECTED ALTERNATIVE - EXPANSION OF THE RIDLEY CREEK WASTEWATER TREATMENT FACILITY

If the West Goshen alternative cannot be effectuated either by way of excessive cost, environmental constraints for expansion of the Chester Creek facility, or other reasons, East Goshen Township must still be prepared to move forward with a means of providing additional sewage service. This would involve an expansion of the Ridley Creek STP as originally outlined in the December 1992 version of this Updated Plan. If expansion of the Ridley Creek STP becomes the only alternative available, a number of important steps must be taken in order to expand this facility.

The greatest hurdle in accomplishing this STP expansion will involve the preparation of the required socio-economic studies needed to justify an increase in stream discharge permit capabilities for Ridley Creek at the site of the present STP. It may take five years or more of concentrated effort to properly design and obtain the necessary permits for the additional treatment required within the Ridley Creek wastewater treatment area.

Detailed studies prepared by and for the external facilities which are requesting direct connections to the Ridley Creek STP will undoubtedly show an overall improvement of the water quality within Ridley Creek. Specifically, the current Ridley Creek tributary stream discharge characteristics for the Bryn Mawr Rehabilitation Hospital, the William Henry Apartment Complex, and the portion of Immaculata College all currently discharging to Ridley Creek undoubtedly would have higher treatment levels at the Ridley Creek STP as compared with the current package plant discharges associated with these facilities. It must be shown conclusively that the ultimate water quality of Ridley Creek above and below the Ridley Creek STP will be maintained or improved as a result of expansion of the Township sewage treatment facility.

Ridley Creek has a protected high quality stream status and no additional discharge is currently permitted without approval of the required socio-economic study showing the specific benefits which will be derived as a result of expansion of the Ridley Creek STP.

Initial analyses show that the Ridley Creek STP can be expanded within the present site from 400,000 gpd to 700,000 gpd without duplicating the facilities now existing on the site. The manufacturer of the major components at the STP (Davco) concurs that the plant facility can be expanded to a maximum of 700,000 gpd using the Anaerobic/Oxic A/O process. The spray irrigation alternative for any additional effluent above 400,000 gpd in permitted discharge capacity is not and cannot be

made cost effective because of lack of available land facilities, potential high condemnation costs, and the added additional pumping costs to spray irrigate such additional effluent south of the site of the present STP. Therefore, the Township should proceed with the design/expansion options which are available.

A great deal of effort will also be required in resolving the high BOD loading at the current plant which is directly attributable to the dilution factor of wastewater influent at the plant. The Ridley Creek STP cannot be allowed to reach its BOD discharge limits prior to reaching the permitted hydraulic discharge limits of 400,000 gpd. Also, for all additional future wastewater treatment needs at the Ridley Creek STP, the excess BOD loading limits must be resolved at the present permit levels prior to proceeding to plant expansion.

6.2 West Goshen (Chester Creek) Wastewater Treatment Selected Alternative as Amended by the "West Goshen Alternative"

The selected wastewater treatment alternative for the Chester Creek (West Goshen) sewage treatment plant service area is to continue in making permitted connections in accordance with the commitments and future probable needs depicted in Table 3.6 of this report plus the new needs identified in the "West Goshen Alternative." The current and long-standing agreement with West Goshen Township to treat 1.0 MGD in actual wastewater flow will continue through the year 2002 and beyond. Table 6-2 depicts the 1992 status and future needs for additional wastewater treatment in accordance with the five-year and ten-year planning cycles and beyond the year 2002. Table 6-2 reflects the latest observed theoretical average daily flows to the West Goshen STP and the estimated or actual monitored average daily flow which is approximately 77.44 percent of theoretical flow.

In 1992, theoretical flows were approximately 974,600 gpd with estimated monitored flow of 754,769 gpd. The committed additional projects requiring wastewater treatment, as depicted in Table 3.6 of this report, would generate 88,295 gpd in theoretical flow and 80,737 gpd in estimated actual flow. At this point, when all such connections are made, the theoretical wastewater flow to the West Goshen STP would be 1,062,894 gpd, but the actual estimated flow will be 835,466 gpd.

The probable new treatment needs as derived from Table 3.6 of this report would add an additional 61,744 gpd and an estimated actual average daily flow of 48,840 gpd.

In summary, at the end of 1997, the theoretical wastewater flow to the West Goshen plant would be 1,124,638 gpd and real flow would be 884,306 gpd. However, it is assumed, in accordance with footnote 1, that the current ratio of actual to theoretical

TABLE 6.2

WASTEWATER TREATMENT NEEDS
CHESTER CREEK (WEST GOSHEN) STP SERVICE AREA
1992-2002 AND BEYOND

STATUS/NEED		THEORETICAL WASTEWATER FLOW	GPD ESTIMATED ACTUAL WASTEWATER FLOW
October 1992 On-Line Avg. Daily Treatment		974,599 GPD	754,769 GPD[1]
Committed additional flow	Subtotal	88,295 GPD 1,062,894 GPD	80,737 GPD 835,466 GPD
Probable New Needs 1993-1997	Subtotal	61,744 GPD 1,124,638 GPD	48,840 GPD 884,306 GPD
Probable Additional Needs 1998-2002	Subtotal	108,074 GPD 1,232,712 GPD	88,832 GPD 973,178 GPD
Potential Needs Beyond 2002	Total	46,250 GPD 1,278,962 GPD	35,816 GPD 1,008,994 GPD [2]

Notes:

(1) Current 77.4% actual vs. theoretical flow ratio is assumed to continue for EDU commitments only with positive I&I control and water conservation devices now mandatory.

[2] Does not include 432,620 gpd in additional basin transfers under the "West Goshen Alternative" which emerged in late 1993.

flow of 77.4 percent can be maintained for EDU connections with rigorous infiltration and inflow (I&I) control and based on the fact that water conservation devices are now mandatory for new EDU connections.

Table 6.2 also projects the probable additional wastewater treatment needs between 1998-2002 as being 108,074 gpd in theoretical sewage flow and 88,832 gpd in estimated actual flow. At this future date, or by the year 2002, East Goshen will probably be utilizing approximately 97 percent of the Township's available treatment capacity at the West Goshen STP. The wastewater treatment needs beyond the year 2002 would potentially add 35,816 gpd in additional estimated actual wastewater flow bringing the East Goshen wastewater treatment needs to 100 percent of the 1.0 MGD treatment availability permitted by present agreement.

It is expected that West Goshen Township, by way of an updated Act 537 Plan, will announce in 1994 that design studies are underway to expand the West Goshen STP from 4.5 MGD to a minimum of 6.0 MGD. As noted previously within this study, the West Goshen STP expansion to 6.0 MGD will allow no additional sewage treatment capabilities outside of the West Goshen needs. An alternative expansion plan is expected to be presented which would allow the West Goshen STP to be expanded to 7.0 or 7.5 MGD. Information provided by West Goshen Township suggests that if the 7.0 or 7.5 MGD option is made, that up to 1.0 or 1.5 MGD in additional treatment capacity would be available to surrounding Townships. It is not known at the time of publication of this report if the latter 7.0 or 7.5 MGD option will be approved.

The Township has within its control the ability to constantly monitor and reduce both infiltration and inflow in gravity sewers connected to the West Goshen facility. The Industrial Park contributors are monitored carefully as to their actual flow versus their agreed contribution of daily wastewater per the formula established for industrial and business park facilities. This monitoring should be continued to assure both West Goshen and East Goshen that agreed upon wastewater treatment flows are at or below committed levels.

One of the areas of the Township, the Charter Chase Subdivision containing 98 EDUs, is listed in Table 3.6 as being reserved for ultimate future connection to the West Goshen STP. However, as noted elsewhere in this report, the 32,550 gpd reservation may not be needed if the Township-wide onlot sewage facility monitoring program is successful. This would eliminate 32,550 gpd from the sewage flows depicted in Table 6.2 and would provide a more comfortable margin between actual wastewater flows and the agreed upon 1.0 MGD in maximum daily effluent to be treated. If a new Agreement with West Goshen is negotiated for

up to 780,000 gpd in new capacity under the "West Goshen Alternative," Charter Chase would be included.

The PaDER will soon review both the West Goshen Act 537 Plan Update and the East Goshen Act 537 Plan Update. The PaDER may recommend to East Goshen Township that a "cushion or buffer" is necessary to serve future but yet unknown needs beyond the year 2002. East Goshen Township should be prepared for such a directive during 1994. Notwithstanding any directives from the PaDER, East Goshen Township could complete its build-out within the Chester Creek wastewater treatment area without exceeding the current 1.0 MGD agreement with West Goshen Township. However, if additional capacity can be acquired at a reasonable cost, it should be pursued (under the West Goshen Alternative).

Since late 1993, East Goshen Township has been seriously evaluating the "West Goshen Alternative." This alternative would involve a substantial diversion of flows from the Ridley Creek Watershed to the Chester Creek Watershed. Since the Township has now selected the West Goshen Alternative as the primary alternative, it is important to note here the impact that this alternative will have on the overall sewage collection and treatment plans for the Township.

One of the most important features of this alternative would be preserving the sewage flows for properties located within East Goshen Township for ultimate treatment at the Ridley Creek STP while diverting other flows (including East Whiteland facilities) to West Goshen. This Section 6.2 of the report contains new material describing how the external flows would be directed to West Goshen. Specifically, all of the probable external flows depicted in Table 3.7 including potential needs beyond 2002 would go to the Chester Creek treatment facility. In addition to the 1,009,000 gpd shown in Table 6.2, and the individual properties identified in Table 3.6 of this report, the following diversions or possible interbasin transfers would be made:

- Pre-planned flow to West Goshen per Table 6.2 — 1,009,000 gallons
- New Kent Apartment diversion — 84,429 gpd
- Immaculata College — 137,200 gpd
- William Henry Apartments — 96,000 gpd
- Hersheys Mill Commercial — 15,000 gpd
- East Goshen Township Reserve for Infiltration/Inflow — 100,000 gpd

Total Flows to West Goshen Township — 1,441,620 gpd

The major external facility not covered above is the Bryn Mawr Rehabilitation Hospital (Willistown Township) at 40,000 gpd which may not be economically feasible to pump from Line Road to a gravity sewer in West Goshen Township. If the Bryn Mawr Rehabilitation Hospital decides that they have a future need to tie in to East Goshen, the 40,000 gpd may be worked out at the Ridley Creek STP rather than create a pump station/force main scenario exceeding two miles in length.

Based on the flows shown above and based upon known developments and future developments identified in Table 3.6, it is possible to convey a total of 1,441,620 gpd to West Goshen Township. This would require an amended agreement with West Goshen Township to the extent of approximately 450,000 gpd. West Goshen has indicated a potential availability of 780,000 gpd. Other East Whiteland properties in the Ridley Creek Watershed may increase this need.

During April 1994, information has been received by the consultant that West Goshen has placed a hold on publishing its Act 537 Plan Update until the East Goshen projections and projections by other townships are received. Further, West Goshen Township wants to establish binding agreements before proceeding to design. This may require direct agreements between West Goshen and East Whiteland Townships and possibly Willistown Township. It is certain that a new agreement must be negotiated with East Goshen Township under the West Goshen Alternative.

It was indicated in April of 1994 that the cost for expansion at the West Goshen STP might reach $6.00 per gallon. Based on the figures shown above, and assuming that 441,620 gpd in excess treatment capacity is required by East Goshen Township and the external facilities, this would represent a cost of approximately $2,650,000 in treatment costs alone plus an

estimated $900,000 for a new Greenhill Road pumping station and force main to West Goshen. It may ultimately be too expensive for the East Whiteland facilities (Immaculata College and William Henry Apartments) to reasonably connect to the West Goshen facility, based on combined treatment and conveyance costs.

6.3 The Selected Alternative for the Hersheys Mill Community (Spray Irrigation) System

Based upon the conclusions reached in Section 4.0 of this report, it is the Township's selected alternative that the Hersheys Mill Community system be continued for at least the next ten years as a privately owned facility. There is ample capacity within the Hersheys Mill treatment facility to handle the ultimate 2,032 maximum permitted EDUs with an estimated additional reserve capacity at the time of build-out of 70,000 to 85,000 gpd.

This facility is well designed, well built, is currently under excellent operational control, and has more than ample capital reserve funding for individual component replacement. East Goshen Township has physically evaluated the plant condition, the management and operation, and has considered the fact that the Homeowners association will assume operational authority in January 1994. The Township sees no need to intervene in this private treatment facility during five-year and ten-year planning cycles extending to the year 2002. However, the Township is fully prepared to monitor this facility on an annual basis, or as deemed necessary, and to continue dialogue with the Board of Directors of the Greenhill Sewer Association during the next ten years.

If, beyond the ten-year planning cycle (beyond 2002), East Goshen Township finds it necessary to have the Municipal Authority take over the Hersheys Mill system for any reason, and if the Charter Chase subdivision has not responded to a rigorous onlot sewage facility monitoring program, there would be possible capacity within the Hersheys Mill system to accommodate the Charter Chase community at a greatly reduced cost factor.

6.4 The Selected Alternative for the Willow Pond Community System

It is assumed that the Willow Pond community comprising 28 single-family detached units will be disconnected from the current community onlot system during the time frame 1998-2002 and will be connected to the Ridley Creek STP subject to the construction of an extended intercepting sewer (the Line Road Interceptor) south of Willow Pond. Although it is possible that the newly constructed inground sewage beds will last beyond this

period, it is prudent to consider a public sewer connection now. The timing of such connection will be totally dependent upon the coordination of construction of gravity sewers south of Willow Pond to the nearest gravity public sewer connection near Saddlebrook Drive.

6.5 The Selected Alternative for Continued Use of Individual Onlot Systems

East Goshen Township will continue the use of individual onlot systems within areas of the Township which are not schedule to receive public sewer extensions by the year 2002. The Township has approved (copy of Ordinance attached) a Township-wide onlot sewage management program during 1994 under the previously described onlot management program. This program will provide for continuous monitoring, reporting and recording procedures, and compliance with mandatory renovations of isolated failed systems. The scheduled public sewer extensions for the Meadowbrook/Cornwallis area and the Highland/Taylor area will reduce the number of onlot individual systems from 699 to 563 such systems. Other potential connections to public sewers are listed in Section 4.2 of this report. It is expected that the condition of such individual onlot systems will actually improve under the jurisdiction of the Township individual onlot management program. Other than the Charter Chase area, already discussed in various sections of this Updated Act 537 Plan, there are no other major areas of the Township which exhibit a need for connection to public sewers prior to the year 2002.

6.6 Selected Alternatives for Public Sewer Service Areas within Chester Creek

The following areas have been selected to be handled as noted:

- Park Avenue (fire house) - Gravity sewer extension.
  Time frame - 1993-2002 - zoned R-3

- Fedor Property - Gravity sewer extension.
  Time frame - 1993-1997 - zoned R-4

- West Chester Pike - Miscellaneous gravity sewer extensions - zoned R-5
  Time frame - 1993-1997

- West Chester Pike Commercial - Gravity sewer extensions - zoned C-4
  Time frame - 1993-1997

- Hicks Property (14.9 Ac.) - Gravity sewer extensions.

Time frame - 1993-1997 - zoned I-1

- Hicks Property (71.5 Ac.) - Gravity sewer extensions.
  Time frame - 1998-2002 - zoned BP

- Price Property - Gravity sewer extensions - zoned R-2
  Time frame - 50 EDUs 1993-1997
  79 EDUs 1998-2002

- Saints Peter and Paul Church - Remain as onlot system to 1997 - possible grinder pump connection by 2002 - zoned R-2

- Green Acres Area and Strasburg Road/Route 352 Area - Remain as individual onlot systems - connect by pump or gravity (as available) after 1998 - zoned R-2

- Charter Chase - Remain as individual onlot systems through 1997 - Reevaluate - possible gravity, grinder pump and force main connection after 1998 - zoned R-2

- Mill Valley - Remain as individual onlot systems through 1997 - possible gravity/force main connection after 1998 - zoned R-2

- Millstream Drive - Same as Mill Valley - zoned R-2

- Divert New Kent Apartments to West Goshen STP

- Immaculata College Complex

- William Henry Apartment Complex

- Hersheys Mill Commercial Area

6.7 Selected Alternatives for Areas Located within Ridley Creek Service Areas.

- Meadowbrook/Cornwallis Area (approved prior to this Act 537 Plan Update) - Low pressure system.
  Time frame - 1993-1995

- Highland/Taylor Area - Gravity sewer extension.
  Time frame - 1993-1995

- Spinozzi-McCloskey - Remain as individual onlot systems - allow for 10 EDU connections (upon need) from 1993-2001.

- SmithKline Beecham - Retain 40,000 gpd (paid and committed).

- Woods/Sherman Properties - Capped sewers - some possible individual onlot systems - public gravity sewer extensions after 1998 or when developed.

- Willow Pond Area - Connect to gravity public sewers 1998 to 2002 or when available.

- Bryn Mawr Rehabilitation Hospital - Gravity sewer extension to SmithKline Beecham system only after STP expansion is approved (or possible force main/pump to West Goshen) may be considered at Ridley Creek STP if other Township properties are deleted.

- Christ Memorial Lutheran Church - Gravity connection through Realen site to Ridley Creek STP.

- William Henry Apartments/Immaculata College - Gravity or force main connections only when STP expansion is approved. This alternative is amended to require disposal at West Goshen STP via Greenhill Road future pump station/force main.

FILE

RESOLUTION FOR PLAN REVISION

RESOLUTION NO. 97-38

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Resources (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Board of Supervisors of East Goshen Township has adopted a 537 Plan Update approved by the Pennsylvania Department of Environmental Protection in June, 1995, and

WHEREAS, the municipality has now prepared a Special Study to determine the best alternative for obtaining additional sewage capacity projected to serve the ultimate needs of the municipality, and

WHEREAS, the Special Study considered three alternatives to accomplish the acquisition of the projected needed sewage capacity, and

WHEREAS, the recommended alternative determined through this Special Study is to use two phases to increase the discharge permit limits of the Ridley Creek Sewage Treatment Plant (PA NPDES # 0050504) from the existing permit limit of 0.400 MGD to 0.750 MGD, and

WHEREAS, the Plan proposes to reduce the wastewater ratings per equivalent dwelling unit for new construction only,

AND NOW THEREFORE, be it resolved that the Act 537 Special Study for East Goshen Township dated May, 1997 and prepared by Yerkes Associates, Inc. is hereby approved and adopted on this 21st day of October, 1997.

BOARD OF SUPERVISORS

E. Martin Shane, Chairman

Joseph M. McDonough, V. Chairman

John Chatley III, Member

Mary L. Powell, Member

Carmen Battavio, Member

ATTEST

VOLUME I

EAST GOSHEN TOWNSHIP

REVISION TO
OFFICIAL SEWAGE PLAN
ACT 537
FOR
A SPECIAL STUDY AREA

Prepared for

Board of Supervisors
East Goshen Township
Chester County, Pennsylvania

DATE
MAY, 1997
REVISED SEPTEMBER, 1997

Yerkes Associates, Inc.

Consulting Engineers - Land Surveyors
Bryn Mawr, PA *610-525-6200*
West Chester, PA. *610-644-4254*

Professional Services Since 1874

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VOLUME I

EXECUTIVE SUMMARY

The objective of this Act 537 Plan Revision for a Special Study Area is two fold:

1. To obtain approval to increase the current discharge permit limits of the Ridley Creek Sewage Treatment Plant NPDES permit, PA 0050504, from 0.400 MGD to 0.750 MGD. If approved, the expansion would take place in two phases. The plant was designed to treat 0.500 MGD, therefore the Phase I increase of the discharge capacity to 0.500 MGD would only involve minor modification of existing equipment. The Phase II would increase the discharge capacity an additional 0.250 MGD for a total of 0.750 MGD.

The Township is extremely cognizant of the high quality rating given to the Ridley Creek. It is the intention of this Special Study and the Socio-economic Study attached, to assure the Department that the quality of the stream has not and will not be affected.

2. To obtain approval to reduce the current wastewater ratings, for new construction only, in the following manner:

Type of Use	Current Rating	Proposed Rating
Single Family Dwelling	275 gpd/EDU	225 gpd/EDU
Townhouse	225 gpd/EDU	200 god/EDU
Apartment	225 gpd/EDU	175 gpd/EDU

This request is based on an evaluation of the current flows when compared to the actual number of equivalent dwelling units (EDUs) on line. The request is made for new construction based on the water saving devices that are being required in today's construction.

Upon approval of this Special Study, Phase I of the expansion and implementation of the new wastewater ratings would be used immediately.

A. PLAN SUMMARY

This Act 537 Plan Special Study looks at the alternatives available to East Goshen for obtaining additional sewage capacity to serve the ultimate needs of the Township. The Plan recommends that the Ridley Creek Sewage Treatment Plant be expanded, in two phases, from the existing permitted capacity of .400 MGD/day to .500 MGD in Phase I and to .750 MGD in Phase II. The Consulting Engineer believes the first phase can be accomplished at minimal cost and time since most of the existing equipment was originally sized to treat .500 MGD.

To accomplish this goal, some Ridley Creek Watershed flows currently being pumped to the West Goshen Sewage Treatment Plant (WGSTP) will be diverted to the Ridley Creek Sewage Treatment (RCSTP) and some flows from the Chester Creek Watershed will be diverted to the RCSTP. These transfers should eliminate the need for additional capacity at the WGSTP. The Township has calculated that construction and treatment costs at the RCSTP are more economical than at the WGSTP.

The Department's June 30, 1995 approval of the current Sewage Facilities Plan included several recommendations to be addressed prior to the Township submitting a recommendation for a plan to increase the sewage capacity at the RCSTP to serve the Township's ultimate needs. The following list is a summary of the actions taken pursuant to the approval letter (full details can be found in Volume II).

- The On-lot Management Plan was implemented in July, 1994
- The diversion of flows for New Kent Apartments from the Ridley Creek to the Chester Creek has not been done and is not expected to be done because it flows to Ridley Creek by gravity and would have to be pumped to be treated at the West Goshen Treatment Plant. In addition, treatment costs are lower at the Ridley Creek Plant than at the Chester Creek treatment facility (West Goshen Township Sewage Treatment Plant).
- The "West Goshen Alternative" has been studied and found to be not economically feasible
- The proposed "Line Road Interceptor" has been installed by a developer
- The future connection of the Bryn Mawr Rehab Hospital has been included in the Ridley Creek Sewage Treatment Plant capacity allocations
- The new EDU wastewater ratings are being used

- Studies of alternatives other than the "West Goshen Alternative" have been completed

- Spray Irrigation - This option has been re-examined and still found to be economically unfeasible based on the current cost of raw land in East Goshen Township - See Supporting Documents #13.

B. PLANNING OBJECTIVES

An Act 537 Plan Update for the entire township was completed and approved in June, 1995. That update suggested that the township would need additional capacity to meet its ultimate needs and that expansion of the Ridley Creek Sewage Treatment Plant appeared to be the most cost effective and logical means of obtaining the projected capacity needs. As mentioned previously, the Department's approval recommended that other alternatives be investigated, namely obtaining additional capacity from West Goshen Township and spray irrigation. This Act 537 Plan Special Study has addressed those other alternatives.

Identification of the Study Area

Ridley Creek Watershed - The Ridley Creek Watershed includes all of the area within the Township east of Boot and North Chester Roads.

Chester Creek Watershed - The Chester Creek Watershed includes all of the area within the Township west of Boot and North Chester Roads.

Current Sewage Usage within the Study Area

Ridley Creek Watershed - The Ridley Creek Sewage Treatment Plant (RCSTP) is designed and permitted to treat 0.400 MGD. The total number of EDUs connected at the end of 1996 was 1,165 contributing an adjusted (see 1996 Chapter 94 Report) average daily flow of 275,451 gallons per day or 205 gpd per unit. The currently approved EDU wastewater rating is 275 gpd per EDU.

In addition to the average daily flow of 275,451 gallons, there are 134,850 gallons committed or sold and 1,375 gallons of potential need in the next five years. The projected total of these existing and future needs will exceed the current plant permit by 11,676 gallons per day.

Chester Creek Watershed - The Township/Authority have an agreement for treatment of 1.0 MGD of capacity at the West Goshen Sewage Treatment Plant. The 1996 actual annual average daily flow was 863,503 gpd (including 109,350

gallons is from the Ridley Creek Basin). An additional 276,896 gallons has been committed or sold. These allocations bring the theoretical flow to the WGSTP over the 1,000,000 gallon per day allotment by 140,399 gallons per day.

Estimated Five and Ten Year Projections

(Sewage Needs Based on Land Use permitted under the Existing Zoning with an EDU rating of 275 gpd)

Ridley Creek Watershed - In the 0 - 5 year range, an estimated 79,600 gpd will be needed. In the 5 years and beyond range, there is an estimated need for an additional 166,050 gallons. These projections include the potential needs of the two institutional facilities in Willistown Township (Bryn Mawr Rehab and Christ Memorial Church). These projected needs are illustrated on Exhibit 2-B.

Chester Creek Watershed - Exhibit 3-A illustrates that an estimated 125,262 gpd will be needed in the 0 - 5 year range and an additional 87,725 gpd in the 5 years and beyond range.

Future Capacity Needs

Using the proposed wastewater rating of 225 gpd/EDU:

Ridley Creek Basin	Flow	Chester Creek Basin	Flow
Current Flow to RCSTP	275,451	Current Flow to WGSTP	863,503
Pumped to Chester Creek	-0-	Pumped from Ridley Creek	-109,350
Current Basin Flow	408,182	Current Basin Flow	754,153
0 - 5 year needs	80,000	0 - 5 years needs	63,909
Total Basin Flow 0 - 5 Years	488,182	Total Basin Flow 0 - 5 Years	818,062
5 years and beyond needs	166,050	5 years and beyond needs	87,725
Total Ultimate Basin Flow	654,232	Total Ultimate Basin Flow	905,787

Use of New EDU Wastewater Ratings - In order to gain the maximum amount of capacity at both the RCSTP and the WGSTP, we have reviewed the actual average daily uses for new construction in both basins. The actual average daily flows from both basins have consistently been 75 - 90% of the EDU Wastewater Ratings used to develop the capacity allocations. The Plan proposes to reduce the EDU rating for new construction only from 275 GPD for single family dwellings to 225 GPD; from 225 GPD for townhouses to 200 GPD and from 200 GPD for apartments to 175 GPD.

Out of Basin Flows

Ridley Creek Watershed - There are no out of basin flows being treated at the RCSTP. The currently approved 537 Plan shows that New Kent flows are treated at the West Goshen Treatment Plant, when, in fact, they are part of the Ridley Creek Watershed and are treated at the RCSTP

Chester Creek Watershed - There are 109,350 gpd being pumped from the Ridley Creek Watershed to the Chester Creek Watershed for treatment at the West Goshen Sewage Treatment Plant. An additional 44,000 gpd is currently projected to be pumped to the Chester Creek in the 5 year and beyond range.

C. ALTERNATIVES

Alternative #1

Obtain additional sewage treatment capacity at the West Goshen Sewage Treatment Plant.

Discussions between the East Goshen and West Goshen Board of Supervisors regarding the possibility of East Goshen purchasing an additional 200,000 gpd capacity at the WGSTP took place in Spring, 1996. The purchase of this amount of capacity was found to be not economically feasible; therefore this Alternative has been eliminated. Copies of all correspondence and data can be found in Volume II.

Alternative #2

Feasibility of obtaining treatment capacity from other sources - Westtown Sewer Company - Pursuant to a court order, on December 15, 1996 Westtown Township took over operation of the Westtown Sewage Treatment Plant located on Westtown Road in Westtown Township. The plant has had many problems over the years and has been cited by the Department for violations of operations and maintenance of the plant and the system. At this time, there are too many unknowns for East Goshen Township and Authority to look for additional capacity at this facility. A copy of the article from the Daily Local News pertaining to the take-over is included in Volume II Exhibits.

West Chester Borough Goose Creek Treatment Plant - The Township was recently asked by the Borough about any capacity the Township may need at the Goose Creek Treatment Plant. The Township responded with a need for

approximately 0.200 MGD however there is no economically feasible method of getting any of that sewage to the Goose Creek Sewage Treatment Plant.

These two alternatives have been eliminated from further study.

Alternative #3

For purposes of this Special Study, the findings of the 1995 Plan Update regarding the feasibility of Spray Irrigation are still valid.

According to the June, 1995 study, only two properties exist within the Ridley Creek watershed which contain sufficient acreage to handle the facilities and spray filed necessary for the calculated discharge need of 0.3 MGD. These include the Pfizer (formerly SmithKline Beecham) property located north of Boot Road and the additional possibility of use of all or part of the Grace Estate property located immediately adjacent to and south of the Ridley Creek STP.

The use of the Pfizer property was dismissed for future spray irrigation purposes because of the need to pump treated effluent more than 1.1 miles and the high expected cost of condemnation per acre (assumed to be in excess of $60,000 per acre) in addition to the burden of exceptionally high operating costs for future years.

The Grace Estate, comprising 182 acres, where soils are suitable, could be acceptable for spray effluent areas in its entirety. The June, 1995 Act 537 Plan Update estimated that it would be necessary to acquire the entire westerly half of this property (west of Ridley Creek) and perhaps suitable portions of the property east of the Ridley Creek in order to meet the estimated physical area needs of 75 acres required for the application of spray effluent for an additional 0.3 MGD.

The 1995 study assumed a cost of $55,000[1] per acre for this raw land since acquisition of these major portions of the site would destroy the utility of the balance of the site. A recent sale of raw ground in the township reflected $60,000[2] per acre for development of the entire site. With that in mind, the Grace Estate ground may cost even more than that on today's market.

Using $60,000 per acre, the costs for spray irrigation would be $4,500,000. Additional costs for spray field piping and pumping were estimated at $400,000 for a total of $4,900,000 before the plant expansion costs are even considered.

A complete copy of the 1995 Act 537 Plan Update section pertaining to spray irrigation is included with the Supporting Documents of this submission.

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[1] Information taken from page 4-28 of the June, 1995 Act 537 Plan Update
[2] Based on average land cost for the Wood Estate, sold in 1996

This alternative has been dismissed from further evaluation since it is not cost effective.

Alternative #4

Increase the RCSTP NPDES Permit to 0.750 MGD

This alternative proposes to increase existing NPDES Permit to .750 MGD in two phases.

Phase I - Increase the Treatment Plant to 0.500 MGD -

This phase will take care of the existing on-line and committed or sold capacity. There are no projected additional needs in the Ridley Creek Basin within the 0 - 5 year range however there are projected potential needs in the 5 years and beyond range unless flows are diverted from the Chester Creek treatment facility (WGSTP) to the RCSTP. When the flows at the RCSTP reach the 0.400 MGD the application process with the Department will be started to obtain permission to begin construction to complete the expansion of the treatment facility to 0.750 MGD.

The 5 year and beyond projections consist of existing developments whose on-lot systems are being monitored through the Township's On-Lot Sewage Management Program. These developments are Charter Chase, Mill Valley, Millstream Drive, Indian Hills and the areas of Broookmont/Treemont, North Chester Road and Old Orchard/Raewyck Drives. Capacity must be allocated for public sewers should these on-lot areas fail. Previous walks through the Charter Chase area indicated that some systems were malfunctioning. Notices were sent to the homeowners advising them to repair the systems. A follow-up inspection showed that the repairs were made.

This Plan also recommends that the Potential 5 year and beyond flow that is currently included in the Chester Creek allocations be moved to the Ridley Creek Basin allocations. Since additional capacity is unavailable at the WGSTP, these changes will go toward reducing the capacity projections at the WGSTP.

Accomplishing the Phase I expansion should be more of a "fine tuning" than construction. Most of the equipment currently in place at the RCSTP was originally sized to handle 0.500 MGD therefore only minor modifications should be needed. It is not anticipated that any additional land will be required.

The flows from New Kent Apartments (calculated at 76,800 gpd using 225 gpd/unit) would continue to be treated at the RCTP and be deleted from the Chester Creek allocation.

The flows from Hershey Mill Estates and Fairway Village (49,500 gallons), currently being pumped to the Chester Creek (WGSTP) through the Hershey Mill Pump Station will be pumped to the RCSTP. Approximately 600 feet of force main extension would be required to make this change, starting at a point just beyond the end of Cornwallis Drive to a connection point at the last manhole on Cornwallis Drive where it would reach the RCSTP by gravity. Implementation of these changes will be made if and when the current capacity limit at the West Goshen Treatment Plant appears to be in danger of being exceeded.

An additional 8,250 gallons could be diverted from the Chester Creek Marydell Pump Station which serves 30 single family dwellings. Approximately 500 feet of force main would need to be constructed from the Marydell Pump Station to a manhole in the Ridley Creek system.

Exhibits 3B - 3D illustrate the proposed EDU wastewater allocations for both the Ridley Creek and Chester Creek Basins.

Phase II - Increase the Treatment Plant to .750 MGD

As discussed in Phase I, when the need for additional sewage capacity becomes a reality, it will be necessary to expand the RCSTP an additional .250 MGD to the ultimate .750 MGD. Construction needs to accomplish this expansion are not known at this time. The existing plant is on one acre of land owned by the East Goshen Municipal Authority. A small portion of land may be required from the adjacent open space. Since the open space is owned by the Township, it is assumed a mutually acceptable agreement could be reached by the Township and Authority for acquisition of the needed land.

The ultimate Ridley Creek Sewer Area is shown on Exhibit 4. This plant expansion should serve the township through its ultimate needs as well as provide needed capacity for the adjoining municipality.

Stream Quality Analysis - The RCSTP is permitted as a stream discharge plant; however it is not a direct stream discharge. It should be more aptly labeled an aquaculture treatment system since the treated effluent is filtered through wetlands before entering the stream. An Aquaculture system has been described as those which include natural and artificial wetlands as well as other aquatic systems for the production of algae and higher plants, invertebrates, fish and integrated polyculture foodchain systems. Swamps and bogs are successfully

being utilized as managed "nutrient sinks" for polishing partially treated, or fully treated in the case of RCSTP, effluent.[3]

The RCSTP filtration system was originally accomplished through a manifold system which diffuses the effluent for a distance of several hundred feet above and below the assumed center of the mixing zone. Based on the nature of this type of stream discharge and the results of periodic stream samples taken over the years, the Township, Authority and Consulting Engineer have formed the opinion that the stream quality has not been degraded as a result of the effluent discharge into it.

To further illustrate this point, the Municipal Authority authorized the plant operator to take random samples from the stream at four locations upstream and downstream of the Plant outfall in November, 1996. The samples were taken below the mixing zone, 400 feet below the next tributary, at the outfall of the Ridley Creek and at the point of outfall from the plant. The test samples concluded that the discharge of effluent into the stream had no measurable effect of any type on the stream quality.

The original discharge area has expanded considerably since the treatment plant was put into service in 1985. Further, these specific wetlands are extremely beneficial because they are artificially fed with a constant supply of water and are unaffected by seasonal changes or drought conditions.

The Plant Operator's memo and the complete laboratory report can be found in Volume II. As a point of interest, on the day the samples were taken, a representative of the Department was present and offered suggestions to the operator on sample locations.

Ridley Creek Greenway Project Plan

In November, 1996 the Township Board of Supervisors endorsed the Ridley Creek Greenway Project Plan. This Plan notes that the Ridley Creek Plant filters effluent through the wetlands to the creek. The Greenway Project Committee was impressed with how the RCSTP is run and did not have any comments on the quality of the stream as a result of the stream discharge from the Plant.

D. RECOMMENDED ALTERNATIVE

Alternative #4 is the recommended alternative of this Plan Study.

[3] Innovative and Alternative Technology Assessment Manual, United States Environmental Protection Agency, February, 1980, page A-26

E. IMPLEMENTATION PLAN

The first goal of this 537 Plan Special Study is to increase the Sewage Treatment Plant NPDES Permit limit from 0.400 to 0.750 MGD in two phases. Upon approval of this 537 Plan Special Study, NPDES Permit application Parts I and II will be submitted to the Department to increase the capacity to 0.500 MGD. When the plant flows reach a daily flow of 0.400 MGD, applications will be submitted to the Department to implement Phase II which will be to increase the plant discharge limit to 0.750 MGD.

The second goal is to immediately utilize the revised wastewater ratings for new construction only.

EXISTING FLOWS TO
RIDLEY CREEK SEWAGE TREATMENT PLANT

Wastewater Ratings
Single Family Dwelling = 275 GPD
Townhouses = 225 GPD
Apartments = 200 GPD

AREA TO BE SERVED	ZONED	GPD ON-LINE	GPD COMMITTED & IN PROGRESS @275 GPD/EDU
BOW TREE FARMS - 338 SFD	R-2	92,950	
CLOCKTOWER - 159 SFD	R-2	35,775	
VISTA FARMS - 65 SFD	R-2	17,875	
HUNT COUNTRY - 71 SFD	R-2	19,525	
WENTWORTH - 65 SFD	R-2	17,875	
E.G. ELEMENTARY SCHOOL	R-2	10,000	
PFIZER (AKA SMITHKLINE BEECHAM)	I-2	10,000	30,000
GOSHEN VILLAGE COMMERCIAL	C-5	13,000	
HANCOCK BUILDING (FUCHS)	C-2	3,800	
PHASE II- HANCOCK BLDG		2,400	
PAOLI PIKE (352/PAOLI CORNER)	C-5	5,950	350
TAYLOR/HIGHLAND (64 EDU)	R-2	17,600	
SPINOZZI & MCCLOSKEY (10 EDU)	R-2	1,375	
COVENTRY WOODS (16 EDU)	R-2	1,650	2,750
WATERFORD (26 EDU)	R-2	7,150	
MEADOWBROOK/CORNWALLIS AREA (76 EDU)	R-2	28,950	6,600
BELLINGHAM LIFE CARE	R-2	28,000	
BENTLEY CONSTRUCTION	I-2	900	
PHILA SUB. - HUNT COUNTRY	C-5	157	
NEW KENT APARTMENTS - 384 APTS		76,800	
WOOD PROPERTY (85.9 ACRES - 63 SFD)	R-2		17,325
WILLOW POND (28 SFD) 13 IN WILLISTOWN	R-2	7,700	
TOTALS		397,232	57,025
TOTAL ON LINE/COMMITTED		454,257	

ACTUAL 1996 AVERAGE (ADJUSTED) FLOW (SEE 1996 CHAPTER 94 REPORT) 275,451

PERCENTAGE OF ACTUAL FLOWS VS ALLOCATIONS 69%

08/29/97
File name: existing RC Flows

EXHIBIT 1
EXISTING FLOWS

EXISTING FLOWS TO
RIDLEY CREEK SEWAGE TREATMENT PLANT
USING REDUCED WASTEWATER RATING

Wastewater Ratings

Single Family Dwelling = 225 GPD for new construction built in last 5 years
Townhouses = 200 GPD
Apartments = 175 GPD

AREA TO BE SERVED	ZONED	GPD ON-LINE	GPD COMMITTED & IN PROGRESS @225 GPD/EDU
BOW TREE FARMS -338 SFD	R-2	76,050	
CLOCKTOWER - 159 SFD	R-2	35,775	
VISTA FARMS - 65 SFD	R-2	17,875	
HUNT COUNTRY - 71 SFD	R-2	19,525	
WENTWORTH - 65 SFD	R-2	17,875	
E.G. ELEMENTARY SCHOOL	R-2	10,000	
PFIZER (AKA SMITHKLINE BEECHAM)	I-2	10,000	30,000
GOSHEN VILLAGE COMMERCIAL	C-5	13,000	
HANCOCK BUILDING (FUCHS)	C-2	3,600	
PHASE II- HANCOCK BLDG		2,400	
PAOLI PIKE (352/PAOLI CORNER)	C-5	5,950	225
TAYLOR/HIGHLAND (64 EDU)	R-2	17,600	
SPINOZZI & MCCLOSKEY (10 EDU)	R-2	1,375	
COVENTRY WOODS (16 EDU)	R-2	1,350	2,250
WATERFORD (26 EDU)	R-2	5,850	
MEADOWBROOK/CORNWALLIS AREA (100 EDU)	R-2	20,900	5,400
BELLINGHAM LIFE CARE	R-2	28,000	
BENTLEY CONSTRUCTION	I-2	900	
PHILA SUB. - HUNT COUNTRY	C-5	157	
NEW KENT APARTMENTS - 384 APTS		67,200	
WOOD PROPERTY (85.9 ACRES - 63 SFD)	R-2		14,175
WILLOW POND (28 SFD) 13 IN WILLISTOWN	R-2	7,700	
TOTALS		363,082	52,050
TOTAL ON LINE/COMMITTED		415,132	

ACTUAL 1996 AVERAGE (ADJUSTED) FLOW (SEE 1996 CHAPTER 94 REPORT) 275,451

PERCENTAGE OF ACTUAL FLOWS VS ALLOCATIONS 76%

09/12/97
file name: RC Reduced Wastewater Rating

EXHIBIT 1-A
EXISTING FLOWS
USING REDUCED WASTEWATER RATING

ALTERNATIVE #4
PHASE I
RIDLEY CREEK
TREATMENT PLANT
PROPOSED EXPANSION TO 0.500 MGD

NEW CONSTRUCTION - BUILT IN LAST 10 YEARS
new residential construction has been calculated at 225 gpd
for single family dwellings and 175 gpd for apartments

May, 1997

May, 1997; revised 9/2/97
file name: RIDLEY PHASE II .500 MGD

AREA TO BE SERVED	ZONED	GPD ON-LINE	GPD COMMITTED OR SOLD	0 - 5 YEARS	5 YEARS AND BEYOND
BOW TREE FARMS - 338 SFD	R-2	76,050	new construction		
CLOCKTOWER - 159 SFD	R-2	35,775	new construction		
VISTA FARMS - 65 SFD	R-2	17,875			
HUNT COUNTRY - 71 SFD	R-2	19,525			
WENTWORTH - 65 SFD	R-2	17,325			
E.G. ELEMENTARY SCHOOL	R-2	10,000			
PFIZER (formerly SmithKline Beecham)	I-2/R-2	10,000	30,000		85,000
GOSHEN VILLAGE COMMERCIAL	C-5	13,000			
HANCOCK BUILDING (FUCHS)	C-2	3,600			
PHASE II- HANCOCK BLDG	C-2		2,400		
PAOLI PIKE (352/PAOLI CORNER) *	C-5	5,950	350		
TAYLOR/HIGHLAND (64 EDU)	R-2	17,600			
SPINOZZI & MCCLOSKEY (10 EDU)	R-2	2,425	225	new construction	
COVENTRY WOODS (16 EDU)	R-2	3,600	new construction		
WATERFORD (26 EDU)	R-2	7,150			
MEADOWBROOK/CORNWALLIS AREA (100 EDU)	R-2	19,800	6,300		
BELLINGHAM LIFE CARE	R-2	28,000			
BENTLEY CONSTRUCTION	I-2	800			
PHILA SUB. - HUNT COUNTRY	C-5	157			
WOOD PROPERTY (85.9 ACRES - 63 SFD)		14,175	new construction		
WILLOW POND (28 SFD / 15 in Williatown Twp)	R-2	7,700			
RETURNED TO RIDLEY CREEK					
NEW KENT APARTMENTS		76,800			
HERSHEY MILL ESTATES (142 SFD)		39,050			
FAIRWAY VILLAGE (38 SFD)		10,450			
POSSIBLE FUTURE CONNECTIONS IN RIDLEY CREEK BASIN					
(were in the Chester Creek allocations)					
CHARTER CHASE	R-2				26,950
MILL VALLEY	R-2				6,875
MILLSTREAM DRIVE	R-2				6,875
GOSHEN DOWNS (12 SFD)	R-2				3,300
ROCRAY PROPERTY (Hershey Mill Road)	R-2		new construction		7,425
POSSIBLE FUTURE CONNECTIONS IN RIDLEY CREEK BASIN					
PRINS PROPERTY (25 SFD)	R-2		new construction	5,625	
SHERMAN PROPERTY (35 SFD)	R-2		new construction	7,875	
INDIAN HILLS **	R-2				15,050
BROOKMONT/TREMONT **	R-2				15,400
N CHESTER RD MISC (82 SFD - 6 PUT ON LINE IN 1996) **	R-2	1,850			20,900
OLD ORCHARD/RAEWYCK**	R-2				10,150
WILLISTOWN TOWNSHIP					
1 SFD LINE ROAD		275			
TOTALS		438,832	39,275	13,500	197,925
TOTAL ON LINE/COMMITTED/0 - 5 YEARS		491,607			
EXPANSION REQUEST TO		500,000			
REMAINING CAPACITY		8,393			

EXHIBIT 2
EXPANSION TO 0.500 MGD

NEW CONSTRUCTION - BUILT IN LAST 10 YEARS
new residential construction has been calculated at 225 gpd for single family dwellings and 175 gpd for apartments

ALTERNATIVE #4
PHASE 2
RIDLEY CREEK TREATMENT PLANT
FLOWS
PROPOSED EXPANSION TO 0.750 MGD

May, 1997; revised 9/2/97
file name: Ridley Phase II - .750 MGD

AREA TO BE SERVED	ZONED	GPD ON-LINE	GPD COMMITTED OR SOLD	0 - 5 YEARS	5 YEARS AND BEYOND
BOW TREE FARMS - 338 SFD	R-2	76,050	new construction		
CLOCKTOWER (159 SFD)	R-2	35,775	new construction		
VISTA FARMS - 65 SFD	R-2	17,875			
HUNT COUNTRY - 71 SFD	R-2	19,525			
WENTWORTH - 65 SFD	R-2	17,325			
E.G. ELEMENTARY SCHOOL	R-2	10,000			
PFIZER (formerly SmithKline Beecham)	I-2	10,000	30,000	new construction	85,000
GOSHEN VILLAGE COMMERCIAL	C-5	13,000			
HANCOCK BUILDING (FUCHS)	C-2	3,600			
PHASE II- HANCOCK BLDG			2,400		
PAOLI PIKE (352/PAOLI CORNER) *	C-5	5,950	350		
TAYLOR/HIGHLAND (64 EDU)	R-2	17,600			
SPINOZZI & MCCLOSKEY (10 EDU)	R-2	2,425	225	new construction	
COVENTRY WOODS (18 EDU)	R-2	675	2,925	new construction	
WATERFORD (26 EDU)	R-2	7,150			
MEADOWBROOK/CORNWALLIS AREA (100 EDU)	R-2	19,800	7,700		
BELLINGHAM LIFE CARE	R-2	28,000			
BENTLEY CONSTRUCTION	I-2	900			
PHILA SUB. - HUNT COUNTRY	C-5	157			
WOOD PROPERTY (85.9 ACRES - 63 SFD)		14,175	new construction		
WILLOW POND (28 SFD / 15 in Willistown Twp)	R-2	7,700			
PUMPED FROM CHESTER CREEK BASIN					
MARYDELL - 30 SFD THROUGH PUMP STATION	R-2	8,250			
RETURNED TO RIDLEY CREEK					
NEW KENT APARTMENTS		76,800			
HERSHEY MILL ESTATES (142 SFD)		39,050			
FAIRWAY VILLAGE (38 SFD)		10,450			
POSSIBLE FUTURE CONNECTIONS (were in Chester Creek allocations)					
CHARTER CHASE	R-2				26,950
MILL VALLEY	R-2				6,875
MILLSTREAM DRIVE	R-2				6,875
GOSHEN DOWNS (12 SFD)	R-2				3,300
POSSIBLE FUTURE CONNECTIONS					
INDIAN HILLS **	R-2				15,050
BROOKMONT/TREMONT **	R-2				15,400
N CHESTER RD MISC. (82 SFD---6 SFD ON LINE IN 1998)	R-2	1,650			22,550
OLD ORCHARD/RAEWYCK**	R-2				10,150
PRINS PROPERTY (25 SFD)	R-2		new construction	5,625	
SHERMAN PROPERTY	R-2		new construction	7,875	
WILLISTOWN TOWNSHIP					
BRYN MAWR REHABILITATION					40,000
1 SFD LINE ROAD		275			
CHRIST MEMORIAL LUTHERAN CHURCH					1,000
FOX RIDGE FARMS (22 SFD)					4,950
TOTALS		444,157	43,600	13,500	238,100

TOTAL ON LINE/COMMITTED/0 - 5 YEARS	**501,257**
5 YEARS AND BEYOND	**238,100**
TOTAL CAPACITY NEEDS	**739,357**
EXPANSION REQUEST TO	**750,000**
REMAINING CAPACITY	**10,643**

EXHIBIT 2-A
EXPANSION TO 0.750 MGD

file name: 1996 approved Chester Flows

EXISTING
EAST GOSHEN FLOWS TO WEST GOSHEN

AREA TO BE SERVED	ZONED	GPD ON LINE	COMMITTED IN PROCESS	0-5 YEARS	5 YEARS AND BEYOND
ARDLEIGH ESTATES (8 SFD)	R-2	1,925	275		
BITTERSWEET (49 SFD)	R-2	13,475			
GRAND OAK (141 SFD)	R-2	38,775			
MARYDELL (159 SFD)	R-2	43,725			
MILLCREEK ESTATES(33 SFD)	R-2	9,075			
PIN OAKS (112 SFD)	R-2	30,800			
MISAK DR EXTENSION (8 SFD)	R-2	2,200			
MEADOWS (35 SFD)	R-2	9,625			
ROCKLAND VILLAGE (74 SFD)	R-2	20,350			
SUPPLEE VALLEY (98 SFD)	R-2	26,950			
HICKORY GLEN (9 SFD)	R-2	2,475			
WATERVIEW (66 SFD)	R-2	18,150			
RESERVOIR ROAD (2 SFD)	R-2	825	275		14,575
PRICE PROPERTY (129.6 ACRES)	R-2				35,476
STRASBURG ROAD	R-2	11,825			
ELLIS LANE	R-2	1,100	1,375		
STURBRIDGE	R-2	2,475			
BRANDOLINI/MORSTEIN RD. (9 SFD)	R-3	2,475			
HILLOCH MANOR (7 SFD)	R-2	1,925			
WHITE CHIMNEYS(CHESTER HOLLOW-71 SFD)	R-2	19,525			
WENTWORTH (12 SF)	R-2	3,300			
GOSHEN HEIGHTS (70 SFD)	R-2	19,250			
PARK AVENUE	R-3	9,625			
FIRE HOUSE (13 ACRES)					12,825
FEDOR (175 APTS)	R-4				35,000
TREE TOPS (200 APTS)	R-4	40,000			
HIGHSPIRE (78 TOWNHOUSES)	R-4	17,550			
DUTT'S MILL (33 UNITS & 16 FUTURE)	R-5	7,425	3,375		
GOSHEN VALLEY (656 APTS/TH)	R-5	147,600			
RIDGEWOOD APTS (60 UNITS)	R-5	13,500			
WALNUT HILL ROAD (4 SFD)	R-5	1,100			
AUDUBON (35 TOWNSHOUSE UNITS)	R-5	7,875			
SMITHFIELD APTS. (199 UNITS)	R-5	39,600			
MISCELLANEOUS (7.3 ACRES)	R-5			4,950	
W.C. PIKE (9)	C-1	3,150			
STEEPLECHASE (81 TOWNHOUSES)	C-1	18,225			
ROSE HILL APTS (166 UNITS)	C-4	33,200			
ROSE HILL COMMERCIAL	C-4	8,000			
RACQUET CLUB APTS (71 UNITS)	C-4	14,200			
WATERVIEW APTS (203 UNITS)	C-4	40,600			
COMMERCIAL (13)	C-4	7,000			
W. C. PIKE (12.9 ACRES)	C-4	6,875		7,500	
GOSHEN CORP. PARK*	BP/I-1	30,609	9,391		
GOSHEN OFFICE ASSOCIATES	BP/I-1	3,000			
HICKS ***(GOSHEN CORP PARK WEST)					
93.3 ACRES	I-1	4,913	22,192		
13.5 ACRES (53-3-1.2)COMMONS @ GOSHEN	I-1	4,200			
14.9 ACRES (53-3-1.28)	I-1			4,544	
11.8 ACRES (53-3-1.7/MILKSTORE)*	BP	573	3,026		
HICKS - BALANCE (34.8 & 36.7 ACRES)	BP				21,807
BRANDYWINE INDUSTRIAL PARK					
MARS*	BP/I-1	13,114			9,386
CALECO*	BP/I-1	616			
(BRANDYWINE PLAZA) WILSON PROPERTY	BP/I-1		10,800		
STS PETER AND PAUL CHURCH	R-2	1,150			
GREEN ACRES (3 SFD)	R-2				825
STRASBURG RD/ROUTE 352 (20 SFD)	R-2				5,500
PUMPED FROM RIDLEY CREEK					
NEW KENT PUMP STATION					
NEW KENT APARTMENTS (SEE NOTES IN NARRATIVE)	R-5	76,800			
HERSHEY MILL PUMP STATION					
HERSHEY MILL ESTATES (142 SFD)	R-2	39,050			
FAIRWAY VILLAGE (38 SFD)	R-2	10,450			
SHERMAN PROPERTY (35 SFD)	R-2				6,875
PRINS PROPERTY (25 SFD)	R-2				9,625
ROCRAY PROPERTY (33 SFD)	R-2				7,425
ASHBRIDGEPUMP STATION					
ASHBRIDGE/FIRETHORNE (170 SFD)	R-2	46,750			
WYLLPEN (17 SFD)	R-2	550	4,125		
HUNTER'S RUN (8 SFD)	R-2	550	1,650		
WINDERMERE (60 APT.)	R-4	12,000			
FUTURE PUMP STATION(S)					
CHARTER CHASE (98 SFD)	R-2				26,950
MILL VALLEY (25 SFD)	R-2				6,875
MILLSTREAM DRIVE (25 SFD)	R-2				6,875
GOSHEN DOWNS (12 SFD)	R-2				3,300
BRANDOLINI - MORSTEIN RD (27 SFD)	R-2		7,425		
TOTAL		940,074	63,909	16,994	203,418

1996 ACTUAL AVERAGE DAILY FLOW	863,503
PLUS COMMITTED & 0 - 5 YEARS AND BEYOND	284,321
TOTAL ON/LINE AND PROJECTED	1,147,824
ALLOCATED CAPACITY	1,000,000
OVER/UNDER ALLOCATION	-147,824

SFD = 275 GPD
TOWNHOUSE = 225 GPD
APARTMENT = 200 GPD

EXHIBIT 3
APPROVED CHESTER CREEK BASIN FLOWS

NEW CONSTRUCTION = BUILT IN LAST 10 YEARS

new residential construction has been calculated at 225 gpd for single family dwellings and 175 gpd for apartments

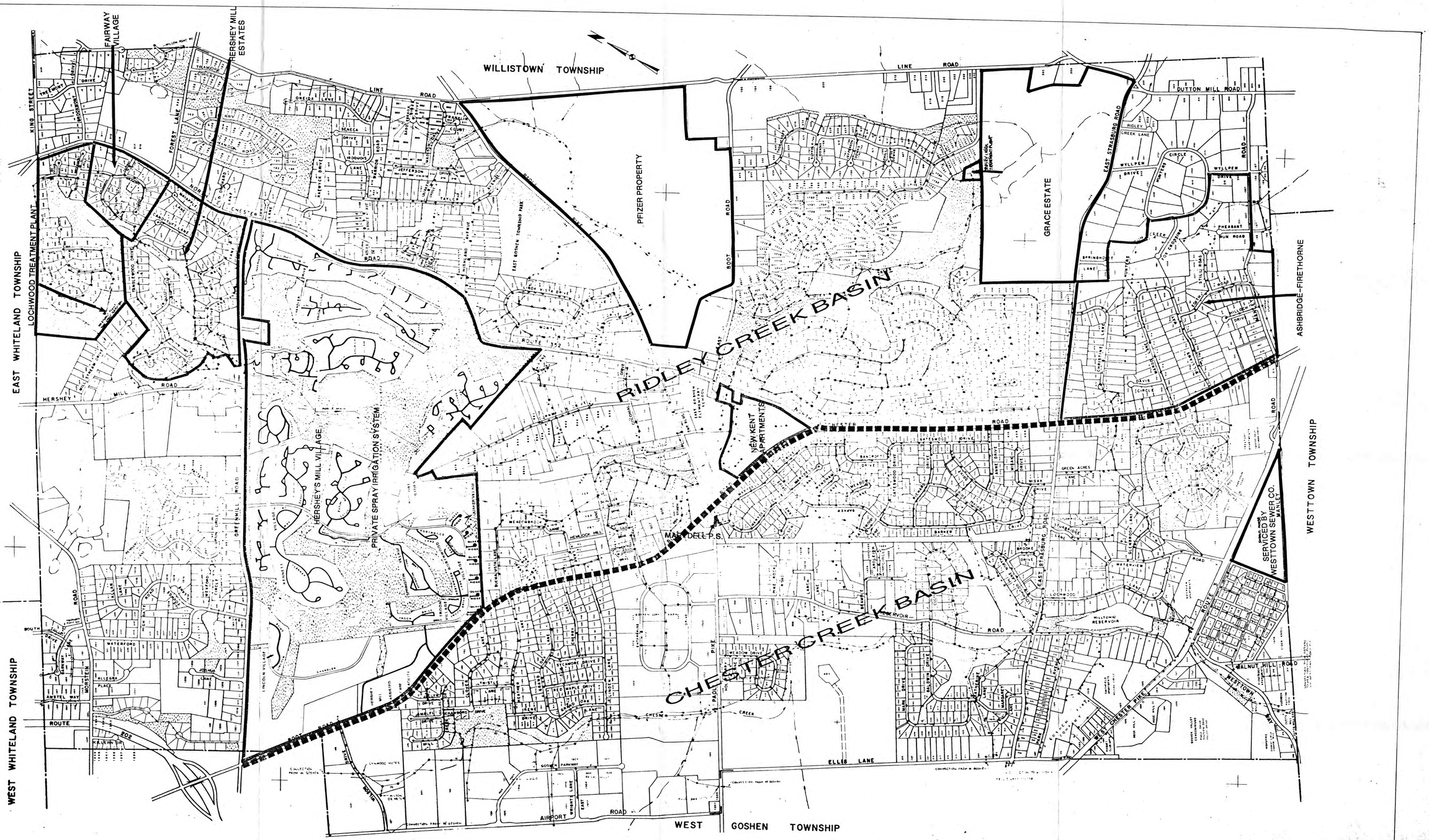
file name:
#2 REV
CHESTER FLOWS

PROPOSED REVISION OF EAST GOSHEN FLOWS TO WEST GOSHEN TREATMENT PLANT

AREA TO BE SERVED	ZONED	GPD ON LINE	GPD COMMITTED OR SOLD	0 - 5 YEARS	5 YEARS AND BEYOND
ARDLEIGH ESTATES (8 SFD)	R-2	1,575	225	new construction	
BITTERSWEET (49 SFD)	R-2	13,475			
GRAND OAK (141 SFD)	R-2	38,775			
MARYDELL (159 SFD - 30 = 129)	R-2	36,475			
MILLCREEK ESTATES(33 SFD)	R-2	9,075			
PIN OAKS (112 SFD)	R-2	30,800			
MISAK DR EXTENSION (8 SFD)	R-2	1,800	new construction		
MEADOWS (35 SFD)	R-2	9,625			
ROCKLAND VILLAGE (74 SFD)	R-2	20,350			
SUPPLEE VALLEY (98 SFD)	R-2	26,950			
HICKORY GLEN (9 SFD)	R-2	2,475			
WATERVIEW (66 SFD)	R-2	18,150			
RESERVOIR ROAD (3 SFD)	R-2	450	225	new construction	2,700
PRICE PROPERTY (129.6 ACRES)	R-2				24,950
STRASBURG ROAD	R-2	11,825			
ELLIS LANE	R-2	1,100	1,375		
STURBRIDGE	R-2	2,475			
BRANDOLINI/MORSTEIN RD. (9 SFD)	R-3	2,025	new construction		
HILLOCH MANOR (7 SFD)	R-2	1,575	new construction		
WHITE CHIMNEYS(CHESTER HOLLOW-71 SFD)	R-2	15,975	new construction		
WENTWORTH (12 SF)	R-2	2,700	new construction		
GOSHEN HEIGHTS (70 SFD)	R-2	19,250			
PARK AVENUE	R-3	9,625			
FIRE HOUSE (13 ACRES)				new construction	4,500
FEDOR (176 APTS)	R-4			new construction	23,625
TREE TOPS (200 APTS)	R-4	35,000	new construction		
HIGHSPIRE (78 TOWNHOUSES)	R-4	17,550			
DUTT'S MILL (33 UNITS & 15 FUTURE)	R-5	7,425	3,375		
GOSHEN VALLEY (656 APTS/TH)	R-5	147,600			
RIDGEWOOD APTS (60 UNITS)	R-5	13,500			
WALNUT HILL ROAD (4 SFD)	R-5	1,100			
AUDUBON (35 TOWNSHOUSE UNITS)	R-5	7,875			
SMITHFIELD APTS. (198 UNITS)	R-5	39,600			
MISCELLANEOUS (7.3 ACRES)	R 5			4,400	new construction
W.C. PIKE (9)	C-1	3,150			
STEEPLECHASE (81 TOWNHOUSES)	C-1	16,200	new construction		
ROSE HILL APTS (166 UNITS)	C-4	33,200			
ROSE HILL COMMERCIAL	C-4	8,000			
RACQUET CLUB APTS (71 UNITS)	C-4	14,200			
WATERVIEW APTS (203 UNITS)	C 4	40,600			
COMMERCIAL ((3)	C-4	7,000			
W. C. PIKE (12.9 ACRES)	C-4	6,875		7,500	
GOSHEN CORP. PARK*	BP/I-1	30,609	9,391		
GOSHEN OFFICE ASSOCIATES	BP/I-1	3,000			
HICKS ***(GOSHEN CORP PARK WEST)					
93.3 ACRES	I-1	4,913	22,192		
13.5 ACRES (53-3-1.2)COMMONS @ GOSHEN	I-1	4,200			
14.9 ACRES (53-3-1.28)	I-1			4,544	
11.8 ACRES (53-3-1.7/MILKSTORE)*	BP	573	3,026		
HICKS - BALANCE (34.8 & 36.7 ACRES)	BP			21,807	
BRANDYWINE INDUSTRIAL PARK					
MARS*	BP/I-1	13,114		9,386	
CALECO*	BP/I-1	615			
(BRANDYWINE PLAZA) WILSON PROPERTY	BP/I-1		10,800		
STS PETER AND PAUL CHURCH	R-2	1,150			
GREEN ACRES (3 SFD)	R-2			825	
STRASBURG RD/ROUTE 352 (20 SFD)	R-2			5,500	
PUMPED FROM RIDLEY CREEK					
ASHBRIDGEPUMP STATION					
ASHBRIDGE/FIRETHORNE (170 SFD)	R-2	46,750			
WYLLPEN (17 SFD)	R-2	550	4,125		
HUNTER'S RUN (8 SFD)	R-2	550	1,650		
WINDERMERE (60 APT.)	R-4	10,500	new construction		
FUTURE PUMP STATION(S)					
BRANDOLINI - MORSTEIN RD (27 SFD)	R-2	6,075	new construction		
TOTAL		**796,999**	**56,384**	**53,962**	**55,775**

CAPACITY ALLOCATION AT WGSTP	**1,000,000**
TOTAL ON-LINE, COMMITTED, 0-5 & BEYOND	**(963,120)**
REMAINING CAPACITY	**36,880**

EXHIBIT 3-A
PROPOSED CHESTER CREEK FLOWS



MAP OF

MASTER SEWER PLAN

MADE FOR

EAST GOSHEN TOWNSHIP, CHESTER COUNTY, PENNA.

LEGEND	PROPOSED	EXISTING
SANITARY SEWER		
FORCE MAIN		
PUMP STATION	D	
SEWAGE TREATMENT PLANT		
SEEPAGE BED		
SANITARY SEWER LATERAL EXTENSION		

REVISED: FEB 1992
OCT 1988

EAST GOSHEN TOWNSHIP

CHESTER COUNTY PENNSYLVANIA

EXHIBIT 4

2/8/96

EAST GOSHEN TOWNSHIP
SEWER SYSTEM
SEWAGE
TREATMENT COST COMPARISON
(per thousand gallons)

CHESTER CREEK	$ 3.31
RIDLEY CREEK	$ 1.67
LOCHWOOD	$ 2.74

Analysis Prepared by
East Goshen Township

EXHIBIT 5

VOLUME II

EAST GOSHEN TOWNSHIP

REVISION TO
OFFICIAL SEWAGE PLAN
ACT 537
FOR
A SPECIAL STUDY AREA

Prepared for

Board of Supervisors
East Goshen Township
Chester County, Pennsylvania

DATE
MAY, 1997
REVISED SEPTEMBER, 1997

Yerkes Associates, Inc.

Consulting Engineers - Land Surveyors
Bryn Mawr, PA *610-525-6200*
West Chester, PA. *610-644-4254*

Professional Services Since 1874

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2. Proof of Publication of Advertising
3. Chester County Health Department Review and Township Response
4. Chester County Planning Commission Review and Township Response
5. East Goshen Township Municipal Authority Review
6. East Goshen Township Planning Commission Review
7. Evidence of Public Review and Comment
8. Ridley Creek Stream Discharge Analysis
9. June 30, 1995 Approval letter from Department of Environmental Protection
10. "West Goshen Alternative" Correspondence and Calculations
11. Act 537 Special Study Content and Environmental Checklist
12. Westtown Sewer Plant - Daily Local News Article
13. Spray Irrigation Study - taken from 1995 Plan Update
14. 1996 Chapter 94 Report and Analysis of Water Usage for new construction

Volume II

Background and Supporting Documents

A. Plan Summary

This Act 537 Plan Special Study looks at the alternatives available to East Goshen for obtaining the projected additional sewage capacity to serve the ultimate needs of the Township. The Plan recommends that the Ridley Creek Sewage Treatment Plant be expanded, in two phases, from the existing permitted capacity of 0.400 MGD/day to 0.750 MGD.

Phase I - increase to 0.500 MGD
Phase II - increase to 0.750 MGD

The Consulting Engineer believes the first phase can be accomplished at minimal cost and time since most of the existing equipment was originally sized to treat 0.500 MGD.

Some Ridley Creek Watershed flows currently being pumped to the West Goshen Sewage Treatment Plant (WGSTP) would be diverted to the Ridley Creek Sewage Treatment (RCSTP) and some flows from the Chester Creek Watershed would be diverted to the RCSTP. These transfers should eliminate the need for additional discharge capacity at the WGSTP.

The Township has calculated that treatment costs at the RCSTP are more economical than at the WGSTP (see Volume I, Exhibit 5).

The Department's June 30, 1995 approval of the current Sewage Facilities Plan included several recommendations to be addressed prior to the Township submitting a recommendation for a plan to increase the sewage capacity at the RCSTP to serve the Township's ultimate needs. A summary of the actions taken can be found in the Plan Summary, Volume II and again following the letter in Volume II - Section F. - Supporting Documents.

B. Alternatives

For the purposes of this Special Study, four alternatives were studied.

Alternative #1

Obtain additional sewage treatment capacity at the West Goshen Sewage Treatment Plant - The June, 1995 Department approval of the 537 Plan Update recommended that further investigation of the "West Goshen Alternative" would be the preferred way of obtaining additional capacity for East Goshen's ultimate needs.

East Goshen Township Supervisors and Municipal Authority were invited to attend a meeting at the West Goshen Treatment Plant for the purpose of discussing the costs associated with the purchase of an additional 0.200 MGD capacity at the WGTP. In addition to the calculated cost per gallon of $6.00 plus $.50 administrative charge, West Goshen presented an "Analysis of Plant Allocation Costs" to East Goshen. The Analysis determined that East Goshen would have to pay $981,000 for "past due cost" allocations prior to any agreement on the sale of additional capacity.

East Goshen Township Supervisors, Municipal Authority, Authority Consulting Engineer and financial consultant discussed the West Goshen proposal at two joint meetings and determined that the premises upon which the alleged past due costs were determined were inaccurate. They felt that all costs paid over the years to West Goshen were determined by the Agreement signed by both townships in 1977 and since modified periodically by amendments. Based on the advice of its consultants, a letter dated May 9, 1996 was sent to West Goshen advising that East Goshen was interested in discussing purchasing capacity for a proportionate share of the estimated $6.00 per gallon and administrative cost but would not consider paying for any past allocation costs. West Goshen's response of May 10, 1996, confirmed that the previously stated terms were non-negotiable and that West Goshen was only looking for a yes or no answer. East Goshen replied on May 30, 1996 and repeated their willingness to discuss purchasing additional capacity for a proportionate share of the estimated cost per gallon and administrative charge. The Township did not receive a reply to that letter. Copies of all correspondence and documents relating to these discussions has been included with Section F - Supporting Documents.

This Alternative has been eliminated from further consideration.

Alternative #2

Feasibility of obtaining treatment capacity from other sources -

Westtown Sewer Company - Pursuant to a court order, on December 15, 1996 Westtown Township took over the operation of the Westtown Sewage Treatment Plant located on Westtown Road in Westtown Township. The plant has had many problems over the years and been cited by the Department for various violations.

This alternative has been eliminated from further consideration as there are too many unknowns for East Goshen Township and Authority to seek additional discharge capacity at this facility.

A copy of the article from the Daily Local News pertaining to the take-over is included in Section F - Supporting Documents.

West Chester Borough Goose Creek Treatment Plant - The Township was recently asked by the Borough, about any capacity the Township may need at the Goose Creek Treatment Plant. The Township responded with a need for approximately .200 MGD but also determined that there is no economically feasible method of getting any of that sewage to the Goose Creek Plant.

This alternative has been eliminated from further consideration.

Alternative #3

Spray Irrigation

Spray Irrigation was discussed in detail in the June, 1995 act 537 Plan Update and is repeated in Section 13 of the Supporting Documents of this Special Study.

Two parcels were discussed: the Pfizer property (previously owned by SmithKline Beecham) and the Grace Estate. The Pfizer property was dismissed for future spray irrigation purposes due, in part, to the need to pump the treated effluent more than 1 mile.

The Grace Estate, comprising 182 acres, was discussed in more detail. SMC determined that 55.5 acres would be needed for spray fields, in addition to the required buffer and storage pond acreage, to treat 300,000 gpd using a percolation rate of 1.5 inches per week per acre. The total acreage estimated by SMC was 75 acres.

Yerkes Associates concurs with the conclusions set forth in the SMC study. For this Special Study, the amount of acreage that will be required has been calculated based on the need to spray 350,000 gpd. Using the same parameters of 1.5 inches per week per acre, a total of 60.15 acres would be required for spray fields plus the buffer and storage pond needs. The total acreage for spray discharge of 350,000 gpd would be 83.75 acres.

The soils on the Grace Estate are primarily made up of Worsham, Wehadkee, Glenville

and Glenelg. Worsham and Wehadkee soils are poorly drained and generally not suitable for subsurface systems. The Glenville and Glenelg soils are categorized as moderately deep and well drained, making them more suitable. However these soils on the Grace Estate are found in areas where the slope ranges from 3 - 8%. The areas with the higher percentages do not lend themselves to a practical spray irrigation system.

Consequently, it appears that not only is the estimated cost of a spray irrigation system not economically feasible, but also the quality of the land under consideration.

Based on the information available, this alternative has been eliminated from consideration at this time.

Alternative #4

Increase the Ridley Creek Sewage Treatment Plant NPDES Permit (#00505404) to 0.750 MGD

This alternative would be accomplished in two phases. Phase I would expand the capacity to 0.500 MGD which will take care of the existing dwellings that are on-line and the capacity that has been committed or sold. There are no current projections for capacity need in the 0 - 5 years; however there is a projected potential need in the 5 years and beyond range. That is the period of time when the second phase would be considered.

As part of Phase I, the changes shown on Table I would be made in the Ridley Creek and Chester Creek capacity allocations.

The 5 year and beyond projections consist primarily of areas whose on-lot systems are older and have had problems in the past. Any malfunctions found in the walk through completed during the preparation of the existing Act 537 Plan Update have been repaired and are being monitored by the Township's Sewage Management Program.

Allocations for Bryn Mawr Rehab, Christ Memorial Lutheran Church and Fox Ridge Farms, all in Willistown Township, will be placed in the 5 Year and Beyond Range. Methods of getting the sewage to the RCSTP will be the full responsibility of the individual users but must be reviewed and approved by East Goshen Municipal Authority's Consulting Engineer.

Phase II (expansion to .750 MGD) will be designed when the need for public sewers

for any or all of the areas in the 5 Year and Beyond becomes apparent.

Phase II may involve the installation of a new package plant. Sufficient land for the expansion may be available on the current site, however, if it is not, it is assumed that land from the adjacent Township owned open space, could be obtained at a reasonable cost or at no cost.

C. USE OF NEW EDU WASTEWATER RATING

In order to gain the maximum amount of capacity at both the RCSTP and the WGSTP, we have reviewed the actual average daily uses for new construction in both basins. The actual average daily flows from both basins have consistently been 75 - 90 % below the EDU Wastewater Ratings used to develop the capacity allocations (please refer to the Chapter 94 Report).

This Plan proposes to reduce the EDU rating for new construction only from 275 GPD for single family dwellings to 225 GPD; from 225 GPD for townhouses to 175 GPD and from 200 GPD for apartments to 175 GPD.

Table I

Table 1, on the following page, charts the flows that will be transferred to the Ridley Creek Sewage Treatment Plant if and when the permitted capacity at the West Goshen Treatment Plant appears to be in danger of being exceeded. The exception is the flow from New Kent Apartments which is planned for continuing treatment at the RCSTP.

TABLE 1

FLOWS TO BE TRANSFERRED FROM CHESTER CREEK ALLOCATIONS TO RIDLEY CREEK ALLOCATIONS

AREA	GPD	HOME BASIN	CURRENTLY PART OF CHESTER ALLOCATIONS	CURRENTLY PART OF RIDLEY ALLOCATIONS	WILL REMAIN OR BE PUMPED TO
NEW KENT APTS	76,800	RIDLEY	YES		RIDLEY
HERSHEY MILL ESTATES	39,050	RIDLEY	YES		RIDLEY
FAIRWAY VILLAGE	10,450	RIDLEY	YES		RIDLEY
CHARTER CHASE	26,950	RIDLEY	YES		RIDLEY
MILL VALLEY	6,875	RIDLEY	YES		RIDLEY
MILLSTREAM DRIVE	6,875	RIDLEY	YES		RIDLEY
GOSHEN DOWNS (12 SFD)	3,300	RIDLEY	YES		RIDLEY
MARYDELL (30 SFD) PUMP STATION	8,250	CHESTER	YES		RIDLEY

TOTAL 181,250 gallons per day

Table 2 illustrates the estimated sewage needs based on the 5 and 10 year Land Use.

TABLE 2

Estimated Sewage Needs Based on 5 and 10 Year Land Use

Ridley Creek Watershed - There are three undeveloped properties with 35 or more acres

Grace Estate	182 acres	E. Strasburg and Dutton Mill Roads	Recommended for on-lot disposal
Pfizer	300 acres	Paoli Pike	total of 40,000 gpd reserved in RCSTP - balance would be by on-lot disposal
Sherman Property	37.8 acres	N. Chester/Forest Lane	capacity reserved in RCSTP

Chester Creek Watershed - There is one undeveloped property with 35 or more acres - the Price Property at Ellis Lane and Paoli Pike. Capacity is reserved in the Chester Creek allocations for treatment at the West Goshen Treatment Plant.

TABLE 3 - ESTIMATED COST OF ALTERNATIVES AND SPRAY IRRIGATION

Alternative #1 **West Goshen Alternative**	**Alternative #2 Obtain Capacity from Other Sources**	**Alternative #3 Spray Irrigation**	**Alternative #4 Phase I Increase RCSTP Permit to 0.500 MGD**	**Phase II Increase Plant Capacity to 0.750 MGD**
Past Due Allocations $980,000 .200 MGD Capacity $1,300,000 Total Cost $2,228,000	Unknown	Purchase 75 acres @ $89,000/acre $6,675,000 Spray System $150,000 Increased tankage equipment $1,000,000	New Kent Apts $0 Hershey Mill Estates & Fairway Village approx 600 LF Force Main @ $35/LF $21,000 Marydell Pump Station (inst. In shoulder) approx. 500 LF Force Main @$75 $37,500 Modify existing plant equipment $150,000	Increase capacity to 0.750 MGD $1,000,000
$2,228,000	**UNKNOWN**	**$7,825,000**	**$208,500**	**$1,000,000**

D. RECOMMENDED ALTERNATIVE

This Plan recommends Alternative #4 as the plan of choice. Taking the outcome of discussions surrounding Alternative #1 (West Goshen Alternative) and the economics of the other alternatives, including the estimated costs of spray irrigation, it is our opinion that Alternative #4 is the best choice to fill the capacity needs of the Township for the next five years and beyond.

E. IMPLEMENTATION

The goal of this 537 Plan Special Study is to increase the permitted discharge limits of the Ridley Creek Sewage Treatment Plant from 0.400 MGD to 0.750 MGD in two phases. Upon receipt of the Department's approval of this 537 Plan Special Study, NPDES Part I and Part II applications will be submitted to the Department requesting approval of the increase in discharge limits from 0.400 MGD to 0.500 MGD. When the RCSTP flows reach 0.400 MGD, NPDES Part I and Part II applications will be submitted to the Department requesting approval of an increase in the discharge permit limits from 0.500 MGD to 0.750 MGD. If and when it appears that the current capacity limits at the West Goshen Treatment Plant will be exceeded, plans will be prepared to divert the flows from Hershey's Mill Estates, Fairway Village and the Marydell Pump Station from treatment at West Goshen Treatment Plant to treatment at the RCSTP.

The second goal of this submission is to obtain approval for the new wastewater ratings for new construction.

F. SUPPORTING DOCUMENTS

1. Draft Municipal Resolution Adopting Plan
2. Proof of Publication
3. Chester County Health Department Review and Township Response
4. Chester County Planning Commission Review and Township Response
5. East Goshen Township Municipal Authority Review
6. East Goshen Township Planning Commission Review
7. Evidence of Public Review and Comment
8. Ridley Creek Stream Discharge Analysis
9. June 30, 1995 Approval Letter from Department of Environmental Protection
10. "West Goshen Alternative" correspondence and Calculations
11. Act 537 Special Study Content and Environmental Checklist
12. Westtown Sewer Plant - Daily Local News Article
13. Spray Irrigation Study completed in 1995

14. 1996 Chapter 94 Report for Ridley Creek Sewage Treatment Plant and Analysis of Water Usage for New Construction

SUPPORTING DOCUMENTS

DRAFT

RESOLUTION FOR PLAN REVISION

RESOLUTION NO. _____

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act", as amended, and the Rules and Regulations of the Department of Environmental Resources (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, the Board of Supervisors of East Goshen Township has adopted a 537 Plan Update approved by the Pennsylvania Department of Environmental Protection in June, 1995, and

WHEREAS, the municipality has now prepared a Special Study to determine the best alternative for obtaining additional sewage capacity projected to serve the ultimate needs of the municipality, and

WHEREAS, the Special Study considered three alternatives to accomplish the acquisition of the projected needed sewage capacity, and

WHEREAS, the recommended alternative determined through this Special Study is to use two phases to increase the discharge permit limits of the Ridley Creek Sewage Treatment Plant (PA NPDES # 0050504) from the existing permit limit of 0.400 MGD to 0.750 MGD, and

WHEREAS, the Plan proposes to reduce the wastewater ratings per equivalent dwelling unit for new construction only,

AND NOW THEREFORE, be it resolved that the Act 537 Special Study for East Goshen Township dated May, 1997 and prepared by Yerkes Associates, Inc. is hereby approved and adopted on this _____day of _____, 1997.

BOARD OF SUPERVISORS

_____
E. Martin Shane, Chairman

_____ATTEST

_____
Joseph M. McDonough, V. Chairman

_____
John Chatley III, Member

_____
Mary L. Powell, Member

_____
Carmen Battavio, Member

SUPPORTING DOCUMENTS

Page F-2
Proof of Publication of Advertising

Proof of Publication of Notice in Daily Local News

Under Newspaper Advertising Act No. 587, Approved May 16, 1929

State of Pennsylvania }
County of Chester } *ss:*

{ No. _____ Term, 19_____

Debra S. Wood, Legal Advertising Rep of the Daily Local News Company, a corporation, of the County and state aforesaid, being duly affirmed, deposes and says that the Daily Local News, a newspaper of general circulation, published at 250 N. Bradford Ave., West Chester, Pa., County and State aforesaid, was established November 19, 1872, and Incorporated December 11, 1911, since which date the Daily Local News has been regularly issued in said county, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said Daily Local News on the following dates viz

May 30 A.D. 19 97

Affiant further deposes that he/she is the proper person duly authorized by the Daily Local News Company, a corporation, publishers of said Daily Local News, a newspaper of general circulation, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Debra S. Wood

COPY OF NOTICE OR PUBLICATION

NOTICE — The East Goshen Township Board of Supervisors is considering adoption of a Resolution which would approve the submission of an Act 537 Plan Revision of a Special Study Area for the purpose of requesting an increase of the NPDES PA Permit 0050504 discharge limits from 0.400 MGD to 0.750 MGD and to reduce the wastewater ratings for new construction. The Public comment period for this Plan will commence on June 1, 1997 and end on July 1, 1997. Copies of the Special Study are available at the East Goshen Township Building, 1580 Paoli Pike, West Chester, PA 19380, Monday-Friday, from 8:00 a.m. to 4:30 p.m.

East Goshen Township-
Louis F. Smith, Jr.
Manager

affirmed to and subscribed before me this 30th day of May 19 97

Virginia Martini
Notary Public

My Commission Expires:

Notarial Seal
Virginia Martini, Notary Public
East Bradford Twp., Chester County
My Commission Expires Oct. 18, 1997

Statement of Advertising Costs

East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

To DAILY LOCAL NEWS COMPANY, Dr.

For publishing the notice or publication attached hereto on the above stated dates .....$ _____

Probating same .....$ _____

Total.....$ _____

Publisher's Receipt for Advertising Costs

The Daily Local News Company, a corporation, publishers of the Daily Local News, a newspaper of general circulation, hereby acknowledges receipt of the aforesaid notice and publication costs and certifies that the same has been duly paid.

DAILY LOCAL NEWS, a Corporation,
Publishers of DAILY LOCAL NEWS, a newspaper
of General Circulation.

By _____

SUPPORTING DOCUMENTS

THE COUNTY OF CHESTER

COMMISSIONERS:
Karen L. Martynick, Chairman
Colin A. Hanna
Andrew E. Dinniman

CHESTER COUNTY HEALTH DEPARTMENT
Government Services Center
601 Westtown Road, Suite 295
West Chester, PA 19382-4543
FAX: (610) 344-5934

Sewage/Wells (610) 344-6526
Food/Vector (610) 344-6689
Laboratory (610) 344-6439

Certified Food Mgr./Public Water (610) 344-5938
Solid Waste Mgt./Recycling (610) 344-5937
Weights & Measures/Consumer Affairs (610) 344-6150

July 21, 1997

Louis F. Smith, Jr.
Township Manager
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380-6199

RE: East Goshen Township 537 Plan

RE[illegible]
JUL 23 1997
YERKES ASSOC.

Dear Rick:

As requested, the Chester County Health Department has reviewed the "East Goshen Township Revision to the Official Plan Act 537 for a Special Study Area" (plan) as prepared by Yerkes Associates, Inc and dated May, 1997.

The plan proposes to increase the capacity of the East Goshen Township Ridley Creek sewage treatment plant from .4MGD to .75MGD. The expansion will occur in two phases. The first phase will rerate the plant to .5MGD and the second phase will expand it to .75MGD. The plan also proposes to revise the design flow figures from new construction.

The following comments are offered:

1. There is no supporting documentation to justify the use of the revised flows for new construction. The supporting documentation should be included in the report.

2. This Department will not object to the re-rate of the existing plant to .5MGD. The Township should be aware that Ridley Creek is a high quality stream and, as such, the Department of Environmental Protection ragulations require that a social and economic justification be provided for any new or increased discharge. No justification has been provida in the plan.

3. Regarding the sewage treatment plant expansion to .75MGD; DEP will again require that a social and economic justification be submitted. Additionally, this Department recommends that the township re-evaluate the need for the expansion when growth in the township warrants the increase.

This Department generally supports the recommendations contained in the plan but believe addition documentation to support the chosen alternatives are necessary.

Should you have any questions concerning this review please contact me at 344-6239 or the above address.

Sincerely,

Maria

Maria T. Goman
Environmental Health Supervisor

cc: Yerkes Associates, Inc.
Pennsylvania Department of Environmental Protection
Chester County Planning Commission
file

Yerkes

Yerkes Associates, Inc. Consulting Engineers / Landscape Architects / Surveyors

September 9, 1997

Maria Goman, Environmental Health Supervisor
Chester County Health Department
Government Service Center
601 Westtown Road, Suite 295
West Chester, PA 19382-4543

Re: East Goshen Township
Act 537 Plan, Special Study
CCHD Review of July 21, 1997

Dear Maria:

We are in receipt of your July 21, 1997 review of the May, 1997 draft of the Act 537 Sewage Facilities Special Study Plan for East Goshen Township. We offer the following responses:

1. COMMENT: There is no supporting documentation to justify the use of the revised flows for new construction. The supporting documentation should be included in the report.

   The 1996 Chapter 94 report for the Ridley Creek Plant is included as Addendum #1. Page 1 of this report showed that the volume of the system in 1996 indicated a usage of 205 gpd per connection. There have been 44 new single family homes constructed and occupied in the township in the past five years. An analysis was made of the actual water usage of these homes with a resulting average usage of 211 gpd. All of the homes used in the analysis are 3,000 + square feet. A copy of the analysis results is included in this addendum.

2. COMMENT: This Department will not object to the re-rating of the existing plant to 0.500 MGD. The Township should be aware that Ridley Creek is a high quality stream and, as such, the Department of Environmental Protection regulations require that a socio-economic justification be provided for any new or increased discharge. No justification has been provided in the plan.

Glen Stinson of the regional office of DEP has advised that preliminary treatment requirements for the Ridley Creek Sewage Treatment Plant. have been ordered in-house. Mr. Stinson said that DEP will advise East Goshen if a socio-economic justification will be required.

3. COMMENT: Regarding the sewage treatment plant expansion to .75 MGD, DEP will again require that a social and economic justification will be submitted. Additionally, this Department recommends that the township re-evaluate the need for the expansion when growth in the township warrants the increase.

   See answer to Comment #2 with regard to the need for a socio-economic justification. The August, 1997 revision of the plan explains the need to expand to 0.750 MGD in more detail.

We trust we have satisfactorily responded to your concerns. Please contact me if you have any questions or additional comments.

Very truly yours,

Suzanne K. Fish

Suzanne K. Fish
Project Manager

SKF
enclosures
cc: Louis F. Smith, Jr. , Township Manager

SUPPORTING DOCUMENTS

THE COUNTY OF CHESTER

COMMISSIONERS:
Karen L. Martynick, Chairman
Colin A. Hanna
Andrew E. Dinniman

WILLIAM H. FULTON, AICP
Executive Director

PLANNING COMMISSION
Government Services Center, Suite 270
601 Westtown Road
West Chester, PA 19382-4539
(610) 344-6285
FAX: (610) 344-6515

July 29, 1997

RECEIVED
JUL 31 1997
YERKES ASSOCIATES INC

E. Martin Shane, Chairman
East Goshen Township Board of Supervisors
1580 Paoli Pike
West Chester, PA 19380

Re: Revision to Official Sewage Plan - Act 537 for a Special Study Area

Dear Mr. Shane:

The Chester County Planning Commission (CCPC) has reviewed the Plan Revision dated May 1997, as required by Section 71.53(a)(2) of the Pennsylvania Sewage Facilities Act (Act 537). One of the purposes of our review is to highlight issues we believe the PA Department of Environmental Protection (DEP) will raise in their review. We suggest that approval of your plan will be facilitated if our comments are addressed in writing by the Township and included with the document when it is sent to DEP for their review and action.

Recently CCPC sent to the Township a memorandum containing our Final Consistency Review Report and Summary of Findings related to the County Vision Partnership Program. In that memorandum we stated that there are no major areas of inconsistency between the current Township Sewage Facilities Plan and the landscape designations contained in the Chester County Comprehensive Policy Plan Element ***Landscapes***. We realize that as primarily a suburban landscape, the Township will eventually need additional infrastructure capacity to meet future needs. The proposed re-rating of the sewage treatment plant from 0.4 to 0.5 million gallons per day (mgd) may be necessary to meet immediate and short term needs. However, the Plan Revision document submitted for our review does not appear to clearly document the need to expand the capacity to 0.750 mgd.

The first objective stated for the Plan Revision contained in the Executive Summary is to obtain approval to reduce the current wastewater ratings. However, little information is presented in the document to support the proposal to reduce equivalent dwelling (EDU) flows by the type of housing unit. We believe DEP will want to see more detailed information to consider approving the proposed EDU ratings.

The second stated objective of the Plan Revision is to obtain approval to increase the discharge permit limits of the Ridley Creek Sewage Treatment Plant from 0.400 million gallons per day (mgd) to 0.750 mgd. We find that the document only partially supports your objective for the following reasons:

- There is no specific mention of any previous wastewater facilities planning efforts.
- There are no maps or other graphics to clearly show the division of sewage flows in the two watersheds.
- A copy of the 1996 Chapter 94 Report would help support other information contained in the document.

We offer the following additional comments about the information contained in the document:

- On page 3 it is stated that the total Ridley Creek Watershed basin flow is 392,000 gallons per day (gpd). This information is not consistent the document Exhibits and conflicts with the table on page 4 that indicates the basin flow to be 408,182 gpd.
- The table on page 4 also indicates that there is 80,000 gpd of needs in this watershed within the next 5 years and 166,050 gpd beyond the next 5 years. This information appears to be different from that contained in the document Exhibits.
- For the Chester Creek Basin, the table on page 4 indicates that 87,725 gpd will be needed beyond the next 5 years. This information appears to be different from data contained in the document Exhibits.
- On page 4 it is stated the flows from the New Kent Apartments are currently being treated at the Ridley Creek STP. This flow is not included in Exhibit 1.

A major omission from the proposed Act 537 Plan Revision is any mention of the fact that the entire Ridley Creek Watershed in East Goshen Township is designated by the Commonwealth of Pennsylvania as High Quality Waters. This water quality designation has special implications for new or increased discharges to the Waters of the Commonwealth. The Act 537 Plan adopted by the Township in 1992 recognized the need to conduct a socio-economic study to justify the proposed increase in discharge to the Ridley Creek. To the best of our knowledge, this is still a PADEP requirement for proposed discharges to High Quality Waters.

CCPC is concerned that the Township still has not given the spray irrigation (land application) alternative a thorough analysis. Land application is the primary alternative emphasized by DEP for proposed discharges to High Quality Waters. We do agree that this alternative would be more expensive than other alternatives if the Township were to purchase in fee simple land that would be used only for that purpose. The County Planning Commission recommends that the Township investigate other possibilities for the land application of effluent, including long term lease arrangements at suitable sites and/or combining land application with other uses of existing and proposed municipal open space sites.

CCPC is very concerned that the Township, the Municipal Authority and DEP have approved or committed sewage treatment plant capacity to proposed land developments over and above the capacity currently available to the Township. We suggest there is a need to institutionalize plan approval procedures between the Township and its Authority to prevent this from happening in the future.

Please contact me if you have any questions regarding this review. If the Township makes significant changes to the Plan Revision document, please send us a copy for our files.

Sincerely,

William H. Fulton, AICP
Secretary

WHF/REI/kp
cc: Glen Stinson, PADEP
Maria Goman, Chester County Health Department
Louis F. Smith, Jr., Township Manager
David Linahan, P.E., Yerkes Associates, Inc.

Yerkes

Yerkes Associates, Inc. Consulting Engineers / Landscape Architects / Surveyors

September 9, 1997

William H. Fulton, AICP
Attn: Robert Ihlein
Chester County Planning Commission
Government Services Center
601 Westtown Road, Suite 270
West Chester, PA 19382-4539

Re: East Goshen Township
Act 537 Plan Special Study

Dear Mr. Ihlein:

We are in receipt of the July 29, 1997 review of the May, 1997 draft of the Special Study referenced above. The following responses are offered to your comments:

1. COMMENT: The proposed re-rating of the sewage plant from 0.4 to 0.5 million gallons per day (mgd) may be necessary to meet immediate and short term needs. However, the Plan Revision document submitted for our review does not appear to clearly document the need to expand the capacity to 0.750 MGD.

Addendum #3 addresses the estimated needs leading to the expansion to .0750 MGD.

2. COMMENT: However, little information is presented in the document to support the proposal to reduce equivalent dwelling (EDU) flows by the type of housing unit. We believe DEP will want to seen more detailed information to consider approving the proposed EDU ratings.

The 1996 Chapter 94 report for the Ridley Creek Plant is included as Addendum #1. Page 1 of this report showed that the volume of the system indicated a usage of 205 gpd per connection. In addition, an analysis was made of the actual water usage of 44 single family dwellings built within the past five years. The results of this analysis

show that the average usage is 211 gpd. All of the homes used in the analysis are 3,000 + square feet in size. A copy of the analysis can be found in this Addendum.

3. COMMENT: There is no specific mention of any previous wastewater facilities planning efforts.

   Volume I, page 2, refers to the current township sewage facilities plan that was approved as an update in June, 1995. The reference has been elaborated on so that it stands out more.

4. COMMENT: There are no maps or graphics to clearly show the division of sewage flows in the two watersheds.

   Exhibit 4 has been revised to show individual lots more clearly, where those lots are treated or whether they have on-lot disposal systems.

5. COMMENT: Paragraph, page 2....several comments regarding discrepancies between chart numbers and text language.

   Revisions have been made to the document to correct these discrepancies.

6. COMMENT: Page 2, second paragraph regarding the High Quality Waters classification of the Ridley Creek and the need to conduct a socio-economic study to justify the proposed increase to the Ridley Creek. Chester County Planning Department feels this is a PaDEP requirement for proposed discharges to High Quality Waters.

   The Department has advised me that preliminary treatment requirements for the proposed expansion have been ordered. The Department will review those requirements and advised the Township if a Socio-Economic Justification should be prepared.

7. COMMENT: Page 2, third paragraph, referencing CCPC concerns regarding spray irrigation.....

The revised document addresses this concern.

8. COMMENT: Page 2, fourth paragraph. Regarding the County's concerns regarding the Township, Municipal Authority and DEP having approved or committed sewage treatment capacity to proposed land developments over and above the capacity currently available to the Township.

   The Township and Municipal Authority keep very detailed records regarding actual flow and committed capacity and the resulting available capacity. The "paper" flows shown on Exhibits 1 - Existing Ridley Creek Treatment Plant Allocations and Exhibit 3 - Existing Conveyance to West Goshen Treatment Plant, are in compliance with available capacity. As part of the 537 Sewage Facilities Planning to serve the ultimate needs of the Township, allocation modifications and additional capacity will be needed.

Please contact me if you have any questions or additional comments.

Very truly yours,

Suzanne K. Fish
Project Manager

skf
cc: Louis F. Smith, Jr.; East Goshen Township

SUPPORTING DOCUMENTS

AREA CODE 610
692-7171

EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

July 15, 1997

Board of Supervisors
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Re: Revision to Official Sewage Plan
Act 537 For A Special Study Area

Dear Board Members:

At their meeting on Monday, July 14, 1997 the Municipal Authority reviewed the Revision to the Official Sewage Plan Act 537 for A Special Study, Volumes I and II and have the following comments:

1) On page 3, Volume I, paragraph 5, the flow numbers should be provided so that the Ridley Creek Balance can be calculated.

2) On page 4 in both Volumes I and II, the wording should be changed from "75-90% **below** the EDU Wastewater Ratings" to "75-90% **of** the EDU Wastewater Ratings".

3) On page 5, Volume I, the date in paragraph 1 should be "Spring, 1996".

4) On page 7, Volume I, paragraph 3, the proposal for construction of 500 feet of force main to divert 8,250 gallons from the Chester Creek Marydell Pump Station to the Ridley Creek system should be reviewed for cost effectiveness.

5) On page 9, Volume I, "$55 per acre" should be changed to "$55,000 per acre".

Very truly yours,

Marie D. Clevenger

Marie D. Clevenger
Director, Utility Administration

mdc

SUPPORTING DOCUMENTS

AREA CODE 215
692-7171

EAST GOSHEN TOWNSHIP
PLANNING COMMISSION
1580 PAOLI PIKE, WEST CHESTER, PA. - 19380

July 11, 1997

Board of Supervisors
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

RE: Revision to Official Sewage Plan - Act 537
Planning Commission Review

Dear Board Members:

At their meeting on July 2, 1997, the Planning Commission reviewed the "Revision to Official Sewage Plan - Act 537" prepared by Yerkes Associates, Inc. After a discussion and explanation period the consensus of the members was that they (the Planning Commission) did not have any significant comments or revisions to make to the proposed plan.

Very truly yours,

Jo Ann Kelton
Chairman

SUPPORTING DOCUMENTS

AREA CODE 610
692-7171

BOARD OF SUPERVISORS
EAST GOSHEN TOWNSHIP

CHESTER COUNTY
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

July 21, 1997

Department of Environmental Protection
Southeast Regional Office
Lee Park, Suite 6010
555 North Lane
Conshocken, PA 19428

Re: East Goshen Township 537 Plan Revision

To Whom it May Concern:

Please be advised the Township has not received any public comments, written or verbal, as of this date.

Sincerely,

Louis F. Smith, Jr.
Township Manager

\RICK\SEWERS\RCSTP

SUPPORTING DOCUMENTS

TMH
ENVIRONMENTAL SERVICES, INC.

P.O. Box 439
Thorndale, PA 19372
(610) 380-8680 • Fax (610) 380-8786

Memo
LETTER

To Ms. Sue Fish
Yerkes Associates
1444 Phoenixville Pike
West Chester, PA 19380

Date 6 December 1996

Subject East Goshen Twp.
Ridley Creek WWTF
Sampling Analyses

Dear Sue:

Enclosed please find the results of the sampling you requested from Ridley Creek at the outfall of the Ridley Creek WWTF discharge.

Should you have any questions, please do not hesitate to contact Tom Hauser or myself.

RECEIVED
DEC 10 1996
YERKES ASSOCIATES, INC

Sincerely
SIGNED Tom Hauser

☐ Please reply ☐ No reply necessary

CEDAR GROVE ENVIRONMENTAL, INC.

Analytical Laboratories and Consultants
100 Gallagherville Road • Downingtown, PA 19335-3698
(610) 269-6977 • Fax (610) 269-6965
E-mail: office@cgelab.com

Customer: TMH ENV SERV RIDLEY CREEK
ATT: TOM HORREX
P O BOX 439
THORNDALE PA 19372

Customer Summary Report

Start Date: 11/21/96 Ending Date: 11/21/96 Report Date 12/03/96

Customer Summary Report

DATE	SAMPLE SOURCE (Test Performed)	(Method)	(Results)
11/21/96	**9609626 Below Mixing Zone - Ridley Creek**		
	Ammonia/as N	EPA 350.3	< 0.1 mg/l
	Carbonaceous BOD	SM 16: 507	1 mg/l
	Fecal Coliform	Membrane Filtration	100/100 mls
	Solids/Residue, Suspended	EPA 160.2 non-filterable	< 5 mg/l
11/21/96	**9609627 400' Upstream/Below next Trib. - Ridley Creek**		
	Ammonia/as N	EPA 350.3	< 0.1 mg/l
	Carbonaceous BOD	SM 16: 507	1 mg/l
	Fecal Coliform	Membrane Filtration	110/100 mls
	Solids/Residue, Suspended	EPA 160.2 non-filterable	< 5 mg/l
11/21/96	**9609628 Outfall - Ridley Creek**		
	Ammonia/as N	EPA 350.3	0.1 mg/l
	Carbonaceous BOD	SM 16: 507	2 mg/l
	Fecal Coliform	Membrane Filtration	200/100 mls
	Solids/Residue, Suspended	EPA 160.2 non-filterable	14 mg/l
11/21/96	**9609629 Point of Outfall U.S. - Ridley Creek**		
	Ammonia/as N	EPA 350.3	< 0.1 mg/l
	Carbonaceous BOD	SM 16: 507	1 mg/l
	Fecal Coliform	Membrane Filtration	40/100 mls
	Solids/Residue, Suspended	EPA 160.2 non-filterable	< 5 mg/l

SUPPORTING DOCUMENTS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Southeast Regional Office

(610) 832-6130
FAX: (610) 832-6259

JUN 30 1995

RECEIVED
JUN 30 1995

Louis Smith
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Re: Act 537 Plan Update
East Goshen Township
Chester County

Dear Mr. Smith:

We have completed our review of your municipality's updated official sewage facilities plan entitled East Goshen Township Act 537 Plan Update as prepared by SMC Environmental Services Group, dated December 1992, Revised June 1994. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the plan is hereby granted.

1. Implementation of the on-lot and community sewage system management program

2. Diversion of sewages flows for New Kent Apartments from the Ridley Creek sewage treatment plant to the West Goshen sewage treatment plant.

3. Immediate initiation of further planning in conjunction with West Goshen for the "West Goshen Alternative". A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

4. Initiation of further planning to evaluate the need for the proposed Line Road Interceptor. A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

5. Initiation of further planning to evaluate the possible connection of the Bryn Mawr Rehabilitation Hospital tot he Ridley Creek sewage treatment plant. A plan of study must be submitted that outlines the study area and proposed plan content and that includes an Task Activity Report or equivalent cost document.

6. Utilization of new EDU wastewater ratings:

Single family detached dwellings	- 275 gpd
Townshouses	- 225 gpd
Apartments	- 200 gpd

7. Initiation of further planning to further evaluate other alternatives if the "West Goshen Alternative" does not meet East Goshen Township needs. The spray irrigation alternative would have to be evaluated in more detail. A plan of study must be submitted that outlines the study area and proposed plan content and that includes a Task Activity Report or equivalent cost document.

If you have any questions regarding this matter, please feel free to contact me at the above number.

Sincerely,

Joseph A. Feola

Joseph A. Feola
Water Management Program Manager

cc: Chester County Health Department
Chester County Planning Commission
Planning Section
West Goshen Township
SMC Environmental Services Group
Division of Municipal Facilities and Grants
Re 30 (RN)153

ANSWERS TO THE JUNE 30, 1995 LETTER FROM THE DEPARTMENT

1. The Township's On-Lot Management Plan was implemented in July, 1994.

2. The diversion of flows for New Kent Apartments from the Ridley Creek to the Chester Creek has not been done.

3. The "West Goshen Alternative" has been studied and found not to be economically feasible.

4. The proposed "Line Road Interceptor" has been installed by a developer.

5. The new EDU wastewater readings are being used.

6. Studies of alternatives other than the "West Goshen Alternative" have been completed.

SUPPORTING DOCUMENTS

as of 2/76

West Goshen Sewer Authority
Analysis of Plant Capacity Allocation Costs

The objective of this analysis is to compare the value of the investments made by West Goshen (the Principal), and East Goshen, West Whiteland, and Westtown (the Investors) to guarantee treatment capacity provided by the West Goshen Sewage Treatment Plant (the Plant) with actual capacity allocated. The capacity allocations are based on agreements between the Investors and the Principal. The value of the investments made by the Investors is based on a financial analysis of historic payments and future payment obligations. The value of the investments made by the Principal is based on the original cost of the various plant assets.

The comparison is based on current investment values. The investments have been made over a 32 year period. It is therefore necessary to convert the historic investment dollars to current dollars. This has been done using construction cost indices published by Engineering News Record (ENR). The cost of the plant assets are multiplied by the appropriate index to achieve current value measurements.

In order to determine the current value of the Investors' contributions, it is first necessary to determine the original values of the payment obligations. Rather than pay a lump sum for future capacity, the Investors have been making semi-annual payments to the Principal. A series of payments can be translated into a lump sum value through a financial process called "discounting". This process provides a "present value" measurement as of the date of the first payment. Once computed, each value is converted to a current value by applying the appropriate ENR cost index.

Exhibit I, the Historic Plant Cost Schedule, presents a listing of the plant assets along with the year acquired and the original cost. The schedule then shows the conversion of the historic amounts to a current dollar basis. The original cost basis of $3.4million converts to $11.3million. Over 82% of this difference, $6.5 million, is attributed to the conversion of the initial cost of the plant in 1963. The cost index of 6.028 reflects the current value of a dollar spent in 1963.

Exhibit II, the Contribution Analysis, presents the discounted "present" value of each investment made by the Investors, with the term present value representing the value of the payment stream at the date presented in the Initial Year column. These present values have been converted to a current cost value based on the scheduled cost index. The West Whiteland Township and Westtown Township payments have been constant semi-annual amounts and have therefore been valued as annuities using standard financial annuity computations. The payments made by East Goshen have not been constant amounts. These payments have been valued through a discounting model presented as Exhibits III and IV. This model discounts each payment separately and then adds the results to achieve a single value measurement.

The results of the analysis carry forward to Exhibit V, the Sewer Plant Investment Allocation Analysis. The first column presents the allocated capacity stated as gallons per day. The second column restates these capacity allocations in terms of percentages to total capacity. The current investment total of $11.3million has been brought forward from the Historic Plant Cost schedule and represents the total current value of the plant. The Investors' "Current Investment" amounts are those values computed in the Contribution Analysis schedule. The difference of $8.04million is the residual current value attributed to West Goshen. The Allocated Investment amounts are computed by multiplying the total current investment value by the percent capacity and the difference is derived by subtracting the allocated investment from the current investment.

The results indicate that the current value of the investments made by each party do not reflect the actual capacity allocated. One of the investors, Westtown, has slightly overpaid for its allocation. East Goshen and West Whiteland Townships have received a capacity allocation greater than their current investment value. West Goshen Township has subsidized East Goshen and West Whiteland Townships' allocations. If the grants for the original plant construction in 1963 and the expansion completed in 1980 were included as investment by West Goshen, the current plant value would be almost double its current value. Therefore, all the municipalities are sharing in the benefits of West Goshen obtaining these grants.

Exhibit

GLACE ASSOCIATES, INC.

CONSULTING ENGINEERS
3705 Trindle Road
Camp Hill, PA 17011

717-731-1579 • FAX 717-731-1348

FAX TRANSMISSION COVER LETTER

TO: RICK SMITH, EAST GOSHEN TOWNSHIP

FROM: MAX E. STONER

REFERENCE: REVISED ANANSIS OF PLANT CAPACITY ALLOCATION COSTS, AS REQUESTED.

DATE: 5/10/ 11:30

NUMBER OF PAGE, INCLUI

PLEASE C
TOTAL NUMBER OF GIBLE

CONFIDENTIALITY NOTICE: This facsimile contains confidential information which may also be legally privileged and which is intended only for the use of the addressee(s) named above. If you are not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination or copying of this facsimile, or the taking of any action in reliance on the contents of this transmittal, may be strictly prohibited. If you have received this facsimile in error, please notify us immediately by telephone and return the entire facsimile to us at the above address at our cost via the U.S. Postal Service. Thank you!

Original will ____ will not ✓ follow by mail.

ADJUSTED FOR DEPRECIATION

AND PAYMENTS VALUATION

Exhibit I

West Goshen Sewer Authority
Historic Plant Cost Schedule
Indexed to June 1995

Cost Item:	Year Acq.	Original Cost Basis	Cost Index	Indexed Cost Basis
Initial cost (net)	1963	~~$ 1,293,324~~ ≈ 783,127	6.028	~~$ 7,823,570~~ ≈ 4,720,690
Additional costs				
Garage storage	1967	$ 24,568	5.057	$ 124,754
Gas detection	1968	$ 9,884	4.703	$ 46,481
Plant upgrade	1980	$ 1,793,032	1.678	$ 3,008,632
Digester roof	1983	$ 172,733	1.336	$ 230,745
Roof replacement	1985	$ 32,670	1.295	$ 42,300
Addtl. land purchase	1990	$ 24,538	1.148	$ 28,166
Belt filter	1991	$ 0	0	$ 0
Covers	1993	$ 0	0	$ 0
Admin/garage	1993	$ 0	0	$ 0
Grit/scum removal	1994	$ 0	0	$ 0
Total costs		$ 3,356,149		$ ~~11,309,648~~ ← ≈ 8,201,768

Notes:

1) An economic development grant (PL660) in the amount of $212,137 has not been included in the capital costs of the original treatment facility. If the grant were included in the original capital cost based on the construction cost index, the additional current capital costs would be $1,278,762.

2) An EPA grant in the amount of $4,603,264 has not been included in the original capital cost. Based on the construction cost index the additional current capital costs would be $7,724,277.

3) Computational differences result because more significant figures than are presented in the cost index were actually used.

MAY 16 '96 11:36AM GLACE ASSOCS.

Exhibit II

West Goshen Sewer Authority
Contribution Analysis

	Initial Year	Term Years	Discount Rate	Annual Payment	Present Value	Cost Index	Current Cost Value
East Goshen Payment I	1977	25	5.56%	Various	$ 296,629	~~2.109~~ 2.684	~~$ 625,448~~ 796,1
East Goshen Payment II	1978	30	5.90%	Various	$ 463,527	~~1.957~~	~~$ 906,942~~ 1,282
West Whiteland Township	1985	30	9.18%	$ 64,710.00	$ 657,180	1.295	$ 850,895 2,078.
Westtown Township	1979	30	6.39%	$ 37,000.00	$ 491,293	1.809 2.766	$ 888,606

East Goshen Payment I - Payment amounts made towards the costs of the original plant have varied from 1977 through 1980 and have been constant at $20,472 per year in semi-annual payments of $10,236.

East Goshen Payment II - These payments varied with the amortization schedule of debt payments for West Goshen. The payments were adjusted for refinancings of the debt in 1985 and again in 1991.

Westtown Township - These payments have been consistent since 1979 - $37,000 per year in semi-annual payments of $18,500.

West Whiteland Township - These payments have been consistent since 1985 at $90,000 per year in semi-annual payments of $45,000. Only $64,710 per year is actually attributed towards the sewage treatment plant as $25,290 per year is attributed to the collection system from the Taylor Run Interceptor through the Taylor Run Pumping Station and Washington Street Pumping Station to the treatment plant.

Notes:

(1) The discount rate represents the cost of funds expressed as an annual interest rate. The scheduled rate is based on Municipal Bond yields as reported by the Federal Reserve Board.

(2) The present value is computed using standard financial computations which discount actual payment streams to the present value based on the payment term, the discount rate, and the payment amounts.

(3) The cost index is computed from cost information provided by Engineering News Record based on relative costs of construction over time. Computational differences result because more significant figures than are presented in the schedule were actually used.

Exhibit III

West Goshen Sewer Authority
Present Value Computation for East Goshen Payments I

Pmt No.	From Date	To Date	Payment Amount	Present Value
1	10/01/77	12/31/77	7,014.25	7,014.25
2	01/01/78	06/30/78	14,028.50	13,649.06
3	07/01/78	12/31/78	14,028.50	13,279.88
4	01/01/79	06/30/79	14,028.50	12,920.68
5	07/01/79	12/31/79	14,028.50	12,571.20
6	01/01/80	06/30/80	14,028.50	12,231.17
7	07/01/80	12/31/80	10,236.00	8,683.18
8	01/01/81	06/30/81	10,236.00	8,448.31
9	07/01/81	12/31/81	10,236.00	8,219.80
10	01/01/82	06/30/82	10,236.00	7,997.47
11	07/01/82	12/31/82	10,236.00	7,781.16
12	01/01/83	06/30/83	10,236.00	7,570.69
13	07/01/83	12/31/83	10,236.00	7,365.92
14	01/01/84	06/30/84	10,236.00	7,166.68
15	07/01/84	12/31/84	10,236.00	6,972.84
16	01/01/85	06/30/85	10,236.00	6,784.24
17	07/01/85	12/31/85	10,236.00	6,600.74
18	01/01/86	06/30/86	10,236.00	6,422.20
19	07/01/86	12/31/86	10,236.00	6,248.49
20	01/01/87	06/30/87	10,236.00	6,079.48
21	07/01/87	12/31/87	10,236.00	5,915.04
22	01/01/88	06/30/88	10,236.00	5,755.05
23	07/01/88	12/31/88	10,236.00	5,599.39
24	01/01/89	06/30/89	10,236.00	5,447.94
25	07/01/89	12/31/89	10,236.00	5,300.58
26	01/01/90	06/30/90	10,236.00	5,157.21
27	07/01/90	12/31/90	10,236.00	5,017.72
28	01/01/91	06/30/91	10,236.00	4,882.00
29	07/01/91	12/31/91	10,236.00	4,749.95
30	01/01/92	06/30/92	10,236.00	4,621.47
31	07/01/92	12/31/92	10,236.00	4,496.47
32	01/01/93	06/30/93	10,236.00	4,374.85
33	07/01/93	12/31/93	10,236.00	4,256.52
34	01/01/94	06/30/94	10,236.00	4,141.39
35	07/01/94	12/31/94	10,236.00	4,029.37
Totals			374,000.75	247,752.41

36	01/01/95	06/30/95	10,236.00	3,920.39
37	07/01/95	12/31/95	10,236.00	3,814.35 X 2.109 = 8,044.46
38	01/01/96	06/30/96	10,236.00	3,711.18
39	07/01/96	12/31/96	10,236.00	3,610.80
40	01/01/97	06/30/97	10,236.00	3,513.13
41	07/01/97	12/31/97	10,236.00	3,418.11
42	01/01/98	06/30/98	10,236.00	3,325.65
43	07/01/98	12/31/98	10,236.00	3,235.70
44	01/01/99	06/30/99	10,236.00	3,148.18
45	07/01/99	12/31/99	10,236.00	3,063.03
46	01/01/00	06/30/00	10,236.00	2,980.18
47	07/01/00	12/31/00	10,236.00	2,899.57
48	01/01/01	06/30/01	10,236.00	2,821.15
49	07/01/01	12/31/01	10,236.00	2,744.84
50	01/01/02	06/30/02	10,236.00	2,670.60
			527,540.75	296,629.26

10,236 ÷ 3814.35 = 2.684

Exhibit IV

West Goshen Sewer Authority
Present Value Computation for East Goshen Payments II

Pmt No.	From Date	To Date	Payment Amount	Present Value
1	04/01/78	09/01/78	11,817.88	11,817.88
2	09/01/78	02/28/79	17,421.75	16,922.54
3	03/01/79	08/31/79	17,421.75	16,437.63
4	09/01/79	02/29/80	17,835.39	16,345.70
5	03/01/80	08/31/80	17,835.39	15,877.32
6	09/01/80	02/28/81	17,680.44	15,288.38
7	03/01/81	08/31/81	17,680.41	14,850.27
8	09/01/81	02/28/82	17,519.76	14,293.67
9	03/01/82	08/31/82	17,519.76	13,884.09
10	09/01/82	02/28/83	17,519.76	13,486.24
11	03/01/83	08/31/83	17,893.44	13,379.21
10.5	06/06/83		373.78	283.57
12	09/01/83	02/29/84	17,694.72	12,851.50
13	03/01/84	08/31/84	17,694.72	12,483.24
14	09/01/84	02/28/85	17,489.52	11,984.93
15	03/01/85	08/31/85	17,489.52	11,641.50
16	09/01/85	02/28/86	17,814.84	11,518.25
17	03/01/86	08/31/86	17,817.84	11,190.09
18	09/01/86	02/28/87	18,114.84	11,050.62
19	03/01/87	08/31/87	18,114.84	10,733.97
20	09/01/87	02/29/88	18,114.84	10,426.39
21	03/01/88	08/31/88	17,558.64	9,816.66
22	09/01/88	02/28/89	9,615.24	5,221.64
23	03/01/89	08/31/89	16,419.24	8,661.11
24	09/01/89	02/28/90	16,667.64	8,540.20
25	03/01/90	08/31/90	16,667.64	8,295.48
26	09/01/90	02/28/91	16,340.94	7,899.84
27	03/01/91	08/31/91	11,237.99	5,277.20
28	09/01/91	02/29/92	15,147.57	6,909.26
29	03/01/92	08/31/92	10,044.61	4,450.36
30	09/01/92	02/28/93	15,318.56	6,592.56
31	03/01/93	08/31/93	15,318.56	6,403.65
32	09/01/93	02/28/94	15,161.12	6,156.22
33	03/01/94	08/31/94	15,161.12	5,979.82
34	09/01/94	02/28/95	15,730.57	6,026.63
Totals			555,254.63	362,977.59

35	03/01/95	08/31/95	15,750.57	5,853.94
36	09/01/95	02/28/96	15,154.23 *	5,477.87 *
37	03/01/96	08/27/96	15,154.23	5,320.90
38	09/01/96	02/24/97	15,103.46	5,151.12
39	03/01/97	08/24/97	15,103.46	5,003.51
40	09/01/97	02/21/98	15,221.86	4,898.24
41	03/01/98	08/21/98	15,221.86	4,757.88
42	09/01/98	02/18/99	15,030.34	4,563.40
43	03/01/99	08/18/99	15,030.34	4,432.63
44	09/01/99	02/15/00	15,008.52	4,299.37
45	03/01/00	08/14/00	15,008.52	4,176.17
46	09/01/00	02/11/01	14,964.90	4,044.72
47	03/01/01	08/11/01	14,964.90	3,928.82
48	09/01/01	02/08/02	13,014.00	3,318.73
49	03/01/02	08/08/02	13,014.00	3,223.64
50	09/01/02	02/05/03	12,904.65	3,104.95
51	03/01/03	08/05/03	12,904.65	3,015.98
52	09/01/03	02/02/04	12,745.35	2,893.40
53	03/01/04	08/01/04	12,745.35	2,810.49
54	09/01/04	01/29/05	13,076.10	2,800.80
55	03/01/05	07/29/05	13,076.10	2,720.54
56	09/01/05	01/29/06	13,306.95	2,689.24
57	03/01/06	07/29/06	13,306.95	2,612.18
58	09/01/06	01/29/07	12,897.90	2,459.33
59	03/01/07	07/29/07	12,897.90	2,388.86
60	09/01/07	01/29/08	12,978.90	2,334.98
61	03/01/08	07/29/08	12,978.90	2,268.07
			933,799.49	463,527.34

* 15,154.23 ÷ 5477.87 = 2.766

Exhibit V

West Goshen Sewer Authority
Sewer Plant Investment Allocation Analysis

	Allocated Capacity	Percent Capacity	Current Cost Value	Allocated Cost Value	Difference
			2,078,268	1,822,433	
West Goshen	2,850,000	63.3%	$ 8,037,757	$ 7,163,531	$ 874,226
East Goshen	1,000,000	22.2%	~~$ 1,532,390~~	~~$ 2,513,004~~	~~(980,614)~~ ← 255,835
West Whiteland	420,000	9.3%	$ 850,895	$ 1,055,190	(204,295)
Westtown	230,000	5.1%	$ 888,606	$ 577,923	310,683
Totals	4,500,000	100.0%	$ 11,309,648	~~$ 11,309,648~~ 8,201,768	$ -

Allocated Capacity: Gallonage of treatment plant capacity in accordance with current intermunicipal agreements.

Percent Capacity: Percentage of each municipality's share of total treatment plant capacity based on current intermunicipal agreements.

Current Cost Value: Based on actual investment values which have been restated to current value based on Engineering News Record Construction Cost indices as computed in Exhibits I and II.

Allocated Cost Value: Based on each municipality sharing equally the costs of the treatment plant as if they were utilizing their share of the capital costs of the plant starting in 1963.

Difference: Current Cost Value less allocated cost value. A positive number indicates overpayment or subsidizing of plant capital costs and a negative value indicates a shortfall or a subsidized amount if all parties share equally in the plant's capital costs.

AREA CODE 610
692-7171

EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

May 9, 1996

West Goshen Township
Board of Supervisors
Municipal Authority
1025 Paoli Pike
West Chester, Pa 19380

Re: Additional Sewage Capacity

Dear Board Members:

At a joint meeting held on May 2, 1996, the East Goshen Board of Supervisors and Municipal Authority discussed your proposal of the costs related to the acquisition of additional capacity at the West Goshen Treatment Plant.

East Goshen would be willing to discuss a proportionate fair share of the estimated $6.00 per gallon and administrative charge for the expansion project as detailed in the Estimated Construction Costs for the Phase I expansion.

However, based on reviews by legal, accounting and engineering consultants, the members of both boards agree that they can not pay for the Sewer Plant Investment Allocation Costs of $1,240,942 as outlined in Exhibit V.

Please advise if you are interested in discussing this matter further.

Very truly yours,

E. Martin Shane /SKF

E. Martin Shane, Chairman
Board of Supervisors

Francis X. Beck Jr. /SKF

Francis X. Beck, Jr., Chairman
East Goshen Municipal Authority

EMS/FXB/skf
cc: Robert F. Adams, Esq.
John B. Yerkes, Jr., P.E.
Jeffrey S. Rolfe
East Goshen Board of Supervisors
East Goshen Municipal Authority
wperf\wgprop

Board of Supervisors

1025 Paoli Pike
West Chester, PA 19380-4699
(610) 696-5266
Fax: (610) 429-0616

MAY 14 1996

May 10, 1996

Mr. Rick Smith, Manager
East Goshen Township
1580 Paoli Pike
West Chester, PA 19380

Dear Rick,

As per our phone conversation on Friday morning 5/10/96, my board will extend the cut-off date for East Goshen's answer for additional sewage capacity until 5/31/96 at 12:00 Noon.

As previously stated, our final terms are $980,000 past capital expenses, 20,000 administrative costs, and a unified O&M on collections. These are non-negotiable terms for your additional capacity. The only discussion is if Max Stoner's numbers are in error. We are looking for a yes or no answer.

I will be available, as well as John Scott, to answer your questions. Be advised that all of our foreign capacity is now spoken for. What is being offered would be taken from West Goshen's allotment.

Remember, good times disappear fast when no toilets are available.

Robert S. White, Member
For Board of Supervisors

RSW/sam

cc: Board of Supervisors
John Scott
Sewer Expansion File
corres.

Yerkes

YERKES ASSOCIATES, INC. 1444 Phoenixville Pike, P.O. Box 1568, West Chester, PA 19380-0078 • (610) 644-4254 FAX: (610) 640-0771

May 28, 1996

Supervisors of East Goshen
1580 Paoli Pike
West Chester, Pennsylvania 19380

MAY 30 1996

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, Pennsylvania 19380

Attn: Rick Smith, Manager

RE: West Goshen Sewage Treatment Plant

Gentlemen:

I am enclosing our estimate of the depreciated worth of the West Goshen Sewage Treatment Plant.

In 1963 dollars it is $264,620.

Please call with any questions.

Very truly yours,

YERKES ASSOCIATES, INC.

John B. Yerkes Jr. (mk)

John B. Yerkes, Jr., P.E.
President

JBY/dmk
cc: Mr. Jeff Rolfe
East Goshen Municipal Authority, Sue Fish
c:\wpwin\letter\ricksmit.jby

WEST GOSHEN SEWAGE TREATMENT PLANT COSTS - MAY 28, 1996

1963 Cost $1,298,624 - After PL660 and E.P.A. Funds Were Applied.

E.N.R.: 1963 to 1977 = 2.77
1963 to 1995 = 6.028

Component	Original Cost		Estimated	1995 Value After St. Line Deprec. (In 1963 Dollars)	
	Percent	Dollars	Life - Years	Percent	Dollars
Tankage	35.8	464,908	50	34	158,069
Machinery	6.3	81,813	25	0	
Electrical	15.0	194,794	35	9.4	18,310
Piping	10.54	136,875	40	25	34,219
Site Improvements	10.8	140,251	20	0	
Control Buildings	9.1	118,175	30	0	
Lift Station	8.3	107,786	25	0	
Land	4.16	54,022	-	100.0	54,022
TOTALS		$1,298,624			$264,620

c:\wpwin\treplant.jby

MAILLIE, FALCONIERO & COMPANY
Certified Public Accountants and Business Counselors

22 North Church Street
PO Box 3068
West Chester, PA 19381-3068
610/696-4353

FAX NO.: 430-8811

James J. Lennon
George J. Falconero
Paul T. Truono
John J. Crenny, Jr.
Frank L. Pellegrini
Jeffrey S. Rolfe
James M. Powers
Glenn B. Bachman
D. Scott Derar
Raymond T. Mock
Robert L. Caruso
Edward J. Furman

May 29, 1996

East Goshen Township
Board of Supervisors
Municipal Authority

Dear Board Members:

We have recalculated the alleged shortfall of East Goshen's payments towards its share of the capital costs of the West Goshen Sewage Treatment Plant, as originally calculated by Max Stoner of Glace Associates, Inc. Our recalculation of the alleged shortfall does not in any way endorse or express agreement with the logic, facts or methods used in Mr. Stoner's original analysis.

East Goshen did not become a user of the West Goshen Plant until 1970. From 1970 until 1977 East Goshen paid West Goshen to treat sewage from East Goshen on a fixed price per "unit of service" basis. In 1977, East Goshen and West Goshen entered into an agreement which provided for the sharing of operating and capital costs by both Townships to the extent each used the other's facilities. Mr. Stoner's analysis did not give recognition to the fact that from 1963 to 1977 East Goshen either did not use the plant, or when it did, paid a fixed fee per unit of service which was not allocated between capital and operating costs.

Our recalculation provides for depreciation of the West Goshen Plant from 1963 to 1977 when East Goshen began paying a charge for useage of the plant which separately identified capital and operating charges. The depreciation of the plant is based on an analysis by Yerkes Associates, Inc.

Working with the revised analysis received from West Goshen:

1. On "Exhibit I" the "Original Cost Basis" of the 1963 initial cost ($1,298,624) is replaced by the net book value of $783,127 from the attached depreciation schedule.

2. This causes the "Indexed Cost Basis" for 1963 to change from $7,828,570 to $4,720,690 and the total costs to change from $11,309,648 to $8,201,768.

3. The change in "total costs" from 2, above, is then carried to Exhibit V where the total of the "Allocated Cost Value" of $11,309,648 is changed to $8,201,768.

4. East Goshen's 22.22% share of the "Allocated Cost Value" then changes from $2,513,004 to $1,822,433.

5. The "difference" betwen the "Current Cost Value" and "Allocated Cost Value" for East Goshen then becomes $(290,043), which is the revised alleged shortfall.

Additionally, there is an inconsistency in the way East Goshen's payments are discounted to a 1977/1978 present value in Exhibits III and IV at one discount rate and then "future valued" to current values at a different rate. For example, the 7/1/95 payment on Exhibit III of $10,236.00 is present valued to $3,814.35, and then restated on Exhibit II to June 1995 value of $8,044.46 ($3,814.35 x 2.109), losing $2,191.54 in the process.

If the same discount rates were used on Exhibit II to compute the "Current Cost Value" as were used on Exhibits III and IV, then the "Cost Index" for East Goshen Payments I and II would be 2.684 and 2.766, and the "Current Cost Values" would be $796,152 and $1,282,116, reducing the alleged shortfall by $545,878.

The combination of the two adjustments to Mr. Stoner's analysis, providing for depreciation on the original plant and using the same factors to present value and future value the East Goshen payments, completely eliminates the alleged shortfall in East Goshen's payments towards its share of the capital costs of the West Goshen Sewage Treatment Plant.

Please feel free to contact me if you have any questions.

Very truly yours,

Jeffrey S. Rolfe

JEFFREY S. ROLFE

JSR/bj

EAST GOSHEN TOWNSHIP
WEST GOSHEN SEWAGE TREATMENT PLANT
DEPRECIATED COST

COMPONENT	PERCENT OF COST	ORIGINAL COST	ESTIMATED LIFE - YEARS	ACCUM DEPREC 1.977	NET BOOK VALUE 1.977
TANKAGE	35.80%	464,907	50	130,174	334,733
MACHINERY	6.30%	81,813	25	45,815	35,998
ELECTRICAL	15.00%	194,794	35	77,918	116,876
PIPING	10.54%	136,875	40	47,906	88,969
SITE IMPROVEMENTS	10.80%	140,251	20	98,176	42,075
CONTROL BUILDINGS	9.10%	118,175	30	55,148	63,027
LIFT STATION	8.30%	107,786	25	60,360	47,426
LAND	4.16%	54,023	N/A	0	54,023
	100.00%	1,298,624		515,497	783,127

AREA CODE 610
692-7171

EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

May 30, 1996

West Goshen Township
Board of Supervisors
and
Municipal Authority
1025 Paoli Pike
West Chester, Pa 19380

Re: Additional Sewage Capacity

Dear Board Members:

We are in receipt of your letter of May 10, 1996 signed by Supervisor Robert S. White. We have not abandoned the position stated in our letter of May 9, 1996 but appreciate the opportunity to review your calaculations.

East Goshen's engineering and financial consultants have examined the calculations of the alleged shortfall in the capital costs paid to West Goshen by East Goshen. Our consultants believe depreciation should be factored into the calculations for the years 1963 - 1977. Additionally, our calculations use the same index factor to discount the 1977/1978 present values and the "future values" shown in Exhibits II, III and IV which are enclosed. We are also enclosing letters from our engineer, John B. Yerkes, Jr., dated May 28, 1996, and auditor Jeffrey S. Rolfe, dated May 29, 1996, supporting our position. Our conclusion is that there is no shortfall due to West Goshen. We are willing to discuss with you the basis for this conclusion.

We feel that both townships have mututally benefited from the 1977 Agreement and look forward to a continuing partnership with West Goshen. To this end, we are willing to discuss purchasing additional capacity for a proportionate fair share of the estimated $6.00 per gallon and administrative charge for the expansion project as detailed in the Estimated Construction Costs for the Phase I expansion.

Very truly yours,

E. Martin Shane

E. Martin Shane, Chairman
Board of Supervisors

Francis X. Beck

Francis X. Beck, Chairman
Municipal Authority

EMS/FXB/skf
enclosures
cc: Robert F. Adams, Esq.
John B. Yerkes, Jr., P.E.
Jeffrey S. Rolfe, Maillie, Falconiero & Company
East Goshen Board of Supervisors
East Goshen Municipal Authority

SUPPORTING DOCUMENTS

ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

D.E.P. USE ONLY | PAGE # | ITEM REQUIRED

Municipality: EAST GOSHEN TOWNSHIP | County: CHESTER

Local Municipal Official LOUIS F. SMITH, JR. | Telephone # of Official: (610) 692-7171

Consultant: YERKES ASSOC., INC. | Consultant's Phone #: (610) 644-4254

Consultant's Contact Person: DAVID V. LINAHAN, P.E.

Title of Submission: SPECIAL STUDY AREA - RIDLEY CREEK SEWAGE TREATMENT PLANT EXPANSION | Date Submitted: OCTOBER 1997

x☐ **3 copies of Plan submitted to the Department (including supporting documentation)**

COMPLETENESS CHECKLIST

	Vol I, pg I Vol II pg I	**1. Table of Contents**
		2. Plan Summary
	Vol I, pg 2	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference: Title 25, § 71.1.a.7.i)
	Vil I, pgs 3-4	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference: Title 25, § 71.21.a.7.ii)
	N/A	C. Include the cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference: Title 25, § 71.21
	Vol I, pg 5	D. Identify the municipal commitments necessary to implement the plan. (Reference: Title 25, § 71.21.a.7.iii)
	Vol I, pg 6	E. Provide a schedule of implementation for the project which identifies the major milestones with dates necessary to accomplish the project to the point of op status. Other milestones in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference: Title 25, § 71.21.a.7.iv)
	Vol I, pg 6	F. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference: Title 25, § 71.21.b)
	Vol II, Section F	3. Original, signed and sealed Resolution of Adoption by the Municipality which contains, at a minimum, alternatives chosen and a commitment to implement plan as stated in the implementation schedule. (Reference: Title 25, § 71.31.f) Section V.F of Guidance.
	Vol II, Section F	4. Evidence that the municipality has requested, reviewed, and considered comments by appropriate official: planning agencies of the municipality, planning agencies of the

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		county, planning agencies with areawide jurisdiction (where applicable), and existing county or joint county departments of health. (Reference: Title 25, § 71.31.b) Section V.E. 1. of guidance.
	Vol II, Section F	5. Proof of Public Notice which documents proposed plan adoption, plan summary, and the establishment of a 30 day comment period. (Reference: Title 25. § 71.31.c) Section V.E.2 of guidance.
	Vol II, Section F	6. Copy of ALL written comments received and municipal response to each comment in relation to the proposed plan. (Reference: Title 25, § 71.31.c) Section V.E.2 of guidance.
	Vol II, Section E pg 6	7. Project Implementation Schedule. (Provide projected milestone dates and be detailed for each existing and future needs area). (Reference: Title 25, § 71.31.d) Section F of Guidance.
	N/A	8. Project Implementation Ordinances (Provide existing ordinances or include the development of new ordinances in the schedule of implementation.) (Reference: Title 25, § 71.21.a.5.vi.D) Section V.F of guidance.
	Vol II, Section F	9. Written documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)i)-(iii). (Reference: Title 25, § 71.3 1.e) Appendix B of guidance.
		GENERAL PLAN
		1. Previous Wastewater Planning
	See Act 537 Plan appvd 6/95	A. Identify and analyze all existing wastewater planning that:
	See Act 537 Plan appvd 6/95	1. Has been previously undertaken under the Sewage Facilities Act (Act 537). (Reference: Act 537, Section 5, section d.1)
	See Act 537 Plan appvd 6/95	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference: Title 25, § 71.21.a.5.i.A - D) Section V.F of Guidance.
	See Act 537 Plan appvd	3. Is anticipated or planned by applicable sewer authorities. (Reference: Title 25, § 71.21.a.5.i.A) Section V.D. of Guidance.

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	See Act 537 Plan appvd 6/95	4. Has been done through official plan revisions (planning modules) and addenda. (Reference: Title 25, § 71.21.a.5.i.A)
	See Act 537 Plan appvd 6/95	B. Identify all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
	See Act 537 Plan appvd 6/95	1. All land use plans and zoning maps which identify residential, commercial, industrial, agricultural, recreational, and open space areas. (Refe Title 25, § 71.21.a.3.iv)
	See Act 537 Plan appvd 6/95	2. A comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference: Title 25, § 71.21.a.3.iv)
	See Act 537 Plan appvd 6/95	3. Zoning or in the absence of zoning subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference: Title 25, § 71.21.a.3.iv)
	See Act 537 Plan appvd 6/95	4. All limitations and plans related to floodplain and stormwater management and special protection areas. (Reference: Title 25, § 71.21.a.3.iv) Appendix B, Section II.F.
	See Act 537 Plan appvd 6/95	5. An analysis of land use planning and zoning and its consistency with protecting environmentally sensitive areas, with special attention to: (Reference: Title 25, § 71.21.a.3.iv) - public ground/surface water supply sources - recreational water use areas - groundwater recharge areas - industrial water use - wetlands
		II. Physical and Demographic Analysis utilizing written description and mapping:
		A. Base line mapping (All maps should show all current lots and structures).
	Vol I, Exhibit 5	1. Identification of Planning Area(s). Municipal Boundaries, Sewer Authority/ Management Agency service area boundaries. (Reference: Title 25, § 71.21.a.1.i)
	See Act 537 Plan appvd 6/95	2. Identification and Mapping of Physical Characteristics (streams, lakes, impoundments, natural conveyance channels, drainage basins in the planning area). (Reference: Title 25, § 71.21.a.I.ii)

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	See Act 537 Plan appvd 6/95	3. Soils - Analysis with description by soil type and soils mapping with any topographic limitations) showing areas suitable for conventional on-lot systems, elevated sand mounds, and areas unsuitable for on-lot systems. (Reference: Title 25, § 71.21.a.1.iii). Mapping of Prime Agricultural Soils and locally protected agricultural soils. (Reference: Title 25, § 71.21.a.5.i.K)
	See Act 537 Plan appvd 6/95	4. Geologic Features - Identification through analysis, mapping and their relation to existing (including areas where existing nitrate-nitrogen levels are in excess of 5 mg/l) or potential nitrate-nitrogen pollution and drinking water sources. (Reference: Title 25, § 71.21.a.1.iii)
	See Act 537 Plan appvd 6/95	5. Topography - Showing slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for on-lot systems. (Reference: Title 25, § 71.21.a.1.ii)
	See Act 537 Plan appvd 6/95	6. Potable Water Supplies - Identification through mapping, description and analysis to include available public water supply capacity and aquifer yield for groundwater supplies. (Reference: Title 25, § 71.21.a.1.vi) Section V.C. of the Guidance.
	See Act 537 Plan appvd 6/95	7. Wetlands - Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Proposed collection, conveyance and trea facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference: Title 25, § 71.21.a.1.v) Appendix B, Section II.I.
	See Act 537 Plan appvd 6/95	8. Population - List historical, current and future population figures and projections of the municipality. Discuss and evaluate any discrepancies between municipal, county, state (DER), and federal population projections as they relate to sewage facilities. (Reference: Title 25, § 71.21.a.1.iv)
	See Act 537 Plan appvd 6/95	**III. Existing Sewage Facilities in the Planning Area.**
	See Act 537 Plan appvd 6/95	**A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:**
	See Act 537 Plan appvd 6/95	1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference: Title 25, § 71.21.a.2.i.A)
	See Act 537 Plan appvd 6/95	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, any remaining reserve capacity and the policy concerning the allocation of reserve capacity. (Reference: Title 25, § 71.21.a.2.i)

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	See Act 537 Plan appvd 6/95	3. A description of problems with existing facilities, including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of a national pollutant discharge elimination system (NPDES) permit, Clean Streams Law permit, or other permit, rule or regulation of the Department. (Reference: Title 25, § 71.21.a.2.i.B)
	See Act 537 Plan appvd 6/95	4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference: Title 25, § 71.21.a.4.i & ii)
	See Act 537 Plan appvd 6/95	5. A detailed description of operation and maintenance requirements and the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference: Title 25, § 71.21.a.2.i.C)
	See Act 537 Plan appvd 6/95	6. Ultimate disposal areas, if other than stream discharge (land application) and any applicable groundwater limitations. (Reference: Title 25, § 71.21.a.4.i & ii)
	See Act 537 Plan appvd 6/95	**B. Identify, map and describe areas that utilize individual and community on-lot sewage disposal and retaining tank systems in the planning area including.**
		1. The type of systems in use. (Reference: Title 25, § 71.21.a.2.ii.A)
	N/A	2. A description of documented and potential public health pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Streams Law or regulation promulgated thereunder. (Reference: Title 25, § 71.21.a.2.ii.B)
	N/A	3. A comparison of the types of on-lot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations, sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference: Title 25, § 71.21.a.2.ii.C)
	N/A	4. Conducting a well water survey to identify possible contamination by malfunctioning on-lot sewage disposal systems. Approximately 15% of the wells in the study area should be sampled. (Reference: Title 25, § 71.21.a.2.ii.B)
		C. Identify wastewater sludge and septage generation, transport, and disposal methods as it relates to sewage facilities alternative analysis including:
	See Act 537 Plan appvd 6/95	1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference: Title 25, § 71.71)
	See Act 537 Plan appvd 6/95	2. Quantities of the types of sludges or septage generated. (Reference: Title 25,§ 71.71)

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	See Act 537 Plan appvd 6/95	3. Present disposal methods, locations, capacities, and transportation methods. (Reference: Title 25, Section 71.71)
	N/A	**D. Identify, map and describe areas in the municipality where unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal. etc.) are in use. (Reference: Title25,§ 71.21.a.2.i.B)**
	See Act 537 Plan appvd 6/95	**IV. Future Growth and Development**
		A. Delineate and describe the following through map, text and analysis:
	EXHIBITS 1 - 3 A	1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed, and total number of Equivalent Dwelling Units (EDUs) remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference: Title25, Section 71.21.a.3.i)
	JUNE, 1995 PLAN EXHIBIT 6 (ZONING MAP)	2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, co and industrial areas. (Reference: Title25, Section 71.21.a.3.ii)
	EXHIBITS 1 - 3 A	3. Future growth areas and population and EDU projections for these areas. (Reference: Title25, Section 71.21.a.3.iii)
	N/A	4. Zoning, subdivision regulations; local, county or regional comprehensive plans; and existing plans of a Commonwealth agency relating to the development, use and protection of land and water resources. (Reference: Title25,§71.21.a.3.iv)
	EXHIBITS 1 - 3 A	5. Sewage planning required to provide adequate wastewater treatment for areas of the municipality and related to:
	Vol II, pg 2	a. Five-year population and growth impacts on existing and proposed wastewater collection and treatment facilities which support the need for expansions of facilities within the five-year time frame. (Reference: Title 25, section 71.21.a.3.v)
	Vol I, pg 2	b. Ten-year population and growth impacts on existing and proposed wastewater collection and treatment facilities which support the need for expansions of facilities within the ten-year time frame. (Reference: Title 25, Section 71.21.a.3.v)

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		V. Alternatives to Provide New or Improved Wastewater Disposal Facilities
	Vol I, pg 3	A. Identify alternatives available to provide for new or improved sewage facilities for each area of need including, but not limited to: (Reference: Title 25,§ 71.21.a.4)
	See Act 537 Plan appvd 6/95	1. Regional Wastewater Treatment Concepts. (Reference: Title 25, § 71.21.a.4)
	N/A	2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference: Title25, Section 71.21.a.4.i)
	N/A	3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference: Title 25, § 71.21.a.4.ii)
	N/A	a. Repair. (Reference: Title 25, § 71.21.a.4.ii.A)
	N/A	b. Upgrading. (Reference: Title 25, Section 71.21.a.4.ii.B)
	N/A	c. Improved operation and maintenance. (Reference: Title 25,§ 71.21.a.4.ii.C)
	N/A	d. Other applicable actions that will resolve or abate the identified problems. (Reference: Title 25, § 71.21.a.4.ii.D)
	N/A	4. The need for new community sewage systems. (Reference: Title 25, § 71.21.a.4.iii)
	Vol I, pg3 Vol II, pg 8	5. The construction of new wastewater treatment facilities. (Reference: Title 25, § 71.21.a.4.iii)
	N/A	6. Repair or replacement of collection and conveyance system components . (Reference: Title 25,§ 71.21.a.4.ii.A)
	N/A	7. Use of alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference: Title 25, § 71.21.a.4.ii.B)
	N/A	8. The continual and future use of individual and community subsurface sewage disposal system alternatives based on:
	N/A	a. Soil suitability. (Reference: Title 25, § 71.21.a.2.ii.C)
	N/A	b. Preliminary hydrogeological evaluation. (Reference: Title 25, § 71.21.a.2.ii.C)
	N/A	c. The establishment of a sewage management program. (Reference: Title 25, § 71.21.a.4.iv) **See Township Ordinance 166 and Authority Rules Chapter VI & VII**
	See Act 537 Plan appvd	9. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for on-lot disposal considering: (Reference: Title 25, § 71.21.a.4)

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	N/A	a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference: Title 25, § 73.31 - 73.72)
	N/A	b. Use of expanded absorption areas or alternating absorption areas. (Reference: Title 25, § 73.16)
	N/A	c. Use of water conservation devices. (Reference: Title 25, § 71.73.b.2.iii)
	N/A	10. The use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes based on: (Reference: Title 25, § 71.21.a.4)
	N/A	a. Discharge Requirements. (Reference: Title 25, § 71.64.d)
	N/A	b. Soil Suitability. (Reference: Title25, Section 71.64.c.1) c. Preliminary Hydrogeologic Evaluation. (Reference: Title 25, §71.64.c.3)
	N/A	d. Agency or other controls over operation and maintenance requirements. (Reference: Title 25, § 71.64.d)
	N/A	11. The use of retaining tank alternatives including: (Reference: Title 25, § 71.21.a.4)
	N/A	a. Commercial, residential and industrial use. (Reference: Title 25, § 71.63.e)
	N/A	b. Designated conveyance facilities (pumper trucks). (R Title 25, § 71.63.b.2)
	N/A	c. Designated treatment facilities or disposal site. (Reference: Title 25, § 71.63.b.2)
	N/A	d. Implementation of a retaining tank ordinance by the municipality. (Reference: Title 25, § 71.63.c.3)
	N/A	e. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference: Title 25, § 71.63.c.2)
	N/A	f. Temporary or permanent use.
	N/A	12. A no-action alternative which includes both short-term and long-term impacts on: (Reference: Title 25, § 71.21.a.4)
	N/A	a. Water Quality/Public Health. (Reference: Title 25,§ 71.21.a.4)
	N/A	b. Growth potential (residential, commercial, industrial). (Ref Title 25, § 71.21.a.4)
	N/A	c. Community economic conditions. (Reference: Title 25 § 71.21.a.4)
	N/A	d. Recreational opportunities. (Reference: Title 25, § 71.21. a.4)
	N/A	e. Drinking water sources. (Reference: Title 25, § 71.21. a.4)

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	N/A	f. Other environmental concerns. (Reference: Title 25, § 71.21.a.4)
	See Act 537 Plan appvd 6/95	13. Discuss the need for and implementation of a sewage management program to assure the future operation and maintenance of existing and proposed sewage facilities through:
	N/A	a. Municipal ownership or other management control over the operation and maintenance of individual on-lot sewage disposal systems, small flow treatment facilities, or other non- municipal treatment facilities. (Reference: Title 25, § 71.21.a.4.iv)
	N/A	b. Requiring scheduled inspection of on-lot sewage disposal systems. (Reference: Title 25, § 71.73.b.1)
	N/A	c. Requiring scheduled maintenance of septic and aerobic treatment tanks and associated system components. (Reference: Title 25, § 71.73.b.2)
	N/A	d. Aggressive enforcement of ordinances which require operation and maintenance and prohibit malfunctioning systems. (Reference: Title 25, § 71.73.b.5)
	N/A	e. Repair, replacement or upgrading of malfunctioning on-lot sewage systems. (Reference: Title 25,§ 71.21.a.4.iv)
	N/A	f. Establishment of joint municipal sewage management programs. (Reference: Title 25, § 71.73.b.8)
	N/A	g. Reduction of organic or hydraulic loading to existing wastewater treatment facilities. (Reference: Title 25, § 71.71)
	N/A	h. Requirements for bonding, escrow accounts, management agencies or associations to assure proper operation and maintenance for non-municipal facilities. (Refer Title 25, § 71.71)
	N/A	14. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including. (Reference: Title 25, § 71.21.a.4)
	N/A	a. Modification of existing comprehensive plans involving:
	N/A	1. Land use designations. (Reference: Title 25, § 71.21.a.4)
	N/A	2. Densities. (Reference: Title 25, § 71.21.a.4)
	N/A	3. Municipal ordinances and regulations. (Reference: Title 25, § 71.21.a.4)
	N/A	4. Improved enforcement. (Reference: Title 25, §

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		71.21.a.4)
	N/A	5. Protection of drinking water sources. (Reference: Title 25, § 71.21.a.4)
	N/A	b. Need for a comprehensive plan to assist in producing sound economic and consistent land development. (Reference: Title 25, § 71.21.a.4)
	N/A	c. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal. (Reference: Title 25, § 71.21 .a.4)
	N/A	d. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference: Title 25, § 71.21.a.4)
		VI. The Evaluation of Alternatives
	N/A	**A. Each technically feasible alternative identified in Section V of this checklist must be evaluated for consistency with respect to the foll (Reference: Title25, § 71.21.a.5.i)**
	N/A	1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act (33 U.S.C.A. 1288). (Reference: Title25, § 71.21.a.5.i.A) B, Section II.A.
	N/A	2. Municipal wasteload management plans developed under PA Code, Title 25, Chapter 94. (Reference: Title25, § 71.21.a.5.i.B) The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. (Appendix B, Section II.B.)
	N/A	3. Plans developed under Title II of the Clean Water Act (33 U.S.C.A. 1281-1299) or Titles 11 and VI of the Water Quality Act of 1987 (33 U.S.C.A. 1251-1376). (Reference: Title25, § 71.21.a.5.i.C) Appendix B, Section II.E.
	N/A	4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code. (Reference: Title25, § 71.21.a.5.i.D) The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section 11, D.
	N/A	5. Antidegradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference: Title25, § 71.21.a.5.i.E) Appendix B, S II,F.
	N/A	6. State water plans developed under the Water Resources Planning Act (42 U.S.C.A 1962-1962 d-18). (Reference: Title25, §

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		71.21.a.5.i.F) Appendix B, Section 11, C.
	N/A	7. Pennsylvania Prime Agricultural Land Policy contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide on local municipal policy and an overlay map on prime agricultural soi (Reference: Title 25, § 71.21.a.5.i.G) Appendix B Section II.G.
	N/A	8. County Stormwater Management Plans approved by the Department under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference: Title25, § 71.21.a.5.i.H) Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the County Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H.
	N/A	9. Wetland Protection under PA Code, Title 25, Chapter 105. Map wetland areas using Federal National Wetlands Inventory Mapping and Soils Mapping. (Reference: Title 25, § 71.21.a.5.i.1) identify and provide mitigative measures for any encroachments on wetlands from the construction or operation of any wastewater facilities proposed by the alternative. Appendix B, Section II.I.
	N/A	10. Protection of rare, endangered or threatened plant and animal species as identified by the Pennsylvania National Diversity Inventory (PNDI). (Reference: Title 25, § 71.21.a.5.i.J) Provide the Department with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department's Bureau of Forestry regarding the findings of the PNDI search. Appendix II. J.
	N/A	11. Historical and Archaeological Resource Protection under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference: Title 25, § 71.21.a.5.i.K) Provide the Department with a completed copy of Form "A" and its attachments requesting the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II. K.
	N/A	**B. Provide for the resolution of any inconsistencies in any of the points identified in Section VIA. of this checklist by submitting written documentation that the appropriate agency has received, reviewed, and concurred with the method proposed to resolve identified inconsistencies. (Reference: Title25, § 71.21.a.5.ii) Appendix B**
		C. Evaluate each alternative identified in Section V of this

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		checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference: Title25, § 71.21.a.5.iii)
	N/A	**D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, operation and maintenance and user fees for each alternative identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference: Title25,§ 71.21.a.5.iv)**
	N/A	**E. Provide an analysis of the funding methods available to finance each of the proposed alternatives evaluated in Section V of this checklist Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within rive years from the date of the plan submission. (Reference: Title25,§ 71.21.a.5.v)**
	N/A	**F. Analyze the ability of the municipality to implement each alternative proposed in Section V of this report including: (Reference: Title25, § 71.21.a.5.vi)**
	N/A	1. The activities necessary to abate critical public health hazards pending completion of sewage facilities or sewage management programs. (Reference: Title 25, § 71.21.a.5.v.A)
	N/A	2. The phased development of the facilities or sewage management program. (Reference: Title25, § 71.21.a.5.vi.B)
	N/A	a. Provide time schedules for implementing each phase. (Reference: Title25, § 71.21.a.5.vi.C)
	N/A	**3. The administrative organization and legal authority necessary for plan implementation. (Reference: Title25, § 71.21.**
		VII. Institutional Evaluation
	N/A	**A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:**
	N/A	1. Financial & debt status. (Reference: Title25,§ 71.61.d.2.)
	N/A	2. Available staff and administrative resources. (Reference: Title25, § 71.61.d.2.)
	N/A	3. Existing legal authority to:
	N/A	a. Implement wastewater planning recommendations. (Reference: Title 25, § 71.61.d.2.)
	N/A	b. Implement system-wide operation and maintenance

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		activities. (Reference: Title 25, § 71.61.d.2.)
	N/A	c. Set user fees and take purchasing actions. (Reference: Title25, § 71.61.d.2.)
	N/A	d. Take actions against adopted ordinance violators. (Reference: Title25, §71. 61.d.2.)
	N/A	e. Negotiate agreements with other parties. (Reference: Title25, § 71.61.d.2.)
	N/A	f. Raise capital for construction and operation and maintenance of facilities. (Reference: Title25, § 71.61.d.2.)
	N/A	**B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed alternative inc**
	N/A	1. Need for new authorities. (Reference: Title25, § 71.61.d.2.)
	N/A	2. Functions of existing and proposed organizations (sewer authorities, etc.). (Reference: Title25,§ 71.61.d.2.)
	N/A	3. Cost of administration, implementability, and the capability of the authority to react to future needs. (Reference: Title25, § 71.61.d.2.)
	N/A	**C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including.**
	N/A	1. All legal authorities of incorporation. (Reference: Title25, § 71.61.d.2.)
	N/A	2. All required ordinances, regulations, standards, and inter-municipal agreements. (Reference: Title25, § 71.61.d.2.)
	N/A	3. Activities to provide rights-of-way, easements, and land transfers. (Reference: Title 25, § 71.61.d.2.)
	N/A	4. Other municipal sewage facilities plan adoptions. (Include the development of Items 1-4 on the project's schedule of implementation). (Reference: Title25, § 71.61.d.2.)
	N/A	5. Any other legal documents. (Reference: Title25, § 71.61.d.2.)
	Vol I, pg 6 Vol II, pg 8	**D. Identify the chosen institutional alternative for implementing the chosen wastewater disposal alternative. Provide justification for choosing the specific alternative. (Reference: Title25, § 71.61.d.2.)**
	N/A	**VIII. Selected Wastewater Treatment & Institutional Alternatives**
	N/A	**A. Select one technical wastewater disposal alternative which best meets the wastewater treatment needs of each area of the municipality studied. Justify the choices by providing documentation which shows that they are the best alternatives) based on:**
	N/A	1. Wastewater disposal needs. (Reference: Title25, § 71.21. a.6.)
	N/A	2. Technical and administrative needs. (Reference: Title25,

D.E.P. USE ONLY	PAGE #	ITEM REQUIRED
		Section 71.21.a.6.)
	N/A	3. Cost-effectiveness. (Reference: Title25, § 71.21.a.6.)
	N/A	4. Management and administration systems available. (Reference: Title25, § 71.21.a.6.)
	N/A	5. Financing methods available. (Reference: Title 25, § 71.21. a.6.)
	N/A	6. 5 and 10 year planned growth areas. (Reference: Title 25, § 71.21.a.6.)
	N/A	7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference: Title 25, § 71.21.a.6.)
	N/A	**B. Describe the capital financing plan chosen to implement the selected alternative(s).**

SUPPORTING DOCUMENTS

Daily Local 12/3/96

Westtown Sewer to be taken over

By BILL THOMPSON
Special to the Local News

WESTTOWN — Supervisors have announced what can be considered a Christmas present to some residents but may prove a headache for the board.

The township will be in the sewage disposal business effective Dec. 15.

The township will take over the operation of the privately owned Westtown Sewer Company, as ordered by the courts on Oct. 15.

In the interim, the sewer company's owner, Peter DeFeo, appealed the decision in a protective appeal, which, according to township Secretary/Treasurer Evelyn Groff, does not stay the order to take over the plant.

The effect facing the board is primarily a financial one. It has already affected the final resolution of the 1997 budget.

"The impact at this time is a large unknown, and there is a lot of work to be done by the board in the immediate future," said Groff.

As far as the operation is concerned, Groff noted that the first decision is whether or not to keep the present operator, American Commonwealth, which has a contract with DeFeo to operate the facility until April.

"The board has had discussions with American, but has not yet reached a decision," said Groff.

"One major item which should be made known to all of DeFeo's customers is that the township will be collecting all bills as of the 15th.

"A number of steps were outlined by the court, which must be completed by various deadlines, including a plan to upgrade and increase plant capacity," she said.

Groff summarized by saying the board will start to pursue the various objectives as ordered.

The board has until the end of the year to approve 1997 budget.

As had been decided earlier, sewer rates will be increased.

The takeover order is the result of a suit by the state Department of Environmental Protection against the township and the sewer company to resolve the plant's many operating problems.

The action did not mean that the township was at fault, but it was the only way for the DEP to guarantee responsibility for the plant.

In other business, Groff noted that the board had filed an appeal of the recent zoning hearing board decision granting various exceptions and variances to Amoco Corporation in its proposed multipurpose site at Route 3, old Routo 352, and Route 352.

One condition of approval was the barring of pedestrian or vehicle access to old Route 352 from the site.

The board's appeal asks that such a one-way access be required, subject to approval by the Pennsylvania Department of Transportation.

SUPPORTING DOCUMENTS

ADDENDUM TO SECTION 4.6
SPRAY IRRIGATION ALTERNATIVE FOR
RIDLEY CREEK STP

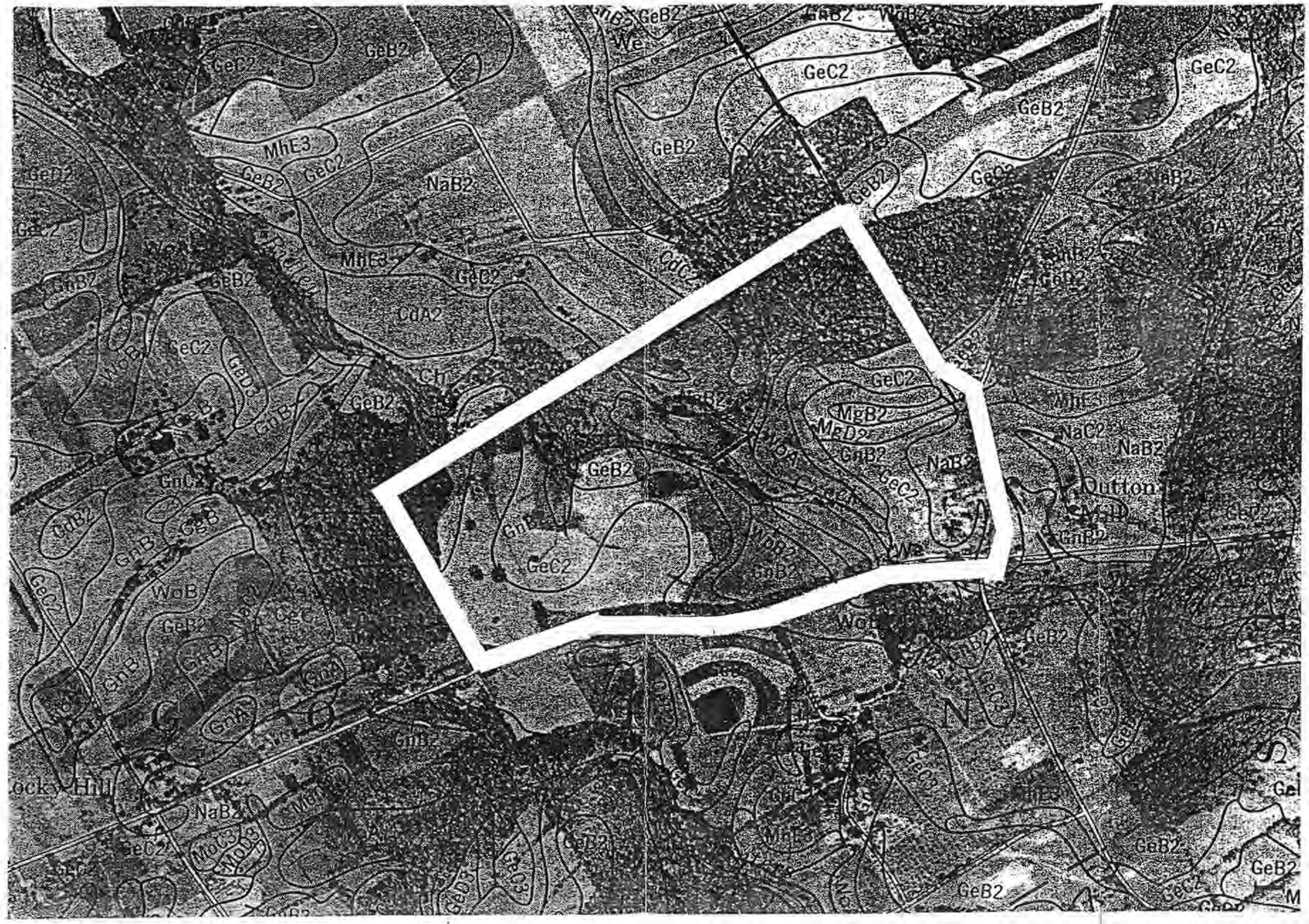
The December 1992 Final Draft for the Act 537 Plan Update was distributed to each adjacent municipality and to the County reviewing agencies during February 1993. The Chester County Planning Commission review as well as the Chester County Health Department review and the Willistown Township letter of comments all encouraged the possible use of a spray irrigation alternative for the estimated 300,000 gallons per day (gpd) in additional wastewater effluent projected for the Ridley Creek STP. The Township has investigated the possibility of the use of spray irrigation techniques with the following summary results.

Table 6.1 as contained on page 6-2 of Section 6.0 of this report clearly establishes an ultimate need for 670,299 gpd for potential wastewater treatment needs at the Ridley Creek plant. When the additional 132,700 gpd requested by Immaculata College is added, the actual anticipated wastewater flow under current plan update conditions would be approximately 740,000 gpd. For future design and discussion purposes only, a figure of 300,000 gpd has been utilized in this Plan Update as the need for expansion of treatment availability at the Ridley Creek STP.

Since a good part of the infrastructure and collection system is already in place for treatment at the Ridley Creek STP, it is logical to assume continued use of the expanded collection system and treatment at the STP. Other sections of this report discuss the viability of use of the A/O system as a means of expanding the current treatment capability from 400,000 gpd to 700,000 gpd. This option would continue to be utilized under a spray irrigation alternative at an estimated cost of $1,200,000 for the STP upgrading.

In lieu of stream discharge into Ridley Creek for the additional 300,000 gpd, a potential alternative would be to acquire nearby property, if available, for spray irrigation purposes.

Only two properties exist within the Ridley Creek watershed which contain sufficient acreage to handle the facilities and spray fields necessary for the discharge of 0.3 MGD. These include the SmithKline Beecham property located north of Boot Road and the additional possibility of use of all or part of the Grace Estate property located immediately adjacent to and south of the Ridley Creek STP.



GRACE ESTATE SOILS

SmithKline Beecham (herein Beecham) currently owns 312 acres bounded by Paoli Pike, Boot Road, and Township Line Road. In August 1991, Beecham presented to the Township a Sewage Facilities Planning and Environmental Site Analysis for Land Application of Wastewater Effluent based on a proposed development of the entire site. The Land Development Plan that accompanied the Sewage Facilities Study was withdrawn. However, Sewage Facilities Study remains a valuable tool in the evaluation of the tract of land. Figure 13 contained in this study shows the proposed land application areas and winter storage lagoons for a spray irrigation alternative. This carefully prepared study documents by way of percolation tests and soil profiles the areas within the site which are suitable for spray irrigation. Such areas are depicted in Figure A-1 of the Beecham report. According to the report, Beecham could handle its ultimate wastewater generated on the site by using the effluent spray areas and the winter storage ponds depicted on Figure 13.

The Township recently reached a settlement with Beecham for the rezoning and future use of this tract for combined residential or office park purposes. The centroid of the Beecham effluent spray areas is located 1.1 miles north of the Ridley Creek STP. A pumping station located at the Ridley Creek STP conveying treated effluent 1.1 miles north to the Beecham property could never be cost-effective, particularly in view of the assumed necessary condemnation of approximately 75 acres of suitable effluent spray area and storage pond area. Therefore, the use of the Beecham property for future spray irrigation purposes is dismissed as a possible alternative because of the need to pump treated effluent more than 1.1 miles and the high expected cost of condemnation per acre (assumed to be in excess of $60,000 per acre) in addition to the burden of exceptionally high operating costs for future years.

Grace Estate

The Grace Estate property, comprising 182 acres, is located immediately south of the Ridley Creek STP and is bounded on the south by East Strasburg Road and on the east by Township Line Road. The site is currently undeveloped. It is possible that the entirety of this adjacent property (or major portions thereof) could be suitable for spray effluent areas. The attached exhibit depicting the soils for the entirety of the Grace Estate property is shown on the following page as Exhibit 4-4. The soils paralleling Ridley Creek are predominately Worsham series and Wehadkee series with Glenville silt loam and Glenelg silt loam occupying substantial portions of the property to the west of Ridley Creek. It is estimated that it would be necessary to acquire the entire westerly half of this property (west of Ridley Creek) and perhaps suitable portions of

the property east of Ridley Creek in order to meet the estimated physical area needs of 75 acres required for application of spray effluent for an additional 300,000 gpd.

The Township believes that the acquisition of any portion of this property would most likely involve condemnation procedures. The best available estimate is that this property would carry an approximate raw land value of $55,000 per acre since acquisition of these major portions of the site would destroy the utility of the balance of the site. Thus, the estimated cost for acquiring approximately 75 acres of the Grace Estate parcel would involve a cost of approximately $4,125,000 and possible additional consequential damages to the balance of the site.

Spray Irrigation Alternative Spatial Needs

The following alternative design assumptions have been utilized in determining the physical or spatial needs for spray field effluent involving 300,000 gpd. Assuming that soil testing would allow the discharge of the above amounts, the following data is relevant.

Land Area Required

- One inch of effluent/week equals 77.3 acres plus buffer and storage pond
- One and one-half inches of effluent/week equals 51.5 acres plus buffer and storage pond
- Three quarters of an inch of effluent/week equals 103.1 acres plus buffer and storage pond

Several design alternatives for an assumed required need for a 60-day winter storage pond are indicated below.

- Eight-foot deep pond equals 9 acres including slope limits
- Six-foot deep pond equals 12.2 acres including slope limits
- Ten-foot deep pond equals 7 acres including slope limits

An average 8-foot depth of pond was assumed for this design alternative. A 1-1/2-inch per week effluent application rate was selected (assuming this is possible) which would require 51.5 acres of spray field area plus a required-100-foot nominal buffer comprising 14.6 acres or a total of 66 acres for spray effluent use. When combined with the 9 acres required for a 60-day storage pond at a average depth of 8 feet, the resulting

required land area is 75 acres. Assuming that 75 acres represents the physical land area requirement at an average price of $55,000 per acre, this would result in an estimated $4,125,00 in costs. Under the Chester County Spray Irrigation Grant Program, utilizing Chester County Open-Space funding, the Township might be entitled to a maximum grant of $600,000 since multiple municipality involvement is anticipated.

Thus, the net cost of $3,525,000 plus an additional $400,000 of estimated cost for the spray field piping and pumping system, plus the $1,200,000 in estimated cost for expansion of the treatment plant would bring the total cost for this alternative to $5,125,000. When equated to the 300,000 gpd of anticipated new wastewater effluent, this results in an estimated cost in excess of $17 per gallon of wastewater treated as compared with the estimated $4.50 per gallon for expanding the STP and allowing stream discharge to Ridley Creek.

It is the Township's position that this spray irrigation alternative, under the above assumed conditions, is not a viable alternative from the initial cost factors and in view of the possibility that the land cost listed above could be higher (based on consequential damages).

SUPPORTING DOCUMENTS

1996 CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT REPORT
RIDLEY CREEK WASTEWATER TREATMENT PLANT
EAST GOSHEN TOWNSHIP, CHESTER COUNTY

Prepared For:

East Goshen Municipal Authority
East Goshen Township, Chester County
1580 Paoli Pike
West Chester, Pennsylvania 19380
610-692-7171

Prepared By:

Yerkes Associates, Inc.
Authority Engineer
1444 Phoenixville Pike
P.O. Box 1568
West Chester, Pennsylvania 19380-0078
610-644-4254

Date: March 10, 1997

RIDLEY CREEK ANNUAL WASTELOAD MANAGEMENT REPORT March 10, 1997

ITEM 1 - HYDRAULIC AND ORGANIC LOADING CONTRIBUTION

The total number of Equivalent Dwelling Units (EDU's) connected at the end of 1996 was 1,165. They contributed an average daily flow of 309,937 gallons per day (gpd). The past year was unusually wet from snow and rain, raising groundwater levels to new records. Based on that information and the Treatment Plant Operator's reports of faulty meter readings, we have taken the average daily flow and subtracted what we feel is I/I to come up with an actual flow of 275,451 gpd. That number is used for all projections in this report.

The number of Equivalent Dwelling Units was derived in the following manner: The total average water usage from nonresidential users plus the 384 New Kent Apartments units is 105,678 gpd (38,904 gpd + 66,674 gpd), based on actual water meter readings provided from the Philadelphia Suburban Water Company. It is estimated that 85% of water used is returned as wastewater. Subtracting 85% of the water usage (89,826 gpd) from the actual average daily flow of 275,451 represents the total average daily flow from the single residential users. This result (169,673 gpd), is then divided by 825, the actual number of single residential connections, for the average flow per single residential connection. The average flow per residential connection for this system is approximately 205 gpd, which defines the volume of an EDU of the system. The total number of EDU's of the system is determined by dividing the average daily flow by 205gpd. However, in accordance with the Township Act 537 Plan, 275 gpd /EDU will be used for estimated future flows.

The following table lists the actual average monthly flows and estimated organic load for 1996

Table 1

MONTH	FLOW (average GPD)	BOD LOAD (ppd)
JAN	305,358	531
FEB	299,824	522
MARCH	312,668	544
APRIL	327,320	570
MAY	302,161	526
JUNE	309,160	538
JULY	292,122	508
AUGUST	289,858	504
SEPTEMBER	304,057	529
OCTOBER	313,907	546
NOVEMBER	258,003	449
DECEMBER	**404,808**	**704**
ACTUAL FLOW	309,937	539
MINUS I/I	-34,486	
BASE FLOW	275,451	

Three Month Maximum (3MM) average flow is 314,050 gpd and the Peak Organic load is 704 ppd.

The monthly average flows are based on the total gallons treated as recorded by the flow meter at the plant effluent divided by the number of days in the month. The flows in **Shaded** type in Table 1 are the flows that have been averaged together for the 3MM flow. The 3MM is the calculated hydraulic load. The permitted hydraulic load is 400,000 gpd.

The Peak Organic load or the BOD load is estimated by using influent data from a 24 hour composite sample taken once monthly and analyzed for CBOD. The ratio of BOD and CBOD is assumed to be 1:2. The monthly samples were combined for an annual average influent BOD concentration of 208.5 mg/l. The estimated monthly organic loading is determined by the following: Monthly Average Flow in million gallons per day (mgd) times 208.5 mg/l times 8.345 pounds per million gallons per mg/l. The Peak Organic load is the highest monthly load for the calendar year and is presented in **Shaded** type in Table 1. The plant was designed to treat an organic load of 830

pounds per day (ppd), however there is no permit limit on the maximum organic load nor have any studies been performed to determined the plant's actual "As-built" efficiency.

During the next five (5) years, the number of EDU's is projected to increase. Projected peak loads for future years is calculated by multiplying the historical average ratio of the 3MM over the annual average flow times the projected load for that year. Hydraulic peak load ratio (last year's 3MM 295,731 gpd + this year's 3MM 314,050 gpd)/(last year's average 271,171 gpd + this year's average 275,451 gpd) = 1.08. Organic peak load ratio (last year's peak 568 ppd + this year's peak 704/last year's average 472 ppd + this year's average 462 ppd) = 1.15. The following chart uses 275 gpd/EDU for future connections in accordance with the Township's current Act 537 Plan. Also, an allowance of 25,000 gpd for inflow and infiltration is added to the current year base flow has been added.

TABLE 2

1996 Base Flow in GPD + 25,000 gal = 300,451

YEAR	ADDITIONAL # EDUs	ADDITIONAL ESTIMATED FLOW at 275 gpd	TOTAL ESTIMATED AVG FLOW	TOTAL ESTIMATED PEAK FLOW (gpd) (AVG X 1.08)
1997	62	17,050	317,501	342,901
1998	61	16,775	334,276	361,018
1999	55	15,125	349,401	377,353
2000	24	6,600	356,001	384,481
2001	6	1,650	357,651	386,263
2002	6	1,650	359,301	388,045

As can be seen in Table 2, after the year 2000 there is potential to exceed the permitted hydraulic loading of the treatment plant when using 275 gpd/EDU for future flows. The current average flow per residential unit is approximately 225 gpd however we feel it is much higher than previously recorded flows due to the unusually wet year and the numerous leaks discovered by the Public Works Department. We will continue to use 225 gpd for planning. The flow figure of 225 gpd has been approved for use for planning, using a per capita flow figure of 75 gpd with an average of 3 persons per dwelling. Using the proposed revised flow figure of 225 gpd the following may be expected.

TABLE 3

1996 BASE FLOW OF 275,451 +
25,000 GPD for I/I ALLOWANCE = 300,451

YEAR	ADDITIONAL # EDUs	ADDITIONAL ESTIMATED FLOW AT 275 GPD	PROJECTED ANNUAL AVG HYDRAULIC LOADING	TOTAL ESTIMATED PEAK FLOW (AVG X 1.08)
1996			300,451	338,421
1997	62	13,950	314,401	339,553
1998	61	13,725	328,126	354,376
1999	55	12,375	340,501	367,741
2000	24	5,400	345,901	373,573
2001	6	1,350	347,251	375,031
2002	6	1,350	348,601	376,489

The estimated average organic load, in pound per day (ppd) is calculated by multiplying estimated average flows, in mgd, from Table 2 times 208.5 mg/l times 8.345 pounds/mgals/mg/l. The estimated peak organic load is 1.15 times estimated average organic load.

The increase in the number of connections was derived in the following manner using 275 gpd per EDU:

Actual connections for 1996:

Authority Sponsored Projects (1996)		
The Lane	6 EDU	
Miscellaneous	6 EDU	
Existing Subdivisions		
Willow Pond	28 EDU	(Includes lots in Willistown Twp.)
Land Developments in progress		
Clocktower (Bow Tree Ph4)	31 EDU	
Oakwood	4 EDU	
Wood Estate	2 EDU	
Total for 1996	**77 EDU**	**21,175 gpd**

Projected connections for 1997:

Authority Sponsored Projects (1997)		
None	0 EDU	
Land Developments in progress		
Clocktower	31 EDU	
Oakwood	6 EDU	
Wood Estate	21 EDU	
Total for 1997	**62 EDU**	**17,050 gpd**

Projected connections for 1998:

Authority Sponsored Projects (1998)		
None	0 EDU	
Land Developments in progress		
Miscellaneous	4 EDU	
Clocktower	31 EDU	
Oakwood	6 EDU	
Wood Estate	20 EDU	
Total for 1998	**61 EDU**	**16,775 gpd**

Projected connections for 1999:

Authority Sponsored Projects (1999)		
None	0 EDU	
Land Developments in progress		
Miscellaneous	4 EDU	
Clocktower	31 EDU	
Wood Estate (complete)	20 EDU	
Total for 1999	**55 EDU**	**15,125 gpd**

Projected connections for 2000:

Miscellaneous	6 EDU	
Clocktower	18 EDU	
Total for 2000	**24 EDU**	**6,600 gpd**
Total for 2001	**6 EDU**	**1,650 gpd**
Total for 2002	**6 EDU**	**1,650 gpd**

Over the past year there was a marked increase in flow due to an extremely wet year causing I/I. The entire system was televised, during which several leaks were discovered and repaired. A large break occurred in the line for the Pfizer property and was the responsibility of the owner to repair. The repair was not made until December, 1996. The Sewer Operating Budget contains $25,500 for maintenance and repairs; an allowance of 25,000 gpd is included in the projected flow estimates.

ITEM 2 - PLAN TO REDUCE OVERLOADS

In the event that Item I flows exceed the allocated or permitted capacity, a plan would be required to indicate what action would be anticipated to relieve this condition. In fact, the Township is currently preparing a Revised Act 537 of the Special Study Area of the Ridley Creek Sewage Treatment for an expansion of the RCSTP to .750 MGD in two phases. The first phase would be to 0.500 MGD and the second phase when needed. The expansion is being pursued because additional capacity at the West Goshen Treatment Plant is not economically feasible and because treatment costs in the Ridley Creek system are lower than the Chester Creek system. Until the RCSTP expansion is approved by the Department, the system will continue to be monitored and televised as necessary to control any I/I. Residents will again be advised that lateral

caps need to be in place and the connection of sump pumps to the public system is prohibited.

ITEM 3 - SEWER EXTENSIONS

During 1996, a total of 6 EDUs were added to the system as a municipal sponsored project. There are no planned municipal projects for the coming years.

ITEM 4 - OPERATING AND MAINTENANCE PROGRAM

A discussion of the practices employed for monitoring, maintaining and inspecting the sewerage system follows. Of particular interest may be the procedures for emergency maintenance, as well as the methods used to detect and remedy excess infiltration and inflow. A description of routine and preventative maintenance programs is given as well as the number of maintenance employees and their availability and effectiveness in the event of a system malfunction is also discussed.

East Goshen Township has engaged the services of TMH Environmental Services Inc. to operate the treatment plant. This contract includes daily maintenance, recording data and submitting all reports to the Township that are required under N.P.D.E.S. Permit No. Pa-0050504.

Although there are presently no industrial waste contributors on system, the Township's Ordinance #95 addresses the strength of industrial waste and permits only discharges of domestic strength.

The treatment plant alarm system is tied into an auto dialer which has the ability to dial five (5) numbers in succession. It begins with treatment operator and ends with the Township Maintenance staff.

The Township constantly monitors daily influent flow readings and monitors daily rainfall with a rain gauge located at the Township building. Should daily flows increase Township staff then would inspect the system for leaks. All sewer lines are routinely cleaned and inspected by Television cameras. The Township, during billing to the users, reminds the users against discharging sump pumps into the sewer system.

Of the Township's Maintenance staff, the Township has approximately eight (8) people along with sundry equipment, all of which can be made available under emergency conditions. The Authority has retained the services of Yerkes Associates, Inc. an engineering consulting firm that has a staff of professional engineers and certified treatment operators should technical assistance be needed.

ITEM 5 - CONDITION OF EXISTING SYSTEM

A discussion of the overall condition of the system with emphasis on any plans to upgrade, repair or rehabilitate the system follows:

The system was installed in 1985 in accordance with Township Specifications and under professional inspection and surveillance of the Authority's Engineer. All of the lines were air tested and lamped and are in excellent condition. Until 1996, there was practically no I/I. The past year (1996) was one of record snow and rain fall bringing groundwater levels to record highs. These high levels caused homes, which are normally dry, to have water problems that they would not normally have. We feel that more sump pumps were installed and probably connected to the sewer lines because it was impossible to direct the flow otherwise due to the heavy snows on the ground for the majority of the winter. In addition, high levels probably caused some infiltration into manholes that normal conditions would not. Based on flow records from the past five years, we estimate that sump pumps and I/I contributed 34,486 gpd.

ITEM 6 - PUMPING STATIONS

There is one pumping station in the system.

	STATION 1
RATED MAXIMUM DAILY CAPACITY	25,000; 71 HOMES (HUNT COUNTRY)
CURRENT MAXIMUM DAILY FLOW	19,525
MAXIMUM DAILY FLOW WHEN AREA SERVED BY THE PUMP STATION IS FULLY DEVELOPED	19,525
TWO YEAR MAXIMUM DAILY FLOW	SAME AS MAXIMUM
CURRENT AVERAGE DAILY FLOW:	19,525 GPD; BASED ON 71 HOMES AT 275 GPD
PEAK INSTANTANEOUS FLOW DURING WET WEATHER	APPROXIMATELY SAME AS

MAXIMUM

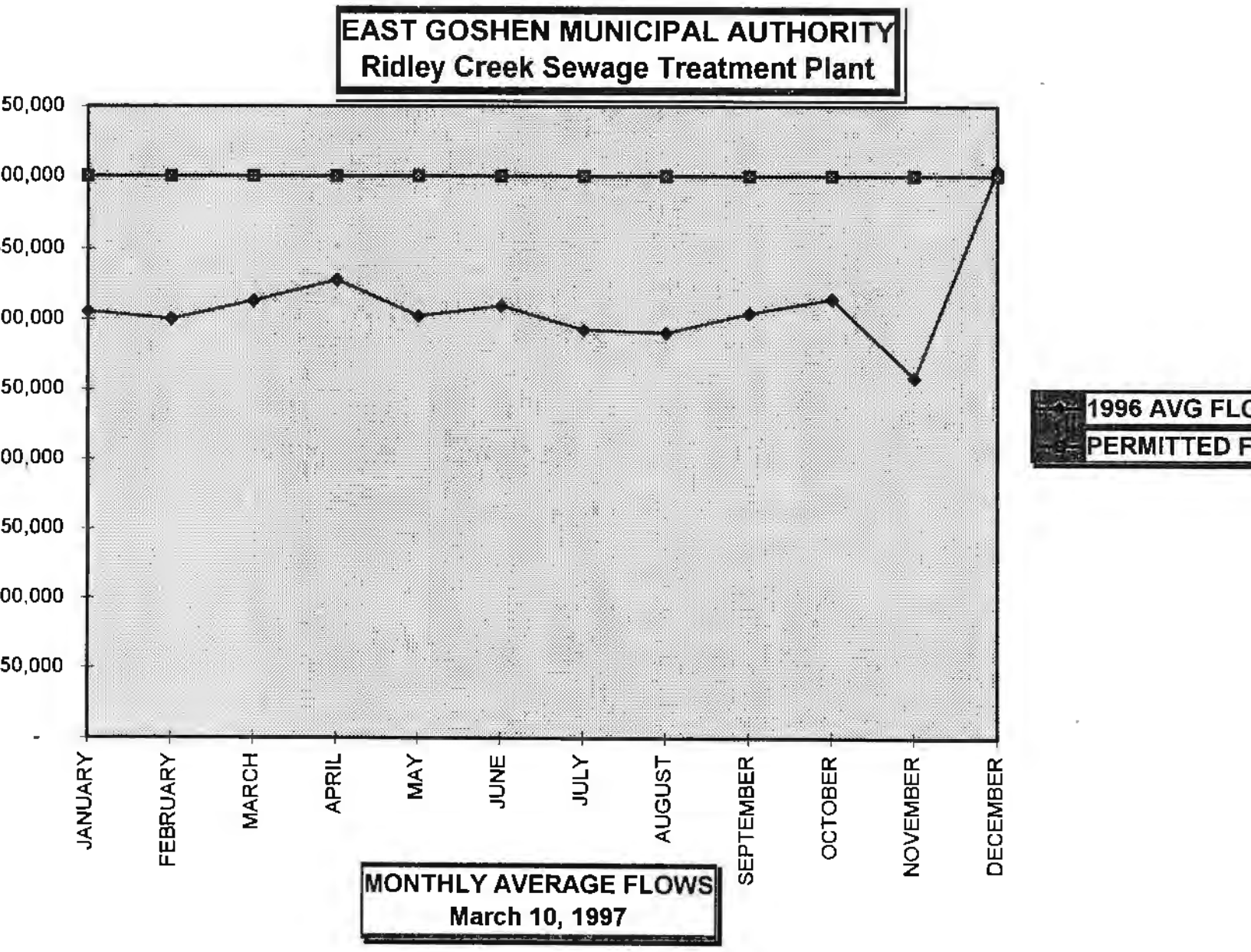
ITEM 7 - AMENDMENTS TO THE SEWER ORDINANCE

No amendments to the Sewer Ordinance this year.

ITEM 8 - GRAPHS

Attached to this report are the following graphs:

Monthly Average Flows
Monthly Average Organic Loading
Projected Hydraulic Loading
Projected Organic Loading
Four Year History of Flows (1992 - 1995)


EAST GOSHEN MUNICIPAL AUTHORITY
Ridley Creek Sewage Treatment Plant
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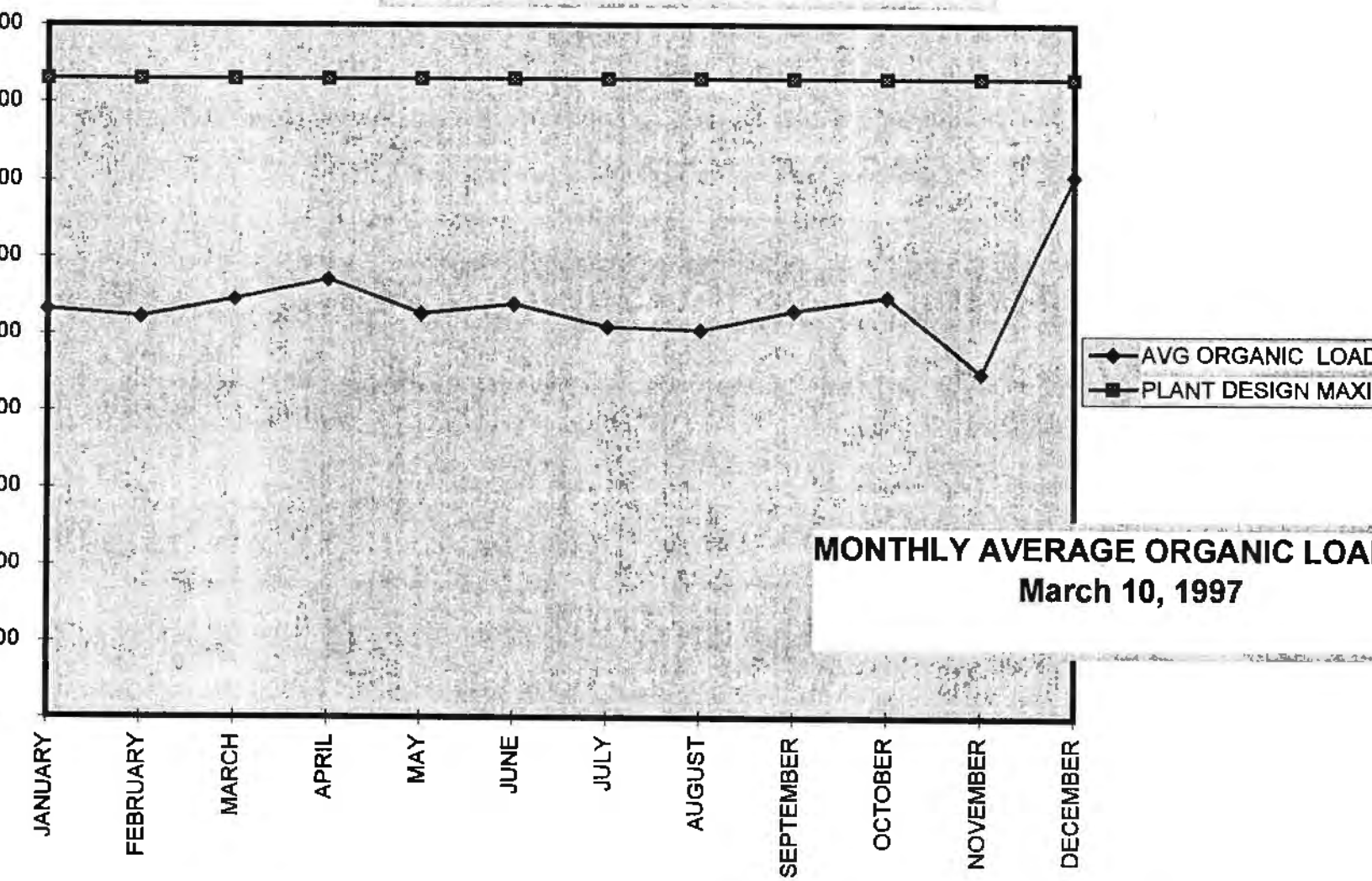
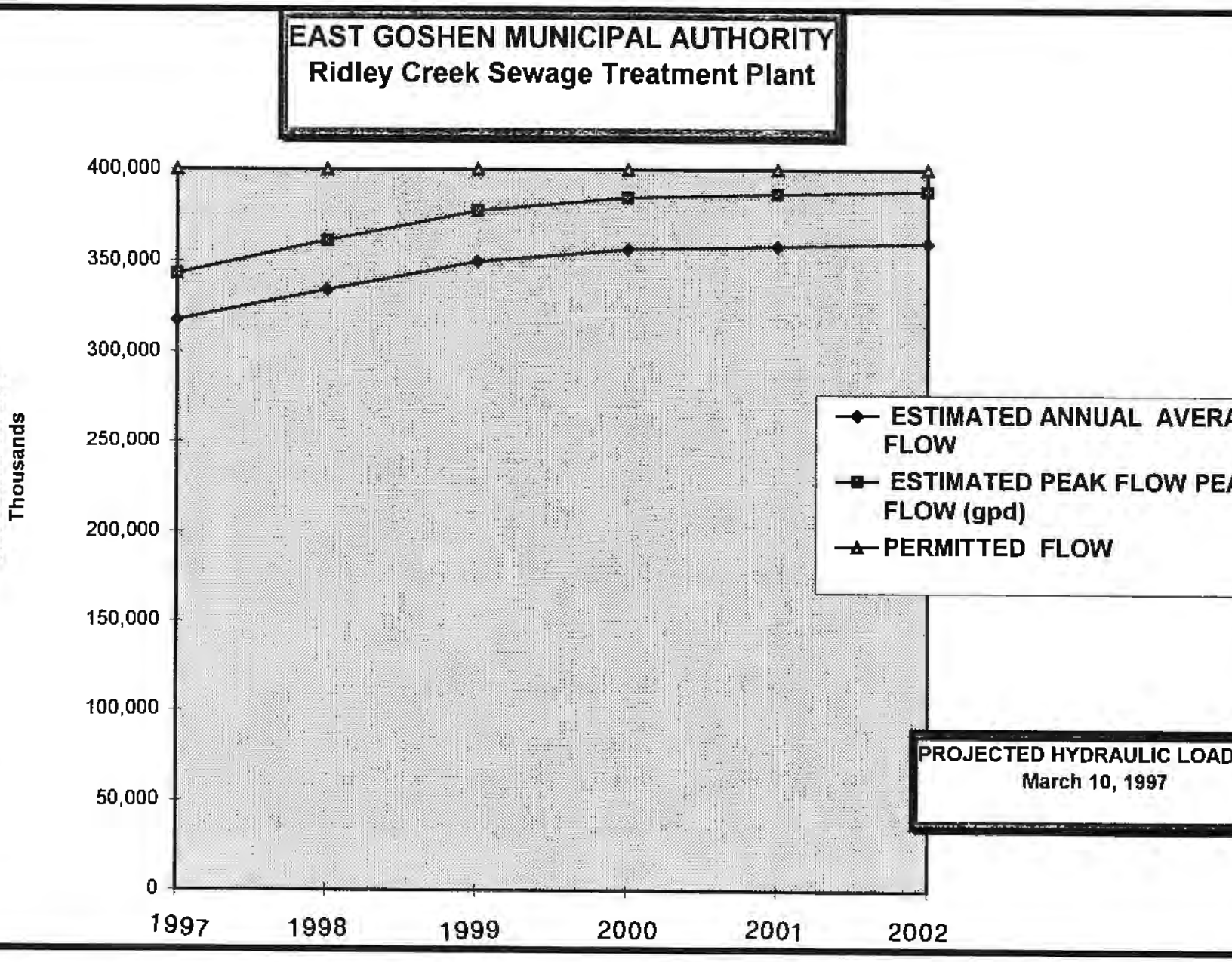
MONTHLY AVERAGE FLOWS
March 10, 1997

EAST GOSHEN MUNICIPAL AUTHORITY
Ridley Creek Sewage Treatment Plant



MONTHLY AVERAGE ORGANIC LOA
March 10, 1997


EAST GOSHEN MUNICIPAL AUTHORITY
Ridley Creek Sewage Treatment Plant
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50,000
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1998
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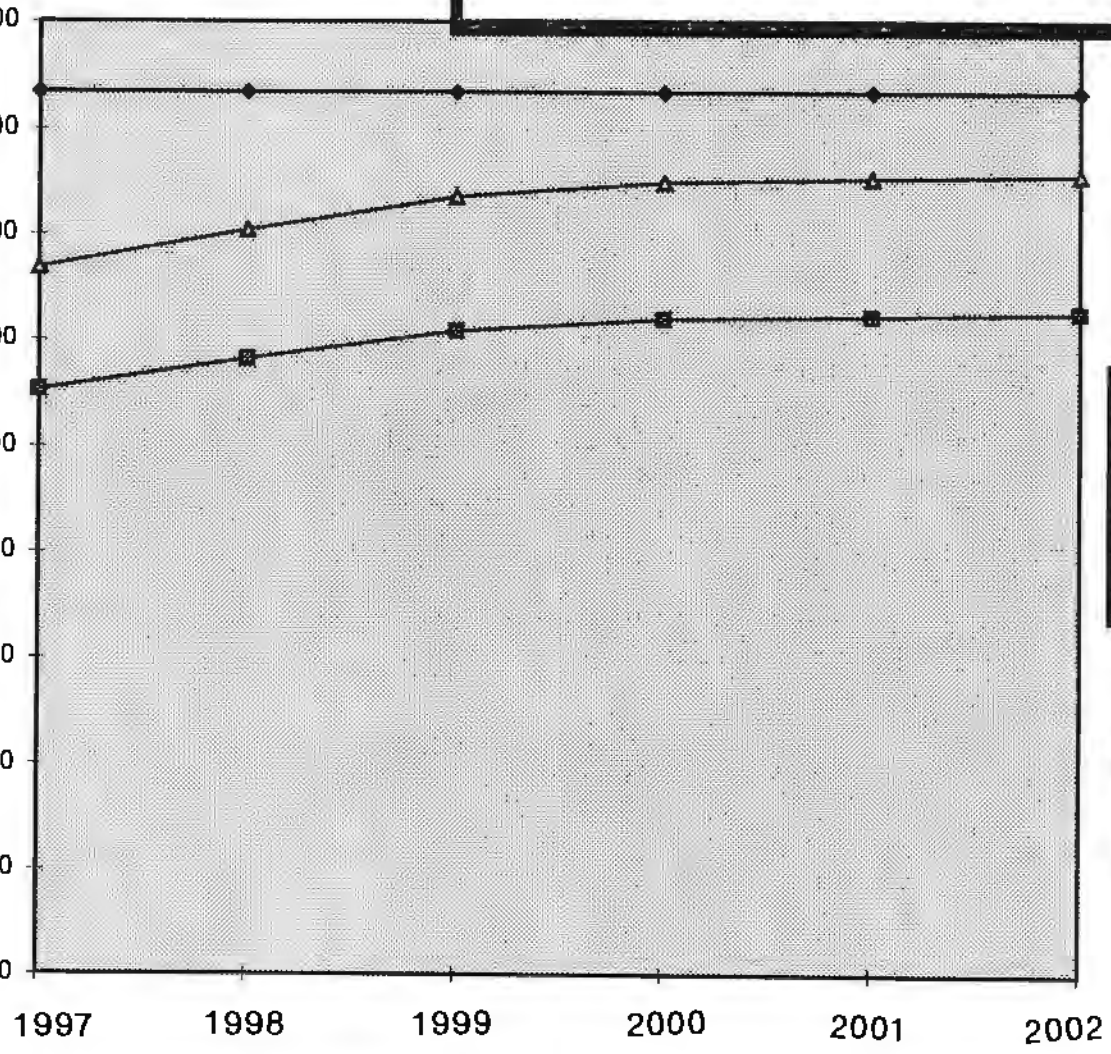
2000
2001
2002
ESTIMATED ANNUAL AVERA
FLOW
ESTIMATED PEAK FLOW PE
FLOW (gpd)
PERMITTED FLOW
PROJECTED HYDRAULIC LOAD
March 10, 1997

EAST GOSHEN MUNICIPAL AUTHORITY
Ridley Creek Sewage Treatment Plant

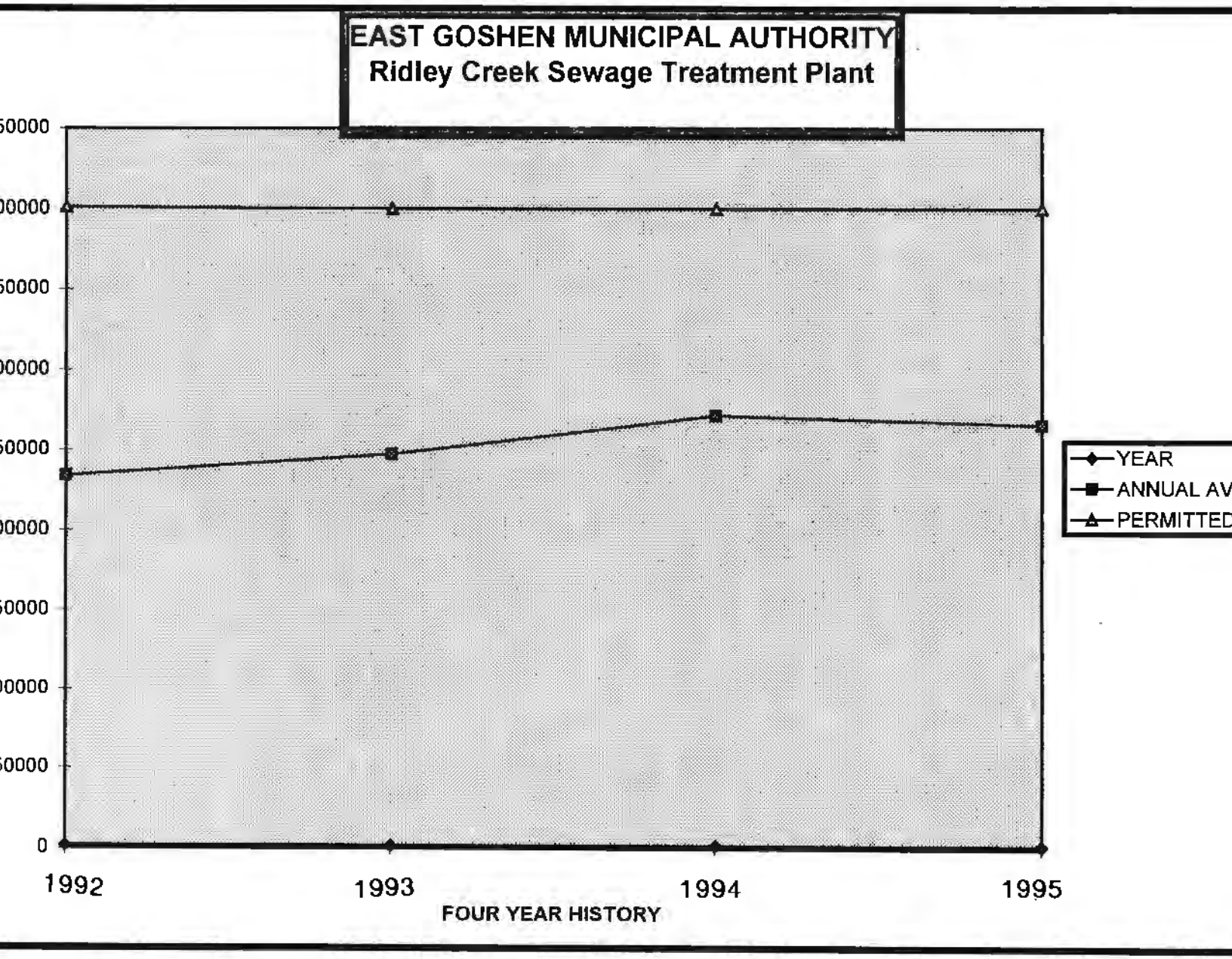


DESIGN ORGANIC LOAD

PROJECTED AVG ORGANIC LOAD

PROJECTED PEAK ORGANIC LOAD

PROJECTED ORGANIC LOADIN
MARCH 10, 1997


EAST GOSHEN MUNICIPAL AUTHORITY
Ridley Creek Sewage Treatment Plant
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FOUR YEAR HISTORY
YEAR
ANNUAL AV
PERMITTED

August, 1997

EAST GOSHEN TOWNSHIP
SUMMARY OF WATER USAGE

STREET	# SFD	AVG GPD
DICKENS DR	4	181
ALCOTT CIR	5	173
CLOCKTOWER DR	17	187
PEACH TREE DR	10	415
JAMESTOWN WAY	8	287
AVG GPD	44	249
returned wastewater (85%) =		211 gpd

Information obtained from Utility Municipal Services

EAST GOSHEN TOWNSHIP

VATER USAGE 1997

ion supplied by Utility & Municipal Services - billing service for
hia Suburban Water Co. (PSW CO)
s are single family of at least 3,000 SF in size & built within the past 5 years

ENS DR	GPD
1100	NEW
1101	204
1102	NEW
1103	181
1104	NEW
1105	134
1107	206
1109	NEW
1110	NEW
G GPD	181

ALCOTT CIR	GPD
1605	247
1606	100
1607	150
1608	216
1610	150
AVG GPD	173

JAMESTOWN WAY	GPD
703	349
705	196
706	303
707	216
708	521
709	129
711	115
713	468

AVG GPD	287

TOWER FARMS

TOWER DR	GPD
1702	178
1704	NEW
1705	NEW
1707	110
1708	228
1709	385
1710	190
1711	298
1712	492
1713	418
1714	388
TAL	2687

CLOCKTOWER DR	GPD
1715	280
1716	518
1717	218
1718	123
1719	243
1720	190
1724	
1726	
1727	141
1730	187
SUB TOTAL	1900
AVG GPD	270

PEACH TREE	GPD
713	598
717	
719	443
721	279
723	667
725	419
726	426
728	344
730	316
732	262
734	391
AVG GPD	415

DETAIL

STREET	HOUSE #	RDG #1	RDG #2	# OF DAYS	GPD
DICKENS DR	1101	519	160	254	141
	1105	168		125	134
	1107	479	120	180	199
ALCOTT CIRCLE	1605	406		155	262
	1606	899	475	145	292
	1607	720	535	123	150
	1608	224	8	67	322
	1610	569	384	123	150
CLOCKTOWER DR	1702	438		246	178
	1705	1175	1093	21	390
	1707	322	150	125	138
	1708	612	254	157	228
	1709	1065	461	157	385
	1710	203		107	190
	1711	889	421	157	298
	1714	1031	421	157	389
	1715	1423	1174	86	290
	1717	1258	1016	111	218
	1718	665	533	107	123
	1719	629	515	47	243
	1720	448	285	86	190
	1727	280		198	141
	1730	251	0	131	192
	721	380	140	87	276
	728	722	0	210	344
	730	489	217	86	316
	732	389	164	86	262
	734	383	0	98	391
JAMESTOWN WAY	703	767	334	125	346
	705	504	304	102	196
	706	784	687	32	303
	707	990	828	75	216
	709	578	467	86	129
	711	1086	1054	28	114
	713	554	277	86	322
	AVERAGE GPD				242
	WASTEWATER RETURN OF 85%				205

EXHIBIT P9

LETTER TO EAST WHITELAND TOWNSHIP
PLANNING COMMISSION

[redacted]

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Thomas F Rafferty

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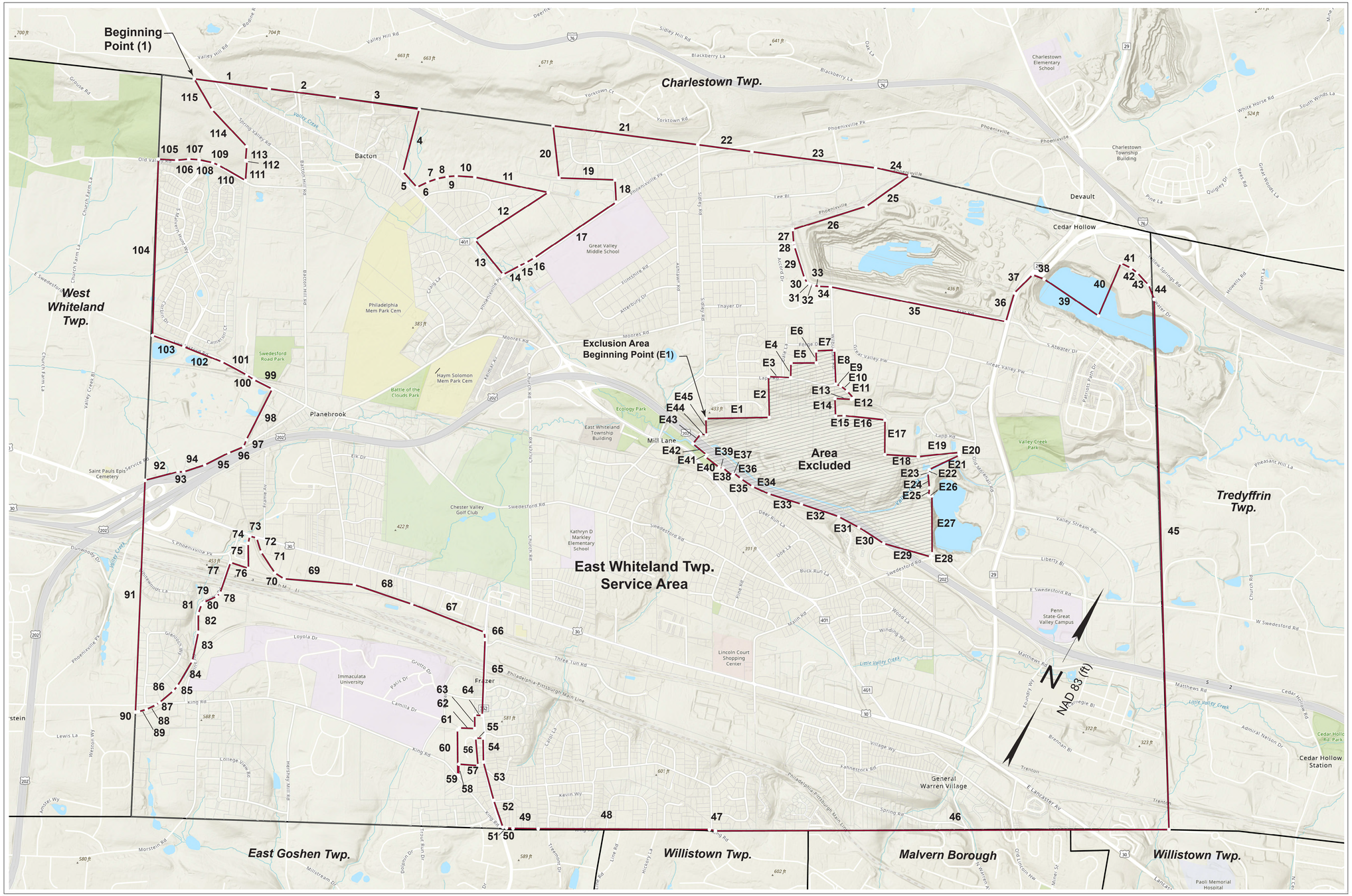


East Whiteland Twp. Service Area
Metes and Bounds

(segment #, bearing and distance in feet)

1	N 66°25'12" E	1590.12	59	N 70°17'40" W	27.41
2	N 66°24'58" E	1446.21	60	N 31°29'44" W	946.03
3	N 66°58'46" E	1735.75	61	N 17°01'20" E	54.91
4	S 16°22'05" E	1355.70	62	N 61°05'10" E	324.80
5	S 73°14'07" E	434.92	63	N 31°35'12" W	286.10
6	N 33°33'47" E	250.35	64	N 62°09'21" E	158.12
7	N 40°14'47" E	210.46	65	N 28°49'38" W	1589.22
8	N 47°36'19" E	214.72	66	N 36°18'19" W	149.99
9	N 54°21'26" E	190.18	67	S 80°06'17" W	1635.75
10	N 62°39'26" E	393.91	68	S 77°35'12" W	1273.08
11	N 70°46'29" E	1573.29	69	S 63°42'10" W	1484.20
12	S 26°04'16" W	1824.63	70	N 88°32'20" W	228.82
13	S 69°48'58" E	933.97	71	N 64°38'42" W	521.23
14	N 31°18'18" E	335.41	72	N 48°39'13" W	307.26
15	N 31°38'55" E	208.99	73	S 74°51'11" W	150.18
16	N 29°10'02" E	199.61	74	S 18°00'29" E	150.45
17	N 24°51'45" E	2078.82	75	S 31°34'41" E	522.89
18	N 33°55'04" W	466.91	76	S 76°51'01" W	394.69
19	S 60°54'10" W	1179.59	77	S 11°57'40" E	679.26
20	N 37°26'40" W	1101.90	78	S 15°02'30" W	95.88
21	N 66°23'58" E	3067.71	79	S 34°36'24" W	296.24
22	N 66°34'10" E	1147.52	80	S 12°16'43" W	72.03
23	N 66°18'47" E	2621.63	81	S 10°47'17" E	197.32
24	N 71°55'56" E	733.52	82	S 31°04'06" E	391.30
25	S 23°42'25" W	1115.16	83	S 19°08'36" E	610.90
26	S 41°34'01" W	1622.38	84	S 00°07'50" E	613.87
27	S 35°21'44" E	281.99	85	S 09°43'05" W	129.21
28	S 42°37'17" E	81.75	86	S 19°07'56" W	383.96
29	S 48°42'07" E	686.85	87	S 23°59'51" W	88.92
30	S 62°47'27" E	121.16	88	S 34°37'27" W	220.71
31	S 85°44'29" E	64.53	89	S 43°55'24" W	170.12
32	N 75°01'15" E	79.83	90	S 49°42'05" W	64.78
33	N 66°00'23" E	129.32	91	N 28°37'18" W	4849.46
34	N 61°14'45" E	224.69	92	N 44°23'03" E	715.79
35	N 70°13'03" E	3760.20	93	N 58°20'35" E	121.03
36	N 14°24'27" W	627.57	94	N 41°33'32" E	462.35
37	N 13°49'26" E	543.86	95	N 32°17'47" E	563.66
38	N 79°29'47" E	258.28	96	N 36°36'05" E	339.96
39	S 86°53'21" E	1379.88	97	N 08°52'21" W	154.27
40	N 07°53'44" W	1201.95	98	N 03°56'52" W	1193.06
41	N 85°07'50" E	232.90	99	S 85°33'10" W	432.47
42	S 85°08'31" E	163.32	100	N 86°28'44" W	179.45
43	S 73°58'05" E	350.51	101	S 86°29'12" W	586.17
44	S 52°22'48" E	325.92	102	S 80°37'38" W	864.30
45	S 32°36'21" E	11094.53	103	S 78°48'01" W	700.84
46	S 58°50'41" W	9534.12	104	N 29°03'51" W	3697.22
47	S 71°06'05" W	128.71	105	N 62°24'44" E	385.89
48	S 59°15'23" W	3600.15	106	N 53°29'32" E	253.87
49	S 59°45'45" W	529.68	107	N 62°41'08" E	217.51
50	S 62°28'30" W	137.03	108	N 70°51'42" E	294.49
51	S 68°41'59" W	75.52	109	N 82°25'09" E	137.06
52	N 49°54'13" W	593.50	110	N 88°39'27" E	646.88
53	N 46°08'30" W	829.23	111	N 26°42'07" W	410.33
54	N 31°55'45" W	501.92	112	S 77°55'59" W	30.28
55	S 60°05'32" W	156.70	113	N 26°42'09" W	296.67
56	S 35°51'20" E	580.53	114	N 74°27'56" W	1056.31
57	S 63°20'37" W	404.03	115	N 61°06'14" W	747.26
58	S 30°14'07" E	245.70			

East Whiteland Twp. Exclusion Area
Metes and Bounds

(segment #, bearing and distance in feet)

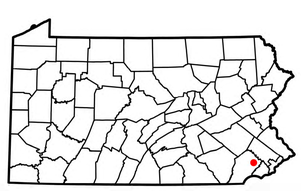
E1	N 58°00'42" E	1334.06	E24	S 36°40'52" E	318.98
E2	N 32°13'28" W	858.65	E25	S 26°15'35" E	165.06
E3	N 61°47'40" E	467.45	E26	N 60°28'24" E	66.00
E4	N 29°50'47" W	301.35	E27	S 31°13'00" E	1216.10
E5	N 58°41'04" E	535.53	E28	S 03°10'57" E	70.31
E6	N 33°02'07" W	254.97	E29	S 74°58'52" W	1025.08
E7	N 56°22'19" E	390.27	E30	N 88°23'08" W	619.92
E8	S 33°02'20" E	719.13	E31	S 86°52'31" W	477.09
E9	N 76°17'26" E	110.09	E32	S 77°35'53" W	827.92
E10	S 82°20'44" E	170.80	E33	S 76°33'20" W	715.21
E11	S 73°41'24" E	197.91	E34	S 83°06'21" W	377.27
E12	S 23°47'16" W	50.82	E35	N 87°18'27" W	290.48
E13	S 62°07'12" W	349.07	E36	N 82°10'30" W	194.28
E14	S 33°00'05" E	365.76	E37	S 02°48'36" E	59.96
E15	N 57°03'30" E	179.82	E38	N 82°21'35" W	254.92
E16	N 65°02'20" E	864.14	E39	S 67°05'59" W	86.07
E17	S 30°36'14" E	722.17	E40	N 83°27'21" W	361.28
E18	N 62°30'29" E	706.12	E41	N 00°10'00" W	50.51
E19	N 52°55'40" E	861.33	E42	N 82°26'17" W	366.90
E20	S 36°29'01" E	64.42	E43	N 07°33'43" E	255.15
E21	S 34°02'25" W	697.30	E44	N 65°52'23" E	123.14
E22	S 27°36'37" E	65.25	E45	N 32°43'51" W	340.00
E23	S 51°18'21" W	24.75			

Note

Bearings, distances, area obtained from Pennsylvania County and Municipal boundaries and parcel shapefiles, obtained from http://www.pasda.psu.edu/ and Chester County. The ~~subject service area bearing~~s, distances and area do not result from a physical survey on the ground and are approximate and not intended to represent a legal description of property.

AQUA

STATE INDEX PLAN



COUNTY INDEX PLAN



SERVICE AREA TERRITORY

East Whiteland Twp. Service Area
233,396,497 square ft.; 5,358.1 Acres; 8.372 square miles

(1) Beginning Point: PASPC Coordinates: North: 270,318.42', East: 2,~~570,746.53'; said~~ point being approximately 394 ft. southwest of the intersection of Conestoga Rd. and Spring Valley Rd., said point also being approximately 685.64 ft. northeast of the intersection of the northeast corner of West Whiteland Twp. and the northwest corner of East Whiteland Twp., and proceeding according to the listed bearings and distances noted in the metes & bounds table insert.

(E1) Exclusion Area Beginning Point: PASPC Coordinates: North: 269,756.82', East: ~~2,583,631.16'; said point being~~ approximately 765 ft. southwest of the intersection of Oak Glen Dr. and Oak Glen Dr. (T-intersection), said point also being approximately 344 ft. north/northwest of the northern right of way (R.O.W.) of Route 202 and proceeding according to the listed bearings and distances noted in the exclusion metes & bounds table insert.

Legend

Requested Territory

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.		

SCALE IN FEET
0 500 1,000 2,000

Proposed Service Territory
East Whiteland Twp., Chester County, Pennsylvania

DATE: 7/20/21 | SCALE: 1" = 1,000 feet | EXHIBIT: **A**

EXHIBIT P10

LETTER TO CHESTER COUNTY
PLANNING COMMISSION

LAMB | McERLANE PC

ATTORNEYS AT LAW

Vincent T. Donohue
vdonohue@lambmcerlane.com
Direct: 610.701.4429
Mobile: 610.416.8841

July 23, 2021

Via hand delivery

Chester County Planning Commission
Government Services Center, Suite 270
601 Westtown Road
West Chester, PA 19382

Re: Acquisition of East Whiteland Township's Sanitary Sewer System by Aqua Pennsylvania Wastewater, Inc.

Dear Sir or Madam:

Aqua Pennsylvania Wastewater, Inc. (Aqua) is submitting an application with the Pennsylvania Public Utility Commission (PUC) to approve the right to offer, render, furnish, or provide sanitary service to the public in areas which are now served by East Whiteland Township.

As part of the application process, the PUC requested that Aqua seek the Chester County Planning Commission's input for the purpose of determining if Aqua's application complies with the County's Comprehensive Plan known as "Landscapes3."

Specifically, the PUC requires that we provide in our application, "evidence the filing is consistent with the affected municipality and county comprehensive plans if the filing proposes to expand service beyond the existing plant footprint."

The existing service area for East Whiteland Township's sanitary sewer system is shown on **Exhibit A** to this letter. The areas shaded in yellow on the map attached as **Exhibit B** to this letter identifies areas within the Township where new sewer service is in the design or construction phase.

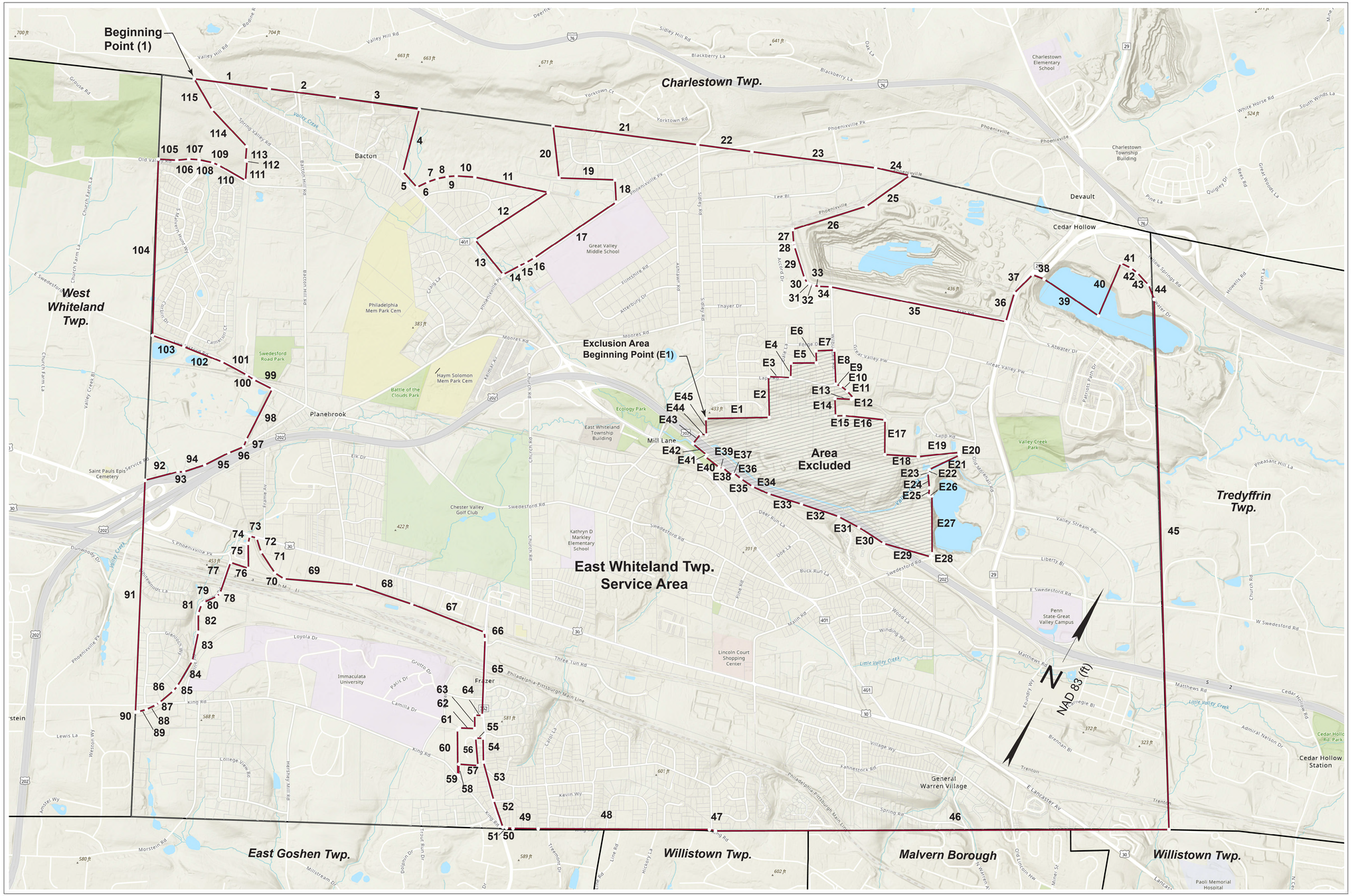
Accordingly, Aqua is requesting a letter from the Planning Commission confirming that the expansion of sanitary sewer service into the areas shaded in yellow on Exhibit B is consistent with Landscapes3. Please do not hesitate to contact me with any questions. Thank you.

Very truly yours,

/s/

Vincent T. Donohue, Esq.
Counsel to Aqua Pennsylvania Wastewater, Inc.

EXHIBIT A



East Whiteland Twp. Service Area
Metes and Bounds

(segment #, bearing and distance in feet)

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3	N 66°58'46" E	1735.75	61	N 17°01'20" E	54.91
4	S 16°22'05" E	1355.70	62	N 61°05'10" E	324.80
5	S 73°14'07" E	434.92	63	N 31°35'12" W	286.10
6	N 33°33'47" E	250.35	64	N 62°09'21" E	158.12
7	N 40°14'47" E	210.46	65	N 28°49'38" W	1589.22
8	N 47°36'19" E	214.72	66	N 36°18'19" W	149.99
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11	N 70°46'29" E	1573.29	69	S 63°42'10" W	1484.20
12	S 26°04'16" W	1824.63	70	N 88°32'20" W	228.82
13	S 69°48'58" E	933.97	71	N 64°38'42" W	521.23
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15	N 31°38'55" E	208.99	73	S 74°51'11" W	150.18
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19	S 60°54'10" W	1179.59	77	S 11°57'40" E	679.26
20	N 37°26'40" W	1101.90	78	S 15°02'30" W	95.88
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51	S 68°41'59" W	75.52	109	N 82°25'09" E	137.06
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E5	N 58°41'04" E	535.53	E28	S 03°10'57" E	70.31
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E14	S 33°00'05" E	365.76	E37	S 02°48'36" E	59.96
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E18	N 62°30'29" E	706.12	E41	N 00°10'00" W	50.51
E19	N 52°55'40" E	861.33	E42	N 82°26'17" W	366.90
E20	S 36°29'01" E	64.42	E43	N 07°33'43" E	255.15
E21	S 34°02'25" W	697.30	E44	N 65°52'23" E	123.14
E22	S 27°36'37" E	65.25	E45	N 32°43'51" W	340.00
E23	S 51°18'21" W	24.75			

Note

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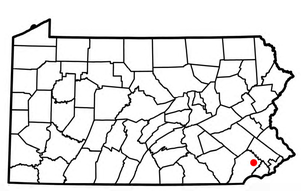
AQUA

STATE INDEX PLAN



COUNTY INDEX PLAN



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Legend

Requested Territory

REV.	DATE	DESCRIPTION
6.		
5.		
4.		
3.		
2.		
1.		

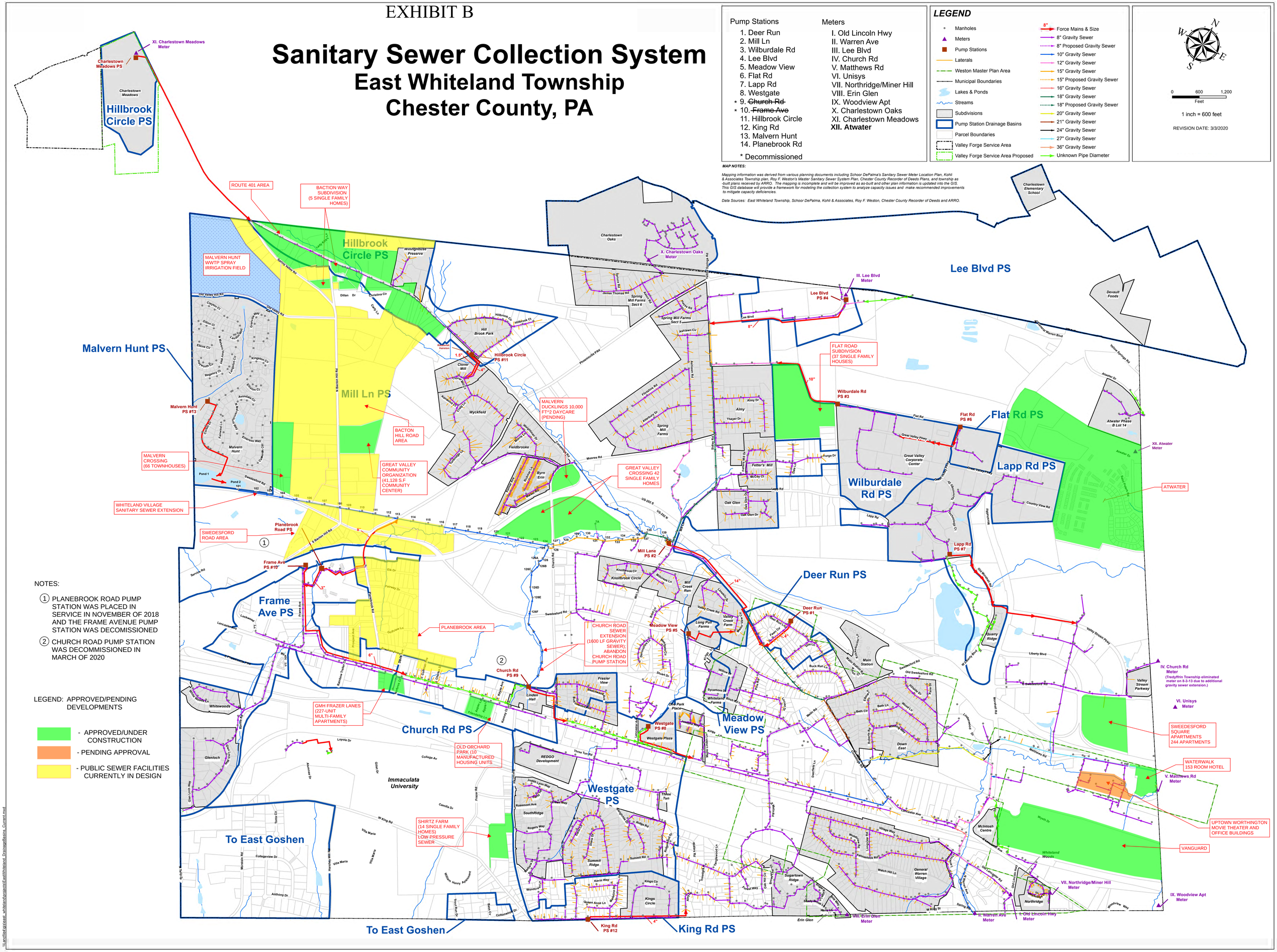
SCALE IN FEET
0 500 1,000 2,000

Proposed Service Territory
East Whiteland Twp., Chester County, Pennsylvania

DATE: 7/20/21 | SCALE: 1" = 1,000 feet | EXHIBIT: **A**

EXHIBIT B

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA



NOTES:

1. PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2. CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020

LEGEND: APPROVED/PENDING DEVELOPMENTS

- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN

EXHIBIT Q

FAIR MARKET VALUE APPRAISAL
GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

EAST WHITELAND TOWNSHIP
WASTEWATER SYSTEM ASSETS

FAIR MARKET VALUE APPRAISAL

AT

MAY 20, 2021

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC



Valley Forge, Pennsylvania

Gannett Fleming

Excellence Delivered ***As Promised***

June 25, 2021

VIA EMAIL

Mr. William C. Packer
Vice President Controller
Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Ave
Bryn Mawr, PA 19010

Re: Fair Market Value Appraisal

Dear Mr. Packer:

In accordance with your request, we have prepared a fair market value appraisal of East Whiteland Township's wastewater system assets ("Wastewater System") as of May 20, 2021.

Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

Based on our analysis, as described in the attached appraisal report, the estimate of the fair market value of the Wastewater System as of May 20, 2021 is $55,668,000 (rounded).

Our appraisal was developed consistent with the Uniform Standards of Professional Appraisal Practices. Our fair market value appraisal of the Wastewater System was based on the Cost, Market, and Income Approaches to valuation. We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The attached narrative appraisal presents our findings and conclusions regarding the fair market value of the Wastewater System's assets of May 20, 2021. The report describes the valuation methodologies employed and the Exhibits that present the valuation results.

The results of the analyses and calculations completed for each applicable approach are detailed throughout the report and the Exhibits and are summarized as follows:

Valuation Approach	Indicated Value
Cost Approach	$59,118,924
Income Approach	61,147,544
Market Approach	46,741,589

We thank Aqua for this opportunity to provide valuation services in connection with the fair market value appraisal of the Wastewater System's assets.

Respectfully Submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

HAROLD WALKER, III
Manager, Financial Studies

HW:amp

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INTRODUCTION

Introduction and Summary. The following narrative report presents our findings and conclusions regarding the fair market value of the wastewater system assets of the East Whiteland Township as of May 20, 2021. The report describes the valuation methodologies employed and the Exhibits that present the valuation results. Based upon the analyses, we believe the fair market value of the East Whiteland Township's wastewater system assets is $55.7 million. This conclusion is based upon the values suggested by the Cost, Income, and Market approaches. During our analysis we found indications of value that ranged from $46.7 million to $61.1 million. However, most of the appropriate indicated values approximated $55.7 million.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by Aqua Pennsylvania Wastewater, Inc. ("Aqua") to estimate the fair market value of East Whiteland Township's wastewater system assets ("Wastewater System") as of May 20, 2021.

Standard and Premise of Value. The fair market value appraisal of the Wastewater System complies with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."[1]

1 The International Glossary of Business Valuation Standards

As stated, the standard of value for this engagement is fair market value. The premise of value is the going concern. The going concern premise of business value assumes that the business will continue running normally using all its assets to produce income and will continue operating beyond the valuation date.

We valued the Wastewater System's assets as a group under the premise that the assets collectively comprise an ongoing operating business enterprise. Additionally, in accordance with 66 Pa. C.S. Section 1329, the original source of funding for any part of the Wastewater System's assets was not relevant to the determination of the value of said assets.

Intended Use of the Valuation. The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches.

Client and Users. The client is Aqua Pennsylvania Wastewater, Inc. The intended users of the valuation are Aqua Pennsylvania Wastewater, Inc., and the Pennsylvania Public Utility Commission ("PUC").

Extraordinary Assumptions. There were no extraordinary assumptions required for this appraisal.

Hypothetical Conditions. There were no hypothetical conditions assumed for this appraisal.

Limiting Conditions. We accepted all information and data provided by the East Whiteland Township and/or Aqua as it pertains to this assignment "as is" after a limited review. That is, we neither audited nor verified any data, engineering assessment, financial record or operating data provided for this assignment. We assumed all title to all assets included in the

appraisal is good and marketable, no hidden defects in the property or soil and no hazardous conditions or materials exist which could affect the assets.

Site Inspection. We viewed or observed the Wastewater System's facilities on June 15, 2021. We also relied on engineering assessment of the Wastewater System's facilities report, "East Whiteland Township Sewerage Facilities Engineering Assessment and Original Cost" and related files prepared by Pennoni Associates Inc., to confirm the condition of the Wastewater System's property and equipment.

Sources of Information. The following sources of information were reviewed during the assignment:

"East Whiteland Township Sewerage Facilities Engineering Assessment and Original Cost" and related files prepared by Pennoni Associates Inc.;

Township/Aqua provided electronic files (e.g., PDF and Excel);

Wastewater System's Customer data;

Wastewater System's Fee Schedule;

Wastewater System's 537 Plan;

Wastewater System's Chapter 94 Reports;

Wastewater System's Sewage Service and Treatment Agreements;

Wastewater System's Municipal Wasteload Management Program Reduction Plan;

Asset Purchase Agreement;

East Whiteland Township's Audited Financials (2016 - 2019);

East Whiteland Township's Budgets for Wastewater System (2020 - 2021);

Blue Chip Financial Forecasts;

US Census Bureau, various data files;

Value Line Investment Survey; and

S&P Capital IQ.

Description of the East Whiteland Township. East Whiteland Township is located in east-central Chester County, in southeastern Pennsylvania. East Whiteland Township borders Malvern Borough and the Townships of Tredyffrin, Willistown, East Goshen, West Whiteland, and Charlestown, all located in Chester County. East Whiteland Township is the 35th largest land mass of Chester County's 73 municipalities and was the 20th most populous with 10,702 people (2015) and 3,551 housing units (2015). East Whiteland Township consists of 10.9 square miles and lies approximately 29 miles northwest of Philadelphia, Pennsylvania. According to U.S. Census figures, East Whiteland Township's population grew 14.1% from 2000 to 2010, while population in Pennsylvania grew 3.4% and 15.1% in Chester County.

East Whiteland Township has a diverse and dynamic economy, boasting over 900 payroll establishments. "With more than 20,000 persons employed in the municipality, the number of people who work in the Township is much greater than the resident population. The present ratio of employed persons to residents, more than two to one, is likely to continue, with several large office complexes slated for construction during the coming years."[2]

Description of the Wastewater System. East Whiteland Township owns and operates the Wastewater System which consists of 12 pump stations, about 329,072 linear feet of mains, approximately 1,506 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System accepts flows and collects sewer rental fees from the adjoining municipalities of East Goshen Township, Charlestown Township and Malvern Borough.

2 https://www.eastwhiteland.org/244/Demographics , 6/14/21

The Wastewater System, in turn, pays sewer rental fees to neighboring Tredyffrin Township and East Goshen Township, and a public utility company for conveyance and to the Valley Forge Sewer Authority Wastewater Treatment Plant for which the Township has purchased capacity.

The Wastewater System's 12 pump stations are: Deer Run; Flat Road; Hillbrook Circle; King Road; Lapp Road; Lee Boulevard; Malvern Hunt; Meadowview; Mill Lane; Planebrook Road; Westgate; and Wilburdale. The Wastewater System has approximately 26,300 linear feet of force mains ranging in size from 4 to 14 inches diameter and were installed between 1976 to 2017. The force mains consist of asbestos-cement ("ACP"), ductile iron ("DIP") and polyvinyl chloride ("PVC") pipe.

The Wastewater System's 302,772 linear feet of gravity sewer collection mains consist of 8-inch, 10-inch, 12-inch, 15-inch, 16-inch, 18-inch, 20-inch, 24-inch, 27-inch and 36-inch diameter pipe which was installed between 1951 to 2020. About 41% of the gravity mains were installed in the 1970s, 27% between 1980 and 1999, and 21% after 1999. The mains consist of ACP, cast iron ("CIP"), corrugated steel ("CSP"), DIP and PVC pipe. There are 1,506 manholes and 3,895 service laterals in the system.

East Whiteland Township utilizes one enterprise fund to account for the Wastewater System's operations. East Whiteland Township's audited financial statements reflect the use of the full accrual accounting, which measures revenues when earned and expenses when a liability is incurred, regardless of the timing of related cash flows. For the year ended December 31, 2019, (shown on Exhibit 1) the Wastewater System had reported revenues of $4.444 million and expenses of $3.848 million. At the same point in time, the Wastewater System was capitalized with $26.447 million of fund equity and East Whiteland Township's long-term debt attributable

to the Wastewater System was $16.065 million. At the same point in time, the Wastewater System had total assets of $45.379 million, including $34.143 net utility plant.

The Wastewater System is exempt from PUC regulation as a municipal utility. The Wastewater System's rate requirements are established by the needed funds to run the system. Most municipalities, including Wastewater System, use a Government Accounting Standards Board ("GASB") process of accounting or the PA Department of Community and Economic Development ("DCED") versus Financial Accounting Standards Board ("FASB") method of accounting used by investor-owned utilities ("IOU"). Municipalities are not typically concerned with the return on and the return of their investments of their utility systems since they deem they are providing a public service to their taxpayers. Municipalities typically expense (i.e., maintenance expense) renewals replacement, and customer collection services capital expenditures and they do not typically fully account for the replacement of all capital assets which are all typically capitalized (i.e., construction of capital asset, construction expenditure, etc.) and "booked" at original cost by IOUs. For these reasons, we do not believe Wastewater System's financial statements should be fully relied upon without recognizing their limitations.

As shown on Exhibit 2, the Wastewater System provides service to 3,895 customers within a population of 14,720 people and services approximately 7,908 Equivalent Dwelling Units ("EDU"). EDUs are estimated to increase by 2,443 EDUs through 2025.

Demographics and Growth for the Wastewater System. As shown on Exhibit 3, Table 3.1, according to U.S. Census figures, the U.S. population grew 9.7% from 2000 to 2010, and the population in Pennsylvania grew 3.4%. During this same period, Chester County's population grew 15.1% and East Whiteland Township's population grew 14.1% (Exhibit 3, Table 3.2). East

Whiteland Township's population growth was ranked 323 of the 2,572 municipalities in Pennsylvania.

The Census Bureau and planning agencies provide population projections for future time periods. Population projections are a primary indicator of expected future growth, and they help determine predictable demand for utility services, housing, roads, business services and facilities. The Delaware Valley Regional Planning Commission ("DVRPC") publishes population projections and employment projections for East Whiteland Township and the nine Delaware Valley counties ("Nine DVRPC Counties"). The DVRPC counties include Bucks County, Chester County, Delaware County, Montgomery County and Philadelphia County, in Pennsylvania, and Burlington County, Camden County, Gloucester County, and Mercer County, in New Jersey.

As shown on Page 2 of Exhibit 3, Table 3.3, East Whiteland Township's population growth is projected to be about 507% the growth rate projected for the Nine DVRPC Counties during each five-year period from 2015 through 2045. East Whiteland Township's project population growth places them in the upper 81 percent or 81st percentile of the 369 municipalities analyzed by DVRPC. Page 3 of Exhibit 3, Table 3.4 shows East Whiteland Township's employment growth is projected to be about 262% the growth rate projected growth rate projected for the Nine DVRPC Counties during each five-year period from 2015 through 2045.

Currently, there are approximately 14,720 people (Exhibit 2) in the Wastewater System's service area. There are 5,085 housing units in the Wastewater System's service area, and the ratio of people to households is 2.89 persons per household. The Wastewater System's service area density is 3.8 people per customer based on an estimated population of 14,720 and 3,895 customers. The Wastewater System's service area density is higher than the 3.6 per customer

density of water and wastewater systems (see Table 2 in this report) indicating lower market penetration.

HISTORY AND NATURE OF THE BUSINESS

Economic Outlook. The valuation date (May 20, 2021) is the specific date at which the value of the Wastewater System is based. Generally, only the circumstances existing at the valuation date and events occurring up to the valuation date are considered. Events which could affect the value may occur after the valuation date.

An outbreak of a new strain of coronavirus was first reported in Wuhan, China in late 2019 and quickly spread around the world. A coronavirus is a kind of common virus that causes an infection in sinuses, or upper throat. The World Health Organization ("WHO") declared the spread of the infection a pandemic. The WHO named the virus SARS-CoV-2, and the disease COVID-19.

We do not believe the appraised value of the long-lived Wastewater System assets is materially impacted by the COVID-19 or its related relatively short-term events. The Wastewater System's customer base is not heavily dependent on customers from sectors of the economy providing tourism and travel, employment services, mining/oil and gas (energy), and leisure and hospitality which have been most impacted by COVID-19's related short-term events. Therefore, even on a short-term basis, the Wastewater System's revenues and cash flows should not be materially impacted on a relative basis.

Nevertheless, we have included subsequent information in Appendix B (Known Impact of COVID-19) regarding COVID-19's known impact for informational purposes only and does not affect the determination of value as of the specified valuation date of May 20, 2021.

In the valuation of any company, the general economic outlook as of the valuation date is important since it influences how investors perceive alternative investment opportunities at that point in time. As part of our analysis, we considered the forecasts for the U.S. economy that prevailed as of May 20, 2021. We focused on the forecasts and economic commentary presented in Blue Chip Financial Forecasts in the May 1, 2021 edition. Some of these economic forecasts are presented in Table 1.

Economic Indicators

	Latest Qtr	Consensus Forecasts	
	1Q 2021	2Q 2021	3Q 2021
Key Assumptions			
Real GDP	6.4	9.0	7.1
GDP Price Index	4.1	2.4	2.2
Consumer Price Index	3.7	2.8	2.4
Interest Rates			
3-mo. Treasury Bills	0.05	0.0	0.1
10 Year Notes	1.32	1.7	1.8
30 Year Notes	2.07	2.4	2.5
Aaa Corporate Bond Yield	2.88	3.0	3.2
Baa Corporate Bond Yield	3.35	3.9	4.0
State & Local Bonds	2.68	2.7	2.8
Home Mortgage Rate	2.88	3.2	3.3

Table 1

Industry Review. A review of the industry in which the company operates is important in determining value. The trends and stability of the specific economic environment affecting operations need to be reviewed to gain further insight regarding the prospects and risks associated with the industry and each company.

The wastewater utility industry has a Standard Industrial Classification ("SIC") code of 4952 (Sewerage Systems), has sewer utilities, and includes establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided. There are currently 2,104 U.S. Businesses with a SIC code of 4952.

The wastewater utility industry is a fragmented industry, although not as fragmented as the water supply industry. According to the U.S. Environmental Protection Agency's ("EPA") most recent survey of publicly owned wastewater treatment facilities in 2012, there are approximately 15,000 such facilities in the nation, serving approximately 76% of the U.S. population. Eighty percent of domestic wastewater systems are government owned rather than IOUs. Currently, there are no wastewater utility companies that have actively traded stock.

A comparative industry to the wastewater utility industry is the water supply industry. A comparative industry to the wastewater utility industry is the water supply industry. The water utility industry has a Standard Industrial Classification ("SIC") code of 4941 (Water Supply), has water utilities, and includes establishments primarily engaged in distributing water for sale for residential, commercial, and industrial uses. Government controlled establishments such as municipal service districts and public utilities dominate the industry. Private companies or IOUs are active in the construction and improvement of water supply facilities and infrastructure. There are currently 11,283 U.S. Businesses with a SIC code of 4941.

The water supply industry is the most fragmented of the major utility industries with more than 53,000 community water systems in the U.S. (82% of which serve less than 3,300 customers). The nation's water systems range in size from large municipally owned systems, such as the New York City water system that serves approximately 9 million people, to small systems, where a few

customers share a common well.

An estimated 14% of all water suppliers are managed or owned by IOUs. IOUs consist of companies with common stock that is either actively traded or inactively traded, as well as companies that are closely held, or not publicly traded. Currently (May 20, 2021), there are only about nine investor-owned water utility companies with publicly traded stock in the U.S.

The water utility industry and wastewater utility industry's increased compliance with state and federal water purity levels and large infrastructure replacements are driving consolidation of the wastewater utility and water utility industries. Because many wastewater utility and water utility operations do not have the means to finance the significant capital expenditures needed to comply with these requirements, many have been selling their operations to larger, financially stronger operations.

The larger IOUs have been following an aggressive acquisition program to expand their operations by acquiring smaller wastewater and water systems. Generally, they enter a new market by acquiring one or several wastewater or water utilities. After their initial entry into a new market, the larger investor-owned water utility companies continually seek to expand their market share and services through the acquisition of wastewater and water utility businesses and operations that can be integrated with their existing operations. Such acquisitions may allow a company to expand market share and increase asset utilization by eliminating duplicate management, administrative, and operational functions.

Acquisitions of small, independent utilities can often add earning assets without necessarily incurring the costs associated with the Safe Drinking Water Act ("SDWA") if such acquisitions are contiguous to the potential purchaser.

In summary, the result of increased capital spending, to meet the SDWA requirements[3] and to replace the aging infrastructure of many systems, has moved the wastewater and water industries toward consolidation. Moreover, Federal and State regulations and controls concerning water quality are still in the process of being developed and it is not possible to predict the scope or the enforceability of regulations or standards which may be established in the future, or the cost and effect of existing and potential regulations and legislation upon the sewer and water systems. However, as a small to medium sized wastewater system, the Wastewater System faces the cost of compliance with significantly limited financial resources when compared to larger IOU water utilities.

QUANTITATIVE AND QUALITATIVE ANALYSIS

Comparison Review. The comparison review considers the financial and operating statistics for the Wastewater System, and a group of companies ("Comparable Group") that operate in the same basic or similar industry as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are like the Wastewater System. We list the Comparable Group chosen for study in Table 2.

The companies in the Comparable Group were selected based upon: (1) the availability of financial information; (2) inclusion in the S&P Capital IQ database; (3) a May 20, 2021 market

3 The SDWA, or Safe Drinking Water Act, is the principal federal law in the United States intended to ensure safe drinking water for the public. Pursuant to the act, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. The CWA, or Clean Water Act, is the primary federal law in the United States governing water pollution. The CWA's objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than $200.0 million; (4) a May 20, 2021 total enterprise value (the sum of market value, preferred stock and total debt) greater than $450.0 million; (5) were not the subject of a known acquisition at May 20, 2021; (6) with a Standard Industrial Classification (SIC) of 4941 (i.e., Water Supply Facilities and Infrastructure) and (7) with a North American Industry Classification System (NAICS) of 221310 (i.e., Water Supply and Irrigation Systems). The eight companies ("Comparable Group") that met the criteria for selection are listed in Table 2.

Acquisition Date Size Statistics

	Revenues (Mill. $)	Customers	Population	Customer Density
East Whiteland Township Wastewater System Assets	$4.328	3,895	14,720	3.8
Comparable Group				
American States Water Co	$473.869	286,341	1,000,000	3.5
American Water Works Co Inc	3,610.000	3,496,000	15,000,000	4.3
Artesian Resources -CL A	83.595	95,640	300,000	3.1
California Water Service Gp	714.557	543,000	2,000,000	3.7
Essential Utilities, Inc.	889.692	1,798,803	5,000,000	2.8
Middlesex Water Co	134.598	122,200	500,000	4.1
SJW Corp	420.482	389,293	1,614,866	4.1
York Water Co	51.578	72,681	202,000	2.8
Median	$447.176	337,817	1,307,433	3.6

Table 2

We believe that similar economic, industry and business risks have affected the Comparable Group as those faced by the Wastewater System. However, consideration must be

given to the fact that no two companies are exactly alike. Table 2 presents comparative statistics regarding total revenues, customers, population of the area served, and customer density (population ÷ customers). On average, the Comparable Group are larger than the Wastewater System. The relative size difference between the group and the Wastewater System suggests that the risk of the Wastewater System is greater than the Comparable Group. We will discuss the difference in risk resulting from size later in this report.

Financial Review. We conducted a financial review that considered the financial and operating statistics for the Wastewater System and the Comparable Group for the three-year period, 2017 to 2019. It is our opinion that the economic, industry and business risks affecting the Comparable Group selected are similar to those faced by the Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike.

The determination of reasonable water rates and sewer rates for the Comparable Group is subject to rate regulation. For the Comparable Group, rate regulation serves as a substitute for competition in the marketplace since utility companies are precluded from exercising complete control over the price to be charged their customers. Under rate regulation, a cost of service formula is used to set the price for service charged to customers. The cost of service formula equates revenues to the sum of annual operating expenses, taxes other than income, depreciation expense, income taxes, and the product of the rate base times a fair rate of return.

It is the responsibility of the utility seeking changes in rates to present sufficient evidence to their regulators in support of their request. Historically, the Wastewater System's rates have not considered a fair rate of return nor taxes. That is, the Wastewater System's rates would have been higher and their financial results would have been healthier if they included a provision for a fair rate of return and taxes. Additionally, after comparing the Wastewater System's historical

financial performance to budgeted numbers we believe the Wastewater System's historical financial performance (pre-transfers) may not include all expenses. Therefore, the results of the Wastewater System's historical financial performance shown on Exhibits 4 and 6 should be viewed with this knowledge.

Financial Benchmark Analysis. To gain insight into the risk differences between the Wastewater System and the Comparable Group, we reviewed financial ratios and coverages. Unfortunately, there is no single measure that best indicates investment risk from an investor's perspective. However, from a creditor's viewpoint, the best measure of investment risk is debt rating. The debt rating process generally provides a good measure of investment risk for common stockholders because the factors considered in the debt rating process are usually relevant factors that a common stock investor would consider in assessing the risk of an investment.

The types of financial benchmarks applied by credit rating agencies such as Standard and Poor's ("S&P") for rating IOU public utility debt are broader than the traditional measure of financial risk, leverage. Besides reviewing the amounts of leverage employed (i.e., percentage of debt used in the capital structure), S&P also focuses on earnings protection and cash flow adequacy. During the period 2017-2019, the Wastewater System's financial benchmark ratios show (Exhibit 4) higher investment risk than the Comparable Group based on coverage and cash flow.

Risk Analysis. From an operations standpoint, the Wastewater System and the Comparable Group are indistinguishable. Both are required to meet SDWA and CWA requirements and are also required to provide safe and reliable services to their customers.

A basic premise of finance is the tradeoff between risk and return. That is, the higher the perceived risk, the higher the required return. Conversely, the lower the perceived risk, the lower the required return.

As mentioned previously, size is a determinant of risk. Based on size, the Wastewater System's risk is higher than the Comparable Group given Wastewater System's relatively small size. Table 2 details the size difference between the Wastewater System and the Comparable Group. As shown on Table 2, the Wastewater System is many times smaller than the Comparable Group.

Size is a determinant of risk because the loss of a large customer impacts a small company much more than a large company because a large customer of a small company usually accounts for a larger percentage of the small company's sales. Further, a larger company has much more diversification in customer mix, economic conditions, source of supplies, weather, demographic, and financing than the Wastewater System. Because the larger Comparable Group has a more diverse geographic operation than the Wastewater System, it enables them to sustain earnings fluctuations caused by adverse weather conditions in one portion of its service territory. Further, the larger Comparable Group has a more diverse customer base and is less susceptible to local downturns associated with regional economic conditions than the Wastewater System.

Exhibit 5, Table 5.1, provides an illustration which shows company size has been inversely related to returns and the volatility of their common stock. Specifically, Ibbotson Associates sorted 3,113 publicly traded common stocks based on size of market value (market price multiples by the number of shares) and placed them into four different portfolios (quartiles). The common stock quartile return and the resultant size premium, column B, increased at an increasing rate as you move from a larger stock quartile to a smaller stock quartile. Similarly, the total risk, or

standard deviation of annual returns (a measure of risk), also increased with decreasing company size (column C).

The Comparable Group's market value on May 20, 2021 ranged from $381 million to $28,022 million as shown on Table 5.2 of Exhibit 5. Based on their market value, the Comparable Group's median market quartile was 3. Wastewater System's market value would place them in quartile 4 based upon Wastewater System's financial statements and since the largest company in quartile 4 on Table 5.1 had a market value of $728 million.

The change in risk adjusted common stock return rate between quartile 3 and quartile 4 (column J) is 97 basis points. The results of the illustration shown on Exhibit 5 suggests the Wastewater System's common equity cost rate could be about 97 basis points higher than the Comparable Group. The history of common stock returns indicates small company stocks are riskier than large company stocks because as one moves from the larger to smaller quartiles, the standard deviation (a measure of risk) of returns increases. Historically, common stock investors have been compensated for taking on this additional risk by the higher returns provided by small company stocks.

In general, it is reasonable to expect small companies to be more risky than large ones. Exhibit 5 shows small company stocks have been riskier over a long period of time than larger company stocks due to the various advantages that larger companies have over smaller companies. For example, small capitalized firms generally have less access to capital and, overall, not as many financial resources. Further, small capitalized stocks have lower trading liquidity than larger ones.

The bond market, particularly the corporate bond market, also differentiates between large and small bond issues, where many large institutional investors such as pension funds and

insurance companies require large blocks of bonds for liquidity and performance. Because of this size preference, smaller bond issuers often pay a cost rate premium when compared to larger bond issuers.

A higher return requirement for companies the size of Wastewater System translates into a higher capitalization rate. All else being equal, a higher capitalization rate will produce a lower value. However, all things are seldom equal as shown by the array of market multiples for the companies that comprise the Comparable Group (Exhibit 17, page 2). As shown on Exhibit 17, the Comparable Group's current market multiples do not suggest a higher capitalization rate due to size as there are numerous other risks affecting the Comparable Group's market values.

Property Plant and Equipment Analysis. The Wastewater System can best be characterized as a wastewater collection system with treatment rights. The Wastewater System does not have the number of large treatment facilities that the Comparable Group has. The Wastewater System's gross property, plant and equipment is in relatively good condition given its age (Exhibit 6, Table 6.1) with 76% of their gross property, plant and equipment remaining undepreciated while 78% of the Comparable Group's gross property, plant and equipment remained undepreciated.[4]

Property Plant and Equipment Analysis for Contributions. Most regulatory commissions determine rates for utilities based on a cost of service formula reflective of gross plant, property, and equipment less accumulated depreciation (i.e., net property, plant, and equipment) being roughly equal to investor provided capital (i.e., debt and equity capital) plus "cost free" capital such as customer contributions. Under 66 Pa. C.S. Section 1329 (Valuation of Acquired Water

4 The Wastewater System's gross and net property, plant and equipment is developed on Exhibit 7.

and Wastewater Systems), the original source of funding for any part of the assets of a selling utility is not relevant to determining the value of a selling utility's assets.

We found a 20% (100% - 80%) difference between the Comparable Group's net property, plant and equipment and the Comparable Group's investor provided capital on the valuation date (Exhibit 6, page 1, Table 6.2). The difference between the Comparable Group's net property, plant and equipment and the Comparable Group's investor provided capital is comprised of "cost free" capital such as customer contributions.[5] This is evidenced by the 20% difference in the Comparable Group's net property, plant and equipment and the Comparable Group's investor provided capital (Exhibit 6, page 1, Table 6.2). Additionally, we verified known components of the Comparable Group's "cost free" capital by reviewing their individual balance sheets (Exhibit 6, page 1, Table 6.2) at year-end 2020.

We did not analyze the Wastewater System's property, plant, and equipment for "cost free" capital, or customer contributions, because the original source of funding for any part of the assets of a selling utility is irrelevant to the valuation process under 66 Pa. C.S. Section 1329.

Capital Expenditures Analysis. The level of capital expenditures required for business purposes is an indicator of risk. Over the last four years, the Comparable Group had annual capital expenditures of about 9% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2016-19, the Wastewater System had annual capital expenditures of about 3% of net plant. Therefore, the Wastewater System historical capital spending was less than the Comparable Group's average.

Growth Rate Analyses. Higher growth rates are an indication of less risk. A review of

5 Under rate regulation "cost free" capital, such as customer contributions, is subtracted from plant assets in determining the dollar amount of property on which a utility may earn a "fair rate of return" and therefore, "cost free" capital has no economic value to investors.

the growth rates in revenue, operating income plus depreciation and operating income, reveal that the Wastewater System's revenues have been growing more than the Comparable Group (Exhibit 6, page 4, Table 6.4) over the last three years, as has operating income plus depreciation. Conversely, the Wastewater System's operating income has been growing less than the Comparable Group. Prospectively, the Wastewater System's growth rates should lag without increased rates and a higher level of planned capital additions.

Profit Margin Analyses. Higher profit margins are an indication of less risk. We compared earnings before interest and taxes ("EBIT") to revenues to see how successful the Wastewater System's management has been at generating income from the operation of the business. We also compared operating profitability or earnings before interest, tax, depreciation, and amortization ("EBITDA") divided by total revenue to gain a clearer view of the Wastewater System's core profitability. The Wastewater System's EBITDA profit margins are higher than the Comparable Group's indicating less risk, while the EBIT profit margins are lower indicating more risk (Exhibit 6, page 5, Table 6.5).

VALUATION

The purpose of this valuation is to comply with 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Water Systems) and conduct a fair market value appraisal of the Wastewater System's assets as of May 20, 2021 in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. Consequently, three basic valuation approaches were considered in this analysis: the cost approach, the income approach, and the market approach.

The Cost Approach. In general terms, the cost approach measures value by determining the amount of money required to replace the future service capability of an asset. The cost approach is based on the premise that an informed purchaser will not pay more for a property than the cost of constructing an equally desirable substitute property, minus applicable depreciation, and assuming no undue delay.

The cost approach can include the use of the: original cost method; trended original cost method; reproduction cost method; and replacement cost method. From these cost bases, the calculated accrued depreciation (accumulated depreciation) is subtracted.

The original cost method begins with determining the original cost new ("OCN") measure of the cost of the assets when first constructed. The OCN is based on (1) a review and summary of the utility's accounting records, contractors' invoices and bid tabulations to determine the most appropriate data sources of each type of asset; (2) and the "pricing out" of assets using unit costs for each vintage year that property was placed in service.

Under the trended cost method, the trended original cost ("TOC") measures the reproduction cost by multiplying the OCN by specific cost indices. The TOC is based on (1) a review and summary of the OCN at each location to determine those elements that would be replaced-in-kind, those that would be replaced with current methods and technologies and those that would not be replaced; (2) the selection of cost indexes and the calculation of trended original cost for those elements that would be replaced-in-kind; and (3) the estimation of the cost to purchase or construct those elements that would be replaced with current methods and technologies. The TOC is a procedure for estimating reproduction cost new of property and is sometimes used as a substitute for reproduction cost method and may be considered a form of the reproduction cost method, though not as precise.

The reproduction cost method begins with determining the reproduction cost new ("RPCN") by determining the current cost of constructing identical new property. The replacement cost method begins with estimating the replacement cost new ("RCN") based on approximating the current cost of replacing service of existing property with similar new property having the nearest equivalent utility to the property being valued (as defined by the *International Glossary of Business Valuation Terms*).

The RPCN and the RCN methods include the research and verification of the inventory of a company's tangible personal property. Upon verification of the inventory, current material costs, current construction costs, engineering costs, administration costs, interest during construction, and entrepreneurial profit[6] are applied to the inventory listing in order to determine the RPCN and to determine the RCN.

The RPCN method assumes the assets would be recreated under the conditions existing at the date certain or valuation date, using the exact materials, standards, design, layout, and quality of workmanship used to create the original assets. The RCN assumes the assets would be recreated under the conditions existing at the date certain or valuation date, using similar materials, current standards, under current conditions with similarly functional property.

From these cost bases (i.e., OCN, TOC, RPCN and RCN), the calculated accrued depreciation (accumulated depreciation) is subtracted ("LD"). The calculated accrued depreciation is based on the assets' attained ages, and the service life of the assets. The cost bases of depreciable assets are reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed.

6 The administration costs and entrepreneurial profit are those of the contractors and engineers. The cost of overhead of the entity having the assets constructed can also be included. Generally overhead costs are allocated as part of an asset's cost, and usually represent at least 5% to 15% of infrastructure asset total costs.

Depreciation represents the loss in property value from: physical deterioration; functional obsolescence; and external obsolescence. The accrued depreciation represents the sum of the annual depreciation amounts that would have been charged for depreciation at a point in time. Accrued depreciation is a calculated amount that would be in the book reserve account at a point in time using the current depreciation parameters (i.e., average service life). The average service lives of depreciable assets are based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized "survivor curves" known as the Iowa type curves. The accrued depreciation ratio from a survivor curve is a concept that is used to estimate the consumed service capacity of plant at a point in time. The survivor curve is used to find the applicable accrued depreciation factors of the assets to result in the total accumulated depreciation.

The Original Cost Method. For this report, East Whiteland Township/Aqua provided us a copy of the Engineer's assessment report "East Whiteland Township Sewerage Facilities Engineering Assessment and Original Cost" and related files prepared by Pennoni Associates Inc., to confirm the condition of the Wastewater System's property and equipment. We utilized the Engineering Assessment and calculated the Original Cost and Related Accrued Depreciation of the Wastewater System as of May 20, 2021 ("OCNLD Study") shown on Exhibit 7.

Page 1 of Exhibit 7 summarizes the original cost and related accrued depreciation by account for the Wastewater System as of May 20, 2021. The original cost was brought forward from page 2 of Exhibit 7 and the accrued depreciation from page 3 of Exhibit 7.

The original cost of the Wastewater System was determined from the Engineering Assessment and is summarized on page 2 of Exhibit 7. A summarizing analysis of the original

cost of the Wastewater System by account and vintage year is shown on Exhibit 10.

The accrued depreciation calculation, shown on page 3 of Exhibit 7, was based on recognized methods using estimated survivor characteristics and the straight-line depreciation method. The estimated survivor curves are those used by other Pennsylvania wastewater companies and the material and age of the assets. The average service life procedure was used to apply the methods of depreciation to group properties for which a survivor curve was used to recognize the existence of life dispersion. The detailed calculations of accrued depreciation applicable to original cost by account and vintage are included in Exhibit 8.

The results of the OCNLD Study established that the OCN of the Wastewater System's utility plant in service as of May 20, 2021 was not less than $43.4 million ($43,447,309 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of $10.5 million ($10,491,713 rounded) as of May 20, 2021. After factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Wastewater System's utility plant in service as of May 20, 2021 was determined to be $33.0 million ($43,447,309 - $10,491,713 = $32,955,596).

The Replacement Cost Method. We utilized the OCN to calculate the trended original cost (TOC) measures, or the replacement cost of the depreciable assets (RCN), by multiplying the OCN by specific transition factors.[7] The result of this analysis is shown in the Replacement Cost and Related Accrued Depreciation of the Wastewater System as of May 20, 2021 ("RCNLD Study") shown on Exhibit 9.

Page 1 of Exhibit 9 summarizes the replacement cost new and related accrued depreciation

7 We used the TOC method because the mandated use of the Engineering Assessment's original cost essentially dictates the use of TOC over the reproduction cost or the replacement cost methods.

by account for the Wastewater System as of May 20, 2021. The replacement cost new was brought forward from page 2 of Exhibit 9 and the accrued depreciation from page 3 of Exhibit 9.

The replacement cost new of the Wastewater System (see Exhibit 10) was calculated by trending the original cost measures by multiplying the OCN by Handy-Whitman indices and obsolescence factors. A summarizing analysis of the replacement cost new of the Wastewater System by account and vintage year and related transition factors is shown on Exhibit 10.[8]

The accrued depreciation calculation, shown on page 3 of Exhibit 9, was based on recognized methods using estimated survivor characteristics and the straight-line depreciation method. The estimated survivor curves are those used in the OCNLD Study. The average service life procedure was used to apply the methods of depreciation to group properties for which a survivor curve was used to recognize the existence of life dispersion. The detailed calculations of accrued depreciation applicable to replacement cost new by account and vintage are included in Exhibit 11.

The results of the RCNLD Study established that the RCN of the Wastewater System's utility plant in service as of May 20, 2021 was not less than $92.7 million ($92,712,337 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of $33.6 million ($33,593,413 rounded) as of May 20, 2021. After factoring in the RCNLD Study's accrued depreciation reserve, the RCNLD of Wastewater System's utility plant in service as of May 20, 2021 was determined to be $59.1 million ($92,712,337 - $33,593,413 = $59,118,924).

8 All land and land rights were valued at original cost.

The results of the OCNLD and RCNLD Cost Approaches show a range of value for the Wastewater System of $33.0 million to $59.1 million and collectively, indicated value of $59.1 million ($59,118,924 rounded) for the Wastewater System based on the results of the RCNLD.

Benchmark Metrics. Besides providing an indication of value based upon a cost method, the OCN and OCNLD can also provide a meaningful metric to evaluate the reasonableness of other indications of value produced by other valuation methods. For example, the Comparable Group's market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents ("Enterprise Value") is currently 1.88-times (Exhibit 17, page 2) their OCNLD or net property, plant and equipment. Similarly, the Comparable Group's Enterprise Value is currently 1.49-times (Exhibit 17, page 2) their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" understate the multiple applicable to the Wastewater System because some of the Comparable Group's property, plant and equipment includes assets that were originally financed with "cost free" capital such as customer contributions.[9] Subtracting customer contributions ("CIAC") from the Comparable Group's property, plant and equipment (Exhibit 17, page 3) based on differences between investor provided capital and OCN results in CIAC adjusted multiples of 2.06-times OCNLD and 1.63-times OCN for the Comparable Group.

Multiplying the Wastewater System's OCN of $43.4 million by the Comparable Group's 1.49-times OCN multiple or the 1.63-times contributions adjusted OCN multiple indicates a range of market value of $64.7 million to $70.7 million for the Wastewater System, similar to the

9 Under rate regulation "cost free" capital, such as customer contributions, is subtracted from plant assets in determining the dollar amount of property on which a utility may earn a "fair rate of return" and therefore, "cost free" capital has no economic value to investors.

RCNLD of $59.1 million. Further, multiplying the Wastewater System's OCNLD of $33.0 million by the Comparable Group's 1.88-times OCNLD multiple or the 2.06-times contributions adjusted OCNLD multiple indicates a range of market value of $62.0 million to $68.0 million for the Wastewater System, similar to the RCNLD of $59.1 million.[10] The aforementioned range of market values for the Wastewater System are not a substitute for an appraisal. However, the referenced range of market values for the Wastewater System can be a meaningful metric to evaluate the reasonableness of other indication of value produced by other valuation methods.

Comparing the results of the OCNLD method and RCNLD method to the benchmark metrics indicates that the value indicated by the OCNLD method of $33.0 million is inconsistent with the benchmark metrics. Therefore, the results of $59.1 million RCNLD method form the basis for our Cost Approach conclusion of $59.1 million ($59,118,924 rounded) and is used as the Cost Approach as part of our fair market value determination for the Wastewater System.

The Income Approach. Capitalizing or discounting a future income stream to a present value provides an indication of the value of a business. The capitalization or discount rate reflects future growth, business risk, economic factors, financial risk, and industry risk of the assets. The theory behind the income approach is that the value of a business is the future economic benefit that ownership will provide.

The two most common methods of the income approach to valuation are the capitalization of earning or cash flow method and the discounted cash flow method ("DCF"). The capitalization of earning method converts a single base economic income number to a value by dividing it by a capitalization rate. The capitalization of earnings is best suited when the future earnings, or cash

10 Similarly, multiplying the Wastewater System's number of customers of 3,895 by the Comparable Group's $10,014-times customer multiple indicates a market value of $39.0 million, similar to the RCNLD of $59.1 million.

flow, can be predicted. The implicit assumption in the capitalization of earning method is that the cash flow is a perpetuity, and the capitalization rate is a constant.

The DCF method uses estimates of future free cash flow and discounts them to arrive at a present value or price of the cash flows. Generally, the DCF analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty years along with a terminal value. In each year, the Debt Free Net Cash Flow is comprised of projected EBIT, minus income taxes, plus projected depreciation, and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. The second element of the DCF analysis is the determination of an appropriate discount rate.

The capitalization rate used in the capitalization of earnings method and the discount rate used in the DCF method are related. The discount rate is the opportunity cost rate related to the risk of the cash flows. For the Wastewater System, the appropriate discount rate is the current municipal revenue bond yield on May 20, 2021 of 3.09%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on May 20, 2021 and ranges from 6.57% to 7.79%.[11] The capitalization rate is simply the discount rate minus the expected growth rate. If no growth is assumed, the capitalization rate is equal to the discount rate.

The capitalization of earnings method is generally a reasonable approach for valuing the Wastewater System as it is currently owned (i.e., non-IOU) and operated. However, change in ownership of the Wastewater System to another large regional municipal authority ("MUNI") or IOU produces a myriad of problems for both the capitalization of earnings method and the DCF

11 Both the American Society of Appraisers, ASA Business Valuation Standards, 2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition: "Weighted Average Cost of Capital (WACC). The cost of capital (discount rate) determined by the weighted average, at market values, of the cost of all financing sources in the business enterprise's capital structure."

Method because any future cash flow estimates would be hypothetical or estimated due to the uncertain nature that would accompany new ownership including future rates, future expenses, future capital expenditures, taxes, and regulation.

For a MUNI, the appropriate discount rate is the current municipal revenue bond, 3.09%, because debt is the only major source of capital available to finance an acquisition (Exhibit 20, pages 2-6). Although a MUNI likely carries equity on their books (balance sheet), all existing equity is already invested in other assets and therefore, cannot be used to finance an acquisition.[12] For valuation purposes, an embedded cost of debt, or the historical cost of all debt issuances outstanding is not used because this capital is already invested in assets. Whereas the marginal cost of debt, 3.09%, at the valuation date is used in accordance with accepted valuation practices and used for market valuation purposes.

As discussed previously, for an IOU, the appropriate discount rate is the net of tax overall cost of capital (weighted average cost of capital), 6.57% to 7.79% (Exhibit 20, pages 2-8). In this instance, the net of tax overall cost of capital (weighted average cost of capital) is based on the Comparable Group's market value capital structure of 23.9% debt and 76.1% equity, a market cost of debt of 3.37% and a range of market cost of equity of 7.87% to 9.47%.[13] The Comparable Group's net of tax overall cost of capital (weighted average cost of capital) is used as a proxy to conform to the "hypothetical buyer" or "hypothetical seller" of fair market valuation. Use of the buyer's net of tax overall cost of capital (weighted average cost of capital) would produce an

12 For example, when a municipal or government entity, such as the Commonwealth of Pennsylvania, finance construction of a road or bridge, they only consider the marginal debt cost despite having "equity" reflected on their books (balance sheet).

13 For example, see http://www.investinganswers.com/financial-dictionary/financial-statement-analysis/weighted-average-cost-capital-wacc-2905. Also see http://www.wallstreetmojo.com/weighted-average-cost-capital-wacc/ , or http://accountingexplained.com/misc/corporate-finance/wacc .

investment valuation, not a fair market valuation.[14]

We began the Income Approach for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized or discounted. The Debt Free Net Cash Flow is comprised of EBIT, minus income taxes, plus depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. The development of Wastewater System's Debt Free Net Cash Flow begins on Exhibit 1 and ends on Exhibits 12 through 16.

Differences in accounting practices exist between GASB, DCED and FASB because there are differences in their purpose. The GASB's and DCED's impetuses are to make sure government entities are accountable for the money they receive from the public or taxpayers, while the FASB's focus is to help investors and creditors make decisions. These differences in accounting objectives between GASB, DCED and FASB can present a problem when it comes to comparing the financial statements of entities that are either publicly or privately owned, such as the Wastewater System and the Comparable Group.

Exhibit 1 presents the Wastewater System's financial information contained in their financial statements, so it is more consistent with the Comparable Group and more practical for valuation purposes. The information on Exhibit 1 was used to develop Exhibits 12 through 16. As noted previously, the Wastewater System's financial statements and their rates did not include taxes nor a fair rate of return. Accordingly, on Exhibits 13 through 16 we adjusted the Wastewater System's post-2020 financial information for pro forma expenses and returns to be reflective of a

14 We did not use the 6.33% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation because a "hypothetical buyer" cannot finance an acquisition at such a rate and therefore, its use would provide a meaningless result. Where the 6.33% DSIC related cost was determined based the Comparable Group's book value capital structure of 47.4% debt and 52.6% equity, a cost of debt of 3.37% and a DSIC cost of equity of 9.85%. We note the 6.33% Comparable Group's DSIC related net of tax overall cost of capital falls below the 6.57% to 7.79% range of discount rates used in our Income Approach.

MUNI or IOU ownership.

The Capitalization of Earnings Method. The capitalization of earnings method begins with an estimate of the income or cash flow producing capabilities of the business (Exhibit 12) for a recent time period and assumes current ownership and operations. We began the capitalization of earnings method for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized. The Debt Free Net Cash Flow is comprised of current EBIT, minus income taxes, plus current depreciation, and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. Specifically, our capitalization of earnings method capitalizes Wastewater System's current (2021) budgeted Debt Free Net Cash Flow. The second element of the capitalization of earnings method is the determination of an appropriate capitalization rate. Our analysis uses the current municipal revenue bond yield on May 20, 2021 of 3.09% (Exhibit 12, line 24) as a capitalization rate.

We computed the Wastewater System's indicated value based on the capitalization of earnings method by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow. We considered ranges of growth in the capitalization of earnings method. Based on the current level of rates we concluded a no growth scenario is the most probable for the Wastewater System based on current ownership and operations.

Exhibit 12 shows the results of the capitalization of earnings method. For the Wastewater System, the capitalization of earnings method using a 3.09% capitalization rate (no growth) indicates a value of –$30.5 million (without rate increases) due to the existence of negative debt free net cash flow. Negative debt free net cash flow is indicative of a system which requires adjustments to their rates if they plan to remain operational.

The DCF Method. For the Wastewater System, the DCF method considers two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model ("Market Multiple DCF") and the capitalization of terminal value model ("Capitalization DCF"). We show the results of these models on Exhibits 13 through 16.

The DCF method begins with an estimate of the income or cash flow producing capabilities of the business. Specifically, our DCF methods use estimates of the results of the Wastewater System's operations over the next 24 years. We use two different assumptions for the Wastewater System's future operations in the DCF methods: MUNI ownership shown on Exhibits 13 and 15; and IOU ownership shown on Exhibits 14 and 16.

Under the MUNI ownership the discount rate is the current 3.09% municipal revenue bond yield and under the IOU ownership the discount rate is the current net of tax overall cost of capital, reflecting the upper and lower range of the net of tax overall cost of capital for the Comparable Group of 6.57% to 7.79%. For the Capitalization DCF, the capitalization rate reflects a scenario of no additional growth (i.e., discount rate = capitalization rate) and a scenario of minimal growth of 0.2% (i.e., discount rate – 0.2% growth = capitalization rate) under MUNI ownership and 0.2% growth (i.e., discount rate – 0.2% growth = capitalization rate) under IOU ownership based on inflation, changes in Debt Free Net Cash Flows and the projected population growth.

We computed the Market Multiple DCF terminal values by multiplying the Wastewater System's projected EBIT and EBITDA by the Comparable Group's adjusted multiples of 23.5-times and 16.3-times, respectively. We computed the Capitalization DCF terminal value by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow.

Exhibit 13 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 13 show a range of value for the Wastewater System of $49.5 million to $51.1 million. The results of the Market Multiple DCF shown on Exhibit 13 show a value of $44.9 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of $48.0 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 14 shows the results of the DCF method under the IOU ownership scenario. The results of the Capitalization DCF shown on Exhibit 14 show a range of value for Wastewater System of $30.3 million to $36.5 million. The results of the Market Multiple DCF shown on Exhibit 14 show a range of value of $38.0 million to $45.0 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of indicates a value of $37.3 million for the Wastewater System.[15]

The DCF method based on the MUNI ownership scenario indicates a value of $48.0 million and the DCF method based on the IOU ownership scenario indicates a value of $37.3 million. Collectively, the DCF method indicates a value of $42.6 million based on OCNLD.

Change in ownership of the Wastewater System to a MUNI or an IOU produces a myriad of problems for the DCF Method. Under a MUNI purchase, future cash flow estimates are uncertain because they would reflect the actual price paid for the acquisition. Under an IOU purchase and the associated regulation by the PUC, future cash flow estimates are uncertain since

15 If we used the 6.33% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 14, the results of the Capitalization DCF would show a value for Wastewater System of $37.7 million. Further, the results of the Market Multiple DCF would show a value of $46.5 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicates a value of $42.3 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $48.0 million and the DCF method based on the IOU ownership scenario indicates a value of $42.3 million. Collectively, the DCF method indicates a value of $45.1 million based on OCNLD.

regulation by the PUC would result in an unknown determination of rate base and the related depreciation and authorized/achieved earning levels. In the current instance, we know the Market Approach and the Cost Approach (RCNLD) indicate values considerably higher than the OCNLD value.

Therefore, Exhibits 13 and 14 are recalculated on Exhibits 15 and 16 to reflect revenues and cash flows derived from an earnings base between OCNLD and RCNLD. Exhibit 15 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 15 show a range of value for the Wastewater System of $68.3 million to $70.7 million. The results of the Market Multiple DCF shown on Exhibit 15 show a value of $63.6 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of $67.1 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 16 shows the results of the DCF method under the IOU ownership. The results of the Capitalization DCF shown on Exhibit 16 show a range of value for Wastewater System of $44.4 million to $53.7 million. The results of the Market Multiple DCF shown on Exhibit 16 show a range of value of $56.5 million to $67.2 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of $55.1 million for the Wastewater System.[16]

16 If we used the 6.33% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 16, the results of the Capitalization DCF would show a value for Wastewater System of $55.5 million. Further, the results of the Market Multiple DCF would show a value of $69.6 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicates a value of $62.8 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $67.1 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of $62.8 million. Collectively, the DCF method indicates a value of $65.0 million when DSIC is considered.

The DCF method based on the MUNI ownership scenario indicates a value of $67.1 million and the DCF method based on the IOU ownership scenario indicates a value of $55.1 million. Collectively, the DCF method indicates a value of $61.1 million based on the Income Approach.

The Market Approach. There are two methods of doing the Market Approach to valuation: the market multiples method; and the selected transaction method. We developed both the market multiples method and the selected transaction method in our valuation analysis.

The Market Multiples Method. The market multiples method valuation begins by reviewing market price data of corporations engaged in the same or a similar line of business as the Wastewater System. We relied upon market data for the Comparable Group for these purposes since they are equally affected by similar economic, industry, and business risks as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Wastewater System. The specific market price data reviewed includes the market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents (i.e., Enterprise Value). Where the market value of common equity is the product of multiplying the closing stock price by the number of common shares outstanding. The Enterprise Value provides an indication of the value of the entire business. The Enterprise Value multiples ("Market Multiples") are shown on Exhibit 17. For the Comparable Group, the Market Multiples were calculated as of May 20, 2021 based on the latest twelve months of financial data available at the appraisal date.

We used the Comparable Group's Enterprise Value at May 20, 2021 and calculated Market Multiples of: revenue ("Revenue"); EBITDA; EBIT; gross property plant and equipment

("GPPE"); net property plant and equipment ("NPPE"); investor provided capital ("ICAP"); utility customers ("Customers"); and population of the area served ("Population").

The next step in the market multiples method valuation was applying the Comparable Group's Market Multiples to corresponding financial and operating statistics of the Wastewater System. The Comparable Group's Market Multiples reflect their capitalization rate of each financial and operating statistic. For example, a Market Multiple of EBIT of 16.14 times equates to a capitalization of EBIT of 6.20% (1 ÷ 16.14 = 6.20%). Each capitalization rate is unique to the entity and the statistic being evaluated and reflects the growth and investment risk of the entity.

We believe that similar economic, industry and business risks have affected the Comparable Group as those faced by the Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike. On average, the utilities in the Comparable Group are larger than the Wastewater System. The relative size difference between the Comparable Group and Wastewater System suggests that the risk to investors of the Wastewater System is higher than the Comparable Group. Further, based upon our quantitative and qualitative analysis, we concluded that the Wastewater System has more risk than the Comparable Group.

Accordingly, the Comparable Group's Market Multiples are not directly applicable to the Wastewater System. We assumed the higher risk due to the Wastewater System's size is added to the higher risk found in our quantitative and qualitative analysis. This combined risk was assumed to result in the Wastewater System being 20% more risky than the Comparable Group and produces an 80% (100% - 20%) base risk adjustment to the Comparable Group's Market Multiples. We applied the 80% base risk adjustment to all financial multiples. For example, the

Comparable Group's ICAP multiple was multiplied by 80% to produce a lower multiple applicable to the Wastewater System to account for risk differences.

The Comparable Group's Market Multiples of Revenue, EBITDA, and EBIT were adjusted for the base risk adjustment to produce multiples applicable to the Wastewater System (Exhibit 17, page 3). The Comparable Group's Market Multiples of GPPE and NPPE were adjusted for the base risk adjustment and for their percentage of property plant and equipment (Exhibit 17, page 3) financed with "cost free" capital such as contributions because "cost free" capital should not be part of this valuation process. The Comparable Group's Market Multiples of Customers and Population were adjusted for the type of assets of the Wastewater System, earnings rate, and growth.

The net risk adjustments to the Comparable Group's Market Multiples are shown on page 1 of Exhibit 17. The adjustments to the Comparable Group's Market Multiples are: 80% of ICAP (more risk/less growth), 88% of GPPE (more risk/lower growth and contributions), 87% of NPPE (more risk/lower growth and contributions), 80% of Revenue (more risk/lower growth); 80% of EBIT and 80% EBITDA (more risk/lower growth); and 88% of Customers and Population (growth, earning rate, and contributions).

Page 1 of Exhibit 17 shows the market multiples method indicated values based on: Revenue, EBIT and EBITDA (collectivity called "Income Statement Items"); ICAP, GPPE and NPPE (collectivity called "Capital Items"); and Customers and Population (collectivity called "Demographics Items"). For most municipal utilities, the indicated values based on Income Statement Items are far below the indicated values that are based on Capital Items and those based on Demographics Items. We attribute this to the dollars of Revenue, EBIT and EBITDA do not

reflect any provision for taxes while the multiples for the Comparable Group do.[17] Consequently, we do not believe the results of the multiples of Revenue, EBIT and EBITDA are meaningful and should not be used for municipal utilities.

In the market multiples method, the meaningful Market Multiples of the Comparable Group are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the Comparable Group's median Market Multiples (Exhibit 17, page 1). The results of the market multiples method (Exhibit 17, page 1) show a range of value for the Wastewater System of $36.6 million to $62.1 million and collectively, indicate value of $49.3 million based on the meaningful Market Multiples.

The Selected Transactions Method. The selected transactions method entails analyzing certain public information relating to selected transactions involving the purchase or sales of businesses involved in the same or similar business line. The number of selected transactions available for review is limited because most acquisitions in the water and wastewater industry involve small acquisitions for which no public information exits. Additionally, not all transactions are comparable since some purchase prices may only involve the acquisition of the common stock, purchase prices may be net of cash and others may only involve assets. In any of these instances, the derived multiples (e.g., purchase price as a multiple of: Revenues; EBITDA; EBIT; etc.) would understate (overstate) the multiples involving a purchase price for an entire business enterprise (common stock) or business assets.

17 The Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

The selected transactions method provides a valuation of a business, or assets, at the time the acquisition of that business was completed, rather than the appraisal date market value (May 20, 2021). The change in the Comparable Group's market multiples of NPPE and ICAP, shown in Figure 1, shows the change in market valuation over a recent 72-month period. In Figure 1 the Comparable Group's market multiples of NPPE and ICAP were indexed to May 20, 2021 valuation multiples so that the May 20, 2021 valuation multiples have an index value of 100.

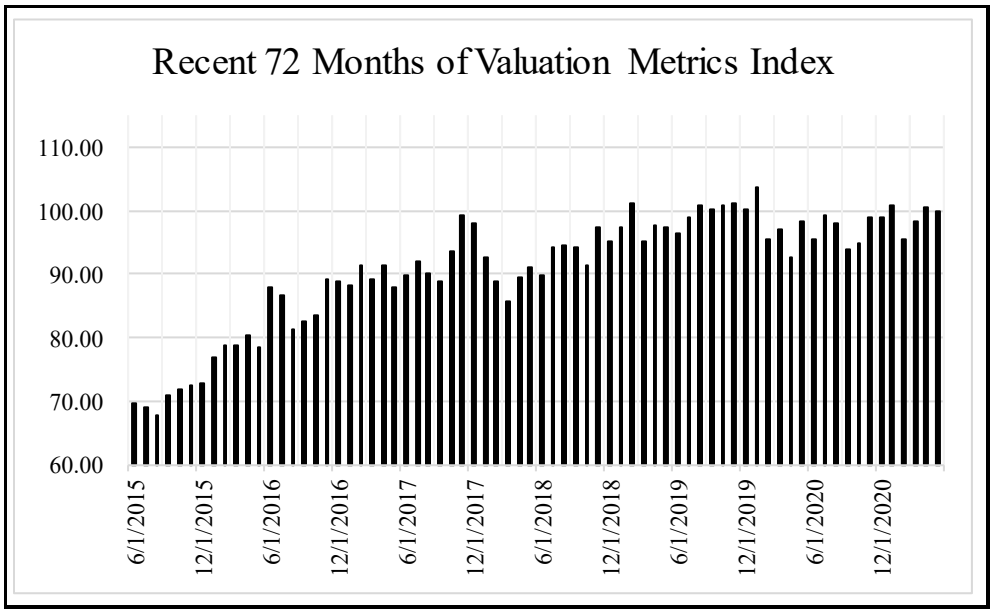

Figure 1

The index of the Comparable Group's appraisal date (May 20, 2021) valuation multiples is 4% above the 2021's lowest levels and 1% below 2021's highest levels and 7% above the 2020's lowest levels and 4% below 2020's highest levels. The index of the Comparable Group's May 20, 2021 valuation multiples is 7% higher than 2019's lowest levels and 1% below 2019's highest levels, are 14% higher than 2018's lowest levels and 3% above 2018's highest levels, are 14% to higher than 2017's lowest levels and 1% above 2017's and are 11% to 23% higher than 2016's multiples' index.

Because of the rapid rise in valuation multiples since early 2016 we limited our search for selected transactions to: (1) those that occurred in 2016 or later; (2) purchases of water or sewer systems; (3) assets being purchased; and (4) those that did not discount "cost free" capital/customer contributions in the valuation. The selected transactions that met the stated selection criteria are shown on pages 2 and 3 of Exhibit 18.

Using certain public information, we calculated sales price multiples of selected transactions involving the purchase or sale of businesses that met the stated selection criteria. The calculated sales price multiples included transactions multiples of: ICAP; GPPE; NPPE; Revenue; EBITDA; EBIT; Customers; and Population. As shown on pages 2 and 3 of Exhibit 18, the selected transactions method indicated values based on the Income Statement Items are far different than the Wastewater System's selected transactions method indicated values based on Capital Items and those based on Demographics Items. We attribute this to the fact the selling utilities' dollars of Income Statement Items do not reflect any provision for taxes.[18] Consequently, we do not believe the results of the multiples of Income Statement Items are meaningful.

The selected transaction method relies on and reflects information that was known, ex-ante, at the time the winning purchase bid (price) was offered, and the metrics used are time period sensitive. For example, bids made in 2016 only reflects metrics from 2015 since the results of 2016 could not be known at the time of the bids. The selected transaction method ex-ante information (metrics) is shown on page 2 of Exhibit 18. Complete information only exists for a few of the transactions, with only Customers and Population having ample data for all transactions

18 Further, Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

as is evident from the information shown (Exhibit 18, page 2). Therefore, we supplemented the ex-ante data with ex-post information of GPPE and NPPE (collectivity called "Asset Items") as shown on page 3 of Exhibit 18.

In the selected transactions method, the significant selected transactions multiples of the selling utilities are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the selling utilities' transactions multiples (Exhibit 18, pages 2 and 3). The results of the selected transactions method (Exhibit 18, page 1) show a range of value for the Wastewater System of $35.5 million to $63.2 million when all transactions are considered and a range of value of $19.2 million to $58.7 million when mostly collection/distribution assets are solely considered. Collectively, the selected transactions method indicates a value of $44.1 million after giving additional weight to the collection/distribution assets selected transactions multiples.

In 2018 two IOUs, Connecticut Water Service, Inc and SJW Group, announced a planned merger with Connecticut Water being acquired by SJW through a stock purchase. SJW Group's purchase of Connecticut Water was approved in late 2019. Although this acquisition is not directly applicable to the Wastewater System, it does provide a range of indicated value for the Wastewater System (Exhibit 18, page 4) which we relied on as a check. In this selected transaction, the significant selected transactions multiples of the selling utilities (Connecticut Water) are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the selling utilities' transactions multiples. The results of the Connecticut Water selected transactions show a range of value for the Wastewater System of $50.3 million when the reported significant selected transactions multiples are considered and a value of $56.1 million when the reported significant

selected transactions multiples have been adjusted for "cost free" capital. Since the Connecticut Water transaction was a stock transaction, we believe it may understate the value of an asset purchase. However, we also note that Connecticut Water was a fully integrated company, was publicly traded which the Wastewater System is not, and therefore, may overstate the value of the Wastewater System.

The results of the market multiples method shown on Exhibit 17 indicate value of $49.3 million. The results of the selected transactions method shown on Exhibit 18 indicate value of $44.1 million. Based on the aforesaid results, the Market Approach to valuation indicates a value of $46.7 million for the Wastewater System based on the results of the market multiples method and the selected transactions method.

Conclusion. We summarize our findings for the Wastewater System on Exhibit 19. Our finding for the Wastewater System is based on the Cost, Market, and Income Approaches to valuation. We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach.

We considered the results of each approach as an indicator of value individually, or as independent indicators of value. Therefore, all three approaches to valuation were given

consideration in arriving at our estimate of the fair market value conclusion. Based on these facts, our conclusion regarding the fair market value is $55.7 million. Our conclusion regarding the fair market value can be described by the weights and the specific results of the three approaches to valuation that are shown on Exhibit 19. The results of our analyses, shown on Exhibit 19, indicate a range of value for the Wastewater System of $46.7 million to $61.1 million and collectively indicate a fair market value of $55,668,000 for the Wastewater System.

APPENDIX A - QUALIFICATIONS

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience, and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past 25 years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services and educating Gannett Fleming personnel and

Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal. His column was the Financial News column and focused mainly on the natural gas industry.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 26 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: fair market value, the taking of natural resources, appropriate capital structure and fixed capital cost rates, depreciation, fair rate of return, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, benchmarking, and fair value.

PROFESSIONAL AFFILIATIONS

Society of Utility and Regulatory Financial Analysts
- Board of Directors, 1996-2000, 2005-2008
- President, 2000-2002
- Treasurer, 1996-1998

National Association of Water Companies
Pennsylvania Municipal Authorities Association
- Electric Deregulation Committee

TECHNICAL PUBLICATIONS & PRESENTATIONS

Walker, Harold. Panelist "Now is the Time to Maximize Your Utility's Value." Presented at the Pennsylvania Association of Township Supervisors 97th Annual State Convention, April 2019.

Walker, Harold. Panelist "Fair Market Acquisitions Debate." Presented at National Association of Regulatory Utilities Commissioners Winter Policy Summit, February 2019.

Walker, Harold. Panelist "Fair Market Value Legislation." Presented at the National Association of Water Companies Water Summit, October 2018.

Walker, Harold. Panelist "Leveraging Water & Sewer to Address Roads, Schools, and Pension Obligations." Presented at the Maryland Association of Counties 2018 Summer Conference, August 2018.

Walker, Harold. Panelist "Is the Glass Half Full or Half Empty? Valuing Municipal Water Acquisitions." Presented at the Mid-Atlantic Conference of Regulatory Utilities Commissioners 23rd Annual Education Conference, June 2018.

Walker, Harold. "Valuation and Inventory of Governmental Assets Under GASB 34." Presented at the Society of Depreciation Professionals 21st Annual Conference, September 2007.

Walker, Harold. "The Paradox of State Regulatory Opinions and Investor Behavior." Presented at the National Association of Water Companies New England Chapter conference, November 2006.

Walker, Harold. "Valuation and Inventory Under GASB 34." Presented at the Government Finance Officers Association South Central Pennsylvania Regional Chapter conference, August 2003.

Walker, Harold. "Valuation and Inventory under GASB 34." Presented at the Government Finance Officers Association Southeastern Pennsylvania Regional Chapter conference, April 2002.

Walker, Harold. "GASB 34 & Your Infrastructure." *The Authority,* August 2001, Volume XXXII, No. 4, pages 10-13.

Walker, Harold. "Managing Risk." Conference Chairperson, presented at the Society of Utility & Regulatory Financial Analysts 33rd Financial Forum, April 2001.

Walker, Harold. "Paying for Your MSW System - Waste Generation Fees." Presented at the Federation of New York Solid Waste Association Solid Waste/Recycling Conference and Trade Show, May 2001.

Walker, Harold. "Statement No. 34 of the Government Accounting Standards Board." Presented at the Pennsylvania Association of Township Supervisors 79th Annual State Convention, April 2001.

Walker, Harold. "Cost of Capital Issues." Presented at the National Association of Water Companies New England Chapter conference, October 2000.

Walker, Harold, Timothy Hartman, and Mark Everett. "Waste Generation Study: Life After Flow Control." Presented at Waste Con 2000, October 1999.

Walker, Harold, and Timothy Hartman. "The Enhancement of Revenues Through a Waste Generation Study." Presented at SWANA's Planning and Management Symposium, July 1999.

APPENDIX B - KNOWN IMPACT OF COVID-19

APPENDIX B

Known Impact of COVID-19

On March 11, 2020, the World Health Organization ("WHO") declared a quickly spreading coronavirus infection a pandemic ("COVID-19"). A coronavirus is a kind of common virus that causes an infection in sinuses, or upper throat. An outbreak of a new strain of coronavirus was first reported in Wuhan, China in late 2019 and quickly spread around the world. The WHO named the virus SARS-CoV-2, and the disease COVID-19. A pandemic is a disease outbreak that spreads widely across countries or continents. Categorizing a disease as a pandemic does not signify lethality nor economic calamity. Rather, labeling a disease as a pandemic indicates its spread over a wide geographic area and affecting a high proportion of the population.

The valuation date (May 20, 2021) is the specific date at which the value of the Wastewater System is based. Generally, only the circumstances existing at the valuation date and events occurring up to the valuation date are considered. Events which could affect the value may occur after the valuation date but have no bearing on an appraised value.

Nevertheless, we have included subsequent information since the valuation date in this appendix (Appendix B) regarding COVID-19's known impact for informational purposes only and this information does not affect the determination of value as of our valuation date of May 20, 2021.

The United States Environmental Protection Agency ("EPA") is providing information on drinking water and wastewater to provide clarity to the public regarding COVID-19. According to EPA, the COVID-19 virus has not been detected in drinking-water supplies. Based on current

evidence, the risk to water supplies is low.[19] EPA has also stated that wastewater treatment plants treat the COVID-19 virus, "wastewater treatment plants treat viruses and other pathogens. Coronavirus, which causes COVID-19, is a type of virus that is particularly susceptible to disinfection. Standard treatment and disinfectant processes at wastewater treatment plants are expected to be effective."[20] EPA sent a "letter to Governors in all 50 states, territories, tribes and Washington, DC, requesting that water and wastewater workers, as well as the manufacturers and suppliers who provide vital services and materials to the water sector, are considered essential workers and businesses by state authorities when enacting restrictions to curb the spread of COVID-19."[21]

In response to COVID-19 the Federal Reserve has provided monetary and fiscal stimulus to increase liquidity in the form of new fiscal stimulus programs and rate cuts. "For context, new fiscal stimulus and total fiscal deficits in the US are roughly double the levels seen in 2008-2009, and the US fiscal deficit we project for 2020 of 15%-18% is only matched by deficits seen at the height of WWII in 1942-1943."[22] The combined result of these actions by the Federal Reserve and investors' flight to quality have resulted in artificial and historically low risk-free rates as measured by the 30-year treasury bond yield. Public utility bond yields have not fluctuated to the degree which yields of 30-year treasury bonds have. This is evident by the initial widening of the yield spread or default spread shown in **Table 3** (below) from pre-COVID-19 levels compared to the 30-year treasury bond yield low of 0.99% on March 9, 2000. Recently, the yield spread, or default spread, has returned much closer to the pre-COVID-19 levels.

19 https://www.epa.gov/coronavirus, 5/27/20.
20 https://www.epa.gov/coronavirus/do-wastewater-treatment-plants-treat-covid-19 ,7/31/20.
21 https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater, 5/27/20
22 https://www.jpmorgan.com/jpmpdf/1320748588999.pdf, 5/29/20.

			Bond Yields			Yield Spread	
			30-Year Treasury Bond	A Rated Public Utility Bond	Baa Rated Public Utility Bond	A Rated Yield LESS 30-Year Bond	Baa Rated LESS 30-Year Bond
	Monthly	Sep-2019	2.16	3.37	3.71	1.21	1.55
	Monthly	Oct-2019	2.19	3.39	3.72	1.20	1.53
	Monthly	Nov-2019	2.28	3.43	3.76	1.15	1.48
	Monthly	Dec-2019	2.30	3.40	3.73	1.10	1.43
	Daily	1/30/20	2.04	3.13	3.45	1.09	1.41
	Daily	2/27/20	1.79	3.03	3.34	1.24	1.55
*	Daily	3/9/20	0.99	2.76	3.27	1.77	2.28
**	Daily	5/20/21	2.34	3.37	3.63	1.03	1.29
	Daily	6/22/21	2.10	3.10	3.36	1.00	1.26

*** - 30-year Treasury yield low**
**** - Valuation date of current appraisal**

Table 3

Before the COVID-19 pandemic the previous all-time market high for the S&P 500 Index occurred on February 19, 2020. After February 19, 2020, the COVID-19 pandemic resulted in large-scale economic shutdowns, produced widespread stock market turbulence, and generally resulted in decreased financial asset prices for some sectors of the economy. As a result, by March 23, 2020 the S&P 500 index had decline by 34% from its February 19, 2020 peak. More recently, between May 20, 2021 and June 22, 2021, the S&P 500 Index reached several new all-time highs and is currently 90% above its March 23, 2020 closing price. During this entire period of widespread stock market turbulence, the asset prices reflected in water utility and wastewater utility market valuations have remained relatively steady as demonstrated by the Comparison

Group's market multiples shown in **Table 4** below.[23]

	Water Utility Comparsion Group Enterprise Value as a Multiple of							
	Invest. Capital (x)	Gross PP&E (x)	Net PP&E (x)	Rev. (x)	EBITDA (x)	EBIT (x)	Customers ($)	Population ($)
12/31/2017	2.04	1.20	1.57	6.00	15.07	21.23	$7,348	$1,994
4/30/2018	1.94	1.17	1.54	6.11	14.48	20.78	$7,131	$1,843
11/30/2018	1.90	1.17	1.55	7.06	16.34	23.99	$7,538	$2,120
2/28/2019	2.03	1.20	1.59	7.34	16.48	24.10	$8,042	$2,303
6/30/2019	2.25	1.40	1.83	7.88	18.03	26.89	$8,368	$2,463
12/31/2019	2.00	1.35	1.76	8.30	20.08	29.37	$9,631	$2,879
* 5/20/2021	2.06	1.49	1.88	8.68	20.33	29.36	$10,014	$2,999
6/22/2021	2.10	1.51	1.90	8.93	20.93	29.85	$10,944	$3,117

*** - Valuation date of current appraisal**

Comment:
Valuation date of 12/31/2017 from East Bradford Township A-2018-3001582
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2018-3001582
Valuation date of 04/30/2018 from Exeter Township – A-2018-3004933
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2018-3004933
Valuation date of 11/30/2018 from Cheltenham Township – A-2019-3008491
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3008491
Valuation date of 02/28/2019 from East Norriton – A-2019-3009052
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3009052
Valuation date of 06/30/2019 from Borough of Kane Authority – A-2019-3014248
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3014248
Valuation date of 12/31/2019 from DELCORA – A-2019-3015173
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3015173

Table 4

Even though most of the US may likely be affected by COVID-19's related economic effects, we believe those effects will vary greatly from place-to-place dependent on the nature of

23 The first six spot dates and the related multiples shown in the market multiples Table 4 were taken from recent Gannett Fleming appraisals filed with the PA PUC.

the business sectors which comprise each local economy and their concentration within the local economy. We do not believe the appraised value of the long-lived Wastewater System assets will be materially impacted by the COVID-19 or its related relatively short-term events. The Wastewater System's customer base is not heavily dependent on customers from sectors of the economy providing tourism and travel, employment services, mining/oil and gas (energy), and leisure and hospitality which have been most impacted by COVID-19's related short-term events. Therefore, even on a short-term basis, the Wastewater System's revenues and cash flows should not be materially impacted on a relative basis.

COMPLIANCE & APPRAISAL CERTIFICATION

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State the identity of the client and any intended users, by name or type:**

  The client is Aqua Pennsylvania Wastewater, Inc. The intended users of the valuation are Aqua Pennsylvania Wastewater, Inc., and the Pennsylvania Public Utility Commission.

- **State the intended use of the appraisal**

  The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of East Whiteland Township's Wastewater System assets in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches.

- **Describe information sufficient to identify the property, real, personal, and intangible, involved in the appraisal, including the physical and economic property characteristics relevant to the assignment.**

  East Whiteland Township owns and operates the Wastewater System which consists of 12 pump stations, about 329,072 linear feet of mains, approximately 1,506 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System accepts flows and collects sewer rental fees from the adjoining municipalities of East Goshen Township, Charlestown Township and Malvern Borough. The Wastewater System, in turn, pays sewer rental fees to neighboring Tredyffrin Township and East Goshen Township, and a public utility company for conveyance and to the Valley Forge Sewer Authority Wastewater Treatment Plant for which the Township has purchased capacity.

  The Wastewater System's 12 pump stations are: Deer Run; Flat Road; Hillbrook Circle; King Road; Lapp Road; Lee Boulevard; Malvern Hunt; Meadowview; Mill Lane; Planebrook Road; Westgate; and Wilburdale. The Wastewater System has approximately 26,300 linear feet of force mains ranging in size from 4 to 14 inches diameter and were installed between 1976 to 2017. The force mains consist of asbestos-cement ("ACP"), ductile iron ("DIP") and polyvinyl chloride ("PVC") pipe.

  The Wastewater System's 302,772 linear feet of gravity sewer collection mains consist of 8-inch, 10-inch, 12-inch, 15-inch, 16-inch, 18-inch, 20-inch, 24-inch, 27-inch and 36-inch diameter pipe which was installed between 1951 to 2020. About 41% of the gravity mains were installed in the 1970s, 27% between 1980 and 1999,

and 21% after 1999. The mains consist of ACP, cast iron ("CIP"), corrugated steel ("CSP"), DIP and PVC pipe. There are 1,506 manholes and 3,895 service laterals in the system.

East Whiteland Township's Wastewater System land and land rights include land used for wastewater collection and transmission, about 63 miles of mains, 12 pump stations and multiple easements and rights-of-way necessary to operate the Wastewater System.

- **State the type and definition of value and cite the source of the definition, including whether the opinion of value is in terms of cash or of financing terms equivalent to cash, or based on non-market financing or financing with unusual conditions or incentives**

  Fair market value is defined as:

  > "The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts." The International Glossary of Business Valuation Standards

- **State the effective date of the appraisal and the date of the report**

  The effective date of the appraisal is as of May 20, 2021 and the appraisal report date is June 2021.

- **Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal**

  Conduct a fair market value appraisal of the East Whiteland Township's Wastewater System assets in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches.

  The premise of value is going concern and the assets are valued as a group under the premise that they collectively comprise an ongoing operating business enterprise.

We accepted all information and data provided by the East Whiteland Township and Aqua Pennsylvania Wastewater, Inc. as it pertains to this assignment "as is" after a limited review. That is, we neither audited nor verify any data, original cost data, financial records or operating data provided for this assignment.

The appraisal considered all three approaches to value: the cost, income and market. Briefly the scopes of work for each are as follows:

The cost approach utilized the original cost method and replacement cost method. The reproduction cost method was calculated by trending (trended cost method) the asset inventory developed by Pennoni Associates Inc. from its original cost new inventory. The original cost method determined the original cost new measure of the cost of the assets when first constructed. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new and converted to replacement cost new after obsolescence was factored. The calculated accrued depreciation was determined for the original cost new and for the replacement cost new. The calculated accrued depreciation was based on the assets' attained ages, and the service life of the assets. The cost basis of depreciable assets was reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed. All land and land rights were valued at original cost.

Income Approach - The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of earning method converted a single base economic income number to a value by dividing it by a capitalization rate. The discounted cash flow method used estimates of future debt free net cash flow and discounted them to arrive at a present value or price of the cash flows. The capitalization rate and the discount rate were developed based on market debt and equity rates at the appraisal date. The discounted cash flow method reflected two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model and a capitalization of terminal value model.

Market Approach - The market approach was developed based on the market multiples method and the selected transaction method. The market multiples method was based on the market price data of publicly traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publicly traded corporations was used to calculate the market multiples for the comparable publicly traded corporations at the appraisal date. The selected transactions method used certain public information relating to the purchase or sales of businesses involved in the same or a similar business line as the Wastewater System to calculated market multiples at the time

of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied by the corresponding the Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

Reconciliation of the Valuation Approaches - The fair market value conclusion was based on reconciliation of each of the three approaches to value and the intended purpose of the appraisal.

- **Clearly and conspicuously:**
  - **State all extraordinary assumptions and hypothetical conditions;**

    There were no extraordinary assumptions required or hypothetical conditions in this appraisal.

  - **State that their use might have affected the assignment results**

    Not applicable.

- **Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment**

  Not applicable.

- **Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions**

  See scope of work above.

- **State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal**

  East Whiteland Township's Wastewater System land and land rights include land used for wastewater collection and transmission, about 63 miles of mains, 12 pump stations and and multiple easements and rights-of-way necessary to operate the Wastewater System.

The East Whiteland Township Wastewater System's land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal.

- **State and describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate**

  All land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal, were valued at original cost, and not at highest and best use of the real estate.

- **State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal - a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken**

  No departures for Standard 1 were made.

- **Include a signed certification in accordance with Standards Rule 2-3**

  See attached for signed certification.

APPRAISAL CERTIFICATION
East Whiteland Township, Pennsylvania
East Whiteland Township
Wastewater System Assets
Fair Market Value Appraisal Report
As of May 20, 2021

Gannett Fleming Valuation and Rate Consultants, LLC certify that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- Gannett Fleming Valuation and Rate Consultants, LLC has not performed an appraisal of the East Whiteland Township Wastewater System prior to this current appraisal.

- Gannett Fleming Valuation and Rate Consultants, LLC, nor its professional staff has any present or prospective interest in the property that is the subject of this report, and has no interest or bias with respect to the parties involved.

- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

- Our engagement in this assignment is not contingent upon developing or reporting predetermined results.

- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice (2020-2021)

APPRAISAL CERTIFICATION
East Whiteland Township, Pennsylvania
East Whiteland Township
Wastewater System Assets
Fair Market Value Appraisal Report
As of May 20, 2021

— The signers of this report have made a personal inspection of the property that is the subject of this report.

— Individuals providing significant appraisal assistance to the person signing this certification include: John J. Spanos, President, Joanna Lappin, Depreciation Analyst and Gregory R. Herbert, Rate Analyst at Gannett Fleming Valuation and Rate Consultants, LLC.

Gannett Fleming Valuation and Rate Consultants, LLC

By,



HAROLD WALKER, III

Manager, Financial Studies

EXHIBITS

East Whiteland Township Wastewater System Assets
Selected Audited Financial Information

	12-Months Ended December 31:			
	2016	2017	2018	2019
Gross property, plant & equipment	44,323,950	45,329,501	47,751,038	48,672,940
Accumulated depreciation	12,377,360	13,065,252	13,754,484	14,529,267
Net property, plant & equipment	31,946,590	32,264,249	33,996,554	34,143,673
Assets	39,689,139	40,478,142	44,559,944	45,379,319
Debt Current	725,000	745,000	715,000	735,000
Debt	17,466,860	16,741,396	16,045,932	15,330,468
Equity	20,205,657	21,279,413	25,275,734	26,447,777
Total Capital	38,397,517	38,765,809	42,036,666	42,513,245
OPERATING REVENUES				
Charges for services	3,312,268	3,294,177	3,809,229	3,761,787
Other operating income	677,340	216,471	1,563,159	682,780
TOTAL OPERATING REVENUES	3,989,608	3,510,648	5,372,388	4,444,567
Expenses	2,552,665	2,864,649	2,407,506	3,073,240
Depreciation	673,195	687,892	718,700	774,783
TOTAL OPERATING EXPENSES	3,225,860	3,552,541	3,126,206	3,848,023
CAPX	1,188,175	1,005,551	393,256	740,070
Interest	564,911	553,075	539,353	522,264
Principal	720,000	725,000	745,000	715,000
Transfer (net of CAPX fund)	30,000	3,543	166,320	166,165

Source of Information: Audited Financial Statements (2016-2019)

East Whiteland Township Wastewater System Assets
Population, Housing Units, Customers and EDUs
Customer Count

	2020	Population To Customers
Population	14,720	3.8
Housing Units	5,085	
Average Size	2.89	

	Current
Customers	
Residential & Commercial	3,895
Total	3,895
Total EDUs	7,908

	Projected New EDUs				
	2021	2022	2023	2024	2025
New EDUs	550	741	681	428	43

Population and Housing Units (2020)

Total Population	Population in Households	Total Housing Units	Vacancy Rate	Population per Housing Unit
14,720	13,514	5,085	5.1%	2.89

TABLE 3.1 US Population Census Counts, 2000 & 2010

State	Population 2000	Population 2010	Percentage Change
Alabama	4,447,351	4,779,736	7.5%
Alaska	626,931	710,231	13.3%
Arizona	5,130,632	6,392,017	24.6%
Arkansas	2,673,400	2,915,918	9.1%
California	33,871,653	37,253,956	10.0%
Colorado	4,302,015	5,029,196	16.9%
Connecticut	3,405,602	3,574,097	4.9%
Delaware	783,600	897,934	14.6%
District of Columbia	572,059	601,723	5.2%
Florida	15,982,824	18,801,310	17.6%
Georgia	8,186,816	9,687,653	18.3%
Hawaii	1,211,537	1,360,301	12.3%
Idaho	1,293,956	1,567,582	21.1%
Illinois	12,419,647	12,830,632	3.3%
Indiana	6,080,517	6,483,802	6.6%
Iowa	2,926,382	3,046,355	4.1%
Kansas	2,688,824	2,853,118	6.1%
Kentucky	4,042,285	4,339,367	7.3%
Louisiana	4,468,958	4,533,372	1.4%
Maine	1,274,923	1,328,361	4.2%
Maryland	5,296,507	5,773,552	9.0%
Massachusetts	6,349,105	6,547,629	3.1%
Michigan	9,938,480	9,883,640	-0.6%
Minnesota	4,919,492	5,303,925	7.8%
Mississippi	2,844,656	2,967,297	4.3%
Missouri	5,596,683	5,988,927	7.0%
Montana	902,195	989,415	9.7%
Nebraska	1,711,265	1,826,341	6.7%
Nevada	1,998,257	2,700,551	35.1%
New Hampshire	1,235,786	1,316,470	6.5%
New Jersey	8,414,347	8,791,894	4.5%
New Mexico	1,819,046	2,059,179	13.2%
New York	18,976,821	19,378,102	2.1%
North Carolina	8,046,485	9,535,483	18.5%
North Dakota	642,200	672,591	4.7%
Ohio	11,353,145	11,536,504	1.6%
Oklahoma	3,450,652	3,751,351	8.7%
Oregon	3,421,436	3,831,074	12.0%
Pennsylvania	12,281,054	12,702,379	3.4%
Rhode Island	1,048,319	1,052,567	0.4%
South Carolina	4,011,816	4,625,364	15.3%
South Dakota	754,844	814,180	7.9%
Tennessee	5,689,267	6,346,105	11.5%
Texas	20,851,790	25,145,561	20.6%
Utah	2,233,198	2,763,885	23.8%
Vermont	608,827	625,741	2.8%
Virginia	7,079,030	8,001,024	13.0%
Washington	5,894,141	6,724,540	14.1%
West Virginia	1,808,350	1,852,994	2.5%
Wisconsin	5,363,715	5,686,986	6.0%
Wyoming	493,782	563,626	14.1%
Total - States & D.C.	281,424,603	308,745,538	9.7%

Source: U.S. Census Bureau, Population Division

TABLE 3.2 Pennsylvania Population Census by County and Municipality, 2000 & 2010

Geographic Area	Population 2000	Population 2010	Percentage Change	Municipal Growth Rank
Pennsylvania	12,281,054	12,702,379	3.4%	-
Chester County	433,501	498,886	15.1%	-
East Whiteland township	9,333	10,650	14.1%	323 out of 2,572

Source: U.S. Census Bureau,Census 2000 & 2010 Redistricting Data (Public Law 94-171) Summary File.

TABLE 3.3 Forecasted Population by County and Municipality, 2015-2045

	Population							Percentage Change						
	Estimate 2015	Forecast 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2015 to 2045
Bucks County	627,367	640,495	654,792	669,299	681,273	691,111	699,498	2.1%	2.2%	2.2%	1.8%	1.4%	1.2%	11.5%
Chester County	515,939	543,702	571,641	599,932	624,832	645,562	662,283	5.4%	5.1%	4.9%	4.2%	3.3%	2.6%	28.4%
Delaware County	563,894	568,337	572,758	577,248	581,136	584,329	587,037	0.8%	0.8%	0.8%	0.7%	0.5%	0.5%	4.1%
Montgomery County	819,264	840,934	863,327	884,387	903,114	918,918	932,820	2.6%	2.7%	2.4%	2.1%	1.7%	1.5%	13.9%
Philadelphia County	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	1.7%	1.4%	1.7%	1.4%	1.0%	0.8%	8.2%
Subtotal - Five Pennsylvania Counties	4,093,907	4,188,255	4,279,334	4,374,837	4,457,645	4,523,322	4,577,771	2.3%	2.2%	2.2%	1.9%	1.5%	1.2%	11.8%
Burlington County	450,226	459,344	468,428	475,978	482,560	488,026	492,709	2.0%	2.0%	1.6%	1.4%	1.1%	1.0%	9.4%
Camden County	510,923	514,006	517,073	520,189	522,886	525,101	526,997	0.6%	0.6%	0.6%	0.5%	0.4%	0.4%	3.1%
Gloucester County	291,479	307,766	323,969	340,425	354,677	366,383	376,308	5.6%	5.3%	5.1%	4.2%	3.3%	2.7%	29.1%
Mercer County	371,398	377,328	383,227	389,219	394,407	398,669	402,283	1.6%	1.6%	1.6%	1.3%	1.1%	0.9%	8.3%
Subtotal - Four New Jersey Counties	1,624,026	1,658,444	1,692,697	1,725,811	1,754,530	1,778,179	1,798,297	2.1%	2.1%	2.0%	1.7%	1.3%	1.1%	10.7%
Total - Nine DVRPC Counties	5,717,933	5,846,699	5,972,031	6,100,648	6,212,175	6,301,501	6,376,068	2.3%	2.1%	2.2%	1.8%	1.4%	1.2%	11.5%
East Whiteland Township	10,702	12,002	13,196	14,309	15,358	16,221	16,952	12.1%	9.9%	8.4%	7.3%	5.6%	4.5%	58.4%

Source: Delaware Valley Regional Planning Commission, June 2016.

TABLE 3.4 Forecasted Employment by County and Municipality, 2015-2045

	Employment							Percentage Change						
	Estimate 2015	Forecast 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2015 to 2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	2.1%	2.3%	2.3%	1.9%	1.5%	1.2%	11.9%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	5.4%	5.1%	4.9%	4.2%	3.3%	2.6%	28.4%
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	0.8%	0.8%	0.8%	0.7%	0.5%	0.5%	4.1%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	2.7%	2.7%	2.5%	2.1%	1.9%	1.4%	14.1%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	1.7%	1.4%	1.7%	1.4%	1.0%	0.8%	8.3%
Subtotal - Five Pennsylvania Counties	2,255,680	2,310,874	2,364,147	2,419,171	2,467,523	2,506,728	2,538,789	2.4%	2.3%	2.3%	2.0%	1.6%	1.3%	12.6%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	2.1%	2.0%	1.7%	1.1%	1.1%	0.9%	9.3%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	0.6%	0.6%	0.6%	0.5%	0.4%	0.4%	3.1%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	5.6%	5.3%	5.1%	4.2%	3.3%	2.7%	29.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	1.6%	1.6%	1.6%	1.3%	1.1%	0.9%	8.3%
Subtotal - Four New Jersey Counties	912,557	930,545	948,431	965,698	979,816	991,943	1,002,261	2.0%	1.9%	1.8%	1.5%	1.2%	1.0%	9.8%
Total - Nine DVRPC Counties	3,168,237	3,241,419	3,312,578	3,384,869	3,447,339	3,498,671	3,541,050	2.3%	2.2%	2.2%	1.8%	1.5%	1.2%	11.8%
East Whiteland Township	23,399	24,735	26,117	27,514	28,722	29,730	30,623	5.7%	5.6%	5.3%	4.4%	3.5%	3.0%	30.9%

Source: Delaware Valley Regional Planning Commission, September 2016. Base employment data from the National Establishments Time Series (NETS) database, 2010 and 2013.

Comparison of Credit Market Financial Risk Metrics
For East Whiteland Township Wastewater System Assets
And the Comparable Group
2017 - 2019 (1)

	East Whiteland Township Wastewater System Assets			Comparable Group		
	2019	2018	2017	2019	2018	2017
Debt Service Coverage	1.1	2.3	0.5	2.0	3.7	2.7
Pre-Tax Interest Coverage - Including AFC(2)(x)	1.1	4.2	-0.1	3.6	3.6	4.4
Post-Tax Interest Coverage - Including AFC(2)(x)	1.1	4.2	-0.1	2.9	3.0	3.5
GCF / Interest Coverage(3)(x)	2.6	5.5	1.2	4.7	4.9	5.9
GCF / Tot. Debt(4)(%)	5.3	14.5	0.5	15.8	18.7	23.2
GCF / Construction(5)(%)	114.7	616.8	9.2	63.0	63.2	81.8

Notes: (1) Average of the achieved results for each individual company based upon the financials as originally reported.
(2) Represents the number of times available earnings, including AFC, cover all interest charges.
(3) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.
(4) GCF (see note 3) as a percentage of total debt.
(5) The percent of GCF (see note 3) which cover gross construction expenditures.

Source: 2017-19 Annual Reports and Budgets
S&P Capital IQ
EXHIBIT 1

East Whiteland Township Wastewater System Assets
Illustrating the Impact of Size on Risk and Retun
Through Common Stock Returns

TABLE 5.1 Change in Return and Risk for Size-Quartiles Portfolio of the NYSE/AMEX/NASDAQ Common Stocks (1)

	A	B	C	D	E	F	G	H	I	J
									Beta Adjusted	
Market Quartile	Market Quartile Name	Average Quartile Premium 1926-18 (%)	Standard Deviation of Return (%)	Change in Quartile Premium (%)	Largest Market Value in the Quartile (Mill $)	Quartile Beta	Comparison Group Beta	Beta Ratio	Quartile Size Premium (%)	Change in Quartile Premium (%)
(Largest Stocks)										
1	Large-Cap	0.00	19.9	--	1,073,390	1.00	0.80	80%	0.00	
2	Mid-Cap	0.89	24.3	0.89	13,456	1.12	0.80	71%	0.64	0.64
3	Low-Cap	1.60	28.5	0.71	2,993	1.22	0.80	66%	1.05	0.41
4	Mico-Cap	3.40	38.5	1.80	728	1.35	0.80	59%	2.01	0.97
(Smallest Stocks)										

Notes: (1) 2019 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook

TABLE 5.2 Recent Market Values and Ibbotson Associates Market Quartiles for the Comparable Group

	5/20/2021 Market Value (Mill $)	Market Quartile Name	Market Quartile
Comparable Group			
American States Water Co	2,891	Low-Cap	3
American Water Works Co Inc	28,022	Large-Cap	1
Artesian Resources -Cl A	381	Mico-Cap	4
California Water Service Gp	2,847	Low-Cap	3
Essential Utilities, Inc.	11,511	Mid-Cap	2
Middlesex Water Co	1,410	Low-Cap	3
SJW Corp	1,890	Low-Cap	3
York Water Co	634	Mico-Cap	4
Median	2,369	Low-Cap	3

East Whiteland Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.1 Property Plant & Equipment Analysis

(Current Know Statistics)

	Gross Property, Plant & Equipment	Net Property, Plant & Equipment	Percentage of Property, Plant & Equipment Not Depreciated
	(Millions of $)		
East Whiteland Township Wastewater System Assets *	$43.447	$32.956	76%
Comparable Group			
American States Water Company	$2,100.362	$1,532.036	73%
American Water Works Company	25,709.000	19,805.000	77%
Artesian Resources Corporation	712.151	563.817	79%
California Water Service Group	3,878.445	2,654.027	68%
Essential Utilities, Inc.	11,680.353	9,573.211	82%
Middlesex Water Company	1,000.470	813.014	81%
SJW Group	3,403.010	2,356.988	69%
The York Water Company	436.163	344.365	79%
Median			78%

* - Developed on Exhibit 7.

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 5/20/2021)

	Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	2020 Percentage of Known "Cost Free" Capital
	(Millions of $)			
Comparable Group				
American States Water Co	$1,532.036	$1,228.228	80%	22%
American Water Works Co Inc	19,805.000	17,492.000	88%	19%
Artesian Resources -CL A	563.817	340.886	60%	39%
California Water Service Gp	2,654.027	2,093.196	79%	28%
Essential Utilities, Inc.	9,573.211	10,461.483	109%	20%
Middlesex Water Co	813.014	636.533	78%	25%
SJW Corp	2,356.988	2,456.075	104%	26%
York Water Co	344.365	269.556	78%	28%
Median			80%	25%

East Whiteland Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.3 Capital Expenditures Analysis

	PP&E-Total Net (Millions of $)				Capital Expenditures (Millions of $)			
	2019	2018	2017	2016	2019	2018	2017	2016
East Whiteland Township Wastewater System Assets	$34.144	$33.997	$32.264	$31.947	$0.740	$0.393	$1.006	$1.188
Comparable Group								
American States Water Co	$1,437.042	$1,304.683	$1,213.264	$1,159.766	$151.940	$126.561	$113.126	$129.867
American Water Works Co Inc	18,335.000	17,409.000	16,246.000	14,992.000	1,654.000	1,586.000	1,434.000	1,311.000
Artesian Resources -CL A	535.013	502.527	464.384	429.383	40.677	49.053	41.094	28.251
California Water Service Gp	2,409.873	2,220.873	2,036.971	1,847.460	273.770	271.707	259.194	228.938
Essential Utilities, Inc.	6,358.657	5,930.326	5,399.860	5,001.615	550.273	495.737	478.089	382.996
Middlesex Water Co	722.044	628.476	566.718	526.907	89.125	72.094	50.301	47.375
SJW Corp	2,230.343	1,365.771	1,278.025	1,180.481	164.325	135.973	141.213	129.134
York Water Co	313.993	299.871	289.524	271.652	20.537	16.882	25.074	13.208

	Capital Expenditures / PP&E-Total Net			
	2019	2018	2017	2016
East Whiteland Township Wastewater System Assets	2%	1%	3%	4%
Comparable Group				
American States Water Co	11%	10%	9%	11%
American Water Works Co Inc	9%	9%	9%	9%
Artesian Resources -CL A	8%	10%	9%	7%
California Water Service Gp	11%	12%	13%	12%
Essential Utilities, Inc.	9%	8%	9%	8%
Middlesex Water Co	12%	11%	9%	9%
SJW Corp	7%	10%	11%	11%
York Water Co	7%	6%	9%	5%
Median	9%	10%	9%	9%

East Whiteland Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

	Revenues				EBITDA			
	2019	2018	2017	2016	2019	2018	2017	2016
	(Millions of $)				(Millions of $)			
East Whiteland Township Wastewater System Assets	$4.445	$5.372	$3.511	$3.990	$1.371	$2.965	$0.646	$1.437
Comparable Group								
American States Water Co	$473.869	$436.816	$440.603	$436.087	$164.085	$144.803	$159.380	$154.263
American Water Works Co Inc	3,610.000	3,440.000	3,357.000	3,302.000	1,306.476	1,154.957	1,102.741	917.849
Artesian Resources -CL A	83.595	80.411	82.235	79.089	433.284	387.423	380.137	340.460
California Water Service Gp	714.557	698.196	676.113	609.370	30.401	25.800	26.382	25.061
Essential Utilities, Inc.	889.692	838.091	809.525	819.875	147.867	140.577	127.710	122.709
Middlesex Water Co	134.598	138.077	130.775	132.906	38.056	33.947	35.841	28.720
SJW Corp	420.482	397.699	389.225	339.706	86.302	83.532	68.003	63.335
York Water Co	51.578	48.437	48.589	47.584	25.743	24.780	24.359	21.800

	EBIT			
	2019	2018	2017	2016
	(Millions of $)			
East Whiteland Township Wastewater System Assets	$0.597	$2.246	($0.042)	$0.764
Comparable Group				
American States Water Co	$128.372	$104.140	$120.107	$115.154
American Water Works Co Inc	1,220.000	1,139.000	1,228.000	1,147.000
Artesian Resources -CL A	25.106	23.946	26.895	27.150
California Water Service Gp	109.924	119.686	132.592	104.015
Essential Utilities, Inc.	357.241	315.347	328.967	333.298
Middlesex Water Co	34.318	37.766	37.967	40.060
SJW Corp	70.089	89.694	98.079	93.116
York Water Co	22.335	21.232	22.473	22.888

East Whiteland Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.4 Growth Rate Analyses

	Revenue Growth			EBITDA Growth		
	2019	2018	2017	2019	2018	2017
East Whiteland Township Wastewater System Assets	-17.3%	53.0%	-12.0%	-53.8%	359.0%	-55.0%
Comparable Group						
American States Water Co	8.5%	-0.9%	1.0%	13.3%	-9.1%	3.3%
American Water Works Co Inc	4.9%	2.5%	1.7%	13.1%	4.7%	20.1%
Artesian Resources -CL A	4.0%	-2.2%	4.0%	11.8%	1.9%	11.7%
California Water Service Gp	2.3%	3.3%	11.0%	17.8%	-2.2%	5.3%
Essential Utilities, Inc.	6.2%	3.5%	-1.3%	5.2%	10.1%	4.1%
Middlesex Water Co	-2.5%	5.6%	-1.6%	12.1%	-5.3%	24.8%
SJW Corp	5.7%	2.2%	14.6%	3.3%	22.8%	7.4%
York Water Co	6.5%	-0.3%	2.1%	3.9%	1.7%	11.7%
Median	5.3%	2.4%	1.9%	12.0%	1.8%	9.6%

	EBIT Growth		
	2019	2018	2017
East Whiteland Township Wastewater System Assets	-73.4%	-5447.6%	-105.5%
Comparable Group			
American States Water Co	23.3%	-13.3%	4.3%
American Water Works Co Inc	7.1%	-7.2%	7.1%
Artesian Resources -CL A	4.8%	-11.0%	-0.9%
California Water Service Gp	-8.2%	-9.7%	27.5%
Essential Utilities, Inc.	13.3%	-4.1%	-1.3%
Middlesex Water Co	-9.1%	-0.5%	-5.2%
SJW Corp	-21.9%	-8.5%	5.3%
York Water Co	5.2%	-5.5%	-1.8%
Median	5.0%	-7.9%	1.7%

East Whiteland Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.5 Profit Margin Analyses

	EBITDA / Revenue - Margin		
	2019	2018	2017
East Whiteland Township Wastewater System Assets	30.8%	55.2%	18.4%
Comparable Group			
American States Water Co	34.6%	33.1%	36.2%
American Water Works Co Inc	36.2%	33.6%	32.8%
Artesian Resources -CL A	518.3%	481.8%	462.3%
California Water Service Gp	4.3%	3.7%	3.9%
Essential Utilities, Inc.	16.6%	16.8%	15.8%
Middlesex Water Co	28.3%	24.6%	27.4%
SJW Corp	20.5%	21.0%	17.5%
York Water Co	49.9%	51.2%	50.1%
Median	31.5%	28.9%	30.1%

	EBIT / Revenue - Margin		
	2019	2018	2017
East Whiteland Township Wastewater System Assets	13.4%	41.8%	-1.2%
Comparable Group			
American States Water Co	27.1%	23.8%	27.3%
American Water Works Co Inc	33.8%	33.1%	36.6%
Artesian Resources -CL A	30.0%	29.8%	32.7%
California Water Service Gp	15.4%	17.1%	19.6%
Essential Utilities, Inc.	40.2%	37.6%	40.6%
Middlesex Water Co	25.5%	27.4%	29.0%
SJW Corp	16.7%	22.6%	25.2%
York Water Co	43.3%	43.8%	46.3%
Median	28.6%	28.6%	30.9%

Source: S&P Capital IQ
EXHIBIT 1

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.20	LAND AND LAND RIGHTS - COLLECTION	668.00	
353.30	LAND AND LAND RIGHTS - PUMPING	13.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	7,826,287.43	1,329,577
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	11,085,241.50	1,133,066
355.00	POWER GENERATION EQUIPMENT	75,416.00	15,379
360.10	FORCE MAINS	2,304,354.56	706,979
361.10	GRAVITY MAINS	10,767,737.94	3,687,821
361.12	GRAVITY MAINS MANHOLES	4,350,867.00	1,656,016
363.20	SERVICES TO CUSTOMERS	6,619,976.05	1,682,736
365.20	METER PITS	78,670.00	58,625
371.30	PUMPING EQUIPMENT	49,664.45	18,041
390.70	COMPUTERS	21,550.00	21,550
391.70	TRANSPORTATION EQUIPMENT	212,955.81	142,750
395.70	POWER OPERATED EQUIPMENT	53,907.50	39,173
	TOTAL COMPANY	**43,447,309.24**	**10,491,713**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF ORIGINAL COST
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	ORIGINAL COST
(1)	(2)	(3)
353.20	LAND AND LAND RIGHTS - COLLECTION	668.00
353.30	LAND AND LAND RIGHTS - PUMPING	13.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	7,826,287.43
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	11,085,241.50
355.00	POWER GENERATION EQUIPMENT	75,416.00
360.10	FORCE MAINS	2,304,354.56
361.10	GRAVITY MAINS	10,767,737.94
361.12	GRAVITY MAINS MANHOLES	4,350,867.00
363.20	SERVICES TO CUSTOMERS	6,619,976.05
365.20	METER PITS	78,670.00
371.30	PUMPING EQUIPMENT	49,664.45
390.70	COMPUTERS	21,550.00
391.70	TRANSPORTATION EQUIPMENT	212,955.81
395.70	POWER OPERATED EQUIPMENT	53,907.50
	TOTAL COMPANY	**43,447,309.24**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED DEPRECIATION RELATED TO ORIGINAL COST AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.20	LAND AND LAND RIGHTS - COLLECTION	NONDEPRECIABLE	668.00	
353.30	LAND AND LAND RIGHTS - PUMPING	NONDEPRECIABLE	13.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	60-R3	7,826,287.43	1,329,577
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	65-R2.5	11,085,241.50	1,133,066
355.00	POWER GENERATION EQUIPMENT	30-S2	75,416.00	15,379
360.10	FORCE MAINS	70-R2.5	2,304,354.56	706,979
361.10	GRAVITY MAINS	65-R2.5	10,767,737.94	3,687,821
361.12	GRAVITY MAINS MANHOLES	60-R3	4,350,867.00	1,656,016
363.20	SERVICES TO CUSTOMERS	55-R2.5	6,619,976.05	1,682,736
365.20	METER PITS	50-R3	78,670.00	58,625
371.30	PUMPING EQUIPMENT	40-R1.5	49,664.45	18,041
390.70	COMPUTERS	5-SQ	21,550.00	21,550
391.70	TRANSPORTATION EQUIPMENT	11-S1.5	212,955.81	142,750
395.70	POWER OPERATED EQUIPMENT	15-L4	53,907.50	39,173
	TOTAL COMPANY		**43,447,309.24**	**10,491,713**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.20 LAND AND LAND RIGHTS - COLLECTION

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

	ORIGINAL	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
1987	668.00						
	668.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.30 LAND AND LAND RIGHTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
1993	13.00						
	13.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1976	118,670.00	60.00	1.67	1,981.79	20.93	0.6512	77,274
1980	106,067.00	60.00	1.67	1,771.32	23.76	0.6040	64,064
1987	179,265.00	60.00	1.67	2,993.73	29.11	0.5148	92,291
1988	78,824.35	60.00	1.67	1,316.37	29.91	0.5015	39,530
2000	838,626.14	60.00	1.67	14,005.06	40.16	0.3307	277,309
2001	89,972.00	60.00	1.67	1,502.53	41.06	0.3157	28,401
2004	233,129.00	60.00	1.67	3,893.25	43.80	0.2700	62,945
2006	131,119.57	60.00	1.67	2,189.70	45.66	0.2390	31,338
2007	556,117.00	60.00	1.67	9,287.15	46.59	0.2235	124,292
2014	4,143,867.37	60.00	1.67	69,202.59	53.27	0.1122	464,818
2017	565,100.00	60.00	1.67	9,437.17	56.19	0.0635	35,884
2018	433,530.00	60.00	1.67	7,239.95	57.16	0.0473	20,519
2019	352,000.00	60.00	1.67	5,878.40	58.14	0.0310	10,912
	7,826,287.43			130,699.01			1,329,577

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TREATMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2013	8,916,353.50	65.00	1.54	137,311.84	57.63	0.1134	1,010,936
2017	2,168,888.00	65.00	1.54	33,400.88	61.34	0.0563	122,130
	11,085,241.50			170,712.72			1,133,066

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-S2							
NET SALVAGE PERCENT.. 0							
2007	23,866.00	30.00	3.33	794.74	16.91	0.4363	10,413
2018	51,550.00	30.00	3.33	1,716.62	27.11	0.0963	4,966
	75,416.00			2,511.36			15,379

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 3.33

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.10 FORCE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
1976	224,591.51	70.00	1.43	3,211.66	31.79	0.5459	122,596
1979	77,969.12	70.00	1.43	1,114.96	33.97	0.5147	40,131
1980	63,237.44	70.00	1.43	904.30	34.72	0.5040	31,872
1987	616,571.40	70.00	1.43	8,816.97	40.12	0.4269	263,190
1988	137,992.57	70.00	1.43	1,973.29	40.92	0.4154	57,326
2000	365,087.80	70.00	1.43	5,220.76	50.95	0.2721	99,355
2004	286,021.50	70.00	1.43	4,090.11	54.47	0.2219	63,457
2016	89,428.47	70.00	1.43	1,278.83	65.41	0.0656	5,864
2017	443,454.75	70.00	1.43	6,341.40	66.34	0.0523	23,188
	2,304,354.56			32,952.28			706,979

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.43

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
1951	2,995.29	65.00	1.54	46.13	13.45	0.7931	2,376
1954	18,192.92	65.00	1.54	280.17	14.69	0.7740	14,081
1967	101,639.86	65.00	1.54	1,565.25	21.44	0.6702	68,114
1970	88,975.20	65.00	1.54	1,370.22	23.29	0.6417	57,094
1971	25,402.60	65.00	1.54	391.20	23.92	0.6320	16,054
1972	23,205.13	65.00	1.54	357.36	24.57	0.6220	14,434
1973	96,745.87	65.00	1.54	1,489.89	25.23	0.6119	59,194
1974	105,874.72	65.00	1.54	1,630.47	25.89	0.6017	63,704
1975	1,212,493.01	65.00	1.54	18,672.39	26.57	0.5912	716,862
1977	190,730.14	65.00	1.54	2,937.24	27.95	0.5700	108,716
1978	445,959.85	65.00	1.54	6,867.78	28.65	0.5592	249,394
1979	113,876.97	65.00	1.54	1,753.71	29.37	0.5482	62,422
1981	204,755.08	65.00	1.54	3,153.23	30.82	0.5259	107,670
1983	124,221.58	65.00	1.54	1,913.01	32.30	0.5031	62,493
1984	122,229.73	65.00	1.54	1,882.34	33.05	0.4915	60,081
1985	25,549.19	65.00	1.54	393.46	33.81	0.4799	12,260
1987	445,308.18	65.00	1.54	6,857.75	35.35	0.4562	203,127
1988	683,452.64	65.00	1.54	10,525.17	36.13	0.4442	303,555
1990	322,292.20	65.00	1.54	4,963.30	37.72	0.4197	135,263
1991	188,920.85	65.00	1.54	2,909.38	38.52	0.4074	76,963
1992	113,430.73	65.00	1.54	1,746.83	39.33	0.3949	44,796
1993	125,848.33	65.00	1.54	1,938.06	40.14	0.3825	48,132
1994	48,812.47	65.00	1.54	751.71	40.96	0.3699	18,053
1996	17,626.35	65.00	1.54	271.45	42.63	0.3442	6,066
1997	195,693.34	65.00	1.54	3,013.68	43.47	0.3312	64,820
1998	161,226.12	65.00	1.54	2,482.88	44.31	0.3183	51,320
1999	191,811.88	65.00	1.54	2,953.90	45.17	0.3051	58,518
2000	841,402.41	65.00	1.54	12,957.60	46.02	0.2920	245,690
2001	33,916.65	65.00	1.54	522.32	46.89	0.2786	9,450
2002	573,796.70	65.00	1.54	8,836.47	47.76	0.2652	152,188
2003	130,439.13	65.00	1.54	2,008.76	48.63	0.2519	32,851
2004	150,691.88	65.00	1.54	2,320.65	49.51	0.2383	35,911
2005	1,084,944.19	65.00	1.54	16,708.14	50.40	0.2246	243,700
2006	25,135.71	65.00	1.54	387.09	51.28	0.2111	5,306
2007	572,582.23	65.00	1.54	8,817.77	52.18	0.1972	112,930
2011	132,177.28	65.00	1.54	2,035.53	55.80	0.1415	18,708
2012	254,832.50	65.00	1.54	3,924.42	56.71	0.1275	32,501
2013	497,526.27	65.00	1.54	7,661.90	57.63	0.1134	56,410
2014	49,702.48	65.00	1.54	765.42	58.56	0.0991	4,925
2016	152,918.81	65.00	1.54	2,354.95	60.41	0.0706	10,799
2017	589,958.65	65.00	1.54	9,085.36	61.34	0.0563	33,221

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2018	118,706.70	65.00	1.54	1,828.08	62.28	0.0419	4,968
2019	42,281.39	65.00	1.54	651.13	63.22	0.0274	1,158
2020	119,454.73	65.00	1.54	1,839.60	64.16	0.0129	1,543
	10,767,737.94			165,823.15			3,687,821

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1951	2,077.71	60.00	1.67	34.70	8.20	0.8633	1,794
1954	8,810.81	60.00	1.67	147.14	9.24	0.8460	7,454
1967	23,972.08	60.00	1.67	400.33	15.27	0.7455	17,871
1970	24,659.55	60.00	1.67	411.81	17.03	0.7162	17,660
1971	9,074.19	60.00	1.67	151.54	17.65	0.7058	6,405
1972	5,589.66	60.00	1.67	93.35	18.28	0.6953	3,887
1973	48,339.55	60.00	1.67	807.27	18.92	0.6847	33,097
1974	38,646.13	60.00	1.67	645.39	19.58	0.6737	26,035
1975	418,962.34	60.00	1.67	6,996.67	20.25	0.6625	277,563
1977	82,138.97	60.00	1.67	1,371.72	21.62	0.6397	52,542
1978	146,936.93	60.00	1.67	2,453.85	22.32	0.6280	92,276
1979	45,962.11	60.00	1.67	767.57	23.04	0.6160	28,313
1980	4,128.63	60.00	1.67	68.95	23.76	0.6040	2,494
1981	81,156.88	60.00	1.67	1,355.32	24.50	0.5917	48,018
1983	44,080.82	60.00	1.67	736.15	26.00	0.5667	24,979
1984	63,456.18	60.00	1.67	1,059.72	26.76	0.5540	35,155
1985	13,376.28	60.00	1.67	223.38	27.54	0.5410	7,237
1987	188,257.68	60.00	1.67	3,143.90	29.11	0.5148	96,921
1988	256,487.24	60.00	1.67	4,283.34	29.91	0.5015	128,628
1990	120,708.58	60.00	1.67	2,015.83	31.54	0.4743	57,256
1991	92,502.00	60.00	1.67	1,544.78	32.37	0.4605	42,597
1992	50,864.94	60.00	1.67	849.44	33.20	0.4467	22,720
1993	63,128.39	60.00	1.67	1,054.24	34.05	0.4325	27,303
1994	24,141.72	60.00	1.67	403.17	34.90	0.4183	10,099
1996	7,168.03	60.00	1.67	119.71	36.62	0.3897	2,793
1997	85,453.87	60.00	1.67	1,427.08	37.50	0.3750	32,045
1998	113,259.95	60.00	1.67	1,891.44	38.38	0.3603	40,811
1999	77,279.51	60.00	1.67	1,290.57	39.26	0.3457	26,713
2000	440,368.85	60.00	1.67	7,354.16	40.16	0.3307	145,617
2001	16,180.36	60.00	1.67	270.21	41.06	0.3157	5,108
2002	254,336.19	60.00	1.67	4,247.41	41.97	0.3005	76,428
2003	55,496.10	60.00	1.67	926.78	42.88	0.2853	15,835
2004	68,061.20	60.00	1.67	1,136.62	43.80	0.2700	18,377
2005	465,353.00	60.00	1.67	7,771.40	44.73	0.2545	118,432
2006	19,772.02	60.00	1.67	330.19	45.66	0.2390	4,726
2007	182,884.21	60.00	1.67	3,054.17	46.59	0.2235	40,875
2011	52,057.49	60.00	1.67	869.36	50.38	0.1603	8,346
2012	100,911.05	60.00	1.67	1,685.21	51.34	0.1443	14,564
2013	85,237.04	60.00	1.67	1,423.46	52.30	0.1283	10,938
2014	25,014.12	60.00	1.67	417.74	53.27	0.1122	2,806
2016	32,964.00	60.00	1.67	550.50	55.21	0.0798	2,632

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2017	246,501.10	60.00	1.67	4,116.57	56.19	0.0635	15,653
2018	77,599.65	60.00	1.67	1,295.91	57.16	0.0473	3,673
2019	14,388.35	60.00	1.67	240.29	58.14	0.0310	446
2020	58,497.23	60.00	1.67	976.90	59.13	0.0145	848
2021	14,624.31	60.00	1.67	244.23	59.81	0.0032	46
	4,350,867.00			72,659.47			1,656,016

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 55-R2.5							
NET SALVAGE PERCENT.. 0							
1970	69,770.80	55.00	1.82	1,269.83	15.16	0.7244	50,539
1976	267,367.04	55.00	1.82	4,866.08	18.57	0.6624	177,093
1978	64,086.47	55.00	1.82	1,166.37	19.81	0.6398	41,004
1980	80,220.26	55.00	1.82	1,460.01	21.10	0.6164	49,445
1982	102,469.43	55.00	1.82	1,864.94	22.44	0.5920	60,662
1985	52,315.53	55.00	1.82	952.14	24.53	0.5540	28,983
1986	47,611.22	55.00	1.82	866.52	25.25	0.5409	25,753
1987	36,853.27	55.00	1.82	670.73	25.98	0.5276	19,445
1988	112,029.11	55.00	1.82	2,038.93	26.71	0.5144	57,623
1989	216,183.43	55.00	1.82	3,934.54	27.46	0.5007	108,250
1993	71,273.98	55.00	1.82	1,297.19	30.53	0.4449	31,711
1995	28,853.50	55.00	1.82	525.13	32.11	0.4162	12,008
1996	10,713.57	55.00	1.82	194.99	32.92	0.4015	4,301
1997	45,795.05	55.00	1.82	833.47	33.73	0.3867	17,710
1998	106,491.11	55.00	1.82	1,938.14	34.55	0.3718	39,596
1999	81,005.82	55.00	1.82	1,474.31	35.38	0.3567	28,897
2000	32,495.47	55.00	1.82	591.42	36.21	0.3416	11,102
2001	340,755.79	55.00	1.82	6,201.76	37.05	0.3264	111,209
2002	136,495.47	55.00	1.82	2,484.22	37.90	0.3109	42,438
2003	26,084.10	55.00	1.82	474.73	38.76	0.2953	7,702
2004	407,503.61	55.00	1.82	7,416.57	39.62	0.2796	113,954
2012	4,283,602.02	55.00	1.82	77,961.56	46.74	0.1502	643,311
	6,619,976.05			120,483.58			1,682,736

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 365.20 METER PITS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 50-R3							
NET SALVAGE PERCENT.. 0							
1976	78,670.00	50.00	2.00	1,573.40	12.74	0.7452	58,625
	78,670.00			1,573.40			58,625

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 371.30 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 40-R1.5							
NET SALVAGE PERCENT.. 0							
2002	49,664.45	40.00	2.50	1,241.61	25.47	0.3633	18,041
	49,664.45			1,241.61			18,041

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 390.70 COMPUTERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. 5-SQUARE NET SALVAGE PERCENT.. 0							
2008	21,550.00	5.00				1.0000	21,550
	21,550.00						21,550

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 391.70 TRANSPORTATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 11-S1.5							
NET SALVAGE PERCENT.. 0							
2001	39,952.00	11.00	9.09	3,631.64	0.55	0.9500	37,954
2003	25,808.00	11.00	9.09	2,345.95	1.06	0.9036	23,321
2010	62,722.85	11.00	9.09	5,701.51	3.20	0.7091	44,476
2011	44,208.46	11.00	9.09	4,018.55	3.63	0.6700	29,620
2018	7,264.50	11.00	9.09	660.34	8.23	0.2518	1,829
2019	33,000.00	11.00	9.09	2,999.70	9.15	0.1682	5,550
	212,955.81			19,357.69			142,750

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 9.09

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 395.70 POWER OPERATED EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 15-L4							
NET SALVAGE PERCENT.. 0							
2009	53,907.50	15.00	6.67	3,595.63	4.10	0.7267	39,173
	53,907.50			3,595.63			39,173

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 6.67

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.20	LAND AND LAND RIGHTS - COLLECTION	668.00	
353.30	LAND AND LAND RIGHTS - PUMPING	13.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	11,876,309.88	2,769,664
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	13,514,005.82	1,392,486
355.00	POWER GENERATION EQUIPMENT	115,234.46	29,479
360.10	FORCE MAINS	6,489,847.72	2,493,840
361.10	GRAVITY MAINS	34,298,562.34	15,386,808
361.12	GRAVITY MAINS MANHOLES	13,431,174.93	6,591,000
363.20	SERVICES TO CUSTOMERS	12,145,646.25	4,368,034
365.20	METER PITS	389,336.22	290,133
371.30	PUMPING EQUIPMENT	134,816.92	48,972
390.70	COMPUTERS	13,689.27	13,689
391.70	TRANSPORTATION EQUIPMENT	236,892.89	161,246
395.70	POWER OPERATED EQUIPMENT	66,139.54	48,062
	TOTAL COMPANY	**92,712,337.24**	**33,593,413**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF REPLACEMENT COST
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	REPLACEMENT COST
(1)	(2)	(3)
353.20	LAND AND LAND RIGHTS - COLLECTION	668.00
353.30	LAND AND LAND RIGHTS - PUMPING	13.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	11,876,309.88
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	13,514,005.82
355.00	POWER GENERATION EQUIPMENT	115,234.46
360.10	FORCE MAINS	6,489,847.72
361.10	GRAVITY MAINS	34,298,562.34
361.12	GRAVITY MAINS MANHOLES	13,431,174.93
363.20	SERVICES TO CUSTOMERS	12,145,646.25
365.20	METER PITS	389,336.22
371.30	PUMPING EQUIPMENT	134,816.92
390.70	COMPUTERS	13,689.27
391.70	TRANSPORTATION EQUIPMENT	236,892.89
395.70	POWER OPERATED EQUIPMENT	66,139.54
	TOTAL COMPANY	**92,712,337.24**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED DEPRECIATION RELATED TO REPLACEMENT COST AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.20	LAND AND LAND RIGHTS - COLLECTION	NONDEPRECIABLE	668.00	
353.30	LAND AND LAND RIGHTS - PUMPING	NONDEPRECIABLE	13.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	60-R3	11,876,309.88	2,769,664
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	65-R2.5	13,514,005.82	1,392,486
355.00	POWER GENERATION EQUIPMENT	30-S2	115,234.46	29,479
360.10	FORCE MAINS	70-R2.5	6,489,847.72	2,493,840
361.10	GRAVITY MAINS	65-R2.5	34,298,562.34	15,386,808
361.12	GRAVITY MAINS MANHOLES	60-R3	13,431,174.93	6,591,000
363.20	SERVICES TO CUSTOMERS	55-R2.5	12,145,646.25	4,368,034
365.20	METER PITS	50-R3	389,336.22	290,133
371.30	PUMPING EQUIPMENT	40-R1.5	134,816.92	48,972
390.70	COMPUTERS	5-SQ	13,689.27	13,689
391.70	TRANSPORTATION EQUIPMENT	11-S1.5	236,892.89	161,246
395.70	POWER OPERATED EQUIPMENT	15-L4	66,139.54	48,062
	TOTAL COMPANY		**92,712,337.24**	**33,593,413**

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	VINTAGE YEAR	BASE COST	TRANSITION FACTOR	FACTOR REFERENCE	REPLACEMENT COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
353.20	LAND AND LAND RIGHTS - COLLECTION	1987	668.00	1.00000	(1)	668.00
353.30	LAND AND LAND RIGHTS - PUMPING	1993	13.00	1.00000	(1)	13.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1976	118,670.00	5.86154	(2)	695,588.77
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1980	106,067.00	4.20994	(2)	446,536.21
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1987	179,265.00	3.18828	(2)	571,547.82
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1988	78,824.35	3.03586	(2)	239,299.42
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2000	838,626.14	2.10497	(2)	1,765,284.86
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2001	89,972.00	2.01587	(2)	181,372.13
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2004	233,129.00	1.80998	(2)	421,957.95
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2006	131,119.57	1.63519	(2)	214,405.82
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2007	556,117.00	1.53629	(2)	854,357.17
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2014	4,143,867.37	1.20761	(2)	5,004,163.13
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2017	565,100.00	1.12889	(2)	637,935.11
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2018	433,530.00	1.08239	(2)	469,246.96
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2019	352,000.00	1.06425	(2)	374,614.53
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	2013	8,916,353.50	1.24104	(2)	11,065,572.26
354.40	STRUCTURES AND IMPROVEMENTS - TREATMENT	2017	2,168,888.00	1.12889	(2)	2,448,433.56
355.00	POWER GENERATION EQUIPMENT	2007	23,866.00	2.26498	(3)	54,056.11
355.00	POWER GENERATION EQUIPMENT	2018	51,550.00	1.18678	(3)	61,178.35
360.10	FORCE MAINS	1976	224,591.51	5.73377	(4)	1,287,755.22
360.10	FORCE MAINS	1979	77,969.12	4.77297	(4)	372,144.50
360.10	FORCE MAINS	1980	63,237.44	4.37129	(4)	276,429.01
360.10	FORCE MAINS	1987	616,571.40	3.35741	(4)	2,070,085.73
360.10	FORCE MAINS	1988	137,992.57	3.15357	(4)	435,169.43
360.10	FORCE MAINS	2000	365,087.80	2.34218	(4)	855,099.54
360.10	FORCE MAINS	2004	286,021.50	2.04398	(4)	584,622.65
360.10	FORCE MAINS	2016	89,428.47	1.16954	(4)	104,589.85
360.10	FORCE MAINS	2017	443,454.75	1.13642	(4)	503,951.79
361.10	GRAVITY MAINS	1951	2,995.29	19.62222	(4)	58,774.25
361.10	GRAVITY MAINS	1954	18,192.92	18.39583	(4)	334,673.92
361.10	GRAVITY MAINS	1967	101,639.86	11.61842	(4)	1,180,894.69
361.10	GRAVITY MAINS	1970	88,975.20	10.51190	(4)	935,298.83
361.10	GRAVITY MAINS	1971	25,402.60	9.39362	(4)	238,622.30
361.10	GRAVITY MAINS	1972	23,205.13	9.01020	(4)	209,082.96
361.10	GRAVITY MAINS	1973	96,745.87	8.83000	(4)	854,266.03
361.10	GRAVITY MAINS	1974	105,874.72	8.02727	(4)	849,885.25
361.10	GRAVITY MAINS	1975	1,212,493.01	6.04795	(4)	7,333,091.29
361.10	GRAVITY MAINS	1977	190,730.14	5.45062	(4)	1,039,597.00
361.10	GRAVITY MAINS	1978	445,959.85	5.10405	(4)	2,276,199.70
361.10	GRAVITY MAINS	1979	113,876.97	4.77297	(4)	543,531.70
361.10	GRAVITY MAINS	1981	204,755.08	4.03196	(4)	825,565.00
361.10	GRAVITY MAINS	1983	124,221.58	3.69456	(4)	458,944.16
361.10	GRAVITY MAINS	1984	122,229.73	3.61885	(4)	442,331.36
361.10	GRAVITY MAINS	1985	25,549.19	3.47638	(4)	88,818.64
361.10	GRAVITY MAINS	1987	445,308.18	3.35741	(4)	1,495,084.12
361.10	GRAVITY MAINS	1988	683,452.64	3.15357	(4)	2,155,316.72
361.10	GRAVITY MAINS	1990	322,292.20	2.93355	(4)	945,461.84
361.10	GRAVITY MAINS	1991	188,920.85	2.87622	(4)	543,378.21
361.10	GRAVITY MAINS	1992	113,430.73	2.83923	(4)	322,055.74
361.10	GRAVITY MAINS	1993	125,848.33	2.75078	(4)	346,180.92
361.10	GRAVITY MAINS	1994	48,812.47	2.70031	(4)	131,808.60
361.10	GRAVITY MAINS	1996	17,626.35	2.60472	(4)	45,911.70
361.10	GRAVITY MAINS	1997	195,693.34	2.54467	(4)	497,974.70
361.10	GRAVITY MAINS	1998	161,226.12	2.48732	(4)	401,021.59
361.10	GRAVITY MAINS	1999	191,811.88	2.44598	(4)	469,168.67
361.10	GRAVITY MAINS	2000	841,402.41	2.34218	(4)	1,970,711.75
361.10	GRAVITY MAINS	2001	33,916.65	2.25831	(4)	76,594.38
361.10	GRAVITY MAINS	2002	573,796.70	2.18564	(4)	1,254,115.06
361.10	GRAVITY MAINS	2003	130,439.13	2.16953	(4)	282,992.02
361.10	GRAVITY MAINS	2004	150,691.88	2.04398	(4)	308,011.41
361.10	GRAVITY MAINS	2005	1,084,944.19	1.88273	(4)	2,042,656.12

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	VINTAGE YEAR	BASE COST	TRANSITION FACTOR	FACTOR REFERENCE	REPLACEMENT COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
361.10	GRAVITY MAINS	2006	25,135.71	1.76954	(4)	44,478.62
361.10	GRAVITY MAINS	2007	572,582.23	1.66604	(4)	953,943.60
361.10	GRAVITY MAINS	2011	132,177.28	1.36265	(4)	180,111.94
361.10	GRAVITY MAINS	2012	254,832.50	1.28530	(4)	327,535.80
361.10	GRAVITY MAINS	2013	497,526.27	1.25963	(4)	626,698.57
361.10	GRAVITY MAINS	2014	49,702.48	1.20793	(4)	60,037.33
361.10	GRAVITY MAINS	2016	152,918.81	1.16954	(4)	178,844.12
361.10	GRAVITY MAINS	2017	589,958.65	1.13642	(4)	670,442.07
361.10	GRAVITY MAINS	2018	118,706.70	1.09963	(4)	130,533.02
361.10	GRAVITY MAINS	2019	42,281.39	1.06386	(4)	44,981.29
361.10	GRAVITY MAINS	2020	119,454.73	1.02914	(4)	122,935.35
361.12	GRAVITY MAINS MANHOLES	1951	2,077.71	19.62222	(4)	40,769.29
361.12	GRAVITY MAINS MANHOLES	1954	8,810.81	18.39583	(4)	162,082.19
361.12	GRAVITY MAINS MANHOLES	1967	23,972.08	11.61842	(4)	278,517.72
361.12	GRAVITY MAINS MANHOLES	1970	24,659.55	10.51190	(4)	259,218.84
361.12	GRAVITY MAINS MANHOLES	1971	9,074.19	9.39362	(4)	85,239.47
361.12	GRAVITY MAINS MANHOLES	1972	5,589.66	9.01020	(4)	50,363.98
361.12	GRAVITY MAINS MANHOLES	1973	48,339.55	8.83000	(4)	426,838.23
361.12	GRAVITY MAINS MANHOLES	1974	38,646.13	8.02727	(4)	310,223.03
361.12	GRAVITY MAINS MANHOLES	1975	418,962.34	6.04795	(4)	2,533,861.28
361.12	GRAVITY MAINS MANHOLES	1977	82,138.97	5.45062	(4)	447,708.09
361.12	GRAVITY MAINS MANHOLES	1978	146,936.93	5.10405	(4)	749,972.89
361.12	GRAVITY MAINS MANHOLES	1979	45,962.11	4.77297	(4)	219,375.91
361.12	GRAVITY MAINS MANHOLES	1980	4,128.63	4.37129	(4)	18,047.43
361.12	GRAVITY MAINS MANHOLES	1981	81,156.88	4.03196	(4)	327,221.58
361.12	GRAVITY MAINS MANHOLES	1983	44,080.82	3.69456	(4)	162,859.26
361.12	GRAVITY MAINS MANHOLES	1984	63,456.18	3.61885	(4)	229,638.55
361.12	GRAVITY MAINS MANHOLES	1985	13,376.28	3.47638	(4)	46,501.00
361.12	GRAVITY MAINS MANHOLES	1987	188,257.68	3.35741	(4)	632,059.05
361.12	GRAVITY MAINS MANHOLES	1988	256,487.24	3.15357	(4)	808,850.83
361.12	GRAVITY MAINS MANHOLES	1990	120,708.58	2.93355	(4)	354,105.24
361.12	GRAVITY MAINS MANHOLES	1991	92,502.00	2.87622	(4)	266,056.24
361.12	GRAVITY MAINS MANHOLES	1992	50,864.94	2.83923	(4)	144,417.18
361.12	GRAVITY MAINS MANHOLES	1993	63,128.39	2.75078	(4)	173,652.24
361.12	GRAVITY MAINS MANHOLES	1994	24,141.72	2.70031	(4)	65,190.03
361.12	GRAVITY MAINS MANHOLES	1996	7,168.03	2.60472	(4)	18,670.71
361.12	GRAVITY MAINS MANHOLES	1997	85,453.87	2.54467	(4)	217,451.78
361.12	GRAVITY MAINS MANHOLES	1998	113,259.95	2.48732	(4)	281,714.19
361.12	GRAVITY MAINS MANHOLES	1999	77,279.51	2.44598	(4)	189,024.40
361.12	GRAVITY MAINS MANHOLES	2000	440,368.85	2.34218	(4)	1,031,420.94
361.12	GRAVITY MAINS MANHOLES	2001	16,180.36	2.25831	(4)	36,540.30
361.12	GRAVITY MAINS MANHOLES	2002	254,336.19	2.18564	(4)	555,888.26
361.12	GRAVITY MAINS MANHOLES	2003	55,496.10	2.16953	(4)	120,400.63
361.12	GRAVITY MAINS MANHOLES	2004	68,061.20	2.04398	(4)	139,115.83
361.12	GRAVITY MAINS MANHOLES	2005	465,353.00	1.88273	(4)	876,133.69
361.12	GRAVITY MAINS MANHOLES	2006	19,772.02	1.76954	(4)	34,987.36
361.12	GRAVITY MAINS MANHOLES	2007	182,884.21	1.66604	(4)	304,692.00
361.12	GRAVITY MAINS MANHOLES	2011	52,057.49	1.36265	(4)	70,936.36
361.12	GRAVITY MAINS MANHOLES	2012	100,911.05	1.28530	(4)	129,700.81
361.12	GRAVITY MAINS MANHOLES	2013	85,237.04	1.25963	(4)	107,367.06
361.12	GRAVITY MAINS MANHOLES	2014	25,014.12	1.20793	(4)	30,215.41
361.12	GRAVITY MAINS MANHOLES	2016	32,964.00	1.16954	(4)	38,552.60
361.12	GRAVITY MAINS MANHOLES	2017	246,501.10	1.13642	(4)	280,129.31
361.12	GRAVITY MAINS MANHOLES	2018	77,599.65	1.09963	(4)	85,330.62
361.12	GRAVITY MAINS MANHOLES	2019	14,388.35	1.06386	(4)	15,307.12
361.12	GRAVITY MAINS MANHOLES	2020	58,497.23	1.02914	(4)	60,201.69
361.12	GRAVITY MAINS MANHOLES	2021	14,624.31	1.00000	(4)	14,624.31
363.20	SERVICES TO CUSTOMERS	1970	69,770.80	9.01266	(5)	628,820.37
363.20	SERVICES TO CUSTOMERS	1976	267,367.04	5.47692	(5)	1,464,348.71
363.20	SERVICES TO CUSTOMERS	1978	64,086.47	4.91034	(5)	314,686.67
363.20	SERVICES TO CUSTOMERS	1980	80,220.26	4.06857	(5)	326,381.86

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF MAY 20, 2021

ACCOUNT	DESCRIPTION	VINTAGE YEAR	BASE COST	TRANSITION FACTOR	FACTOR REFERENCE	REPLACEMENT COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
363.20	SERVICES TO CUSTOMERS	1982	102,469.43	3.59596	(5)	368,475.93
363.20	SERVICES TO CUSTOMERS	1985	52,315.53	3.22172	(5)	168,545.96
363.20	SERVICES TO CUSTOMERS	1986	47,611.22	3.15044	(5)	149,996.41
363.20	SERVICES TO CUSTOMERS	1987	36,853.27	3.09565	(5)	114,084.91
363.20	SERVICES TO CUSTOMERS	1988	112,029.11	2.90612	(5)	325,570.31
363.20	SERVICES TO CUSTOMERS	1989	216,183.43	2.75969	(5)	596,599.23
363.20	SERVICES TO CUSTOMERS	1993	71,273.98	2.43836	(5)	173,791.35
363.20	SERVICES TO CUSTOMERS	1995	28,853.50	2.31922	(5)	66,917.56
363.20	SERVICES TO CUSTOMERS	1996	10,713.57	2.21807	(5)	23,763.43
363.20	SERVICES TO CUSTOMERS	1997	45,795.05	2.20433	(5)	100,947.60
363.20	SERVICES TO CUSTOMERS	1998	106,491.11	2.15758	(5)	229,762.64
363.20	SERVICES TO CUSTOMERS	1999	81,005.82	2.13174	(5)	172,683.07
363.20	SERVICES TO CUSTOMERS	2000	32,495.47	2.04598	(5)	66,484.98
363.20	SERVICES TO CUSTOMERS	2001	340,755.79	2.01130	(5)	685,361.93
363.20	SERVICES TO CUSTOMERS	2002	136,495.47	1.97778	(5)	269,957.71
363.20	SERVICES TO CUSTOMERS	2003	26,084.10	1.93478	(5)	50,467.06
363.20	SERVICES TO CUSTOMERS	2004	407,503.61	1.83505	(5)	747,790.13
363.20	SERVICES TO CUSTOMERS	2012	4,283,602.02	1.19064	(5)	5,100,208.43
365.20	METER PITS	1976	78,670.00	4.94898	(6)	389,336.22
371.30	PUMPING EQUIPMENT	2002	49,664.45	2.71456	(3)	134,816.92
390.70	COMPUTERS	2008	21,550.00	0.63523	(7)	13,689.27
391.70	TRANSPORTATION EQUIPMENT	2001	39,952.00	1.13057	(8)	45,168.39
391.70	TRANSPORTATION EQUIPMENT	2003	25,808.00	1.15114	(8)	29,708.65
391.70	TRANSPORTATION EQUIPMENT	2010	62,722.85	1.13683	(8)	71,305.49
391.70	TRANSPORTATION EQUIPMENT	2011	44,208.46	1.12940	(8)	49,929.18
391.70	TRANSPORTATION EQUIPMENT	2018	7,264.50	1.01468	(8)	7,371.16
391.70	TRANSPORTATION EQUIPMENT	2019	33,000.00	1.01242	(8)	33,410.02
395.70	POWER OPERATED EQUIPMENT	2009	53,907.50	1.22691	(9)	66,139.54
	TOTAL COMPANY		**43,447,309.24**			**92,712,337.24**

NOTES : (1) Not trended
(2) Handy-Whitman Index of Public Utility Costs, 1/1/21, Cost Trends of Water Utility Construction, North Atlantic Region, Line 8
(3) Handy-Whitman Index of Public Utility Costs, 1/1/21, Cost Trends of Water Utility Construction, North Atlantic Region, Line 9
(4) Handy-Whitman Index of Public Utility Costs, 1/1/21, Cost Trends of Water Utility Construction, North Atlantic Region, Line 34
(5) Handy-Whitman Index of Public Utility Costs, 1/1/21, Cost Trends of Water Utility Construction, North Atlantic Region, Line 39
(6) Handy-Whitman Index of Public Utility Costs, 1/1/21, Cost Trends of Water Utility Construction, North Atlantic Region, Line 40
(7) U.S. Bureau of Labor Statistics, Producer Price Index, Series Title: PPI industry data for Automobile, light truck and utility vehicle mfg, not seasonally adjusted
(8) U.S. Bureau of Labor Statistics, Producer Price Index, Series Title: PPI industry data for Computer & peripheral equipment mfg, not seasonally adjusted
(9) U.S. Bureau of Labor Statistics, Producer Price Index, Series Title: PPI industry data for Construction machinery mfg, not seasonally adjusted

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.20 LAND AND LAND RIGHTS - COLLECTION

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

	ORIGINAL	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
1987	668.00						
	668.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.30 LAND AND LAND RIGHTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
1993	13.00						
	13.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1976	695,588.77	60.00	1.67	11,616.33	20.93	0.6512	452,947
1980	446,536.21	60.00	1.67	7,457.15	23.76	0.6040	269,708
1987	571,547.82	60.00	1.67	9,544.85	29.11	0.5148	294,250
1988	239,299.42	60.00	1.67	3,996.30	29.91	0.5015	120,009
2000	1,765,284.86	60.00	1.67	29,480.26	40.16	0.3307	583,727
2001	181,372.13	60.00	1.67	3,028.91	41.06	0.3157	57,254
2004	421,957.95	60.00	1.67	7,046.70	43.80	0.2700	113,929
2006	214,405.82	60.00	1.67	3,580.58	45.66	0.2390	51,243
2007	854,357.17	60.00	1.67	14,267.76	46.59	0.2235	190,949
2014	5,004,163.13	60.00	1.67	83,569.52	53.27	0.1122	561,317
2017	637,935.11	60.00	1.67	10,653.52	56.19	0.0635	40,509
2018	469,246.96	60.00	1.67	7,836.42	57.16	0.0473	22,209
2019	374,614.53	60.00	1.67	6,256.06	58.14	0.0310	11,613
	11,876,309.88			198,334.36			2,769,664

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TREATMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2013	11,065,572.26	65.00	1.54	170,409.81	57.63	0.1134	1,254,615
2017	2,448,433.56	65.00	1.54	37,705.88	61.34	0.0563	137,871
	13,514,005.82			208,115.69			1,392,486

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-S2							
NET SALVAGE PERCENT.. 0							
2007	54,056.11	30.00	3.33	1,800.07	16.91	0.4363	23,586
2018	61,178.35	30.00	3.33	2,037.24	27.11	0.0963	5,893
	115,234.46			3,837.31			29,479

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 3.33

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.10 FORCE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
1976	1,287,755.22	70.00	1.43	18,414.90	31.79	0.5459	702,934
1979	372,144.50	70.00	1.43	5,321.67	33.97	0.5147	191,546
1980	276,429.01	70.00	1.43	3,952.93	34.72	0.5040	139,320
1987	2,070,085.73	70.00	1.43	29,602.23	40.12	0.4269	883,637
1988	435,169.43	70.00	1.43	6,222.92	40.92	0.4154	180,782
2000	855,099.54	70.00	1.43	12,227.92	50.95	0.2721	232,707
2004	584,622.65	70.00	1.43	8,360.10	54.47	0.2219	129,704
2016	104,589.85	70.00	1.43	1,495.63	65.41	0.0656	6,858
2017	503,951.79	70.00	1.43	7,206.51	66.34	0.0523	26,352
	6,489,847.72			92,804.81			2,493,840

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.43

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

	ORIGINAL	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
1951	58,774.25	65.00	1.54	905.12	13.45	0.7931	46,613
1954	334,673.92	65.00	1.54	5,153.98	14.69	0.7740	259,038
1967	1,180,894.69	65.00	1.54	18,185.78	21.44	0.6702	791,377
1970	935,298.83	65.00	1.54	14,403.60	23.29	0.6417	600,172
1971	238,622.30	65.00	1.54	3,674.78	23.92	0.6320	150,809
1972	209,082.96	65.00	1.54	3,219.88	24.57	0.6220	130,050
1973	854,266.03	65.00	1.54	13,155.70	25.23	0.6119	522,683
1974	849,885.25	65.00	1.54	13,088.23	25.89	0.6017	511,367
1975	7,333,091.29	65.00	1.54	112,929.61	26.57	0.5912	4,335,544
1977	1,039,597.00	65.00	1.54	16,009.79	27.95	0.5700	592,570
1978	2,276,199.70	65.00	1.54	35,053.48	28.65	0.5592	1,272,919
1979	543,531.70	65.00	1.54	8,370.39	29.37	0.5482	297,937
1981	825,565.00	65.00	1.54	12,713.70	30.82	0.5259	434,123
1983	458,944.16	65.00	1.54	7,067.74	32.30	0.5031	230,886
1984	442,331.36	65.00	1.54	6,811.90	33.05	0.4915	217,424
1985	88,818.64	65.00	1.54	1,367.81	33.81	0.4799	42,620
1987	1,495,084.12	65.00	1.54	23,024.30	35.35	0.4562	681,983
1988	2,155,316.72	65.00	1.54	33,191.88	36.13	0.4442	957,284
1990	945,461.84	65.00	1.54	14,560.11	37.72	0.4197	396,801
1991	543,378.21	65.00	1.54	8,368.02	38.52	0.4074	221,361
1992	322,055.74	65.00	1.54	4,959.66	39.33	0.3949	127,186
1993	346,180.92	65.00	1.54	5,331.19	40.14	0.3825	132,400
1994	131,808.60	65.00	1.54	2,029.85	40.96	0.3699	48,749
1996	45,911.70	65.00	1.54	707.04	42.63	0.3442	15,801
1997	497,974.70	65.00	1.54	7,668.81	43.47	0.3312	164,944
1998	401,021.59	65.00	1.54	6,175.73	44.31	0.3183	127,649
1999	469,168.67	65.00	1.54	7,225.20	45.17	0.3051	143,134
2000	1,970,711.75	65.00	1.54	30,348.96	46.02	0.2920	575,448
2001	76,594.38	65.00	1.54	1,179.55	46.89	0.2786	21,341
2002	1,254,115.06	65.00	1.54	19,313.37	47.76	0.2652	332,629
2003	282,992.02	65.00	1.54	4,358.08	48.63	0.2519	71,272
2004	308,011.41	65.00	1.54	4,743.38	49.51	0.2383	73,402
2005	2,042,656.12	65.00	1.54	31,456.90	50.40	0.2246	458,821
2006	44,478.62	65.00	1.54	684.97	51.28	0.2111	9,389
2007	953,943.60	65.00	1.54	14,690.73	52.18	0.1972	188,146
2011	180,111.94	65.00	1.54	2,773.72	55.80	0.1415	25,493
2012	327,535.80	65.00	1.54	5,044.05	56.71	0.1275	41,774
2013	626,698.57	65.00	1.54	9,651.16	57.63	0.1134	71,055
2014	60,037.33	65.00	1.54	924.57	58.56	0.0991	5,948
2016	178,844.12	65.00	1.54	2,754.20	60.41	0.0706	12,630
2017	670,442.07	65.00	1.54	10,324.81	61.34	0.0563	37,753

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2018	130,533.02	65.00	1.54	2,010.21	62.28	0.0419	5,463
2019	44,981.29	65.00	1.54	692.71	63.22	0.0274	1,232
2020	122,935.35	65.00	1.54	1,893.20	64.16	0.0129	1,588
	34,298,562.34			528,197.85			15,386,808

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1951	40,769.29	60.00	1.67	680.85	8.20	0.8633	35,197
1954	162,082.19	60.00	1.67	2,706.77	9.24	0.8460	137,122
1967	278,517.72	60.00	1.67	4,651.25	15.27	0.7455	207,635
1970	259,218.84	60.00	1.67	4,328.95	17.03	0.7162	185,645
1971	85,239.47	60.00	1.67	1,423.50	17.65	0.7058	60,165
1972	50,363.98	60.00	1.67	841.08	18.28	0.6953	35,020
1973	426,838.23	60.00	1.67	7,128.20	18.92	0.6847	292,243
1974	310,223.03	60.00	1.67	5,180.72	19.58	0.6737	208,988
1975	2,533,861.28	60.00	1.67	42,315.48	20.25	0.6625	1,678,683
1977	447,708.09	60.00	1.67	7,476.73	21.62	0.6397	286,385
1978	749,972.89	60.00	1.67	12,524.55	22.32	0.6280	470,983
1979	219,375.91	60.00	1.67	3,663.58	23.04	0.6160	135,136
1980	18,047.43	60.00	1.67	301.39	23.76	0.6040	10,901
1981	327,221.58	60.00	1.67	5,464.60	24.50	0.5917	193,607
1983	162,859.26	60.00	1.67	2,719.75	26.00	0.5667	92,287
1984	229,638.55	60.00	1.67	3,834.96	26.76	0.5540	127,220
1985	46,501.00	60.00	1.67	776.57	27.54	0.5410	25,157
1987	632,059.05	60.00	1.67	10,555.39	29.11	0.5148	325,403
1988	808,850.83	60.00	1.67	13,507.81	29.91	0.5015	405,639
1990	354,105.24	60.00	1.67	5,913.56	31.54	0.4743	167,963
1991	266,056.24	60.00	1.67	4,443.14	32.37	0.4605	122,519
1992	144,417.18	60.00	1.67	2,411.77	33.20	0.4467	64,507
1993	173,652.24	60.00	1.67	2,899.99	34.05	0.4325	75,105
1994	65,190.03	60.00	1.67	1,088.67	34.90	0.4183	27,271
1996	18,670.71	60.00	1.67	311.80	36.62	0.3897	7,275
1997	217,451.78	60.00	1.67	3,631.44	37.50	0.3750	81,544
1998	281,714.19	60.00	1.67	4,704.63	38.38	0.3603	101,510
1999	189,024.40	60.00	1.67	3,156.71	39.26	0.3457	65,340
2000	1,031,420.94	60.00	1.67	17,224.73	40.16	0.3307	341,060
2001	36,540.30	60.00	1.67	610.22	41.06	0.3157	11,535
2002	555,888.26	60.00	1.67	9,283.33	41.97	0.3005	167,044
2003	120,400.63	60.00	1.67	2,010.69	42.88	0.2853	34,354
2004	139,115.83	60.00	1.67	2,323.23	43.80	0.2700	37,561
2005	876,133.69	60.00	1.67	14,631.43	44.73	0.2545	222,976
2006	34,987.36	60.00	1.67	584.29	45.66	0.2390	8,362
2007	304,692.00	60.00	1.67	5,088.36	46.59	0.2235	68,099
2011	70,936.36	60.00	1.67	1,184.64	50.38	0.1603	11,373
2012	129,700.81	60.00	1.67	2,166.00	51.34	0.1443	18,720
2013	107,367.06	60.00	1.67	1,793.03	52.30	0.1283	13,778
2014	30,215.41	60.00	1.67	504.60	53.27	0.1122	3,389
2016	38,552.60	60.00	1.67	643.83	55.21	0.0798	3,078

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2017	280,129.31	60.00	1.67	4,678.16	56.19	0.0635	17,788
2018	85,330.62	60.00	1.67	1,425.02	57.16	0.0473	4,039
2019	15,307.12	60.00	1.67	255.63	58.14	0.0310	475
2020	60,201.69	60.00	1.67	1,005.37	59.13	0.0145	873
2021	14,624.31	60.00	1.67	244.23	59.81	0.0032	46
	13,431,174.93			224,300.63			6,591,000

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 55-R2.5							
NET SALVAGE PERCENT.. 0							
1970	628,820.37	55.00	1.82	11,444.53	15.16	0.7244	455,492
1976	1,464,348.71	55.00	1.82	26,651.15	18.57	0.6624	969,926
1978	314,686.67	55.00	1.82	5,727.30	19.81	0.6398	201,343
1980	326,381.86	55.00	1.82	5,940.15	21.10	0.6164	201,169
1982	368,475.93	55.00	1.82	6,706.26	22.44	0.5920	218,138
1985	168,545.96	55.00	1.82	3,067.54	24.53	0.5540	93,374
1986	149,996.41	55.00	1.82	2,729.93	25.25	0.5409	81,135
1987	114,084.91	55.00	1.82	2,076.35	25.98	0.5276	60,196
1988	325,570.31	55.00	1.82	5,925.38	26.71	0.5144	167,460
1989	596,599.23	55.00	1.82	10,858.11	27.46	0.5007	298,735
1993	173,791.35	55.00	1.82	3,163.00	30.53	0.4449	77,322
1995	66,917.56	55.00	1.82	1,217.90	32.11	0.4162	27,850
1996	23,763.43	55.00	1.82	432.49	32.92	0.4015	9,540
1997	100,947.60	55.00	1.82	1,837.25	33.73	0.3867	39,039
1998	229,762.64	55.00	1.82	4,181.68	34.55	0.3718	85,430
1999	172,683.07	55.00	1.82	3,142.83	35.38	0.3567	61,601
2000	66,484.98	55.00	1.82	1,210.03	36.21	0.3416	22,714
2001	685,361.93	55.00	1.82	12,473.59	37.05	0.3264	223,675
2002	269,957.71	55.00	1.82	4,913.23	37.90	0.3109	83,933
2003	50,467.06	55.00	1.82	918.50	38.76	0.2953	14,901
2004	747,790.13	55.00	1.82	13,609.78	39.62	0.2796	209,112
2012	5,100,208.43	55.00	1.82	92,823.79	46.74	0.1502	765,949
	12,145,646.25			221,050.77			4,368,034

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 365.20 METER PITS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 50-R3							
NET SALVAGE PERCENT.. 0							
1976	389,336.22	50.00	2.00	7,786.72	12.74	0.7452	290,133
	389,336.22			7,786.72			290,133

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 371.30 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 40-R1.5							
NET SALVAGE PERCENT.. 0							
2002	134,816.92	40.00	2.50	3,370.42	25.47	0.3633	48,972
	134,816.92			3,370.42			48,972

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 390.70 COMPUTERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. 5-SQUARE NET SALVAGE PERCENT.. 0							
2008	13,689.27	5.00				1.0000	13,689
	13,689.27						13,689

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 391.70 TRANSPORTATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 11-S1.5							
NET SALVAGE PERCENT.. 0							
2001	45,168.39	11.00	9.09	4,105.81	0.55	0.9500	42,910
2003	29,708.65	11.00	9.09	2,700.52	1.06	0.9036	26,846
2010	71,305.49	11.00	9.09	6,481.67	3.20	0.7091	50,562
2011	49,929.18	11.00	9.09	4,538.56	3.63	0.6700	33,453
2018	7,371.16	11.00	9.09	670.04	8.23	0.2518	1,856
2019	33,410.02	11.00	9.09	3,036.97	9.15	0.1682	5,619
	236,892.89			21,533.57			161,246

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 9.09

EAST WHITELAND TOWNSHIP
EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 395.70 POWER OPERATED EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MAY 20, 2021

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 15-L4							
NET SALVAGE PERCENT.. 0							
2009	66,139.54	15.00	6.67	4,411.51	4.10	0.7267	48,062
	66,139.54			4,411.51			48,062

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 6.67

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

		Actual		Budget	Budget
					Year 0
		2018	2019	2020	2021
1.	**OPERATING REVENUES (1)**				
2.	Charges for services	3,809,229	3,761,787	3,948,000	3,948,000
3.	Other operating revenue	1,563,159	682,780	439,000	380,000
4.	Tap Fees	0	0	0	0
5.	**Total Operating Revenues**	5,372,388	4,444,567	4,387,000	4,328,000
6.	**Rate Increase**				
7.	**OPERATING EXPENSES (1)**				
8.	Operating & Maintenance Expenses	2,407,506	3,073,240	3,106,409	3,222,278
9.	**Operating Expenses Before Depreciation**	2,407,506	3,073,240	3,106,409	3,222,278
10.	Depreciation (2)	718,700	774,783	774,783	733,450
11.	**Total Operating Expenses**	3,126,206	3,848,023	3,881,192	3,955,728
12.	**Operating Income**	2,246,182	596,544	505,808	372,272
13.	Revenues (3)	5,372,388	4,444,567	4,387,000	4,328,000
14.	EBITDA (4)	2,964,882	1,371,327	1,280,591	1,105,722
15.	EBIT (5)	2,246,182	596,544	505,808	372,272
16.	EBIT	2,246,182	596,544	505,808	372,272
17.	(-) Income Taxes	0	0	0	0
18.	Debt Free Net Income	2,246,182	596,544	505,808	372,272
19.	(+) Depreciation & Amortization	718,700	774,783	774,783	733,450
20.	(-) Capital Expenditures (6)	393,256	740,070	2,738,000	2,038,000
21.	(-) Changes in Working Capital (7)	11,282	9,334	9,213	9,089
22.	Debt Free Net Cash Flow	$2,560,344	$621,923	($1,466,622)	($941,367)

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

2021

		3.09% Capitalization Rate Model (No Growth)
23.	Debt Free Net Cash Flow (10)	($941,367)
24.	Capitalization Factor: (8)	3.09%
25.	Indicated Value (line 23 ÷ line 24)	($30,464,945)

		3.09% Capitalization Rate Model (0.00% Growth)
26.	Debt Free Net Cash Flow (10)	($941,367)
27.	Capitalization Factor: (9)	3.09%
28.	Indicated Value (line 26 ÷ line 27)	($30,464,945)

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or budget. Post-2021 based on customer growth (EDU) and average revenue per customer.

OPERATING EXPENSES - increase at 2.5% annually after 2021 unless noted elsewhere. Assumed economies of scale are shown on lines below.

(2) Depreciation - Pre-2022 based on actual depreciation rate plus same rate on half of CAPX. Post-2021 based on depreciation rate plus same rate on half of CAPX.

(3) Line 5.

(4) Line 12 + line 10.

(5) Line 12.

(6) Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 0.21% of revenues.

(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 equal to discount rate, where capitalization rate = K - g.

(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate = K - g.

(10) Final year shown, line 22.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investor owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

			Budget	Budget	Estimated	Estimated
	Actual			Year 0	Year 1	Year 2
	2018	2019	2020	2021	2022	2023
1. **OPERATING REVENUES (1)**						
2. Charges for services	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291
3. Other operating revenue	1,563,159	682,780	439,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	5,372,388	4,444,567	4,387,000	4,328,000	4,500,950	4,653,291
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	2,407,506	3,073,240	3,106,409	3,222,278	3,302,835	3,385,406
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(733,706)	(752,048)	(770,849)
12. LESS: EOS - Professional Services	0	0	0	(103,125)	(105,703)	(108,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,407,506	3,073,240	3,106,409	2,385,447	2,445,084	2,506,211
16. Depreciation (2)	718,700	774,783	774,783	733,450	754,251	764,682
17. **Total Operating Expenses**	3,126,206	3,848,023	3,881,192	3,118,898	3,199,335	3,270,892
18. **Operating Income**	2,246,182	596,544	505,808	1,209,102	1,301,615	1,382,399
19. Revenues (3)	5,372,388	4,444,567	4,387,000	4,328,000	4,500,950	4,653,291
20. EBITDA (4)	2,964,882	1,371,327	1,280,591	1,942,553	2,055,866	2,147,080
21. EBIT (5)	2,246,182	596,544	505,808	1,209,102	1,301,615	1,382,399
22. EBIT	2,246,182	596,544	505,808	1,209,102	1,301,615	1,382,399
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	2,246,182	596,544	505,808	1,209,102	1,301,615	1,382,399
25. (+) Depreciation & Amortization	718,700	774,783	774,783	733,450	754,251	764,682
26. (-) Capital Expenditures (6)	393,256	740,070	2,738,000	2,038,000	734,982	745,145
27. (-) Changes in Working Capital (7)	11,282	9,334	9,213	9,089	9,452	9,772
28. Debt Free Net Cash Flow	$2,560,344	$621,923	($1,466,622)	($104,536)	$1,311,432	$1,392,163
29. PV Time Period (mid-year)					0.5	1.5
30. Present Value Factor: 3.09% (8)					0.9849	0.9554
31. Present Value Debt Free Net Cash Flow					$1,291,630	$1,330,073
32. Present Value Factor: 2.89% (9)					0.9859	0.9582
33. Present Value Debt Free Net Cash Flow					$1,292,941	$1,333,971

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2024	2025	2026	2027	2028	2029
1. **OPERATING REVENUES (1)**						
2. Charges for services	4,521,585	4,627,087	4,673,730	4,748,510	4,824,486	4,901,678
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	4,901,585	5,007,087	5,053,730	5,128,510	5,204,486	5,281,678
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	3,470,041	3,556,792	3,645,712	3,736,855	3,830,276	3,926,033
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(790,121)	(809,874)	(830,120)	(850,873)	(872,145)	(893,949)
12. LESS: EOS - Professional Services	(111,054)	(113,831)	(116,676)	(119,593)	(122,583)	(125,648)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,568,866	2,633,088	2,698,915	2,766,388	2,835,547	2,906,436
16. Depreciation (2)	775,255	785,975	796,844	807,862	819,033	830,359
17. **Total Operating Expenses**	3,344,121	3,419,063	3,495,759	3,574,250	3,654,580	3,736,795
18. **Operating Income**	1,557,464	1,588,024	1,557,971	1,554,260	1,549,906	1,544,883
19. Revenues (3)	4,901,585	5,007,087	5,053,730	5,128,510	5,204,486	5,281,678
20. EBITDA (4)	2,332,719	2,373,999	2,354,815	2,362,122	2,368,939	2,375,242
21. EBIT (5)	1,557,464	1,588,024	1,557,971	1,554,260	1,549,906	1,544,883
22. EBIT	1,557,464	1,588,024	1,557,971	1,554,260	1,549,906	1,544,883
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	1,557,464	1,588,024	1,557,971	1,554,260	1,549,906	1,544,883
25. (+) Depreciation & Amortization	775,255	785,975	796,844	807,862	819,033	830,359
26. (-) Capital Expenditures (6)	755,449	765,895	776,486	787,223	798,108	809,144
27. (-) Changes in Working Capital (7)	10,293	10,515	10,613	10,770	10,929	11,092
28. Debt Free Net Cash Flow	$1,566,977	$1,597,589	$1,567,716	$1,564,129	$1,559,901	$1,555,006
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.09% (8)	0.9267	0.8990	0.8720	0.8459	0.8205	0.7959
31. Present Value Debt Free Net Cash Flow	$1,452,117	$1,436,233	$1,367,049	$1,323,097	$1,279,899	$1,237,630
32. Present Value Factor: 2.89% (9)	0.9313	0.9051	0.8797	0.8550	0.8309	0.8076
33. Present Value Debt Free Net Cash Flow	$1,459,325	$1,445,978	$1,379,120	$1,337,331	$1,296,122	$1,255,823

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2030	2031	2032	2033	2034	2035
1. **OPERATING REVENUES (1)**						
2. Charges for services	4,980,105	5,059,786	5,140,743	5,222,995	5,359,628	5,445,383
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	52,230	0	0
6. **Total Operating Revenues**	5,360,105	5,439,786	5,520,743	5,655,225	5,739,628	5,825,383
7. **Rate Increase**				**1%**		
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,024,184	4,124,788	4,227,908	4,333,606	4,441,946	4,552,994
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(916,298)	(939,205)	(962,685)	(986,752)	(1,011,421)	(1,036,707)
12. LESS: EOS - Professional Services	(128,789)	(132,009)	(135,309)	(138,692)	(142,159)	(145,713)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,979,097	3,053,574	3,129,914	3,208,162	3,288,366	3,370,575
16. Depreciation (2)	841,841	853,482	865,283	877,248	889,378	901,677
17. **Total Operating Expenses**	3,820,938	3,907,056	3,995,197	4,085,410	4,177,744	4,272,252
18. **Operating Income**	1,539,167	1,532,730	1,525,546	1,569,815	1,561,884	1,553,131
19. Revenues (3)	5,360,105	5,439,786	5,520,743	5,655,225	5,739,628	5,825,383
20. EBITDA (4)	2,381,008	2,386,212	2,390,829	2,447,063	2,451,262	2,454,808
21. EBIT (5)	1,539,167	1,532,730	1,525,546	1,569,815	1,561,884	1,553,131
22. EBIT	1,539,167	1,532,730	1,525,546	1,569,815	1,561,884	1,553,131
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	1,539,167	1,532,730	1,525,546	1,569,815	1,561,884	1,553,131
25. (+) Depreciation & Amortization	841,841	853,482	865,283	877,248	889,378	901,677
26. (-) Capital Expenditures (6)	820,333	831,676	843,177	854,836	866,656	878,640
27. (-) Changes in Working Capital (7)	11,256	11,424	11,594	11,876	12,053	12,233
28. Debt Free Net Cash Flow	$1,549,419	$1,543,112	$1,536,059	$1,580,351	$1,572,553	$1,563,935
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.09% (8)	0.7721	0.7489	0.7265	0.7047	0.6836	0.6631
31. Present Value Debt Free Net Cash Flow	$1,196,306	$1,155,637	$1,115,947	$1,113,674	$1,074,997	$1,037,045
32. Present Value Factor: 2.89% (9)	0.7849	0.7629	0.7414	0.7206	0.7004	0.6807
33. Present Value Debt Free Net Cash Flow	$1,216,139	$1,177,240	$1,138,834	$1,138,801	$1,101,416	$1,064,570

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2036	2037	2038	2039	2040	2041
1. **OPERATING REVENUES (1)**						
2. Charges for services	5,532,509	5,621,029	5,710,965	5,802,341	5,895,178	5,989,501
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	5,912,509	6,001,029	6,090,965	6,182,341	6,275,178	6,369,501
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,666,819	4,783,490	4,903,077	5,025,654	5,151,295	5,280,078
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(1,062,624)	(1,089,190)	(1,116,420)	(1,144,330)	(1,172,939)	(1,202,262)
12. LESS: EOS - Professional Services	(149,356)	(153,090)	(156,917)	(160,840)	(164,861)	(168,982)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	3,454,839	3,541,210	3,629,740	3,720,484	3,813,496	3,908,833
16. Depreciation (2)	914,145	926,786	939,601	952,594	965,766	979,120
17. **Total Operating Expenses**	4,368,985	4,467,996	4,569,341	4,673,078	4,779,262	4,887,954
18. **Operating Income**	1,543,524	1,533,033	1,521,624	1,509,263	1,495,916	1,481,547
19. Revenues (3)	5,912,509	6,001,029	6,090,965	6,182,341	6,275,178	6,369,501
20. EBITDA (4)	2,457,670	2,459,819	2,461,225	2,461,857	2,461,682	2,460,668
21. EBIT (5)	1,543,524	1,533,033	1,521,624	1,509,263	1,495,916	1,481,547
22. EBIT	1,543,524	1,533,033	1,521,624	1,509,263	1,495,916	1,481,547
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	1,543,524	1,533,033	1,521,624	1,509,263	1,495,916	1,481,547
25. (+) Depreciation & Amortization	914,145	926,786	939,601	952,594	965,766	979,120
26. (-) Capital Expenditures (6)	890,790	903,108	915,596	928,256	941,092	954,105
27. (-) Changes in Working Capital (7)	12,416	12,602	12,791	12,983	13,178	13,376
28. Debt Free Net Cash Flow	$1,554,464	$1,544,109	$1,532,838	$1,520,618	$1,507,412	$1,493,187
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.09% (8)	0.6432	0.6239	0.6052	0.5871	0.5695	0.5524
31. Present Value Debt Free Net Cash Flow	$999,831	$963,369	$927,673	$892,755	$858,471	$824,836
32. Present Value Factor: 2.89% (9)	0.6616	0.6430	0.6249	0.6074	0.5903	0.5738
33. Present Value Debt Free Net Cash Flow	$1,028,433	$992,862	$957,870	$923,623	$889,825	$856,790

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
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DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21	Estimated Year 22	Estimated Year 23	Estimated Year 24
	2042	2043	2044	2045
1. **OPERATING REVENUES (1)**				
2. Charges for services	6,085,333	6,182,698	6,281,621	6,445,949
3. Other operating revenue	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	0	62,816	0
6. **Total Operating Revenues**	6,465,333	6,562,698	6,724,437	6,825,949
7. **Rate Increase**			**1%**	
8. **OPERATING EXPENSES (1)**				
9. Operating & Maintenance Expenses	5,412,080	5,547,382	5,686,066	5,828,218
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(1,232,319)	(1,263,126)	(1,294,705)	(1,327,072)
12. LESS: EOS - Professional Services	(173,207)	(177,537)	(181,975)	(186,525)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. **Operating Expenses Before Depreciation**	4,006,554	4,106,718	4,209,386	4,314,621
16. Depreciation (2)	992,660	1,006,386	1,020,302	1,034,410
17. **Total Operating Expenses**	4,999,214	5,113,104	5,229,688	5,349,031
18. **Operating Income**	1,466,119	1,449,594	1,494,749	1,476,918
19. Revenues (3)	6,465,333	6,562,698	6,724,437	6,825,949
20. EBITDA (4)	2,458,779	2,455,980	2,515,051	2,511,328
21. EBIT (5)	1,466,119	1,449,594	1,494,749	1,476,918
22. EBIT	1,466,119	1,449,594	1,494,749	1,476,918
23. (-) Income Taxes	0	0	0	0
24. Debt Free Net Income	1,466,119	1,449,594	1,494,749	1,476,918
25. (+) Depreciation & Amortization	992,660	1,006,386	1,020,302	1,034,410
26. (-) Capital Expenditures (6)	967,299	980,674	994,235	1,007,983
27. (-) Changes in Working Capital (7)	13,577	13,782	14,121	14,334
28. Debt Free Net Cash Flow	$1,477,903	$1,461,524	$1,506,695	$1,489,011
29. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.09% (8)	0.5359	0.5198	0.5042	0.4891
31. Present Value Debt Free Net Cash Flow	$792,008	$759,700	$759,675	$728,275
32. Present Value Factor: 2.89% (9)	0.5576	0.5420	0.5267	0.5120
33. Present Value Debt Free Net Cash Flow	$824,078	$792,146	$793,576	$762,374

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 3.09%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,489,011
Divided by Capitalization Factor (8)	3.09%
24th Year Terminal Value	48,188,052
24th Year Present Value Factor (11)	0.4891
Present Value of Terminal Value	23,568,776
Present Value Debt Free Net Cash Flow for 24 Years	25,917,928
Indicated Value	$49,486,704

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.09%		Multiples (13)	Terminal Value
Projected EBIT	$1,476,918	23.5	$34,707,579
Projected EBITDA	2,511,328	16.3	40,934,651
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			38,879,717
24th Year Present Value Factor (11)			0.4891
Present Value of Terminal Value			19,016,070
Present Value Debt Free Net Cash Flow for 24 Years			25,917,928
Indicated Value			$44,933,997

DCF With Capitalization of Terminal Value Model @ 2.89%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,489,011
Divided by Capitalization Factor (9)	2.89%
24th Year Terminal Value	51,522,865
24th Year Present Value Factor (12)	0.4891
Present Value of Terminal Value	25,199,833
Present Value Debt Free Net Cash Flow for 24 Years	25,917,928
Indicated Value	$51,117,761

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 2.89%		Multiples (13)	Terminal Value
Projected EBIT	$1,476,918	23.5	$34,707,579
Projected EBITDA	2,511,328	16.3	40,934,651
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			38,879,717
24th Year Present Value Factor (12)			0.4891
Present Value of Terminal Value			19,016,070
Present Value Debt Free Net Cash Flow for 24 Years			25,917,928
Indicated Value			$44,933,997

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or budget. Post-2021 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by MUNI at end of 2021 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2021 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2021 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2021 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

(2) Depreciation - Pre-2022 based on actual depreciation rate plus same rate on half of CAPX. Post-2021 based on depreciation rate plus same rate on half of CAPX.

(3) Line 6.

(4) Line 18 + line 16.

(5) Line 18.

(6) Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 0.21% of revenues.

(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 equal to discount rate, where capitalization rate = K - g.

(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate = K - g.

(10) Final year shown, line 28.

(11) Final year shown, line 30.

(12) Final year shown, line 30.

(13) Developed on Market Multiples EXHIBIT 17.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investor owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

				Budget	Budget	Estimated	Estimated
	Actual				Year 0	Year 1	Year 2
	2018	2019	2020		2021	2022	2023
1. **OPERATING REVENUES (1)**							
2. Charges for services	3,809,229	3,761,787	3,948,000		3,948,000	4,120,950	4,273,291
3. Other operating revenue	1,563,159	682,780	439,000		380,000	380,000	380,000
4. Tap Fees	0	0	0		0	0	0
5. Other (Rate Increase)	0	0	0		0	0	0
6. **Total Operating Revenues**	5,372,388	4,444,567	4,387,000		4,328,000	4,500,950	4,653,291
7. **Rate Increase**							
8. **OPERATING EXPENSES (1)**							
9. Operating & Maintenance Expenses	2,407,506	3,073,240	3,106,409		3,222,278	3,302,835	3,385,406
10. Remove Economies of Scale							
11. LESS: EOS - Wages & Benefits	0	0	0		(733,706)	(752,048)	(770,849)
12. LESS: EOS - Professional Services	0	0	0		(103,125)	(105,703)	(108,346)
13. LESS: EOS - Eliminated Expenses	0	0	0		0	0	0
14. ADD: Additional O&M	0	0	0		0	0	0
15. ADD: PURTA & Reg Assessment	0	0	0		0	73,687	74,643
16. **Operating Expenses Before Depreciation**	2,407,506	3,073,240	3,106,409		2,385,447	2,518,771	2,580,854
17. Depreciation (2)	718,700	774,783	774,783		733,450	754,251	764,682
18. **Total Operating Expenses**	3,126,206	3,848,023	3,881,192		3,118,898	3,273,022	3,345,535
19. **Operating Income**	2,246,182	596,544	505,808		1,209,102	1,227,928	1,307,756
20. Revenues (3)	5,372,388	4,444,567	4,387,000		4,328,000	4,500,950	4,653,291
21. EBITDA (4)	2,964,882	1,371,327	1,280,591		1,942,553	1,982,179	2,072,437
22. EBIT (5)	2,246,182	596,544	505,808		1,209,102	1,227,928	1,307,756
23. EBIT	2,246,182	596,544	505,808		1,209,102	1,227,928	1,307,756
24. (-) Income Taxes	0	0	0		349,310	354,748	377,811
25. Debt Free Net Income	2,246,182	596,544	505,808		859,792	873,180	929,945
26. (+) Depreciation & Amortization	718,700	774,783	774,783		733,450	754,251	764,682
27. (-) Capital Expenditures (6)	393,256	740,070	2,738,000		2,038,000	734,982	745,145
28. (-) Changes in Working Capital (7)	11,282	9,334	9,213		9,089	9,452	9,772
29. Debt Free Net Cash Flow	$2,560,344	$621,923	($1,466,622)		($453,846)	$882,997	$939,709
30. PV Time Period (mid-year)						0.5	1.5
31. Present Value Factor: 6.57% (8)						0.9687	0.9090
32. Present Value Debt Free Net Cash Flow						$855,360	$854,196
33. Present Value Factor: 7.79% (9)						0.9632	0.8936
34. Present Value Debt Free Net Cash Flow						$850,503	$839,724
35. Present Value Factor: 6.37% (8)						0.9696	0.9115
36. Present Value Debt Free Net Cash Flow						$856,154	$856,545
37. Present Value Factor: 7.59% (9)						0.9641	0.8961
38. Present Value Debt Free Net Cash Flow						$851,298	$842,074

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2024	2025	2026	2027	2028	2029
1. **OPERATING REVENUES (1)**						
2. Charges for services	4,521,585	6,616,735	6,683,434	6,790,369	6,899,015	7,009,399
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	1,944,282	0	0	0	0	0
6. **Total Operating Revenues**	6,845,867	6,996,735	7,063,434	7,170,369	7,279,015	7,389,399
7. **Rate Increase**	**43%**					
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	3,470,041	3,556,792	3,645,712	3,736,855	3,830,276	3,926,033
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(790,121)	(809,874)	(830,120)	(850,873)	(872,145)	(893,949)
12. LESS: EOS - Professional Services	(111,054)	(113,831)	(116,676)	(119,593)	(122,583)	(125,648)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	75,482	87,930	88,759	89,110	89,688	90,277
16. **Operating Expenses Before Depreciation**	2,644,348	2,721,018	2,787,674	2,855,498	2,925,235	2,996,713
17. Depreciation (2)	775,255	785,975	796,844	807,862	819,033	830,359
18. **Total Operating Expenses**	3,419,603	3,506,993	3,584,518	3,663,360	3,744,268	3,827,072
19. **Operating Income**	3,426,264	3,489,742	3,478,916	3,507,009	3,534,747	3,562,327
20. Revenues (3)	6,845,867	6,996,735	7,063,434	7,170,369	7,279,015	7,389,399
21. EBITDA (4)	4,201,519	4,275,717	4,275,760	4,314,871	4,353,780	4,392,686
22. EBIT (5)	3,426,264	3,489,742	3,478,916	3,507,009	3,534,747	3,562,327
23. EBIT	3,426,264	3,489,742	3,478,916	3,507,009	3,534,747	3,562,327
24. (-) Income Taxes	989,848	1,008,186	1,005,059	1,013,175	1,021,188	1,029,156
25. Debt Free Net Income	2,436,416	2,481,556	2,473,857	2,493,834	2,513,559	2,533,171
26. (+) Depreciation & Amortization	775,255	785,975	796,844	807,862	819,033	830,359
27. (-) Capital Expenditures (6)	755,449	765,895	776,486	787,223	798,108	809,144
28. (-) Changes in Working Capital (7)	14,376	14,693	14,833	15,058	15,286	15,518
29. Debt Free Net Cash Flow	$2,441,846	$2,486,943	$2,479,382	$2,499,416	$2,519,198	$2,538,868
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 6.57% (8)	0.8529	0.8003	0.7510	0.7047	0.6613	0.6205
32. Present Value Debt Free Net Cash Flow	$2,082,650	$1,990,301	$1,862,016	$1,761,338	$1,665,945	$1,575,368
33. Present Value Factor: 7.79% (9)	0.8290	0.7691	0.7135	0.6619	0.6141	0.5697
34. Present Value Debt Free Net Cash Flow	$2,024,290	$1,912,708	$1,769,039	$1,654,363	$1,547,039	$1,446,393
35. Present Value Factor: 6.37% (8)	0.8569	0.8056	0.7574	0.7120	0.6694	0.6293
36. Present Value Debt Free Net Cash Flow	$2,092,418	$2,003,481	$1,877,884	$1,779,584	$1,686,351	$1,597,710
37. Present Value Factor: 7.59% (9)	0.8329	0.7741	0.7195	0.6687	0.6216	0.5777
38. Present Value Debt Free Net Cash Flow	$2,033,813	$1,925,143	$1,783,915	$1,671,359	$1,565,933	$1,466,704

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2030	2031	2032	2033	2034	2035
1. **OPERATING REVENUES (1)**						
2. Charges for services	7,121,550	7,235,495	7,167,481	7,282,161	7,398,675	7,517,054
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	(180,887)	0	0	0	0
6. **Total Operating Revenues**	7,501,550	7,434,608	7,547,481	7,662,161	7,778,675	7,897,054
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,024,184	4,124,788	4,227,908	4,333,606	4,441,946	4,552,994
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(916,298)	(939,205)	(962,685)	(986,752)	(1,011,421)	(1,036,707)
12. LESS: EOS - Professional Services	(128,789)	(132,009)	(135,309)	(138,692)	(142,159)	(145,713)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	90,875	91,482	91,070	91,680	92,301	92,931
16. **Operating Expenses Before Depreciation**	3,069,972	3,145,056	3,220,984	3,299,842	3,380,667	3,463,506
17. Depreciation (2)	841,841	853,482	865,283	877,248	889,378	901,677
18. **Total Operating Expenses**	3,911,813	3,998,538	4,086,267	4,177,090	4,270,045	4,365,183
19. **Operating Income**	3,589,737	3,436,070	3,461,214	3,485,071	3,508,630	3,531,871
20. Revenues (3)	7,501,550	7,434,608	7,547,481	7,662,161	7,778,675	7,897,054
21. EBITDA (4)	4,431,578	4,289,552	4,326,497	4,362,319	4,398,008	4,433,548
22. EBIT (5)	3,589,737	3,436,070	3,461,214	3,485,071	3,508,630	3,531,871
23. EBIT	3,589,737	3,436,070	3,461,214	3,485,071	3,508,630	3,531,871
24. (-) Income Taxes	1,037,075	992,681	999,945	1,006,837	1,013,643	1,020,358
25. Debt Free Net Income	2,552,662	2,443,389	2,461,269	2,478,234	2,494,987	2,511,513
26. (+) Depreciation & Amortization	841,841	853,482	865,283	877,248	889,378	901,677
27. (-) Capital Expenditures (6)	820,333	831,676	843,177	854,836	866,656	878,640
28. (-) Changes in Working Capital (7)	15,753	15,613	15,850	16,091	16,335	16,584
29. Debt Free Net Cash Flow	$2,558,417	$2,449,582	$2,467,526	$2,484,556	$2,501,374	$2,517,966
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 6.57% (8)	0.5822	0.5463	0.5127	0.4811	0.4514	0.4236
32. Present Value Debt Free Net Cash Flow	$1,489,510	$1,338,207	$1,265,100	$1,195,320	$1,129,120	$1,066,611
33. Present Value Factor: 7.79% (9)	0.5285	0.4903	0.4549	0.4220	0.3915	0.3632
34. Present Value Debt Free Net Cash Flow	$1,352,123	$1,201,030	$1,122,477	$1,048,483	$979,288	$914,525
35. Present Value Factor: 6.37% (8)	0.5916	0.5562	0.5229	0.4916	0.4621	0.4345
36. Present Value Debt Free Net Cash Flow	$1,513,559	$1,362,457	$1,290,269	$1,221,408	$1,155,885	$1,094,056
37. Present Value Factor: 7.59% (9)	0.5370	0.4991	0.4639	0.4311	0.4007	0.3725
38. Present Value Debt Free Net Cash Flow	$1,373,870	$1,222,586	$1,144,685	$1,071,092	$1,002,301	$937,942

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Income Approach
East Whiteland Township Wastewater System Assets
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DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2036	2037	2038	2039	2040	2041
1. **OPERATING REVENUES (1)**						
2. Charges for services	7,637,327	7,759,524	7,883,676	7,809,570	7,934,523	8,061,475
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	(197,092)	0	0	0
6. **Total Operating Revenues**	8,017,327	8,139,524	8,066,584	8,189,570	8,314,523	8,441,475
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,666,819	4,783,490	4,903,077	5,025,654	5,151,295	5,280,078
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(1,062,624)	(1,089,190)	(1,116,420)	(1,144,330)	(1,172,939)	(1,202,262)
12. LESS: EOS - Professional Services	(149,356)	(153,090)	(156,917)	(160,840)	(164,861)	(168,982)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	93,571	94,223	94,884	94,435	95,100	95,776
16. **Operating Expenses Before Depreciation**	3,548,410	3,635,433	3,724,624	3,814,919	3,908,596	4,004,609
17. Depreciation (2)	914,145	926,786	939,601	952,594	965,766	979,120
18. **Total Operating Expenses**	4,462,556	4,562,219	4,664,225	4,767,513	4,874,362	4,983,730
19. **Operating Income**	3,554,771	3,577,305	3,402,359	3,422,057	3,440,161	3,457,745
20. Revenues (3)	8,017,327	8,139,524	8,066,584	8,189,570	8,314,523	8,441,475
21. EBITDA (4)	4,468,917	4,504,091	4,341,960	4,374,651	4,405,927	4,436,866
22. EBIT (5)	3,554,771	3,577,305	3,402,359	3,422,057	3,440,161	3,457,745
23. EBIT	3,554,771	3,577,305	3,402,359	3,422,057	3,440,161	3,457,745
24. (-) Income Taxes	1,026,973	1,033,483	982,942	988,632	993,863	998,943
25. Debt Free Net Income	2,527,798	2,543,822	2,419,417	2,433,425	2,446,298	2,458,802
26. (+) Depreciation & Amortization	914,145	926,786	939,601	952,594	965,766	979,120
27. (-) Capital Expenditures (6)	890,790	903,108	915,596	928,256	941,092	954,105
28. (-) Changes in Working Capital (7)	16,836	17,093	16,940	17,198	17,460	17,727
29. Debt Free Net Cash Flow	$2,534,317	$2,550,407	$2,426,482	$2,440,565	$2,453,511	$2,466,090
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 6.57% (8)	0.3975	0.3730	0.3500	0.3284	0.3081	0.2891
32. Present Value Debt Free Net Cash Flow	$1,007,391	$951,302	$849,269	$801,482	$755,927	$712,947
33. Present Value Factor: 7.79% (9)	0.3370	0.3126	0.2900	0.2691	0.2496	0.2316
34. Present Value Debt Free Net Cash Flow	$854,065	$797,257	$703,680	$656,756	$612,396	$571,147
35. Present Value Factor: 6.37% (8)	0.4084	0.3840	0.3610	0.3394	0.3190	0.2999
36. Present Value Debt Free Net Cash Flow	$1,035,015	$979,356	$875,960	$828,328	$782,670	$739,581
37. Present Value Factor: 7.59% (9)	0.3462	0.3218	0.2991	0.2780	0.2584	0.2401
38. Present Value Debt Free Net Cash Flow	$877,381	$820,721	$725,761	$678,477	$633,987	$592,108

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21	Estimated Year 22	Estimated Year 23	Estimated Year 24
	2042	2043	2044	2045
1. **OPERATING REVENUES (1)**				
2. Charges for services	8,190,459	8,321,506	8,454,650	8,589,925
3. Other operating revenue	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	0	0	0
6. **Total Operating Revenues**	8,570,459	8,701,506	8,834,650	8,969,925
7. **Rate Increase**				
8. **OPERATING EXPENSES (1)**				
9. Operating & Maintenance Expenses	5,412,080	5,547,382	5,686,066	5,828,218
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(1,232,319)	(1,263,126)	(1,294,705)	(1,327,072)
12. LESS: EOS - Professional Services	(173,207)	(177,537)	(181,975)	(186,525)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	96,462	97,159	97,869	98,588
16. **Operating Expenses Before Depreciation**	4,103,016	4,203,877	4,307,255	4,413,209
17. Depreciation (2)	992,660	1,006,386	1,020,302	1,034,410
18. **Total Operating Expenses**	5,095,676	5,210,263	5,327,557	5,447,619
19. **Operating Income**	3,474,783	3,491,243	3,507,093	3,522,306
20. Revenues (3)	8,570,459	8,701,506	8,834,650	8,969,925
21. EBITDA (4)	4,467,443	4,497,629	4,527,395	4,556,716
22. EBIT (5)	3,474,783	3,491,243	3,507,093	3,522,306
23. EBIT	3,474,783	3,491,243	3,507,093	3,522,306
24. (-) Income Taxes	1,003,865	1,008,620	1,013,199	1,017,594
25. Debt Free Net Income	2,470,918	2,482,623	2,493,894	2,504,712
26. (+) Depreciation & Amortization	992,660	1,006,386	1,020,302	1,034,410
27. (-) Capital Expenditures (6)	967,299	980,674	994,235	1,007,983
28. (-) Changes in Working Capital (7)	17,998	18,273	18,553	18,837
29. Debt Free Net Cash Flow	$2,478,281	$2,490,062	$2,501,408	$2,512,302
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 6.57% (8)	0.2713	0.2546	0.2389	0.2242
32. Present Value Debt Free Net Cash Flow	$672,358	$633,970	$597,586	$563,258
33. Present Value Factor: 7.79% (9)	0.2149	0.1993	0.1849	0.1716
34. Present Value Debt Free Net Cash Flow	$532,583	$496,269	$462,510	$431,111
35. Present Value Factor: 6.37% (8)	0.2820	0.2651	0.2492	0.2343
36. Present Value Debt Free Net Cash Flow	$698,875	$660,115	$623,351	$588,632
37. Present Value Factor: 7.59% (9)	0.2232	0.2074	0.1928	0.1792
38. Present Value Debt Free Net Cash Flow	$553,152	$516,439	$482,271	$450,205

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 6.57%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,512,302
Divided by Capitalization Factor (8)	6.57%
24th Year Terminal Value	38,239,002
24th Year Present Value Factor (11)	0.2242
Present Value of Terminal Value	8,573,184
Present Value Debt Free Net Cash Flow for 24 Years	27,676,530
Indicated Value	$36,249,714

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 6.57%		Multiples (13)	Terminal Value
Projected EBIT	$3,522,306	23.5	$82,774,197
Projected EBITDA	4,556,716	16.3	74,274,476
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			77,079,384
24th Year Present Value Factor (11)			0.2242
Present Value of Terminal Value			17,281,198
Present Value Debt Free Net Cash Flow for 24 Years			27,676,530
Indicated Value			$44,957,728

DCF With Capitalization of Terminal Value Model @ 7.79%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,512,302
Divided by Capitalization Factor (9)	7.79%
24th Year Terminal Value	32,250,352
24th Year Present Value Factor (12)	0.1716
Present Value of Terminal Value	5,534,160
Present Value Debt Free Net Cash Flow for 24 Years	24,779,761
Indicated Value	$30,313,921

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.79%		Multiples (13)	Terminal Value
Projected EBIT	$3,522,306	23.5	$82,774,197
Projected EBITDA	4,556,716	16.3	74,274,476
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			77,079,384
24th Year Present Value Factor (12)			0.1716
Present Value of Terminal Value			13,226,822
Present Value Debt Free Net Cash Flow for 24 Years			24,779,761
Indicated Value			$38,006,583

DCF With Capitalization of Terminal Value Model @ 6.37%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,512,302
Divided by Capitalization Factor (8)	6.37%
24th Year Terminal Value	39,439,599
24th Year Present Value Factor (11)	0.2242
Present Value of Terminal Value	8,842,358
Present Value Debt Free Net Cash Flow for 24 Years	27,676,530
Indicated Value	$36,518,888

DCF With Capitalization of Terminal Value Model @ 7.59%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,512,302
Divided by Capitalization Factor (9)	7.59%
24th Year Terminal Value	33,100,164
24th Year Present Value Factor (12)	0.1716
Present Value of Terminal Value	5,679,988
Present Value Debt Free Net Cash Flow for 24 Years	24,779,761
Indicated Value	$30,459,749

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Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or budget. Post-2021 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by IOU at end of 2021 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2021 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2021 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2021 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2021 assumed due to IOU purchase at the end of 2020.

(2) Depreciation - Pre-2022 based on actual depreciation rate plus same rate on half of CAPX. Post-2021 based on depreciation rate plus same rate on half of CAPX.

(3) Line 6.

(4) Line 19 + line 17.

(5) Line 19.

(6) Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 0.21% of revenues.

(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate

(9) Discount rate is the current upper end of the IOU discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate

(10) Final year shown, line 29.

(11) Final year shown, line 31.

(12) Final year shown, line 33.

(13) Developed on Market Multiples EXHIBIT 17.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investor owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

			Budget	Budget	Estimated	Estimated
	Actual			Year 0	Year 1	Year 2
	2018	2019	2020	2021	2022	2023
1. **OPERATING REVENUES (1)**						
2. Charges for services	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291
3. Other operating revenue	1,563,159	682,780	439,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	5,372,388	4,444,567	4,387,000	4,328,000	4,500,950	4,653,291
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	2,407,506	3,073,240	3,106,409	3,222,278	3,302,835	3,385,406
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(733,706)	(752,048)	(770,849)
12. LESS: EOS - Professional Services	0	0	0	(103,125)	(105,703)	(108,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,407,506	3,073,240	3,106,409	2,385,447	2,445,084	2,506,211
16. Depreciation (2)	718,700	774,783	774,783	1,366,425	1,390,766	1,409,650
17. **Total Operating Expenses**	3,126,206	3,848,023	3,881,192	3,751,873	3,835,850	3,915,861
18. **Operating Income**	2,246,182	596,544	505,808	576,127	665,100	737,430
19. Revenues (3)	5,372,388	4,444,567	4,387,000	4,328,000	4,500,950	4,653,291
20. EBITDA (4)	2,964,882	1,371,327	1,280,591	1,942,553	2,055,866	2,147,080
21. EBIT (5)	2,246,182	596,544	505,808	576,127	665,100	737,430
22. EBIT	2,246,182	596,544	505,808	576,127	665,100	737,430
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	2,246,182	596,544	505,808	576,127	665,100	737,430
25. (+) Depreciation & Amortization	718,700	774,783	774,783	1,366,425	1,390,766	1,409,650
26. (-) Capital Expenditures (6)	393,256	740,070	2,738,000	2,038,000	1,355,374	1,373,777
27. (-) Changes in Working Capital (7)	11,282	9,334	9,213	9,089	9,452	9,772
28. Debt Free Net Cash Flow	$2,560,344	$621,923	($1,466,622)	($104,536)	$691,040	$763,531
29. PV Time Period (mid-year)					0.5	1.5
30. Present Value Factor: 3.09% (8)					0.9849	0.9554
31. Present Value Debt Free Net Cash Flow					$680,606	$729,478
32. Present Value Factor: 2.89% (9)					0.9859	0.9582
33. Present Value Debt Free Net Cash Flow					$681,297	$731,616

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2024	2025	2026	2027	2028	2029
1. **OPERATING REVENUES (1)**						
2. Charges for services	4,521,585	5,830,130	5,888,900	5,983,123	6,078,853	6,176,114
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	1,175,612	0	0	0	0	0
6. **Total Operating Revenues**	6,077,197	6,210,130	6,268,900	6,363,123	6,458,853	6,556,114
7. **Rate Increase**	**26%**					
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	3,470,041	3,556,792	3,645,712	3,736,855	3,830,276	3,926,033
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(790,121)	(809,874)	(830,120)	(850,873)	(872,145)	(893,949)
12. LESS: EOS - Professional Services	(111,054)	(113,831)	(116,676)	(119,593)	(122,583)	(125,648)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,568,866	2,633,088	2,698,915	2,766,388	2,835,547	2,906,436
16. Depreciation (2)	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985	1,528,461
17. **Total Operating Expenses**	3,997,656	4,081,278	4,166,769	4,254,172	4,343,532	4,434,897
18. **Operating Income**	2,079,541	2,128,852	2,102,131	2,108,951	2,115,321	2,121,217
19. Revenues (3)	6,077,197	6,210,130	6,268,900	6,363,123	6,458,853	6,556,114
20. EBITDA (4)	3,508,331	3,577,042	3,569,985	3,596,735	3,623,306	3,649,678
21. EBIT (5)	2,079,541	2,128,852	2,102,131	2,108,951	2,115,321	2,121,217
22. EBIT	2,079,541	2,128,852	2,102,131	2,108,951	2,115,321	2,121,217
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	2,079,541	2,128,852	2,102,131	2,108,951	2,115,321	2,121,217
25. (+) Depreciation & Amortization	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985	1,528,461
26. (-) Capital Expenditures (6)	1,392,430	1,411,336	1,430,499	1,449,922	1,469,609	1,489,563
27. (-) Changes in Working Capital (7)	12,762	13,041	13,165	13,363	13,564	13,768
28. Debt Free Net Cash Flow	$2,103,139	$2,152,665	$2,126,321	$2,133,451	$2,140,133	$2,146,347
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.09% (8)	0.9267	0.8990	0.8720	0.8459	0.8205	0.7959
31. Present Value Debt Free Net Cash Flow	$1,948,979	$1,935,246	$1,854,152	$1,804,686	$1,755,979	$1,708,278
32. Present Value Factor: 2.89% (9)	0.9313	0.9051	0.8797	0.8550	0.8309	0.8076
33. Present Value Debt Free Net Cash Flow	$1,958,653	$1,948,377	$1,870,525	$1,824,100	$1,778,237	$1,733,390

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Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2030	2031	2032	2033	2034	2035
1. **OPERATING REVENUES (1)**						
2. Charges for services	6,274,932	6,375,331	6,477,336	6,580,974	6,686,269	6,793,249
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	6,654,932	6,755,331	6,857,336	6,960,974	7,066,269	7,173,249
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,024,184	4,124,788	4,227,908	4,333,606	4,441,946	4,552,994
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(916,298)	(939,205)	(962,685)	(986,752)	(1,011,421)	(1,036,707)
12. LESS: EOS - Professional Services	(128,789)	(132,009)	(135,309)	(138,692)	(142,159)	(145,713)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	2,979,097	3,053,574	3,129,914	3,208,162	3,288,366	3,370,575
16. Depreciation (2)	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284
17. **Total Operating Expenses**	4,528,311	4,623,823	4,721,483	4,821,341	4,923,449	5,027,859
18. **Operating Income**	2,126,621	2,131,508	2,135,853	2,139,633	2,142,820	2,145,390
19. Revenues (3)	6,654,932	6,755,331	6,857,336	6,960,974	7,066,269	7,173,249
20. EBITDA (4)	3,675,835	3,701,757	3,727,422	3,752,812	3,777,903	3,802,674
21. EBIT (5)	2,126,621	2,131,508	2,135,853	2,139,633	2,142,820	2,145,390
22. EBIT	2,126,621	2,131,508	2,135,853	2,139,633	2,142,820	2,145,390
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	2,126,621	2,131,508	2,135,853	2,139,633	2,142,820	2,145,390
25. (+) Depreciation & Amortization	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284
26. (-) Capital Expenditures (6)	1,509,788	1,530,288	1,551,066	1,572,126	1,593,473	1,615,109
27. (-) Changes in Working Capital (7)	13,975	14,186	14,400	14,618	14,839	15,064
28. Debt Free Net Cash Flow	$2,152,072	$2,157,282	$2,161,956	$2,166,068	$2,169,591	$2,172,501
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.09% (8)	0.7721	0.7489	0.7265	0.7047	0.6836	0.6631
31. Present Value Debt Free Net Cash Flow	$1,661,615	$1,615,589	$1,570,661	$1,526,428	$1,483,133	$1,440,586
32. Present Value Factor: 2.89% (9)	0.7849	0.7629	0.7414	0.7206	0.7004	0.6807
33. Present Value Debt Free Net Cash Flow	$1,689,161	$1,645,791	$1,602,874	$1,560,869	$1,519,582	$1,478,822

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	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2036	2037	2038	2039	2040	2041
1. **OPERATING REVENUES (1)**						
2. Charges for services	6,901,941	7,012,373	7,124,570	7,238,564	7,354,381	7,472,051
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	7,281,941	7,392,373	7,504,570	7,618,564	7,734,381	7,852,051
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,666,819	4,783,490	4,903,077	5,025,654	5,151,295	5,280,078
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(1,062,624)	(1,089,190)	(1,116,420)	(1,144,330)	(1,172,939)	(1,202,262)
12. LESS: EOS - Professional Services	(149,356)	(153,090)	(156,917)	(160,840)	(164,861)	(168,982)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. **Operating Expenses Before Depreciation**	3,454,839	3,541,210	3,629,740	3,720,484	3,813,496	3,908,833
16. Depreciation (2)	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966
17. **Total Operating Expenses**	5,134,626	5,243,805	5,355,453	5,469,628	5,586,389	5,705,800
18. **Operating Income**	2,147,315	2,148,568	2,149,117	2,148,936	2,147,992	2,146,251
19. Revenues (3)	7,281,941	7,392,373	7,504,570	7,618,564	7,734,381	7,852,051
20. EBITDA (4)	3,827,102	3,851,163	3,874,830	3,898,080	3,920,885	3,943,218
21. EBIT (5)	2,147,315	2,148,568	2,149,117	2,148,936	2,147,992	2,146,251
22. EBIT	2,147,315	2,148,568	2,149,117	2,148,936	2,147,992	2,146,251
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	2,147,315	2,148,568	2,149,117	2,148,936	2,147,992	2,146,251
25. (+) Depreciation & Amortization	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966
26. (-) Capital Expenditures (6)	1,637,038	1,659,266	1,681,795	1,704,631	1,727,776	1,751,235
27. (-) Changes in Working Capital (7)	15,292	15,524	15,760	15,999	16,242	16,489
28. Debt Free Net Cash Flow	$2,174,772	$2,176,373	$2,177,275	$2,177,450	$2,176,867	$2,175,493
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.09% (8)	0.6432	0.6239	0.6052	0.5871	0.5695	0.5524
31. Present Value Debt Free Net Cash Flow	$1,398,813	$1,357,839	$1,317,687	$1,278,381	$1,239,726	$1,201,742
32. Present Value Factor: 2.89% (9)	0.6616	0.6430	0.6249	0.6074	0.5903	0.5738
33. Present Value Debt Free Net Cash Flow	$1,438,829	$1,399,408	$1,360,579	$1,322,583	$1,285,004	$1,248,298

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	Estimated Year 21	Estimated Year 22	Estimated Year 23	Estimated Year 24
	2042	2043	2044	2045
1. **OPERATING REVENUES (1)**				
2. Charges for services	7,591,604	7,713,069	7,836,478	7,969,824
3. Other operating revenue	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	0	7,836	0
6. **Total Operating Revenues**	7,971,604	8,093,069	8,224,314	8,349,824
7. **Rate Increase**			**0%**	
8. **OPERATING EXPENSES (1)**				
9. Operating & Maintenance Expenses	5,412,080	5,547,382	5,686,066	5,828,218
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(1,232,319)	(1,263,126)	(1,294,705)	(1,327,072)
12. LESS: EOS - Professional Services	(173,207)	(177,537)	(181,975)	(186,525)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. **Operating Expenses Before Depreciation**	4,006,554	4,106,718	4,209,386	4,314,621
16. Depreciation (2)	1,821,364	1,846,095	1,871,161	1,896,568
17. **Total Operating Expenses**	5,827,919	5,952,813	6,080,547	6,211,189
18. **Operating Income**	2,143,685	2,140,256	2,143,767	2,138,635
19. Revenues (3)	7,971,604	8,093,069	8,224,314	8,349,824
20. EBITDA (4)	3,965,050	3,986,351	4,014,928	4,035,203
21. EBIT (5)	2,143,685	2,140,256	2,143,767	2,138,635
22. EBIT	2,143,685	2,140,256	2,143,767	2,138,635
23. (-) Income Taxes	0	0	0	0
24. Debt Free Net Income	2,143,685	2,140,256	2,143,767	2,138,635
25. (+) Depreciation & Amortization	1,821,364	1,846,095	1,871,161	1,896,568
26. (-) Capital Expenditures (6)	1,775,014	1,799,115	1,823,543	1,848,303
27. (-) Changes in Working Capital (7)	16,740	16,995	17,271	17,535
28. Debt Free Net Cash Flow	$2,173,295	$2,170,240	$2,174,114	$2,169,366
29. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.09% (8)	0.5359	0.5198	0.5042	0.4891
31. Present Value Debt Free Net Cash Flow	$1,164,669	$1,128,091	$1,096,188	$1,061,037
32. Present Value Factor: 2.89% (9)	0.5576	0.5420	0.5267	0.5120
33. Present Value Debt Free Net Cash Flow	$1,211,830	$1,176,270	$1,145,106	$1,110,715

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DCF With Capitalization of Terminal Value Model and
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DCF With Capitalization of Terminal Value Model @ 3.09%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,169,366
Divided by Capitalization Factor (8)	3.09%
24th Year Terminal Value	70,206,009
24th Year Present Value Factor (11)	0.4891
Present Value of Terminal Value	34,337,759
Present Value Debt Free Net Cash Flow for 24 Years	33,959,587
Indicated Value	$68,297,346

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.09%			
		Multiples (13)	Terminal Value
Projected EBIT	$2,138,635	23.5	$50,257,930
Projected EBITDA	4,035,203	16.3	65,773,814
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			60,653,572
24th Year Present Value Factor (11)			0.4891
Present Value of Terminal Value			29,665,662
Present Value Debt Free Net Cash Flow for 24 Years			33,959,587
Indicated Value			$63,625,249

DCF With Capitalization of Terminal Value Model @ 2.89%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$2,169,366
Divided by Capitalization Factor (9)	2.89%
24th Year Terminal Value	75,064,556
24th Year Present Value Factor (12)	0.4891
Present Value of Terminal Value	36,714,074
Present Value Debt Free Net Cash Flow for 24 Years	33,959,587
Indicated Value	$70,673,661

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 2.89%			
		Multiples (13)	Terminal Value
Projected EBIT	$2,138,635	23.5	$50,257,930
Projected EBITDA	4,035,203	16.3	65,773,814
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			60,653,572
24th Year Present Value Factor (12)			0.4891
Present Value of Terminal Value			29,665,662
Present Value Debt Free Net Cash Flow for 24 Years			33,959,587
Indicated Value			$63,625,249

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Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or budget. Post-2021 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by MUNI at end of 2021 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2021 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2021 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2021 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

(2) Depreciation - Pre-2022 based on actual depreciation rate plus same rate on half of CAPX. Post-2021 based on depreciation rate plus same rate on half of CAPX.

(3) Line 6.

(4) Line 18 + line 16.

(5) Line 18.

(6) Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 0.21% of revenues.

(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 equal to discount rate, where capitalization rate = K - g.

(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate = K - g.

(10) Final year shown, line 28.

(11) Final year shown, line 30.

(12) Final year shown, line 30.

(13) Developed on Market Multiples EXHIBIT 17.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investor owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

				Budget	Budget	Estimated	Estimated
	Actual				Year 0	Year 1	Year 2
	2018	2019	2020		2021	2022	2023
1. **OPERATING REVENUES (1)**							
2. Charges for services	3,809,229	3,761,787	3,948,000		3,948,000	4,120,950	4,273,291
3. Other operating revenue	1,563,159	682,780	439,000		380,000	380,000	380,000
4. Tap Fees	0	0	0		0	0	0
5. Other (Rate Increase)	0	0	0		0	0	0
6. **Total Operating Revenues**	5,372,388	4,444,567	4,387,000		4,328,000	4,500,950	4,653,291
7. **Rate Increase**							
8. **OPERATING EXPENSES (1)**							
9. Operating & Maintenance Expenses	2,407,506	3,073,240	3,106,409		3,222,278	3,302,835	3,385,406
10. Remove Economies of Scale							
11. LESS: EOS - Wages & Benefits	0	0	0		(733,706)	(752,048)	(770,849)
12. LESS: EOS - Professional Services	0	0	0		(103,125)	(105,703)	(108,346)
13. LESS: EOS - Eliminated Expenses	0	0	0		0	0	0
14. ADD: Additional O&M	0	0	0		0	0	0
15. ADD: PURTA & Reg Assessment	0	0	0		0	101,484	102,417
16. **Operating Expenses Before Depreciation**	2,407,506	3,073,240	3,106,409		2,385,447	2,546,568	2,608,628
17. Depreciation (2)	718,700	774,783	774,783		1,366,425	1,390,766	1,409,650
18. **Total Operating Expenses**	3,126,206	3,848,023	3,881,192		3,751,873	3,937,334	4,018,278
19. **Operating Income**	2,246,182	596,544	505,808		576,127	563,616	635,013
20. Revenues (3)	5,372,388	4,444,567	4,387,000		4,328,000	4,500,950	4,653,291
21. EBITDA (4)	2,964,882	1,371,327	1,280,591		1,942,553	1,954,382	2,044,663
22. EBIT (5)	2,246,182	596,544	505,808		576,127	563,616	635,013
23. EBIT	2,246,182	596,544	505,808		576,127	563,616	635,013
24. (-) Income Taxes	0	0	0		166,443	162,829	183,455
25. Debt Free Net Income	2,246,182	596,544	505,808		409,684	400,787	451,558
26. (+) Depreciation & Amortization	718,700	774,783	774,783		1,366,425	1,390,766	1,409,650
27. (-) Capital Expenditures (6)	393,256	740,070	2,738,000		2,038,000	1,355,374	1,373,777
28. (-) Changes in Working Capital (7)	11,282	9,334	9,213		9,089	9,452	9,772
29. Debt Free Net Cash Flow	$2,560,344	$621,923	($1,466,622)		($270,979)	$426,727	$477,659
30. PV Time Period (mid-year)						0.5	1.5
31. Present Value Factor: 6.57% (8)						0.9687	0.9090
32. Present Value Debt Free Net Cash Flow						$413,371	$434,192
33. Present Value Factor: 7.79% (9)						0.9632	0.8936
34. Present Value Debt Free Net Cash Flow						$411,024	$426,836
35. Present Value Factor: 6.37% (8)						0.9696	0.9115
36. Present Value Debt Free Net Cash Flow						$413,755	$435,387
37. Present Value Factor: 7.59% (9)						0.9641	0.8961
38. Present Value Debt Free Net Cash Flow						$411,408	$428,031

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East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
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DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2024	2025	2026	2027	2028	2029
1. **OPERATING REVENUES (1)**						
2. Charges for services	4,521,585	9,161,633	9,253,986	9,402,050	9,552,483	9,452,984
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	4,431,154	0	0	0	(248,365)	0
6. **Total Operating Revenues**	9,332,739	9,541,633	9,633,986	9,782,050	9,684,118	9,832,984
7. **Rate Increase**	**98%**					
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	3,470,041	3,556,792	3,645,712	3,736,855	3,830,276	3,926,033
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(790,121)	(809,874)	(830,120)	(850,873)	(872,145)	(893,949)
12. LESS: EOS - Professional Services	(111,054)	(113,831)	(116,676)	(119,593)	(122,583)	(125,648)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	103,233	129,807	130,943	131,414	132,203	131,591
16. **Operating Expenses Before Depreciation**	2,672,099	2,762,895	2,829,858	2,897,802	2,967,750	3,038,027
17. Depreciation (2)	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985	1,528,461
18. **Total Operating Expenses**	4,100,889	4,211,085	4,297,712	4,385,586	4,475,735	4,566,488
19. **Operating Income**	5,231,850	5,330,548	5,336,274	5,396,464	5,208,383	5,266,496
20. Revenues (3)	9,332,739	9,541,633	9,633,986	9,782,050	9,684,118	9,832,984
21. EBITDA (4)	6,660,640	6,778,738	6,804,128	6,884,248	6,716,368	6,794,957
22. EBIT (5)	5,231,850	5,330,548	5,336,274	5,396,464	5,208,383	5,266,496
23. EBIT	5,231,850	5,330,548	5,336,274	5,396,464	5,208,383	5,266,496
24. (-) Income Taxes	1,511,481	1,539,995	1,541,650	1,559,038	1,504,702	1,521,491
25. Debt Free Net Income	3,720,369	3,790,553	3,794,624	3,837,426	3,703,681	3,745,005
26. (+) Depreciation & Amortization	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985	1,528,461
27. (-) Capital Expenditures (6)	1,392,430	1,411,336	1,430,499	1,449,922	1,469,609	1,489,563
28. (-) Changes in Working Capital (7)	19,599	20,037	20,231	20,542	20,337	20,649
29. Debt Free Net Cash Flow	$3,737,130	$3,807,370	$3,811,748	$3,854,746	$3,721,720	$3,763,254
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 6.57% (8)	0.8529	0.8003	0.7510	0.7047	0.6613	0.6205
32. Present Value Debt Free Net Cash Flow	$3,187,398	$3,047,038	$2,862,623	$2,716,439	$2,461,173	$2,335,099
33. Present Value Factor: 7.79% (9)	0.8290	0.7691	0.7135	0.6619	0.6141	0.5697
34. Present Value Debt Free Net Cash Flow	$3,098,081	$2,928,248	$2,719,682	$2,551,456	$2,285,508	$2,143,926
35. Present Value Factor: 6.37% (8)	0.8569	0.8056	0.7574	0.7120	0.6694	0.6293
36. Present Value Debt Free Net Cash Flow	$3,202,347	$3,067,217	$2,887,018	$2,744,579	$2,491,319	$2,368,216
37. Present Value Factor: 7.59% (9)	0.8329	0.7741	0.7195	0.6687	0.6216	0.5777
38. Present Value Debt Free Net Cash Flow	$3,112,656	$2,947,285	$2,742,553	$2,577,669	$2,313,421	$2,174,032

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2030	2031	2032	2033	2034	2035
1. **OPERATING REVENUES (1)**						
2. Charges for services	9,604,232	9,757,899	9,914,026	10,072,650	9,937,032	10,096,024
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	(292,107)	0	0
6. **Total Operating Revenues**	9,984,232	10,137,899	10,294,026	10,160,543	10,317,032	10,476,024
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,024,184	4,124,788	4,227,908	4,333,606	4,441,946	4,552,994
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(916,298)	(939,205)	(962,685)	(986,752)	(1,011,421)	(1,036,707)
12. LESS: EOS - Professional Services	(128,789)	(132,009)	(135,309)	(138,692)	(142,159)	(145,713)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	132,382	133,186	134,004	134,834	134,015	134,846
16. **Operating Expenses Before Depreciation**	3,111,479	3,186,760	3,263,918	3,342,996	3,422,381	3,505,421
17. Depreciation (2)	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284
18. **Total Operating Expenses**	4,660,693	4,757,009	4,855,487	4,956,175	5,057,464	5,162,705
19. **Operating Income**	5,323,539	5,380,890	5,438,539	5,204,368	5,259,568	5,313,319
20. Revenues (3)	9,984,232	10,137,899	10,294,026	10,160,543	10,317,032	10,476,024
21. EBITDA (4)	6,872,753	6,951,139	7,030,108	6,817,547	6,894,651	6,970,603
22. EBIT (5)	5,323,539	5,380,890	5,438,539	5,204,368	5,259,568	5,313,319
23. EBIT	5,323,539	5,380,890	5,438,539	5,204,368	5,259,568	5,313,319
24. (-) Income Taxes	1,537,970	1,554,539	1,571,194	1,503,542	1,519,489	1,535,018
25. Debt Free Net Income	3,785,569	3,826,351	3,867,345	3,700,826	3,740,079	3,778,301
26. (+) Depreciation & Amortization	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284
27. (-) Capital Expenditures (6)	1,509,788	1,530,288	1,551,066	1,572,126	1,593,473	1,615,109
28. (-) Changes in Working Capital (7)	20,967	21,290	21,617	21,337	21,666	22,000
29. Debt Free Net Cash Flow	$3,804,028	$3,845,022	$3,886,231	$3,720,542	$3,760,024	$3,798,477
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 6.57% (8)	0.5822	0.5463	0.5127	0.4811	0.4514	0.4236
32. Present Value Debt Free Net Cash Flow	$2,214,705	$2,100,536	$1,992,471	$1,789,953	$1,697,275	$1,609,035
33. Present Value Factor: 7.79% (9)	0.5285	0.4903	0.4549	0.4220	0.3915	0.3632
34. Present Value Debt Free Net Cash Flow	$2,010,429	$1,885,214	$1,767,846	$1,570,069	$1,472,049	$1,379,607
35. Present Value Factor: 6.37% (8)	0.5916	0.5562	0.5229	0.4916	0.4621	0.4345
36. Present Value Debt Free Net Cash Flow	$2,250,463	$2,138,601	$2,032,110	$1,829,019	$1,737,507	$1,650,438
37. Present Value Factor: 7.59% (9)	0.5370	0.4991	0.4639	0.4311	0.4007	0.3725
38. Present Value Debt Free Net Cash Flow	$2,042,763	$1,919,050	$1,802,822	$1,603,926	$1,506,641	$1,414,933

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2036	2037	2038	2039	2040	2041
1. **OPERATING REVENUES (1)**						
2. Charges for services	10,257,561	10,421,682	10,588,429	10,488,898	10,656,720	10,827,227
3. Other operating revenue	380,000	380,000	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	(264,711)	0	0	0
6. **Total Operating Revenues**	10,637,561	10,801,682	10,703,718	10,868,898	11,036,720	11,207,227
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	4,666,819	4,783,490	4,903,077	5,025,654	5,151,295	5,280,078
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(1,062,624)	(1,089,190)	(1,116,420)	(1,144,330)	(1,172,939)	(1,202,262)
12. LESS: EOS - Professional Services	(149,356)	(153,090)	(156,917)	(160,840)	(164,861)	(168,982)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	135,691	136,549	137,421	136,800	137,676	138,566
16. **Operating Expenses Before Depreciation**	3,590,530	3,677,759	3,767,161	3,857,284	3,951,172	4,047,399
17. Depreciation (2)	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966
18. **Total Operating Expenses**	5,270,317	5,380,354	5,492,874	5,606,428	5,724,065	5,844,366
19. **Operating Income**	5,367,244	5,421,328	5,210,844	5,262,470	5,312,655	5,362,861
20. Revenues (3)	10,637,561	10,801,682	10,703,718	10,868,898	11,036,720	11,207,227
21. EBITDA (4)	7,047,031	7,123,923	6,936,557	7,011,614	7,085,548	7,159,828
22. EBIT (5)	5,367,244	5,421,328	5,210,844	5,262,470	5,312,655	5,362,861
23. EBIT	5,367,244	5,421,328	5,210,844	5,262,470	5,312,655	5,362,861
24. (-) Income Taxes	1,550,597	1,566,222	1,505,413	1,520,328	1,534,826	1,549,331
25. Debt Free Net Income	3,816,647	3,855,106	3,705,431	3,742,142	3,777,829	3,813,530
26. (+) Depreciation & Amortization	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966
27. (-) Capital Expenditures (6)	1,637,038	1,659,266	1,681,795	1,704,631	1,727,776	1,751,235
28. (-) Changes in Working Capital (7)	22,339	22,684	22,478	22,825	23,177	23,535
29. Debt Free Net Cash Flow	$3,837,057	$3,875,751	$3,726,871	$3,763,830	$3,799,769	$3,835,726
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 6.57% (8)	0.3975	0.3730	0.3500	0.3284	0.3081	0.2891
32. Present Value Debt Free Net Cash Flow	$1,525,230	$1,445,655	$1,304,405	$1,236,042	$1,170,709	$1,108,909
33. Present Value Factor: 7.79% (9)	0.3370	0.3126	0.2900	0.2691	0.2496	0.2316
34. Present Value Debt Free Net Cash Flow	$1,293,088	$1,211,560	$1,080,793	$1,012,847	$948,422	$888,354
35. Present Value Factor: 6.37% (8)	0.4084	0.3840	0.3610	0.3394	0.3190	0.2999
36. Present Value Debt Free Net Cash Flow	$1,567,054	$1,488,289	$1,345,400	$1,277,444	$1,212,126	$1,150,334
37. Present Value Factor: 7.59% (9)	0.3462	0.3218	0.2991	0.2780	0.2584	0.2401
38. Present Value Debt Free Net Cash Flow	$1,328,389	$1,247,217	$1,114,707	$1,046,345	$981,860	$920,958

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21	Estimated Year 22	Estimated Year 23	Estimated Year 24
	2042	2043	2044	2045
1. **OPERATING REVENUES (1)**				
2. Charges for services	11,000,463	11,176,470	11,094,122	11,271,628
3. Other operating revenue	380,000	380,000	380,000	380,000
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	(257,059)	0	0
6. **Total Operating Revenues**	11,380,463	11,299,411	11,474,122	11,651,628
7. **Rate Increase**				
8. **OPERATING EXPENSES (1)**				
9. Operating & Maintenance Expenses	5,412,080	5,547,382	5,686,066	5,828,218
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(1,232,319)	(1,263,126)	(1,294,705)	(1,327,072)
12. LESS: EOS - Professional Services	(173,207)	(177,537)	(181,975)	(186,525)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	139,471	140,391	139,862	140,788
16. **Operating Expenses Before Depreciation**	4,146,025	4,247,109	4,349,248	4,455,409
17. Depreciation (2)	1,821,364	1,846,095	1,871,161	1,896,568
18. **Total Operating Expenses**	5,967,390	6,093,204	6,220,409	6,351,977
19. **Operating Income**	5,413,073	5,206,207	5,253,713	5,299,651
20. Revenues (3)	11,380,463	11,299,411	11,474,122	11,651,628
21. EBITDA (4)	7,234,438	7,052,302	7,124,874	7,196,219
22. EBIT (5)	5,413,073	5,206,207	5,253,713	5,299,651
23. EBIT	5,413,073	5,206,207	5,253,713	5,299,651
24. (-) Income Taxes	1,563,837	1,504,073	1,517,798	1,531,069
25. Debt Free Net Income	3,849,236	3,702,134	3,735,915	3,768,582
26. (+) Depreciation & Amortization	1,821,364	1,846,095	1,871,161	1,896,568
27. (-) Capital Expenditures (6)	1,775,014	1,799,115	1,823,543	1,848,303
28. (-) Changes in Working Capital (7)	23,899	23,729	24,096	24,468
29. Debt Free Net Cash Flow	$3,871,688	$3,725,385	$3,759,437	$3,792,379
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 6.57% (8)	0.2713	0.2546	0.2389	0.2242
32. Present Value Debt Free Net Cash Flow	$1,050,389	$948,483	$898,130	$850,251
33. Present Value Factor: 7.79% (9)	0.2149	0.1993	0.1849	0.1716
34. Present Value Debt Free Net Cash Flow	$832,026	$742,469	$695,120	$650,772
35. Present Value Factor: 6.37% (8)	0.2820	0.2651	0.2492	0.2343
36. Present Value Debt Free Net Cash Flow	$1,091,816	$987,600	$936,852	$888,554
37. Present Value Factor: 7.59% (9)	0.2232	0.2074	0.1928	0.1792
38. Present Value Debt Free Net Cash Flow	$864,161	$772,645	$724,820	$679,594

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 6.57%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$3,792,379
Divided by Capitalization Factor (8)	6.57%
24th Year Terminal Value	57,722,662
24th Year Present Value Factor (11)	0.2242
Present Value of Terminal Value	12,941,421
Present Value Debt Free Net Cash Flow for 24 Years	40,399,510
Indicated Value	$53,340,930

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 6.57%		Multiples (13)	Terminal Value
Projected EBIT	$5,299,651	23.5	$124,541,806
Projected EBITDA	7,196,219	16.3	117,298,375
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			119,688,707
24th Year Present Value Factor (11)			0.2242
Present Value of Terminal Value			26,834,208
Present Value Debt Free Net Cash Flow for 24 Years			40,399,510
Indicated Value			$67,233,718

DCF With Capitalization of Terminal Value Model @ 7.79%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$3,792,379
Divided by Capitalization Factor (9)	7.79%
24th Year Terminal Value	48,682,656
24th Year Present Value Factor (12)	0.1716
Present Value of Terminal Value	8,353,944
Present Value Debt Free Net Cash Flow for 24 Years	36,005,427
Indicated Value	$44,359,371

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.79%		Multiples (13)	Terminal Value
Projected EBIT	$5,299,651	23.5	$124,541,806
Projected EBITDA	7,196,219	16.3	117,298,375
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			119,688,707
24th Year Present Value Factor (12)			0.1716
Present Value of Terminal Value			20,538,582
Present Value Debt Free Net Cash Flow for 24 Years			36,005,427
Indicated Value			$56,544,009

DCF With Capitalization of Terminal Value Model @ 6.37%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$3,792,379
Divided by Capitalization Factor (8)	6.37%
24th Year Terminal Value	59,534,990
24th Year Present Value Factor (11)	0.2242
Present Value of Terminal Value	13,347,745
Present Value Debt Free Net Cash Flow for 24 Years	40,399,510
Indicated Value	$53,747,255

DCF With Capitalization of Terminal Value Model @ 7.59%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$3,792,379
Divided by Capitalization Factor (9)	7.59%
24th Year Terminal Value	49,965,466
24th Year Present Value Factor (12)	0.1716
Present Value of Terminal Value	8,574,074
Present Value Debt Free Net Cash Flow for 24 Years	36,005,427
Indicated Value	$44,579,501

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Whiteland Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or budget. Post-2021 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by IOU at end of 2021 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2021 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2021 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2021 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2021 assumed due to IOU purchase at the end of 2020.

(2) Depreciation - Pre-2022 based on actual depreciation rate plus same rate on half of CAPX. Post-2021 based on depreciation rate plus same rate on half of CAPX.

(3) Line 6.

(4) Line 19 + line 17.

(5) Line 19.

(6) Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 0.21% of revenues.

(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate

(9) Discount rate is the current upper end of the IOU discount rate. Capitalization rate (K) at 5/20/2021 adjusted for stated growth (g) where capitalization rate

(10) Final year shown, line 29.

(11) Final year shown, line 31.

(12) Final year shown, line 33.

(13) Developed on Market Multiples EXHIBIT 17.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investor owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment

Market Multiples Method
East Whiteland Township Wastewater System Assets
2021 Operations
Market Multiple Method

	A	B	C	D (Col B × Col C)	E (Col A × Col D)
	Subject Company Statistic (1)	Comparison Group's Valuation Multiples 5/20/2021	East Whiteland's Growth & Risk Adjustment	East Whiteland's Risk Adjusted Valuation Multiples 5/20/2021	East Whiteland's Market Multiples Valuation
Risk Adjusted Multiple					
1. East Whiteland Township Wastewater System Assets					
2. Investor Provided Capital	$42,513,245	2.06	80.00%	1.65	$70,146,854
3. Gross PP&E	$43,447,309	1.49	88.00%	1.31	56,915,975
4. Net PP&E	$32,955,596	1.88	87.00%	1.64	54,047,177
5. Revenues	$4,328,000	8.68	80.00%	6.94	30,036,320
6. EBITDA	$1,942,553	20.33	80.00%	16.26	31,585,904
7. EBIT	$1,209,102	29.36	80.00%	23.49	28,401,810
8. Customers	3,895	$10,014	88.00%	$8,812	34,322,740
9. Population	14,720	$2,999	88.00%	$2,639	38,846,080
10.					
11. Average					$43,037,858

Conclusion of Market Multiple Method Valuation

		Low	High		Conclusion
12.	Capital Items	$54,047,177	$70,146,854		$62,097,016
13.	(Items 2-4)				
14.	Income Statement Items	28,401,810	31,585,904		-
15.	(Items 5 -7)				
16.	Demographics Items	34,322,740	38,846,080		36,584,410
17.	(Items 8-9)				
				Conclusion	$49,340,713

Market Multiples Method
East Whiteland Township Wastewater System Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2020		5/20/2021
	Gross PP&E	Net PP&E	Invest. Total Capital	12 Mos. Rev.	12 Mos. EBITDA	12 Mos. EBIT	Customers	Population	Enterprise Value
	($ Mill)	($ Mill)	($ Mill)	($ Mill)	($ Mill)	($ Mill)			($ Mill)
American States Water Co	$2,100.362	$1,532.036	$1,228.228	$488.243	$171.044	$133.840	286,341	1,000,000	$3,464.566
American Water Works Company Inc	$25,709.000	$19,805.000	$17,492.000	$3,777.000	$1,901.000	$1,297.000	3,496,000	15,000,000	$38,786.473
Artesian Resources Corp	$712.151	$563.817	$340.886	$88.141	$39.122	$27.979	95,640	300,000	$547.493
California Water Service Group	$3,878.445	$2,654.027	$2,093.196	$794.307	$244.000	$143.065	543,000	2,000,000	$3,983.968
Essential Utilities, Inc.	$11,680.353	$9,573.211	$10,461.483	$1,462.698	$730.696	$473.637	1,798,803	5,000,000	$17,249.523
Middlesex Water Co	$1,000.470	$813.014	$636.533	$141.592	$58.537	$37.699	122,200	500,000	$1,706.421
SJW Corp.	$3,403.010	$2,356.988	$2,456.075	$564.526	$208.918	$117.296	389,293	1,614,866	$3,379.882
York Water Company (The)	$436.163	$344.365	$269.556	$53.852	$31.246	$23.069	72,681	202,000	$758.677
Average	$6,114.994	$4,705.307	$4,372.245	$921.295	$423.070	$281.698	850,495	3,202,108	$8,734.625
Max	$25,709.000	$19,805.000	$17,492.000	$3,777.000	$1,901.000	$1,297.000	3,496,000	15,000,000	$38,786.473
Min	$436.163	$344.365	$269.556	$53.852	$31.246	$23.069	72,681	202,000	$547.493
Median	$2,751.686	$1,944.512	$1,660.712	$526.385	$189.981	$125.568	337,817	1,307,433	$3,422.224

	Enterprise Value as a Multiple of								
	Invest. Capital	Gross PP&E	Net PP&E	Rev.	EBITDA	EBIT	Customers	Population	Population Per Customer
	(x)	(x)	(x)	(x)	(x)	(x)	($)	($)	
American States Water Co	2.82	1.65	2.26	7.10	20.26	25.89	$12,099	$3,465	3.49
American Water Works Company Inc	2.22	1.51	1.96	10.27	20.40	29.90	$11,095	$2,586	4.29
Artesian Resources Corp	1.61	0.77	0.97	6.21	13.99	19.57	$5,725	$1,825	3.14
California Water Service Group	1.90	1.03	1.50	5.02	16.33	27.85	$7,337	$1,992	3.68
Essential Utilities, Inc.	1.65	1.48	1.80	11.79	23.61	36.42	$9,589	$3,450	2.78
Middlesex Water Co	2.68	1.71	2.10	12.05	29.15	45.26	$13,964	$3,413	4.09
SJW Corp.	1.38	0.99	1.43	5.99	16.18	28.81	$8,682	$2,093	4.15
York Water Company (The)	2.81	1.74	2.20	14.09	24.28	32.89	$10,438	$3,756	2.78
Average	2.13	1.36	1.78	9.06	20.52	30.82	$9,866	$2,822	3.55
Max	2.82	1.74	2.26	14.09	29.15	45.26	$13,964	$3,756	4.29
Min	1.38	0.77	0.97	5.02	13.99	19.57	$5,725	$1,825	2.78
Median	2.06	1.49	1.88	8.68	20.33	29.36	$10,014	$2,999	3.59

Market Multiples Method
East Whiteland Township Wastewater System Assets
Quantification of the Effective Risk/Growth Adjustments

		Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple		1.88	1.49	2.06
Ratio to Net PPE			79.26%	
Not Contributed Multiple (NPPE = ICAP mult.)		2.06	1.63	
Base Risk Factor	x	80%	80%	
Subject Company Adjusted Multiple		1.65	1.30	
Subject Company Adjusted Multiple		1.65	1.30	
Comparable Group Multiple	÷	1.88	1.49	
Effective Risk/Growth Adjustment		88%	87%	

		Net PP&E	Gross PP&E
Plant Assets		100%	100%
Ratio of Known "Cost Free" Capital		25%	25%
Plant Assets Less Known "Cost Free" Capital		75%	75%
Comparable Group Multiple		1.88	1.49
Plant Assets Less Known "Cost Free" Capital	÷	75%	75%
Mulitple Without "Cost Free" Capital		2.51	1.99
Base Risk Factor	x	80%	80%
Subject Company Adjusted Multiple		2.01	1.59
Subject Company Adjusted Multiple		2.01	1.59
Comparable Group Multiple	÷	1.88	1.49
Effective Risk/Growth Adjustment		107%	107%

		Net PP&E	Customers
Comparable Group Multiple		1.88	10,014.00
Implied Capitalization Rate (1÷Multiple)		53.19%	0.0100%
Ratio of Net PP&E Mult. to Invest. Capital Mult.		109.57%	
Less 1	-	1.00	
Difference in Capital Source due to Contributions		9.57%	
Assumed Investor Financed (1-Difference in Capital Source)		90.43%	90.43%
Implied Capitalization Rate (1÷Multiple)	x		0.0100%
Not Contributed Cap. Rate			0.0090%
Not Contributed Multiple (1÷Cap. Rate)			11,073.76
Base Risk Factor	x		80%
Subject Company Adjusted Multiple			8,859.01
Subject Company Adjusted Multiple			8,859.01
Comparable Group Multiple	÷		10,014.00
Effective Risk/Growth Adjustment			88%

Selected Transactions Method
For East Whiteland Township Wastewater System Assets
Summary

		Median	Mid-Point	Value
	All Selected Transactions Companies			
1.	Asset Items			$63,197,042
2.	Ex-Ante (page 2)	$66,785,680	$65,947,059	
3.	Ex-Post (page 3)	$51,879,567	$68,175,863	
4.	Demographics Items			$35,549,532
5.	Ex-Ante (page 2)	$35,409,148	$35,689,915	
6.	Ex-Post (page 3)	$35,409,148	$35,689,915	
7.			Indicated Value	$49,373,287
	Fully Integrated Selected Transactions Companies			
8.	Asset Items			$60,787,989
9.	Ex-Ante (page 2)	$66,785,680	$65,947,059	
10.	Ex-Post (page 3)	$52,991,676	$57,427,539	
11.	Demographics Items			$47,164,106
12.	Ex-Ante (page 2)	$46,476,671	$47,851,542	
13.	Ex-Post (page 3)	$46,476,671	$47,851,542	
14.			Indicated Value	$53,976,047
	Mostly Collection/Distribution Selected Transactions Companies			
15.	Asset Items			$58,659,023
16.	Ex-Ante (page 2)	NA	NA	
17.	Ex-Post (page 3)	$49,142,184	$68,175,863	
18.	Demographics Items			$19,164,261
19.	Ex-Ante (page 2)	$16,576,577	$21,751,944	
20.	Ex-Post (page 3)	$16,576,577	$21,751,944	
21.			Indicated Value	$38,911,642

Selected Transactions Method - Ex-Ante
For East Whiteland Township Wastewater System Assets
Based on 2016 - 2020 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

Name	Service	System	Announced Purchase Price was:	Investor Provided Capital	Gross PP&E	Net PP&E	Revenues	EBITDA	EBIT	Customers	Population
			Selected Transactions' Metrics								
Municipal Authority of the City of Mckeesport	WW	INT	$156,000,000	$83,903,219	$91,435,797	$73,813,794	$13,047,844	$6,180,616	$3,811,679	12,780	50,570
New Garden Township/Authority's WW System's Assets	WW	INT	$29,500,000	$23,001,140	$25,988,330	$17,967,319	$2,261,294	$907,386	$499,638	1,796	12,085
Limerick Township Wastewater System's Assets	WW	INT	$75,100,000	$43,501,755	$60,847,250	$36,113,701	$4,418,775	$2,487,775	$893,600	5,416	18,798
Steelton Borough (Water) Authority	W	INT	$22,500,000	NA	NA	NA	NA	NA	NA	2,472	5,932
Exeter Township Wastewater System Assets	WW	INT	$96,000,000	NA	NA	NA	$7,735,788	$4,660,967	$4,660,967	8,984	27,609
Kane Borough Authority Wastewater System	WW	INT	$17,560,000	$10,809,115	$20,265,926	$8,897,773	$1,433,978	$684,830	$181,672	2,019	4,645
Borough of Royersford Wastewater System Assets	WW	INT	$13,000,000	$4,702,972	$6,883,116	$4,545,699	$863,000	$280,365	$280,365	1,596	5,154
Sadsbury Township Wastewater Utility	WW	C/D	$9,250,000	NA	NA	NA	NA	NA	NA	998	3,850
East Bradford Township Wastewater System Assets	WW	C/D	$5,000,000	$1,298,627	NA	NA	$1,130,372	$49,804	$49,804	1,248	9,942
Township of Mahoning Water System Assets	W	C/D	$4,734,800	NA	NA	NA	$753,857	$151,916	$91,468	1,186	4,218
Township of Mahoning Sewer System Assets	WW	C/D	$4,765,200	NA	NA	NA	$1,193,055	($173,564)	($244,337)	1,451	4,218
Cheltenham Township Wastewater System Assets	WW	C/D	$50,250,000	NA	NA	NA	$9,290,500	$4,506,168	$4,506,168	10,219	37,841
East Norriton Township Wastewater System Assets	WW	C/D	$21,000,000	$4,055,138	NA	NA	$3,320,000	$612,827	$612,827	4,966	14,296
				Subject Company's Metrics							
East Whiteland Township Wastewater System Assets				$42,513,245	$43,447,309	$32,955,596	$4,328,000	$1,942,553	$1,209,102	3,895	14,720
				Subject Company's Selected Transactions Multiples Valuations							
Municipal Authority of the City of Mckeesport	WW	INT	$58,254,204	$79,044,240	$74,126,113	$69,649,217	$51,745,560	$49,030,420	$49,484,738	$47,544,601	$45,408,740
New Garden Township/Authority's WW System's Assets	WW	INT	$56,108,197	$54,525,155	$49,318,121	$54,108,801	$56,461,477	$63,154,270	$71,388,713	$63,976,893	$35,932,147
Limerick Township Wastewater System's Assets	WW	INT	$67,772,672	$73,393,469	$53,624,328	$68,532,584	$73,557,219	$58,641,033	$101,615,458	$54,009,324	$58,807,958
Steelton Borough (Water) Authority	W	INT	$45,642,417	NA	NA	NA	NA	NA	NA	$35,452,063	$55,832,771
Exeter Township Wastewater System Assets	WW	INT	$42,285,428	NA	NA	NA	$53,709,848	$40,009,947	$24,903,375	$41,620,659	$51,183,310
Kane Borough Authority Wastewater System	WW	INT	$60,118,996	$69,065,098	$37,646,182	$65,038,776	$52,999,195	$49,809,767	$116,869,050	$33,876,275	$55,647,621
Borough of Royersford Wastewater System Assets	WW	INT	$71,751,036	$117,515,517	$82,058,041	$94,247,936	$65,195,829	$90,072,524	$56,063,803	$31,726,190	$37,128,444
Sadsbury Township Wastewater Utility	WW	C/D	$35,733,593	NA	NA	NA	NA	NA	NA	$36,100,952	$35,366,234
East Bradford Township Wastewater System Assets	WW	C/D	$87,040,531	$163,685,358	NA	NA	$19,144,140	$195,019,732	$121,386,050	$15,604,968	$7,402,937
Township of Mahoning Water System Assets	W	C/D	$36,477,769	NA	NA	NA	$27,183,160	$60,543,885	$62,588,484	$15,549,786	$16,523,532
Township of Mahoning Sewer System Assets	WW	C/D	($6,041,185)	NA	NA	NA	$17,286,535	($53,332,926)	($23,580,647)	$12,791,491	$16,629,622
Cheltenham Township Wastewater System Assets	WW	C/D	$19,450,871	NA	NA	NA	$23,409,074	$21,662,145	$13,483,160	$19,152,926	$19,547,052
East Norriton Township Wastewater System Assets	WW	C/D	$65,604,760	$220,159,744	NA	NA	$27,375,904	$66,566,263	$41,432,811	$16,471,003	$21,622,832

Definitions: Where "INT" is "Fully Integrated Assets" and "C/D" is "Mostly Collection/Distribution Assets".
Where "WW" is wastewater and "W" is water.

Selected Transactions Method - Ex-Post
For East Whiteland Township Wastewater System Assets
Based on 2016 - 2020 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

			Ex-Post Selected Transactions' Metrics								
Name	Service	System	Announced Purchase Price was:	Investor Provided Capital	Ex-POST - OCN - Gross PP&E	Ex-Post - OCNLD - Net PP&E	Revenues	EBITDA	EBIT	Customers	Population
Municipal Authority of the City of Mckeesport	WW	INT	$156,000,000	$83,903,219	$108,231,570	$80,085,602	$13,047,844	$6,180,616	$3,811,679	12,780	50,570
New Garden Township/Authority's WW System's Assets	WW	INT	$29,500,000	$23,001,140	$27,146,852	$18,567,728	$2,261,294	$907,386	$499,638	1,796	12,085
Limerick Township Wastewater System's Assets	WW	INT	$75,100,000	$43,501,755	$63,480,402	$46,153,867	$4,418,775	$2,487,775	$893,600	5,416	18,798
Steelton Borough (Water) Authority	W	INT	$22,500,000	NA	$19,739,906	$14,433,435	NA	NA	NA	2,472	5,932
Exeter Township Wastewater System Assets	WW	INT	$96,000,000	NA	$68,404,345	$42,678,351	$7,735,788	$4,660,967	$4,660,967	8,984	27,609
Kane Borough Authority Wastewater System	WW	INT	$17,560,000	$10,809,115	$21,023,527	$13,503,901	$1,433,978	$684,830	$181,672	2,019	4,645
Borough of Royersford Wastewater System Assets	WW	INT	$13,000,000	$4,702,972	$7,666,493	$5,453,064	$863,000	$280,365	$280,365	1,596	5,154
Sadsbury Township Wastewater Utility	WW	C/D	$9,250,000	NA	$7,480,601	$6,128,876	NA	NA	NA	998	3,850
East Bradford Township Wastewater System Assets	WW	C/D	$5,000,000	$1,298,627	$8,294,931	$5,473,948	$1,130,372	$49,804	$49,804	1,248	9,942
Township of Mahoning Water System Assets	W	C/D	$4,734,800	NA	$5,294,272	$3,507,138	$753,857	$151,916	$91,468	1,186	4,218
Township of Mahoning Sewer System Assets	WW	C/D	$4,765,200	NA	$4,931,649	$3,234,859	$1,193,055	($173,564)	($244,337)	1,451	4,218
Cheltenham Township Wastewater System Assets	WW	C/D	$50,250,000	NA	$19,818,216	$15,408,458	$9,290,500	$4,506,168	$4,506,168	10,219	37,841
East Norriton Township Wastewater System Assets	WW	C/D	$21,000,000	$4,055,138	$16,916,212	$9,251,450	$3,320,000	$612,827	$612,827	4,966	14,296
				Subject Company's Metrics							
East Whiteland Township Wastewater System Assets				$42,513,245	$43,447,309	$32,955,596	$4,328,000	$1,942,553	$1,209,102	3,895	14,720
				Ex-Post Subject Company's Selected Transactions Multiples Valuations							
Municipal Authority of the City of Mckeesport	WW	INT	$56,134,497	$79,044,240	$62,622,950	$64,194,722	$51,745,560	$49,030,420	$49,484,738	$47,544,601	$45,408,740
New Garden Township/Authority's WW System's Assets	WW	INT	$55,626,400	$54,525,155	$47,213,416	$52,359,130	$56,461,477	$63,154,270	$71,388,713	$63,976,893	$35,932,147
Limerick Township Wastewater System's Assets	WW	INT	$65,631,086	$73,393,469	$51,400,004	$53,624,223	$73,557,219	$58,641,033	$101,615,458	$54,009,324	$58,807,958
Steelton Borough (Water) Authority	W	INT	$48,045,229	NA	$49,522,245	$51,373,836	NA	NA	NA	$35,452,063	$55,832,771
Exeter Township Wastewater System Assets	WW	INT	$49,504,534	NA	$60,974,806	$74,129,790	$53,709,848	$40,009,947	$24,903,375	$41,620,659	$51,183,310
Kane Borough Authority Wastewater System	WW	INT	$57,176,360	$69,065,098	$36,289,570	$42,854,303	$52,999,195	$49,809,767	$116,869,050	$33,876,275	$55,647,621
Borough of Royersford Wastewater System Assets	WW	INT	$68,742,626	$117,515,517	$73,673,193	$78,565,509	$65,195,829	$90,072,524	$56,063,803	$31,726,190	$37,128,444
Sadsbury Township Wastewater Utility	WW	C/D	$43,732,340	NA	$53,723,973	$49,738,200	NA	NA	NA	$36,100,952	$35,366,234
East Bradford Township Wastewater System Assets	WW	C/D	$72,316,809	$163,685,358	$26,189,071	$30,102,218	$19,144,140	$195,019,732	$121,386,050	$15,604,968	$7,402,937
Township of Mahoning Water System Assets	W	C/D	$37,962,351	NA	$38,856,016	$44,491,593	$27,183,160	$60,543,885	$62,588,484	$15,549,786	$16,523,532
Township of Mahoning Sewer System Assets	WW	C/D	$8,617,308	NA	$41,980,911	$48,546,167	$17,286,535	($53,332,926)	($23,580,647)	$12,791,491	$16,629,622
Cheltenham Township Wastewater System Assets	WW	C/D	$44,984,524	NA	$110,162,654	$107,474,654	$23,409,074	$21,662,145	$13,483,160	$19,152,926	$19,547,052
East Norriton Township Wastewater System Assets	WW	C/D	$65,296,373	$220,159,744	$53,936,040	$74,806,383	$27,375,904	$66,566,263	$41,432,811	$16,471,003	$21,622,832

Definitions: Where "INT" is "Fully Integrated Assets" and "C/D" is "Mostly Collection/Distribution Assets".
Where "WW" is wastewater and "W" is water.

Selected Transactions Method
For East Whiteland Township Wastewater System Assets
Based on Recent SJW Group's Bid For Connecticut Water Service Inc., With and Without Discount for Cost Free Capital

Connecticut Water Service Inc.			East Whiteland Township Wastewater System Assets			
Purchase Price was: $1,106,267			East Whiteland Township Wastewater	Selected Transactions Multiples		
	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$573,223	1.93	$42,513,245	$82,046,607		
Gross PP&E	$939,050	1.18	$43,447,309	$51,183,991		
Net PP&E	$697,723	1.59	$32,955,596	$52,252,384	$66,615,299	
Revenues	$107,054	10.33	$4,328,000	$44,724,380		
EBITDA	$48,920	22.61	$1,942,553	$43,928,493		
EBIT	$32,236	34.32	$1,209,102	$41,493,668		$50,295,976
Customers	135,645	$8,156	3,895	$31,766,082		
Population	450,000	$2,458	14,720	$36,187,224	$33,976,653	
Average				$47,947,854		

	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$573,223	1.93	$42,513,245	$82,046,607		
Gross PP&E (Less "Cost Free" Capital)	$646,723	1.71	$43,447,309	$74,319,848		
Net PP&E (Less "Cost Free" Capital)	$480,521	2.30	$32,955,596	$75,871,169	$78,183,227	
Revenues	$107,054	10.33	$4,328,000	$44,724,380		
EBITDA	$48,920	22.61	$1,942,553	$43,928,493		
EBIT	$32,236	34.32	$1,209,102	$41,493,668		$56,079,940
Customers	135,645	$8,156	3,895	$31,766,082		
Population	450,000	$2,458	14,720	$36,187,224	$33,976,653	
Average				$53,792,184		

East Whiteland Township Wastewater System Assets
Summary of Approach Results and
Fair Market Value Conclusion at Appraisal Date

Valuation Approach	Indicated Value	Conclusion	Consideration
Cost Approach	$59,118,924		33.33%
Income Approach	61,147,544		33.33%
Market Approach	46,741,589		33.34%
		Conclusion $55,668,000	

WORKPAPERS

Daily Bond Yields and Key Indicators

Updated by 11 am ET with data from the previous business day.

Data as of 17-May-21

Moody's Daily Long-term Corporate Bond Yield Averages

	Utilities	Industrial	Corporate
Aaa	NA	3.00	3.00
Aa	3.23	2.99	3.11
A	3.38	3.25	3.32
Baa	3.64	3.68	3.66
Avg	3.42	3.23	3.33

Moody's Daily Treasury Yield Averages

Short-Term (3-5 yrs)	0.56
Medium-Term (5-10 yrs)	1.19
Long-Term (10+ yrs)	2.24

Moody's Daily Public Utility Common Stock Yield Averages

Price	516.33
Yield	3.75
New Dividend	19.35

Index Name: S&P Municipal Bond Revenue Index

As of: 10-Jun-21

Effective date	Yield To Maturity
5/14/2021	2.70%
5/17/2021	2.69%
5/18/2021	2.69%
5/19/2021	2.68%
5/20/2021	2.69%
5/21/2021	2.69%
5/24/2021	2.68%
5/25/2021	2.67%
5/26/2021	2.67%

FED H.15

DATE	DAAA	DBAA	DGS10	DGS20	DGS30
2021-05-14	3.00	3.66	1.63	2.25	2.35
2021-05-17	3.00	3.66	1.64	2.27	2.36
2021-05-18	3.01	3.67	1.64	2.27	2.37
2021-05-19	3.04	3.70	1.68	2.30	2.38
2021-05-20	2.98	3.65	1.63	2.25	2.34
2021-05-21	2.97	3.64	1.63	2.24	2.33
2021-05-24	2.94	3.61	1.61	2.22	2.31
2021-05-25	2.89	3.57	1.56	2.16	2.26
2021-05-26	2.88	3.56	1.58	2.17	2.27

FED H.15

		10-yr T-bond	20-yr T-bond	30-yr T-bond
Spot	5/20/21	1.63	2.25	2.34

FED H.15	**AAA Corp**	**BAA CORP**		A Rated Utility		
5/20/21	2.98	3.65	Spread	-0.02	-0.01	
Moody's Spot ===>	3.00	3.66	Moody's Spot ===>	3.38	3.38	
	-0.02	-0.01	Implied	3.36	3.37	3.37

Moody's Daily Long-term Corporate Bond Yield Averages

	5/17/2021	Utilities	Industrial	Corporate
Spot	Aaa	NA	3	3
	Aa	3.23	2.99	3.11
	A	3.38	3.25	3.32
	Baa	3.64	3.68	3.66
	Avg	3.42	3.23	3.33

S&P Municipal Bond Revenue Index

5/20/21 2.69%

Utilities
Aa
A **3.37**
Baa

		Decade Spread	**Annual Spread**	
10-Year	1.63			
20-Year	2.25	0.620	0.062	
30-Year	2.34	0.090		
REVENUE BOND INDEX				2.69
10-20 Yr				0.31
20-30 Yr				0.09
				3.09

30-Yr Rev Bond Est. **3.09**

2019	Lt Debt	3.17	3.37
	Prf Stk	5.84	184%
Pref Stock Est.		184%	**6.21**

	5/20/21
A-Rated Rev Bonds	**3.09**
A-Rated PU Bonds	**3.37**
A-Rated PU Pref Stk	**6.21**
30-yr T-bond	**2.34**

	SBBI	SBBI
Equity Risk Premium	6.91	6.91
Beta (Value Line Med.)	0.80	0.80
Risk Adjusted Equity Premium	5.53	5.53
Yield (RF)	2.34	2.34
Size Premium	1.60	0.00
	9.47	7.87

High 9.47
Low 7.87

0.80

11.88 Total Return SBBI 1926-2018
4.97 Income Return SBBI 1926-2018

2.34 30-yr T-bond

	Recent Market Value (Mill $)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	2,890.66	Low-Cap	3	1.6	0.65
American Water Works Co Inc	28,022.47	Large-Cap	1	0	0.85
Artesian Resources Corp	380.99	Mico-Cap	4	3.4	-
California Water Service Gp	2,847.27	Low-Cap	3	1.6	0.65
Essential Utilities, Inc.	11,510.85	Mid-Cap	2	0.89	0.95
Middlesex Water Co	1,409.99	Low-Cap	3	1.6	0.7
SJW Corp	1,890.47	Low-Cap	3	1.6	0.85
York Water Co	634.44	Mico-Cap	4	3.4	0.8
Average	6,198.390	Mid-Cap	2	0.89	0.78
Median	2,368.867	Low-Cap	3	1.60	0.80

6/11/2021

		12/31/20					5/20/21		Book Ratios				Market Ratios			
Company Name	Ticker Symbol	LT Debt-Total Qtly	Preferred S	Minority In	Common Equity-Total-Qtly	Invested Capital-Total Qtly	Market Value-Mnthly		LTD	Pref	Equity		LTD	Pref	Equity	
AMERICAN ST.	**AWR**	586.555	0.000	0.000	641.673	1,228.228	2,890.658	AMERICA	0.478	0.000	0.522	1.000	0.169	0.000	0.831	1.000
AMERICAN W/	**AWK**	9,756.000	0.000	0.000	6,454.000	16,210.000	28,022.473	AMERICA	0.602	0.000	0.398	1.000	0.258	0.000	0.742	1.000
ARTESIAN RES	**ARTN.A**	144.542	0.000	0.000	169.426	313.968	380.989	ARTESIAI	0.460	0.000	0.540	1.000	0.275	0.000	0.725	1.000
CALIFORNIA W	**CWT**	801.852	0.000	0.000	921.344	1,723.196	2,847.268	CALIFORI	0.465	0.000	0.535	1.000	0.220	0.000	0.780	1.000
ESSENTIAL UT	**WTRG**	5,655.405	0.000	0.000	4,683.877	10,339.282	11,510.847	ESSENTIA	0.547	0.000	0.453	1.000	0.329	0.000	0.671	1.000
MIDDLESEX W	**MSEX**	286.241	2.084	0.000	346.208	634.533	1,409.988	MIDDLES	0.451	0.003	0.546	1.000	0.169	0.001	0.830	1.000
SJW GROUP	**SJW**	1,363.821	0.000	0.000	917.160	2,280.981	1,890.466	SJW GROI	0.598	0.000	0.402	1.000	0.419	0.000	0.581	1.000
THE YORK WA	**YORW**	126.304	0.000	0.000	143.252	269.556	634.436	THE YORI	0.469	0.000	0.531	1.000	0.166	0.000	0.834	1.000
									0.509	0.000	0.491	Avg	0.251	0.000	0.749	
									0.474	0.000	0.527	Med	0.239	0.000	0.761	

Assumptions:	5/20/2021
Debt Cost	3.37
Pref. Stock Cost	6.21
Equity Cost	9.47
Equity Cost	7.87

Ratio	Cost	Wt	Shield	Overall	
23.90%	3.370	0.81	0.72	0.5799096	
0.00%	6.210	0.00	1	0	
76.10%	9.470	7.21	1	7.20667	
		8.01		**7.79**	**<<<<ANSWER**
23.90%	3.370	0.81	0.72	0.5799096	
0.00%	6.210	0.00	1	0	
76.10%	7.868	5.99	1	5.987548	
		6.79		**6.57**	**<<<<ANSWER**

	ROE
Public Meeting held May 6, 2021	9.85

DSIC Weighted Cost of Capital

Assumptions:	5/20/2021
Debt Cost	3.37
Pref. Stock Cost	6.21
DSIC Equity Cost	9.85

	Ratio	Cost	Wt	Shield	Overall	
Debt	47.40%	3.370	1.60	0.72	1.150114	
Pref	0.00%	6.210	0.00	1	0	
Equity	52.60%	9.850	5.18	1	5.1811	
			6.78		**6.33**	**<<<<ANSWER**

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Aqua America's Pennsylvania Subsidiary Enters Agreement to Purchase Cheltenham Township Wastewater System

July 02, 2018 07:00 AM Eastern Daylight Time

BRYN MAWR, Pa.--(BUSINESS WIRE)--Aqua America announced today that its Pennsylvania subsidiary has signed an asset purchase agreement with Cheltenham Township to purchase its wastewater system, which serves approximately 10,500 connections in Montgomery County, for $50.25 million. The agreement must be approved by the Pennsylvania Public Utility Commission.

The transaction will be Aqua Pennsylvania's fourth acquisition application referred to the Pennsylvania PUC since Act 12, commonly referred to as fair market value legislation, was enacted last year. Aqua Pennsylvania has asset purchase agreements with the 2,100-customer New Garden Township wastewater system in Chester County and the 5,400-customer Limerick Township wastewater system in Montgomery County. The company also has an agreement, signed in December 2017, with East Bradford Township in Chester County to purchase its 1,200-customer wastewater collection system. Aqua already provides water service to East Bradford, as it does with Cheltenham.

These four systems, including Cheltenham, total more than 19,000 wastewater connections and would nearly double Aqua Pennsylvania's current 22,000-customer wastewater operation.

The new law encourages a consolidation of the fragmented industry for the benefit of customers, the environment, and local governments. This transaction will benefit customers by leveraging compliance expertise, purchasing power gained through economies of scale and operational efficiencies to ultimately benefit service to our customers at affordable rates.

"We are pleased with the momentum we are gaining to reach agreements with municipal systems," said Aqua America Chairman and CEO Christopher Franklin. "Act 12 is having its intended impact, allowing municipalities to be compensated for the fair value of their water and wastewater assets and enabling utility professionals to bring expertise to systems in need."

Aqua Pennsylvania President Marc Lucca says his team is ready to work with the Cheltenham community on making needed system improvements.

"As with our pending agreements with New Garden, East Bradford and Limerick, the Aqua Pennsylvania team is looking forward to assuming Cheltenham's sewer utility responsibilities so the township can direct its attention and capital to other priorities," said Lucca. "We are anxious to begin the work necessary to help the township meet the requirements of an outstanding Pennsylvania Department of Environmental Protection consent order, specifically related to inflow and infiltration issues there."

In total, Aqua has plans to spend nearly $50 million over the next 10 years to improve Cheltenham's wastewater system.

Aqua America is one of the largest U.S.-based, publicly traded water utilities and serves nearly 3 million people in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Indiana and Virginia. Aqua America is listed on the New York Stock Exchange under the ticker symbol WTR. Visit AquaAmerica.com for more information.

Forward-Looking Statements

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 including, among others: the company's ability to successfully close the acquisition of the wastewater systems noted in this release. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including: general economic business conditions, the successful integration of the customers and the facilities, the success of the company's growth efforts including its ability to utilize Act 12, and other factors discussed in our Annual Report on Form 10-K, which is on file with the Securities and Exchange Commission.

Cheltenham Township
1329 Proceeding
Cheltenham Twp. - Water Accounts reported for Sewer Billing

Type of Service	Gallons	Customers[1]
Commercial	280,938,300	534
Industrial	364,400	14
Public	9,962,700	23
Residential	484,692,800	9,648
Total	**775,958,200**	**10,219**

1. Customers include all Active and Inactive Accounts

The following table breaks down the above total figures by customer class as of December 31, 2017, 2016, and 2015 :

	2017	2016	2015
Customers:			
Residential	118,493	111,494	110,254
Commercial	9,386	8,626	8,569
Industrial	536	479	478
Public Authority	1,072	948	964
Fire Protection	3,178	2,876	2,815
Other (including non-metered accounts)	2,980	545	553
Total	135,645	124,968	123,633
Water Revenues *(in thousands):*			
Residential	$ 62,831	$ 59,884	$ 58,439
Commercial	13,676	12,250	11,816
Industrial	3,196	3,176	3,229
Public Authority	3,845	3,510	3,193
Fire Protection	20,235	18,486	18,016
Other (including non-metered accounts)	3,271	1,361	1,348
Total	$ 107,054	$ 98,667	$ 96,041
Customer Water Consumption *(millions of gallons):*			
Residential	6,408	6,583	6,551
Commercial	2,026	1,954	1,941
Industrial	711	724	777
Public Authority	575	539	503
Total	9,720	9,800	9,772

The Regulated Companies own various small, discrete parcels of land that are no longer required for water supply purposes. At December 31, 2017 , this land totaled over 600 acres. Over the past several years, we have been disposing of these land parcels through sales and/or donations, primarily to towns and municipalities. For more information, please refer to *Segments of Our Business* below.

Additional information on land dispositions can be found in Item 7 – "Management's Discussion and Analysis of Financial Conditions and Results of Operations – Commitments and Contingencies".

Competition

Our Regulated Companies face competition from a few small privately-owned water systems operating within, or adjacent to, our franchise areas and from municipal and public authority systems whose service areas in some cases overlap portions of our franchise areas.

Employees

As of December 31, 2017 , we employed a total of 294 people. Our employees are not covered by collective bargaining agreements.

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DEALS AUGUST 6, 2018 / 5:11 PM / 6 MONTHS AGO

SJW Group makes $1.1 billion all-cash offer for Connecticut Water

3 MIN READ

NEW YORK (Reuters) - SJW Group (SJW.N) and Connecticut Water Service Inc (CTWS.O) said on Monday they were changing from a merger to an acquisition agreement, with SJW offering to buy the New England utility for $1.1 billion in cash instead of combining stock.

The switch to an all-cash offer is worth $70 per Connecticut Water share, a 33 percent premium to Connecticut Water's share price prior to the original deal announced in March, according to a joint statement.

It was also higher than the implied $61.86 per share value of the Clinton, Connecticut-based firm under the merger-of-equals transaction, which would have created a combined company in which existing SJW shareholders would hold 60 percent of the stock.

SJW closed 2.3 percent lower, while Connecticut Water was 9 percent higher at $68.50.

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To pay for the acquisition, SJW will initially utilize a $975 million bridge loan from financial adviser JP Morgan Chase (JPM.N). Ultimately, the purchase would be covered by debt and between $450 million and $500 million of equity finance.

The new deal aims to conclude in the first quarter of 2019, subject to approvals from Connecticut Water's shareholders, as well as regulators in Connecticut and Maine.

The duo's original all-stock merger announcement in March triggered competing offers from Eversource Energy (ES.N) and California Water Service Group (CWT.N).

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"We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals," SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

Switching to an acquisition, versus a merger structure, means that SJW shareholders will no longer be required to vote on approving the deal, the statement said.

CalWater has an open tender offer to acquire SJW that runs until Sept. 28.

However, asked if the change was aimed at heading off any shareholder challenge to the deal, Thornburg told Reuters it "wasn't a consideration" and it had received nothing but support from its shareholders.

RBS sounds alarm over Brexit

CalWater declined to comment. A spokesman for Eversource said the company was evaluating developments but, as it has made clear, it will be disciplined in pursuing this or any other transaction.

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker

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MORE FROM REUTERS

Wastewater treatment is provided by the Borough of West Chester pursuant to a Sewer Capacity Agreement dated November 14, 2017, by and between the Borough and East Bradford Township. Copies of West Chester's 2017 Chapter 94 Reports to DEP for the Goose Creek WWTP and for the Taylor Run WWTP are attached hereto as **Exhibit E3** and **Exhibit E4**.

15. The Goose Creek WWTP has a permitted treatment capacity of 1.672 MGD. The Taylor Run WWTP has a permitted treatment capacity of 1.50 MGD. The elevation of the Goose Creek WWTP is generally about EL 370. The elevation of the Taylor Run WWTP is generally about EL 260. The elevation of the Requested Territory ranges from approximately EL 365 to EL 280.

16. Water service in the Requested Territory is provided by both Aqua Pennsylvania, Inc. and private wells.

17. The original cost, by year and major plant category, of the East Bradford Township used and useful plant in service is $8,294,931 with a related calculation depreciation reserve of $2,820,983. The original cost value includes a series of capped sewers along the North Benjamin Drive area of the Township. The capped sewers include approximately 3,300 linear feet of 8" Gravity PVC pipe and 20 manholes, with an estimated original cost value of approximately $100,000 as estimated by Aqua. The pipe and manholes are included in the totals on page 2-11 and 2-12 of Exhibit W. Aqua will categorize the capped sewer pipe and manholes as plant held for future use in its asset allocation upon closing. The area of capped sewers along North Benjamin Drive is not included in the Requested Territory.

18. Tentative journal entries to record the transaction are presented in Section IV.

IV. ASSET PURCHASE AGREEMENT

19. The *Assets Purchase Agreement* is dated December 20, 2017. The *First Amendment to Assets Purchase Agreement* is dated April 18, 2018. The purchase price is Five Million Dollars

($5,000,000.00). In addition to the purchase price, Section 1.5 of the Agreement provides that Aqua will assume certain defined liabilities and pay certain out-of-pocket costs incurred by East Bradford Township.

20. The purchase price and Agreement are based on arm's length negotiations. Aqua and East Bradford Township are not affiliated with each other. Aqua will use short term debt initially for the purchase of the assets with the expectation that the short term debt will be converted to long term debt and equity capital at a later date.

21. The wastewater system assets to be acquired are the "Assets" and have the meaning specified in Section 1.1 of the Agreement. The Assets include the assets, properties and rights of East Bradford Township that comprise the wastewater system or that are owned by East Bradford Township and used by it solely in connection with operation of the system.

22. "Excluded Assets," which are those assets not being transferred to Aqua, have the meaning specified in Section 1.4 of the Agreement. Excluded Assets include customer service laterals that run from the curb area to individual customer residences or structures; piping and fixtures internal to each customer residence or structure; cash and cash equivalents; and the items set forth in Schedule 1.4 of the Agreement.

23. "Assumed Liabilities" has the meaning specified in Section 1.6 of the Agreement and include the liabilities and obligations under the Assumed Contracts that arise after Closing, liabilities incurred or arising from and after Closing under or from failure to comply with permits, approvals or licenses related to the system that are transferred to Aqua and the obligation to provide wastewater service after Closing. The Assumed Contracts, which are listed in Schedule 1.6 of the APA and attached hereto as **Exhibit F1** and **Exhibit F2**, are the Sewer Capacity Agreement dated November 14, 2017, by and between the Borough of West Chester and East Bradford Township and the Intergovernmental Cooperation Agreement dated March 15, 1999, between East Bradford and Birmingham Township.

East Bradford Township

	# of Customers	Annual Gallons Treated (2017)
Residential- Single Family	399	23,783,560
Residential- Townhomes	814	36,390,635
Commercial		
Bradford Retail - The Bistro		112,800
Bradford Retail - Strip Stores		688,000
Brookworth Plaza - Dunkin Donuts		147,200
Brookworth Plaza - CVS		35,300
Brookworth Plaza - empty building		-
Brookworth Plaza - Strip Stores		142,000
Brookworth Plaza - PNC Bank		17,000
Countryside Food Mart		52,700
Antique Ice Museum		3,600
Mrs. Mike's Restaurant		103,110
Brandywine Hall Nursing Home		8,281,000
Daily Local News - now empty building		24,400
Bradford Plaza - Strip Stores		1,991,430
Bradford Plaza - Giant Food Store		2,527,700
Bradford Plaza - Walgreens		47,000
Bradford Plaza - Giant Gas Station		6,200
Chester County Art Association		120,100
Industrial		
Diesel Systems		66,300
Chem Service		173,400
Other Class(?)*		
Goddard School		252,800
Hillsdale Elementary School		649,700
WCU S Campus Apts - 144		24,200
WCU S Campus Apts - 167		583,900
WCU S Campus Apts - 168		500,900
WCU S Campus Apts - 169		441,900
WCU S Campus Apts - 170		570,900
WCU S Campus Apts - 171		318,900
WCU S Campus Apts - 172		422,000
WCU S Campus Apts - 173		306,400
WCU S Campus Apts - 174		424,500
WCU S Campus Apts - 175		323,400
WCU S Campus Apts - 176		340,000
WCU S Campus Apts - 177		356,000
University Student Housing 1		4,463,500
University Student Housing 2		5,429,000
Total		90,121,435

*May include church, school, public, etc… (please insert a line for each)

420,000
153,300,000

35
399
814
1,248

Q. How many customers will the acquisition add?

A. The acquisition of East Norriton will add 4,966 customers to Aqua's existing 28,000 wastewater customers. This is an increase in customers of 17.7% (or about 20%).[23]

Q. Will the acquisition increase rates for the customers to be acquired?

A. Yes. Aqua witness Packer states that he reasonably expects that rates for East Norriton customers will increase under Aqua ownership.[24] As discussed above, Aqua calculates that if the entire revenue deficiency resulting from the acquisition is applied to East Norriton Township customers, the adjusted average bill for customers using four thousand gallons per month would increase from approximately $39 per month to $52 per month, which would be a 35% rate increase.[25]

Q. Will the acquisition increase rates for existing Aqua customers?

A. Yes. Mr. Packer's testimony shows that, as a result of the acquisition, rates for existing Aqua water customers and existing Aqua wastewater customers will increase if the revenue deficiency is not fully borne by the East Norriton Township customers. Mr. Packer's schedules show estimated increases to existing total Aqua water and wastewater customers ranging from $0.17 per month to $1.66 per month ($2.04 per year to $19.92 per year).[26] If the costs were spread to only existing wastewater customers, and not water customers, the

[23] Exhibit U, Direct Testimony of William C. Packer, p. 9, lines 2-3 and 11-12, p. 16, lines 11-12.

[24] Exhibit U, Direct Testimony of William C. Packer, p. 18, lines 17-20 and Appendix A, p.1; Response to OCA-II-4, Attachment 1, p. 22 (attached as OCA Exhibit DJG-12).

[25] Exhibit U, Direct Testimony of William C. Packer, Appendix A, pp. 1-2 ($38.52 + $13.42 = $51.94). ($13.42 ÷ $38.52) x 100 = 34.84%.

[26] Exhibit U, Direct Testimony of William C. Packer, Appendix A, p. 1.

Q. Describe the scope and organization of your testimony.

A. My testimony addresses the application filed by Aqua Pennsylvania Wastewater, Inc. ("Aqua" or the "Company") for the acquisition of the East Norriton Township (the "Township") wastewater collection system assets. My testimony responds to the fair market value ("FMV") approaches addressed in the testimonies of Harold Walker, III of Gannett Fleming, who sponsors the FMV appraisals commissioned by the Company, and Jerome C. Weinert, who sponsors the appraisal commissioned by the Township. I also discuss the sufficiency of the notices sent to the customers of Aqua and the Township regarding the impact on rates of the proposed acquisition.

II. EXECUTIVE SUMMARY

A. Overview

Q. Please summarizes Aqua's application in this proceeding.

A. Aqua's application proposes to acquire the Township's wastewater assets under Sections 1102 and 1329 of the Public Utility Code (the "Code"). According to Section 1329(c)(2) of the Code, the ratemaking rate base is the lesser of the negotiated purchase price and the average of two FMV appraisals. The FMV estimated by Gannett Fleming and AUS Consultants is $24.2 million and $25.1 million, respectively. The purchase price negotiated by Aqua and the Township is $21 million. Thus, the proposed rate base in the application is $21 million.

Report by Class

Account	Name / Service Address	Tax ID	Book	Status	Alert Code
97990.00	F M BROWN SONS INC 790 DANIEL BOONE ROAD	43-5345-07-68-8539 BIRDSBORO PA 19508-8737		A	
99991.00	DIEROLF, CANDACE 21 PINE AVENUE	BIRDSBORO PA 19508		A	
99992.00	TELFORD, MARK 19-6 CRANBERRY RIDGE	READING PA 19606-3934		A	

Total Class: R: 8,708

Class: TRAILER PARK

20000.00	KLIEWER, KIM B 4851 PERKIOMEN AVENUE (610)670-0191	43-5325-08-79- READING PA 19606	100	A	
20010.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34- READING PA 19606-3655	201	A	
20020.00	BORDIC MOBILE HOME PARK 214 BORDIC ROAD	43-5335-09-16- READING PA 19606-3605	200	A	
20030.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-10-35- READING PA 19606-3655	201	A	
20060.00	ALSACE TOWNSHIP 240 SPIES CHURCH ROAD	READING PA 19606	101	A	
20070.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34-2494 READING PA 19606-3655		A	
91230.00	PENN VIEW MOBILE PARK BROADWAY AVENUE (610)779-4202	43-5327-14-42- READING PA 19606	200	A	

Total Class: T: 7

Total: 8,984

Exeter Township supervisors agree to sell municipal wastewater system for $96 million

readingeagle.com/news/article/exeter-township-supervisors-agree-to-sell-municipal-wastewater-system-for-96-million

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The sale to Pennsylvania American Water Co. will keep taxes steady for 10 years and do other things for Exeter, the township manager said.

Written by Mike Urban

Exeter Township, PA —

The Exeter Township supervisors have agreed to sell the township's wastewater treatment plant and system to a private company for $96 million, a move they expect will save taxpayers money and put the township on much better financial footing.

The supervisors voted 4-1 on April 23 to approve the sale to Pennsylvania American Water Co., which supplies water to the township and operates 15 wastewater treatment systems statewide.

The two sides must finalize the asset purchase agreement, and the sale will require Pennsylvania Utility Commission approval, meaning the earliest the company is likely to take ownership would be early next year.

Township Manager John A. Granger said that if the sale goes through as planned, it will allow the township to hold real estate taxes steady for 10 years or more; pay for future capital projects including equipment replacement, township building relocation and storm sewer improvements; and still leave $48 million in the bank.

The current property tax rate is 2.14 mills, but that would have increased 32.6 percent to 2.8 mills in 2019 if the township retained ownership of the plant, he said.

The township is expected to raise sewer rates 29 percent before the sale is completed, but that rate hike would likely have been higher if the township held onto the system and made necessary upgrades, said Supervisor John Cusatis.

And the supervisors plan to enact a homestead tax exemption that would more than cover the rate increase for most homeowners, he said.

There are about 9,000 properties in Exeter connected to the wastewater system, and Pennsylvania American spokesman Terry M. Maenza said that they shouldn't notice any changes in sewer service once the company takes control of the system.

"It should be seamless," he said.

The company plans to retain the township's six wastewater employees, he said.

Cusatis and fellow Supervisors Lisa VanderLaan, William F. White and David G. Speece Jr. voted for the sale, saying it was a tough decision but the economic benefits were too good to turn down.

"The sale will pay off the library and sewer debt, stabilize the tax base and improve the township's credit rating," Cusatis said.

Supervisor Gary E. Lloyd Jr. voted against the sale, saying he didn't want to lose the valuable asset.

Cusatis said that most Exeter residents he spoke with support the move, but at the April 23 meeting several expressed concern about selling public property to private industry and giving up control of the wastewater system.

A written handout from resident Sherrie Greene noted that: "I have done some research and read that many municipalities have taken this route, then regretted it later. Once our sewer system is sold, it is gone forever and we cannot get it back."

Pennsylvania American, headquartered in Hershey, is a subsidiary of American Water Works Co., based in Vorhees, N.J.

This would be Pennsylvania American's first wastewater treatment system in Berks.

(Correspondent Valdis I. Lacis contributed to this story.)

Contact Mike Urban: 610-371-5023 or murban@readingeagle.com.

1. The collection of a DSIC prior to inclusion of the acquired assets in a base rate case;
2. The accrual of Allowance for Funds Used During Construction (AFUDC) on non-DSIC eligible post-acquisition improvements; and
3. The deferral of depreciation for book and ratemaking purposes on non-DSIC eligible post-acquisition improvements.

Q. Please briefly summarize the Acquisition Transaction that the Joint Applicants are proposing.

A. Under the terms of the Proposed Transaction, PAWC would acquire the wastewater utility assets of Kane for $17.56 million.

Q. Please describe the Kane wastewater utility.

A. Kane owns and operates a sanitary wastewater collection system that provides sanitary wastewater service to approximately 2,019 customers in Kane Borough and a portion of Westmore Township in McKean County. The breakout of Kane's customer count is: 1,847 residential, 162 commercial, 3 industrial, and 7 municipal. The $17.56 million purchase price for a wastewater utility assets serving 2,019 customers equates to a cost of approximately $8,700 per customer.

Q. Does the Application provide the terms of the Proposed Transaction?

A. Yes, the Asset Purchase Agreement ("APA") dated November 4, 2019 was included with the Application. The APA states that the purchase price is Seventeen Million, Five Hundred Sixty Thousand Dollars ($17,560,000). The Application indicates that the purchase price is based on arm's length negotiations. PAWC and Kane Borough are not affiliated with each other.

	Service Address	Customer Number	Edu Purchased	Group Code	Drainage Basin	SPA Amt	SPA Qty	SWR Amt	SWR Qty	Swr Base Amt	PEN Amt	INT Amt
3793	900 FOXMEADOW DR	12133	16	King Road	SOUTHEAST (6)	-	116,300.00	F	-	$ 1,348.80	-	-
3794	1000 FOXMEADOW DR	12134	16	King Road	SOUTHEAST (6)	-	94,400.00	F	-	$ 1,348.80	-	-
3795	1100 FOXMEADOW DR	12135	16	King Road	SOUTHEAST (6)	$ 216.44	153,200.00	F	-	$ 1,348.80	-	-
3796	1200 FOXMEADOW DR	12136	16	King Road	SOUTHEAST (6)	$ 69.15	130,400.00	F	-	$ 1,348.80	-	-
3799	1500 FOXMEADOW CIR	12139	16	King Road	SOUTHEAST (6)	$ 43.95	126,500.00	F	-	$ 1,348.80	-	-
3800	1600 FOXMEADOW CIR	12140	16	King Road	SOUTHEAST (6)	-	82,300.00	F	-	$ 1,348.80	-	-
3801	1700 FOXMEADOW CIR	12141	16	King Road	SOUTHEAST (6)	-	84,300.00	F	-	$ 1,348.80	-	-
3802	1800 FOXMEADOW CIR	12142	16	King Road	SOUTHEAST (6)	-	92,500.00	F	-	$ 1,348.80	-	-
3803	1900 FOXMEADOW DR	12143	16	King Road	SOUTHEAST (6)	-	111,200.00	F	-	$ 1,348.80	-	-
3804	2000 FOXMEADOW CIR	12144	16	King Road	SOUTHEAST (6)	$ 8.42	121,000.00	F	-	$ 1,348.80	-	-
3805	2100 FOXMEADOW CIR	12145	16	King Road	SOUTHEAST (6)	$ 160.88	144,600.00	F	-	$ 1,348.80	-	-
3806	2200 FOXMEADOW DR	12146	16	King Road	SOUTHEAST (6)	-	101,000.00	F	-	$ 1,348.80	-	-
3807	2300 FOXMEADOW DR	12147	16	King Road	SOUTHEAST (6)	$ 176.38	147,000.00	F	-	$ 1,348.80	-	-
3808	2400 FOXMEADOW CIR	12148	16	King Road	SOUTHEAST (6)	$ 94.99	134,400.00	F	-	$ 1,348.80	-	-
3809	2500 FOXMEADOW CIR	12149	16	King Road	SOUTHEAST (6)	$ 107.26	136,300.00	F	-	$ 1,348.80	-	-
161	640 N LEWIS RD	275	17	King Road	SOUTHEAST (6)	$ 1,932.95	306,700.00	F	-	$ 84.30	-	-
3674	7-27 W RIDGE PIKE/STRP ML	12005	18	King Road	SOUTHEAST (6)	$ 63.37	92,100.00	F	-	$ 927.30	-	-
3727	125 SUNSET RD	12065	18	King Road	282 GRATERFORD RD (20)	$ 1,198.45	193,000.00	F	-	$ 84.30	-	-
3772	15 KEYSTONE DR	12112	18	King Road	TRINLEY (5)	$ 2,452.98	387,200.00	F	-	$ 84.30	-	-
5199	256 SWAMP PIKE/SCHOOL	60965	18	Possum Hollow	RAVENS CLAW (18)	$ 2,015.24	334,400.00	F	-	$ 252.90	-	-
162	339 N LEWIS RD	276	19	King Road	SOUTHEAST (6)	$ 1,256.59	202,000.00	F	-	$ 84.30	-	-
3706	W RIDGE PIKE/STRIP/BANK	12039	19	King Road	SOUTH LIMERICK (3)	$ 1,373.73	272,500.00	F	-	$ 674.40	-	-
3745	542 N LEWIS RD	12084	19	King Road	TRINLEY (5)	$ 112.65	32,400.00	F	-	$ 168.60	-	-
3411	70 BUCKWALTER RD/1350/APPLEB	11737	20	King Road	SOUTHEAST (6)	$ 3,375.47	530,000.00	F	-	$ 84.30	-	-
5389	206 JONES BLVD/MICROCOAX	70011	20	Possum Hollow	BROOKE EVANS (16)	$ 14,938.23	2,319,900.00	F	-	$ 84.30	-	-
3445	70 BUCKWALTER RD/1250/TEXAS	11771	21	King Road	SOUTHEAST (6)	$ 2,419.39	382,000.00	F	-	$ 84.30	-	-
3707	22 ANCHOR PARKWAY	12040	23	King Road	SOUTHEAST (6)	$ 1,958.79	310,700.00	F	-	$ 84.30	-	-
3773	77 GRATERFORD RD	12113	23	King Road	282 GRATERFORD RD (20)	$ 1,208.14	194,500.00	F	-	$ 84.30	-	-
64	677 ELM ST	170	24	Royersford	ORCHARD TERRACE (OT)	-	12,000.00	F	-	$ 2,023.20	-	-
3863	430 W LINFIELD TRAPPE RD	12208	24	King Road	TRINLEY (5)	$ 4,782.46	747,800.00	F	-	$ 84.30	-	-
794	1101 ENTERPRISE DR	2573	28	King Road	TRINLEY (5)	$ 1,182.95	190,600.00	F	-	$ 84.30	-	-
2502	196 W RIDGE PK/FLEA MRKT	10679	29	King Road	RIDGE PIKE (10)	$ 629.07	247,000.00	F	-	$ 1,686.00	$ 1.80	-
3869	420 LINFIELD TRAPPE RD	12214	30	King Road	TRINLEY (5)	$ 852.20	139,400.00	F	-	$ 84.30	-	-
5410	14 W LIGHTCAP RD	70032	34	Possum Hollow	POSSUM HOLLOW (17)	$ 7,741.14	1,205,800.00	F	-	$ 84.30	-	-
3401	19 W LINFIELD TRAPPE RD	11727	36	King Road	SOUTHEAST (6)	$ 5,421.59	846,736.00	F	-	$ 84.30	-	-
107	475 N LEWIS RD	216	52	King Road	SOUTHEAST (6)	$ 3,921.34	614,500.00	F	-	$ 84.30	-	-
3761	88 ANCHOR PARKWAY	12101	52	King Road	SOUTHEAST (6)	$ 3,746.92	587,500.00	F	-	$ 84.30	-	-
2292	420 W LINFIELD TRAPPE RD	10357	59	King Road	TRINLEY (5)	$ 5,568.64	869,500.00	F	-	$ 84.30	-	-
167	350 S LEWIS RD	282	60	King Road	SOUTHEAST (6)	$ 3,791.50	594,400.00	F	-	$ 84.30	-	-
2465	827 N LEWIS RD	10630	80	King Road	SOUTH LIMERICK (3)	-	150,200.00	F	-	$ 6,744.00	-	-
3091	FOX RIDGE APTS	11378	97	King Road	SOUTH LIMERICK (3)	$ 2,050.04	1,043,000.00	F	-	$ 8,177.10	-	-
2685	165 W RIDGE PIKE/TRLR PK	10913	115	King Road	SOUTHEAST (6)	$ 6,018.69	1,792,000.00	F	-	$ 9,694.50	-	-
5397	EXELON LIM GEN STA	70019	137	Possum Hollow	POSSUM HOLLOW (17)	N	-	$ 8,659.75	1,348,000.00	$ 84.30	$ 1,041.07	-
5400	18 LIGHTCAP RD	70022	200	Possum Hollow	POSSUM HOLLOW (17)	$ 4,006.31	1,278,500.00	F	-	$ 7,418.40	-	-
		5416	**8402**			**$ 299,707.92**	**89,160,697**	**$ 25,039.14**	**7,288,556**	**$ 600,843.05**	**$ 14,296.74**	**$ 1,169.98**

ASSET PURCHASE AGREEMENT

7. Aqua and Limerick are parties to an Asset Purchase Agreement dated November 16, 2016. Aqua Exhibit 1, Application ¶ 5 and ¶ 18; *see also* Aqua Exhibit No. 1, Exhibit C.

8. The negotiated purchase price, which is based on arms' length negotiation, is Seventy-Five Million One Hundred Thousand Dollars ($75,100,000.00). Aqua and Limerick are not affiliated with each other. Aqua Exhibit No. 1, Application ¶ 18 and Aqua St. No. 1 at 6, lines 6 through 10.

9. Aqua will use short term credit lines to fund the transaction. The short term credit funding will be converted to a mix of long-term debt and equity capital shortly after closing. Aqua St. No. 1 at 7, lines 18 through 20; *see also* Aqua Exhibit No. 1, Application ¶ 18.

ASSETS BEING TRANSFERRED

10. The wastewater system assets to be transferred are the "Acquired Assets" and have the meaning specified in Section 2.01 of the Agreement. The Acquired Assets include all real property Limerick owns and uses in the operation of the wastewater system and all sanitary wastewater related treatment and conveyance facilities, including the Possum Hollow Waste Water Treatment Plant ("PHWWTP"), the King Road Waste Water Treatment Plant ("KRWWTP") and all pipes, pumping stations, manholes and pipelines and billing and collections related assets necessary to run the system. Aqua Exhibit No. 1, Application ¶ 19.

11. Acquired Assets also include the contracts identified on Schedule 4.15 of the Agreement to which Limerick is a party (the "Assigned Contracts"). Since contract parties, other than Limerick, are identified by name, Schedule 4.15 and the Assigned Contracts are considered CONFIDENTIAL. Copies of CONFIDENTIAL Schedule 4.15 and the CONFIDENTIAL Assigned Contracts were included with the Application as Confidential Exhibit F and admitted into evidence as CONFIDENTIAL Aqua Exhibit No. 4. Aqua Exhibit No. 1, Application ¶ 20 and Tr. 13 and 20.

$5,572,770. Exh. A-14-a, SWPA St. 1 at 11-12. The allocated purchase price for the water system is $4,734,800 and the wastewater system is $4,765,200. Appendix A-14, SWPA St. 2 at 4-5.

The valuation experts were paid $59,145 for the Fair Market Value Appraisal Reports for both the water and wastewater systems. Exh. A-8-a. SWPA also indicates that it will incur transaction and closing costs of approximately $1,000,000 between the Water System and the Wastewater System, which will be included in rate base. Appendix A-14, SWPA St.1 at 5-6; Appendix A-12.

OCA will examine the ratemaking rate base claims to determine if the claims are reasonable and appropriate for ratemaking purposes.

2. Proposed Rates: SWPA proposes to charge customers of the Mahoning Township system the Mahoning Township water and wastewater rates in effect at closing. Application at 6, 11; Appendix A-13. Those rates will remain in effect until SWPA's next base rate case but SWPA may impose any fee or surcharge permitted by its Commission-approved tariff. Id.

The proposed rates do not appear to match the existing Mahoning Township rates. The OCA will investigate this apparent discrepancy. The OCA will investigate the impacts on the current customers as well as on Mahoning Township customers of the various assumptions and proposals.

3. The OCA submits that additional information is necessary to determine how the transaction will substantially and affirmatively benefit Suez's existing customers.

4. Conditions: Whether any conditions should be imposed upon the proposed transfer to ensure that Suez's customers are treated in a fair and just manner in accord with Pennsylvania law and Commission rules and regulations.

MAHONING TOWNSHIP CUSTOMER LIST

Customer No	Name	Service Address	Service	SWR EDUs	EDU	Count
11470.01	T & S REALTY	304 HOLLOW DR	Sewer	1	1	1431
11471.01	T & S REALTY	306 HOLLOW DR	Sewer	1	1	1432
11472.01	T & S REALTY	308 HOLLOW DR	Sewer	1	1	1433
11473.01	T & S REALTY	310 HOLLOW DR	Sewer	1	1	1434
11474.01	T & S REALTY	312 HOLLOW DR	Sewer	1	1	1435
11475.01	DAVID & JOANNE BROOKO\	32 TERRE LANE	Sewer	1	1	1436
11476.02	JAYA SUGUNARAJ & JESSITA	214 ABBEY RD	Sewer	1	1	1437
11478.01	DAVID BULBIN & BARBARA	74 WOODLAND DR	Sewer	1	1	1438
11479.01	JEFFREY MOLINARO	1318 BLOOM RD	Sewer	1	1	1439
11480.01	CRYSTAL DOMETITA	91 WOODLAND DR	Sewer	1	1	1440
11482.01	AYUSA SINHA	672 LOWER ST	Sewer	1	1	1441
11483.01	MADIAN YAHYA	676 LOWER ST	Sewer	1	1	1442
11484.01	JEFF WATSON	168 KASEVILLE RD	Sewer	1	1	1443
11485.01	ANWER & SARAH QURESHI	656 LOWER ST	Sewer	1	1	1444
11486.01	ROSS & ASHLEY PETERS	83 TERRE LN	Sewer	1	1	1445
11488.01	QUESHI ANWER	664 LOWER STREET	Sewer	1	1	1446
11489.01	MATHUR HERSH	660 LOWER STREET	Sewer	1	1	1447
11490.01	PRASANNA SANKEPALLI & S	668 LOWER ST	Sewer	1	1	1448
11491.01	MARK GATSKI & CATHERINI	82 DELWOOD DR	Sewer	1	1	1449
11492.01	JONATHAN & LAURA SPAHF	78 TERRE LN	Sewer	1	1	1450
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	Sewer	0	1	1451
	TOTALS				2195	1451

eport Criteria:
Customer.Final bill date = {IS NULL}

5/30/18

stomer #	Name	Service Address	Meter ID	Customer Type	Size
11104.01	ANIMAL CARE	32 ENTERPRISE DR	0049503582	Commercial	1
11107.01	EMMANUEL HOME	MONTOUR BLVD. 11107	8280982952	Commercial	1
11120.02	REDEEMER ORTHODOX PRESBYTER	1820 MONTOUR BLVD.	1540802894	Commercial	1
11121.01	FAB-TEX	29 WOODBINE LANE	0004695133	Commercial	1
11137.01	GEISINGER HEALTH SYSTEMS - MCB	MCBRIDE	1541355520	Commercial	1
11151.01	ROAT-KRINER ROAT	1133 BLOOM RD.	1541286282	Commercial	1
11157.01	TRINITY METHODIST CHURCH	84 LOMBARD AVE	1018010545	Commercial	1
11159.01	VINTAGE KNOLLS ASSISTED LIVING	9 JUSTIN DR 101	1541313242	Commercial	1
11160.01	GEISINGER COMMUNITY HEALTH - VI	44 WOODBINE LANE	0048920994	Commercial	1
11165.01	RINEHART DENTAL	20 WESNER LANE	1481726108	Commercial	1
Total 1: 10				10	10
11110.01	BUSY BEAVER	23 WESNER LN	0053635505	Commercial	1.5
11139.01	MEADOWS COMM.	77 TOWER VIEW CIRCLE	0051583844	Commercial	1.5
11148.01	SHANER HOTEL GRP	43 PINE BARN PLACE	1832339361	Commercial	1.5
11170.01	HAWKINS CHEVROLET	1856 MONTOUR BLVD.	1852732193	Commercial	1.5
11439.01	GEORGE HEIM CAR WASH	1802 MONTOUR BLVD	1541551330	Commercial	1.5
Total 1.5: 5				5	5
11102.01	ATLANTIC EQUIP	15 ENTERPRISE DR	0048304212	Commercial	2
11108.01	EMMANUEL NAZARETH	1707 MONTOUR BLVD. 11108	1007034764	Commercial	2
11117.01	T & S REALTY	1083 BLOOM RD	0046645520	Commercial	2
11126.01	GUM REALTY GROUP LLC	74 SCHOOL HOUSE RD STE 101	0022379100	Commercial	2
11134.01	MARIA JOSEPH AL CENTER	MONTOUR BLVD. 11134	1832120637	Commercial	2
11136.01	GEISINGER HEALTH SYSTEMS - HUG	HUGHES CENTER SOUTH	0052693508	Commercial	2
11146.01	SHANER HOTEL GRP	43 PINE BARN PLACE A	0043702654	Commercial	2
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	1548931502	Commercial	2
Total 2: 8				8	8
11101.01	NAILS TO TAILS GROOMING SALON	938 BLOOM RD.	1810172132	Commercial	3/4
11109.01	BROKENSHIRE JOHN	769 BLOOM RD.	1541276964	Commercial	3/4
11111.01	CERO JAMES PATRICK	795 BLOOM RD	1541282452	Commercial	3/4
11113.01	COLE'S HARDWARE	25 ENTERPRISE ROAD	1541310306	Commercial	3/4
11115.01	HAWKINS JAMES	1581 MONTOUR BLVD.	1852924202	Commercial	3/4
11116.01	HAWKINS COLLISION CENTER	MONTOUR BLVD. 11116	1541425432	Commercial	3/4

Commercial Water Meters
70

Residential Water Meters
1116

2" + 1 = 15 Wesner Lane added 5/24/18

Total Meters = 1186

EXHIBIT 20
Page 27 of 295

21. Second, Ms. Vicari used inconsistent purchase price values to calculate the average costs per customer. Id. at 21-22.

(a) Incorrect Use of Projected Customers

Ms. Vicari used an incorrect number of customers for MACM. In Appendix A-17-a, it states that MACM has 12,780 customers, yet Ms. Vicari used 21,953 customers. OCA St. 1 at 20-21. She explained that she used that number because she counted the individual connections for each bulk customer. Id. She never supplied her calculation of the individual connections for the four bulk customers. Id.

Ms. Vicari does not necessarily apply that logic to the other acquisitions in her sample group by reflecting individual connections for any bulk customers. OCA St. 1S at 16-17. By using the actual number of customers for the other systems, she achieved a higher average cost per customer. She then multiplied this overstated cost per customer times the unsupported number of bulk customers' individual connection, compounding the error. Ms. Everette was not able to confirm whether all of the customer numbers in Ms. Vicari's sample group were consistently counted. She therefore used the 21,953 customer number used by Ms. Vicari to minimize the issues in the proceeding.

(b) Inconsistent Purchase Price Values

Similar to the problem with the customer count, MACM witness Vicari did not use consistent purchase price values. OCA St. 1 at 21-22. For the comparative acquisitions, she used the purchase price plus the value of capital improvements required by the agreement of sale. For MACM, however, she uses only the purchase price and does not consider the $62.7 million of capital investments that PAWC anticipates making over the next 10 years. Including the cost

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McKeesport sewer system to be sold for $156 million

September 16, 2016 12:00 AM

By Deana Carpenter

The Municipal Authority of the City of McKeesport has agreed to sell its sewer system to Pennsylvania American Water for approximately $156 million.

The sale is needed to bring the city to more stable financial ground and avoid Act 47, the program for financially distressed municipalities, or municipal bankruptcy, McKeesport Mayor Michael Cherepko said at the Sept. 7 council meeting.

“It became very clear to this administration that the only way to save our community from municipal bankruptcy, while continuing to offer the same level of services our residents deserve, would be to transfer our local sewage system to a regional or national utility company,” Mr. Cherepko said in a news release.

A purchase agreement was signed by both parties last Friday following votes by city council and the municipal authority to sell the sewer system. The sale is expected to be finalized in the second half of next year pending regulatory approvals and other closing conditions.

The system serves 22,000 customers in McKeesport and the communities of Dravosburg, Duquesne, East McKeesport, Elizabeth Township, Glassport, Liberty, Lincoln, North Versailles, Port Vue, Versailles and White Oak.

“We look forward to closing the proposed acquisition and to providing wastewater services that reflect our commitment to environmental stewardship and quality customer service,” said

Kathy L. Pape, president of Pennsylvania American Water, said that after the deal is closed, the company looks forward “to welcoming the Municipal Authority of the City of McKeesport’s employees and customers to the Pennsylvania American Water family.”

She said the company also looks forward to “providing wastewater services that reflect our commitment to environmental stewardship and quality customer service.”

The next step is approval of the acquisition by the Pennsylvania Public Utility Commission along with other approvals, such as from the state Department of Environmental Protection.

In June, state Auditor General Eugene DePasquale said McKeeesport erred when it accidentally spent $729,275 in state funds earmarked for pension costs and subsequently couldn't pay its $2.3 million annual pension obligation last year.

McKeesport officials said then they would remedy the shortfall through "the sale of an asset in the near future."

“The total proceeds of the pending sale of the Municipal Authority of the City of McKeesport will solidify the City of McKeesport’s financial position for years to come,” Mr. Cherepko said this week. “The down payment associated with this

sale will generate enough revenue to cover all of the city's outstanding financial obligations, including the minimum municipal obligations associated with the city's pension funds."

Deana Carpenter, freelance writer: suburbanliving@post-gazette.com.

EAST END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	2,070,000	2,060,000	1,831,000	2,284,000	2,971,000	2,665,000	1,498,000	1,278,000
CO2	739,000	1,050,000	885,000	793,000	1,028,000	1,061,000	873,000	873,000
IND								
MIX	15,000	9,000	10,000	4,000	17,000	14,000	12,000	18,000
RES	13,780,000	13,367,000	12,924,000	13,280,000	12,700,000	14,137,000	14,241,000	12,874,000
Grand Total	**16,604,000**	**16,486,000**	**15,650,000**	**16,361,000**	**16,716,000**	**17,877,000**	**16,624,000**	**15,043,000**
# DAYS	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	22,021	22,889	20,573	25,099	34,149	28,351	16,108	14,044
CO2	7,862	11,667	9,944	8,714	11,816	11,287	9,387	9,593
IND								
MIX	160	100	112	44	195	149	129	198
RES	146,596	148,522	145,213	145,934	145,977	150,394	153,129	141,473
Grand Total	**176,638**	**183,178**	**175,843**	**179,791**	**192,138**	**190,181**	**178,753**	**165,308**

Type	Total Units	Total Active Units	Total Accounts
CO1	145	109	65
CO2	40	16	13
IND			
MIX	8	7	3
RES	1,043	1012	823
Grand Total	**1,236**	**1,144**	**904**

Type	2015 Total	2014 Total
CO1	8,245,000	8,412,000
CO2	3,467,000	3,835,000
IND		
MIX	38,000	61,000
RES	53,351,000	53,952,000
Grand Total	**65,101,000**	**66,260,000**

Service Area	Total Units	Total Active Units	Total Accounts
BP	290	282	107
BR	52	51	52
BW	99	90	56
CR	5	4	5
CW	110	109	110
EE	1		1
GL	132	110	70
HD	127	110	112
PD	31	31	31
PM	48	47	48
PS	66	66	66
SC	65	37	40
SH	132	132	132
SRO	2	2	2
WB	76	73	72
Grand Total	**1,236**	**1,144**	**904**

SOUTH END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	163,000	68,000	33,000	27,000	277,000	265,000	28,000	25,000
RES	7,444,000	7,494,000	7,172,000	7,565,000	7,109,000	7,576,000	7,233,000	7,750,000
Grand Total	**7,607,000**	**7,562,000**	**7,205,000**	**7,592,000**	**7,386,000**	**7,841,000**	**7,261,000**	**7,775,000**
# DAYS	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	)15-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	1,734	756	371	297	3,184	2,819	301	275
RES	79,191	83,267	80,584	83,132	81,713	80,596	77,774	85,165
Grand Total	**80,926**	**84,022**	**80,955**	**83,429**	**84,897**	**83,415**	**78,075**	**85,440**

Type	Total Units	Total Active Units	Total Accounts
CO1	6	2	2
RES	611	605	607
Grand Total	**617**	**607**	**609**

Type	2015 Total	2014 Total
CO1	291,000	595,000
RES	29,675,000	29,668,000
Grand Total	**29,966,000**	**30,263,000**

Service Area	Total Units	Total Active Units	Total Accounts
ES	178	174	174
HGN	129	125	125
HGS	30	29	30
MG	21	21	21
WS	259	258	259
Grand Total	**617**	**607**	**609**

AVONDALE SEWER ACCOUNTS SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	20144
CO1	2,833,000	3,044,000	2,895,000	3,014,000	2,844,000	2,681,000	2,598,000	2,992,000
CO2	191,000	208,000	235,000	228,000	224,000	195,000	192,000	179,000
MIX	301,000	312,000	255,000	273,000	227,000	258,000	276,000	332,000
RES	4,090,000	3,750,000	3,588,000	4,089,000	3,506,000	4,183,000	4,716,000	3,705,000
TWP	31,000	24,000	20,000	19,000	21,000	22,000	19,000	74,000
Grand Total	**7,446,000**	**7,338,000**	**6,993,000**	**7,623,000**	**6,822,000**	**7,339,000**	**7,801,000**	**7,282,000**
# DAYS	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	)15-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	30,138	33,822	32,528	33,121	32,690	28,521	27,935	32,879
CO2	2,032	2,311	2,640	2,505	2,575	2,074	2,065	1,967
MIX	3,202	3,467	2,865	3,000	2,609	2,745	2,968	3,648
RES	43,511	41,667	40,315	44,934	40,299	44,500	50,710	40,714
TWP	330	267	225	209	241	234	204	813
Grand Total	**79,213**	**81,533**	**78,573**	**83,769**	**78,414**	**78,074**	**83,882**	**80,022**

Type	Total Units	Total Active Units	Total Accounts
CO1	397	48	38
CO2	4	4	4
MIX	8	22	8
RES	306	282	230
TWP	3	3	3
Grand Total	**718**	**359**	**283**

Type	2015 Total	2014 Total
CO1	11,786,000	11,115,000
CO2	862,000	790,000
MIX	1,141,000	1,093,000
RES	15,517,000	16,110,000
TWP	94,000	136,000
Grand Total	**29,400,000**	**29,244,000**

Service Area	Total Units	Total Active Units	Total Accounts
41	308	76	46
BH	123	120	121
BH2	6	6	6
RR	130	119	79
TK	151	38	31
Grand Total	**718**	**359**	**283**

Dilworth Paxson LLP

The PA PUC Approves First Wastewater Sale Under New Act 12

06/14/2017

June 14, 2017 (Philadelphia, PA) - On June 14, 2017, the Pennsylvania Public Utility Commission approved, in a four-to-one vote, Aqua Pennsylvania Wastewater, Inc.'s application to acquire the wastewater system of New Garden Township and its Sewer Authority, and to begin providing wastewater service to the residents of New Garden and Kennett Townships in Chester County. The transaction is the first to be approved using the fair market valuation approach established by the Pennsylvania State Legislature and Governor Tom Wolf with Act 12 of 2016 (Act of Apr. 14, 2016, P.L. 76, No. 12, 66 Pa. C.S. § 1329).

Act 12 is changing the landscape for municipal sales of water and wastewater systems to PUC-regulated public utility companies. The new law allows the parties to the transaction to opt in to a new method of valuation, which takes the value of the system for ratemaking purposes as either the lower of the average of two independent fair market value appraisals—one obtained by the utility buyer and one by the municipal seller—or by the negotiated purchase price. Prior to Act 12, system value for ratemaking was based on depreciated original cost, which would likely always result in a lower sale price than fair market value. In addition, the new law requires the PUC to act within six months of the acceptance of the application.

Act 12 became effective mid-June 2016, and the PUC issued its final implementation order in October 2016. The New Garden transaction was the first Act 12 application, submitted for approval in December 2016. Aqua, New Garden, and the Authority agreed to a negotiated purchase price of $29,500,000, which turned out to be less than the average of the two appraisals commissioned by Aqua and New Garden. The valuation for ratemaking purposes was therefore set at $29,500,000.

A protest to Aqua's application for PUC approval pursuant to Act 12 in the New Garden transaction was filed by the Bureau of Investigation and Enforcement, which sought a review of both of the fair market appraisals used, additional information about the proposed rate freeze agreed to by the parties, and a determination of whether the transaction was in the public interest under Section 1102 of the Public Utility Code.

An additional protest was filed by the Office of Consumer Advocates requesting further information to determine whether supplementary conditions should be imposed on the transaction to ensure that Aqua's existing customers are treated in a fair and just manner; how the transaction will substantially and affirmatively benefit Aqua's existing customers; and whether the agreement sufficiently provides for safe, adequate, and reasonable service at just and reasonable rates.

An evidentiary hearing was held before an administrative law judge on February 16, 2017. After the hearing, the judge recommended the denial of Aqua's application, concluding that Aqua had failed to demonstrate by a preponderance of the evidence that the acquisition was in the public interest because it failed to demonstrate that the transaction will result in affirmative public benefits to its existing customers. The judge also concluded that Aqua had failed to support its rate stabilization plan with evidence to show its basis and impact. The judge did

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invest in necessary capital improvements and resources, and experienced managerial and operating personnel necessary to provide safe and reliable sewer services to the residents of the TOS and surrounding areas. PAWC is currently the water provider within TOS and is the operator of TOS's System pump station.

Q. PLEASE DESCRIBE PAWC'S HISTORICAL RELATIONSHIP WITH TOS.

A. Since PAWC's acquisition of the water and wastewater assets of the City of Coatesville Authority ("CCA") in March 2001, PAWC has been the regional wastewater (and water) provider in the City of Coatesville and surrounding communities. . PAWC's treats the wastewater from the communities of Sadsbury Township, City of Coatesville, East Fallowfield Township, Caln Township, West Caln Township, Valley Township, West Sadsbury Township, Highland Township, West Brandywine Township and Parksburg Borough. TOS has been a bulk wastewater customer of PAWC since PAWC's acquisition of CCA's water and wastewater system assets. We maintain a relationship with TOS and other local municipalities by participating in local events, providing environmental and firefighting grants, offering the "H2O Assistance Program," and supporting economic growth through infrastructure improvements in the communities we serve.

Q. HOW MANY CUSTOMERS DOES THE TOS SYSTEM CURRENTLY SERVE AND HOW MANY CUSTOMERS DOES PAWC CURRENTLY SERVE?

A. As of December 31, 2016, TOS furnished wastewater services to 998 customers. This number includes 950 residential and 48 commercial customer connections. Of these

interest in discussing the potential acquisition of the System and the use of Section 1329, the fair market value approach. TOS's representatives executed the Letter of Interest on December 6 and 7, 2016 and returned it to PAWC. This "Letter of Interest" was extended through amendments on March 9, 2017, May 2, 2017, June 6, 2017, and July 5, 2017 to allow the parties to enter into a definitive agreement. Through these extensions, PAWC and TOS jointly retained the services of Herbert E. MacCombie, Jr., P.E., of Media Pennsylvania to complete the Engineer's Assessment of Tangible Assets pursuant to Section 1329. The Engineer's Assessment of Tangible Assets is included as **Schedule 1.1** of the APA and included with the UVE fair market valuation reports at **Appendix A-5**. PAWC, pursuant to Section 1329, retained the services of AUS Consultants of Greenfield Wisconsin to complete an appraisal of the System. TOS retained the services of Herbert, Rowland & Grubic, Inc. of Harrisburg, Pennsylvania to also complete an appraisal of the System. These appraisals accompany the Application at **Appendix A-5** (together with electronic working documents at **Appendix A-4**) and are included as **Schedule 2.2** of the APA. After receipt of the two appraisals and subsequent arms-length negotiations, on May 1, 2018 TOS's Board of Supervisors approved the APA, which was subsequently executed by PAWC and TOS that day too. This APA includes a negotiated purchase price of $9,250,000.

Q. CAN YOU PLEASE PROVIDE AN OVERVIEW OF THE APA?

A. Yes. The APA is attached as **Appendix A-24-a** to the Application **(PAWC Exhibit KEG-1)**. The APA sets forth the terms and conditions pursuant to which the TOS will sell, and PAWC will purchase, the System, as well as substantially all assets, properties and rights

Elizabeth Rose Triscari, Esquire
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033
(717) 520-4606
elizabeth.triscari@amwater.com

The Applicant's attorneys are authorized to receive all notices and communications regarding this Application.

6. PAWC is a regulated public utility corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania, and is engaged in the business of collecting, treating, storing, supplying, distributing and selling water to the public, and collecting, treating, transporting and disposing of wastewater for the public. Water and wastewater services are furnished by PAWC to the public in a service territory encompassing more than 400 communities across the Commonwealth with a combined population of over 2,400,000. A description of PAWC's existing certificated water and wastewater service territory is found in **Appendix B**, along with a detailed corporate history, outlining all of the mergers, acquisitions and consolidations, which have created PAWC as it exists on the date of this Application.

7. Steelton is a municipal water authority, organized by the Borough of Steelton in accordance with the Municipality Authorities Act, 53 Pa. C.S. §5601, et seq., with its offices located at 123 North Front Street, Steelton, Pennsylvania. Steelton owns and operates the Steelton System, providing water service to the public in the Borough of Steelton and a portion of Swatara Township (the "Service Area"), in Dauphin County, Pennsylvania.

8. As of November 30, 2018, Steelton furnishes water service to 2,472 customers including 2,289 residential, 124 commercial, 13 industrial, 34 institutional, 11 municipal, and one bulk sales customer connection.

PENNSYLVANIA REAL-TIME NEWS

Steelton water sale closer to completion as Pa. American Water signs $22.5 million agreement

Updated Nov 15, 2018;
Posted Nov 15, 2018



Pennsylvania American Water announced today it signed an agreement to acquire the water assets of the Steelton Borough Authority. Pending regulatory approvals, the sale should be complete by the third quarter of 2019.

1

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By Steve Marroni | smarroni@pennlive.com

The sale of Steelton's water system is one step closer to completion.

Pennsylvania American Water announced today it has signed an agreement to acquire the water assets of the Steelton Borough Authority for $22.5 million.

The two will next seek approval of the acquisition from the Pennsylvania Public Utility Commission and other necessary approvals from the Pennsylvania Department of Environmental Protection, according to the company.

Subscribe

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
)33438358	Morath, Christina	Commercial	None	1	SEWER	1
)33453937	Baeder, William	Commercial	None	1	SEWER	1
)33521786	Sanders, Debra	Commercial	None	1	SEWER	1
)33757653	Advanced Auto Parts	Commercial	None	1	SEWER	1
)34016546	Nelson's Ice Cream	Commercial	None	1	SEWER	1
)34030702	Pitcher, Paul	Commercial	None	1	SEWER	1
)34083232	Beck, Katharine G	Commercial	None	1	SEWER	1
)34862572	LK Miller Properties LLC	Commercial	None	1	SEWER	1
)02939458	Fuhrman, Steve	Commercial	None	1	SEWER	1
)03198199	Sarangpur Realty LLC	Commercial	None	1	SEWER	1
)03373167	Wilhelm, Rosemarie	Commercial	None	1	SEWER	1
)04397982	Pragi Enterprises LLC	Commercial	None	1	SEWER	1
)06085025	Plank Jr, Robert E	Commercial	None	1	SEWER	1
)06197065	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
)06197096	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
)07394708	Fissinger, Matthew	Commercial	None	1	SEWER	1
)07425268	Snyder, Joseph	Commercial	None	1	SEWER	1
)07461417	Varlotta, Michael	Commercial	None	1	SEWER	1
)07487679	CG Complex LLC	Commercial	None	1	SEWER	1
)07519040	Bristol Road Partners Inc.	Commercial	None	1	SEWER	1
)08908308	Superior Credit Union	Commercial	None	1	SEWER	1
)09217890	Hoff Properties LLC	Commercial	None	1	SEWER	1
)10722804	AMA Realty Properties LLC	Commercial	None	1	SEWER	1
)11184863	Attilio, Thomas	Commercial	None	1	SEWER	1
)12032330	310 Chestnut Street LLC	Commercial	None	1	SEWER	1
)13068080	Branch Banking & Trust Company	Commercial	None	1	SEWER	1
)13286185	White, Elaine & Bruce	Commercial	None	1	SEWER	1
)15089717	C&R Property Management LLC	Commercial	None	1	SEWER	1
)15089748	C&R Property Management LLC	Commercial	None	1	SEWER	1
)15292810	Preston, Aaron	Commercial	None	1	SEWER	1
)16240812	Shalom, Jan	Commercial	None	1	SEWER	1
)16276750	Copenhafer, Fay	Commercial	None	1	SEWER	1
)16612479	Donohue, Patrick R	Commercial	None	1	SEWER	1
)17470098	Lewis Group Ltd Partnership	Commercial	None	1	SEWER	1
)17961983	Qawasmy, John	Commercial	None	1	SEWER	1
)18085592	Christman, Lewis	Commercial	None	1	SEWER	1
)18305104	Tarquini Herrera, Rachel	Commercial	None	1	SEWER	1
)18888302	Florence Attilio Rental Acct.	Commercial	None	1	SEWER	1
)18888319	Attilio, Thomas	Commercial	None	1	SEWER	1
)19364687	Conigliaro, Vito	Commercial	None	1	SEWER	1
)21630875	Chesterview Apartments	Commercial	None	1	SEWER	1
)22621041	Main Street Royersford LLC	Commercial	None	1	SEWER	1
)22621096	Spring Mountain Brewing Co	Commercial	None	1	SEWER	1
)23796115	Kassam, Tashir	Commercial	None	1	SEWER	1
)26295581	JD Arnold LLC	Commercial	None	1	SEWER	1
)26393133	Ostebo, Kurt	Commercial	None	1	SEWER	1
		158				

Report Criteria:
Billing.Service No = 1
Customer.Customer Type = Commercial, Industrial, Residential

Report Criteria:
Billing.Service No = 1
Customer.Customer Type = Industrial, Residential

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
)28611137	Lewis Group Ltd. Partnership	Industrial	None	1	SEWER	1
)28619292	Giftwares Co Inc	Industrial	None	1	SEWER	1
)28619407	Specialty Chemical Systems Inc	Industrial	None	1	SEWER	1
)28619759	Accumetrics Limited	Industrial	None	1	SEWER	1
)28619773	Accumetrics Limited	Industrial	None	1	SEWER	1
)28620339	Nelson's Ice Cream Inc.	Industrial	None	1	SEWER	1
)28620858	American Machine & Tool Co.	Industrial	None	1	SEWER	1
)29486532	A.C. Miller Concrete Company	Industrial	None	1	SEWER	1
)29651213	Borough of Royersford	Industrial	None	1	SEWER	1
)29709754	Royersford Spring Company	Industrial	None	1	SEWER	1
)29784885	Advanced Fluid Systems Inc	Industrial	None	1	SEWER	1
		11				

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
)25581487	Sakal, Brian J	Residential	None	1	SEWER	1
)25581852	Barbara Berman Ricci	Residential	None	1	SEWER	1
)25590276	Tallman, William	Residential	None	1	SEWER	1
)25596441	Tarantino, Joseph	Residential	None	1	SEWER	1
)25635087	Benson, Merrill G	Residential	None	1	SEWER	1
)25760044	Blamey, Chad & Katrin	Residential	None	1	SEWER	1
)25762972	Whitmore, Andrew	Residential	None	1	SEWER	1
)25807684	Mecca, Jessica	Residential	None	1	SEWER	1
)25824139	Gerber, Jenna	Residential	None	1	SEWER	1
)25859012	Creciun, Peter	Residential	None	1	SEWER	1
)25869156	Seiders, Lester & Monica	Residential	None	1	SEWER	1
)25879108	Chesterview Apartments	Residential	None	1	SEWER	1
)25930898	US Bank NA	Residential	None	1	SEWER	1
)25948684	Findley, Nicole M	Residential	None	1	SEWER	1
)25987108	Craft, Elena	Residential	None	1	SEWER	1
)26021179	John McDonald & Karlyn Eyre	Residential	None	1	SEWER	1
)26043841	Blanche, Camile	Residential	None	1	SEWER	1
)26160869	Hirst, Sharon A	Residential	None	1	SEWER	1
)26161459	John Marlatt & Rebecca Gardner	Residential	None	1	SEWER	1
)26204967	Niemczuk, Joseph W	Residential	None	1	SEWER	1
)26223333	Weiss, Joseph	Residential	None	1	SEWER	1
)26239376	C&R Property Management LLC	Residential	None	1	SEWER	1
)26300278	Millard, Barry & Sheryl	Residential	None	1	SEWER	1
)26310954	Nevin, Sean	Residential	None	1	SEWER	1
)26326843	Davis, Jeff	Residential	None	1	SEWER	1
)26340238	Jacobs, Jamie	Residential	None	1	SEWER	1
)26352002	Slifer, Richard	Residential	None	1	SEWER	1
)26353432	Lynch, Heather	Residential	None	1	SEWER	1
)26380250	Tallman, William	Residential	None	1	SEWER	1
)26381130	Stem, Matt & Heather	Residential	None	1	SEWER	1
)26403078	Petaccio, Andrea	Residential	None	1	SEWER	1
)26630702	O'Donnell, Kaitlyn	Residential	None	1	SEWER	1
)26660253	Ilyas, Asif	Residential	None	1	SEWER	1
)26713911	Hernandez, S & Murphy, M	Residential	None	1	SEWER	1
)26746591	Gieske and Niemann LLC	Residential	None	1	SEWER	1
)26875659	Speck, Erin	Residential	None	1	SEWER	1
)26880804	Raser, Randy	Residential	None	1	SEWER	1
)26909682	Perez, Waldemar & Aracelis	Residential	None	1	SEWER	1
)26969219	Macelwee-Todd, Lisa	Residential	None	1	SEWER	1
		1427				

Report Criteria:
Billing.Service No = 1
Customer.Customer Type = Residential

permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.15, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets is Thirteen Million Dollars ($13,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall provide for payment in full of the total amount of Outstanding Indebtedness directly to Seller's obligees on account of the Purchase Price;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (remaining after the debt repayment pursuant to Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(c) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

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DEALS AUGUST 6, 2018 / 5:11 PM / 6 MONTHS AGO

SJW Group makes $1.1 billion all-cash offer for Connecticut Water

3 MIN READ

NEW YORK (Reuters) - SJW Group (SJW.N) and Connecticut Water Service Inc (CTWS.O) said on Monday they were changing from a merger to an acquisition agreement, with SJW offering to buy the New England utility for $1.1 billion in cash instead of combining stock.

The switch to an all-cash offer is worth $70 per Connecticut Water share, a 33 percent premium to Connecticut Water's share price prior to the original deal announced in March, according to a joint statement.

It was also higher than the implied $61.86 per share value of the Clinton, Connecticut-based firm under the merger-of-equals transaction, which would have created a combined company in which existing SJW shareholders would hold 60 percent of the stock.

SJW closed 2.3 percent lower, while Connecticut Water was 9 percent higher at $68.50.

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To pay for the acquisition, SJW will initially utilize a $975 million bridge loan from financial adviser JP Morgan Chase (JPM.N). Ultimately, the purchase would be covered by debt and between $450 million and $500 million of equity finance.

The new deal aims to conclude in the first quarter of 2019, subject to approvals from Connecticut Water's shareholders, as well as regulators in Connecticut and Maine.

The duo's original all-stock merger announcement in March triggered competing offers from Eversource Energy (ES.N) and California Water Service Group (CWT.N).

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"We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals," SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

Switching to an acquisition, versus a merger structure, means that SJW shareholders will no longer be required to vote on approving the deal, the statement said.

CalWater has an open tender offer to acquire SJW that runs until Sept. 28.

However, asked if the change was aimed at heading off any shareholder challenge to the deal, Thornburg told Reuters it "wasn't a consideration" and it had received nothing but support from its shareholders.

RBS sounds alarm over Brexit

CalWater declined to comment. A spokesman for Eversource said the company was evaluating developments but, as it has made clear, it will be disciplined in pursuing this or any other transaction.

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker

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CONNECTICUT WATER SERVICE INC / CT
BALANCE_SHEET2
Form Type: 10-K
Period End: Dec 31, 2017
Date Filed: Mar 15, 2018
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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED BALANCE SHEETS

December 31, (in thousands, except share amounts)	2017	2016
ASSETS		
Utility Plant	$ 927,289	$ 777,860
Construction Work in Progress	11,761	33,748
	939,050	811,608
Accumulated Provision for Depreciation	(241,327)	(210,212)
Net Utility Plant	697,723	601,396
Other Property and Investments	10,662	9,071
Cash and Cash Equivalents	3,618	1,564
Accounts Receivable (Less Allowance, 2017 - $1,265; 2016 - $1,100)	14,965	13,024
Accrued Unbilled Revenues	8,481	8,171
Materials and Supplies, at Average Cost	1,593	1,536
Prepayments and Other Current Assets	7,021	5,069
Total Current Assets	35,678	29,364
Unrecovered Income Taxes - Regulatory Asset	66,631	93,264
Pension Benefits - Regulatory Asset	11,339	12,266
Post-Retirement Benefits Other Than Pension - Regulatory Asset	116	265
Goodwill	67,016	30,427
Deferred Charges and Other Costs	9,618	8,449
Total Regulatory and Other Long-Term Assets	154,720	144,671
Total Assets	$ 898,783	$ 784,502
CAPITALIZATION AND LIABILITIES		
Common Stockholders' Equity:		
Common Stock Without Par Value: Authorized - 25,000,000 Shares		
Issued and Outstanding:		
2017 - 12,065,016; 2016 - 11,248,458	$ 191,641	$ 145,739
Retained Earnings	102,417	91,213
Accumulated Other Comprehensive Loss	(428)	(924)
Common Stockholders' Equity	293,630	236,028
Preferred Stock	772	772
Long-Term Debt	253,367	197,047
Total Capitalization	547,769	433,847
Current Portion of Long-Term Debt	6,173	4,859
Interim Bank Loans Payable	19,281	32,953
Accounts Payable and Accrued Expenses	11,319	13,116
Accrued Interest	1,439	1,012
Current Portion of Refund to Customers - Regulatory Liability	64	855
Other Current Liabilities	3,262	2,330
Total Current Liabilities	41,538	55,125
Advances for Construction	20,024	19,127
Deferred Federal and State Income Taxes	33,579	50,558
Unfunded Future Income Taxes	58,384	90,977
Long-Term Compensation Arrangements	32,649	33,540
Unamortized Investment Tax Credits - Regulatory Liability	1,133	1,189
Excess Accumulated Deferred Income Tax - Regulatory Liability	30,937	4,373
Refund to Customers - Regulatory Liability	-	108
Other Long-Term Liabilities	1,241	701
Total Long-Term Liabilities	177,947	200,573
Contributions in Aid of Construction	131,529	94,957
Commitments and Contingencies	-	-
Total Capitalization and Liabilities	$ 898,783	$ 784,502

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CONNECTICUT WATER SERVICE INC / CT
INCOME_STATEMENT2
Form Type: 10-K
Period End: Dec 31, 2017
Date Filed: Mar 15, 2018

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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED STATEMENTS OF INCOME

For the Years Ended December 31, (in thousands, except per share data)	2017	2016	2015
Operating Revenues	$ 107,054	$ 98,667	$ 96,041
Operating Expenses			
Operation and Maintenance	48,017	44,191	48,052
Depreciation	16,684	13,905	12,871
Income Taxes	(1,993)	2,570	(818)
Taxes Other Than Income Taxes	10,941	9,796	9,294
Total Operating Expenses	73,649	70,462	69,399
Net Operating Revenues	33,405	28,205	26,642
Other Utility Income, Net of Taxes	824	744	797
Total Utility Operating Income	34,229	28,949	27,439
Other Income (Deductions), Net of Taxes			
(Loss) Gain on Real Estate Transactions	33	(54)	349
Non-Water Sales Earnings	1,167	1,219	1,394
Allowance for Funds Used During Construction	774	1,198	530
Other	(2,308)	(1,009)	(214)
Total Other Income (Loss), Net of Taxes	(334)	1,354	2,059
Interest and Debt Expenses			
Interest on Long-Term Debt	9,054	7,714	7,087
Other Interest Income, Net	(359)	(922)	(458)
Amortization of Debt Expense and Premium, Net	146	124	108
Total Interest and Debt Expenses	8,841	6,916	6,737
Net Income	25,054	23,387	22,761
Preferred Stock Dividend Requirement	38	38	38
Total Net Income Applicable to Common Stock	$ 25,016	$ 23,349	$ 22,723
Weighted Average Common Shares Outstanding:			
Basic	11,540	11,009	10,958
Diluted	11,762	11,228	11,164
Earnings Per Common Share:			
Basic	$ 2.17	$ 2.12	$ 2.07
Diluted	$ 2.13	$ 2.08	$ 2.04

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the Years Ended December 31, (in thousands)	2017	2016	2015
Net Income	$ 25,054	$ 23,387	$ 22,761
Other Comprehensive Income (Loss), net of tax			
Adjustment to post-retirement benefit plans, net of tax benefit (expense) of $(419), $15, and $(505) in 2017, 2016, and 2015, respectively	289	(24)	765
Unrealized Investment gain (loss), net of tax (expense) benefit of $(13), $(22) and $62, in 2017, 2016, and 2015, respectively	207	35	(97)
Other Comprehensive Income, net of tax	$ 496	$ 11	$ 668
Comprehensive Income	$ 25,550	$ 23,398	$ 23,429

EAST WHITELAND TOWNSHIP

As of Year End 2020

District A/B $100.00 Qtr or $400.00 per year (Majority of billing, residential and business – approximately 3,053 accounts)

District C- $135.50 Qtr or $542.00 per year (Lochwood Chase 28 homes)

District D - $150.00 Qtr or $600.00 per year (Malvern Hunt-This billing is based off a spray irrigation system. Does not go to VFSA Treatment Plant.) – 279 homes

District E- $120.00 Qtr or $480.00 per year (Atwater, residential and business 522 accounts at year end 2020, but has been fully built out @ 2/2021 with 545 accounts)

High Volume- Water Use customers based on water meter reading (about 13 customers at year end 2020) $6.20 per thousand gallons. It averages about $90,000.00 Qtr or $360,000.00 per year.

Two Intermunicipal Agreements with Charlestown Township & Malvern Borough based off an annual formula. Charlestown Twp- $20,071.00 Qtr or $80,068. 00 per year. Malvern Boro- $37,575.00 Qtr or $150,300.00 per year.

Approximate # of Accounts – 3,895

Township Of East Whiteland Data & Demographics (As of July 1, 2020)

POPULATION

Total Population	14,270 (100%)
Population in Households	13,514 (94.7%)
Population in Families	11,297 (79.2%)
Population in Group Quarters[1]	756 (5.3%)
Population Density	1,305
Diversity Index[2]	52

INCOME

Median Household Income	$112,769
Average Household Income	$150,838
% of Income for Mortgage[4]	16%
Per Capita Income	$51,110
Wealth Index[5]	187

HOUSING

Total HU (Housing Units)	5,085 (100%)
Owner Occupied HU	3,293 (64.8%)
Renter Occupied HU	1,533 (30.1%)
Vacant Housing Units	259 (5.1%)
Median Home Value	$418,059
Average Home Value	$441,193
Housing Affordability Index[3]	142

HOUSEHOLDS

Total Households	4,826
Average Household Size	2.8
Family Households	3,461
Average Family Size	3

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA

Pump Stations
1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
* 9. ~~Church Rd~~
* 10. ~~Frame Ave~~
11. Hillbrook Circle
12. King Rd
13. Malvern Hunt
14. Planebrook Rd

* Decommissioned

Meters
I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows
XII. Atwater

LEGEND
- Manholes
- Meters
- Pump Stations
- Laterals
- Weston Master Plan Area
- Municipal Boundaries
- Lakes & Ponds
- Streams
- Subdivisions
- Pump Station Drainage Basins
- Parcel Boundaries
- Valley Forge Service Area
- Valley Forge Service Area Proposed
- Force Mains & Size
- 8" Gravity Sewer
- 8" Proposed Gravity Sewer
- 10" Gravity Sewer
- 12" Gravity Sewer
- 15" Gravity Sewer
- 15" Proposed Gravity Sewer
- 16" Gravity Sewer
- 18" Gravity Sewer
- 18" Proposed Gravity Sewer
- 20" Gravity Sewer
- 21" Gravity Sewer
- 24" Gravity Sewer
- 27" Gravity Sewer
- 36" Gravity Sewer
- Unknown Pipe Diameter

N W E S

0 600 1,200 Feet

1 inch = 600 feet

REVISION DATE: 3/3/2020

MAP NOTES:

Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohl & Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as-built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.

Data Sources: East Whiteland Township, Schoor DePalma, Kohl & Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.

Hillbrook Circle PS
Malvern Hunt PS
Mill Ln PS
Lee Blvd PS
Flat Rd PS
Lapp Rd PS
Wilburdale Rd PS
Deer Run PS
Frame Ave PS
Church Rd PS
Meadow View PS
Westgate PS
King Rd PS
To East Goshen

NOTES:

1. PLANEBROOK ROAD PUMP STATION WAS PLACED IN SERVICE IN NOVEMBER OF 2018 AND THE FRAME AVENUE PUMP STATION WAS DECOMISSIONED
2. CHURCH ROAD PUMP STATION WAS DECOMMISSIONED IN MARCH OF 2020

LEGEND: APPROVED/PENDING DEVELOPMENTS

- APPROVED/UNDER CONSTRUCTION
- PENDING APPROVAL
- PUBLIC SEWER FACILITIES CURRENTLY IN DESIGN

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Westgate Pump Station - P.S. 8



Meadowview Pump Station - P.S. 5



Deer Run Pump Station - P.S. 1



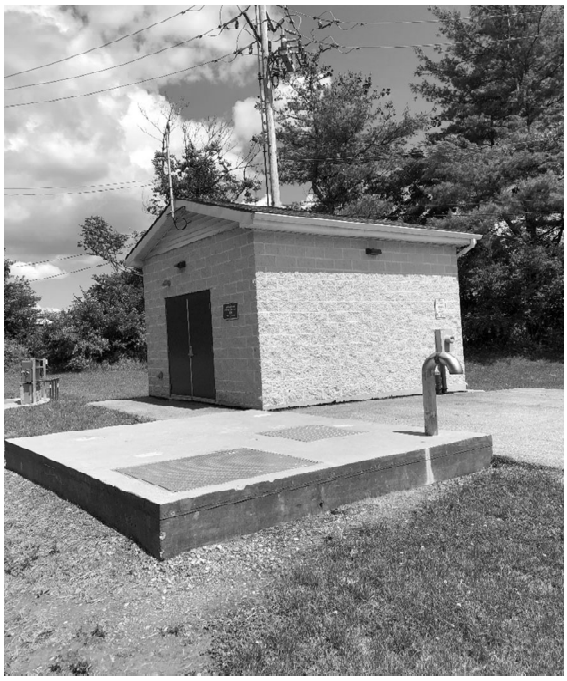
Deer Run Pump Station - P.S. 1



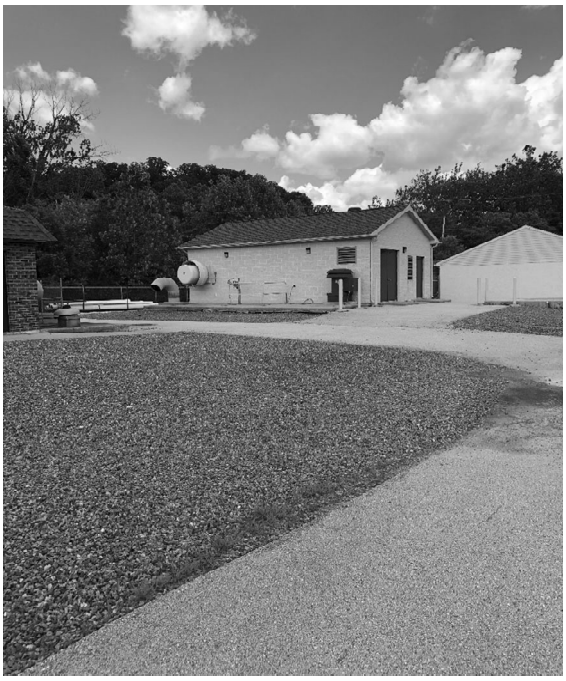
Lapp Road Pump Station - P.S. 7



Lee Boulevard Pump Station - P.S. 4



Wilburdale Pump Station - P.S. 3



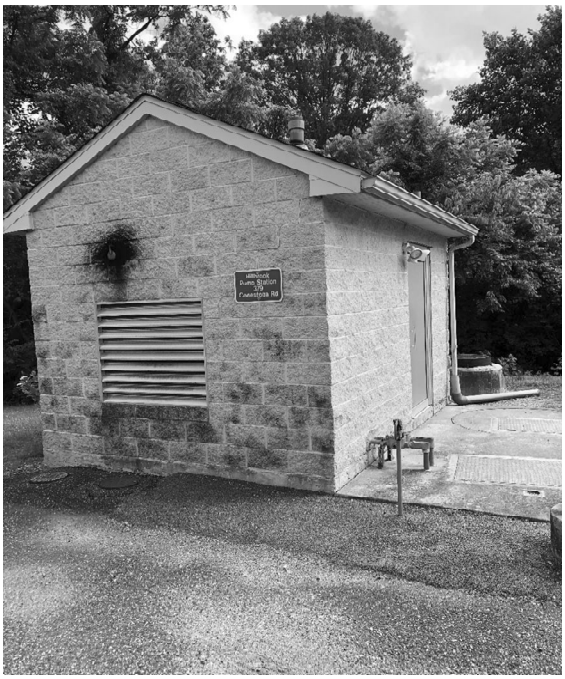
Mill Lane Pump Station - P.S. 2



Planebrook Road Pump Station - P.S. 14



Malvern Hunt Pump Station - P.S. 13



Hillbrook Circle Pump Station - P.S. 11

EAST WHITELAND TOWNSHIP

Statement of Net Position
Proprietary Funds
December 31, 2016

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 6,580,678
Accounts receivable	1,161,871
TOTAL CURRENT ASSETS	7,742,549
NONCURRENT ASSETS	
Capital assets	32,785,377
Other capital assets	11,538,573
Accumulated depreciation	(12,377,360)
TOTAL NONCURRENT ASSETS	31,946,590
TOTAL ASSETS	39,689,139
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	70,666
Deferred amount on refunding	215,921
TOTAL DEFERRED OUTFLOWS OF RESOURCES	286,587
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	123,100
Accrued liabilities	13,831
Due to other funds	371
Compensated absences	6,015
Unearned revenue	830,898
Accrued interest	188,258
Bonds payable	725,000
TOTAL CURRENT LIABILITIES	1,887,473
NONCURRENT LIABILITIES	
Compensated absences	34,085
Bonds payable	17,466,860
Net pension liability	137,571
Other post-employment benefits and obligations	232,724
TOTAL NONCURRENT LIABILITIES	17,871,240
TOTAL LIABILITIES	19,758,713
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	11,356
NET POSITION	
Net investment in capital assets	13,970,651
Unrestricted	6,235,006
TOTAL NET POSITION	$ 20,205,657

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

Statement of Revenues, Expenses and
Changes in Net Position
Proprietary Funds
Year Ended December 31, 2016

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,312,268
Tapping fees	844,300
Miscellaneous	677,340
TOTAL OPERATING REVENUES	4,833,908
OPERATING EXPENSES	
Sewer and collection fees	1,484,102
Salaries, wages and benefits	651,954
Repairs and maintenance	140,341
Contracted services	85,418
Utilities	95,347
Insurance	38,276
Depreciation	673,195
Other	57,227
TOTAL OPERATING EXPENSES	3,225,860
OPERATING INCOME	1,608,048
NONOPERATING REVENUES (EXPENSES)	
Interest income	15,300
Interest expense	(605,904)
Transfers out	(30,000)
TOTAL NONOPERATING REVENUES (EXPENSES)	(620,604)
CHANGE IN NET POSITION	987,444
NET POSITION AT BEGINNING OF YEAR	19,218,213
NET POSITION AT END OF YEAR	$ 20,205,657

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

Statement of Cash Flows
Proprietary Funds
Year Ended December 31, 2016

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 4,058,022
Cash payments to suppliers for goods and services	(1,823,910)
Cash payments to employees for services	(579,944)
NET CASH PROVIDED BY OPERATING ACTIVITIES	1,654,168
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(30,000)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(1,188,175)
Principal paid on capital debt	(720,000)
Interest paid on capital debt	(564,911)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(2,473,086)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	15,300
NET DECREASE IN CASH AND CASH EQUIVALENTS	(833,618)
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	7,414,296
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 6,580,678

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2017

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 7,518,955
Accounts receivable	683,599
Due from other funds	11,339
TOTAL CURRENT ASSETS	8,213,893
NONCURRENT ASSETS	
Capital assets	34,244,259
Other capital assets	11,085,242
Accumulated depreciation	(13,065,252)
TOTAL NONCURRENT ASSETS	32,264,249
TOTAL ASSETS	40,478,142
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	109,842
Deferred amount on refunding	190,519
TOTAL DEFERRED OUTFLOWS OF RESOURCES	300,361
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	138,497
Accrued liabilities	10,221
Due to other funds	210,243
Compensated absences	5,417
Unearned revenue	917,045
Accrued interest	197,363
Bonds payable	745,000
TOTAL CURRENT LIABILITIES	2,223,786
NONCURRENT LIABILITIES	
Compensated absences	30,694
Bonds payable	16,741,396
Net pension liability	163,903
Other post-employment benefits and obligations	294,321
TOTAL NONCURRENT LIABILITIES	17,230,314
TOTAL LIABILITIES	19,454,100
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	44,990
NET POSITION	
Net investment in capital assets	14,968,372
Unrestricted	6,311,041
TOTAL NET POSITION	$ 21,279,413

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,294,177
Tapping fees	1,706,800
Miscellaneous	216,471
TOTAL OPERATING REVENUES	5,217,448
OPERATING EXPENSES	
Sewer and collection fees	1,155,032
Salaries, wages and benefits	731,028
Repairs and maintenance	643,587
Contracted services	57,917
Utilities	84,883
Insurance	35,780
Depreciation	687,892
Other	156,422
TOTAL OPERATING EXPENSES	3,552,541
OPERATING INCOME	1,664,907
NONOPERATING REVENUES (EXPENSES)	
Interest income	19,510
Interest expense	(607,118)
TOTAL NONOPERATING REVENUES (EXPENSES)	(587,608)
INCOME BEFORE TRANSFERS	1,077,299
TRANSFERS OUT	(3,543)
CHANGE IN NET POSITION	1,073,756
NET POSITION AT BEGINNING OF YEAR	20,205,657
NET POSITION AT END OF YEAR	$ 21,279,413

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,781,867
Cash payments to suppliers for goods and services	(1,919,691)
Cash payments to employees for services	(656,240)
NET CASH PROVIDED BY OPERATING ACTIVITIES	3,205,936
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(3,543)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(1,005,551)
Principal paid on capital debt	(725,000)
Interest paid on capital debt	(553,075)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(2,283,626)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	19,510
NET INCREASE IN CASH AND CASH EQUIVALENTS	938,277
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	6,580,678
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 7,518,955

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2018

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 9,567,007
Accounts receivable	848,468
Due from other funds	147,915
TOTAL CURRENT ASSETS	10,563,390
NONCURRENT ASSETS	
Capital assets	36,333,876
Other capital assets	11,417,162
Accumulated depreciation	(13,754,484)
TOTAL NONCURRENT ASSETS	33,996,554
TOTAL ASSETS	44,559,944
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	183,740
Deferred amount related to OPEB	28,363
Deferred amount on refunding	165,117
TOTAL DEFERRED OUTFLOWS OF RESOURCES	377,220
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	82,760
Accrued liabilities	10,708
Due to other funds	78
Due to Fiduciary Funds	12,396
Compensated absences	4,953
Unearned revenue	931,069
Accrued interest	191,523
Bonds payable	715,000
TOTAL CURRENT LIABILITIES	1,948,487
NONCURRENT LIABILITIES	
Compensated absences	28,065
Bonds payable	16,045,932
Net pension liability	333,457
Other post-employment benefits and obligations	1,239,417
TOTAL NONCURRENT LIABILITIES	17,646,871
TOTAL LIABILITIES	19,595,358
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	6,206
Deferred amount related to OPEB	59,866
TOTAL DEFERRED INFLOWS OF RESOURCES	66,072
NET POSITION	
Net investment in capital assets	17,400,739
Unrestricted	7,874,995
TOTAL NET POSITION	$ 25,275,734

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,809,229
Tapping fees	1,306,657
Miscellaneous	1,563,159
TOTAL OPERATING REVENUES	6,679,045
OPERATING EXPENSES	
Sewer and collection fees	1,174,936
Salaries, wages and benefits	867,750
Repairs and maintenance	57,793
Contracted services	96,819
Utilities	85,609
Insurance	37,641
Depreciation	718,700
Other	86,958
TOTAL OPERATING EXPENSES	3,126,206
OPERATING INCOME	3,552,839
NONOPERATING REVENUES (EXPENSES)	
Interest income	27,696
Interest expense	(578,450)
TOTAL NONOPERATING REVENUES (EXPENSES)	(550,754)
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	3,002,085
CAPITAL CONTRIBUTIONS	2,057,746
TRANSFERS OUT	(166,320)
CHANGE IN NET POSITION	4,893,511
NET POSITION AT BEGINNING OF YEAR, restated	20,382,223
NET POSITION AT END OF YEAR	$ 25,275,734

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 6,528,200
Cash payments to suppliers for goods and services	(1,942,234)
Cash payments to employees for services	(721,681)
NET CASH PROVIDED BY OPERATING ACTIVITIES	3,864,285
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(166,320)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(393,256)
Principal paid on capital debt	(745,000)
Interest paid on capital debt	(539,353)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,677,609)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	27,696
NET INCREASE IN CASH AND CASH EQUIVALENTS	2,048,052
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	7,518,955
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 9,567,007

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2019

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 10,083,775
Accounts receivable	1,151,871
TOTAL CURRENT ASSETS	11,235,646
NONCURRENT ASSETS	
Capital assets	37,387,925
Other capital assets	11,285,015
Accumulated depreciation	(14,529,267)
TOTAL NONCURRENT ASSETS	34,143,673
TOTAL ASSETS	45,379,319
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	113,838
Deferred amount related to OPEB	130,298
Deferred amount on refunding	139,715
TOTAL DEFERRED OUTFLOWS OF RESOURCES	383,851
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	417,065
Accrued liabilities	13,689
Due to other funds	18,493
Compensated absences	3,114
Unearned revenue	971,503
Accrued interest	185,646
Bonds payable	735,000
TOTAL CURRENT LIABILITIES	2,344,510
NONCURRENT LIABILITIES	
Compensated absences	17,649
Bonds payable	15,330,468
Net pension liability	192,049
Net OPEB liability	921,823
TOTAL NONCURRENT LIABILITIES	16,461,989
TOTAL LIABILITIES	18,806,499
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	82,821
Deferred amount related to OPEB	426,073
TOTAL DEFERRED INFLOWS OF RESOURCES	508,894
NET POSITION	
Net investment in capital assets	18,217,920
Unrestricted	8,229,857
TOTAL NET POSITION	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,761,787
Tapping fees	984,100
Miscellaneous	682,780
TOTAL OPERATING REVENUES	5,428,667
OPERATING EXPENSES	
Sewer and collection fees	1,779,913
Salaries, wages and benefits	687,311
Repairs and maintenance	236,403
Contracted services	41,140
Utilities	86,097
Insurance	40,288
Depreciation	774,783
Other	202,088
TOTAL OPERATING EXPENSES	3,848,023
OPERATING INCOME	1,580,644
NONOPERATING REVENUES (EXPENSES)	
Interest income	137,057
Interest expense	(561,324)
TOTAL NONOPERATING REVENUES (EXPENSES)	(424,267)
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	1,156,377
CAPITAL CONTRIBUTIONS	181,831
TRANSFERS OUT	(166,165)
CHANGE IN NET POSITION	1,172,043
NET POSITION AT BEGINNING OF YEAR	25,275,734
NET POSITION AT END OF YEAR	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,165,698
Cash payments to suppliers for goods and services	(1,885,294)
Cash payments to employees for services	(757,194)
NET CASH PROVIDED BY OPERATING ACTIVITIES	2,523,210
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(166,165)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(740,070)
Principal paid on capital debt	(715,000)
Interest paid on capital debt	(522,264)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,977,334)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	137,057
NET INCREASE IN CASH AND CASH EQUIVALENTS	516,768
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	9,567,007
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 10,083,775

See accompanying notes to the basic financial statements.

PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
08341	Interest								
08341	34101	Interest E	-17,845.60	-12,000.00	-12,000.00	-6,133.66	-12,000.00	-12,000.00	.0%
TOTAL Interest			-17,845.60	-12,000.00	-12,000.00	-6,133.66	-12,000.00	-12,000.00	.0%
08364	Sewer Dept. Earning								
08364	36400	Sewer Rent	-206,836.00	-210,000.00	-210,000.00	-283,248.00	-210,000.00	-210,000.00	.0%
08364	36411	Sewer Conn	-40,100.00	-35,000.00	-35,000.00	-45,712.50	-35,000.00	-35,000.00	.0%
08364	36412	Sewer Rent	-3,464,965.77	-3,703,000.00	-3,703,000.00	-4,317,738.84	-3,703,000.00	-3,703,000.00	.0%
TOTAL Sewer Dept. Earning			-3,711,901.77	-3,948,000.00	-3,948,000.00	-4,646,699.34	-3,948,000.00	-3,948,000.00	.0%
08380	Miscellaneous Revenue								
08380	36244	Sewer Cert	-4,510.00	-5,000.00	-5,000.00	-5,355.00	-5,000.00	-5,000.00	.0%
08380	38002	Other Non-	-85,475.40	.00	.00	.00	.00	.00	.0%
08380	38003	Refund fro	-287,779.92	-434,000.00	-434,000.00	-457,733.76	-434,000.00	-375,000.00	-13.6%
TOTAL Miscellaneous Revenue			-377,765.32	-439,000.00	-439,000.00	-463,088.76	-439,000.00	-380,000.00	-13.4%
08387	Donations/Contributions								
08387	38700	Contributi	-181,831.00	.00	.00	.00	.00	.00	.0%
TOTAL Donations/Contribution			-181,831.00	.00	.00	.00	.00	.00	.0%
08429	Sewer Dept. Expenses								
08429	12000	Salary - D	120,907.20	138,000.00	138,000.00	70,331.04	138,000.00	.00	-100.0%
08429	13000	Wages - Se	134,690.73	181,100.00	181,100.00	215,968.80	181,100.00	500,000.00	176.1%
08429	13200	Mechanic	6,495.33	6,830.00	6,830.00	4,721.96	6,830.00	.00	-100.0%
08429	13500	Wages - Ot	22,631.31	.00	.00	9,510.00	.00	.00	.0%
08429	14000	Wages/Sala	143,878.59	177,000.00	177,000.00	102,732.03	177,000.00	.00	-100.0%
08429	15300	Disability	2,255.75	3,000.00	3,000.00	3,062.04	3,000.00	3,000.00	.0%
08429	15600	Medical In	134,139.53	163,500.00	163,500.00	136,229.67	163,500.00	119,000.00	-27.2%
08429	15650	OPEB	-32,094.76	25,250.00	25,250.00	16,943.16	25,250.00	17,000.00	-32.7%
08429	15700	Drug & Alc	363.00	525.00	525.00	.00	525.00	525.00	.0%
08429	15800	Life Insur	1,748.46	2,325.00	2,325.00	2,017.55	2,325.00	2,325.00	.0%
08429	16000	Pension/Re	81,249.00	86,251.00	86,251.00	86,251.00	86,251.00	158,000.00	83.2%
08429	16100	FICA (Soc.	36,166.04	41,000.00	41,000.00	32,062.10	41,000.00	39,000.00	-4.9%
08429	17000	Vacat Pay	1,357.80	2,500.00	2,500.00	.00	2,500.00	2,500.00	.0%
08429	18200	Longevity	7,358.00	7,358.00	7,358.00	7,358.00	7,358.00	7,358.00	.0%
08429	18300	Overtime	24,665.35	15,000.00	15,000.00	7,199.14	15,000.00	15,000.00	.0%
08429	19000	Other Pay	1,500.00	.00	.00	.00	.00	.00	.0%
08429	20000	Material &	3,148.47	4,000.00	4,000.00	1,299.14	4,000.00	4,000.00	.0%

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PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
08429	21300	Small Item	2,292.31	5,000.00	5,000.00	358.25	5,000.00	5,000.00	.0%
08429	23000	Utilities	86,096.76	91,200.00	91,200.00	81,899.62	91,200.00	91,200.00	.0%
08429	23100	Vehicle Fu	7,562.07	10,000.00	10,000.00	3,590.67	10,000.00	10,000.00	.0%
08429	23800	Uniforms	2,313.96	3,800.00	3,800.00	2,320.04	3,800.00	3,800.00	.0%
08429	31100	Financial	7,875.00	9,000.00	9,000.00	7,875.00	9,000.00	9,000.00	.0%
08429	31300	Twp. Engin	14,533.71	55,000.00	55,000.00	12,867.05	55,000.00	55,000.00	.0%
08429	31400	Legal Serv	10,862.00	15,000.00	15,000.00	8,382.50	15,000.00	15,000.00	.0%
08429	31700	Banking /	.00	.00	.00	120.00	.00	.00	.0%
08429	31900	Compu Serv	13,253.37	27,250.00	27,250.00	7,496.01	27,250.00	27,250.00	.0%
08429	32100	Telephone	14,019.77	15,500.00	15,500.00	13,920.46	15,500.00	15,500.00	.0%
08429	32500	Postage &	5,952.50	7,500.00	7,500.00	6,350.00	7,500.00	7,500.00	.0%
08429	33100	Training,	818.20	2,500.00	2,500.00	60.00	2,500.00	2,500.00	.0%
08429	34000	Advertisin	3,656.63	4,000.00	4,000.00	3,355.17	4,000.00	4,000.00	.0%
08429	35200	Insurance	32,065.28	34,000.00	34,000.00	33,901.02	34,000.00	34,000.00	.0%
08429	35400	Worker's C	8,223.22	8,000.00	8,000.00	7,079.95	8,000.00	8,000.00	.0%
08429	37000	Office Equ	837.75	1,200.00	1,200.00	832.00	1,200.00	1,200.00	.0%
08429	37100	Sewer Syst	84,858.34	120,120.00	120,120.00	86,747.71	120,120.00	121,920.00	1.5%
08429	37200	Road Maint	.00	1,000.00	1,000.00	15,700.00	1,000.00	1,000.00	.0%
08429	37300	Pump Stati	147,060.92	76,000.00	76,000.00	69,337.09	76,000.00	76,000.00	.0%
08429	37400	Equipment	315.17	700.00	700.00	466.06	700.00	700.00	.0%
08429	37500	Vehicle -	3,332.76	6,000.00	6,000.00	5,357.28	6,000.00	6,000.00	.0%
08429	38500	Sewer Rent	1,779,913.45	1,760,000.00	1,760,000.00	1,647,143.72	1,760,000.00	1,760,000.00	.0%
08429	80000	Deprec	774,782.74	.00	.00	.00	.00	.00	.0%
TOTAL Sewer Dept. Expenses			3,691,085.71	3,106,409.00	3,106,409.00	2,710,845.23	3,106,409.00	3,122,278.00	.5%
08470	Debt - Sewer Dept.								
08470	25522	GOB 2013	.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	.0%
08470	25523	GOB 12 A	.00	350,000.00	350,000.00	350,000.00	350,000.00	350,000.00	.0%
08470	25524	GOB 2012B	.00	335,000.00	335,000.00	335,000.00	335,000.00	335,000.00	.0%
08470	47000	Debt Servi	561,657.03	516,409.00	516,409.00	516,074.77	516,409.00	516,409.00	.0%
TOTAL Debt - Sewer Dept.			561,657.03	1,251,409.00	1,251,409.00	1,251,074.77	1,251,409.00	1,251,409.00	.0%
08475	Fiscal Agent Fees								
08475	47600	Fiscal Age	1,500.00	3,150.00	3,150.00	2,500.00	3,150.00	3,150.00	.0%
TOTAL Fiscal Agent Fees			1,500.00	3,150.00	3,150.00	2,500.00	3,150.00	3,150.00	.0%
08492	Interfund Operating Transfers								
08492	49201	Transfer t	166,165.00	168,345.00	168,345.00	.00	168,345.00	168,345.00	.0%
TOTAL Interfund Operating Tr			166,165.00	168,345.00	168,345.00	.00	168,345.00	168,345.00	.0%
TOTAL Sewer Fund			131,064.05	130,313.00	130,313.00	-1,151,501.76	130,313.00	205,182.00	57.5%

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PROJECTION: 20211 2021 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund			2019 ACTUAL	2020 ORIG BUD	2020 REVISED BUD	2020 ACTUAL	2020 PROJECTION	2021 Final	PCT CHANGE
09341	Interest								
09341	34101	Interest E	-119,211.83	-96,000.00	-96,000.00	-35,949.18	-96,000.00	-96,000.00	.0%
TOTAL Interest			-119,211.83	-96,000.00	-96,000.00	-35,949.18	-96,000.00	-96,000.00	.0%
09364	Sewer Reserve - Earnings								
09364	36411	Sewer Tapp	-944,000.00	-1,108,000.00	-1,108,000.00	-548,000.00	-1,108,000.00	-792,000.00	-28.5%
TOTAL Sewer Reserve - Earnin			-944,000.00	-1,108,000.00	-1,108,000.00	-548,000.00	-1,108,000.00	-792,000.00	-28.5%
09380	Sewer Reserve - Earnings								
09380	38000	Miscellane	-395,000.00	.00	.00	-3,335.18	.00	.00	.0%
TOTAL Sewer Reserve - Earnin			-395,000.00	.00	.00	-3,335.18	.00	.00	.0%
09429	Sewer Expenses								
09429	60000	Capital Co	-4,500.78	2,500,000.00	2,500,000.00	451,421.82	2,500,000.00	2,000,000.00	-20.0%
09429	60100	ValleyCr	135,873.00	38,000.00	38,000.00	.00	38,000.00	38,000.00	.0%
09429	60200	Capital Co	4,499.81	200,000.00	200,000.00	556.50	200,000.00	.00	-100.0%
TOTAL Sewer Expenses			135,872.03	2,738,000.00	2,738,000.00	451,978.32	2,738,000.00	2,038,000.00	-25.6%
09470	Bond Interest Exp								
09470	47000	Debt Serv	-333.00	.00	.00	.00	.00	.00	.0%
TOTAL Bond Interest Exp			-333.00	.00	.00	.00	.00	.00	.0%
09472	Bond Amortization								
09472	47270	Amortiz	11,699.00	.00	.00	.00	.00	.00	.0%
TOTAL Bond Amortization			11,699.00	.00	.00	.00	.00	.00	.0%
09480	Miscellaneous Expenditures								
09480	31200	Consulting	7,869.08	.00	.00	208,876.87	.00	100,000.00	.0%
TOTAL Miscellaneous Expendit			7,869.08	.00	.00	208,876.87	.00	100,000.00	.0%
TOTAL Sewer Reserve Fund			-1,303,104.72	1,534,000.00	1,534,000.00	73,570.83	1,534,000.00	1,250,000.00	-18.5%

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PART I

Item 1. Business

This annual report on Form 10-K is a combined report being filed by two separate Registrants, American States Water Company ("AWR") and Golden State Water Company ("GSWC"). References in this report to "Registrant" are to AWR and GSWC, collectively, unless otherwise specified. GSWC makes no representations as to the information contained in this report relating to AWR and its subsidiaries, other than GSWC.

AWR makes its periodic reports, Form 10-Q and Form 10-K, and current reports, Form 8-K, available free of charge through its website, www.aswater.com, as soon as material is electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). Such reports are also available on the SEC's website at www.sec.gov. AWR also makes available free of charge its code of business conduct and ethics, its corporate governance guidelines and the charters of its Nominating and Governance Committee, Compensation Committee and Audit and Finance Committee through its website or by calling (877) 463-6297. AWR and GSWC have filed the certification of officers required by Section 302 of the Sarbanes-Oxley Act as Exhibits 31.1 and 31.2 to its Form 10-K for the year ended December 31, 2020.

Overview

AWR is the parent company of GSWC, Bear Valley Electric Service, Inc. ("BVESI") and American States Utility Services, Inc. ("ASUS") (and its wholly owned subsidiaries: Fort Bliss Water Services Company ("FBWS"), Terrapin Utility Services, Inc. ("TUS"), Old Dominion Utility Services, Inc. ("ODUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS") and Fort Riley Utility Services, Inc. ("FRUS")). On July 1, 2020, GSWC completed the transfer of the electric utility assets and liabilities from its electric division to BVESI, in exchange for common shares of BVESI. GSWC then immediately distributed all of BVESI's common shares to AWR, whereupon BVESI became wholly owned directly by AWR. This reorganization did not result in any substantive changes to AWR's operations and business segments.

AWR has three reportable segments: water, electric and contracted services. Within the segments, AWR has three principal business units, water and electric service utility operations conducted through its regulated utilities GSWC and BVESI, respectively, and contracted services conducted through ASUS and its subsidiaries. FBWS, TUS, ODUS, PSUS, ONUS, ECUS and FRUS may be referred to herein collectively as the "Military Utility Privatization Subsidiaries."

GSWC is a public water utility engaged in the purchase, production, distribution and sale of water in 10 counties in the State of California. GSWC is regulated by the California Public Utilities Commission ("CPUC"). BVESI is a public electric utility that distributes electricity in several San Bernardino County mountain communities in California, and is also regulated by the CPUC. Additional information regarding public utility regulation is discussed in Item 7. "*Management's Discussion and Analysis of Financial Condition" and Results of Operation*" under the section titled "*Regulatory Matters*."

AWR's regulated utilities served 261,796 water customers and 24,545 electric customers at December 31, 2020, or a total of 286,341 customers, compared with 260,708 water customers and 24,420 electric customers at December 31, 2019, or a total of 285,128 customers. Both GSWC's and BVESI's operations exhibit seasonal trends. Although both have diversified customer bases, residential and commercial customers account for the majority of water and electric sales and revenues. Revenues derived from commercial and residential customers accounted for approximately 90% of total water and electric revenues for the years ended December 31, 2020, 2019 and 2018.

ASUS, itself or through the Military Utility Privatization Subsidiaries, has contracted with the U.S. government to provide water and/or wastewater services at various military installations. ASUS operates, maintains and performs construction activities (including renewal and replacement capital work) on water and/or wastewater systems at various U.S. military bases pursuant to 50-year firm, fixed-price contracts. Each of the contracts with the U.S. government is subject to termination, in whole or in part, prior to the end of its 50-year term for convenience of the U.S. government or as a result of default or nonperformance by the ASUS subsidiary performing the contract. The price for each of these contracts is subject to annual economic price adjustments. Contracts are also subject to modifications for changes in circumstances, changes in laws and regulations, and additions to the contract value for new construction of facilities at the military bases. AWR guarantees performance of ASUS's military privatization contracts.

AMERICAN STATES WATER COMPANY AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — Summary of Significant Accounting Policies

Nature of Operations: American States Water Company ("AWR") is the parent company of Golden State Water Company ("GSWC"), Bear Valley Electric Service Inc. ("BVESI"), and American States Utility Services, Inc. ("ASUS") (and its wholly owned subsidiaries, Fort Bliss Water Services Company ("FBWS"), Terrapin Utility Services, Inc. ("TUS"), Old Dominion Utility Services, Inc. ("ODUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS"), and Fort Riley Utility Services, Inc. ("FRUS")). AWR and its subsidiaries may be collectively referred to as "Registrant" or "the Company." The subsidiaries of ASUS are collectively referred to as the "Military Utility Privatization Subsidiaries." On July 1, 2020, GSWC completed the transfer of the electric utility assets and liabilities from its electric division to BVESI, a separate legal entity and wholly owned subsidiary of AWR (Note 20). This reorganization did not result in any substantive changes to AWR's operations and business segments. AWR, through its wholly owned subsidiaries, serves over one million people in nine states.

GSWC and BVESI are both California public utilities, with GSWC engaged in the purchase, production, distribution and sale of water throughout California serving approximately 261,800 customers, while BVESI distributes electricity in several San Bernardino County mountain communities in California serving approximately 24,500 customers. The California Public Utilities Commission ("CPUC") regulates GSWC's and BVESI's businesses in matters including properties, rates, services, facilities, and transactions between GSWC, BVESI, and their affiliates.

ASUS, through its Military Utility Privatization Subsidiaries, operates, maintains and performs construction activities (including renewal and replacement capital work) on water and/or wastewater systems at various U.S. military bases pursuant to 50-year firm fixed-price contracts. These contracts are subject to annual economic price adjustments and modifications for changes in circumstances, changes in laws and regulations and additions to the contract value for new construction of facilities at the military bases.

There is no direct regulatory oversight by the CPUC over AWR or the operations, rates or services provided by ASUS or the Military Utility Privatization Subsidiaries.

Basis of Presentation: The consolidated financial statements and notes thereto are presented in a combined report filed by two separate Registrants: AWR and GSWC. References in this report to "Registrant" are to AWR and GSWC, collectively, unless otherwise specified.

AWR owns all of the outstanding Common Shares of GSWC, BVESI and ASUS. ASUS owns all of the outstanding common shares of the Military Utility Privatization Subsidiaries. The consolidated financial statements of AWR include the accounts of AWR and its subsidiaries. These financial statements are prepared in conformity with accounting principles generally accepted in the United States of America. Intercompany transactions and balances have been eliminated in the AWR consolidated financial statements.

Related-Party Transactions: GSWC, BVESI and ASUS provide and/or receive various support services to and from their parent, AWR, and among themselves. GSWC also allocates certain corporate office administrative and general costs to its affiliates using allocation factors approved by the CPUC. During the years ended December 31, 2020, 2019 and 2018, GSWC allocated to ASUS approximately $4.9 million, $4.7 million and $4.2 million, respectively, of corporate office administrative and general costs. During the year ended December 31, 2020, GSWC allocated corporate office administrative and general costs to BVESI of approximately $1.3 million.

Furthermore, AWR borrows under a credit facility, which expires in May 2023, and provides funds to GSWC and ASUS in support of their operations. The interest rate charged to GSWC and ASUS is sufficient to cover AWR's interest expense under the credit facility. The CPUC requires GSWC to pay down all intercompany borrowings from AWR within a 24-month period, which was required by November 2020. In October 2020, the Board of Directors authorized AWR to invest equity in GSWC to enable the subsidiary to pay down all its intercompany borrowings. During the fourth quarter of 2020, AWR invested $60 million of equity in GSWC and received five shares of GSWC common stock. The majority of the proceeds from this stock issuance were used by GSWC to pay down its intercompany borrowings from AWR, satisfying the CPUC's requirement. As a result, GSWC had no intercompany borrowings from AWR as of December 31, 2020.

In October 2020, AWR issued an interest bearing promissory note to GSWC, which expires in May 2023. Under the terms of the note, AWR may borrow from GSWC amounts up to $30 million for working capital purposes. AWR agrees to pay any unpaid principal amounts outstanding under this note, plus accrued interest. In November 2020, AWR borrowed $6 million from GSWC under the terms of the note, which was subsequently repaid in December. As of December 31, 2020, there were no amounts outstanding under this note.

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PART I

Item 1. Business

This annual report on Form 10-K is a combined report being filed by two separate Registrants, American States Water Company (“AWR”) and Golden State Water Company (“GSWC”). References in this report to “Registrant” are to AWR and GSWC, collectively, unless otherwise specified. GSWC makes no representations as to the information contained in this report relating to AWR and its subsidiaries, other than GSWC.

AWR makes its periodic reports, Form 10-Q and Form 10-K, and current reports, Form 8-K, available free of charge through its website, www.aswater.com, as soon as material is electronically filed with or furnished to the Securities and Exchange Commission (“SEC”). Such reports are also available on the SEC’s website at www.sec.gov. AWR also makes available free of charge its code of business conduct and ethics, its corporate governance guidelines and the charters of its Nominating and Governance Committee, Compensation Committee and Audit and Finance Committee through its website or by calling (877) 463-6297. AWR and GSWC have filed the certification of officers required by Section 302 of the Sarbanes-Oxley Act as Exhibits 31.1 and 31.2 to its Form 10-K for the year ended December 31, 2020.

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PART I

ITEM 1. BUSINESS

The Company

With a history dating back to 1886, American Water is the largest and most geographically diverse, publicly-traded water and wastewater utility company in the United States, as measured by both operating revenues and population served. A holding company originally incorporated in Delaware in 1936, the Company employs approximately 7,000 professionals who provide drinking water, wastewater and other related services to over 15 million people in 46 states. The Company conducts the majority of its business through regulated utilities that provide water and wastewater services, collectively presented as the "Regulated Businesses." The Company also operates market-based businesses that provide complementary services. Individually, these businesses do not meet the criteria of a reportable segment in accordance with generally accepted accounting principles in the United States ("GAAP"), and are collectively presented as the "Market-Based Businesses," which is consistent with how management assesses the results of these businesses.

Throughout this Form 10-K, unless the context otherwise requires, references to "we," "us," "our," the "Company," and "American Water" mean American Water Works Company, Inc. and its subsidiaries, taken together as a whole. References to "parent company" mean American Water Works Company, Inc., without its subsidiaries.

Regulated Businesses

The Company's primary business involves the ownership of utilities that provide water and wastewater services to residential, commercial, industrial, public authority, fire service and sale for resale customers. The Company's utilities operate in over 1,700 communities in 16 states in the United States, with 3.5 million active customers in its water and wastewater networks. Services provided by the Company's utilities are subject to regulation by multiple state utility commissions or other entities engaged in utility regulation, collectively referred to as public utility commissions ("PUCs"). Federal, state and local governments also regulate environmental, health and safety, and water quality and water accountability matters. The Company reports the results of the services provided by its utilities in the Regulated Businesses segment. Operating revenues for the Regulated Businesses were $3,255 million for 2020, $3,094 million for 2019 and $2,984 million for 2018, accounting for 86%, 86% and 87%, respectively, of the Company's total operating revenues for the same periods.

Presented in the table below is a geographic summary of the Regulated Businesses' operating revenues and the number of customers the Company serves, by type of service, for and as of the year ended December 31, 2020:

	Operating Revenues (in millions)				Number of Customers (in thousands)			
	Water (a)	Wastewater	Total	% of Total	Water	Wastewater	Total	% of Total
New Jersey	$ 753	$ 43	$ 796	24.5 %	657	55	712	20.4 %
Pennsylvania	663	70	733	22.5 %	673	77	750	21.6 %
Missouri	335	11	346	10.6 %	472	15	487	13.9 %
Illinois	293	32	325	10.0 %	292	68	360	10.3 %
California	247	3	250	7.7 %	183	3	186	5.3 %
Indiana	234	2	236	7.3 %	318	2	320	9.2 %
West Virginia	164	1	165	5.1 %	168	1	169	4.8 %
Total—Top Seven States (b)	2,689	162	2,851	87.7 %	2,763	221	2,984	85.5 %
Other (c)	381	23	404	12.3 %	481	31	512	14.5 %
Total Regulated Businesses	$ 3,070	$ 185	$ 3,255	100.0 %	3,244	252	3,496	100.0 %

(a) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

(b) The Company's "Top Seven States" are determined based upon operating revenues.

(c) Includes the Company's utility operations in the following states: Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New York, Tennessee and Virginia and other revenue attributable collectively to the Regulated Businesses.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read together with the Consolidated Financial Statements and the Notes thereto included elsewhere in this Form 10-K. This discussion contains forward-looking statements that are based on management's current expectations, estimates and projections about the Company's business, operations and financial performance. The cautionary statements made in this Form 10-K should be read as applying to all related forward-looking statements whenever they appear in this Form 10-K. The Company's actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those that are discussed under "Forward-Looking Statements," Item 1A—Risk Factors and elsewhere in this Form 10-K. The Company has a disclosure committee consisting of members of senior management and other key employees involved in the preparation of the Company's SEC reports. The committee is actively involved in the review and discussion of the Company's SEC filings. For a discussion and analysis of the Company's financial statements for fiscal 2019 compared to fiscal 2018, please refer to Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 18, 2020.

Overview

American Water is the largest and most geographically diverse, publicly-traded water and wastewater utility company in the United States, as measured by both operating revenues and population served. The Company employs approximately 7,000 professionals who provide drinking water, wastewater and other related services to over 15 million people in 46 states. The Company's primary business involves the ownership of utilities that provide water and wastewater services to residential, commercial, industrial, public authority, fire service and sale for resale customers, collectively presented as the "Regulated Businesses." The Company's utilities operate in over 1,700 communities in 16 states in the United States, with 3.5 million active customers with services provided by its water and wastewater networks. Services provided by the Company's utilities are subject to regulation by PUCs. The Company also operates market-based businesses that provide water, wastewater and other services to residential and smaller commercial customers, the U.S. government on military installations, as well as municipalities and utility customers, collectively presented as the "Market-Based Businesses." These Market-Based Businesses are not subject to economic regulation by state PUCs. See Item 1—Business for additional information.

Novel Coronavirus (COVID-19) Pandemic Update

American Water has been monitoring the global impact of COVID-19 pandemic and has taken steps to mitigate adverse impacts to the Company. The Company has three main areas of focus as part of its response to COVID-19: the care and safety of its employees; the safety of its customers and the communities it serves; and the execution of its business continuity plan. American Water continues to work with its vendors to prevent disruptions in its supply chain, and, at this time, has not experienced, and does not anticipate, any material negative impacts. The Company has also been monitoring the impacts of the pandemic on its access to the capital markets, and to the extent such access is adversely affected, American Water may need to consider alternative sources of funding for its operations and for working capital, any of which could increase its cost of capital.

This pandemic continues to evolve, and American Water continues to monitor developments affecting its employees, customers, contractors and vendors and will take additional actions as warranted. To date, the Company has experienced COVID-19 financial impacts, including an increase in uncollectible accounts expense, additional debt costs, and certain incremental operation and maintenance ("O&M") expenses. The Company has also experienced decreased revenues as a result of the suspension of late fees and foregone reconnect fees. These impacts are collectively referred to as "financial impacts." See Note 3—Impact of Novel Coronavirus (COVID-19) Pandemic in the Notes to Consolidated Financial Statements for additional information. The extent to which COVID-19 may further impact American Water, including without limitation, its liquidity, financial condition, and results of operations, will depend on future developments, which presently cannot be predicted.

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agreement, the expenditure in 2020 was $0.1 million. Tank painting expense for 2020, 2019 and 2018 was $155,000, $447,000, and $658,000, respectively.

Budgeted mandatory utility plant expenditures, due to planned governmental highway projects, which require the relocation of Artesian Water's water service mains, expected to be incurred in 2021 through 2023 are as follows:

In thousands	
2021	$ 3,020
2022	3,020
2023	3,020
	$ 9,060

The exact timing and extent of these relocation projects is controlled primarily by the Delaware Department of Transportation.

NOTE 12

GEOGRAPHIC CONCENTRATION OF CUSTOMERS

Artesian Water, Artesian Water Maryland and Artesian Water Pennsylvania provide water utility service to customers within their established service territory in all three counties of Delaware and in portions of Maryland and Pennsylvania, pursuant to rates filed with and approved by the DEPSC, the MDPSC and the PAPUC. As of December 31, 2020, Artesian Water was serving approximately 90,300 customers, Artesian Water Maryland was serving approximately 2,500 customers and Artesian Water Pennsylvania was serving approximately 40 customers.

Artesian Wastewater provides wastewater utility service to customers within its established service territory in Sussex County, Delaware pursuant to rates filed with and approved by the DEPSC. As of December 31, 2020, Artesian Wastewater was serving approximately 2,800 customers, including one large industrial customer that comprises approximately 24% of the outstanding accounts receivable balance at year end. All wastewater customers are located in Sussex County, Delaware.

NOTE 13

REGULATORY PROCEEDINGS

Overview

Our water and wastewater utilities generate operating revenue from customers based on rates that are established by state Public Service Commissions through a rate setting process that may include public hearings, evidentiary hearings and the submission of evidence and testimony in support of the requested level of rates by the Company.

We are subject to regulation by the following state regulatory commissions:

- The DEPSC, regulates both Artesian Water and Artesian Wastewater.
- The MDPSC, regulates both Artesian Water Maryland and Artesian Wastewater Maryland.
- The PAPUC, regulates Artesian Water Pennsylvania.

Our water and wastewater utility operations are also subject to regulation under the federal Safe Drinking Water Act of 1974, or Safe Drinking Water Act, the Clean Water Act of 1972, or the Clean Water Act, and related state laws, and under federal and state regulations issued under these laws. These laws and regulations establish criteria and standards for drinking water and for wastewater discharges. Capital expenditures and operating costs required as a result of water quality standards and environmental requirements have been traditionally recognized by state regulatory commissions as appropriate for inclusion in establishing rates.

Water and Wastewater Rates

Our regulated utilities periodically seek rate increases to cover the cost of increased operating expenses, increased financing expenses due to additional investments in utility plant and other costs of doing business. In Delaware, utilities are permitted by law to place rates into effect, under bond, on a temporary basis pending completion of a rate increase proceeding. The first temporary increase may be up to the lesser of $2.5 million on an annual basis or 15% of gross water sales. Should the rate case not be completed within seven months, by law, the utility may put the entire requested rate relief, up to 15% of gross water sales, in effect under bond until a final resolution is ordered and placed into effect. If any such rates are found to be in excess of rates the DEPSC finds to be appropriate, the utility must refund customers the portion found to be in excess with interest. The timing of our rate increase requests is therefore dependent upon the estimated cost of the administrative process in relation to the investments and expenses that we hope to recover through the rate increase. We can provide no assurances that rate increase requests will be approved by applicable regulatory agencies and, if approved, we cannot guarantee that these rate increases will be granted in a timely or sufficient manner to cover the investments and expenses for which we initially sought the rate increase.

Artesian Resources Corporation 2020 Annual Report Available Electronically to Shareholders

April 08, 2021 17:28 ET | Source: Artesian Resources Corporation

NEWARK, Del., April 08, 2021 (GLOBE NEWSWIRE) -- Artesian Resources Corporation (NASDAQ: ARTNA), a leading provider of water, wastewater services and related services on the Delmarva Peninsula today announced that its 2020 Annual Report is available electronically to shareholders through its website at https://www.artesianwater.com/investor-relations/annual-report/. If any shareholder would like to receive a print copy of the 2020 Annual Report, they can request one free of charge by writing or calling Artesian Resources Corporation, 664 Churchmans Road, Newark, Delaware 19702, Attention Laura Slayman (Phone Number: 302-453-6900).

About Artesian Resources

Artesian Resources Corporation operates as a holding company of wholly-owned subsidiaries offering water and wastewater services, and related services, on the Delmarva Peninsula. Artesian Water Company, the principal subsidiary, is the oldest and largest regulated water utility on the Delmarva Peninsula and has been providing water service since 1905. Artesian supplies 8.3 billion gallons of water per year through 1,311 miles of main to over 300,000 people.

Contact:
Nicholle Taylor

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ACCEPT

Effective June 30, 2011, the CPUC adopted new rules related to the provision of non-regulated services using utility assets and employees. As a result, nearly all California non-regulated activities are now considered NTPS. The prescribed accounting for these NTPS is incremental cost allocation plus revenue sharing with regulated customers. Non-regulated services determined to be "active activities" require a 10% revenue sharing, and "passive activities" require a 30% revenue sharing. The amount of non-regulated revenues subject to revenue sharing is the total billed revenues less any authorized pass-through costs. Some examples of CPUC authorized pass-through costs are purchased water, purchased power, and pump taxes. All of our non-regulated services, except for leasing communication antenna sites on our properties, are "active activities" subject to a 10% revenue sharing. Leasing communication antenna sites on our properties are "passive activities" subject to a 30% revenue sharing. Cal Water's annual revenue sharing with regulated customers was $2.5 million, $2.7 million, and $2.6 million in 2020, 2019, and 2018, respectively.

Operating Segment

We operate in one reportable segment, the supply and distribution of water and providing water-related utility services. For information about revenue from external customers, net income and total assets, see "Item 8. Financial Statements and Supplementary Data."

Growth

We intend to continue exploring opportunities to expand our regulated and non-regulated water and wastewater activities, particularly in the western United States. The opportunities could include system acquisitions, lease arrangements similar to the City of Hawthorne and City of Commerce contracts, full service system operation and maintenance agreements, meter reading, billing contracts and other utility-related services.

Geographical Service Areas and Number of Customer Connections at Year-end

Our principal markets are users of water within our service areas. The approximate number of customer connections served in each regulated district, the City of Hawthorne and the City of Commerce, at December 31 is as follows:

(rounded to the nearest hundred)	2020	2019
SAN FRANCISCO BAY AREA/NORTH COAST		
Bay Area Region (serving South San Francisco, Colma, Broadmoor, San Mateo, San Carlos, Lucerne, Duncans Mills, Guerneville, Dillon Beach, Noel Heights and portions of Santa Rosa)	56,000	55,900
Bear Gulch (serving portions of Menlo Park, Atherton, Woodside and Portola Valley)	19,000	18,900
Los Altos (including portions of Cupertino, Los Altos Hills, Mountain View and Sunnyvale)	19,000	19,000
Livermore	18,900	18,900
	112,900	112,700
SACRAMENTO VALLEY		
Chico (including Hamilton City)	30,800	30,500
Oroville	3,700	3,600
Marysville	3,800	3,800
Dixon	3,100	3,000
Willows	2,400	2,400
	43,800	43,300
SALINAS VALLEY		
Salinas Valley Region (including Salinas and King City)	31,600	31,500
	31,600	31,500
SAN JOAQUIN VALLEY		
Bakersfield	73,500	72,700
Stockton	44,800	44,400
Visalia	46,700	46,000

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Selma	6,500	6,500
Kern River Valley	4,000	4,000

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(rounded to the nearest hundred)	2020	2019
	175,500	173,600
LOS ANGELES AREA		
East Los Angeles	26,900	26,800
Hermosa Redondo (serving Hermosa Beach, Redondo Beach and a portion of Torrance)	27,100	27,100
Dominguez (Carson and portions of Compton, Harbor City, Long Beach, Los Angeles and Torrance)	34,300	34,200
Los Angeles County Region (including Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, Rolling Hills, Fremont Valley, Lake Hughes, Lancaster and Leona Valley)	25,700	25,700
Westlake (a portion of Thousand Oaks)	7,100	7,100
Hawthorne and Commerce (leased municipal systems)	7,700	7,600
	128,800	128,500
CALIFORNIA TOTAL	492,600	489,600
HAWAII	5,300	5,000
NEW MEXICO	8,500	8,300
WASHINGTON	36,600	17,700
COMPANY TOTAL	543,000	520,600

Rates and Regulation

The Commissions have plenary powers setting both rates and operating standards. As such, the Commissions' decisions significantly impact the Company's revenues, earnings, and cash flows. The amounts discussed herein are generally annual amounts, unless otherwise stated, and the financial impact to recorded revenue is expected to occur over a 12-month period from the effective date of the decision. In California, water utilities are required to make several different types of filings. Certain filings, such as General Rate Case (GRC) filings, escalation rate increase filings, and offset filings, may result in rate changes that generally remain in place until the next GRC. As explained below, surcharges and surcredits to recover balancing and memorandum accounts as well as GRC interim rate relief are temporary rate changes which have specific time frames for recovery.

The CPUC follows a rate case plan which requires Cal Water to file a GRC for each of its regulated operating districts every three years. In a GRC proceeding the CPUC not only considers the utility's rate setting requests, but may also consider other issues that affect the utility's rates and operations. The CPUC is generally required to issue its GRC decision prior to the first day of the test year or authorize interim rates. In accordance with the rate case plan, Cal Water will file its next GRC application in July of 2021.

Between GRC filings, Cal Water may file escalation rate increases, which allow Cal Water to recover cost increases, primarily from inflation and incremental investments, during the second and third years of the rate case cycle. However, escalation rate increases are district specific and subject to an earnings test. The CPUC may reduce a district’s escalation rate increase if, in the most recent 13-month period, the earnings test reflects earnings in excess of what was authorized for that district.

In addition, California water utilities are entitled to make offset requests via advice letter. Offsets may be requested to adjust revenues for construction projects authorized in GRCs when those capital projects go into service (these filings are referred to as "rate base offsets"), or for rate changes charged to Cal Water for purchased water, purchased power, and pump taxes (which are referred to as "expense offsets"). Rate changes approved in offset requests remain in effect until the next GRC is approved.

- restrictive covenants in or changes to the credit ratings on our current or future debt that could increase our financing costs or affect our ability to borrow, make payments on debt or pay dividends; and
- the risks set forth in "Risk Factors" included elsewhere in this annual report.

In light of these risks, uncertainties and assumptions, investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date of this annual report or as of the date of any document incorporated by reference in this annual report, as applicable. When considering forward-looking statements, investors should keep in mind the cautionary statements in this annual report and the documents incorporated by reference. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise.

Overview

California Water Service Group is a holding company with six operating subsidiaries: California Water Service Company (Cal Water), New Mexico Water Service Company (New Mexico Water), Washington Water Service Company (Washington Water), Hawaii Water Service Company, Inc. (Hawaii Water), and CWS Utility Services and HWS Utility Services LLC (CWS Utility Services and HWS Utility Services LLC being referred to collectively in this annual report as Utility Services). Cal Water, New Mexico Water, Washington Water, and Hawaii Water are regulated public utilities. The regulated utility entities also provide some non-regulated services. Utility Services holds non-utility property and provides non-regulated services to private companies and municipalities outside of California. Cal Water was the original operating company and began operations in 1926.

Our business is conducted through our operating subsidiaries and we provide utility services to approximately two million people. The bulk of the business consists of the production, purchase, storage, treatment, testing, distribution and sale of water for domestic, industrial, public and irrigation uses, and for fire protection. In some areas, we provide wastewater collection and treatment services, including treatment which allows water recycling. We also provide non-regulated water-related services under agreements with municipalities and other private companies. The non-regulated services include full water system operation, billing and meter reading services. Non-regulated operations also include the lease of communication antenna sites, lab services and promotion of other non-regulated services.

During the year ended December 31, 2020, there were no significant changes in the kind of products produced or services rendered by our operating subsidiaries, or in the markets or methods of distribution.

Our mailing address and contact information is:

California Water Service Group
1720 North First Street
San Jose, California 95112-4598
Telephone number: 408-367-8200
www.calwatergroup.com

Annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports are available free of charge through our website at www.calwatergroup.com. The reports are available on our website as soon as reasonably practicable after such reports are filed with the SEC.

The content on any website referred to in this annual report is not incorporated by reference in this annual report unless expressly noted.

Regulated Business

California water operations are conducted by Cal Water, which provides service to approximately 492,600 customer connections in approximately 100 California communities through 21 separate districts, which are subject to regulation by the California Public Utilities Commission (CPUC). California water operations accounted for approximately 90.7% of our total customer connections and 93.8% of our total consolidated operating revenue.

We operate the City of Hawthorne and the City of Commerce water systems under lease agreements. In accordance with the lease agreements, we receive all revenues from operating the systems and are responsible for paying the operating costs. The City of Hawthorne and the City of Commerce lease revenues are governed through their respective city councils and are considered non-regulated because they are

patterns by our customers, resulting from such causes as increased water conservation and the installation of water saving devices and appliances that can result in decreased water usage. It is estimated that in the event we experience a 0.50% decrease in residential water consumption it would result in a decrease in annual residential water revenue of approximately $2,800,000 and would likely be partially offset by a reduction in incremental water production expenses such as chemicals and power.

Our natural gas utility customer base is diversified among residential gas, commercial gas, industrial gas, gas transportation, and other utility (consisting of miscellaneous service revenue from gas distribution operations; gas processing and handling revenue; sales of natural gas at market-based rates and contracted fixed prices; sales of gas purchased from third parties; and other gas marketing activities). The Regulated Natural Gas segment operating revenues are reported for the period since closing on the Peoples Gas Acquisition on March 16, 2020. Substantially all of our natural gas utility customers are metered, which allows to measure and bill for our customers' natural gas usage. Natural gas usage per customer is affected by local weather conditions during the year, especially during the fall, winter, and early spring. These patterns reflect the higher demand for natural gas for heating purposes during the colder months.

Our growth in revenues over the past five years is primarily a result of the 2020 Peoples Gas Acquisition, increases in water and wastewater rates and customer growth. See *Economic Regulation* for a discussion of water, wastewater and natural gas rates. The increase in our utility customer base has been due to customers added through acquisitions, partnerships with developers, and organic growth (excluding dispositions) as shown below:

Year	Utility Customer Growth Rate
2020	42.9%
2019	2.1%
2018	2.3%
2017	1.1%
2016	1.6%

In 2020, 2019, and 2018, our customer count increased by 772,099, 21,108, and 22,741 customers, respectively, primarily due to the addition of approximately 750,000 natural gas utility customers from the Peoples Gas Acquisition, water and wastewater utility systems that we acquired, and organic growth. Overall, for the five year period of 2016 through 2020, our utility customer base, adjusted to exclude customers associated with utility system dispositions, increased at an annual compound rate of 13.4%. During the five year period ended December 31, 2020, our utility customer base including customers associated with utility system acquisitions and dispositions increased from 957,866 at January 1, 2016 to 1,798,803 at December 31, 2020.

Acquisitions and Other Growth Ventures

We believe that acquisitions will continue to be an important source of customer growth for us. We intend to continue to pursue acquisitions of government-owned and regulated water and wastewater systems that provide services in areas near our existing service territories or in new service areas. We engage in continuing activities with respect to potential acquisitions, including calling on prospective sellers, performing analyses of and due diligence on acquisition candidates, making preliminary acquisition proposals, and negotiating the terms of potential acquisitions. Further, we are also seeking other potential business opportunities, including but not limited to, partnering with public and regulated utilities to invest in infrastructure projects, growing our market-based activities by acquiring businesses that provide water and wastewater or other utility-related services, and investing in infrastructure projects.

Based on the 2019 U.S. Census American Housing Survey, approximately 89% of the U.S. population obtains its water from public or private water utility systems, and 11% of the U.S. population obtains its water from individual wells. With approximately 50,000 public or private water systems in the U.S. (81% of which serve less than 3,300 customers), the water industry is the most fragmented of the major utility industries (telephone, natural gas, electric, water and wastewater). The majority of these community water systems are government-owned. The nation's water systems range in size from large government-owned systems, such as the New York City water system, which serves approximately 8.3 million people, to small systems, where a few customers share a common well. In the states where we operate regulated water utilities, we believe there are approximately 14,000 public or private water utility systems of widely-varying size, with the majority of the population being served by government-owned water systems.

Inline XBRL Viewer

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K, or this Annual Report are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 that are made based upon, among other things, our current assumptions, expectations, plans, and beliefs concerning future events and their potential effect on us. These forward-looking statements involve risks, uncertainties and other factors, many of which are outside our control that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. In some cases you can identify forward-looking statements where statements are preceded by, followed by or include the words "believes," "expects," "estimates", "anticipates," "plans," "future," "potential," "probably," "predictions," "intends," "will," "continue," "in the event" or the negative of such terms or similar expressions. Please refer to the Summary in Item 1A – Risk Factors in this Annual Report for a description of the types of Forward-looking statements in this Annual Report.

Given these risks and uncertainties, you should not place undue reliance on any forward-looking statements. You should read this Annual Report completely and with the understanding that our actual future results, performance and achievements may be materially different from what we expect. These forward-looking statements represent assumptions, expectations, plans, and beliefs only as of the date of this Annual Report. Except for our ongoing obligations to disclose certain information under the federal securities laws, we are not obligated, and assume no obligation, to update these forward-looking statements, even though our situation may change in the future. For further information or other factors which could affect our financial results and such forward-looking statements, see *Item 1A – Risk Factors*. We qualify all of our forward-looking statements by these cautionary statements.

PART I

Item 1. *Business*

The Company

Essential Utilities, Inc. (referred to as "Essential Utilities", the "Company", "we", "us", or "our"), a Pennsylvania corporation, is the holding company for regulated utilities providing water, wastewater, or natural gas services to an estimated five million people in Pennsylvania, Ohio, Texas, Illinois, North Carolina, New Jersey, Indiana, Virginia, West Virginia, and Kentucky under the Aqua and Peoples brands. One of our largest operating subsidiaries, is Aqua Pennsylvania, Inc., ("Aqua Pennsylvania") accounted for approximately 55% of operating revenues and approximately 67% of income for our Regulated Water segment in 2020. As of December 31, 2020, Aqua Pennsylvania provided water or wastewater services to approximately one-half of the total number of water and wastewater customers we serve. Aqua Pennsylvania's service territory is located in the suburban areas in counties north and west of the City of Philadelphia and in 27 other counties in Pennsylvania. Our other regulated water utility subsidiaries provide similar services in seven additional states. Additionally, pursuant to the Company' growth strategy, commencing on March 16, 2020 with the completion of the Peoples Gas Acquisition, the Company began to provide natural gas distribution services to customers in western Pennsylvania, Kentucky, and West Virginia. Approximately 93% of the total number of natural gas utility customers we serve are in western Pennsylvania. Lastly, the Company's market-based activities are conducted through Aqua Infrastructure, LLC and Aqua Resources Inc., and certain other non-regulated subsidiaries of Peoples. Prior to our October 30, 2020 sale of our investment in a joint venture, Aqua Infrastructure provided non-utility raw water supply services for firms in the natural gas drilling industry. Following the October 30, 2020 closing, Aqua Infrastructure does not provide any services to the natural gas drilling industry. Aqua Resources offers, through a third-party, water and sewer line protection solutions and repair services to households.

Essential Utilities, which prior to its name change on February 3, 2020 was known as Aqua America, Inc., was formed in 1968 as a holding company for its primary subsidiary, Aqua Pennsylvania, formerly known as Philadelphia Suburban Water Company. In the early 1990s, we embarked on a growth through acquisition strategy. Our most significant transactions to date have been the merger with Consumers Water Company in 1999, the acquisition of the regulated water and wastewater operations of AquaSource, Inc. in 2003, the acquisition of Heater Utilities, Inc. in 2004, the acquisition of American Water Works Company, Inc.'s regulated water and wastewater operations in Ohio in 2012, and the Peoples Gas

PART I

Item 1. Business.

Overview

Middlesex Water Company (Middlesex) was incorporated as a water utility company in 1897 and owns and operates regulated water utility and wastewater systems primarily in New Jersey and Delaware. Middlesex also operates water and wastewater systems under contract on behalf of municipal and private clients primarily in New Jersey and Delaware.

The terms "the Company," "we," "our," and "us" refer to Middlesex Water Company and its subsidiaries, including Tidewater Utilities, Inc. (Tidewater) and Tidewater's wholly-owned subsidiaries, Southern Shores Water Company, LLC (Southern Shores) and White Marsh Environmental Systems, Inc. (White Marsh). The Company's other subsidiaries are Pinelands Water Company (Pinelands Water) and Pinelands Wastewater Company (Pinelands Wastewater) (collectively, Pinelands), Utility Service Affiliates, Inc. (USA), Utility Service Affiliates (Perth Amboy) Inc., (USA-PA), Tidewater Environmental Services, Inc. (TESI) and Twin Lakes Utilities, Inc. (Twin Lakes).

The Company's principal executive offices are located at 485C Route 1 South, Suite 400, Iselin, New Jersey 08830. Our telephone number is (732) 634-1500. Our website address is http://www.middlesexwater.com. Information contained on our website is not part of this Annual Report on Form 10-K. We make available, free of charge through our website, reports and amendments filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, after such material is electronically filed with or furnished to the United States Securities and Exchange Commission (the SEC).

Middlesex System

The Middlesex System in New Jersey provides water services to approximately 61,000 retail customers, primarily in eastern Middlesex County, New Jersey and provides water under wholesale contracts to the City of Rahway, Townships of Edison and Marlboro, the Borough of Highland Park and the Old Bridge Municipal Utilities Authority. The Middlesex System treats, stores and distributes water for residential, commercial, industrial and fire protection purposes. The Middlesex System also provides water treatment and pumping services to the Township of East Brunswick under contract. The amount of water supply allocated to the Township of East Brunswick is granted directly to the Township by the New Jersey Water Supply Authority. The Middlesex System produced approximately 59% of our 2020 consolidated operating revenues.

The Middlesex System's retail customers are located in an area of approximately 55 square miles in Woodbridge Township, the City of South Amboy, the Boroughs of Metuchen and Carteret, portions of the Township of Edison and the Borough of South Plainfield, all in Middlesex County, and a portion of the Township of Clark in Union County. Retail customers include a mix of residential customers, large industrial concerns and commercial and light industrial facilities. These customers are located in generally well-developed areas of central New Jersey.

The contract customers of the Middlesex System comprise an area of approximately 110 square miles with a population of over 200,000. Contract sales to the Townships of Edison and Marlboro, the City of Rahway and the Old Bridge Municipal Utilities Authority are supplemental to the water systems owned and operated by these customers. Middlesex is the sole source of water for the Borough of Highland Park and the Township of East Brunswick.

Middlesex provides water service to approximately 300 customers in Cumberland County, New Jersey. This system is referred to as Bayview, and is not physically interconnected with the Middlesex System. Bayview produced less than 1% of our 2020 consolidated operating revenues.

Tidewater System

Tidewater, together with its wholly-owned subsidiary, Southern Shores, provides water services to approximately 52,000 retail customers for residential, commercial and fire protection purposes in over 430 separate communities in New Castle, Kent and Sussex Counties, Delaware. The Tidewater System produced approximately 28% of our 2020 consolidated operating revenues.

USA-PA

USA-PA operates the City of Perth Amboy, New Jersey's (Perth Amboy) water and wastewater systems under a 10-year agreement, which expires in December 2028. There are approximately 12,000 customers comprised of residential, commercial and industrial connections, most of which are served by both the water and wastewater systems. In addition to performing day-to day operations, USA-PA is also responsible for emergency responses and management of capital projects funded by Perth Amboy. USA-PA produced approximately 5% of our 2020 consolidated operating revenues.

Pinelands Systems

Pinelands Water provides water services to approximately 2,500 residential customers in Burlington County, New Jersey. Pinelands Water is not physically interconnected with the Middlesex System. Pinelands Water produced approximately 1% of our 2020 consolidated operating revenues.

Pinelands Wastewater provides wastewater collection and treatment services to approximately 2,500 residential customers. Under contract, it also services one municipal wastewater system in Burlington County, New Jersey with approximately 200 residential customers. Pinelands Wastewater produced approximately 1% of our 2020 consolidated operating revenues.

USA

Tidewater System

Tidewater, together with its wholly-owned subsidiary, Southern Shores, provides water services to approximately 52,000 retail customers for residential, commercial and fire protection purposes in over 430 separate communities in New Castle, Kent and Sussex Counties, Delaware. The Tidewater System produced approximately 28% of our 2020 consolidated operating revenues.

USA-PA

USA-PA operates the City of Perth Amboy, New Jersey's (Perth Amboy) water and wastewater systems under a 10-year agreement, which expires in December 2028. There are approximately 12,000 customers comprised of residential, commercial and industrial connections, most of which are served by both the water and wastewater systems. In addition to performing day-to day operations, USA-PA is also responsible for emergency responses and management of capital projects funded by Perth Amboy. USA-PA produced approximately 5% of our 2020 consolidated operating revenues.

Pinelands Systems

Pinelands Water provides water services to approximately 2,500 residential customers in Burlington County, New Jersey. Pinelands Water is not physically interconnected with the Middlesex System. Pinelands Water produced approximately 1% of our 2020 consolidated operating revenues.

Pinelands Wastewater provides wastewater collection and treatment services to approximately 2,500 residential customers. Under contract, it also services one municipal wastewater system in Burlington County, New Jersey with approximately 200 residential customers. Pinelands Wastewater produced approximately 1% of our 2020 consolidated operating revenues.

USA

USA operates the Borough of Avalon, New Jersey's (Avalon) water utility, sewer utility and storm water system under a ten-year operations and maintenance contract expiring in 2022. USA serves approximately 6,400 retail customers in Avalon, most of which are served by both the water system and wastewater collection system. In addition to performing day-to-day operations, USA is responsible for billing, collections, customer service, emergency responses and management of capital projects funded by Avalon.

USA operates the Borough of Highland Park, New Jersey's (Highland Park) water utility and sewer utility under a ten-year operations and maintenance contract expiring in 2030. USA serves approximately 3,300 mostly retail customers in Highland Park. The contract commenced July 1, 2020.

USA also provides unregulated water and wastewater services under contract with several other smaller New Jersey municipalities.

Under a marketing agreement with HomeServe, USA offers residential customers in New Jersey and Delaware various water and wastewater related home maintenance programs. HomeServe is a leading national provider of such home maintenance service programs. USA receives a service fee for the billing, cash collection and other administrative matters associated with HomeServe's service contracts. The agreement expires in July 2021 and renewal discussions are underway.

USA produced approximately 2% of our 2020 consolidated operating revenues.

TESI System

TESI provides wastewater collection and treatment services to approximately 3,900 retail customers in Sussex County, Delaware. TESI produced approximately 2% of our 2020 consolidated operating revenues.

White Marsh

White Marsh operates or maintains water and/or wastewater systems that serve approximately 1,900 retail customers under more than 36 separate contracts. White Marsh also owns two commercial properties that are leased to Tidewater for its administrative office campus and its field operations center. White Marsh produced approximately 1% of our 2020 consolidated operating revenues.

Financial Information

Consolidated operating revenues, operating income and net income are as follows:

	(Thousands of Dollars) Years Ended December 31, 2020	2019	2018
Operating Revenues	$ 141,592	$ 134,598	$ 138,077
Operating Income	$ 37,420	$ 35,520	$ 37,142
Net Income	$ 38,425	$ 33,888	$ 32,452

Operating revenues were earned from the following sources:

EX-99.1 2 ex99-1.htm EX-99.1

EXHIBIT 99.1

FOR IMMEDIATE RELEASE

Middlesex Water Company Declares Quarterly Cash Dividend

ISELIN, N.J., Jan. 28, 2021 -- Middlesex Water Company (NASDAQ:MSEX) announced today that its Board of Directors has declared a cash dividend of $0.2725 per share on its common stock payable on March 1, 2021 to holders of record as of February 12, 2021. Middlesex Water has paid cash dividends in varying amounts continually since 1912 and has increased its annual dividend rate for 48 consecutive years.

Organized in 1897, Middlesex Water provides regulated and unregulated water and wastewater utility services primarily in New Jersey and Delaware through various subsidiary companies. To learn more about Middlesex Water, including information about its Investment Plan, visit the Investor Relations section at www.middlesexwater.com.

ABOUT MIDDLESEX WATER COMPANY

Middlesex Water Company serves as a trusted provider offering life-sustaining high quality water service for residential, commercial, industrial and fire protection purposes. The Company offers a full range of water, wastewater utility and related services. An investor-owned public utility, Middlesex Water is a professional services provider specializing in municipal and industrial contract operations and water and wastewater system technical operations and maintenance. The company and its subsidiaries form the Middlesex Water family of companies, which collectively serve a population of nearly half a million people in New Jersey and Delaware. Named a 2020 Top Workplace in New Jersey, Middlesex is focused on meeting the needs of our employees, customers, and shareholders. We invest in our people, our infrastructure and the communities we serve to support reliable and resilient utility services, economic growth and quality of life. To learn more about Middlesex Water, visit https://www.middlesexwater.com Please follow us on Facebook, Twitter and LinkedIn.

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including, among others, our long-term strategy and expectations, the status of our acquisition program, the impact of our acquisitions, the impact of current and projected rate requests and the impact of our capital program on our environmental compliance. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including: general economic business conditions, unfavorable weather conditions, the success of certain cost containment initiatives, changes in regulations or regulatory treatment, availability and the cost of capital, the success of growth initiatives and other factors discussed in our filings with the Securities and Exchange Commission.

Contact:
Bernadette Sohler, Vice President – Corporate Affairs
Middlesex Water Company
(732) 638-7549
www.middlesexwater.com

Item 6. ***Selected Financial Data***

FIVE YEAR FINANCIAL AND STATISTICAL REVIEW
SJW Group and Subsidiaries

	2020	2019	2018	2017	2016
CONSOLIDATED RESULTS OF OPERATIONS (in thousands)					
Operating revenue	$ 564,526	420,482	397,699	389,225	339,706
Operating expense:					
Purchased water	100,723	99,118	97,378	86,456	72,971
Power	13,330	7,443	6,180	7,295	6,102
Groundwater extraction charges	71,359	43,917	46,770	47,817	32,088
Other production expenses	40,380	25,291	18,398	16,571	14,470
Administrative and general	79,741	66,301	48,933	48,940	41,529
Maintenance	22,158	20,505	18,414	18,361	18,361
Property taxes and other non-income taxes	29,886	19,068	14,975	13,642	12,123
Depreciation and amortization	89,279	65,592	54,601	48,292	44,625
Merger related expenses	—	15,768	18,610	—	—
Total operating expense	446,856	363,003	324,259	287,374	242,269
Operating income	117,670	57,479	73,440	101,851	97,437
Interest expense, other income and expense	(47,775)	(25,398)	(24,608)	(5,358)	(11,056)
Income before income taxes	69,895	32,081	48,832	96,493	86,381
Provision for income taxes	8,380	8,454	10,065	35,393	33,542
Net income before noncontrolling interest	61,515	23,627	38,767	61,100	52,839
Less net income attributable to the noncontrolling interest	—	224	—	1,896	—
SJW Group net income	$ 61,515	23,403	38,767	59,204	52,839
Dividends paid	$ 36,509	34,134	23,074	21,332	16,559
CONSOLIDATED PER SHARE DATA					
Earnings per share - diluted	2.14	0.82	1.82	2.86	2.57
Dividends paid	1.28	1.20	1.12	1.04	0.81
Book value per common share	32.12	31.28	31.31	22.57	20.61
CONSOLIDATED BALANCE SHEET (in thousands)					
Utility plant and intangible assets	$ 3,380,048	3,168,505	1,935,911	1,792,323	1,666,381
Less accumulated depreciation and amortization	1,045,136	962,019	607,090	553,059	520,018
Net utility plant	2,334,912	2,206,486	1,328,821	1,239,264	1,146,363
Total assets	3,311,465	3,132,470	1,956,389	1,458,001	1,443,376
Capitalization:					
Stockholders' equity	917,160	889,984	889,312	463,209	421,646
Long-term debt, less current portion	1,287,580	1,283,597	431,424	431,092	433,335
Total capitalization	$ 2,204,740	2,173,581	1,320,736	894,301	854,981
OTHER STATISTICS—WATER UTILITY SERVICES					
Average revenue per connection (in thousands)	$ 1,450	1,087	1,609	1,594	1,402

Inline XBRL Viewer

Investment in gross utility plant per connection (in thousands)	$ 8,683	8,195	7,832	7,340	6,874
Connections at year-end	389,293	386,607	247,267	244,133	242,421
Miles of main at year-end	5,462	5,465	3,091	3,082	3,069
Water production (million gallons)	53,604	42,216	40,053	38,584	35,847
Maximum daily production (million gallons)	218	206	149	148	136
Population served (estimate)	1,614,866	1,604,442	1,114,200	1,100,200	1,092,600

Note: Information in this table, including Other Statistics, include SJWNE, LLC from the date of October 9, 2019.

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Item 6. ***Selected Financial Data***

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Lead and copper may enter drinking water primarily through plumbing materials. The Company is required to comply with the Lead and Copper Rule established by the EPA and administered by the DEP. The Company must monitor drinking water at customer taps for compliance with this rule. If lead concentrations exceed an action level, the Company must undertake a number of additional actions to control corrosion, inform the public about steps they should take to protect their health and may be required to replace lead service lines under its control. See "Management's Discussion and Analysis – Environmental Matters" for a discussion of the Company's compliance with the Lead and Copper rule.

The DEP and the Susquehanna River Basin Commission, or SRBC, regulate the amount of water withdrawn from streams in the watershed to assure that sufficient quantities are available to meet the needs of the Company and other regulated users. Through its Division of Dam Safety, the DEP regulates the operation and maintenance of the Company's impounding dams. The Company routinely inspects its dams and prepares annual reports of their condition as required by DEP regulations. The DEP reviews these reports and inspects the Company's dams. The DEP most recently inspected the Company's dams in 2019.

Since 1980, the DEP has required any new dam to have a spillway that is capable of passing the design flood without overtopping the dam. The design flood is either the Probable Maximum Flood, or PMF, or some fraction of it, depending on the size and location of the dam. PMF is very conservative and is calculated using the most severe combination of meteorological and hydrologic conditions reasonably possible in the watershed area of a dam.

The Company engaged a professional engineer to analyze the spillway capacities at the Lake Williams and Lake Redman dams and validate the DEP's recommended flood design for the dams. Management presented the results of the study to the DEP in December 2004, and DEP then requested that the Company submit a proposed schedule for the actions to address the spillway capacities. Thereafter, the Company retained an engineering firm to prepare preliminary designs for increasing the spillway capacities to pass the PMF through armoring the dams with roller compacted concrete. Management has met with the DEP on a regular basis to review the preliminary design and discuss scheduling, permitting, and construction requirements. Recently, DEP expressed concern regarding the stability of the Lake Williams spillway in light of current design standards. The Company is currently completing the final design and the permitting process to armor and replace the spillway of the Lake Williams dam. The Company expects to finalize its plans in 2021 and begin construction in 2022 at a total cost of approximately $27 million. The Lake Redman dam will be reviewed following the completion of the work on the Lake Williams dam.

Capital expenditures and operating costs required as a result of water quality standards and environmental requirements have been traditionally recognized by state public utility commissions as appropriate for inclusion in establishing rates. The capital expenditures currently required as a result of water quality standards and environmental requirements have been budgeted in the Company's capital program and represent less than 15% of its expected total capital expenditures over the next five years. The Company is currently in compliance with wastewater environmental standards and does not anticipate any major capital expenditures for its current wastewater business.

Growth

(All dollar amounts are stated in thousands of dollars)

The Company continues to grow its number of customers and distribution facilities.

The growth in the number of customers of the Company is due primarily to the acquisition of water and wastewater systems and organic growth. During the year ended December 31, 2020, the Company increased its number of customers from 71,411 to 72,681. See "Management's Discussion and Analysis – Acquisitions and Growth" for a discussion of the Company's recent acquisitions.

The Company continues to grow its water distribution and wastewater collection systems to provide reliable service to its expanding franchised service territory and the increasing population within that territory. During the year ended December 31, 2020, the Company installed an additional 14,950 feet of water distribution mains and acquired an additional 32,593 feet of wastewater collection mains resulting in 987 miles of water mains and 36 miles of wastewater mains as of December 31, 2020.

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The Company's growth in revenues is primarily a result of customer growth and increases in water and wastewater rates. During the year ended December 31, 2020, the Company recognized revenue of $53,852, an increase of $2,274, or 4.4%, as compared to $51,578 during the year ended December 31, 2019. In 2020, operating revenue was derived from the following sources and in the following percentages: residential, 66%; commercial and industrial, 26%; and other, 8%, which is primarily from the provision for fire service but includes other water and wastewater service-related income. See "Management's Discussion and Analysis – Rate Matters" for a discussion of the Company's rate case management.

THE YORK WATER COMPANY

PART I

Item 1. Business.

The York Water Company (the "Company") is the oldest investor-owned water utility in the United States and is duly organized under the laws of the Commonwealth of Pennsylvania. The Company has operated continuously since 1816. The primary business of the Company is to impound, purify to meet or exceed safe drinking water standards and distribute water. The Company also owns and operates two wastewater collection systems and five wastewater collection and treatment systems. The Company operates within its franchised water and wastewater territory, which covers portions of 51 municipalities within three counties in south-central Pennsylvania. The Company is regulated by the Pennsylvania Public Utility Commission, or PPUC, for both water and wastewater in the areas of billing, payment procedures, dispute processing, terminations, service territory, debt and equity financing and rate setting. The Company must obtain PPUC approval before changing any practices associated with the aforementioned areas.

Water service is supplied through the Company's own distribution system. The Company obtains the bulk of its water supply from both the South Branch and East Branch of the Codorus Creek, which together have an average daily flow of 73.0 million gallons. This combined watershed area is approximately 117 square miles. The Company has two reservoirs, Lake Williams and Lake Redman, which together hold up to approximately 2.2 billion gallons of water. The Company supplements its reservoirs with a 15-mile pipeline from the Susquehanna River to Lake Redman which provides access to an additional supply of 12.0 million gallons of untreated water per day. The Company also owns nine wells which are capable of providing a safe yield of approximately 597,000 gallons per day to supply water to the customers of its satellite systems in Adams County. As of December 31, 2020, the Company's average daily availability was 35.6 million gallons, and average daily consumption was approximately 19.9 million gallons. The Company's service territory had an estimated population of 202,000 as of December 31, 2020. Industry within the Company's service territory is diversified, manufacturing such items as fixtures and furniture, electrical machinery, food products, paper, ordnance units, textile products, air conditioning systems, laundry detergent, barbells, and motorcycles.

The Company's water business is somewhat dependent on weather conditions, particularly the amount and timing of rainfall. Revenues are particularly vulnerable to weather conditions in the summer months. Prolonged periods of hot and dry weather generally cause increased water usage for watering lawns, washing cars, and keeping golf courses and sports fields irrigated. Conversely, prolonged periods of dry weather could lead to drought restrictions from governmental authorities. Despite the Company's adequate water supply, customers may be required to cut back water usage under such drought restrictions which would negatively impact revenues. The Company has addressed some of this vulnerability by instituting minimum customer charges which are intended to cover fixed costs of operations under all likely weather conditions.

The Company's business does not require large amounts of working capital and is not dependent on any single customer or a very few customers for a material portion of its business. Increases in revenues are generally dependent on the Company's ability to obtain rate increases from the PPUC in a timely manner and in adequate amounts and to increase volumes of water sold through increased consumption and increases in the number of customers served. The Company continuously looks for water and wastewater acquisition and expansion opportunities both within and outside its current service territory as well as additional opportunities to enter into bulk water contracts with municipalities and other entities to supply water.

The Company has agreements with several municipalities to provide sewer billing and collection services. The Company also has a service line protection program on a targeted basis in order to further diversify its business. Under this optional program, customers pay a fixed monthly fee, and the Company will repair or replace damaged customer service lines, as needed, subject to an annual maximum dollar amount. The Company continues to review and consider opportunities to expand both initiatives.

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Competition

As a regulated utility, the Company operates within an exclusive franchised territory that is substantially free from direct competition with other public utilities, municipalities, and other entities. Although the Company has been granted an exclusive franchise for each of its existing community water and wastewater systems, the ability of the Company to expand or acquire new service territories may be affected by currently unknown competitors obtaining franchises to surrounding systems by application or acquisition. These competitors may include other investor-owned utilities, nearby municipally-owned utilities and sometimes competition from strategic or financial purchasers seeking to enter or expand in the water and wastewater industry. The addition of new service territory and the acquisition of other utilities are generally subject to review and approval by the PPUC.

Water and Wastewater Quality and Environmental Regulations

5/20/2021

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Company Name	Enterprise value to Net PPE	Month End 5/20/2021 0	Month End 4/30/2021 -1	Month End 3/31/2021 -2	Month End 2/28/2021 -3	Month End 1/31/2021 -4	Month End 12/31/2020 -5	Month End 11/30/2020 -6	Month End 10/31/2020 -7	Month End 9/30/2020 -8	Month End 8/31/2020 -9	Month End 7/31/2020 -10	Month End 6/30/2020 -11	Month End 5/31/2020 -12	Month End 4/30/2020 -13	Month End 3/31/2020 -14	Month End 2/29/2020 -15	Month End 1/31/2020 -16	Month End 12/31/2019 -17	Month End 11/30/2019 -18	Month End 10/31/2019 -19	Month End 9/30/2019 -20	Month End 8/31/2019 -21	Month End 7/31/2019 -22
AMERICAN STATES WATER COMP		2.261	2.267	2.180	2.165	2.259	2.314	2.207	2.228	2.235	2.299	2.313	2.357	2.434	2.349	2.407	2.372	2.672	2.622	2.632	2.894	2.753	2.898	2.453
AMERICAN WATER WORKS COMP		1.958	1.958	1.903	1.871	2.016	1.964	1.996	1.962	1.909	1.910	1.954	1.773	1.791	1.719	1.698	1.744	1.849	1.717	1.732	1.755	1.762	1.810	1.682
ESSENTIAL UTILITIES, INC.		1.802	1.812	1.751	1.715	1.806	1.832	1.820	1.725	1.699	1.793	1.828	1.743	2.513	1.804	1.762	1.741	1.978	1.804	1.735	1.766	1.748	1.756	1.958
ARTESIAN RESOURCES CORPORA		0.971	0.972	0.960	0.925	0.982	0.923	0.936	0.890	0.878	0.902	0.888	0.905	0.897	0.889	0.932	0.893	0.954	0.943	0.953	0.941	0.941	0.944	0.921
CALIFORNIA WATER SERVICE GR		1.501	1.554	1.494	1.500	1.461	1.449	1.393	1.288	1.267	1.352	1.369	1.360	1.366	1.324	1.410	1.393	1.468	1.448	1.470	1.565	1.505	1.607	1.524
MIDDLESEX WATER COMPANY		2.099	2.115	2.050	1.899	2.137	1.978	1.938	1.838	1.788	1.882	1.878	1.939	2.011	1.822	1.818	1.874	2.070	2.028	2.078	2.013	1.957	1.934	1.975
SJW GROUP		1.434	1.460	1.443	1.429	1.451	1.491	1.471	1.399	1.401	1.431	1.420	1.416	1.450	1.393	1.370	2.195	1.557	1.512	1.531	1.561	1.476	1.506	1.435
THE YORK WATER COMPANY		2.203	2.326	2.224	1.968	2.040	2.165	2.160	2.036	2.037	2.205	2.227	2.294	2.174	2.000	2.131	2.091	2.302	2.250	2.221	2.191	2.175	1.931	1.862

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMP		2.821	2.828	2.719	2.754	2.874	2.944	2.805	2.832	2.841	2.955	2.972	3.030	3.224	3.110	3.188	3.061	3.448	3.382	3.426	3.766	3.582	3.881	3.285
AMERICAN WATER WORKS COMP		2.217	2.217	2.154	2.094	2.256	2.198	2.234	2.196	2.136	2.143	2.191	1.989	2.096	2.012	1.987	2.062	2.187	2.030	2.041	2.067	2.075	2.153	2.000
ESSENTIAL UTILITIES, INC.		1.649	1.658	1.602	1.578	1.663	1.687	1.660	1.574	1.550	1.622	1.653	1.576	2.289	1.643	1.605	1.552	1.763	1.608	1.555	1.582	1.567	2.227	2.483
ARTESIAN RESOURCES CORPORA		1.606	1.608	1.588	1.542	1.636	1.539	1.589	1.511	1.490	1.542	1.517	1.547	1.528	1.514	1.587	1.529	1.633	1.615	1.651	1.629	1.630	1.648	1.608
CALIFORNIA WATER SERVICE GR		1.903	1.970	1.894	1.879	1.830	1.815	1.800	1.665	1.636	1.742	1.765	1.752	1.852	1.795	1.911	1.887	1.989	1.962	1.985	2.113	2.032	2.190	2.076
MIDDLESEX WATER COMPANY		2.681	2.701	2.618	2.364	2.660	2.462	2.366	2.244	2.183	2.287	2.282	2.356	2.463	2.232	2.226	2.249	2.484	2.433	2.773	2.686	2.611	2.607	2.662
SJW GROUP		1.376	1.401	1.384	1.374	1.395	1.433	1.411	1.342	1.344	1.379	1.369	1.365	1.398	1.343	1.321	2.144	1.521	1.477	1.482	1.511	1.429	1.459	1.390
THE YORK WATER COMPANY		2.815	2.971	2.842	2.496	2.587	2.745	2.847	2.685	2.686	2.912	2.941	3.030	2.875	2.645	2.817	2.777	3.057	2.988	2.986	2.945	2.923	2.610	2.518

5/20/2021

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Month

Company Name	Enterprise value to Net PPE	Month End 5/20/2021 0	Month End 4/30/2021 -1	Month End 3/31/2021 -2	Month End 2/28/2021 -3	Month End 1/31/2021 -4	Month End 12/31/2020 -5	Month End 11/30/2020 -6	Month End 10/31/2020 -7	Month End 9/30/2020 -8	Month End 8/31/2020 -9	Month End 7/31/2020 -10	Month End 6/30/2020 -11	Month End 5/31/2020 -12	Month End 4/30/2020 -13	Month End 3/31/2020 -14	Month End 2/29/2020 -15	Month End 1/31/2020 -16	Month End 12/31/2019 -17	Month End 11/30/2019 -18	Month End 10/31/2019 -19	Month End 9/30/2019 -20	Month End 8/31/2019 -21	Month End 7/31/2019 -22
AMERICAN STATES WATER COMP		1.000	1.002	0.964	0.957	0.999	1.023	0.976	0.985	0.988	1.017	1.023	1.042	1.076	1.039	1.065	1.049	1.182	1.159	1.164	1.280	1.217	1.281	1.085
AMERICAN WATER WORKS COMP		1.000	1.000	0.972	0.955	1.029	1.003	1.019	1.002	0.975	0.976	0.998	0.906	0.915	0.878	0.867	0.890	0.944	0.877	0.885	0.896	0.900	0.924	0.859
ESSENTIAL UTILITIES, INC.		1.000	1.006	0.972	0.952	1.003	1.017	1.010	0.958	0.943	0.995	1.014	0.967	1.394	1.001	0.978	0.966	1.098	1.001	0.963	0.980	0.970	0.975	1.086
ARTESIAN RESOURCES CORPORA		1.000	1.001	0.989	0.953	1.011	0.951	0.964	0.917	0.904	0.929	0.914	0.932	0.924	0.915	0.960	0.919	0.982	0.971	0.982	0.969	0.970	0.972	0.949
CALIFORNIA WATER SERVICE GR		1.000	1.035	0.995	0.999	0.973	0.965	0.928	0.858	0.844	0.900	0.912	0.906	0.910	0.882	0.939	0.928	0.978	0.964	0.979	1.043	1.002	1.071	1.015
MIDDLESEX WATER COMPANY		1.000	1.008	0.977	0.905	1.018	0.942	0.923	0.876	0.852	0.897	0.895	0.924	0.958	0.868	0.866	0.893	0.986	0.966	0.990	0.959	0.932	0.921	0.941
SJW GROUP		1.000	1.018	1.006	0.997	1.012	1.039	1.026	0.976	0.977	0.998	0.991	0.987	1.011	0.971	0.956	1.530	1.086	1.054	1.068	1.089	1.030	1.050	1.001
THE YORK WATER COMPANY		1.000	1.056	1.010	0.893	0.926	0.982	0.980	0.924	0.925	1.001	1.011	1.041	0.987	0.908	0.967	0.949	1.045	1.021	1.008	0.994	0.987	0.876	0.845

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMP		1.000	1.002	0.964	0.976	1.019	1.044	0.995	1.004	1.007	1.048	1.054	1.074	1.143	1.103	1.130	1.085	1.222	1.199	1.214	1.335	1.270	1.376	1.165
AMERICAN WATER WORKS COMP		1.000	1.000	0.972	0.944	1.018	0.991	1.008	0.990	0.963	0.966	0.988	0.897	0.945	0.907	0.896	0.930	0.986	0.916	0.920	0.932	0.936	0.971	0.902
ESSENTIAL UTILITIES, INC.		1.000	1.006	0.972	0.957	1.008	1.023	1.007	0.954	0.940	0.983	1.003	0.956	1.388	0.997	0.973	0.941	1.069	0.975	0.943	0.960	0.950	1.351	1.506
ARTESIAN RESOURCES CORPORA		1.000	1.001	0.989	0.960	1.019	0.958	0.990	0.941	0.928	0.960	0.945	0.963	0.951	0.943	0.988	0.952	1.017	1.006	1.028	1.014	1.015	1.026	1.001
CALIFORNIA WATER SERVICE GR		1.000	1.035	0.995	0.987	0.961	0.954	0.946	0.875	0.860	0.915	0.927	0.921	0.973	0.943	1.004	0.991	1.045	1.031	1.043	1.110	1.068	1.151	1.091
MIDDLESEX WATER COMPANY		1.000	1.008	0.977	0.882	0.992	0.918	0.883	0.837	0.814	0.853	0.851	0.879	0.919	0.833	0.830	0.839	0.927	0.908	1.034	1.002	0.974	0.972	0.993
SJW GROUP		1.000	1.018	1.006	0.999	1.014	1.041	1.025	0.975	0.976	1.002	0.995	0.992	1.016	0.976	0.960	1.558	1.105	1.073	1.077	1.098	1.039	1.060	1.010
THE YORK WATER COMPANY		1.000	1.056	1.010	0.887	0.919	0.975	1.012	0.954	0.954	1.035	1.045	1.077	1.021	0.940	1.001	0.987	1.086	1.062	1.061	1.046	1.039	0.927	0.895

5/20/2021	Month End 5/20/2021	Month End 4/30/2021	Month End 3/31/2021	Month End 2/28/2021	Month End 1/31/2021	Month End 12/31/2020	Month End 11/30/2020	Month End 10/31/2020	Month End 9/30/2020	Month End 8/31/2020	Month End 7/31/2020	Month End 6/30/2020	Month End 5/31/2020	Month End 4/30/2020	Month End 3/31/2020	Month End 2/29/2020	Month End 1/31/2020	Month End 12/31/2019	Month End 11/30/2019	Month End 10/31/2019	Month End 9/30/2019	Month End 8/31/2019	Month End 7/31/2019
Enterprise value to Net PPE	100%	101%	98%	95%	101%	99%	98%	94%	93%	99%	99%	95%	97%	91%	96%	94%	102%	99%	99%	99%	98%	97%	97%
Enterprise value to Inv Cap	100%	101%	98%	96%	101%	98%	100%	95%	95%	97%	99%	96%	99%	94%	98%	97%	106%	102%	104%	103%	103%	104%	101%

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Company Name	Month End 6/30/2019 -23 Enterprise value to Net PPE	Month End 5/31/2019 -24 Enterprise value to Net PPE	Month End 4/30/2019 -25 Enterprise value to Net PPE	Month End 3/31/2019 -26 Enterprise value to Net PPE	Month End 2/28/2019 -27 Enterprise value to Net PPE	Month End 1/31/2019 -28 Enterprise value to Net PPE	Month End 12/31/2018 -29 Enterprise value to Net PPE	Month End 11/30/2018 -30 Enterprise value to Net PPE	Month End 10/31/2018 -31 Enterprise value to Net PPE	Month End 9/30/2018 -32 Enterprise value to Net PPE	Month End 8/31/2018 -33 Enterprise value to Net PPE	Month End 7/31/2018 -34 Enterprise value to Net PPE	Month End 6/30/2018 -35 Enterprise value to Net PPE	Month End 5/31/2018 -36 Enterprise value to Net PPE	Month End 4/30/2018 -37 Enterprise value to Net PPE	Month End 3/31/2018 -38 Enterprise value to Net PPE	Month End 2/28/2018 -39 Enterprise value to Net PPE	Month End 1/31/2018 -40 Enterprise value to Net PPE	Month End 12/31/2017 -41 Enterprise value to Net PPE	Month End 11/30/2017 -42 Enterprise value to Net PPE	Month End 10/31/2017 -43 Enterprise value to Net PPE	Month End 9/30/2017 -44 Enterprise value to Net PPE	Month End 8/31/2017 -45 Enterprise value to Net PPE	Month End 7/31/2017 -46 Enterprise value to Net PPE	Month End 6/30/2017 -47 Enterprise value to Net PPE
AMERICAN STATES WATER COMF	2.391	2.392	2.321	2.324	2.379	2.263	2.244	2.288	2.117	2.115	2.128	2.112	2.024	2.021	2.000	1.919	1.958	2.005	2.088	2.128	2.004	1.863	1.894	1.944	1.879
AMERICAN WATER WORKS COMP	1.683	1.684	1.610	1.569	1.574	1.500	1.448	1.522	1.448	1.441	1.462	1.436	1.405	1.400	1.433	1.372	1.393	1.416	1.511	1.540	1.497	1.418	1.442	1.433	1.396
ESSENTIAL UTILITIES, INC.	1.937	1.904	1.863	1.538	1.572	1.505	1.479	1.535	1.453	1.593	1.626	1.606	1.549	1.550	1.555	1.519	1.558	1.609	1.710	1.707	1.621	1.536	1.574	1.556	1.553
ARTESIAN RESOURCES CORPORA	0.939	0.928	0.931	0.954	0.999	0.927	0.919	0.963	0.961	0.966	0.972	0.980	1.014	1.035	1.009	0.973	0.926	1.009	1.036	1.138	1.102	1.040	1.044	1.072	1.053
CALIFORNIA WATER SERVICE GR	1.465	1.470	1.495	1.550	1.525	1.468	1.427	1.420	1.328	1.349	1.339	1.338	1.265	1.324	1.289	1.228	1.284	1.351	1.463	1.510	1.420	1.322	1.332	1.369	1.294
MIDDLESEX WATER COMPANY	1.852	1.900	1.848	1.794	1.907	1.835	1.759	1.772	1.569	1.664	1.636	1.567	1.507	1.592	1.505	1.361	1.345	1.410	1.476	1.697	1.601	1.474	1.459	1.486	1.497
SJW GROUP	1.335	1.373	1.382	1.366	1.373	1.630	1.539	1.534	1.321	1.318	1.290	1.396	1.406	1.380	1.336	1.200	1.208	1.309	1.373	1.480	1.334	1.276	1.288	1.243	1.184
THE YORK WATER COMPANY	1.852	1.810	1.790	1.802	1.900	1.745	1.709	1.773	1.687	1.655	1.657	1.688	1.724	1.776	1.755	1.702	1.573	1.731	1.832	2.006	1.910	1.852	1.859	1.932	1.934

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	3.203	3.201	3.106	3.109	3.200	3.044	3.017	3.044	2.818	2.814	2.834	2.812	2.695	2.693	2.666	2.558	2.609	2.672	2.782	2.820	2.656	2.468	2.371	2.434	2.352
AMERICAN WATER WORKS COMP	2.002	2.024	1.934	1.885	1.883	1.794	1.732	1.811	1.722	1.714	1.790	1.758	1.720	1.735	1.776	1.700	1.681	1.710	1.824	1.846	1.794	1.699	1.732	1.721	1.677
ESSENTIAL UTILITIES, INC.	2.456	2.435	2.383	1.968	2.026	1.940	1.905	1.969	1.864	2.043	2.128	2.102	2.027	2.039	2.045	1.998	2.057	2.124	2.258	2.240	2.127	2.016	2.088	2.064	2.061
ARTESIAN RESOURCES CORPORA	1.639	1.626	1.631	1.671	1.757	1.630	1.615	1.691	1.688	1.696	1.696	1.711	1.770	1.824	1.778	1.714	1.613	1.757	1.805	1.961	1.899	1.792	1.794	1.842	1.809
CALIFORNIA WATER SERVICE GR	1.996	2.027	2.062	2.138	2.075	1.997	1.942	1.977	1.849	1.877	1.887	1.885	1.782	1.791	1.743	1.660	1.769	1.861	2.016	2.068	1.946	1.810	1.878	1.930	1.824
MIDDLESEX WATER COMPANY	2.497	2.596	2.525	2.451	2.612	2.514	2.409	2.450	2.169	2.300	2.305	2.208	2.123	2.224	2.103	1.903	1.882	1.974	2.066	2.395	2.260	2.081	2.054	2.093	2.108
SJW GROUP	1.293	1.320	1.329	1.313	1.883	2.236	2.111	2.123	1.828	1.824	1.806	1.956	1.969	1.918	1.857	1.668	1.714	1.857	1.948	2.116	1.907	1.825	1.825	1.761	1.678
THE YORK WATER COMPANY	2.503	2.441	2.414	2.431	2.598	2.387	2.337	2.413	2.296	2.252	2.272	2.315	2.364	2.417	2.388	2.316	2.162	2.380	2.518	2.771	2.638	2.557	2.551	2.652	2.655

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Company Name	Month End 6/30/2019 -23 Enterprise value to Net PPE	Month End 5/31/2019 -24 Enterprise value to Net PPE	Month End 4/30/2019 -25 Enterprise value to Net PPE	Month End 3/31/2019 -26 Enterprise value to Net PPE	Month End 2/28/2019 -27 Enterprise value to Net PPE	Month End 1/31/2019 -28 Enterprise value to Net PPE	Month End 12/31/2018 -29 Enterprise value to Net PPE	Month End 11/30/2018 -30 Enterprise value to Net PPE	Month End 10/31/2018 -31 Enterprise value to Net PPE	Month End 9/30/2018 -32 Enterprise value to Net PPE	Month End 8/31/2018 -33 Enterprise value to Net PPE	Month End 7/31/2018 -34 Enterprise value to Net PPE	Month End 6/30/2018 -35 Enterprise value to Net PPE	Month End 5/31/2018 -36 Enterprise value to Net PPE	Month End 4/30/2018 -37 Enterprise value to Net PPE	Month End 3/31/2018 -38 Enterprise value to Net PPE	Month End 2/28/2018 -39 Enterprise value to Net PPE	Month End 1/31/2018 -40 Enterprise value to Net PPE	Month End 12/31/2017 -41 Enterprise value to Net PPE	Month End 11/30/2017 -42 Enterprise value to Net PPE	Month End 10/31/2017 -43 Enterprise value to Net PPE	Month End 9/30/2017 -44 Enterprise value to Net PPE	Month End 8/31/2017 -45 Enterprise value to Net PPE	Month End 7/31/2017 -46 Enterprise value to Net PPE	Month End 6/30/2017 -47 Enterprise value to Net PPE
AMERICAN STATES WATER COMF	1.057	1.058	1.026	1.028	1.052	1.001	0.992	1.012	0.936	0.935	0.941	0.934	0.895	0.894	0.885	0.849	0.866	0.887	0.923	0.941	0.886	0.824	0.837	0.860	0.831
AMERICAN WATER WORKS COMP	0.859	0.860	0.822	0.801	0.804	0.766	0.739	0.777	0.739	0.736	0.747	0.733	0.717	0.715	0.732	0.701	0.711	0.723	0.772	0.787	0.764	0.724	0.736	0.732	0.713
ESSENTIAL UTILITIES, INC.	1.075	1.057	1.034	0.854	0.873	0.835	0.821	0.852	0.806	0.884	0.902	0.891	0.859	0.860	0.863	0.843	0.865	0.893	0.949	0.947	0.899	0.852	0.873	0.863	0.862
ARTESIAN RESOURCES CORPORA	0.967	0.956	0.959	0.982	1.029	0.955	0.946	0.992	0.990	0.995	1.001	1.009	1.045	1.066	1.039	1.002	0.954	1.039	1.067	1.172	1.135	1.071	1.075	1.104	1.084
CALIFORNIA WATER SERVICE GR	0.976	0.979	0.996	1.032	1.016	0.978	0.951	0.946	0.885	0.899	0.892	0.891	0.843	0.882	0.858	0.818	0.855	0.900	0.975	1.006	0.946	0.880	0.888	0.912	0.862
MIDDLESEX WATER COMPANY	0.883	0.905	0.880	0.855	0.909	0.874	0.838	0.844	0.747	0.793	0.779	0.747	0.718	0.758	0.717	0.649	0.641	0.672	0.703	0.808	0.763	0.702	0.695	0.708	0.713
SJW GROUP	0.931	0.958	0.964	0.953	0.957	1.137	1.073	1.069	0.921	0.919	0.899	0.974	0.980	0.962	0.932	0.837	0.842	0.913	0.957	1.032	0.930	0.890	0.898	0.867	0.826
THE YORK WATER COMPANY	0.840	0.822	0.812	0.818	0.862	0.792	0.776	0.805	0.766	0.751	0.752	0.766	0.782	0.806	0.797	0.772	0.714	0.786	0.831	0.911	0.867	0.840	0.844	0.877	0.878

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	1.136	1.135	1.101	1.102	1.134	1.079	1.070	1.079	0.999	0.998	1.005	0.997	0.955	0.955	0.945	0.907	0.925	0.947	0.986	1.000	0.942	0.875	0.840	0.863	0.834
AMERICAN WATER WORKS COMP	0.903	0.913	0.872	0.850	0.849	0.809	0.781	0.817	0.777	0.773	0.807	0.793	0.776	0.782	0.801	0.767	0.758	0.771	0.823	0.832	0.809	0.766	0.781	0.776	0.756
ESSENTIAL UTILITIES, INC.	1.490	1.477	1.445	1.193	1.229	1.176	1.156	1.194	1.130	1.239	1.290	1.275	1.229	1.237	1.241	1.212	1.247	1.288	1.370	1.359	1.290	1.222	1.266	1.252	1.250
ARTESIAN RESOURCES CORPORA	1.020	1.012	1.016	1.040	1.094	1.015	1.006	1.053	1.051	1.056	1.056	1.065	1.102	1.136	1.107	1.067	1.004	1.094	1.124	1.221	1.182	1.116	1.117	1.147	1.126
CALIFORNIA WATER SERVICE GR	1.049	1.065	1.083	1.123	1.090	1.049	1.020	1.039	0.971	0.986	0.991	0.991	0.937	0.941	0.916	0.872	0.929	0.978	1.059	1.087	1.022	0.951	0.987	1.014	0.958
MIDDLESEX WATER COMPANY	0.931	0.968	0.942	0.914	0.974	0.938	0.898	0.914	0.809	0.858	0.860	0.824	0.792	0.830	0.785	0.710	0.702	0.736	0.771	0.893	0.843	0.776	0.766	0.781	0.786
SJW GROUP	0.940	0.959	0.966	0.954	1.368	1.625	1.534	1.543	1.329	1.325	1.312	1.421	1.431	1.394	1.350	1.212	1.246	1.349	1.416	1.538	1.386	1.326	1.326	1.280	1.219
THE YORK WATER COMPANY	0.889	0.867	0.858	0.864	0.923	0.848	0.830	0.857	0.816	0.800	0.807	0.823	0.840	0.859	0.849	0.823	0.768	0.846	0.895	0.984	0.937	0.908	0.906	0.942	0.943

5/20/2021	Month End 6/30/2019	Month End 5/31/2019	Month End 4/30/2019	Month End 3/31/2019	Month End 2/28/2019	Month End 1/31/2019	Month End 12/31/2018	Month End 11/30/2018	Month End 10/31/2018	Month End 9/30/2018	Month End 8/31/2018	Month End 7/31/2018	Month End 6/30/2018	Month End 5/31/2018	Month End 4/30/2018	Month End 3/31/2018	Month End 2/28/2018	Month End 1/31/2018	Month End 12/31/2017	Month End 11/30/2017	Month End 10/31/2017	Month End 9/30/2017	Month End 8/31/2017	Month End 7/31/2017	Month End 6/30/2017
Enterprise value to Net PPE	95%	96%	96%	90%	93%	91%	89%	90%	85%	89%	90%	89%	85%	87%	86%	83%	85%	89%	94%	94%	89%	85%	86%	87%	85%
Enterprise value to Inv Cap	98%	99%	99%	100%	109%	103%	101%	105%	99%	99%	100%	99%	95%	95%	93%	89%	93%	96%	102%	104%	98%	93%	95%	98%	95%

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Company Name	Month End 5/31/2017 -48 Enterprise value to Net PPE	Month End 4/30/2017 -49 Enterprise value to Net PPE	Month End 3/31/2017 -50 Enterprise value to Net PPE	Month End 2/28/2017 -51 Enterprise value to Net PPE	Month End 1/31/2017 -52 Enterprise value to Net PPE	Month End 12/31/2016 -53 Enterprise value to Net PPE	Month End 11/30/2016 -54 Enterprise value to Net PPE	Month End 10/31/2016 -55 Enterprise value to Net PPE	Month End 9/30/2016 -56 Enterprise value to Net PPE	Month End 8/31/2016 -57 Enterprise value to Net PPE	Month End 7/31/2016 -58 Enterprise value to Net PPE	Month End 6/30/2016 -59 Enterprise value to Net PPE	Month End 5/31/2016 -60 Enterprise value to Net PPE	Month End 4/30/2016 -61 Enterprise value to Net PPE	Month End 3/31/2016 -62 Enterprise value to Net PPE	Month End 2/29/2016 -63 Enterprise value to Net PPE	Month End 1/31/2016 -64 Enterprise value to Net PPE	Month End 12/31/2015 -65 Enterprise value to Net PPE	Month End 11/30/2015 -66 Enterprise value to Net PPE	Month End 10/31/2015 -67 Enterprise value to Net PPE	Month End 9/30/2015 -68 Enterprise value to Net PPE	Month End 8/31/2015 -69 Enterprise value to Net PPE	Month End 7/31/2015 -70 Enterprise value to Net PPE	Month End 6/30/2015 -71 Enterprise value to Net PPE	Month End 5/31/2015 -72 Enterprise value to Net PPE
AMERICAN STATES WATER COMF	1.805	1.760	1.752	1.800	1.756	1.813	1.744	1.651	1.653	1.659	1.778	1.799	1.667	1.751	1.671	1.824	1.904	1.782	1.806	1.757	1.781	1.661	1.681	1.637	1.668
AMERICAN WATER WORKS COMP	1.411	1.419	1.396	1.443	1.367	1.354	1.378	1.397	1.407	1.418	1.516	1.540	1.425	1.397	1.348	1.327	1.318	1.250	1.246	1.237	1.206	1.187	1.173	1.128	1.193
ESSENTIAL UTILITIES, INC.	1.549	1.553	1.519	1.535	1.479	1.465	1.478	1.509	1.501	1.521	1.670	1.708	1.605	1.579	1.585	1.564	1.588	1.522	1.533	1.501	1.418	1.402	1.392	1.354	1.437
ARTESIAN RESOURCES CORPORA	1.009	1.070	0.943	0.957	0.919	0.941	0.942	0.879	0.885	0.877	1.017	1.016	0.898	0.882	0.901	0.916	0.957	0.894	0.876	0.839	0.834	0.798	0.784	0.774	0.784
CALIFORNIA WATER SERVICE GR	1.267	1.294	1.271	1.316	1.239	1.223	1.263	1.168	1.202	1.189	1.279	1.289	1.164	1.129	1.079	1.038	1.028	0.976	0.970	0.965	0.968	0.942	0.969	0.993	1.042
MIDDLESEX WATER COMPANY	1.384	1.467	1.430	1.481	1.486	1.648	1.610	1.454	1.426	1.396	1.632	1.700	1.503	1.503	1.313	1.254	1.287	1.205	1.185	1.187	1.122	1.098	1.096	1.090	1.072
SJW GROUP	1.195	1.209	1.211	1.221	1.230	1.332	1.329	1.276	1.147	1.146	1.139	1.078	1.031	1.029	1.068	1.073	0.989	0.933	0.966	0.991	0.973	0.948	0.969	0.977	0.992
THE YORK WATER COMPANY	1.883	2.079	1.963	2.043	2.034	2.149	2.076	1.850	1.757	1.702	1.859	1.888	1.645	1.782	1.825	1.703	1.649	1.564	1.527	1.490	1.382	1.408	1.417	1.392	1.476

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	2.312	2.254	2.243	2.303	2.246	2.319	2.259	2.138	2.141	2.171	2.327	2.354	2.188	2.298	2.192	2.341	2.443	2.287	2.302	2.240	2.270	2.050	2.074	2.021	2.045
AMERICAN WATER WORKS COMP	1.706	1.716	1.688	1.733	1.642	1.626	1.639	1.662	1.674	1.689	1.805	1.834	1.711	1.677	1.618	1.566	1.556	1.476	1.462	1.452	1.416	1.408	1.392	1.338	1.430
ESSENTIAL UTILITIES, INC.	2.061	2.067	2.023	2.039	1.964	1.946	1.963	2.005	1.994	2.029	2.229	2.279	2.151	2.116	2.124	2.067	2.099	2.011	2.016	1.974	1.865	1.854	1.841	1.791	1.921
ARTESIAN RESOURCES CORPORA	1.734	1.838	1.620	1.657	1.592	1.630	1.603	1.496	1.507	1.468	1.703	1.700	1.482	1.455	1.487	1.506	1.574	1.470	1.424	1.364	1.355	1.301	1.278	1.262	1.245
CALIFORNIA WATER SERVICE GR	1.780	1.818	1.787	1.882	1.772	1.750	1.770	1.636	1.684	1.680	1.806	1.822	1.652	1.603	1.532	1.439	1.424	1.352	1.353	1.346	1.351	1.310	1.347	1.381	1.454
MIDDLESEX WATER COMPANY	1.953	2.069	2.017	2.060	2.067	2.292	2.252	2.034	1.996	1.975	2.309	2.405	2.104	2.104	1.838	1.668	1.711	1.603	1.576	1.578	1.493	1.458	1.455	1.447	1.410
SJW GROUP	1.623	1.642	1.645	1.686	1.700	1.841	1.836	1.764	1.585	1.606	1.597	1.512	1.397	1.394	1.447	1.486	1.370	1.292	1.323	1.359	1.333	1.299	1.328	1.340	1.324
THE YORK WATER COMPANY	2.545	2.810	2.654	2.701	2.688	2.841	2.748	2.449	2.325	2.260	2.468	2.507	2.198	2.382	2.439	2.254	2.182	2.070	2.026	1.976	1.833	1.857	1.869	1.837	1.951

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Company Name	Month End 5/31/2017 -48 Enterprise value to Net PPE	Month End 4/30/2017 -49 Enterprise value to Net PPE	Month End 3/31/2017 -50 Enterprise value to Net PPE	Month End 2/28/2017 -51 Enterprise value to Net PPE	Month End 1/31/2017 -52 Enterprise value to Net PPE	Month End 12/31/2016 -53 Enterprise value to Net PPE	Month End 11/30/2016 -54 Enterprise value to Net PPE	Month End 10/31/2016 -55 Enterprise value to Net PPE	Month End 9/30/2016 -56 Enterprise value to Net PPE	Month End 8/31/2016 -57 Enterprise value to Net PPE	Month End 7/31/2016 -58 Enterprise value to Net PPE	Month End 6/30/2016 -59 Enterprise value to Net PPE	Month End 5/31/2016 -60 Enterprise value to Net PPE	Month End 4/30/2016 -61 Enterprise value to Net PPE	Month End 3/31/2016 -62 Enterprise value to Net PPE	Month End 2/29/2016 -63 Enterprise value to Net PPE	Month End 1/31/2016 -64 Enterprise value to Net PPE	Month End 12/31/2015 -65 Enterprise value to Net PPE	Month End 11/30/2015 -66 Enterprise value to Net PPE	Month End 10/31/2015 -67 Enterprise value to Net PPE	Month End 9/30/2015 -68 Enterprise value to Net PPE	Month End 8/31/2015 -69 Enterprise value to Net PPE	Month End 7/31/2015 -70 Enterprise value to Net PPE	Month End 6/30/2015 -71 Enterprise value to Net PPE	Month End 5/31/2015 -72 Enterprise value to Net PPE
AMERICAN STATES WATER COMF	0.798	0.778	0.775	0.796	0.776	0.802	0.771	0.730	0.731	0.734	0.786	0.796	0.737	0.774	0.739	0.807	0.842	0.788	0.799	0.777	0.787	0.735	0.743	0.724	0.738
AMERICAN WATER WORKS COMP	0.721	0.725	0.713	0.737	0.698	0.691	0.704	0.713	0.719	0.724	0.774	0.786	0.728	0.713	0.688	0.677	0.673	0.638	0.636	0.632	0.616	0.606	0.599	0.576	0.609
ESSENTIAL UTILITIES, INC.	0.859	0.862	0.843	0.852	0.821	0.813	0.820	0.838	0.833	0.844	0.927	0.948	0.891	0.876	0.880	0.868	0.882	0.845	0.851	0.833	0.787	0.778	0.772	0.751	0.798
ARTESIAN RESOURCES CORPORA	1.039	1.101	0.971	0.985	0.947	0.969	0.970	0.905	0.912	0.903	1.047	1.046	0.925	0.909	0.928	0.943	0.985	0.921	0.902	0.864	0.858	0.822	0.807	0.797	0.807
CALIFORNIA WATER SERVICE GR	0.844	0.862	0.847	0.877	0.825	0.815	0.841	0.778	0.801	0.792	0.852	0.859	0.775	0.752	0.719	0.692	0.685	0.650	0.646	0.643	0.645	0.627	0.645	0.662	0.694
MIDDLESEX WATER COMPANY	0.660	0.699	0.681	0.706	0.708	0.785	0.767	0.693	0.679	0.665	0.777	0.810	0.716	0.716	0.625	0.598	0.613	0.574	0.565	0.565	0.535	0.523	0.522	0.519	0.511
SJW GROUP	0.834	0.843	0.845	0.851	0.858	0.929	0.927	0.890	0.800	0.799	0.794	0.752	0.719	0.718	0.745	0.748	0.690	0.651	0.673	0.691	0.678	0.661	0.676	0.681	0.692
THE YORK WATER COMPANY	0.855	0.944	0.891	0.927	0.923	0.976	0.942	0.840	0.797	0.772	0.844	0.857	0.747	0.809	0.828	0.773	0.748	0.710	0.693	0.676	0.627	0.639	0.643	0.632	0.670

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	0.819	0.799	0.795	0.816	0.796	0.822	0.801	0.758	0.759	0.770	0.825	0.834	0.776	0.815	0.777	0.830	0.866	0.811	0.816	0.794	0.805	0.727	0.735	0.716	0.725
AMERICAN WATER WORKS COMP	0.769	0.774	0.761	0.782	0.741	0.733	0.739	0.749	0.755	0.762	0.814	0.827	0.772	0.756	0.730	0.706	0.702	0.666	0.660	0.655	0.638	0.635	0.628	0.604	0.645
ESSENTIAL UTILITIES, INC.	1.250	1.254	1.227	1.236	1.191	1.180	1.190	1.216	1.209	1.231	1.352	1.382	1.304	1.283	1.288	1.254	1.273	1.220	1.223	1.197	1.131	1.125	1.117	1.086	1.165
ARTESIAN RESOURCES CORPORA	1.080	1.145	1.009	1.032	0.991	1.015	0.998	0.931	0.938	0.914	1.060	1.059	0.923	0.906	0.926	0.938	0.980	0.915	0.887	0.849	0.844	0.810	0.795	0.786	0.775
CALIFORNIA WATER SERVICE GR	0.935	0.955	0.939	0.989	0.931	0.919	0.930	0.860	0.885	0.883	0.949	0.957	0.868	0.842	0.805	0.756	0.748	0.710	0.711	0.707	0.710	0.688	0.708	0.726	0.764
MIDDLESEX WATER COMPANY	0.728	0.772	0.752	0.769	0.771	0.855	0.840	0.759	0.744	0.737	0.861	0.897	0.785	0.785	0.686	0.622	0.638	0.598	0.588	0.589	0.557	0.544	0.543	0.540	0.526
SJW GROUP	1.180	1.193	1.195	1.225	1.235	1.338	1.334	1.282	1.152	1.167	1.160	1.098	1.015	1.013	1.051	1.080	0.995	0.939	0.962	0.987	0.969	0.944	0.965	0.973	0.962
THE YORK WATER COMPANY	0.904	0.998	0.943	0.960	0.955	1.009	0.976	0.870	0.826	0.803	0.877	0.891	0.781	0.846	0.867	0.801	0.775	0.735	0.720	0.702	0.651	0.660	0.664	0.653	0.693

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	Month End 5/31/2017	Month End 4/30/2017	Month End 3/31/2017	Month End 2/28/2017	Month End 1/31/2017	Month End 12/31/2016	Month End 11/30/2016	Month End 10/31/2016	Month End 9/30/2016	Month End 8/31/2016	Month End 7/31/2016	Month End 6/30/2016	Month End 5/31/2016	Month End 4/30/2016	Month End 3/31/2016	Month End 2/29/2016	Month End 1/31/2016	Month End 12/31/2015	Month End 11/30/2015	Month End 10/31/2015	Month End 9/30/2015	Month End 8/31/2015	Month End 7/31/2015	Month End 6/30/2015	Month End 5/31/2015
Enterprise value to Net PPE	84%	85%	84%	85%	82%	81%	83%	81%	80%	78%	82%	83%	74%	76%	74%	76%	72%	68%	68%	68%	66%	65%	66%	67%	69%
Enterprise value to Inv Cap	92%	98%	94%	97%	94%	96%	95%	86%	86%	84%	91%	93%	83%	84%	84%	82%	82%	77%	77%	75%	76%	71%	72%	72%	74%

NetPlant Advances CIAC DefTax ITC

		2020 Net Property, Plant & Equipment	Advances for construction	Contributions in aid of construction	Deferred income taxes, net	Deferred investment tax credits	2020 Known "Cost Free" Capital	2020 Percentage of Known "Cost Free" Capital
		(Millions of $)						
	Comparable Group							
1	American States Water Co	$1,512.043	$63.354	$138.691	$124.581	$1.224	$327.850	22%
2	American Water Works Co Inc	$19,710.000	$270.000	$1,393.000	$2,113.000	$0.000	$3,776.000	19%
3	Artesian Resources -CL A	$559.561	$4.578	$160.258	$50.313	$0.473	$215.622	39%
4	California Water Service Gp	$2,650.558	$195.625	$268.050	$276.032	$0.000	$739.707	28%
5	Essential Utilities, Inc.	$9,512.877	$99.014	$573.774	$1,258.098	$0.000	$1,930.886	20%
6	Middlesex Water Co	$796.598	$23.404	$111.990	$61.297	$0.000	$196.691	25%
7	SJW Corp	$2,334.912	$125.027	$296.105	$191.415	$0.000	$612.547	26%
8	York Water Co	$344.365	$10.326	$41.307	$43.538	$0.000	$95.171	28%
	Median							25%

CONSOLIDATED BALANCE SHEETS - USD ($)	Dec. 31, 2020	Dec. 31, 2019
$ in Thousands		
Regulated utility plant, at cost		
Water	$1,784,402	$1,700,442
Electric	112,507	108,425
Total	1,896,909	1,808,867
Non-regulated utility property, at cost	33,315	30,554
Total utility plant, at cost	1,930,224	1,839,421
Less — accumulated depreciation	-568,326	-543,263
Utility plant before construction work in progress	1,361,898	1,296,158
Construction work in progress	150,145	119,547
Net utility plant	1,512,043	1,415,705
Other Property and Investments		
Goodwill	1,116	1,116
Other property and investments	35,318	30,293
Total other property and investments	36,434	31,409
Current Assets		
Cash and cash equivalents	36,737	1,334
Accounts receivable — customers, less allowance for doubtful accounts	29,162	20,907
Unbilled revenue — receivable (Note 2)	25,836	20,482
Receivable from U.S. government, less allowance for doubtful accounts (Note 2)	25,182	22,613
Other accounts receivable, less allowance for doubtful accounts	3,960	3,096
Income taxes receivable	103	5,685
Materials and supplies	8,619	6,429
Regulatory assets — current	13,088	20,930
Prepayments and other current assets	5,555	5,413
Contract assets (Note 2)	8,873	15,567
Total current assets	157,115	122,456
Regulatory and Other Assets		
Unbilled revenue, receivable from U.S government	9,945	8,621
Receivable from U.S. government (Note 2)	49,488	42,206
Contract assets (Note 2)	1,384	64
Operating lease right-of-use assets	11,146	13,168
Regulatory Assets, Noncurrent	3,451	0
Other	10,597	7,702
Total other assets	86,011	71,761
Total Assets	1,791,603	1,641,331
Capitalization		
Common shareholders' equity	641,673	601,530
Long-term debt	440,348	280,996
Total capitalization	1,082,021	882,526
Current Liabilities		
Notes payable to banks	0	5,000
Long-term debt -current	358	344
Accounts payable	63,788	55,616
Income taxes payable	6,783	95
Accrued other taxes	11,902	11,110
Accrued employee expenses	15,122	14,255
Accrued interest	4,832	3,050
Unrealized loss on purchased power contracts	1,537	3,171
Contract liabilities (Note 2)	1,800	11,167
Operating lease liabilities	2,013	1,849
Other	10,437	10,341
Total current liabilities	118,572	115,998
Other Credits		
Notes payable to banks	134,200	200,000
Advances for Construction	63,374	63,989
Contributions in aid of construction — net	140,332	134,706
Deferred income taxes	131,172	125,304
Regulatory liabilities	0	23,380
Unamortized investment tax credits	1,224	1,295
Accrued pension and other post-retirement benefits	95,639	68,469
Operating lease liabilities	9,636	11,739
Other	15,433	13,925
Total other credits	591,010	642,807
Commitments and Contingencies		
Liabilities and Equity, Total	1,791,603	1,641,331
GSWC		
Regulated utility plant, at cost		
Water	1,784,402	1,700,442
Electric	0	108,425
Total utility plant, at cost	1,784,402	1,808,867
Less — accumulated depreciation	-502,283	-531,801
Utility plant before construction work in progress	1,282,119	1,277,066
Construction work in progress	118,370	117,676
Net utility plant	1,400,489	1,394,742
Other Property and Investments		
Other property and investments	33,240	28,212
Total other property and investments	33,240	28,212
Current Assets		
Cash and cash equivalents	35,578	401
Accounts receivable — customers, less allowance for doubtful accounts	26,920	20,907
Unbilled revenue — receivable (Note 2)	19,330	18,636
Other accounts receivable, less allowance for doubtful accounts	3,255	1,857
Intercompany receivable	1,107	0
Income taxes receivable	0	7,727
Materials and supplies	3,659	4,920
Regulatory assets — current	11,325	20,930
Prepayments and other current assets	4,114	4,497
Total current assets	105,288	79,875
Regulatory and Other Assets		
Operating lease right-of-use assets	11,103	12,745
Regulatory Assets, Noncurrent	1,048	0
Other	9,614	6,880
Total other assets	21,765	19,625
Total Assets	1,560,782	1,522,454
Capitalization		
Common shareholders' equity	583,298	551,188
Long-term debt	440,348	280,996
Total capitalization	1,023,646	832,184
Current Liabilities		
Long-term debt -current	358	344
Intercompany payable to Parent	0	158,845
Accounts payable	45,613	45,756
Income taxes payable	4,612	0
Accrued other taxes	10,382	10,640
Accrued employee expenses	12,351	12,386
Accrued interest	4,545	2,736
Unrealized loss on purchased power contracts	0	3,171
Operating lease liabilities	1,956	1,612
Other	9,403	9,745
Total current liabilities	89,220	245,235
Other Credits		
Advances for Construction	63,354	63,989
Contributions in aid of construction — net	138,691	134,706
Deferred income taxes	124,581	127,806
Regulatory liabilities	0	23,380
Unamortized investment tax credits	1,224	1,295
Accrued pension and other post-retirement benefits	95,570	68,469
Operating lease liabilities	9,636	11,588
Other	14,860	13,802
Total other credits	447,916	445,035
Liabilities and Equity, Total		
NetPlant	1,512,043	1,415,705
Advances	63,354	63,989
CIAC	138,691	134,706
DefTax	124,581	127,806
ITC	1,224	1,295

olidated Balance Sheets - USD ($)	Dec. 31, 2020	Dec. 31, 201
Millions		
ETS		
perty, plant and equipment	$25,614	$23,9
umulated depreciation	-5,904	-5,
perty, plant and equipment, net	19,710	18,
rent assets:		
n and cash equivalents	547	
tricted funds	29	
ounts receivable, net of allowance for uncollectible accounts of $60 and $41, respectively	321	
illed revenues	206	
terials and supplies	47	
ts held for sale	629	
er	127	
l current assets	1,906	1,
ulatory and other long-term assets:		
ulatory assets	1,127	1,
rating lease right-of-use assets	95	
dwill	1,504	1,
tretirement benefit assets	173	
ngible assets	55	
er	196	
l regulatory and other long-term assets	3,150	3,
l assets	24,766	22,
italization:		
mon stock ($0.01 par value; 500,000,000 shares authorized; 186,466,707 and 185,903,727 shares issued, respectively)	2	
l-in-capital	6,747	6,
ained earnings (accumulated deficit)	102	-
umulated other comprehensive loss	-49	
sury stock, at cost (5,168,215 and 5,090,855 shares, respectively)	-348	-
l common shareholders' equity	6,454	6,
g-term debt	9,329	8,
eemable preferred stock at redemption value	4	
l long-term debt	9,333	8,
l capitalization	15,787	14,
rent liabilities:		
rt-term debt	1,282	
rent portion of long-term debt	329	
ounts payable	189	
rued liabilities	591	
rued taxes	50	
rued interest	88	
ilities related to assets held for sale	137	
er	215	
l current liabilities	2,881	2,
ulatory and other long-term liabilities:		
ances for construction	270	
erred income taxes and investment tax credits	2,113	1,
ulatory liabilities	1,770	1,
rating lease liabilities	81	
rued pension expense	388	
er	83	
l regulatory and other long-term liabilities	4,705	4,
tributions in aid of construction	1,393	1,
mitments and contingencies		
l capitalization and liabilities	$24,766	$22,6

NetPlant	19,710	18,
Advances	270	
CIAC	1,393	1,
DefTax	2,113	1,
ITC	0	

CONSOLIDATED BALANCE SHEETS - USD ($)	Dec. 31, 2020	Dec. 31, 2019
$ in Thousands		
ASSETS		
Utility plant, at original cost (less accumulated depreciation - 2020 - $147,469,; 2019 - $136,588)	$559,561	$530,721
Current assets		
Cash and cash equivalents	28	596
Accounts receivable (less allowance for doubtful accounts 2020 - $862; 2019-$264)	10,162	6,913
Income tax receivable	629	19
Unbilled operating revenues	1,166	1,211
Materials and supplies	1,535	1,264
Prepaid property taxes	1,891	1,954
Prepaid expenses and other	2,208	2,250
Total current assets	17,619	14,207
Other assets		
Non-utility property (less accumulated depreciation - 2020- $865; 2019 - $790)	3,796	3,812
Other deferred assets	5,309	4,257
Operating lease right of use assets	460	480
Total other assets	9,565	8,549
Regulatory assets, net	6,473	6,891
Total assets	593,218	560,368
Stockholders' equity		
Common stock	9,357	9,292
Preferred stock	0	0
Additional paid-in capital	103,463	101,811
Retained earnings	56,606	49,165
Total stockholders' equity	169,426	160,268
Long-term debt, net of current portion	142,333	144,156
Total stockholders' equity and long-term debt	311,759	304,424
Current liabilities		
Lines of credit	26,813	7,500
Current portion of long-term debt	1,757	1,706
Accounts payable	6,341	8,176
Accrued expenses	3,414	3,113
Overdraft payable	105	15
Accrued interest	930	830
Income taxes payable	237	343
Customer and other deposits	2,060	1,970
OtherLiabilitiesCurrent	2,067	1,946
Total current liabilities	43,724	25,599
Commitments and contingencies (Note 11)		
Deferred credits and other liabilities		
Net advances for construction	4,578	5,421
OperatingLeaseLiabilityNoncurrent	432	450
Regulatory liabilities	21,681	22,246
Deferred investment tax credits	473	490
Deferred income taxes	50,313	52,259
Total deferred credits and other liabilities	77,477	80,866
Net contributions in aid of construction	160,258	149,479
Total Liabilities and Stockholders' Equity		

NetPlant	$559,561	$530,721
Advances	4,578	5,421
CIAC	160,258	149,479
DefTax	50,313	52,259
ITC	473	490

solidated Balance Sheets - USD ($)	Dec. 31, 2020	Dec. 31, 2
Thousands		
ty plant:		
l	$45,672	$45,(
reciable plant and equipment	3,645,770	3,235,
struction work in progress	171,414	245,
ngible assets	27,567	24,
l utility plant	3,890,423	3,550,
accumulated depreciation and amortization	-1,239,865	-1,144,
utility plant	2,650,558	2,406,
ent assets:		
and cash equivalents	44,555	42,
ivables:		
omers, net	44,025	32,
ulatory balancing accounts	96,241	38,
r, net	20,331	14,
illed revenue, net	34,069	34,
erials and supplies at weighted average cost	8,831	7,
s, prepaid expenses, and other assets	17,964	14,
l current assets	266,016	184,
r assets:		
ulatory assets	325,376	433,
dwill	31,842	2,
r	120,456	84,
l other assets	477,674	520,
AL ASSETS	3,394,248	3,111,
talization:		
mon stock, $0.01 par value; 68,000 shares authorized, 50,334 and 48,532 outstanding in 2020 and 2019, respectively	503	
tional paid-in capital	448,632	362,
ined earnings	472,209	417,
l common stockholders' equity	921,344	779,
-term debt, net	781,100	786,
l capitalization	1,702,444	1,566,
ent liabilities:		
ent maturities of long-term debt, net	5,127	21,
t-term borrowings	370,000	175,
unts payable	131,725	108,
ulatory balancing accounts	34,636	4,
ued other taxes	4,477	4,
ued interest	6,178	5,
r accrued liabilities	36,563	38,
l current liabilities	588,706	358,
rred income taxes	276,032	222,
ulatory liabilities	180,718	211,
sion and postretirement benefits other than pensions	115,581	258,
ances for construction	195,625	191,
ributions in aid of construction	268,050	241,
r long-term liabilities	67,092	60,
mitments and contingencies		
AL CAPITALIZATION AND LIABILITIES	$3,394,248	$3,111,3

NetPlant	2,650,558	2,406,
Advances	195,625	191,
CIAC	268,050	241,
DefTax	276,032	222,
ITC	0	

:ed Balance Sheets - USD ($)	Dec. 31,
ısands	
, plant and equipment, at cost	$11,6
umulated depreciation	2,
erty, plant and equipment	9,
ıssets:	
cash equivalents	
receivable, net	
revenues	
/ - materials and supplies	
/ - gas stored	
ents and other current assets	
ry assets	
ld for sale	
rent assets	
ry assets	1,
charges and other assets, net	
nt in joint venture	
stricted for construction activity	
	2,
g lease right-of-use assets	
e assets	
ets	13,
Utilities stockholders' equity:	
stock at $0.50 par value, authorized 600,000,000 shares, issued 248,571,355 and 223,871,284 as of December 31, 2020 and December 31, 2019	
excess of par value	3,
earnings	1,
stock, at cost, 3,180,887 and 3,112,565 shares as of December 31, 2020 and December 31, 2019	
ckholders' equity	4,
n debt, excluding current portion	5,
t issuance costs	
n debt, excluding current portion, net of debt issuance costs	5,
nents and contingencies (See Note 9)	
iabilities:	
portion of long-term debt	
yable	
payable	
rdraft	
interest	
taxes	
ry liabilities	
crued liabilities	
rent liabilities	
credits and other liabilities:	
income taxes and investment tax credits	1,
rs' advances for construction	
ry liabilities	
irement obligations	
g lease liabilities	
and other postretirement benefit liabilities	
erred credits and other liabilities	2,
tions in aid of construction	
ilities and equity	$13,7

NetPlant	9,
Advances	
CIAC	
DefTax	1,
ITC	

CONSOLIDATED BALANCE SHEETS - USD ($)	Dec. 31, 2020	Dec. 31, 2019
$ in Thousands		
UTILITY PLANT:		
Water Production	$168,080	$160,870
Transmission and Distribution	648,763	556,517
General	85,056	83,043
Construction Work in Progress	80,055	75,520
TOTAL	981,954	875,950
Less Accumulated Depreciation	185,356	170,220
UTILITY PLANT - NET	796,598	705,730
CURRENT ASSETS:		
Cash and Cash Equivalents	4,491	2,230
Accounts Receivable, net	14,569	11,908
Unbilled Revenues	7,065	7,183
Materials and Supplies (at average cost)	5,112	5,445
Prepayments	2,886	2,367
TOTAL CURRENT ASSETS	34,123	29,133
Operating Lease Right of Use Asset	5,209	5,944
Preliminary Survey and Investigation Charges	5,192	2,054
Regulatory Assets	118,144	110,479
Restricted Cash	5,913	44,269
Non-utility Assets - Net	11,207	10,370
Other	84	1,899
TOTAL OTHER ASSETS	145,749	175,015
TOTAL ASSETS	976,470	909,878
CAPITALIZATION:		
Common Stock, No Par Value	217,451	215,125
Retained Earnings	128,757	108,667
TOTAL COMMON EQUITY	346,208	323,792
Preferred Stock	2,084	2,084
Long-term Debt	273,244	230,777
TOTAL CAPITALIZATION	621,536	556,653
CURRENT LIABILITIES:		
Current Portion of Long-term Debt	7,255	7,178
Notes Payable	2,000	20,000
Accounts Payable	30,443	23,306
Accrued Taxes	10,138	7,635
Accrued Interest	2,137	2,031
Unearned Revenues and Advanced Service Fees	1,255	1,211
Other	3,620	3,620
TOTAL CURRENT LIABILITIES	56,848	64,981
COMMITMENTS AND CONTINGENT LIABILITIES (Note 4)		
OTHER LIABILITIES:		
Customer Advances for Construction	23,404	23,905
Lease Obligations	5,042	5,732
Accumulated Deferred Income Taxes	61,297	54,408
Employee Benefit Plans	34,426	34,671
Regulatory Liabilities	60,792	69,152
Other	1,135	2,546
TOTAL OTHER LIABILITIES	186,096	190,414
CONTRIBUTIONS IN AID OF CONSTRUCTION	111,990	97,830
TOTAL CAPITALIZATION AND LIABILITIES	$976,470	$909,878

NetPlant	796,598	705,730
Advances	23,404	23,905
CIAC	111,990	97,830
DefTax	61,297	54,408
ITC	0	0

ated Balance Sheets - USD ($)	Dec. 31, 2
sands	
ant:	
	$
ble plant and equipment	3,1
tion in progress	1
e assets	
plant and equipment, gross	3,3
mulated depreciation and amortization	1,0
lities, property, plant and equipment, net	2,3
te investments	
mulated depreciation and amortization	
te investments, net	
ssets:	
d cash	
receivable:	
rs, net of allowances for uncollectible accounts of $3,891 and $1,512 in 2020 and 2019, respectively	
ax	
unbilled utility revenue	
egulatory assets, net	
xpenses	
rrent assets	
rent assets	1
sets:	
latory assets, less current portion	1
nts	
	6
er assets	8
ets	3,3
ders' equity:	
stock, $0.001 par value; authorized 70,000,000 shares in 2020 and 2019; issued and outstanding 28,556,605 shares in 2020 and 28,456,508 shares in 201	
al paid-in capital	5
earnings	4
ated other comprehensive (loss) income	
ckholders' equity	9
n debt, less current portion	1,2
ation, long-term debt and equity	2,2
iabilities:	
redit	1
portion of long-term debt	
groundwater extraction charges, purchased water and power	
payable	
interest	
payroll	
rrent liabilities	
rent liabilities	3
income taxes	1
s for construction	1
tions in aid of construction	2
ement benefit plans	1
ncurrent liabilities	
nents and contingencies	
ity and liabilities	$3,3

NetPlant	2,3
Advances	1
CIAC	2
DefTax	1
ITC	

Sheets - USD ($)	Dec. 31, 2
usands	
PLANT, at original cost	$43
quisition adjustments	
ated depreciation	-
y plant	3
HYSICAL PROPERTY, net of accumulated depreciation of $458 in 2020 and $435 in 2019	
T ASSETS:	
l cash equivalents	
d cash	
s receivable, net of reserves of $655 in 2020 and $305 in 2019	
revenues	
able income taxes	
s and supplies inventories, at cost	
expenses	
rent assets	
ONG-TERM ASSETS:	
pension cost	
eivable	
l regulatory assets	
sets	
ner long-term assets	
ets	4
N STOCKHOLDERS' EQUITY:	
n stock, no par value, authorized 46,500,000 shares, issued and outstanding 13,060,817 shares in 2020 and 13,014,898 shares in 2019	
l earnings	
nmon stockholders' equity	1
ED STOCK, authorized 500,000 shares, no shares issued	
RM DEBT, excluding current portion	1
MENTS	
T LIABILITIES:	
portion of long-term debt	
s payable	
s payable	
compensation and benefits	
interest	
l regulatory liabilities	
crued expenses	
rent liabilities	
D CREDITS:	
rs' advances for construction	
l income taxes	
l employee benefits	
l regulatory liabilities	
ferred credits	
erred credits	
tions in aid of construction	
ckholders' Equity and Liabilities	

NetPlant	3
Advances	
CIAC	
DefTax	
ITC	

Bulletin No. 193

1912 to January 1, 2021

The Handy-Whitman Index® of Public Utility Construction Costs™

Trends of Construction Costs

COMPILED & PUBLISHED BY
Whitman, Requardt & Associates, LLP
Engineers, Architects and Planners
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South Central Region	E-4	E-4-1
Plateau Region	E-5	E-5-1
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COST TRENDS OF GAS UTILITY CONSTRUCTION

Cost Trend Tables - 1912 to January 1, 2021		
North Atlantic Region	G-1	G-1-1
South Atlantic Region	G-2	G-2-1
North Central Region	G-3	G-3-1
South Central Region	G-4	G-4-1
Plateau Region	G-5	G-5-1
Pacific Region	G-6	G-6-1

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Cost Trend Tables - 1912 to January 1, 2021		
North Atlantic Region	W-1	W-1-1
South Atlantic Region	W-2	W-2-1
North Central Region	W-3	W-3-1
South Central Region	W-4	W-4-1
Plateau Region	W-5	W-5-1
Pacific Region	W-6	W-6-1

TRENDS OF PUBLIC UTILITY CONSTRUCTION COSTS

GEOGRAPHIC REGIONS



FOREWORD

Tradition of Quality

The Handy-Whitman Index of Public Utility Construction Costs has been published continuously since 1924. Formerly the Handy Index, Bulletin Nos. 1 through 15 were developed by William W. Handy of Baltimore who had wide valuation experience in public utilities. *He believed that valuation studies should not be confined to rate cases but should be kept alive to the benefit of the utility industry.* He began publishing index numbers for electric and gas construction cost trends. Carrying on with the *tradition of quality*, after Mr. Handy's death, we continued publication for his estate beginning with Bulletin 16. Then, January 1, 1950, Whitman, Requardt and Associates, LLP purchased rights to the publication and have since been the sole publishers.

The name Handy-Whitman Index was adopted for Bulletin No. 53 and succeeding issues to combine the names of Mr. Handy and Ezra B. Whitman, a well-known valuation engineer. In 1957 an index of water utility construction costs was added. Mr. Whitman was a consultant on the publication of the Index until his death in 1963.

Whitman, Requardt and Associates, LLP

Ezra B. Whitman, a well-known valuation engineer was one of the founders of our firm. Major Whitman, as he was known from his World War I service, had already made a name for himself. Prior to the founding of the firm in 1915, Major Whitman had been President and Chief Engineer of the Water Board of the City of Baltimore. He designed the first rapid sand filtration plant serving a major city while he was the Baltimore Water Engineer. He was also president of the American Society of Civil Engineers and of the American Institute of Consulting Engineers and a chairman of the Public Service Commission of Maryland.

The Handy-Whitman Index is prepared especially for electric, gas and water utilities and is the only known publication of its kind available to the public. The list of subscribers is international and includes operating utilities, regulatory bodies, valuation engineers, equipment industries, insurance companies and reference libraries.

Tradition of Quality Continued

Since 1915, Whitman, Requardt and Associates, LLP, has been an independent consulting engineering firm organized to serve government, industry and private enterprise.

The firm has steadily expanded its engineering capabilities, providing complete services for civil, sanitary, structural, mechanical and electrical engineering and architectural projects from job inception through construction management. Construction cost data from utility projects of all types are available from design and valuation assignments. The staff is composed of specialists in these and related disciplines who bring a diverse professional and academic expertise to each assignment. A full-time staff is maintained specifically for preparing the Handy-Whitman Index.

Methods of Preparation of Indexes

An index number is a percentage ratio between the cost of an item at any stated time and its cost at a base period, or:

$$\text{Index Number} = \frac{\text{cost at stated time}}{\text{cost at base period}} \times 100$$

Index numbers have been prepared for many items, including wage rates, cost-of-living, material and equipment costs, and financial transactions. In the Handy-Whitman Index, index numbers have been developed for Building Construction, Electric Utility Construction, Gas Utility Construction and Water Utility Construction. Prices of basic materials such as cement, sand, gravel, cast iron pipe, wire, etc., are obtained from publications such as Engineering News-Record and checked against prices actually being paid for such materials. Labor cost trends are computed from labor rates obtained from sources such as the Construction Labor Research Council. Prices and cost trends of equipment are obtained from nationally recognized manufacturers, and operating utilities.

Handy-Whitman Index numbers are developed from wage rates and prices prevailing on January 1 and July 1 each year. The index numbers are generally based on 1973 = 100, although those items of recent origin are based on a later year.

The proportions of basic materials, labor, equipment and other cost components used in the Handy-Whitman Index are based on analyses developed during valuation and design assignments and on data furnished by utilities and industrial sources willing to assist with the Index. These data are reviewed continuously, and weightings and components are revised as required. This review assures that the indexes published reflect current construction practice.

Geographic Regions

To reflect differing cost trends throughout the 48 contiguous states, the index has been divided into six geographical regions of similar characteristics. They are shown on the accompanying map.

Use of Index Numbers

Handy-Whitman Index numbers have been widely used to trend earlier valuations and original cost records to estimate reproduction cost at prices prevailing at a certain date. The use of indexes for an appropriate property item or group will provide a reliable guide to changes in cost. Cost trends are given for all the important items of property. The electric and gas groups are arranged by the Federal Energy Regulatory Commission Uniform System of Accounts. The water property accounts are arranged to follow the classification of the National Association of Regulatory Utility Commissioners and the American Water Works Association.

The Handy-Whitman Index will furnish a yardstick for the fluctuations in value of property which will be satisfactory for many purposes. In rate cases, when a more exact determination of value is desired, however, the Index must be used carefully. Average prices and cost trends are used to develop the Index, and any direct application of cost trends without checking with actual local experience may not be accepted without controversy. When local experience is compared with the index and the correlation between the two trends is determined, the result is satisfactory. Costs trended by such a method are used to assist in establishing a rate base.

Indexes in these bulletins are used to trend earlier valuations or original cost records for insurance purposes.

The Handy-Whitman Index has a general application in valuations of all types of property. The building construction cost trends may be used wherever similar items of property are to be compared. Many of the other trends may be used for related items in other industries because of their similarity.

State-of-the-art changes often affect costs independently of inflation. New regulatory and environmental requirements, changes in work rules and improved design standards, for instance, increase construction costs even though the price of wages, materials and equipment may be static. Trended construction costs will not reflect such changes. However, trended costs are a reasonably accurate measure of the cost of reproducing actual plant.

Although every effort is made to maintain accuracy, Whitman, Requardt and Associates, LLP disclaim any responsibility for the use of these indexes, because local conditions may vary.

No guarantee or warranty of any kind is made in the sale of the Handy-Whitman Index. Published numbers are occasionally subject to change based upon receipt of new or different information. These numbers will be bolded.

Further inquiries on electric, gas and water indexes should be addressed to Whitman, Requardt and Associates, LLP.

Total Electric Plant and Function

Three indexes are provided for total plant. The first is for all steam generation and the other two for weighted combinations of steam and nuclear, and steam and hydro generation. Indexes are also provided for each function.

Indexes are not maintained for plant accounts 323,324,325,341,345 and 346. We believe that indexes for comparable accounts in other functions are sufficiently accurate for these accounts.

The indexes for total nuclear production and total other production incorporate comparable indexes from the steam production function for the accounts not listed.

Value of Index Numbers

We believe that present-day reproduction cost of any property can be calculated more accurately using index numbers than by repricing a complete inventory.

Trending the controlling items of property in any utility by the index method saves time and effort in arriving at a valuation. Analyzing and determining cost trends for all of the great numbers of articles of plant that represent only a very small proportion of the value of the utility is not necessary. They may be assumed to follow in general the trend of the controlling items, and the fluctuations in value above or below the trends of the controlling items will tend to offset each other and have a very slight effect on the total value.

Comments on Bulletin No. 193

During the twelve-month period ending January 1, 2021, the average index of all geographical regions for Total Gas Plant increased 0.9%, and the comparable index for Electric Plant-All Steam Generation increased 4.5%.

May 2021
Whitman, Requardt and Associates, LLP

Series Id: CUUR0000SA0,CUUS0000SA0
Not Seasonally Adjusted
Series Title: All items in U.S. city average, all urban consumers, not seasonally adjusted
Area: U.S. city average
Item: All items
Base Period: 1982-84=100

Download:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
1990	127.4	128	128.7	128.9	129.2	129.9	130.4	131.6	132.7	133.5	133.8	133.8	128.7	132.6
1991	134.6	134.8	135	135.2	135.6	136	136.2	136.6	137.2	137.4	137.8	137.9	135.2	137.2
1992	138.1	138.6	139.3	139.5	139.7	140.2	140.5	140.9	141.3	141.8	142	141.9	139.2	141.4
1993	142.6	143.1	143.6	144	144.2	144.4	144.4	144.8	145.1	145.7	145.8	145.8	143.7	145.3
1994	146.2	146.7	147.2	147.4	147.5	148	148.4	149	149.4	149.5	149.7	149.7	147.2	149.3
1995	150.3	150.9	151.4	151.9	152.2	152.5	152.5	152.9	153.2	153.7	153.6	153.5	151.5	153.2
1996	154.4	154.9	155.7	156.3	156.6	156.7	157	157.3	157.8	158.3	158.6	158.6	155.8	157.9
1997	159.1	159.6	160	160.2	160.1	160.3	160.5	160.8	161.2	161.6	161.5	161.3	159.9	161.2
1998	161.6	161.9	162.2	162.5	162.8	163	163.2	163.4	163.6	164	164	163.9	162.3	163.7
1999	164.3	164.5	165	166.2	166.2	166.2	166.7	167.1	167.9	168.2	168.3	168.3	165.4	167.8
2000	168.8	169.8	171.2	171.3	171.5	172.4	172.8	172.8	173.7	174	174.1	174	170.8	173.6
2001	175.1	175.8	176.2	176.9	177.7	178	177.5	177.5	178.3	177.7	177.4	176.7	176.6	177.5
2002	177.1	177.8	178.8	179.8	179.8	179.9	180.1	180.7	181	181.3	181.3	180.9	178.9	180.9
2003	181.7	183.1	184.2	183.8	183.5	183.7	183.9	184.6	185.2	185	184.5	184.3	183.3	184.6
2004	185.2	186.2	187.4	188	189.1	189.7	189.4	189.5	189.9	190.9	191	190.3	187.6	190.2
2005	190.7	191.8	193.3	194.6	194.4	194.5	195.4	196.4	198.8	199.2	197.6	196.8	193.2	197.4
2006	198.3	198.7	199.8	201.5	202.5	202.9	203.5	203.9	202.9	201.8	201.5	201.8	200.6	202.6
2007	202.416	203.499	205.352	206.686	207.949	208.352	208.299	207.917	208.49	208.936	210.177	210.036	205.709	208.976
2008	211.08	211.693	213.528	214.823	216.632	218.815	219.964	219.086	218.783	216.573	212.425	210.228	214.429	216.177
2009	211.143	212.193	212.709	213.24	213.856	215.693	215.351	215.834	215.969	216.177	216.33	215.949	213.139	215.935
2010	216.687	216.741	217.631	218.009	218.178	217.965	218.011	218.312	218.439	218.711	218.803	219.179	217.535	218.576
2011	220.223	221.309	223.467	224.906	225.964	225.722	225.922	226.545	226.889	226.421	226.23	225.672	223.598	226.28
2012	226.665	227.663	229.392	230.085	229.815	229.478	229.104	230.379	231.407	231.317	230.221	229.601	228.85	230.338
2013	230.28	232.166	232.773	232.531	232.945	233.504	233.596	233.877	234.149	233.546	233.069	233.049	232.366	233.548
2014	233.916	234.781	236.293	237.072	237.9	238.343	238.25	237.852	238.031	237.433	236.151	234.812	236.384	237.088
2015	233.707	234.722	236.119	236.599	237.805	238.638	238.654	238.316	237.945	237.838	237.336	236.525	236.265	237.769
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432	238.778	241.237
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524	244.076	246.163
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233	250.089	252.125
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974	254.412	256.903
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.28	260.388	260.229	260.474	257.557	260.065
2021	261.582	263.014	264.877	267.054										

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #
	2	**8**	**9**	**16**	**23**	**24**	**34**	**38**	**39**	**40**
1912	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**6**	**0**
1913	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**6**	**0**
1914	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**5**	**0**
1915	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**6**	**0**
1916	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**6**	**0**
1917	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**9**	**0**
1918	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**10**	**0**
1919	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**11**	**0**
1920	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**12**	**0**
1921	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**13**	**0**
1922	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**12**	**0**
1923	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**12**	**0**
1924	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**13**	**0**
1925	**0**	**18**	**0**	**20**	**0**	**0**	**21**	**0**	**13**	**0**
1926	**0**	**19**	**0**	**0**	**0**	**0**	**21**	**0**	**13**	**0**
1927	**0**	**18**	**0**	**0**	**0**	**0**	**21**	**0**	**13**	**0**
1928	**0**	**18**	**0**	**0**	**0**	**0**	**20**	**0**	**13**	**0**
1929	**0**	**18**	**0**	**0**	**0**	**0**	**20**	**0**	**14**	**0**
1930	**0**	**17**	**0**	**0**	**0**	**0**	**20**	**0**	**14**	**0**
1931	**0**	**16**	**0**	**0**	**0**	**0**	**20**	**0**	**14**	**0**
1932	**0**	**15**	**0**	**0**	**0**	**0**	**18**	**0**	**13**	**0**
1933	**0**	**15**	**0**	**0**	**0**	**0**	**18**	**0**	**11**	**0**
1934	**0**	**16**	**0**	**0**	**0**	**0**	**19**	**0**	**12**	**0**
1935	**0**	**16**	**0**	**0**	**0**	**0**	**19**	**0**	**13**	**0**
1936	**0**	**16**	**0**	**0**	**0**	**0**	**20**	**0**	**13**	**0**
1937	**0**	**18**	**0**	**0**	**0**	**0**	**21**	**0**	**14**	**0**

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	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #
	2	**8**	**9**	**16**	**23**	**24**	**34**	**38**	**39**	**40**
1938	**0**	**18**	**0**	**0**	**0**	**0**	**22**	**0**	**14**	**0**
1939	**0**	**18**	**0**	**20**	**0**	**0**	**22**	**0**	**14**	**0**
1940	**0**	**20**	**0**	**0**	**0**	**0**	**24**	**0**	**14**	**0**
1941	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**
1942	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**
1943	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**
1944	**0**	**21**	**0**	**0**	**0**	**0**	**25**	**0**	**17**	**0**
1945	**0**	**22**	**0**	**0**	**0**	**0**	**26**	**0**	**17**	**0**
1946	**0**	**24**	**0**	**0**	**0**	**0**	**29**	**0**	**19**	**0**
1947	**0**	**28**	**0**	**32**	**0**	**0**	**35**	**0**	**22**	**0**
1948	**0**	**32**	**0**	**35**	**29**	**0**	**41**	**0**	**25**	**0**
1949	**0**	**35**	**0**	**36**	**0**	**0**	**42**	**0**	**27**	**52**
1950	**0**	**36**	**0**	**38**	**0**	**0**	**43**	**0**	**28**	**59**
1951	**0**	**38**	**0**	**40**	**0**	**0**	**45**	**0**	**29**	**61**
1952	**0**	**38**	**0**	**41**	**0**	**0**	**47**	**0**	**31**	**61**
1953	**0**	**39**	**0**	**42**	**0**	**0**	**48**	**0**	**33**	**65**
1954	**0**	**41**	**0**	**0**	**0**	**0**	**48**	**0**	**0**	**67**
1955	**0**	**43**	**0**	**0**	**0**	**0**	**53**	**0**	**36**	**70**
1956	**0**	**46**	**0**	**0**	**0**	**0**	**57**	**0**	**0**	**77**
1957	**0**	**49**	**0**	**0**	**0**	**0**	**60**	**0**	**41**	**78**
1958	**0**	**50**	**0**	**0**	**0**	**0**	**63**	**0**	**44**	**78**
1959	**0**	**52**	**74**	**54**	**36**	**0**	**65**	**na**	**46**	**78**
1960	**0**	**53**	**74**	**55**	**35**	**0**	**68**	**na**	**48**	**78**
1961	**0**	**53**	**71**	**56**	**35**	**0**	**69**	**na**	**50**	**78**
1962	**0**	**54**	**71**	**58**	**35**	**0**	**71**	**na**	**51**	**84**
1963	**0**	**55**	**71**	**59**	**41**	**0**	**72**	**na**	**53**	**87**
1964	**0**	**56**	**73**	**60**	**44**	**0**	**73**	**na**	**55**	**87**
1965	**0**	**57**	**74**	**62**	**45**	**38**	**74**	**na**	**58**	**93**
1966	**0**	**56**	**78**	**64**	**46**	**41**	**75**	**na**	**60**	**101**
1967	**64**	**61**	**81**	**67**	**47**	**44**	**76**	**na**	**63**	**101**

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	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #
	2	**8**	**9**	**16**	**23**	**24**	**34**	**38**	**39**	**40**
1968	**0**	**64**	**81**	**69**	**49**	**0**	**77**	**na**	**66**	**101**
1969	**0**	**69**	**84**	**73**	**53**	**0**	**80**	**na**	**72**	**106**
1970	**0**	**75**	**89**	**79**	**75**	**0**	**84**	**na**	**79**	**108**
1971	**0**	**84**	**93**	**89**	**82**	**0**	**94**	**na**	**89**	**108**
1972	**0**	**92**	**96**	**96**	**85**	**0**	**98**	**na**	**96**	**106**
1973	**0**	**100**	**100**	**100**	**100**	**0**	**100**	**na**	**100**	**100**
1974	**0**	**117**	**122**	**118**	**140**	**0**	**110**	**25**	**115**	**93**
1975	**0**	**127**	**155**	**134**	**159**	**0**	**146**	**100**	**123**	**93**
1976	**0**	**130**	**174**	**144**	**171**	**0**	**154**	**104**	**130**	**98**
1977	**0**	**137**	**184**	**152**	**172**	**0**	**162**	**108**	**139**	**101**
1978	**0**	**148**	**192**	**162**	**173**	**0**	**173**	**113**	**145**	**105**
1979	**0**	**163**	**205**	**175**	**178**	**0**	**185**	**122**	**160**	**108**
1980	**0**	**181**	**222**	**191**	**191**	**0**	**202**	**132**	**175**	**122**
1981	**196**	**191**	**245**	**208**	**208**	**0**	**219**	**138**	**184**	**127**
1982	**197**	**198**	**260**	**227**	**210**	**244**	**231**	**137**	**198**	**128**
1983	**206**	**206**	**271**	**242**	**182**	**197**	**239**	**151**	**207**	**141**
1984	**217**	**218**	**277**	**251**	**184**	**200**	**244**	**149**	**215**	**148**
1985	**227**	**225**	**282**	**262**	**181**	**198**	**254**	**151**	**221**	**135**
1986	**234**	**233**	**284**	**269**	**184**	**207**	**255**	**150**	**226**	**135**
1987	**238**	**239**	**299**	**276**	**196**	**0**	**263**	**160**	**230**	**137**
1988	**248**	**251**	**311**	**286**	**220**	**0**	**280**	**197**	**245**	**140**
1989	**255**	**265**	**330**	**301**	**216**	**0**	**295**	**217**	**258**	**150**
1990	**258**	**271**	**349**	**313**	**229**	**0**	**301**	**211**	**262**	**159**
1991	**262**	**274**	**355**	**322**	**253**	**0**	**307**	**200**	**272**	**162**
1992	**270**	**281**	**368**	**332**	**261**	**0**	**311**	**183**	**283**	**196**
1993	**282**	**294**	**386**	**342**	**248**	**0**	**321**	**193**	**292**	**195**

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #
	2	**8**	**9**	**16**	**23**	**24**	**34**	**38**	**39**	**40**
1994	**295**	**308**	**428**	**348**	**246**	**0**	**327**	**191**	**300**	**175**
1995	**302**	**316**	**442**	**357**	**250**	**0**	**332**	**204**	**307**	**200**
1996	**309**	**321**	**450**	**367**	**251**	**268**	**339**	**211**	**321**	**207**
1997	**317**	**331**	**473**	**380**	**255**	**273**	**347**	**216**	**323**	**197**
1998	**318**	**337**	**489**	**391**	**268**	**283**	**355**	**216**	**330**	**197**
1999	**318**	**343**	**505**	**401**	**268**	**288**	**361**	**219**	**334**	**198**
2000	**326**	**362**	**530**	**413**	**270**	**0**	**377**	**231**	**348**	**205**
2001	**336**	**378**	**527**	**428**	**0**	**0**	**391**	**0**	**354**	**206**
2002	**344**	**389**	**529**	**443**	**0**	**0**	**404**	**0**	**360**	**207**
2003	**350**	**394**	**543**	**452**	**0**	**0**	**407**	**0**	**368**	**207**
2004	**276**	**421**	**572**	**466**	**308**	**0**	**432**	**0**	**388**	**207**
2005	**0**	**448**	**612**	**486**	**0**	**0**	**469**	**0**	**410**	**214**
2006	**0**	**466**	**624**	**504**	**0**	**0**	**499**	**0**	**454**	**248**
2007	**0**	**496**	**634**	**537**	**0**	**0**	**530**	**0**	**485**	**289**
2008	**465**	**538**	**663**	**586**	**676**	**0**	**588**	**0**	**514**	**373**
2009	**469**	**544**	**691**	**619**	**722**	**0**	**614**	**0**	**537**	**373**
2010	**0**	**560**	**704**	**637**	**759**	**0**	**624**	**0**	**555**	**376**
2011	**0**	**584**	**752**	**654**	**777**	**0**	**648**	**0**	**576**	**379**
2012	**503**	**604**	**788**	**680**	**798**	**1078**	**687**	**0**	**598**	**379**
2013	**0**	**614**	**836**	**699**	**763**	**0**	**701**	**0**	**602**	**381**
2014	**0**	**631**	**896**	**725**	**735**	**1131**	**731**	**0**	**608**	**386**
2015	**0**	**647**	**945**	**741**	**742**	**0**	**740**	**0**	**618**	**402**
2016	**0**	**661**	**1017**	**761**	**769**	**0**	**755**	**0**	**624**	**403**
2017	**0**	**675**	**1117**	**785**	**788**	**0**	**777**	**0**	**650**	**419**
2018	**0**	**704**	**1210**	**813**	**818**	**0**	**803**	**0**	**668**	**436**
2019	**578**	**716**	**1332**	**847**	**833**	**0**	**830**	**405**	**688**	**447**
2020	**589**	**735**	**1430**	**893**	**836**	**0**	**858**	**431**	**705**	**466**
2021	**605**	**762**	**1436**	**922**	**836**	**1244**	**883**	**471**	**712**	**485**
2021	**605**	**762**	**1436**	**922**	**836**	**1244**	**883**	**471**	**712**	**485**

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Handy-Whitman	Series Id: PCU3341--3341-- Series Title: PPI industry group data for Computer & peripheral equipment mfg, not seasonally adjusted	Series Id: PCU336110336110 Series Title: PPI industry data for Automobile, light truck and utility vehicle mfg, not seasonally adjusted	Series Id: PCU333120333120 Series Title: PPI industry data for Construction machinery mfg, not seasonally adjusted
Line #	Industry: Computer & peripheral equipment mfg	Industry: Automobile, light truck and utility vehicle mfg	Industry: Construction machinery mfg
42	Product: Computer & peripheral equipment mfg	Product: Automobile, light truck and utility vehicle mfg	Product: Construction machinery mfg
	Base Date: 200612	Base Date: 198206	Base Date: 198012
1912	**0**		
1913	**0**		
1914	**0**		
1915	**0**		
1916	**0**		
1917	**0**		
1918	**0**		
1919	**0**		
1920	**0**		
1921	**0**		
1922	**0**		
1923	**0**		
1924	**0**		
1925	**0**		
1926	**0**		
1927	**0**		
1928	**0**		
1929	**0**		
1930	**0**		
1931	**0**		
1932	**0**		
1933	**0**		
1934	**0**		
1935	**0**		
1936	**0**		
1937	**0**		

Handy-Whitman Line #	Series Id: PCU3341--3341-- Series Title: PPI industry group data for Computer & peripheral equipment mfg, not seasonally adjusted Industry: Computer & peripheral equipment mfg Product: Computer & peripheral equipment mfg Base Date: 200612	Series Id: PCU336110336110 Series Title: PPI industry data for Automobile, light truck and utility vehicle mfg, not seasonally adjusted Industry: Automobile, light truck and utility vehicle mfg Product: Automobile, light truck and utility vehicle mfg Base Date: 198206	Series Id: PCU333120333120 Series Title: PPI industry data for Construction machinery mfg, not seasonally adjusted Industry: Construction machinery mfg Product: Construction machinery mfg Base Date: 198012
42			
1938	**0**		
1939	**0**		
1940	**0**		
1941	**0**		
1942	**0**		
1943	**0**		
1944	**0**		
1945	**0**		
1946	**0**		
1947	**0**		
1948	**0**		
1949	**35**		
1950	**37**		
1951	**41**		
1952	**41**		
1953	**43**		
1954	**44**		
1955	**44**		
1956	**48**		
1957	**50**		
1958	**51**		
1959	**53**		
1960	**54**		
1961	**55**		
1962	**56**		
1963	**57**		
1964	**58**		
1965	**58**		
1966	**61**		
1967	**64**		

Handy-Whitman	Series Id: PCU3341--3341--		Series Id: PCU336110336110		Series Id: PCU333120333120	
	Series Title: PPI industry group data for Computer & peripheral equipment mfg, not seasonally adjusted		Series Title: PPI industry data for Automobile, light truck and utility vehicle mfg, not seasonally adjusted		Series Title: PPI industry data for Construction machinery mfg, not seasonally adjusted	
Line #	Industry: Computer & peripheral equipment mfg		Industry: Automobile, light truck and utility vehicle mfg		Industry: Construction machinery mfg	
42	Product: Computer & peripheral equipment mfg		Product: Automobile, light truck and utility vehicle mfg		Product: Construction machinery mfg	
	Base Date: 200612		Base Date: 198206		Base Date: 198012	
1968	**68**					
1969	**72**					
1970	**80**					
1971	**90**					
1972	**96**					
1973	**100**					
1974	**123**					
1975	**143**		**1975**	62.900		
1976	**157**		**1976**	64.025	**1976**	67.800
1977	**167**		**1977**	68.192	**1977**	70.867
1978	**182**		**1978**	72.892	**1978**	77.317
1979	**194**		**1979**	78.667	**1979**	84.833
1980	**207**		**1980**	85.983	**1980**	95.700
1981	**222**		**1981**	94.533	**1981**	106.333
1982	**245**		**1982**	99.567	**1982**	112.133
1983	**264**	*276.983*	**1983**	102.108	**1983**	114.383
1984	**270**	*276.983*	**1984**	104.625	**1984**	116.750
1985	**285**	*276.983*	**1985**	107.208	**1985**	119.450
1986	**296**	*276.983*	**1986**	111.008	**1986**	120.792
1987	**307**	*276.983*	**1987**	112.967	**1987**	122.642
1988	**320**	*276.983*	**1988**	114.117	**1988**	125.767
1989	**343**	*276.983*	**1989**	117.358	**1989**	132.408
1990	**363**	*276.983*	**1990**	119.850	**1990**	137.642
1991	**372**	*276.983*	**1991**	125.292	**1991**	141.983
1992	**348**	*276.983*	**1992**	129.108	**1992**	146.950
1993	**385**	*276.983*	**1993**	133.167	**1993**	151.250

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Handy-Whitman	Series Id: PCU3341--3341--		Series Id: PCU336110336110		Series Id: PCU333120333120	
	Series Title: PPI industry group data for Computer & peripheral equipment mfg, not seasonally adjusted		Series Title: PPI industry data for Automobile, light truck and utility vehicle mfg, not seasonally adjusted		Series Title: PPI industry data for Construction machinery mfg, not seasonally adjusted	
Line #	Industry: Computer & peripheral equipment mfg		Industry: Automobile, light truck and utility vehicle mfg		Industry: Construction machinery mfg	
42	Product: Computer & peripheral equipment mfg		Product: Automobile, light truck and utility vehicle mfg		Product: Construction machinery mfg	
	Base Date: 200612		Base Date: 198206		Base Date: 198012	
1994	**391**	*276.983*	**1994**	137.950	**1994**	153.767
1995	**398**	276.983	**1995**	139.100	**1995**	157.250
1996	**418**	249.050	**1996**	140.433	**1996**	161.583
1997	**475**	219.583	**1997**	138.700	**1997**	164.392
1998	**493**	191.717	**1998**	136.842	**1998**	167.775
1999	**508**	172.783	**1999**	137.642	**1999**	170.833
2000	**526**	162.158	**2000**	138.767	**2000**	172.708
2001	**551**	153.075	**2001**	137.542	**2001**	173.517
2002	**565**	139.533	**2002**	134.892	**2002**	175.942
2003	**570**	123.950	**2003**	135.083	**2003**	178.358
2004	**585**	115.350	**2004**	136.475	**2004**	183.933
2005	**601**	107.775	**2005**	135.067	**2005**	192.367
2006	**643**	102.067	**2006**	130.817	**2006**	201.058
2007	**674**	94.450	**2007**	131.117	**2007**	206.817
2008	**706**	86.425	**2008**	132.892	**2008**	213.375
2009	**734**	81.092	**2009**	136.742	**2009**	221.125
2010	**728**	76.475	**2010**	136.783	**2010**	220.475
2011	**737**	73.408	**2011**	137.683	**2011**	227.800
2012	**762**	70.658	**2012**	141.250	**2012**	235.408
2013	**787**	67.642	**2013**	142.733	**2013**	239.167
2014	**846**	66.392	**2014**	145.333	**2014**	242.375
2015	**927**	63.208	**2015**	148.883	**2015**	245.258
2016	**974**	59.858	**2016**	150.108	**2016**	247.083
2017	**989**	58.775	**2017**	152.067	**2017**	248.408
2018	**1027**	58.483	**2018**	153.250	**2018**	250.850
2019	**1069**	56.308	**2019**	153.592	**2019**	262.108
2020	**1123**	54.950	**2020**	153.108	**2020**	266.758
2021	**1184**	54.900	**2021**	155.500	**2021**	271.300
2021	**1184**	54.900		155.500		271.300

EXHIBIT 20
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U.S. States a

State	1790	1800	1810	1820	1830	1840	1850
Alabama	-	1,250	9,046	127,901	309,527	590,756	771,623
Alaska	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	-
Arkansas	-	-	1,062	14,273	30,388	97,574	209,897
California	-	-	-	-	-	-	92,597
Colorado	-	-	-	-	-	-	-
Connecticut	237,946	251,002	261,942	275,248	297,675	309,978	370,792
Delaware	59,096	64,273	72,674	72,749	76,748	78,085	91,532
District of Columbia	-	8,144	15,471	23,336	30,261	33,745	51,687
Florida	-	-	-	-	34,730	54,477	87,445
Georgia	82,548	162,686	252,433	340,989	516,823	691,392	906,185
Hawaii	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-
Illinois	-	-	12,282	55,211	157,445	476,183	851,470
Indiana	-	5,641	24,520	147,718	343,031	685,866	988,416
Iowa	-	-	-	-	-	43,112	192,914
Kansas	-	-	-	-	-	-	-
Kentucky	73,677	220,955	406,511	564,317	687,917	779,828	982,405
Louisiana	-	-	76,556	153,407	215,739	352,411	517,762
Maine	96,540	151,719	228,705	298,335	399,455	501,793	583,169
Maryland	319,728	341,548	380,546	407,350	447,040	470,019	583,034
Massachusetts	378,787	422,845	472,040	523,287	610,408	737,699	994,514
Michigan	-	-	4,762	8,896	31,639	212,267	397,654
Minnesota	-	-	-	-	-	-	6,077
Mississippi	-	7,600	31,306	75,448	136,621	375,651	606,526
Missouri	-	-	19,783	66,586	140,455	383,702	682,044
Montana	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-
Nevada	-	-	-	-	-	-	-
New Hampshire	141,885	183,858	214,460	244,161	269,328	284,574	317,976
New Jersey	184,139	211,149	245,562	277,575	320,823	373,306	489,555
New Mexico	-	-	-	-	-	-	61,547
New York	340,120	589,051	959,049	1,372,812	1,918,608	2,428,921	3,097,394
North Carolina	393,751	478,103	555,500	638,829	737,987	753,419	869,039
North Dakota	-	-	-	-	-	-	-
Ohio	-	45,365	230,760	581,434	937,903	1,519,467	1,980,329
Oklahoma	-	-	-	-	-	-	-
Oregon	-	-	-	-	-	-	12,093
Pennsylvania	434,373	602,365	810,091	1,049,458	1,348,233	1,724,033	2,311,786
Rhode Island	68,825	69,122	76,931	83,059	97,199	108,830	147,545
South Carolina	249,073	345,591	415,115	502,741	581,185	594,398	668,507
South Dakota	-	-	-	-	-	-	-
Tennessee	35,691	105,602	261,727	422,823	681,904	829,210	1,002,717
Texas	-	-	-	-	-	-	212,592
Utah	-	-	-	-	-	-	11,380
Vermont	85,425	154,465	217,895	235,981	280,652	291,948	314,120
Virginia	691,737	807,557	877,683	938,261	1,044,054	1,025,227	1,119,348
Washington	-	-	-	-	-	-	1,201
West Virginia	55,873	78,592	105,469	136,808	176,924	224,537	302,313
Wisconsin	-	-	-	-	-	30,945	305,391
Wyoming	-	-	-	-	-	-	-
Total - States & D.C.	3,929,214	5,308,483	7,239,881	9,638,993	12,860,702	17,063,353	23,192,576

and District of Columbia Population Censu

State	1860	1870	1880	1890	1900	1910
Alabama	964,201	996,992	1,262,505	1,513,401	1,828,697	2,138,093
Alaska	-	-	33,426	32,052	63,592	64,356
Arizona	-	9,658	40,440	88,243	122,931	204,354
Arkansas	435,450	484,471	802,525	1,128,211	1,311,564	1,574,449
California	379,994	560,247	864,694	1,213,398	1,485,053	2,377,549
Colorado	34,277	39,864	194,327	413,249	539,700	799,024
Connecticut	460,147	537,454	622,700	746,258	908,420	1,114,756
Delaware	112,216	125,015	146,608	168,493	184,735	202,322
District of Columbia	75,080	131,700	177,624	230,392	278,718	331,069
Florida	140,424	187,748	269,493	391,422	528,542	752,619
Georgia	1,057,286	1,184,109	1,542,180	1,837,353	2,216,331	2,609,121
Hawaii	-	-	-	-	154,001	191,874
Idaho	-	14,999	32,610	88,548	161,772	325,594
Illinois	1,711,951	2,539,891	3,077,871	3,826,352	4,821,550	5,638,591
Indiana	1,350,428	1,680,637	1,978,301	2,192,404	2,516,462	2,700,876
Iowa	674,913	1,194,020	1,624,615	1,912,297	2,231,853	2,224,771
Kansas	107,206	364,399	996,096	1,428,108	1,470,495	1,690,949
Kentucky	1,155,684	1,321,011	1,648,690	1,858,635	2,147,174	2,289,905
Louisiana	708,002	726,915	939,946	1,118,588	1,381,625	1,656,388
Maine	628,279	626,915	648,936	661,086	694,466	742,371
Maryland	687,049	780,894	934,943	1,042,390	1,188,044	1,295,346
Massachusetts	1,231,066	1,457,351	1,783,085	2,238,947	2,805,346	3,366,416
Michigan	749,113	1,184,059	1,636,937	2,093,890	2,420,982	2,810,173
Minnesota	172,023	439,706	780,773	1,310,283	1,751,394	2,075,708
Mississippi	791,305	827,922	1,131,597	1,289,600	1,551,270	1,797,114
Missouri	1,182,012	1,721,295	2,168,380	2,679,185	3,106,665	3,293,335
Montana	-	20,595	39,159	142,924	243,329	376,053
Nebraska	28,841	122,993	452,402	1,062,656	1,066,300	1,192,214
Nevada	6,857	42,491	62,266	47,355	42,335	81,875
New Hampshire	326,073	318,300	346,991	376,530	411,588	430,572
New Jersey	672,035	906,096	1,131,116	1,444,933	1,883,669	2,537,167
New Mexico	93,516	91,874	119,565	160,282	195,310	327,301
New York	3,880,735	4,382,759	5,082,871	6,003,174	7,268,894	9,113,614
North Carolina	992,622	1,071,361	1,399,750	1,617,949	1,893,810	2,206,287
North Dakota	-	2,405	36,909	190,983	319,146	577,056
Ohio	2,339,511	2,665,260	3,198,062	3,672,329	4,157,545	4,767,121
Oklahoma	-	-	-	258,657	790,391	1,657,155
Oregon	52,465	90,923	174,768	317,704	413,536	672,765
Pennsylvania	2,906,215	3,521,951	4,282,891	5,258,113	6,302,115	7,665,111
Rhode Island	174,620	217,353	276,531	345,506	428,556	542,610
South Carolina	703,708	705,606	995,577	1,151,149	1,340,316	1,515,400
South Dakota	4,837	11,776	98,268	348,600	401,570	583,888
Tennessee	1,109,801	1,258,520	1,542,359	1,767,518	2,020,616	2,184,789
Texas	604,215	818,579	1,591,749	2,235,527	3,048,710	3,896,542
Utah	40,273	86,786	143,963	210,779	276,749	373,351
Vermont	315,098	330,551	332,286	332,422	343,641	355,956
Virginia	1,219,630	1,225,163	1,512,565	1,655,980	1,854,184	2,061,612
Washington	11,594	23,955	75,116	357,232	518,103	1,141,990
West Virginia	376,688	442,014	618,457	762,794	958,800	1,221,119
Wisconsin	775,881	1,054,670	1,315,497	1,693,330	2,069,042	2,333,860
Wyoming	-	9,118	20,789	62,555	92,531	145,965
Total - States & D.C.	31,443,321	38,558,371	50,189,209	62,979,766	76,212,168	92,228,496

ıs Counts: 1790 to 2010

State	1920	1930	1940	1950	1960	1970
Alabama	2,348,174	2,646,248	2,832,961	3,061,743	3,266,740	3,444,165
Alaska	55,036	59,278	72,524	128,643	226,167	300,382
Arizona	334,162	435,573	499,261	749,587	1,302,161	1,770,900
Arkansas	1,752,204	1,854,482	1,949,387	1,909,511	1,786,272	1,923,295
California	3,426,861	5,677,251	6,907,387	10,586,223	15,717,204	19,953,134
Colorado	939,629	1,035,791	1,123,296	1,325,089	1,753,947	2,207,259
Connecticut	1,380,631	1,606,903	1,709,242	2,007,280	2,535,234	3,031,709
Delaware	223,003	238,380	266,505	318,085	446,292	548,104
District of Columbia	437,571	486,869	663,091	802,178	763,956	756,510
Florida	968,470	1,468,211	1,897,414	2,771,305	4,951,560	6,789,443
Georgia	2,895,832	2,908,506	3,123,723	3,444,578	3,943,116	4,589,575
Hawaii	255,881	368,300	422,770	499,794	632,772	768,561
Idaho	431,866	445,032	524,873	588,637	667,191	712,567
Illinois	6,485,280	7,630,654	7,897,241	8,712,176	10,081,158	11,113,976
Indiana	2,930,390	3,238,503	3,427,796	3,934,224	4,662,498	5,193,669
Iowa	2,404,021	2,470,939	2,538,268	2,621,073	2,757,537	2,824,376
Kansas	1,769,257	1,880,999	1,801,028	1,905,299	2,178,611	2,246,578
Kentucky	2,416,630	2,614,589	2,845,627	2,944,806	3,038,156	3,218,706
Louisiana	1,798,509	2,101,593	2,363,880	2,683,516	3,257,022	3,641,306
Maine	768,014	797,423	847,226	913,774	969,265	992,048
Maryland	1,449,661	1,631,526	1,821,244	2,343,001	3,100,689	3,922,399
Massachusetts	3,852,356	4,249,614	4,316,721	4,690,514	5,148,578	5,689,170
Michigan	3,668,412	4,842,325	5,256,106	6,371,766	7,823,194	8,875,083
Minnesota	2,387,125	2,563,953	2,792,300	2,982,483	3,413,864	3,804,971
Mississippi	1,790,618	2,009,821	2,183,796	2,178,914	2,178,141	2,216,912
Missouri	3,404,055	3,629,367	3,784,664	3,954,653	4,319,813	4,676,501
Montana	548,889	537,606	559,456	591,024	674,767	694,409
Nebraska	1,296,372	1,377,963	1,315,834	1,325,510	1,411,330	1,483,493
Nevada	77,407	91,058	110,247	160,083	285,278	488,738
New Hampshire	443,083	465,293	491,524	533,242	606,921	737,681
New Jersey	3,155,900	4,041,334	4,160,165	4,835,329	6,066,782	7,168,164
New Mexico	360,350	423,317	531,818	681,187	951,023	1,016,000
New York	10,385,227	12,588,066	13,479,142	14,830,192	16,782,304	18,236,967
North Carolina	2,559,123	3,170,276	3,571,623	4,061,929	4,556,155	5,082,059
North Dakota	646,872	680,845	641,935	619,636	632,446	617,761
Ohio	5,759,394	6,646,697	6,907,612	7,946,627	9,706,397	10,652,017
Oklahoma	2,028,283	2,396,040	2,336,434	2,233,351	2,328,284	2,559,229
Oregon	783,389	953,786	1,089,684	1,521,341	1,768,687	2,091,385
Pennsylvania	8,720,017	9,631,350	9,900,180	10,498,012	11,319,366	11,793,909
Rhode Island	604,397	687,497	713,346	791,896	859,488	946,725
South Carolina	1,683,724	1,738,765	1,899,804	2,117,027	2,382,594	2,590,516
South Dakota	636,547	692,849	642,961	652,740	680,514	665,507
Tennessee	2,337,885	2,616,556	2,915,841	3,291,718	3,567,089	3,923,687
Texas	4,663,228	5,824,715	6,414,824	7,711,194	9,579,677	11,196,730
Utah	449,396	507,847	550,310	688,862	890,627	1,059,273
Vermont	352,428	359,611	359,231	377,747	389,881	444,330
Virginia	2,309,187	2,421,851	2,677,773	3,318,680	3,966,949	4,648,494
Washington	1,356,621	1,563,396	1,736,191	2,378,963	2,853,214	3,409,169
West Virginia	1,463,701	1,729,205	1,901,974	2,005,552	1,860,421	1,744,237
Wisconsin	2,632,067	2,939,006	3,137,587	3,434,575	3,951,777	4,417,731
Wyoming	194,402	225,565	250,742	290,529	330,066	332,416
Total - States & D.C.	106,021,537	123,202,624	132,164,569	151,325,798	179,323,175	203,211,926

State	1980	1990	2000	2010
Alabama	3,893,888	4,040,587	4,447,351	4,779,736
Alaska	401,851	550,043	626,931	710,231
Arizona	2,718,215	3,665,228	5,130,632	6,392,017
Arkansas	2,286,435	2,350,725	2,673,400	2,915,918
California	23,667,902	29,760,021	33,871,653	37,253,956
Colorado	2,889,964	3,294,394	4,302,015	5,029,196
Connecticut	3,107,576	3,287,116	3,405,602	3,574,097
Delaware	594,338	666,168	783,600	897,934
District of Columbia	638,333	606,900	572,059	601,723
Florida	9,746,324	12,937,926	15,982,824	18,801,310
Georgia	5,463,105	6,478,216	8,186,816	9,687,653
Hawaii	964,691	1,108,229	1,211,537	1,360,301
Idaho	943,935	1,006,749	1,293,956	1,567,582
Illinois	11,426,518	11,430,602	12,419,647	12,830,632
Indiana	5,490,224	5,544,159	6,080,517	6,483,802
Iowa	2,913,808	2,776,755	2,926,382	3,046,355
Kansas	2,363,679	2,477,574	2,688,824	2,853,118
Kentucky	3,660,777	3,685,296	4,042,285	4,339,367
Louisiana	4,205,900	4,219,973	4,468,958	4,533,372
Maine	1,124,660	1,227,928	1,274,923	1,328,361
Maryland	4,216,975	4,781,468	5,296,507	5,773,552
Massachusetts	5,737,037	6,016,425	6,349,105	6,547,629
Michigan	9,262,078	9,295,297	9,938,480	9,883,640
Minnesota	4,075,970	4,375,099	4,919,492	5,303,925
Mississippi	2,520,638	2,573,216	2,844,656	2,967,297
Missouri	4,916,686	5,117,073	5,596,683	5,988,927
Montana	786,690	799,065	902,195	989,415
Nebraska	1,569,825	1,578,385	1,711,265	1,826,341
Nevada	800,493	1,201,833	1,998,257	2,700,551
New Hampshire	920,610	1,109,252	1,235,786	1,316,470
New Jersey	7,364,823	7,730,188	8,414,347	8,791,894
New Mexico	1,302,894	1,515,069	1,819,046	2,059,179
New York	17,558,072	17,990,455	18,976,821	19,378,102
North Carolina	5,881,766	6,628,637	8,046,485	9,535,483
North Dakota	652,717	638,800	642,200	672,591
Ohio	10,797,630	10,847,115	11,353,145	11,536,504
Oklahoma	3,025,290	3,145,585	3,450,652	3,751,351
Oregon	2,633,105	2,842,321	3,421,436	3,831,074
Pennsylvania	11,863,895	11,881,643	12,281,054	12,702,379
Rhode Island	947,154	1,003,464	1,048,319	1,052,567
South Carolina	3,121,820	3,486,703	4,011,816	4,625,364
South Dakota	690,768	696,004	754,844	814,180
Tennessee	4,591,120	4,877,185	5,689,267	6,346,105
Texas	14,229,191	16,986,510	20,851,790	25,145,561
Utah	1,461,037	1,722,850	2,233,198	2,763,885
Vermont	511,456	562,758	608,827	625,741
Virginia	5,346,818	6,187,358	7,079,030	8,001,024
Washington	4,132,156	4,866,692	5,894,141	6,724,540
West Virginia	1,949,644	1,793,477	1,808,350	1,852,994
Wisconsin	4,705,767	4,891,769	5,363,715	5,686,986
Wyoming	469,557	453,588	493,782	563,626
Total - States & D.C.	226,545,805	248,709,873	281,424,603	308,745,538

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

ADR 022 I July 2016

Analytical Data Report

County- and Municipal-Level Population Forecasts, 2015–2045





The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources, including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA); the Pennsylvania and New Jersey departments of transportation; and DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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As the region's metropolitan planning organization, DVRPC provides technical assistance and services to its member state and local governments. *Delaware Valley Data* is our periodic series of free data bulletins, analytical data reports, data reference guides, and data snapshots.

Background

Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of the Delaware Valley Regional Planning Commission's (DVRPC's) long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. DVRPC last adopted forecasts through the year 2040 in January 2012. Since that time, the Census Bureau has released 2015 population estimates, and both the nation and the region have continued to recover from the significant economic recession that officially began in December 2007 and ended in June 2009.

In order to incorporate the 2015 Census estimates and maintain a 30-year planning horizon, DVRPC has prepared 2045 population forecasts for its member counties and municipalities. These forecasts were formally adopted by the DVRPC Board on July 28, 2016, and serve as the basis for DVRPC planning and modeling activities. Employment forecasts in five-year increments through 2045 are scheduled to be adopted in October 2016.

Three alternative sets of county- and municipal-level 2045 population forecasts were developed based on the method described below, and sent to the county planning staffs for review and comment. Agreement was first reached on the county- and municipal-level 2045 population forecasts; forecasts for 2020, 2025, 2030, 2035, and 2040 were then calculated by DVRPC, based on the population growth rate predicted over each five-year increment by the Commission's age-cohort survival model. These mid-cycle forecasts were again sent to the counties for review, and their suggested revisions were incorporated to produce the final set of 2045 forecasts.

Method for Calculating County-Level 2045 Population Forecasts

Three alternative 2045 population forecasts were calculated for each county based on three separate methods, the results of which define a reasonable range of values within which each county's 2045 population total is expected to fall. This process replicates the process employed in 2007 and again in 2011, to develop the Commission's adopted 2035 and 2040 population forecasts. The three alternative methods are as follows:

- An initial set of draft county-level 2045 forecasts was obtained by running the traditional age-cohort survival model used in the previously forecasted round, but updating the model to incorporate 2000, 2005, 2010, and 2015 population data in five-year age/sex cohorts. When the analysis for this report was conducted, the Census Bureau had released 2015 estimates of the total population in each county, but had not yet released 2015 estimates by age/sex cohorts. The percentage of the population in each age/sex cohort in 2014 was therefore applied to the 2015 county estimates, to approximate 2015 age/sex breakdowns. The model incorporates birth, death, survival, and migration rates as follows:

- **Birth rate**: The model uses the number of live births per 1,000 women by five-year age cohort in New Jersey in 2013, assuming that New Jersey state-wide data is a better proxy for the Greater Philadelphia region's fertility rate than state-wide data from Pennsylvania (which has many non-metropolitan counties).

- **Survival rate**: Survival rate data (and, conversely, mortality rate data) was obtained from the National Vital Statistics System of the Center for Disease Control and Prevention (CDC). Future survival rates were adjusted to account for expected improvements in mortality related to medical advances and lifestyle changes, based on average increases in life expectancy over the past 20 years.

- **Migration**: The model assumes that migration (the change in the population that cannot be accounted for through births and deaths) in future years will be the same as the average migration rate experienced by each five-year age/sex cohort in each county between 2000 and 2015. Using the average migration rates between 2000 and 2015 accounts for changes in migration experienced prior to the economic recession, during the recession, and post-recession.

This age-cohort model replicates the model used in 2007 and again in 2011, but incorporates recent data to more accurately portray recent demographic trends. These trends include higher in-migration of seniors to certain areas of the region, declining overall fertility rates but higher fertility rates among women over age 35, and in-migration to Philadelphia and some of the region's older suburbs.

- A second set of county-level forecasts was developed utilizing the region-wide 2045 population forecast from the age-cohort model described above, but redistributing the total 2045 regional population to each of the nine counties based on the county percentages from the adopted 2040 forecasts. This alternative acknowledges that the longer-term development trends agreed upon during the process of developing the 2040 forecasts may be more important in some counties than the age-cohort births/deaths and shorter-term migration trends reflected in the county-level age-cohort method described above. It therefore continues those longer-term growth trends by reassigning the 2045 regional population among the nine counties, essentially adjusting migration rates to compensate for birth-death effects.

- A third alternative set of county-level forecasts was developed by applying the growth rates between each five-year time period from DVRPC's adopted 2040 forecasts to the previous five-year total, but using 2015 American Community Survey data as the base. The expected growth rate between 2040 and 2045 was based on the average change in the forecasted growth rate for each five-year increment between 2015 and 2040.

  This alternative ignores the results of the most recent age-cohort model and simply extends to 2045 the growth rates agreed upon during the process of developing the 2040 forecasts, as applied to the new 2015 base. This method assumes future population growth will follow previously adopted trends but adjusts for the differences in growth that actually occurred between 2010 and 2015.

The two alternatives to the age-cohort model incorporate the value of local planning knowledge and recognize that the adopted 2040 forecasts did not simply reflect the age-cohort results, but included significant input from the county planning staffs. Based on the above steps, three alternative sets of 2045 forecasts were developed for each of the nine counties, creating expected minimum and maximum 2045 county-level forecasts.

Method for Calculating Municipal-Level 2045 Population Forecasts

Each set of alternative county-level 2045 forecasts was disaggregated to the municipal level using the following method:

- The difference between the municipal-level 2015 Census population estimate and DVRPC's 2015 population forecast was calculated for each municipality.
- These differences were added or subtracted as appropriate from the adopted municipal-level 2040 forecasts. These adjusted 2040 forecasts were then used as a base for the calculation of the 2045 municipal forecasts.
- The adjusted 2040 population forecasts were summed and, for each set of alternatives, the percentage of the population forecasted to live in each municipality in 2040 (based on the adjusted 2040 forecasts) was applied to each of the 2045 county-level alternatives to create preliminary 2045 municipal forecasts, with the sum of all municipalities within each county matching the county-level 2045 forecast for each of the three alternatives.

This method assumes that the proportion of the county's population living in each municipality in 2040 will remain the same in 2045 and, when applied to the three alternative county-level forecasts, produced three alternative sets of municipal-level 2045 forecasts. These alternatives were sent to DVRPC's member counties' planning staff for review and comment, and consensus was reached on a full set of 2045 county and municipal forecasts.

Method for Developing Mid-Year Population Forecasts

Once agreement was reached on the county- and municipal-level 2045 population forecasts, forecasts for 2020, 2025, 2030, 2035, and 2040 were developed by DVRPC, based on the population growth predicted for each mid-year increment by the regional age-cohort survival model. The age-cohort model predicted a slight curve (rather than a straight line), with slightly more growth in the early years and a slight slowing near the end.

Obviously, the population of every municipality is not going to increase at exactly the same rate during each five-year interval. These mid-year numbers were simply intended to provide a logical starting point for discussion, and were sent to the county planning staffs for final review, based on their local knowledge of pending and approved development proposals and population growth trends. Their suggested revisions were incorporated to produce the final set of 2045 forecasts. Table 1 summarizes DVRPC's adopted regional and county forecasts in five-year increments through 2045, and municipal-level forecasts are provided in Appendix A.

Table 1: Forecasted Population by County, 2015-2045

County	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Bucks County	625,249	627,367	640,495	654,792	669,299	681,273	691,111	699,498	72,131	11.5%
Chester County	498,886	515,939	543,702	571,641	599,932	624,832	645,562	662,283	146,344	28.4%
Delaware County	558,979	563,894	568,337	572,758	577,248	581,136	584,329	587,037	23,143	4.1%
Montgomery County	799,874	819,264	840,934	863,327	884,387	903,114	918,918	932,820	113,556	13.9%
Philadelphia County	1,526,006	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	128,690	8.2%
Five Pennsylvania Counties	**4,008,994**	**4,093,907**	**4,188,255**	**4,279,333**	**4,374,837**	**4,457,645**	**4,523,322**	**4,577,771**	**483,864**	**11.8%**
Burlington County	448,734	450,226	459,344	468,428	475,978	482,560	488,026	492,709	42,483	9.4%
Camden County	513,657	510,923	514,006	517,073	520,189	522,886	525,101	526,997	16,074	3.1%
Gloucester County	288,288	291,479	307,766	323,969	340,425	354,677	366,383	376,308	84,829	29.1%
Mercer County	367,511	371,398	377,328	383,227	389,219	394,407	398,669	402,283	30,885	8.3%
Four New Jersey Counties	**1,618,190**	**1,624,026**	**1,658,444**	**1,692,697**	**1,725,811**	**1,754,530**	**1,778,179**	**1,798,296**	**174,270**	**10.7%**
Nine-County DVRPC Region	**5,627,184**	**5,717,933**	**5,846,699**	**5,972,030**	**6,100,648**	**6,212,175**	**6,301,501**	**6,376,067**	**658,134**	**11.5%**

Source: Delaware Valley Regional Planning Commission, July 2016.

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Table 2 identifies the 20 municipalities expected to gain the most residents between 2015 and 2045, and Table 3 identifies municipalities with the highest forecasted percentage change in population. Figure 1 illustrates the 2040 population forecasts by municipality, with concentrations of population seen in Philadelphia and the region's mature suburbs and along major highway corridors, including Route 422, Route 30, Mercer County's Route 1 corridor, and the Route 55 in Gloucester County and southern Camden County. Figures 2 and 3 illustrate absolute and percent change in population by municipality between 2015 and 2045, respectively.

Figure 4 illustrates the absolute increase in population per square mile in each of the region's 352 municipalities. This map illustrates not just where the population is increasing, but also the impact of relatively small population increases on the population density in specific municipalities. Significant increases in density are forecast not just in the City of Philadelphia, but also in many of the region's smaller boroughs, including Phoenixville, Atglen, Parkesburg, Oxford, Avondale, West Grove, and Kennett Square in Chester County; Bridgeport and Conshohocken in Montgomery County; and Riverside and Beverly in Burlington County.

Highlights

- The DVRPC region is forecast to gain over 658,000 residents between 2015 and 2045 (an 11.5 percent increase).

- As it has since the mid-2000s, the population of the City of Philadelphia increased between 2010 and 2015, with the city adding more than 41,000 residents. This trend is forecast to continue, with the city's population expected to increase by over 8 percent by 2045, adding over 128,000 residents. The share of the region's population living in the city is expected to increase slightly by 2045, from 26 percent, in 2015, to 27 percent.

- The population of the region's five southeastern Pennsylvania counties is forecast to increase by 11.8 percent between 2015 and 2045, while the population of the four New Jersey counties is expected to increase by 10.7 percent.

- The largest percentage increases in population are expected in municipalities in Gloucester County, New Jersey (where the county's population is forecast to increase by over 29 percent) and Chester County, Pennsylvania (where the population is forecast to increase by more than 28 percent).

- The largest absolute increase in population is forecast for Chester County, which is expected to gain over 146,000 residents and surpass Delaware County to become the region's fourth most populous county by 2045. Other counties forecast to see a significant number of additional residents include Philadelphia (as mentioned above), Montgomery County (with a forecasted increase of over 113,000 people), and Gloucester County, New Jersey (forecast to add almost 85,000 residents).

Table 2: Municipalities with the Greatest Forecasted Absolute Change in Population, 2015–2045

Rank	Municipality or City Planning Area	County	Absolute Change	Rank	Municipality or City Planning Area	County	Absolute Change
1	Central	Philadelphia	30,406	11	Harrison Township	Gloucester	7,666
2	Lower North	Philadelphia	16,360	12	Washington Township	Gloucester	7,504
3	University/Southwest	Philadelphia	14,586	13	Bristol Township	Bucks	6,766
4	Monroe Township	Gloucester	13,519	14	Mantua Township	Gloucester	6,667
5	Woolwich Township	Gloucester	12,362	15	River Wards	Philadelphia	6,566
6	Phoenixville Borough	Chester	9,052	16	East Whiteland Township	Chester	6,250
7	North	Philadelphia	8,607	17	Glassboro Borough	Gloucester	6,063
8	West	Philadelphia	8,278	18	Lower Merion Township	Montgomery	6,054
9	Bensalem Township	Bucks	7,838	19	Upper Providence Township	Montgomery	6,050
10	South	Philadelphia	7,767	20	Horsham Township	Montgomery	5,954

Source: Delaware Valley Regional Planning Commission, July 2016.

Table 3: Municipalities with the Greatest Forecasted Percentage Change in Population, 2015–2045

Rank	Municipality or City Planning Area	County	Absolute Change	Rank	Municipality or City Planning Area	County	Absolute Change
1	Woolwich Township	Gloucester	100.5%	11	London Grove Township	Chester	52.4%
2	Elk Township	Gloucester	70.3%	12	South Coatesville Borough	Chester	50.5%
3	Atglen Borough	Chester	63.9%	13	West Brandywine Township	Chester	48.2%
4	Elverson Borough	Chester	62.6%	14	East Vincent Township	Chester	47.6%
5	Modena Borough	Chester	62.5%	15	East Brandywine Township	Chester	47.0%
6	Sadsbury Township	Chester	62.3%	16	Penn Township	Chester	46.5%
7	Harrison Township	Gloucester	59.0%	17	Charlestown Township	Chester	46.5%
8	East Whiteland Township	Chester	58.4%	18	New Hanover Township	Montgomery	46.3%
9	West Sadsbury Township	Chester	54.5%	19	Hainesport Township	Burlington	45.5%
10	Phoenixville Borough	Chester	54.3%	20	Mantua Township	Gloucester	44.3%

Source: Delaware Valley Regional Planning Commission, July 2016.

Figure 1:

2045 Municipal Population Forecast

dvrpc

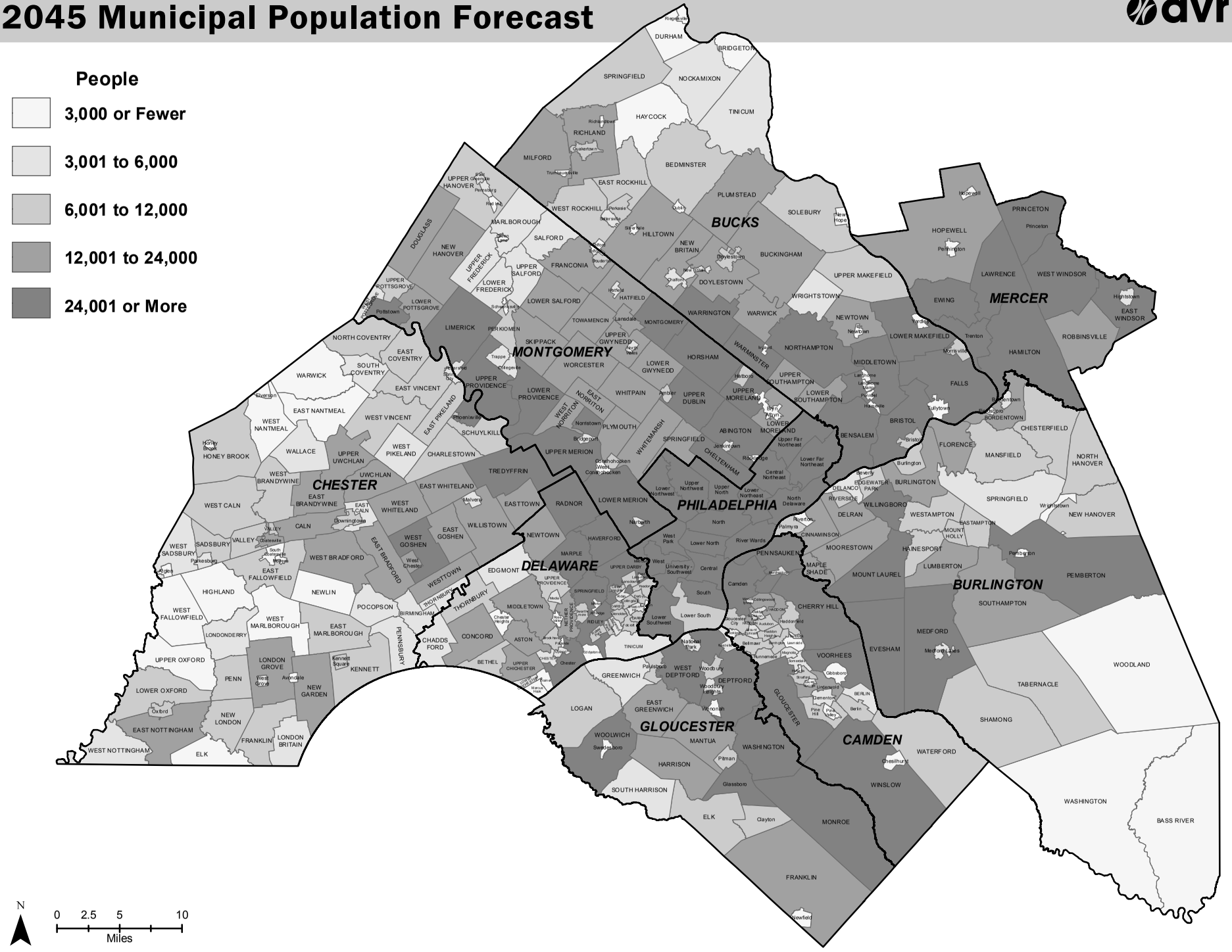

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Figure 2:

2045 Municipal Population Forecast

Absolute Change: 2015—2045

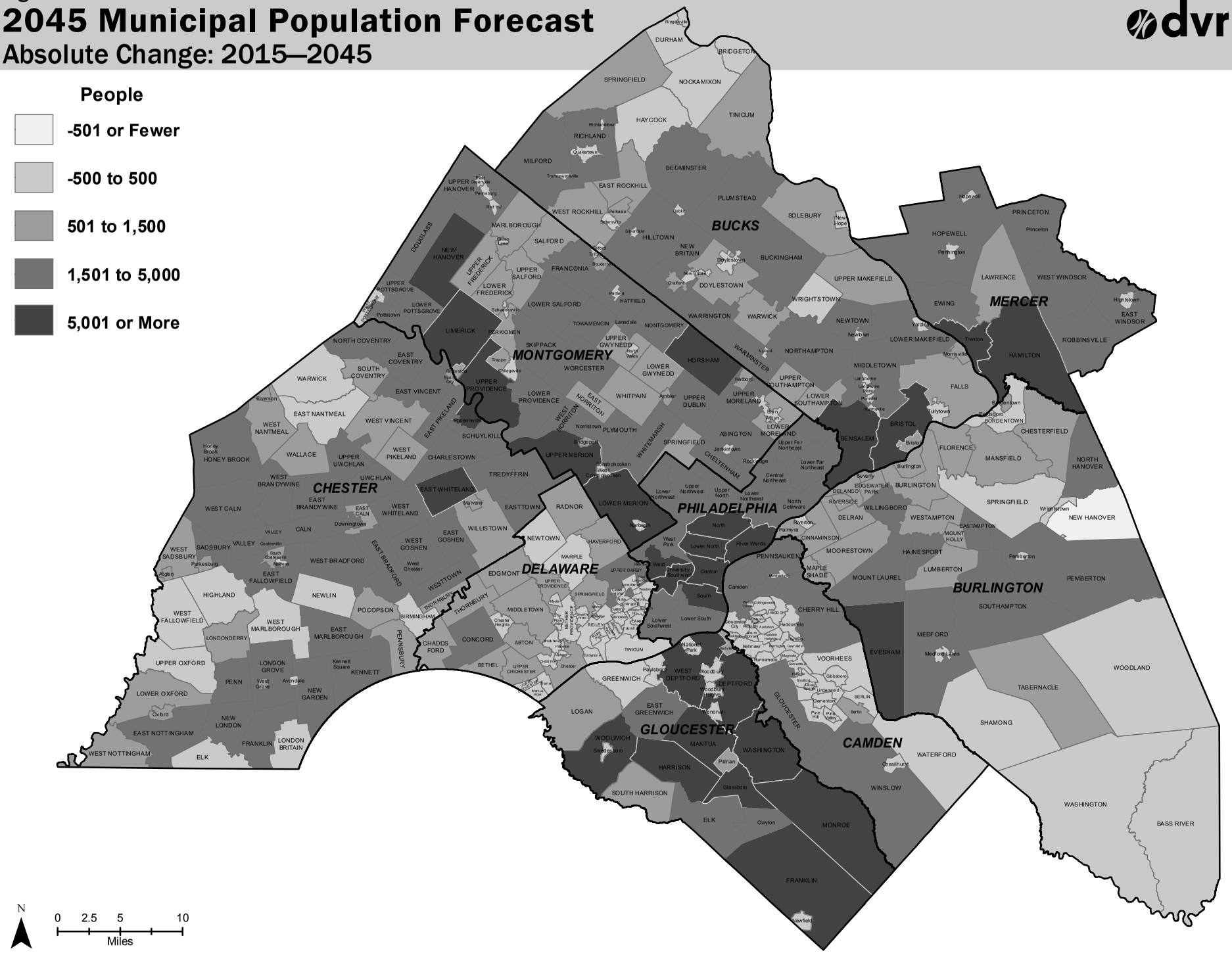

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Figure 3:

2045 Municipal Population Forecast

Percentage Change: 2015—2045

dvrpc

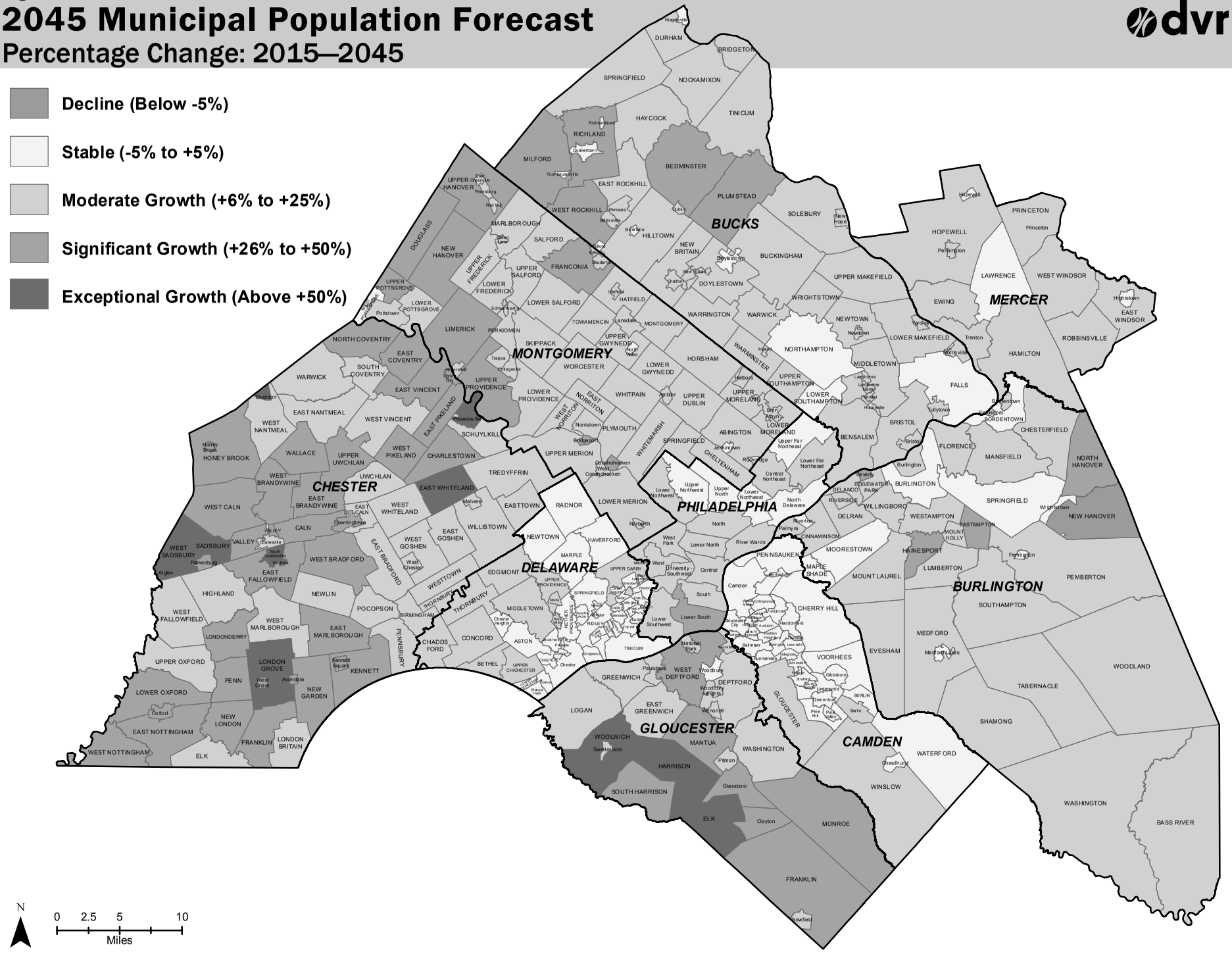

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Figure 4:

2045 Municipal Population Forecast

Absolute Change per Square Mile by Municipality: 2015—2045

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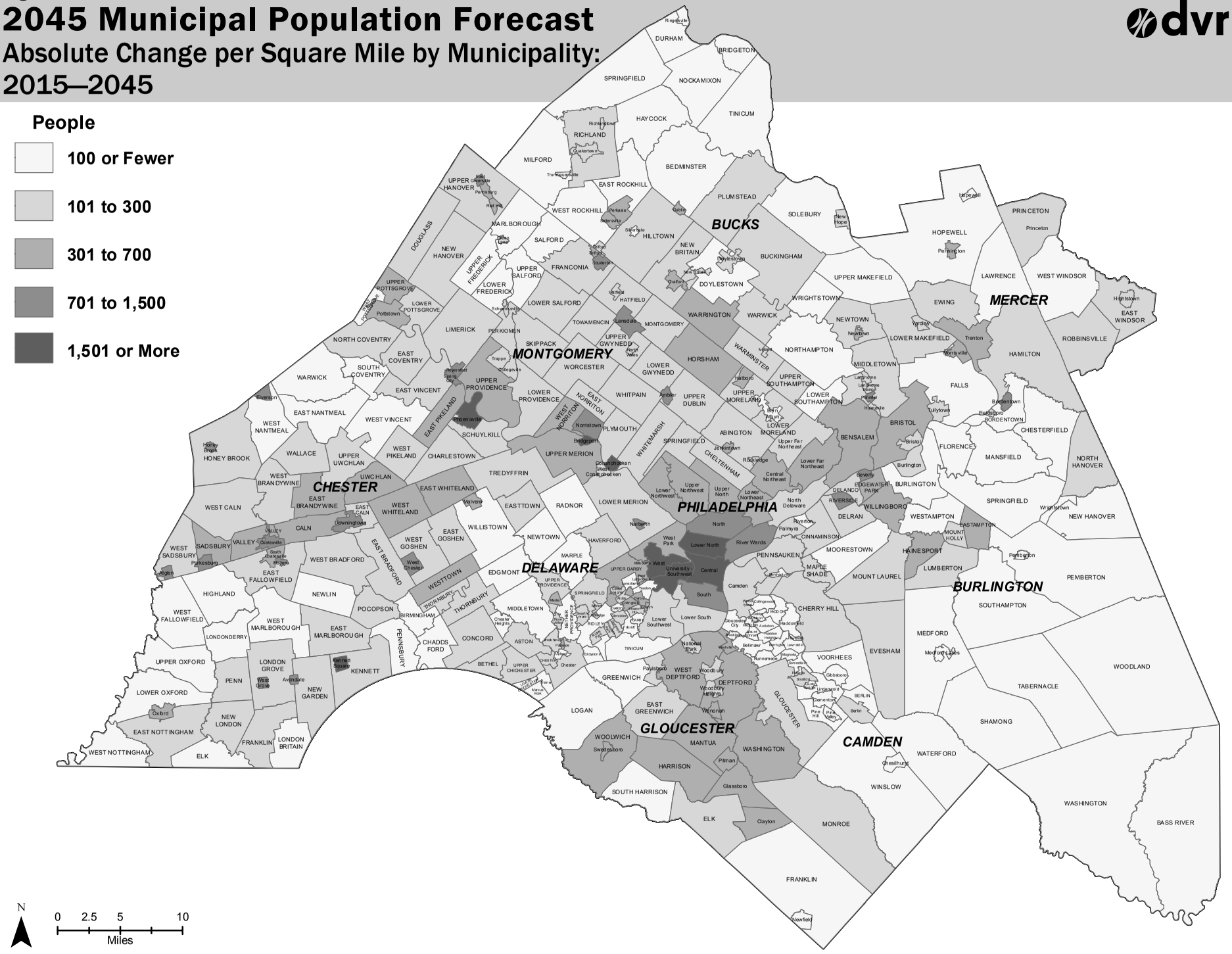

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Summary

This report summarizes the method used to develop 2045 and interim-year population forecasts, which were adopted by the DVRPC Board on July 28, 2016. The population of the nine-county DVRPC region is forecast to increase by 11.5 percent between 2015 and 2045, with much of this growth concentrated in the suburbs, particularly in Chester County, Pennsylvania, and Gloucester County, New Jersey. The population of the City of Philadelphia is expected to increase by over 8 percent by 2045, and the share of the region's population living in the city is expected to increase slightly, from 26 percent in 2015 to 27 percent in 2045.

Population and employment forecasts are a critical component of long-range land use and transportation planning. The adopted population forecasts provided in this report will serve as the basis for DVRPC's planning and modeling activities. Employment forecasts in five-year increments through 2045 will be prepared and adopted in October 2016. The population and employment forecasts will be included in and support *Connections 2045*, the region's long-range plan update, scheduled for adoption in July 2017.

Appendix A: Forecasted Population by County and Municipality, 2015-2045

County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Bucks County	**597,636**	**625,249**	**627,367**	**640,495**	**654,792**	**669,299**	**681,273**	**691,111**	**699,498**	**72,131**	**11.5%**
Bedminster Township	4,800	6,574	7,037	7,407	7,775	8,149	8,473	8,739	8,965	1,928	27.4%
Bensalem Township	58,435	60,427	60,374	61,878	63,377	64,898	66,212	67,296	68,212	7,838	13.0%
Bridgeton Township	1,410	1,277	1,283	1,309	1,335	1,361	1,384	1,402	1,418	135	10.5%
Bristol Borough	9,923	9,726	9,569	9,674	9,778	9,884	9,976	10,051	10,115	546	5.7%
Bristol Township	55,521	54,582	54,086	54,360	56,166	57,990	59,127	60,060	60,852	6,766	12.5%
Buckingham Township	16,440	20,075	20,385	21,079	21,770	22,471	23,078	23,577	24,000	3,615	17.7%
Chalfont Borough	3,900	4,009	4,069	4,496	4,559	4,625	4,672	4,699	4,726	657	16.1%
Doylestown Borough	8,230	8,380	8,301	8,368	8,435	8,502	8,561	8,609	8,650	349	4.2%
Doylestown Township	18,387	17,565	17,563	17,806	18,048	18,293	18,506	18,681	18,829	1,266	7.2%
Dublin Borough	2,085	2,158	2,169	2,221	2,273	2,325	2,371	2,408	2,440	271	12.5%
Durham Township	1,313	1,144	1,144	1,175	1,206	1,238	1,265	1,288	1,307	163	14.2%
East Rockhill Township	5,200	5,706	5,742	5,924	6,106	6,290	6,450	6,581	6,692	950	16.5%
Falls Township	34,865	34,300	33,901	34,074	34,245	34,420	34,571	34,695	34,800	899	2.7%
Haycock Township	2,190	2,225	2,218	2,266	2,315	2,363	2,406	2,441	2,470	252	11.4%
Hilltown Township	12,100	15,029	15,262	15,807	16,349	16,900	17,376	17,768	18,100	2,838	18.6%
Hulmeville Borough	895	1,003	996	1,007	1,017	1,028	1,037	1,045	1,051	55	5.5%
Ivyland Borough	492	1,041	1,053	1,071	1,089	1,108	1,124	1,137	1,148	95	9.0%
Langhorne Borough	1,980	1,622	1,599	1,618	1,638	1,657	1,674	1,688	1,700	101	6.3%
Langhorne Manor Borough	925	1,442	1,431	1,449	1,467	1,485	1,501	1,514	1,525	94	6.6%
Lower Makefield Township	32,691	32,559	32,755	33,683	34,074	34,474	34,855	35,181	35,500	2,745	8.4%
Lower Southampton Township	19,275	18,909	19,142	19,266	19,389	19,515	19,623	19,712	19,788	646	3.4%
Middletown Township	44,140	45,436	45,407	46,097	46,784	47,480	48,084	48,580	49,000	3,593	7.9%
Milford Township	8,810	9,902	10,053	10,555	11,055	11,562	12,002	12,363	12,669	2,616	26.0%
Morrisville Borough	10,020	8,728	8,605	8,623	8,796	8,968	9,074	9,160	9,234	629	7.3%
New Britain Borough	2,358	3,152	3,017	3,080	3,143	3,207	3,263	3,308	3,347	330	10.9%
New Britain Township	10,695	11,070	11,236	11,653	12,068	12,489	12,854	13,154	13,408	2,172	19.3%
New Hope Borough	2,250	2,528	2,510	2,550	2,590	2,631	2,666	2,695	2,719	209	8.3%
Newtown Borough	2,310	2,248	2,222	2,284	2,345	2,407	2,461	2,505	2,543	321	14.4%
Newtown Township	18,206	19,299	19,704	20,059	20,412	20,770	21,081	21,336	21,552	1,848	9.4%
Nockamixon Township	3,520	3,441	3,413	3,491	3,568	3,647	3,715	3,771	3,818	405	11.9%
Northampton Township	39,384	39,726	39,587	39,841	40,262	40,691	41,012	41,276	41,500	1,913	4.8%
Penndel Borough	2,420	2,328	2,221	2,283	2,345	2,408	2,462	2,507	2,545	324	14.6%
Perkasie Borough	8,830	8,511	8,471	8,671	8,869	9,071	9,246	9,389	9,511	1,040	12.3%
Plumstead Township	11,410	12,442	13,511	14,417	15,318	16,233	17,025	17,676	18,228	4,717	34.9%
Quakertown Borough	8,935	8,979	8,855	8,912	8,968	9,025	9,075	9,115	9,150	295	3.3%
Richland Township	9,920	13,052	13,155	13,855	14,551	15,258	15,871	16,374	16,800	3,645	27.7%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Richlandtown Borough	1,285	1,327	1,312	1,319	1,327	1,334	1,340	1,346	1,350	38	2.9%
Riegelsville Borough	863	868	858	865	873	880	886	892	896	38	4.4%
Sellersville Borough	4,564	4,249	4,212	4,297	4,382	4,469	4,544	4,605	4,657	445	10.6%
Silverdale Borough	1,000	871	856	863	869	876	881	886	890	34	4.0%
Solebury Township	7,740	8,692	8,639	8,766	8,892	9,020	9,131	9,223	9,300	661	7.7%
Springfield Township	4,965	5,035	5,036	5,239	5,440	5,645	5,823	5,968	6,092	1,056	21.0%
Telford Borough (part)	2,201	2,207	2,193	2,214	2,234	2,255	2,273	2,287	2,300	107	4.9%
Tinicum Township	4,205	3,995	3,963	4,136	4,307	4,482	4,633	4,757	4,862	899	22.7%
Trumbauersville Borough	1,060	974	959	967	975	983	990	995	1,000	41	4.3%
Tullytown Borough	2,035	1,872	1,859	1,906	1,953	2,000	2,042	2,075	2,104	245	13.2%
Upper Makefield Township	7,180	8,190	8,255	8,477	8,697	8,921	9,115	9,275	9,410	1,155	14.0%
Upper Southampton Township	15,765	15,152	15,121	15,271	15,419	15,570	15,701	15,809	15,900	779	5.2%
Warminster Township	31,383	32,682	32,594	33,035	33,473	33,918	34,304	34,620	34,889	2,295	7.0%
Warrington Township	17,580	23,418	23,942	24,796	25,646	26,510	27,257	27,871	28,392	4,450	18.6%
Warwick Township	11,975	14,437	14,694	14,972	15,249	15,531	15,774	15,974	16,144	1,450	9.9%
West Rockhill Township	4,230	5,256	5,277	5,369	5,733	6,098	6,337	6,534	6,700	1,423	27.0%
Wrightstown Township	2,840	2,995	3,110	3,197	3,284	3,373	3,449	3,512	3,565	455	14.6%
Yardley Borough	2,500	2,434	2,441	2,497	2,554	2,611	2,660	2,701	2,735	294	12.0%
Chester County	**433,512**	**498,886**	**515,939**	**543,702**	**571,641**	**599,932**	**624,832**	**645,562**	**662,283**	**146,344**	**28.4%**
Atglen Borough	1,215	1,406	1,408	1,532	1,683	1,858	2,030	2,203	2,308	900	63.9%
Avondale Borough	1,110	1,265	1,399	1,490	1,581	1,672	1,752	1,818	1,873	474	33.9%
Birmingham Township	4,220	4,208	4,262	4,320	4,377	4,435	4,486	4,527	4,562	300	7.0%
Caln Township	11,916	13,817	14,115	15,025	15,929	16,848	17,644	18,299	18,852	4,737	33.6%
Charlestown Township	4,050	5,671	5,690	6,198	6,703	7,217	7,661	8,026	8,336	2,646	46.5%
Coatesville City	10,838	13,100	13,148	13,666	14,182	14,706	15,160	15,532	15,848	2,700	20.5%
Downingtown Borough	7,590	7,891	7,946	8,508	9,068	9,636	10,128	10,532	10,875	2,929	36.9%
East Bradford Township	9,405	9,942	10,038	10,470	10,900	11,336	11,714	12,025	12,288	2,250	22.4%
East Brandywine Township	5,825	6,742	8,295	9,044	9,789	10,545	11,201	11,739	12,195	3,900	47.0%
East Caln Township	2,855	4,838	4,873	5,073	5,273	5,475	5,651	5,795	5,917	1,044	21.4%
East Coventry Township	4,565	6,636	6,753	7,173	7,592	8,017	8,385	8,687	8,943	2,190	32.4%
East Fallowfield Township	5,160	7,449	7,570	7,992	8,412	8,839	9,208	9,512	9,769	2,199	29.0%
East Goshen Township	16,825	18,026	18,339	18,685	19,028	19,378	19,680	19,928	20,139	1,800	9.8%
East Marlborough Township	6,315	7,026	7,283	7,850	8,414	8,986	9,482	9,890	10,235	2,952	40.5%
East Nantmeal Township	1,785	1,803	1,842	1,871	1,899	1,929	1,954	1,974	1,992	150	8.1%
East Nottingham Township	5,515	8,650	8,930	9,571	10,208	10,855	11,415	11,876	12,266	3,336	37.4%
East Pikeland Township	6,550	7,079	7,359	7,932	8,502	9,081	9,583	9,995	10,344	2,985	40.6%
East Vincent Township	5,493	6,821	6,920	7,552	8,182	8,821	9,374	9,829	10,214	3,294	47.6%
East Whiteland Township	9,335	10,650	10,702	12,002	13,196	14,309	15,358	16,221	16,952	6,250	58.4%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Easttown Township	10,265	10,477	10,620	10,966	11,309	11,659	11,961	12,209	12,420	1,800	16.9%
Elk Township	1,490	1,681	1,695	1,753	1,810	1,868	1,919	1,960	1,995	300	17.7%
Elverson Borough	960	1,225	1,314	1,472	1,629	1,788	1,926	2,040	2,136	822	62.6%
Franklin Township	3,850	4,352	4,518	4,861	5,202	5,548	5,848	6,094	6,303	1,785	39.5%
Highland Township	1,125	1,272	1,289	1,332	1,375	1,419	1,457	1,488	1,514	225	17.5%
Honey Brook Borough	1,285	1,713	1,758	1,873	1,988	2,104	2,205	2,288	2,358	600	34.1%
Honey Brook Township	6,280	7,647	8,124	8,510	8,980	9,523	10,058	10,596	10,924	2,800	34.5%
Kennett Square Borough	5,275	6,072	6,167	6,666	7,163	7,667	8,104	8,463	8,767	2,600	42.2%
Kennett Township	6,450	7,565	8,172	8,690	9,206	9,730	10,184	10,556	10,872	2,700	33.0%
London Britain Township	2,795	3,139	3,268	3,314	3,360	3,406	3,447	3,480	3,508	240	7.3%
London Grove Township	5,265	7,475	8,592	9,213	9,969	10,842	11,702	12,566	13,092	4,500	52.4%
Londonderry Township	1,630	2,149	2,400	2,553	2,706	2,860	2,995	3,105	3,198	798	33.3%
Lower Oxford Township	4,320	5,200	5,001	5,289	5,576	5,867	6,119	6,326	6,501	1,500	30.0%
Malvern Borough	3,060	2,998	3,430	3,557	3,684	3,813	3,924	4,015	4,093	663	19.3%
Modena Borough	610	535	528	591	654	718	774	819	858	330	62.5%
New Garden Township	9,080	11,984	12,096	12,730	13,360	14,000	14,555	15,010	15,396	3,300	27.3%
New London Township	4,585	5,631	5,944	6,438	6,930	7,429	7,862	8,217	8,518	2,574	43.3%
Newlin Township	1,150	1,285	1,356	1,415	1,474	1,534	1,586	1,629	1,665	309	22.8%
North Coventry Township	7,380	7,866	8,024	8,397	8,851	9,375	9,891	10,409	10,724	2,700	33.6%
Oxford Borough	4,315	5,077	5,385	5,571	5,798	6,060	6,318	6,577	6,735	1,350	25.1%
Parkesburg Borough	3,375	3,593	3,687	3,974	4,260	4,551	4,802	5,009	5,184	1,497	40.6%
Penn Township	2,810	5,364	5,475	5,964	6,451	6,945	7,373	7,724	8,022	2,547	46.5%
Pennsbury Township	3,505	3,604	3,659	3,763	3,867	3,972	4,064	4,138	4,202	543	14.8%
Phoenixville Borough	14,795	16,440	16,658	18,696	20,725	22,481	24,002	25,051	25,710	9,052	54.3%
Pocopson Township	3,350	4,582	4,856	5,060	5,264	5,471	5,649	5,796	5,921	1,065	21.9%
Sadsbury Township	2,580	3,570	3,850	4,311	4,769	5,235	5,638	5,969	6,250	2,400	62.3%
Schuylkill Township	6,965	8,516	8,576	8,922	9,265	9,615	9,917	10,165	10,376	1,800	21.0%
South Coatesville Borough	995	1,303	1,435	1,574	1,713	1,853	1,975	2,075	2,160	725	50.5%
South Coventry Township	1,895	2,604	2,616	2,721	2,825	2,931	3,023	3,098	3,162	546	20.9%
Spring City Borough	3,305	3,323	3,322	3,514	3,705	3,898	4,066	4,204	4,321	999	30.1%
Thornbury Township	2,678	3,017	3,343	3,503	3,662	3,824	3,964	4,079	4,177	834	24.9%
Tredyffrin Township	29,065	29,332	29,559	30,232	30,900	31,578	32,165	32,648	33,059	3,500	11.8%
Upper Oxford Township	2,095	2,484	2,504	2,594	2,684	2,776	2,855	2,920	2,975	471	18.8%
Upper Uwchlan Township	6,850	11,227	11,545	12,179	12,809	13,449	14,004	14,459	14,845	3,300	28.6%
Uwchlan Township	16,575	18,088	19,072	19,763	20,451	21,149	21,754	22,251	22,672	3,600	18.9%
Valley Township	5,115	6,794	7,632	8,187	8,740	9,301	9,787	10,186	10,524	2,892	37.9%
Wallace Township	3,240	3,458	3,698	3,985	4,270	4,560	4,811	5,017	5,192	1,494	40.4%
Warwick Township	2,555	2,507	2,550	2,610	2,671	2,732	2,785	2,828	2,865	315	12.4%
West Bradford Township	10,775	12,223	12,779	13,519	14,255	15,003	15,651	16,183	16,634	3,855	30.2%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
West Brandywine Township	7,160	7,394	7,468	8,159	8,847	9,545	10,150	10,647	11,068	3,600	48.2%
West Caln Township	7,055	9,014	9,085	9,539	9,990	10,449	10,846	11,172	11,449	2,364	26.0%
West Chester Borough	17,861	18,461	19,842	20,361	20,876	21,400	21,853	22,225	22,542	2,700	13.6%
West Fallowfield Township	2,485	2,566	2,596	2,625	2,653	2,683	2,708	2,728	2,746	150	5.8%
West Goshen Township	20,495	21,866	23,137	23,713	24,284	24,868	25,369	25,786	26,137	3,000	13.0%
West Grove Borough	2,650	2,854	2,859	3,002	3,144	3,288	3,413	3,516	3,603	744	26.0%
West Marlborough Township	855	814	821	830	838	847	855	861	866	45	5.5%
West Nantmeal Township	2,030	2,170	2,190	2,294	2,397	2,502	2,592	2,667	2,730	540	24.7%
West Nottingham Township	2,634	2,722	2,706	2,879	3,051	3,225	3,377	3,501	3,606	900	33.3%
West Pikeland Township	3,550	4,024	4,085	4,324	4,562	4,803	5,013	5,184	5,330	1,245	30.5%
West Sadsbury Township	2,440	2,444	2,475	2,661	2,888	3,150	3,408	3,667	3,825	1,350	54.5%
West Vincent Township	3,170	4,567	5,038	5,230	5,422	5,616	5,784	5,923	6,040	1,002	19.9%
West Whiteland Township	16,500	18,274	18,450	19,266	20,077	20,901	21,614	22,201	22,698	4,248	23.0%
Westtown Township	10,352	10,827	10,913	11,426	11,936	12,454	12,902	13,271	13,583	2,670	24.5%
Willistown Township	10,015	10,497	10,905	11,177	11,448	11,724	11,962	12,158	12,324	1,419	13.0%
Delaware County	**551,989**	**558,979**	**563,894**	**568,337**	**572,758**	**577,248**	**581,136**	**584,329**	**587,037**	**23,143**	**4.1%**
Aldan Borough	4,315	4,152	4,165	4,186	4,208	4,230	4,248	4,264	4,277	112	2.7%
Aston Township	16,205	16,592	16,799	16,942	17,083	17,227	17,352	17,455	17,541	742	4.4%
Bethel Township	6,420	8,791	9,166	9,359	9,550	9,745	9,914	10,052	10,170	1,004	11.0%
Brookhaven Borough	7,985	8,006	8,078	8,138	8,198	8,259	8,311	8,355	8,391	313	3.9%
Chadds Ford Township	3,170	3,640	3,740	3,848	3,955	4,064	4,159	4,237	4,302	562	15.0%
Chester City	36,855	33,972	34,092	34,281	34,468	34,659	34,824	34,960	35,075	983	2.9%
Chester Heights Borough	2,481	2,531	2,626	2,647	2,667	2,688	2,706	2,721	2,733	107	4.1%
Chester Township	4,605	3,940	4,103	4,140	4,178	4,216	4,248	4,275	4,298	195	4.8%
Clifton Heights Borough	6,780	6,652	6,684	6,709	6,733	6,758	6,780	6,798	6,813	129	1.9%
Collingdale Borough	8,665	8,786	8,792	8,866	8,939	9,014	9,079	9,132	9,177	385	4.4%
Colwyn Borough	2,455	2,546	2,553	2,584	2,615	2,646	2,673	2,695	2,714	161	6.3%
Concord Township	11,235	17,231	17,663	18,150	18,635	19,127	19,554	19,904	20,201	2,538	14.4%
Darby Borough	10,300	10,687	10,687	10,756	10,825	10,896	10,956	11,006	11,049	362	3.4%
Darby Township	9,625	9,264	9,318	9,322	9,326	9,330	9,333	9,336	9,338	20	0.2%
East Lansdowne Borough	2,585	2,668	2,665	2,673	2,682	2,690	2,697	2,703	2,709	44	1.7%
Eddystone Borough	2,440	2,410	2,407	2,414	2,420	2,427	2,433	2,438	2,442	35	1.5%
Edgmont Township	3,915	3,987	4,069	4,214	4,358	4,504	4,631	4,735	4,823	754	18.5%
Folcroft Borough	6,980	6,606	6,637	6,631	6,625	6,619	6,614	6,610	6,606	-31	-0.5%
Glenolden Borough	7,475	7,153	7,173	7,194	7,215	7,236	7,255	7,270	7,283	110	1.5%
Haverford Township	49,608	48,491	49,057	49,279	49,500	49,724	49,918	50,078	50,213	1,156	2.4%
Lansdowne Borough	11,044	10,620	10,639	10,655	10,671	10,688	10,702	10,714	10,724	85	0.8%
Lower Chichester Township	3,590	3,469	3,477	3,488	3,499	3,510	3,519	3,527	3,534	57	1.6%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Marcus Hook Borough	2,315	2,397	2,397	2,415	2,433	2,451	2,466	2,479	2,490	93	3.9%
Marple Township	23,735	23,428	23,743	23,794	23,846	23,898	23,942	23,979	24,011	268	1.1%
Media Borough	5,530	5,327	5,363	5,445	5,526	5,608	5,679	5,738	5,788	425	7.9%
Middletown Township	16,065	15,807	15,998	16,185	16,371	16,560	16,724	16,858	16,972	974	6.1%
Millbourne Borough	945	1,159	1,162	1,178	1,194	1,210	1,223	1,235	1,244	82	7.1%
Morton Borough	2,715	2,669	2,695	2,707	2,720	2,732	2,743	2,752	2,760	65	2.4%
Nether Providence Township	13,456	13,706	13,808	13,893	13,977	14,063	14,138	14,199	14,251	443	3.2%
Newtown Township	11,705	12,216	12,754	12,849	12,943	13,038	13,121	13,189	13,246	492	3.9%
Norwood Borough	5,985	5,890	5,898	5,917	5,935	5,954	5,970	5,984	5,995	97	1.6%
Parkside Borough	2,265	2,328	2,334	2,349	2,365	2,380	2,394	2,405	2,414	80	3.4%
Prospect Park Borough	6,595	6,454	6,481	6,515	6,548	6,582	6,612	6,636	6,656	175	2.7%
Radnor Township	30,880	31,531	31,612	31,808	32,003	32,201	32,373	32,513	32,633	1,021	3.2%
Ridley Park Borough	7,195	7,002	7,035	7,071	7,106	7,143	7,174	7,200	7,221	186	2.6%
Ridley Township	30,790	30,768	31,053	31,129	31,205	31,281	31,348	31,402	31,449	396	1.3%
Rose Valley Borough	945	913	949	970	991	1,012	1,031	1,046	1,058	109	11.5%
Rutledge Borough	860	784	795	798	801	804	807	809	811	16	2.0%
Sharon Hill Borough	5,465	5,697	5,702	5,733	5,764	5,795	5,822	5,845	5,863	161	2.8%
Springfield Township	23,675	24,211	24,401	24,612	24,822	25,035	25,220	25,372	25,500	1,099	4.5%
Swarthmore Borough	6,170	6,194	6,211	6,249	6,287	6,325	6,359	6,386	6,409	198	3.2%
Thornbury Township	5,787	8,028	7,857	8,039	8,219	8,403	8,562	8,692	8,803	946	12.0%
Tinicum Township	4,355	4,091	4,109	4,113	4,117	4,120	4,124	4,126	4,129	20	0.5%
Trainer Borough	1,905	1,828	1,844	1,833	1,822	1,810	1,801	1,793	1,786	-58	-3.1%
Upland Borough	2,980	3,239	3,251	3,263	3,274	3,286	3,296	3,304	3,311	60	1.8%
Upper Chichester Township	16,845	16,738	17,003	17,177	17,350	17,526	17,678	17,803	17,909	906	5.3%
Upper Darby Township	81,821	82,795	82,878	83,699	84,521	85,354	86,073	86,662	87,167	4,289	5.2%
Upper Providence Township	10,510	10,142	10,448	10,592	10,735	10,881	11,007	11,110	11,198	750	7.2%
Yeadon Borough	11,762	11,443	11,523	11,528	11,533	11,539	11,543	11,547	11,550	27	0.2%
Montgomery County	**748,978**	**799,874**	**819,264**	**840,934**	**863,327**	**884,387**	**903,114**	**918,918**	**932,820**	**113,556**	**13.9%**
Abington Township	56,105	55,310	55,590	56,172	56,754	57,336	57,918	58,500	59,083	3,493	6.3%
Ambler Borough	6,425	6,417	6,505	6,657	6,810	6,963	7,116	7,269	7,422	917	14.1%
Bridgeport Borough	4,370	4,554	4,564	4,964	5,464	5,533	5,602	5,671	5,740	1,176	25.8%
Bryn Athyn Borough	1,350	1,375	1,392	1,408	1,423	1,439	1,453	1,464	1,474	82	5.9%
Cheltenham Township	36,880	36,793	37,014	37,364	37,714	38,146	38,578	39,092	39,607	2,593	7.0%
Collegeville Borough	4,930	5,089	5,287	5,360	5,432	5,506	5,569	5,622	5,666	379	7.2%
Conshohocken Borough	7,590	7,833	7,956	8,706	9,456	9,877	10,297	10,567	10,837	2,881	36.2%
Douglass Township	9,104	10,195	10,432	10,950	11,464	11,987	12,440	12,812	13,128	2,696	25.8%
East Greenville Borough	3,105	2,951	2,985	3,047	3,109	3,171	3,233	3,295	3,358	373	12.5%
East Norriton Township	13,211	13,590	14,082	14,256	14,430	14,606	14,759	14,884	14,990	908	6.4%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Franconia Township	11,525	13,064	13,241	13,798	14,355	14,912	15,469	16,026	16,584	3,343	25.2%
Green Lane Borough	580	508	500	508	515	523	530	535	540	40	8.0%
Hatboro Borough	7,390	7,360	7,411	7,591	7,770	7,952	8,110	8,240	8,349	938	12.7%
Hatfield Borough	2,605	3,290	3,306	3,342	3,378	3,415	3,447	3,473	3,495	189	5.7%
Hatfield Township	16,712	17,249	17,558	18,057	18,553	19,057	19,493	19,851	20,155	2,597	14.8%
Horsham Township	24,234	26,147	26,587	26,987	28,319	29,668	31,023	31,845	32,541	5,954	22.4%
Jenkintown Borough	4,475	4,422	4,431	4,467	4,504	4,541	4,572	4,599	4,621	190	4.3%
Lansdale Borough	16,070	16,269	16,512	17,019	17,523	18,035	18,479	18,843	19,152	2,640	16.0%
Limerick Township	13,535	18,074	18,798	19,854	20,904	21,970	22,894	23,653	24,296	5,498	29.2%
Lower Frederick Township	4,795	4,840	4,892	4,985	5,078	5,171	5,263	5,355	5,447	555	11.3%
Lower Gwynedd Township	10,420	11,405	11,548	11,732	11,916	12,100	12,284	12,468	12,651	1,103	9.6%
Lower Merion Township	58,740	57,825	58,177	59,676	61,027	62,135	62,983	63,732	64,231	6,054	10.4%
Lower Moreland Township	11,280	12,982	13,220	13,426	13,631	13,839	14,020	14,168	14,294	1,074	8.1%
Lower Pottsgrove Township	11,213	12,059	12,174	12,565	12,954	13,350	13,692	13,973	14,212	2,038	16.7%
Lower Providence Township	22,390	25,436	26,187	26,679	27,168	27,664	28,094	28,448	28,747	2,560	9.8%
Lower Salford Township	12,895	14,959	15,344	15,922	16,497	17,081	17,587	18,002	18,355	3,011	19.6%
Marlborough Township	3,110	3,178	3,308	3,405	3,501	3,599	3,683	3,753	3,812	504	15.2%
Montgomery Township	22,025	24,790	26,025	26,545	27,063	27,588	28,044	28,418	28,735	2,710	10.4%
Narberth Borough	4,235	4,282	4,309	4,378	4,447	4,517	4,578	4,627	4,669	360	8.4%
New Hanover Township	7,365	10,939	12,495	13,605	14,708	15,829	16,800	17,598	18,274	5,779	46.3%
Norristown Borough	31,280	34,324	34,412	34,777	35,212	35,737	36,344	36,942	37,543	3,131	9.1%
North Wales Borough	3,340	3,229	3,250	3,277	3,304	3,332	3,356	3,375	3,392	142	4.4%
Pennsburg Borough	2,730	3,843	3,873	3,942	4,010	4,080	4,140	4,190	4,232	359	9.3%
Perkiomen Township	7,095	9,139	9,245	9,486	9,726	9,969	10,180	10,354	10,501	1,256	13.6%
Plymouth Township	16,045	16,525	17,653	18,091	18,527	18,969	19,353	19,668	19,934	2,281	12.9%
Pottstown Borough	21,859	22,377	22,664	22,959	23,253	23,551	23,809	24,021	24,201	1,537	6.8%
Red Hill Borough	2,195	2,383	2,383	2,441	2,498	2,557	2,607	2,649	2,684	301	12.6%
Rockledge Borough	2,575	2,543	2,541	2,553	2,565	2,577	2,588	2,596	2,604	63	2.5%
Royersford Borough	4,245	4,752	4,771	4,893	5,014	5,136	5,243	5,330	5,404	633	13.3%
Salford Township	2,365	2,504	2,954	3,088	3,222	3,358	3,475	3,572	3,654	700	23.7%
Schwenksville Borough	1,395	1,385	1,398	1,422	1,445	1,469	1,489	1,506	1,521	123	8.8%
Skippack Township	9,915	13,715	14,992	15,475	15,958	16,441	16,924	17,407	17,891	2,899	19.3%
Souderton Borough	6,725	6,618	6,747	6,917	7,086	7,258	7,406	7,528	7,632	885	13.1%
Springfield Township	19,530	19,418	19,574	19,766	19,957	20,151	20,319	20,457	20,574	1,000	5.1%
Telford Borough (pt.)	2,474	2,665	2,668	2,720	2,771	2,823	2,868	2,905	2,937	269	10.1%
Towamencin Township	17,600	17,578	18,272	18,755	19,235	19,723	20,146	20,493	20,787	2,515	13.8%
Trappe Borough	3,210	3,509	3,553	3,656	3,758	3,862	3,952	4,026	4,089	536	15.1%
Upper Dublin Township	25,875	25,569	26,211	26,890	27,715	28,501	28,995	29,383	29,745	3,534	13.5%
Upper Frederick Township	3,140	3,523	3,564	3,662	3,760	3,860	3,946	4,016	4,076	512	14.4%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Upper Gwynedd Township	14,245	15,552	15,928	16,116	16,304	16,492	16,679	16,866	17,053	1,125	7.1%
Upper Hanover Township	4,885	6,464	7,287	7,696	8,103	8,516	8,874	9,168	9,417	2,130	29.2%
Upper Merion Township	26,863	28,395	28,620	30,147	31,668	32,607	33,393	34,003	34,491	5,871	20.5%
Upper Moreland Township	24,990	24,015	24,231	24,522	24,812	25,107	25,362	25,572	25,749	1,518	6.3%
Upper Pottsgrove Township	4,105	5,315	5,483	5,774	6,065	6,357	6,649	6,941	7,233	1,750	31.9%
Upper Providence Township	15,395	21,219	23,460	24,622	25,777	26,951	27,967	28,802	29,510	6,050	25.8%
Upper Salford Township	3,025	3,299	3,378	3,507	3,636	3,765	3,894	4,024	4,154	776	23.0%
West Conshohocken Borough	1,445	1,320	1,381	1,411	1,442	1,472	1,499	1,521	1,539	158	11.4%
West Norriton Township	14,900	15,663	15,779	16,145	16,509	16,878	17,198	17,461	17,684	1,905	12.1%
West Pottsgrove Township	3,815	3,874	3,884	3,915	3,945	3,976	4,003	4,025	4,044	160	4.1%
Whitemarsh Township	16,702	17,349	17,663	18,503	19,040	19,486	19,859	20,197	20,476	2,813	15.9%
Whitpain Township	18,562	18,875	19,180	19,464	19,747	20,034	20,283	20,487	20,661	1,481	7.7%
Worcester Township	7,789	9,750	10,435	10,917	11,396	11,882	12,304	12,650	12,943	2,508	24.0%
Philadelphia County	**1,517,550**	**1,526,006**	**1,567,443**	**1,594,787**	**1,616,816**	**1,643,971**	**1,667,290**	**1,683,402**	**1,696,133**	**128,690**	**8.2%**
Central	100,188	117,132	126,629	132,848	137,233	143,015	148,841	153,321	157,035	30,406	24.0%
Central Northeast	72,179	78,266	79,870	81,333	82,568	83,813	84,123	84,490	84,713	4,843	6.1%
Lower Far Northeast	71,657	70,340	70,596	71,526	72,319	73,060	73,588	74,087	74,502	3,906	5.5%
Lower North	95,139	95,176	101,692	105,069	108,227	111,507	114,601	116,878	118,052	16,360	16.1%
Lower Northeast	93,471	100,232	102,654	103,621	104,301	104,837	105,110	105,080	105,424	2,770	2.7%
Lower Northwest	51,869	50,799	52,319	53,241	54,072	54,730	55,162	55,406	55,811	3,492	6.7%
Lower South	4,318	5,150	5,499	5,747	5,998	6,501	6,749	7,001	7,335	1,836	33.4%
Lower Southwest	41,642	42,117	42,462	43,288	43,711	44,054	44,854	45,183	45,439	2,977	7.0%
North	141,061	137,849	138,049	138,663	140,022	142,561	144,724	145,520	146,656	8,607	6.2%
North Delaware	96,005	100,631	101,251	102,210	102,553	102,944	102,909	103,041	103,280	2,029	2.0%
River Wards	66,321	68,489	70,385	72,380	73,004	74,203	75,613	76,270	76,951	6,566	9.3%
South	131,616	132,904	137,110	138,842	140,432	141,898	143,712	144,223	144,877	7,767	5.7%
University/Southwest	83,639	81,746	87,719	92,546	94,735	97,599	99,607	101,667	102,305	14,586	16.6%
Upper Far Northeast	64,469	66,605	67,986	68,387	69,071	69,893	69,943	70,370	70,660	2,674	3.9%
Upper North	154,560	144,381	145,913	146,533	147,898	149,046	149,501	150,207	150,422	4,509	3.1%
Upper Northwest	89,851	85,093	85,633	86,048	87,079	88,209	89,309	89,432	89,915	4,282	5.0%
West	111,973	105,642	106,922	107,403	108,060	109,844	112,163	114,009	115,200	8,278	7.7%
West Park	47,592	43,454	44,754	45,102	45,533	46,257	46,781	47,217	47,556	2,802	6.3%
Burlington County	**423,397**	**448,734**	**450,226**	**459,344**	**468,428**	**475,978**	**482,560**	**488,026**	**492,709**	**42,483**	**9.4%**
Bass River Township	1,510	1,443	1,449	1,483	1,516	1,550	1,580	1,604	1,624	175	12.1%
Beverly City	2,660	2,577	2,559	2,710	2,859	3,011	3,143	3,251	3,343	784	30.6%
Bordentown City	3,970	3,924	3,882	4,012	4,141	4,273	4,387	4,480	4,559	677	17.4%
Bordentown Township	8,375	11,367	11,935	11,965	11,996	12,027	12,053	12,075	12,094	159	1.3%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Burlington City	9,740	9,920	9,808	10,010	10,210	10,414	10,590	10,735	10,858	1,050	10.7%
Burlington Township	20,190	22,594	22,826	22,936	23,045	23,156	23,252	23,331	23,398	572	2.5%
Chesterfield Township	5,955	7,699	7,572	7,715	7,857	8,002	8,127	8,230	8,317	745	9.8%
Cinnaminson Township	14,595	15,569	16,651	16,880	17,108	17,339	17,540	17,704	17,844	1,193	7.2%
Delanco Township	3,335	4,283	4,541	4,644	4,746	4,849	4,939	5,013	5,075	534	11.8%
Delran Township	15,535	16,896	16,767	16,959	17,150	17,343	17,511	17,649	17,766	999	6.0%
Eastampton Township	6,205	6,069	6,011	6,450	6,887	7,331	7,715	8,031	8,298	2,287	38.0%
Edgewater Park Township	7,865	8,881	8,788	8,995	9,200	9,409	9,590	9,738	9,864	1,076	12.2%
Evesham Township	42,275	45,538	45,577	47,546	49,519	49,847	50,175	50,504	50,831	5,254	11.5%
Fieldsboro Borough	522	540	532	539	547	554	560	565	570	38	7.1%
Florence Township	10,745	12,109	12,688	12,864	13,038	13,216	13,369	13,495	13,602	914	7.2%
Hainesport Township	4,125	6,110	6,053	6,582	7,108	7,643	8,105	8,486	8,808	2,755	45.5%
Lumberton Township	10,455	12,559	12,428	12,712	12,995	13,281	13,530	13,734	13,907	1,479	11.9%
Mansfield Township	5,090	8,544	8,574	8,735	8,896	9,058	9,200	9,315	9,414	840	9.8%
Maple Shade Township	19,080	19,131	18,963	19,071	19,178	19,287	19,381	19,459	19,524	561	3.0%
Medford Lakes Borough	4,175	4,146	4,085	4,097	4,109	4,122	4,132	4,141	4,149	64	1.6%
Medford Township	22,250	23,033	23,414	23,916	24,415	24,922	25,361	25,721	26,027	2,613	11.2%
Moorestown Township	19,020	20,726	20,564	20,745	20,925	21,107	21,265	21,395	21,505	941	4.6%
Mount Holly Township	10,728	9,536	9,493	9,620	9,747	9,875	9,987	10,078	10,156	663	7.0%
Mount Laurel Township	40,225	41,864	41,842	42,342	42,839	43,346	43,784	44,146	44,449	2,607	6.2%
New Hanover Township	9,744	7,385	8,078	7,927	7,777	7,625	7,493	7,384	7,292	-786	-9.7%
North Hanover Township	7,347	7,678	7,609	8,049	8,486	8,930	9,315	9,630	9,898	2,289	30.1%
Palmyra Borough	7,090	7,398	7,314	7,420	7,525	7,632	7,725	7,801	7,865	551	7.5%
Pemberton Borough	1,210	1,409	1,383	1,390	1,397	1,404	1,410	1,415	1,419	36	2.6%
Pemberton Township	28,575	27,912	27,771	28,279	28,784	29,297	29,741	30,106	30,416	2,645	9.5%
Riverside Township	7,910	8,079	7,997	8,254	8,511	8,771	8,996	9,181	9,338	1,341	16.8%
Riverton Borough	2,760	2,779	2,748	2,753	2,758	2,763	2,768	2,771	2,774	26	0.9%
Shamong Township	6,465	6,490	6,419	6,494	6,568	6,644	6,709	6,763	6,809	390	6.1%
Southampton Township	10,388	10,464	10,337	10,735	11,131	11,533	11,881	12,167	12,409	2,072	20.0%
Springfield Township	3,225	3,414	3,355	3,386	3,417	3,448	3,475	3,498	3,517	162	4.8%
Tabernacle Township	7,170	6,949	6,954	7,051	7,147	7,244	7,329	7,398	7,457	503	7.2%
Washington Township	621	687	674	681	689	697	703	708	713	39	5.8%
Westampton Township	7,217	8,813	8,726	8,932	9,137	9,345	9,525	9,673	9,799	1,073	12.3%
Willingboro Township	33,010	31,629	31,270	31,831	32,391	32,959	33,451	33,855	34,198	2,928	9.4%
Woodland Township	1,290	1,788	1,793	1,833	1,873	1,913	1,948	1,977	2,001	208	11.6%
Wrightstown Borough	750	802	796	801	806	811	815	819	822	26	3.3%
Camden County	**508,929**	**513,657**	**510,923**	**514,006**	**517,073**	**520,189**	**522,886**	**525,101**	**526,997**	**16,074**	**3.1%**
Audubon Borough	9,180	8,819	8,730	8,699	8,668	8,637	8,609	8,587	8,568	-162	-1.9%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Audubon Park Borough	1,100	1,023	1,011	1,008	1,006	1,003	1,001	999	997	-14	-1.4%
Barrington Borough	7,084	6,983	6,817	6,816	6,815	6,814	6,813	6,812	6,811	-6	-0.1%
Bellmawr Borough	11,265	11,583	11,462	11,464	11,467	11,469	11,470	11,471	11,472	10	0.1%
Berlin Borough	6,150	7,588	7,590	7,688	7,785	7,884	7,970	8,040	8,100	510	6.7%
Berlin Township	5,290	5,357	5,434	5,439	5,444	5,448	5,453	5,456	5,459	25	0.5%
Brooklawn Borough	2,355	1,955	1,933	1,939	1,945	1,951	1,956	1,960	1,964	31	1.6%
Camden City	79,905	77,344	76,119	76,512	76,904	77,302	77,643	77,929	78,169	2,050	2.7%
Cherry Hill Township	69,960	71,045	71,340	71,903	72,462	73,031	73,523	73,927	74,270	2,930	4.1%
Chesilhurst Borough	1,520	1,634	1,634	1,632	1,631	1,629	1,628	1,627	1,626	-8	-0.5%
Clementon Borough	4,985	5,000	4,947	4,981	5,014	5,048	5,077	5,102	5,122	175	3.5%
Collingswood Borough	14,326	13,926	14,000	13,997	13,994	13,991	13,988	13,986	13,984	-16	-0.1%
Gibbsboro Borough	2,435	2,274	2,244	2,242	2,239	2,236	2,234	2,233	2,231	-13	-0.6%
Gloucester City	11,484	11,456	11,329	11,326	11,323	11,320	11,318	11,316	11,314	-15	-0.1%
Gloucester Township	64,350	64,634	63,939	64,859	65,777	66,707	67,514	68,176	68,737	4,798	7.5%
Haddon Heights Borough	7,545	7,473	7,514	7,474	7,434	7,393	7,358	7,329	7,305	-209	-2.8%
Haddon Township	14,651	14,707	14,543	14,580	14,617	14,655	14,688	14,714	14,737	194	1.3%
Haddonfield Borough	11,661	11,593	11,414	11,412	11,410	11,408	11,407	11,405	11,404	-10	-0.1%
Hi-Nella Borough	1,035	870	860	860	859	859	859	858	858	-2	-0.2%
Laurel Springs Borough	1,970	1,908	1,884	1,883	1,882	1,882	1,881	1,880	1,880	-4	-0.2%
Lawnside Borough	2,692	2,945	2,919	2,917	2,915	2,913	2,911	2,909	2,908	-11	-0.4%
Lindenwold Borough	17,410	17,613	17,458	17,449	17,441	17,432	17,424	17,418	17,413	-45	-0.3%
Magnolia Borough	4,405	4,341	4,298	4,290	4,282	4,274	4,267	4,260	4,256	-42	-1.0%
Merchantville Borough	3,800	3,821	3,778	3,778	3,777	3,777	3,777	3,776	3,776	-2	-0.1%
Mount Ephraim Borough	4,495	4,676	4,639	4,637	4,636	4,634	4,633	4,632	4,631	-8	-0.2%
Oaklyn Borough	4,188	4,038	3,992	4,001	4,010	4,019	4,026	4,033	4,038	46	1.2%
Pennsauken Township	35,737	35,885	35,628	35,924	36,219	36,518	36,778	36,990	37,171	1,543	4.3%
Pine Hill Borough	10,880	10,233	10,510	10,501	10,492	10,482	10,474	10,468	10,462	-48	-0.5%
Pine Valley Borough	20	12	12	12	12	12	12	12	12	0	0.0%
Runnemede Borough	8,535	8,468	8,381	8,380	8,378	8,377	8,376	8,375	8,374	-7	-0.1%
Somerdale Borough	5,192	5,151	5,460	5,444	5,427	5,411	5,397	5,385	5,375	-85	-1.6%
Stratford Borough	7,270	7,040	7,013	7,047	7,081	7,116	7,146	7,170	7,191	178	2.5%
Tavistock Borough	24	5	5	5	5	5	5	5	5	0	0.0%
Voorhees Township	28,130	29,131	29,370	29,305	29,240	29,174	29,117	29,071	29,031	-339	-1.2%
Waterford Township	10,494	10,649	10,753	10,749	10,744	10,740	10,736	10,733	10,747	-6	-0.1%
Winslow Township	34,611	39,499	39,019	39,910	40,797	41,698	42,478	43,119	43,662	4,643	11.9%
Woodlynne Borough	2,795	2,978	2,944	2,943	2,941	2,940	2,939	2,938	2,937	-7	-0.2%
Gloucester County	**255,719**	**288,288**	**291,479**	**307,766**	**323,969**	**340,425**	**354,677**	**366,383**	**376,308**	**84,829**	**29.1%**
Clayton Borough	7,135	8,179	8,493	9,013	9,531	10,057	10,512	10,886	11,203	2,710	31.9%

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County / Municipality	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045 Absolute Change	2015-2045 Percentage Change
Deptford Township	26,770	30,561	30,569	31,601	32,628	33,671	34,574	35,316	35,945	5,376	17.6%
East Greenwich Township	5,430	9,555	10,380	10,798	11,214	11,637	12,003	12,303	12,558	2,178	21.0%
Elk Township	3,615	4,216	4,156	4,717	5,274	5,841	6,331	6,734	7,076	2,920	70.3%
Franklin Township	15,470	16,820	16,669	17,714	18,753	19,808	20,722	21,473	22,110	5,441	32.6%
Glassboro Borough	18,970	18,579	19,216	20,380	21,538	22,715	23,733	24,570	25,279	6,063	31.6%
Greenwich Township	4,880	4,899	4,857	4,942	5,027	5,113	5,188	5,249	5,301	444	9.1%
Harrison Township	8,785	12,417	12,984	14,456	15,920	17,407	18,695	19,753	20,650	7,666	59.0%
Logan Township	6,035	6,042	5,983	6,217	6,450	6,687	6,892	7,061	7,203	1,220	20.4%
Mantua Township	14,217	15,217	15,054	16,334	17,608	18,901	20,021	20,941	21,721	6,667	44.3%
Monroe Township	28,967	36,129	36,862	39,459	42,040	44,662	46,934	48,799	50,381	13,519	36.7%
National Park Borough	3,205	3,036	2,999	3,053	3,107	3,162	3,210	3,249	3,282	283	9.4%
Newfield Borough	1,615	1,553	1,534	1,561	1,588	1,615	1,639	1,659	1,675	141	9.2%
Paulsboro Borough	6,160	6,097	5,989	6,054	6,118	6,184	6,241	6,287	6,327	338	5.6%
Pitman Borough	9,330	9,011	8,898	9,092	9,285	9,482	9,652	9,791	9,910	1,012	11.4%
South Harrison Township	2,415	3,162	3,138	3,397	3,655	3,917	4,144	4,331	4,489	1,351	43.1%
Swedesboro Borough	2,055	2,584	2,613	2,686	2,758	2,831	2,895	2,947	2,991	378	14.5%
Washington Township	48,155	48,559	47,862	49,302	50,738	52,192	53,452	54,488	55,366	7,504	15.7%
Wenonah Borough	2,315	2,278	2,254	2,318	2,382	2,447	2,503	2,549	2,588	334	14.8%
West Deptford Township	19,370	21,677	21,420	22,506	23,586	24,683	25,634	26,414	27,076	5,656	26.4%
Westville Borough	4,500	4,288	4,224	4,338	4,451	4,566	4,665	4,747	4,816	592	14.0%
Woodbury City	10,305	10,174	10,020	10,105	10,190	10,276	10,351	10,412	10,464	444	4.4%
Woodbury Heights Borough	2,990	3,055	3,010	3,054	3,098	3,143	3,181	3,213	3,240	230	7.6%
Woolwich Township	3,030	10,200	12,295	14,669	17,030	19,428	21,505	23,211	24,657	12,362	100.5%
Mercer County	**320,527**	**367,511**	**371,398**	**377,328**	**383,227**	**389,219**	**394,407**	**398,669**	**402,283**	**30,885**	**8.3%**
East Windsor Township	24,915	27,190	27,603	28,068	28,531	29,002	29,409	29,743	30,027	2,424	8.8%
Ewing Township	35,710	35,790	36,486	37,076	37,660	38,254	38,769	39,192	39,550	3,064	8.4%
Hamilton Township	87,109	88,464	89,030	90,099	91,163	92,243	93,178	93,947	94,598	5,568	6.3%
Hightstown Borough	5,215	5,494	5,517	5,562	5,607	5,653	5,693	5,725	5,753	236	4.3%
Hopewell Borough	2,035	1,922	1,929	1,932	1,936	1,939	1,942	1,944	1,946	17	0.9%
Hopewell Township	16,105	18,302	18,606	19,460	20,310	21,174	21,921	22,535	23,056	4,450	23.9%
Lawrence Township	29,160	33,472	33,242	33,511	33,779	34,052	34,287	34,481	34,645	1,403	4.2%
Pennington Borough	2,695	2,585	2,598	2,654	2,710	2,766	2,816	2,856	2,890	292	11.2%
Princeton**		28,572	29,603	30,084	30,559	31,044	31,463	31,808	32,100	2,497	8.4%
Robbinsville	10,275	13,642	14,176	14,784	15,390	16,006	16,538	16,978	17,347	3,171	22.4%
Trenton City	85,403	84,913	84,225	85,213	86,197	87,194	88,059	88,767	89,372	5,147	6.1%
West Windsor Township	21,905	27,165	28,383	28,885	29,385	29,892	30,332	30,693	30,999	2,616	9.2%

*Source: Delaware Valley Regional Planning Commission, June 2016. ** In January 2013, Princeton Township and Princeton Borough, in Mercer County, merged to form one single municipality, known simply as Princeton.*

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Report Title: **Analytical Data Report # 022: County- and Municipal-Level Population Forecasts, 2015-2045**

Publication No.: ADR 022

Date Published: July 2016

Geographic Area Covered: DVRPC's 9-county region, including Burlington, Camden, Gloucester, and Mercer counties in New Jersey, and Bucks, Chester, Delaware, Montgomery, and Philadelphia counties in Pennsylvania.

Key Words: population, population forecasts, age-cohort survival model, birth rates, survival rates, migration, Connections 2045, long-range plan

ABSTRACT: This report presents the Delaware Valley Regional Planning Commission's (DVRPC's) adopted 2045 county- and municipal-level population forecasts and describes the method used to develop them. Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of DVRPC's long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. DVRPC last adopted forecasts through the year 2040 in January 2012. Since that time, the Census Bureau has released 2015 population estimates, and both the nation and the region have continued to recover from the significant economic recession that officially began in December 2007 and ended in June 2009.

In order to incorporate the 2015 Census estimates and maintain a 30-year planning horizon, DVRPC has prepared 2045 population forecasts for its member counties and municipalities. These forecasts were formally adopted by the DVRPC Board on July 28, 2016, and serve as the basis for DVRPC planning and modeling activities. Employment forecasts in five-year increments through 2045 are scheduled to be adopted in October 2016.

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DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

ADR 023 I October 2016

Analytical Data Report

Regional, County, and Municipal Employment Forecasts, 2015–2045

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The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources, including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA); the Pennsylvania and New Jersey departments of transportation; and DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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As the region's metropolitan planning organization, DVRPC provides technical assistance and services to its member state and local governments. *Delaware Valley Data* is our periodic series of free data bulletins, analytical data reports, data reference guides, and data snapshots.

Introduction

As a part of our long-range planning activities, DVRPC is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. Population forecasts in five-year increments between 2015 and 2045 were adopted by the DVRPC Board on July 28, 2016. This document presents employment forecasts in five-year increments between 2015 and 2045, developed by DVRPC in coordination with its member county planning staffs. These population and employment forecasts will support the region's 2045 long-range plan, scheduled for adoption in July 2017, and serve as the basis for DVRPC's planning and modeling activities.

2010 and 2013 Employment Base

DVRPC has traditionally based its long-range employment forecasts on employment data from the American Association of State Highway and Transportation Officials' (AASHTO) Census Transportation Planning Products (CTPP). However, 2010 CTPP data was not released until mid-2013, too late to be used for forecasting purposes prior to the 2013 adoption of the current Connections 2040 Long Range Plan. Additionally, changes in the method for calculating CTPP data has increased the margins of error and made it a less reliable source of employment data for small geographies. Subsequently, DVRPC staff researched and compared several sources of employment data, including government sources (such as ES-202 data, the BLS' Quarterly Census of Employment and Wages, and the Current Employment Statistics survey) and private proprietary sources (including Dun and Bradstreet). The National Establishment Time-Series (NETS), produced by Walls and Associates, was determined to be superior to other sources in terms of coverage, accuracy, and the provision of locational data.

The NETS database is essentially a "cleaned-up" version of the Dun and Bradstreet database. Using each company's unique DUNS number (or numbers, in cases where separate divisions within a company have unique DUNS numbers), Walls and Associates creates a time series for each business and then screens the data to eliminate duplicates and identify anomalies. If a file contains suspicious information, the data is cross-checked with previous annual records and adjusted or eliminated as appropriate, based on information collected from other sources (including government and non-profits). One advantage of the establishment-based NETS Database is that all employment, sales, and other activity is reported at the actual facility—not the headquarters.

Unlike government sources of employment data, the NETS database includes sole proprietors, part-time jobs, and farm operations, and has been found to be more accurate in reporting data for small privately-owned firms and public sector employers such as post offices and public schools. Employment from the NETS database is therefore generally higher than many of these other sources. As a base for the 2040 forecasts, DVRPC and county planning staffs reviewed 2000 and 2010 employment data from a NETS database that was acquired in 2013.

In March 2016, DVRPC acquired an updated NETS dataset that included both revised 2010 and 2013 employment data. All corrections made to the previous NETS database by DVRPC and county planning staffs, either during the previous forecasting round or as a result of ongoing DVRPC land

use and transportation studies, were incorporated in to the new database. DVRPC staff reviewed the revised 2010 data and the 2013 data to eliminate any remaining duplicates and correct obvious errors, using resources that included CoStar, company web sites, and on-line business directories. The data was then reviewed by the region's county planning staffs, and further corrections were made based on local knowledge (including errors in location and missing large employers).

The NETS database used by DVRPC includes the street address and the most current latitude-longitude for each establishment as well as the origin and destination latitude-longitudes for all significant moves, at the four-decimal-place-level. In order to assign each employer to a specific municipality, every employer in the NETS database was geocoded. Based on an internal review by DVRPC staff, several spatially inaccurate results were identified, and numerous adjustments were made to improve the accuracy of the dataset before the results were sent to the counties for review. While the counties were reviewing the employment data, DVRPC staff continued to refine the NETS GIS dataset, by comparing TomTom results with other geocoding services, and by manually checking the location of hundreds of significant employers.

2015 Employment Estimates

Estimates of the 2015 employment were then calculated, based on both the changes in NETS employment by sector in each county between 2010 and 2013, and the employment change in each county between 2010 and 2015 released by the BLS in September 2016. The estimated 2015 county employment was allocated to municipalities based on the proportion of the county's employment that was present in each municipality in 2013.

2045 Employment Forecasts

Employment forecasts in five-year increments through 2045 were developed using a similar method as was used in previous forecasting rounds. Various studies and past experience have shown that there is a direct relationship between the number of workers living in a region (which is a function of population) and the number of jobs. To forecast future employment, DVRPC determined an expected future ratio of employment to population for each county, based on the known ratio in 2015. These ratios were applied to the Commission's adopted 2045 population forecasts, to create employment forecasts for each county, in five-year increments through 2045.

County-level employment forecasts between 2020 and 2040 were disaggregated to the municipal level based on the proportion of each county's employment that was expected to be in each municipality by DVRPC's adopted 2040 forecasts, as adjusted by the differences between the Commission's adopted 2015 forecast and the 2015 NETS employment estimates. The proportion of each county's employment expected to be in each municipality in 2045 was forecast based on the linear trend in the proportion from 2015 to 2040. The draft employment forecasts in five-year increments were then reviewed by county planning staffs, and final revisions were made based on their recommendations.

Military employment, which DVRPC staff believes was not accurately reflected in the NETS database, was accounted for by adding the military employment in each municipality reported in the 2006–2010 five-

year CTPP estimates to the 2015 employment estimate and the future employment forecasts. Given the difficulty of forecasting future military employment, the number of military employees was kept stable in future years.

Table 1 summarizes regional and county employment forecasts in five-year increments through 2045, and municipal-level forecasts are provided in Appendix A. Table 2 identifies the 20 municipalities expected to gain the most employees between 2015 and 2045 in absolute numbers, while Table 3 identifies municipalities with the highest forecast percentage change in employment. Figure 1 illustrates the DVRPC region's 2045 municipal employment forecasts, and Figures 2 and 3 illustrate absolute and percent change in employment by municipality between 2015 and 2045.

Figure 4 illustrates the absolute increase in employment per square mile in each of the region's 352 municipalities and 18 City of Philadelphia planning districts. This map highlights not only where employment is increasing, but also the impact of relatively small increases on employment density in many of the region's centers. Employment density is forecast to increase not only in the City of Philadelphia, but also in many of the region's smaller boroughs, including Conshohocken and West Conshohocken boroughs in Montgomery County; Dublin, Penndel, and Ivyland boroughs in Bucks County; and Kennett Square, Phoenixville, and Downingtown boroughs in Chester County.

Highlights include the following:

- The DVRPC region is forecast to gain almost 373,000 jobs between 2015 and 2045 (an increase of almost 12 percent), with much of this growth concentrated in the suburbs.
- The region's five southeastern Pennsylvania counties are forecast to experience a 12.6 percent increase in employment, while employment in the four New Jersey counties is expected to increase by 9.8 percent.
- The largest percent increases are forecast in Gloucester County in New Jersey and Chester County in Pennsylvania, where employment is forecast to increase by 29 and 28 percent, respectively.
- The largest absolute increase in employment is forecast for Chester County, expected to gain 87,800 employees. Other counties forecast to see a significant number of additional employees include Montgomery County (expected to gain almost 82,000 employees) and Philadelphia (with a forecasted increase of almost 64,000 jobs).
- Both Philadelphia and Camden City, New Jersey, are forecast to gain employment, with forecasted percentage increases of 8.3 percent and 10.1 percent, respectively. The region's other two core cities are expected to see their employment stabilize and increase slightly, with a 2.8 percent increase in employment in Trenton, New Jersey, and a 2.6 percent increase in Chester City, Pennsylvania.

Summary

Population and employment forecasts are a critical component of long-range land use and transportation planning. This report presents the method used to develop 2045 and interim year employment forecasts, adopted by the DVRPC Board on October 27, 2016.

Data from the National Establishments Time Series (NETS) database served as the base for the 2045 employment forecasts. In March 2016, DVRPC acquired an updated NETS database that included 2013 employment data and revised 2010 data. The 2010 and 2013 employment data was reviewed and revised by DVRPC staff, utilizing resources that included CoStar, on-line business directories, company websites and, when appropriate, direct telephone calls. The revised data was then sent to the county planning staffs for additional revision. Additionally, during the summer of 2016, DVRPC acquired improved geocoding resources that allowed staff to further correct the spatial locations of employers.

Based on changes in the NETS employment between 2010 and 2013, and changes in employment in each county between 2010 and 2015 as reported by the U.S. Bureau of Labor Statistics (BLS), 2015 employment was estimated by county and municipality. Given that studies have shown that there is a direct relationship between the number of workers living in an area and the number of jobs, employment forecasts were calculated in five-year increments through 2045, by estimating a future ratio of population to employment in each county and applying it to DVRPC's adopted population forecasts.

Employment in the nine-county region is forecast to increase by almost 12 percent between 2015 and 2045, with the greatest absolute increases in employment expected in Chester, Montgomery, and Philadelphia counties and the greatest percentage increases forecast in Gloucester County, New Jersey, and Chester County, Pennsylvania. Together with the 2045 population forecasts adopted by the DVRPC Board in July 2016, these employment forecasts will serve as the basis for DVRPC's planning and modeling activities, and support the region's 2045 long-range plan, scheduled for adoption in July 2017.

Table 1: 2045 Employment Forecasts by County

County	2015 Employment	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Forecasted Absolute Change, 2015-2045	Forecasted Percent Change, 2015-2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	38,393	11.9%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	87,800	28.4%
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	10,996	4.1%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	81,942	14.1%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	63,978	8.3%
Five Pennsylvania Counties	**2,255,680**	**2,310,874**	**2,364,147**	**2,419,171**	**2,467,523**	**2,506,728**	**2,538,789**	**283,109**	**12.6%**
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	22,324	9.3%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	8,287	3.1%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	35,304	29.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	23,789	8.3%
Four New Jersey Counties	**912,557**	**930,545**	**948,431**	**965,698**	**979,816**	**991,943**	**1,002,261**	**89,704**	**9.8%**
Nine DVRPC Counties	**3,168,237**	**3,241,419**	**3,312,578**	**3,384,869**	**3,447,339**	**3,498,671**	**3,541,050**	**372,813**	**11.8%**

Source: *Delaware Valley Regional Planning Commission, October 2016.*

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Table 2: Municipalities with the Greatest Forecasted Absolute Change in Employment, 2015–2045

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Upper Merion Township/ Montgomery	9,470	11	Plymouth Township/ Montgomery	4,500
2	Horsham Township/ Montgomery	8,660	12	Woolwich Township/ Gloucester	4,338
3	East Whiteland Township/ Chester	7,224	13	Camden City/ Camden	4,206
4	Uwchlan Township/ Chester	6,737	14	West Deptford Township/ Gloucester	3,844
5	Tredyffrin Township/ Chester	6,625	15	West Windsor Township/ Mercer	3,713
6	West Whiteland Township/ Chester	6,259	16	Hopewell Township/ Mercer	3,712
7	West Goshen Township/ Chester	5,459	17	Phoenixville Borough/ Chester	3,621
8	Conshohocken Borough/ Montgomery	5,000	18	Lower Merion Township/ Montgomery	3,500
9	Monroe Township/ Camden	4,999	19	Mt. Laurel Township/ Burlington	3,444
10	Upper Providence Township/ Montgomery	4,520	20	Upper Dublin Township/Bucks	3,400

Source: Delaware Valley Regional Planning Commission, October 2016. Does not include Philadelphia, which is both a county and a municipality.

Table 3: Municipalities with the Greatest Forecasted Percentage Change in Employment, 2015–2045

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Woolwich Township/ Gloucester	164%	11	Parkesburg Borough/ Chester	59%
2	Modena Borough/ Chester	125%	12	West Sadsbury Township/ Chester	58%
3	Elk Township/ Gloucester	92%	13	Mantua Township/ Gloucester	57%
4	Dublin Borough/ Bucks	84%	14	Honey Brook Borough/ Chester	55%
5	Lower Oxford Township/ Chester	82%	15	Conshohocken Borough/ Montgomery	53%
6	West Brandywine Township/ Chester	77%	16	Wallace Township/ Chester	53%
7	Elverson Borough/ Chester	72%	17	Phoenixville Borough/ Chester	53%
8	East Vincent Township/ Chester	68%	18	West Nottingham Township/ Chester	53%
9	Harrison Township/ Gloucester	64%	19	Sellersville Borough/ Bucks	52%
10	South Coventry Township/ Chester	61%	20	Upper Oxford Township/ Chester	52%

Source: Delaware Valley Regional Planning Commission, October, 2016. Does not include Philadelphia, which is both a county and a municipality.

Figure 1:

2045 Municipal Employment Forecast

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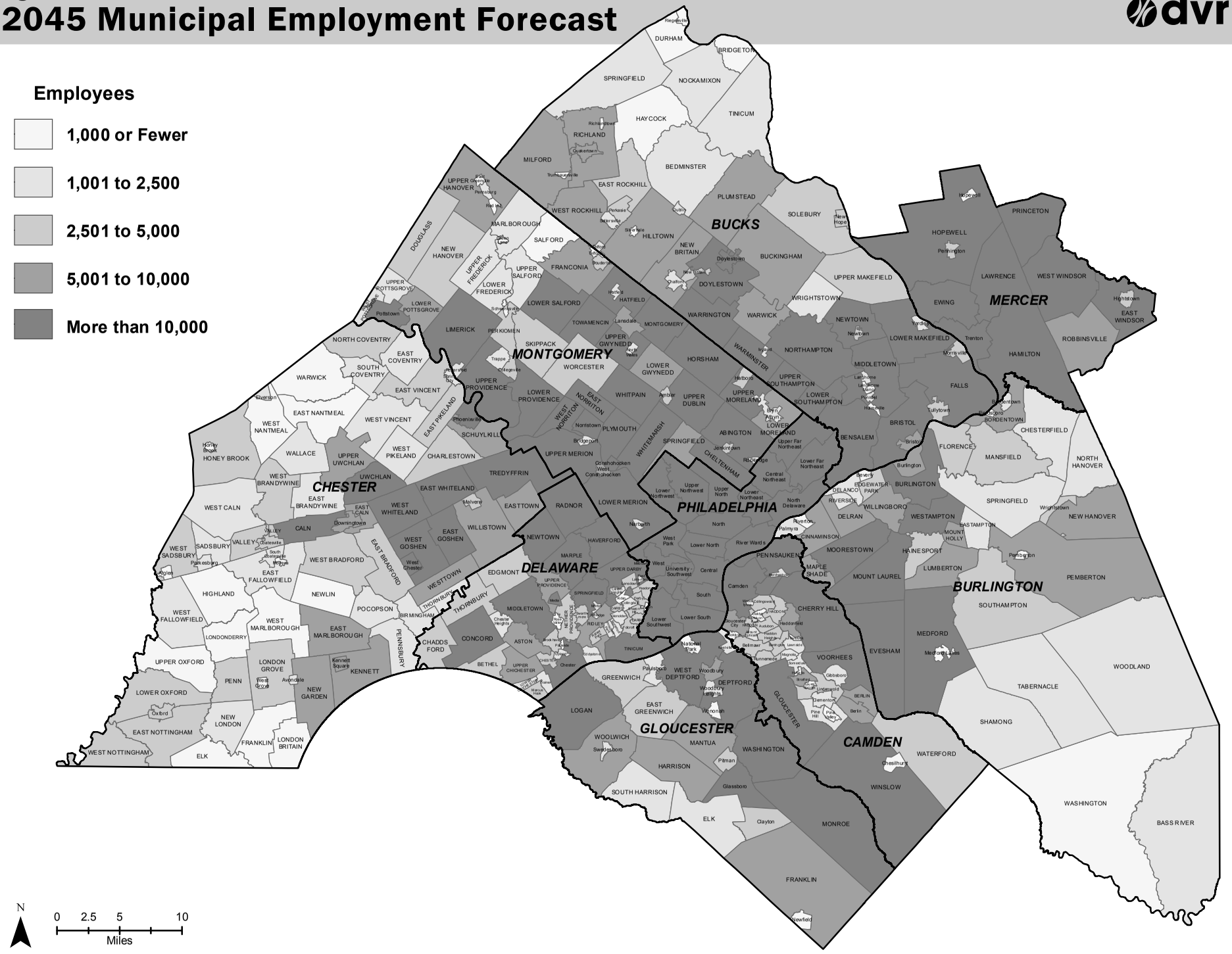

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Figure 2:

2045 Municipal Employment Forecast

Absolute Change: 2015—2045

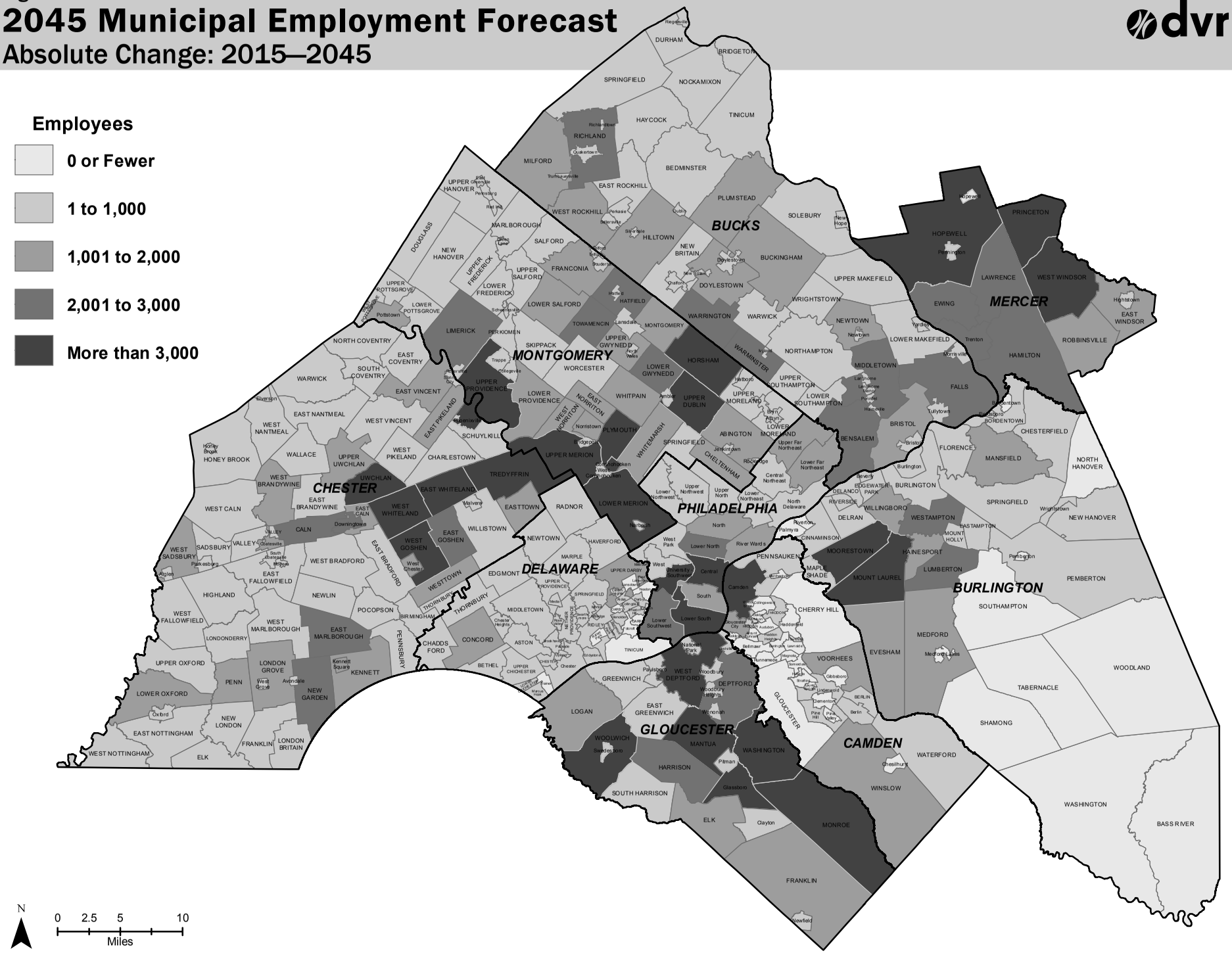

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Figure 3:

2045 Municipal Employment Forecast

Percentage Change: 2015—2045

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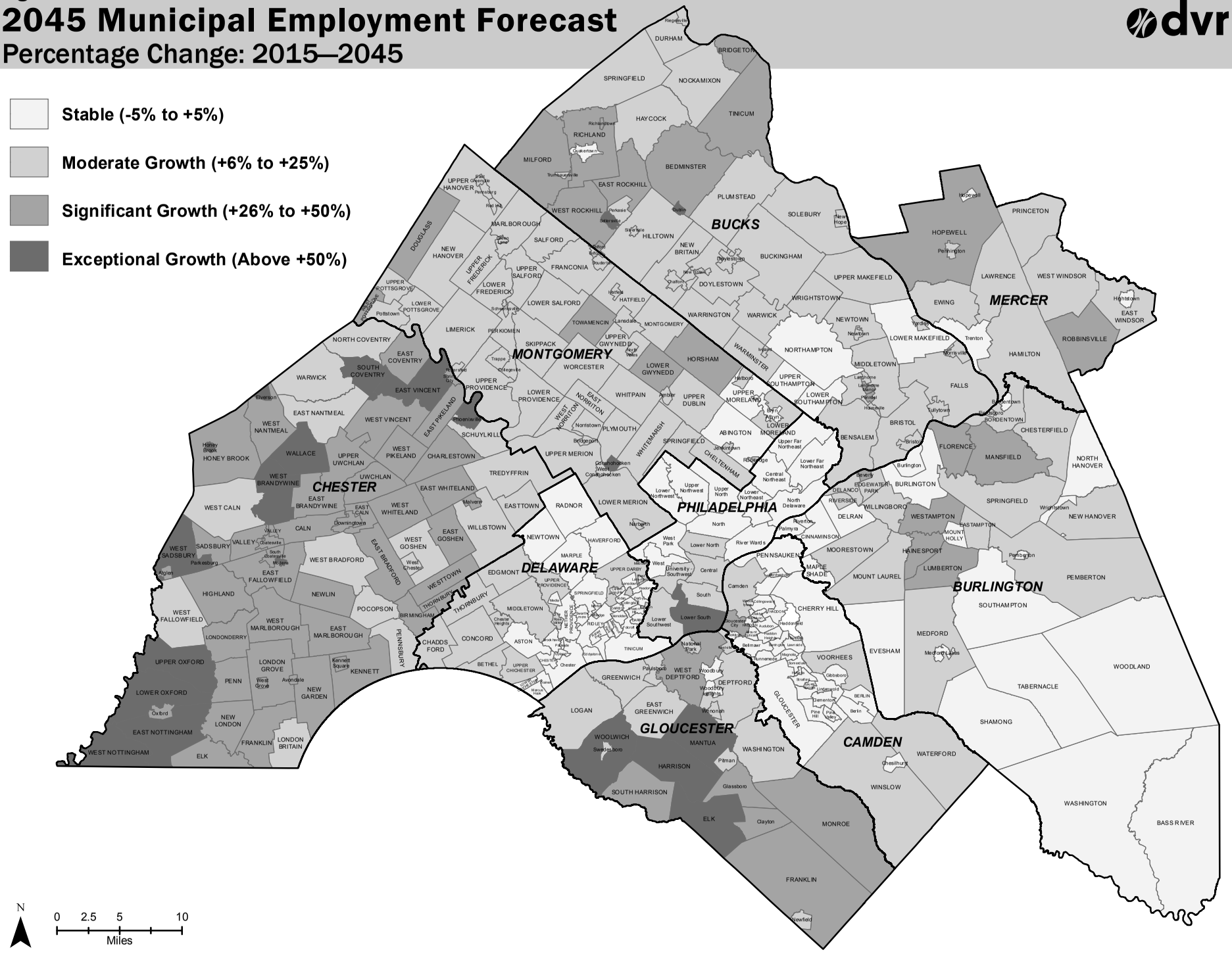

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Figure 4:

2045 Municipal Employment Forecast

Absolute Change per Square Mile by Municipality: 2015—2045

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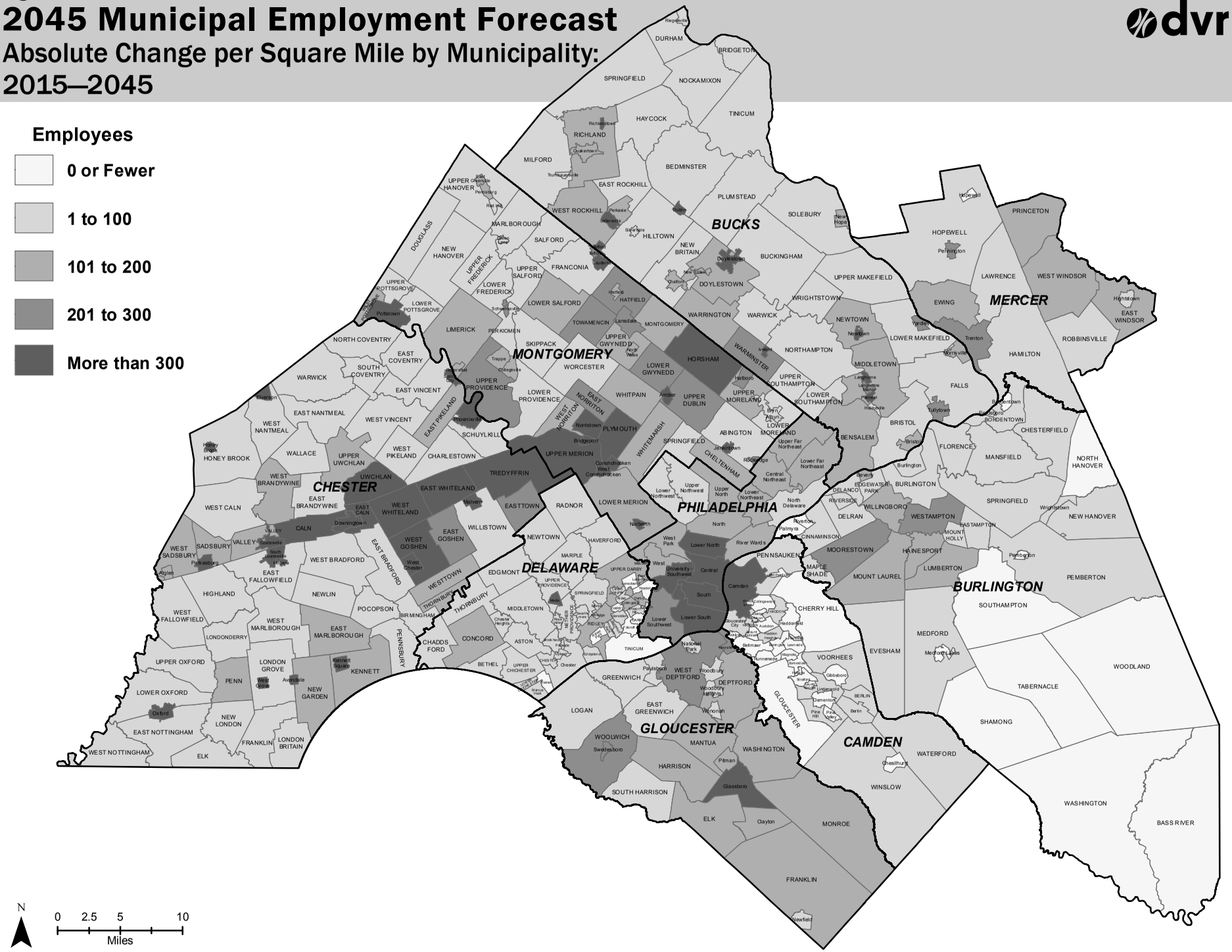

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Appendix A: Forecasted Employment by County and Municipality, 2015-2045

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Bucks County	**322,731**	**329,645**	**337,203**	**344,859**	**351,310**	**356,671**	**361,124**	**38,393**	**11.9%**
Bedminster Township	1,864	2,018	2,116	2,215	2,260	2,311	2,424	560	30.0%
Bensalem Township	43,829	44,472	44,697	44,952	45,567	46,304	46,023	2,194	5.0%
Bridgeton Township	334	351	368	395	402	419	434	100	29.9%
Bristol Borough	5,111	5,166	5,239	5,315	5,366	5,396	5,415	304	5.9%
Bristol Township	23,168	23,575	23,799	24,037	24,370	24,768	24,740	1,572	6.8%
Buckingham Township	7,609	7,755	8,012	8,271	8,409	8,476	8,667	1,058	13.9%
Chalfont Borough	1,300	1,332	1,393	1,454	1,485	1,499	1,550	250	19.2%
Doylestown Borough	10,480	10,628	10,861	11,097	11,236	11,309	11,438	958	9.1%
Doylestown Township	11,453	11,838	12,071	12,308	12,652	13,030	13,163	1,710	14.9%
Dublin Borough	820	879	926	962	1,225	1,530	1,520	700	85.4%
Durham Township	254	256	257	259	267	276	273	19	7.5%
East Rockhill Township	2,140	2,259	2,335	2,411	2,520	2,636	2,700	560	26.2%
Falls Township	16,290	16,575	17,065	17,558	17,827	17,961	18,302	2,012	12.4%
Haycock Township	486	507	519	532	556	582	590	104	21.4%
Hilltown Township	6,113	6,252	6,509	6,766	6,897	6,959	7,167	1,054	17.2%
Hulmeville Borough	254	262	268	274	282	290	294	40	15.7%
Ivyland Borough	1,671	1,749	1,789	1,830	1,869	1,913	1,948	277	16.6%
Langhorne Borough	1,150	1,176	1,225	1,274	1,299	1,311	1,351	201	17.5%
Langhorne Manor Borough	313	329	364	398	413	420	454	141	45.0%
Lower Makefield Township	11,612	11,717	11,768	11,827	12,007	12,219	12,111	499	4.3%
Lower Southampton Township	13,210	13,289	13,334	13,387	13,457	13,512	13,401	191	1.4%
Middletown Township	24,781	25,116	25,630	26,154	26,465	26,634	26,900	2,119	8.6%
Milford Township	3,753	3,912	4,241	4,567	4,720	4,784	5,100	1,347	35.9%
Morrisville Borough	2,903	2,951	3,033	3,115	3,161	3,184	3,238	335	11.5%
New Britain Borough	3,004	3,046	3,088	3,132	3,176	3,214	3,204	200	6.7%
New Britain Township	5,330	5,453	5,528	5,605	5,791	5,992	5,999	669	12.6%
New Hope Borough	2,854	2,893	2,953	3,015	3,051	3,071	3,102	248	8.7%
Newtown Borough	2,375	2,404	2,426	2,447	2,522	2,604	2,588	213	9.0%
Newtown Township	13,519	13,712	14,016	14,325	14,505	14,601	14,771	1,252	9.3%
Nockamixon Township	1,519	1,580	1,617	1,655	1,733	1,816	1,838	319	21.0%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Northampton Township	14,669	14,801	14,953	15,113	15,233	15,310	15,299	630	4.3%
Penndel Borough	1,403	1,453	1,555	1,656	1,704	1,725	1,819	416	29.7%
Perkasie Borough	2,991	3,058	3,182	3,305	3,369	3,399	3,499	508	17.0%
Plumstead Township	6,583	6,785	7,183	7,578	7,771	7,856	8,214	1,631	24.8%
Quakertown Borough	5,546	5,598	5,660	5,724	5,772	5,801	5,802	256	4.6%
Richland Township	6,678	7,236	7,597	7,956	8,221	8,510	8,904	2,226	33.3%
Richlandtown Borough	288	300	326	351	363	368	393	105	36.5%
Riegelsville Borough	142	145	148	149	154	159	159	17	12.0%
Sellersville Borough	1,150	1,230	1,377	1,520	1,597	1,632	1,750	600	52.2%
Silverdale Borough	299	301	303	305	315	327	323	24	8.0%
Solebury Township	3,399	3,472	3,605	3,739	3,808	3,841	3,946	547	16.1%
Springfield Township	1,474	1,524	1,555	1,586	1,638	1,693	1,710	236	16.0%
Telford Borough (part)	778	815	894	971	1,007	1,022	1,099	321	41.3%
Tinicum Township	1,532	1,584	1,690	1,794	1,844	1,866	1,963	431	28.1%
Trumbauersville Borough	307	309	314	317	333	348	346	39	12.7%
Tullytown Borough	3,097	3,158	3,267	3,377	3,435	3,463	3,546	449	14.5%
Upper Makefield Township	2,741	2,790	2,876	2,962	3,008	3,031	3,092	351	12.8%
Upper Southampton Township	9,981	10,006	10,026	10,053	10,322	10,618	10,459	478	4.8%
Warminster Township	16,109	16,891	17,210	17,536	17,956	18,424	18,702	2,593	16.1%
Warrington Township	9,581	9,863	10,414	10,963	11,232	11,352	11,842	2,261	23.6%
Warwick Township	5,967	6,074	6,258	6,444	6,544	6,594	6,724	757	12.7%
West Rockhill Township	5,227	5,442	5,885	6,323	6,530	6,617	7,040	1,813	34.7%
Wrightstown Township	1,294	1,324	1,378	1,433	1,461	1,474	1,519	225	17.4%
Yardley Borough	1,996	2,034	2,100	2,167	2,203	2,220	2,269	273	13.7%
Chester County	**309,605**	**326,320**	**343,050**	**359,774**	**374,967**	**387,391**	**397,405**	**87,800**	**28.4%**
Atglen Borough	498	521	549	577	599	617	643	145	29.1%
Avondale Borough	780	840	906	971	1,026	1,071	1,122	342	43.8%
Birmingham Township	1,573	1,664	1,754	1,846	1,927	1,994	2,046	473	30.1%
Caln Township	8,191	8,719	9,294	9,872	10,358	10,761	11,181	2,990	36.5%
Charlestown Township	3,134	3,309	3,483	3,661	3,818	3,947	4,050	916	29.2%
Coatesville City	2,579	2,759	2,958	3,160	3,327	3,465	3,619	1,040	40.3%
Downingtown Borough	6,455	6,798	7,192	7,588	7,910	8,175	8,499	2,044	31.7%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
East Bradford Township	1,844	1,966	2,097	2,229	2,341	2,433	2,527	683	37.0%
East Brandywine Township	1,649	1,777	1,921	2,068	2,187	2,285	2,404	755	45.8%
East Caln Township	4,254	4,474	4,685	4,900	5,096	5,258	5,367	1,113	26.2%
East Coventry Township	1,515	1,618	1,730	1,842	1,937	2,015	2,096	581	38.3%
East Fallowfield Township	911	969	1,029	1,089	1,140	1,186	1,221	310	34.0%
East Goshen Township	8,156	8,597	9,036	9,482	9,877	10,205	10,461	2,305	28.3%
East Marlborough Township	5,264	5,608	6,002	6,399	6,721	6,987	7,308	2,044	38.8%
East Nantmeal Township	821	862	896	931	966	996	999	178	21.7%
East Nottingham Township	1,713	1,854	2,020	2,187	2,320	2,430	2,571	858	50.1%
East Pikeland Township	2,836	3,040	3,268	3,499	3,687	3,845	4,025	1,189	41.9%
Easttown Township	7,006	7,347	7,667	7,992	8,291	8,545	8,694	1,688	24.1%
East Vincent Township	1,867	2,063	2,298	2,306	2,716	2,858	3,129	1,262	67.6%
East Whiteland Township	23,399	24,735	26,117	27,514	28,722	29,730	30,623	7,224	30.9%
Elk Township	266	287	305	324	342	357	363	97	36.5%
Elverson Borough	596	663	746	829	894	947	1,026	430	72.1%
Franklin Township	608	659	715	773	820	859	905	297	48.8%
Highland Township	535	567	594	623	649	674	681	146	27.3%
Honey Brook Borough	389	425	466	507	541	569	602	213	54.8%
Honey Brook Township	2,990	3,164	3,342	3,522	3,678	3,809	3,920	930	31.1%
Kennett Township	5,782	6,112	6,450	6,793	7,092	7,341	7,555	1,773	30.7%
Kennett Square Borough	4,177	4,405	4,632	4,862	5,066	5,239	5,370	1,193	28.6%
London Britain Township	630	665	691	719	747	772	773	143	22.7%
Londonderry Township	488	530	575	621	660	694	729	241	49.4%
London Grove Township	2,535	2,738	2,972	3,208	3,400	3,559	3,755	1,220	48.1%
Lower Oxford Township	1,874	2,096	2,397	2,698	2,918	3,098	3,418	1,544	82.4%
Malvern Borough	2,359	2,500	2,646	2,794	2,921	3,027	3,121	762	32.3%
Modena Borough	124	147	178	207	230	248	279	155	125.0%
New Garden Township	6,534	6,884	7,277	7,673	7,999	8,268	8,578	2,044	31.3%
Newlin Township	271	293	315	336	357	375	387	116	42.8%
New London Township	1,041	1,098	1,155	1,213	1,263	1,306	1,385	344	33.0%
North Coventry Township	3,730	3,896	4,037	4,182	4,323	4,444	4,483	753	20.2%
Oxford Borough	2,156	2,319	2,504	2,691	2,843	2,968	3,118	962	44.6%
Parkesburg Borough	671	734	811	888	948	997	1,065	394	58.7%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Penn Township	2,916	3,084	3,286	3,490	3,649	3,781	3,961	1,045	35.8%
Pennsbury Township	1,395	1,460	1,514	1,568	1,624	1,671	1,680	285	20.4%
Phoenixville Borough	6,835	7,419	8,119	8,823	9,378	9,835	10,456	3,621	53.0%
Pocopson Township	1,030	1,081	1,123	1,165	1,208	1,244	1,252	222	21.6%
Sadsbury Township	1,571	1,692	1,830	1,969	2,083	2,176	2,288	717	45.6%
Schuylkill Township	4,530	4,706	4,840	4,977	5,124	5,197	5,247	717	15.8%
South Coatesville Borough	1,390	1,502	1,629	1,759	1,862	1,949	2,055	665	47.8%
South Coventry Township	1,146	1,257	1,392	1,528	1,633	1,721	1,844	698	60.9%
Spring City Borough	959	1,027	1,100	1,173	1,235	1,287	1,339	380	39.6%
Thornbury Township	1,302	1,384	1,470	1,557	1,631	1,693	1,749	447	34.3%
Tredyffrin Township	55,495	57,323	58,540	59,802	61,270	62,518	62,120	6,625	11.9%
Upper Oxford Township	361	393	428	465	494	519	547	186	51.5%
Upper Uwchlan Township	4,216	4,447	4,677	4,910	5,116	5,288	5,421	1,205	28.6%
Uwchlan Township	14,889	16,014	17,312	18,619	19,674	20,545	21,626	6,737	45.2%
Valley Township	2,085	2,249	2,440	2,633	2,787	2,915	3,074	989	47.4%
Wallace Township	903	981	1,074	1,168	1,242	1,304	1,383	480	53.2%
Warwick Township	614	648	674	701	729	753	754	140	22.8%
West Bradford Township	2,095	2,190	2,269	2,349	2,429	2,497	2,514	419	20.0%
West Brandywine Township	2,088	2,331	2,643	2,955	3,192	3,386	3,694	1,606	76.9%
West Caln Township	1,450	1,523	1,590	1,657	1,721	1,775	1,799	349	24.1%
West Chester Borough	11,440	11,787	11,979	12,181	12,448	12,678	12,510	1,070	9.4%
West Fallowfield Township	958	1,006	1,043	1,082	1,122	1,155	1,159	201	21.0%
West Goshen Township	24,174	25,299	26,334	27,385	28,369	29,189	29,633	5,459	22.6%
West Grove Borough	674	719	763	808	848	881	907	233	34.6%
West Marlborough Township	330	353	371	388	409	424	426	96	29.1%
West Nantmeal Township	647	690	732	775	814	845	870	223	34.5%
West Nottingham Township	1,736	1,884	2,060	2,238	2,378	2,493	2,647	911	52.5%
West Pikeland Township	964	1,029	1,097	1,165	1,225	1,274	1,320	356	36.9%
West Sadsbury Township	2,106	2,300	2,537	2,774	2,959	3,112	3,327	1,221	58.0%
West Vincent Township	1,476	1,552	1,623	1,695	1,759	1,816	1,846	370	25.1%
West Whiteland Township	23,476	24,691	25,883	27,093	28,175	29,076	29,735	6,259	26.7%
Westtown Township	4,257	4,479	4,693	4,910	5,107	5,271	5,383	1,126	26.5%
Willistown Township	7,896	8,118	8,275	8,436	8,616	8,769	8,741	845	10.7%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Delaware County	**268,054**	**270,167**	**272,269**	**274,401**	**276,248**	**277,763**	**279,050**	**10,996**	**4.1%**
Aldan Borough	957	963	966	969	973	978	978	21	2.2%
Aston Township	6,558	6,615	6,678	6,742	6,793	6,832	6,876	318	4.8%
Bethel Township	2,297	2,331	2,388	2,445	2,478	2,497	2,548	251	10.9%
Brookhaven Borough	2,702	2,722	2,739	2,756	2,773	2,787	2,796	94	3.5%
Chadds Ford Twp.	4,153	4,232	4,374	4,516	4,593	4,634	4,768	615	14.8%
Chester City	11,939	12,014	12,062	12,112	12,174	12,234	12,244	305	2.6%
Chester Township	942	956	980	1,004	1,017	1,025	1,047	105	11.1%
Chester Heights Borough	2,926	2,945	2,958	2,971	2,987	3,002	3,005	79	2.7%
Clifton Heights Borough	2,142	2,153	2,155	2,157	2,165	2,175	2,169	27	1.3%
Collingdale Borough	2,108	2,125	2,143	2,161	2,176	2,188	2,199	91	4.3%
Colwyn Borough	417	421	425	430	433	435	439	22	5.3%
Concord Township	11,491	11,733	12,179	12,629	12,864	12,988	13,416	1,925	16.8%
Darby Borough	3,955	3,982	4,003	4,025	4,047	4,068	4,077	122	3.1%
Darby Township	2,593	2,602	2,595	2,588	2,594	2,604	2,588	-5	-0.2%
East Lansdowne Borough	658	661	661	661	664	667	665	7	1.1%
Eddystone Borough	2,429	2,439	2,436	2,433	2,440	2,450	2,439	10	0.4%
Edgmont Township	2,247	2,307	2,424	2,542	2,601	2,630	2,745	498	22.2%
Folcroft Borough	3,501	3,507	3,484	3,460	3,462	3,474	3,437	-64	-1.8%
Glenolden Borough	2,366	2,376	2,376	2,375	2,383	2,394	2,385	19	0.8%
Haverford Township	16,973	17,066	17,103	17,142	17,217	17,298	17,279	306	1.8%
Lansdowne Borough	2,650	2,659	2,652	2,646	2,652	2,662	2,646	-4	-0.2%
Lower Chichester Township	1,374	1,380	1,381	1,381	1,386	1,392	1,387	13	0.9%
Marcus Hook Borough	3,014	3,037	3,058	3,079	3,099	3,115	3,127	113	3.7%
Marple Township	14,026	14,082	14,063	14,045	14,085	14,143	14,075	49	0.3%
Media Borough	11,882	11,974	12,064	12,156	12,236	12,303	12,357	475	4.0%
Middletown Township	14,076	14,220	14,407	14,597	14,727	14,820	14,968	892	6.3%
Millbourne Borough	370	375	382	389	393	396	402	32	8.6%
Morton Borough	1,290	1,297	1,300	1,303	1,309	1,315	1,314	24	1.9%
Nether Providence Township	4,626	4,656	4,677	4,698	4,723	4,747	4,753	127	2.7%
Newtown Township	12,615	12,710	12,798	12,888	12,971	13,040	13,090	475	3.8%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Norwood Borough	1,140	1,145	1,146	1,146	1,151	1,156	1,152	12	1.1%
Parkside Borough	328	330	332	334	336	337	338	10	3.0%
Prospect Park Borough	1,726	1,736	1,742	1,747	1,756	1,764	1,764	38	2.2%
Radnor Township	25,694	25,861	25,978	26,099	26,239	26,371	26,407	713	2.8%
Ridley Township	2,809	2,814	2,795	2,776	2,777	2,786	2,757	-52	-1.9%
Ridley Park Borough	9,411	9,463	9,483	9,505	9,546	9,591	9,580	169	1.8%
Rose Valley Borough	297	302	310	318	323	326	333	36	12.1%
Rutledge Borough	131	132	132	132	133	133	133	2	1.5%
Sharon Hill Borough	2,985	3,003	3,014	3,026	3,041	3,056	3,058	73	2.4%
Springfield Township	14,177	14,292	14,411	14,532	14,633	14,715	14,791	614	4.3%
Swarthmore Borough	2,660	2,677	2,688	2,700	2,714	2,727	2,730	70	2.6%
Thornbury Township	2,366	2,418	2,514	2,610	2,661	2,687	2,780	414	17.5%
Tinicum Township	12,489	12,531	12,495	12,461	12,488	12,537	12,457	-32	-0.3%
Trainer Borough	1,799	1,799	1,779	1,760	1,757	1,762	1,735	-64	-3.6%
Upland Borough	1,222	1,227	1,228	1,228	1,232	1,237	1,233	11	0.9%
Upper Chichester Township	6,648	6,710	6,786	6,862	6,918	6,959	7,016	368	5.5%
Upper Darby Township	25,058	25,282	25,543	25,806	26,007	26,159	26,346	1,288	5.1%
Upper Providence Township	5,055	5,114	5,198	5,283	5,338	5,373	5,445	390	7.7%
Yeadon Borough	2,782	2,791	2,784	2,776	2,783	2,794	2,776	-6	-0.2%
Montgomery County	**582,443**	**598,434**	**614,469**	**629,563**	**642,996**	**654,966**	**664,385**	**81,942**	**14.1%**
Abington Township	30,656	31,098	31,327	31,512	31,899	32,371	32,156	1,500	4.9%
Ambler Borough	3,185	3,248	3,322	3,392	3,450	3,501	3,537	352	11.1%
Bridgeport Borough	2,180	2,248	2,298	2,345	2,399	2,455	2,480	300	13.8%
Bryn Athyn Borough	1,427	1,440	1,452	1,463	1,474	1,484	1,477	50	3.5%
Cheltenham Township	18,189	18,517	18,725	18,906	19,201	19,546	19,489	1,300	7.1%
Collegeville Borough	2,626	2,668	2,705	2,738	2,775	2,814	2,815	189	7.2%
Conshohocken Borough	9,368	10,531	11,292	12,036	12,854	13,522	14,368	5,000	53.4%
Douglass Township	3,661	3,820	4,038	4,249	4,380	4,431	4,661	1,000	27.3%
East Greenville Borough	651	663	675	687	697	707	711	60	9.2%
East Norriton Township	10,682	10,999	11,317	11,617	11,813	11,880	12,182	1,500	14.0%
Franconia Township	7,630	7,696	8,004	8,297	8,439	8,497	8,745	1,115	14.6%
Green Lane Borough	183	186	187	189	191	193	193	10	5.5%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Hatboro Borough	3,893	3,978	4,018	4,055	4,125	4,204	4,193	300	7.7%
Hatfield Borough	1,150	1,172	1,190	1,208	1,227	1,248	1,250	100	8.7%
Hatfield Township	17,580	18,120	18,629	19,110	19,533	19,857	20,218	2,638	15.0%
Horsham Township	30,408	31,549	33,538	35,468	36,584	37,907	39,068	8,660	28.5%
Jenkintown Borough	4,597	4,677	4,722	4,761	4,833	4,918	4,897	300	6.5%
Lansdale Borough	7,772	7,952	8,045	8,126	8,254	8,372	8,384	612	7.9%
Limerick Township	11,533	11,874	12,362	12,826	13,324	13,799	14,151	2,618	22.7%
Lower Frederick Township	1,110	1,146	1,178	1,208	1,260	1,320	1,334	224	20.2%
Lower Gwynedd Township	7,006	7,282	7,770	8,244	8,514	8,687	9,125	2,119	30.2%
Lower Merion Township	55,354	56,522	57,038	57,471	58,209	58,915	58,854	3,500	6.3%
Lower Moreland Township	8,085	8,225	8,331	8,424	8,551	8,692	8,685	600	7.4%
Lower Pottsgrove Township	4,670	4,768	4,943	5,109	5,239	5,346	5,470	800	17.1%
Lower Providence Township	12,994	13,230	13,581	13,910	14,129	14,290	14,494	1,500	11.5%
Lower Salford Township	9,663	9,864	10,234	10,586	10,776	10,886	11,163	1,500	15.5%
Marlborough Township	978	991	1,010	1,027	1,051	1,071	1,078	100	10.2%
Montgomery Township	16,097	16,473	16,923	17,343	17,580	17,640	18,012	1,915	11.9%
Narberth Borough	2,039	2,076	2,101	2,122	2,155	2,193	2,189	150	7.4%
New Hanover Township	2,020	2,102	2,198	2,290	2,370	2,435	2,515	495	24.5%
Norristown Borough	14,095	14,558	14,873	15,166	15,560	15,972	16,095	2,000	14.2%
North Wales Borough	1,419	1,443	1,460	1,476	1,498	1,522	1,519	100	7.0%
Pennsburg Borough	1,519	1,552	1,573	1,592	1,617	1,641	1,645	126	8.3%
Perkiomen Township	2,416	2,469	2,537	2,602	2,651	2,693	2,733	317	13.1%
Plymouth Township	23,839	24,550	25,500	26,410	27,090	27,652	28,339	4,500	18.9%
Pottstown Borough	10,757	11,090	11,342	11,578	11,857	12,128	12,257	1,500	13.9%
Red Hill Borough	631	642	654	666	676	685	689	58	9.2%
Rockledge Borough	957	979	996	1,011	1,031	1,054	1,057	100	10.4%
Royersford Borough	1,393	1,419	1,443	1,466	1,489	1,511	1,518	125	9.0%
Salford Township	526	544	564	583	605	627	641	115	21.9%
Schwenksville Borough	418	434	454	474	490	504	518	100	23.9%
Skippack Township	4,197	4,300	4,402	4,496	4,565	4,631	4,697	500	11.9%
Souderton Borough	2,788	2,876	2,972	3,064	3,147	3,227	3,288	500	17.9%
Springfield Township	7,874	8,000	8,084	8,158	8,271	8,399	8,374	500	6.4%
Telford Borough (part)	643	659	684	707	722	734	751	108	16.8%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Towamencin Township	7,548	8,086	8,612	9,125	9,567	9,909	10,421	2,873	38.1%
Trappe Borough	2,144	2,190	2,248	2,303	2,345	2,381	2,414	270	12.6%
Upper Dublin Township	21,566	22,207	22,864	23,485	24,048	24,546	24,966	3,400	15.8%
Upper Frederick Township	871	899	930	960	998	1,037	1,056	185	21.2%
Upper Gwynedd Township	25,099	25,428	25,751	26,036	26,324	26,607	26,599	1,500	6.0%
Upper Hanover Township	4,221	4,395	4,541	4,680	4,831	4,957	5,078	857	20.3%
Upper Merion Township	57,038	59,232	60,940	62,559	64,072	65,430	66,508	9,470	16.6%
Upper Moreland Township	18,160	18,395	18,536	18,650	18,853	19,092	18,977	817	4.5%
Upper Pottsgrove Township	1,161	1,186	1,227	1,264	1,301	1,335	1,361	200	17.2%
Upper Providence Township	22,276	23,028	24,014	24,960	25,575	25,947	26,796	4,520	20.3%
Upper Salford Township	1,273	1,303	1,338	1,371	1,407	1,442	1,462	189	14.8%
West Conshohocken Borough	5,836	5,978	6,180	6,371	6,506	6,612	6,748	912	15.6%
West Norriton Township	9,363	9,557	9,802	10,031	10,212	10,367	10,499	1,136	12.1%
West Pottsgrove Township	1,476	1,530	1,622	1,711	1,764	1,798	1,879	403	27.3%
Whitemarsh Township	20,727	21,090	21,343	21,565	21,894	22,235	22,227	1,500	7.2%
Whitpain Township	19,871	20,231	20,641	21,020	21,350	21,653	21,819	1,948	9.8%
Worcester Township	2,954	3,069	3,189	3,304	3,394	3,457	3,560	606	20.5%
Philadelphia County	**772,847**	**786,308**	**797,156**	**810,574**	**822,002**	**829,937**	**836,825**	**63,978**	**8.3%**
Central	277,884	280,877	283,540	287,458	289,839	291,941	294,586	16,702	6.0%
South	32,348	32,823	33,052	33,584	33,897	34,118	34,233	1,885	5.8%
Lower South	19,366	22,053	25,327	28,043	30,830	33,279	35,111	15,745	81.3%
Lower Southwest	21,287	21,570	22,013	22,546	22,943	23,231	23,518	2,231	10.5%
University/Southwest	81,863	84,881	86,678	89,222	91,692	92,487	94,866	13,003	15.9%
West	14,073	14,203	14,299	14,439	14,598	14,699	14,774	701	5.0%
West Park	17,141	17,404	17,509	17,692	17,785	17,928	17,987	846	4.9%
Lower North	27,134	27,582	28,096	28,441	28,963	29,335	29,204	2,070	7.6%
River Wards	23,154	23,578	23,698	23,934	24,224	24,485	24,249	1,095	4.7%
North	41,243	41,508	41,777	42,342	42,647	42,878	42,941	1,698	4.1%
Lower Northwest	18,212	18,475	18,586	18,710	18,889	19,048	19,008	796	4.4%
Upper Northwest	25,673	25,928	26,010	26,217	26,435	26,540	26,478	805	3.1%
Upper North	33,741	34,068	34,214	34,353	34,589	34,656	34,655	914	2.7%
Lower Northeast	27,338	27,591	27,740	27,958	28,086	28,125	28,124	786	2.9%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Central Northeast	22,546	22,843	23,015	23,244	23,395	23,498	23,473	927	4.1%
North Delaware	23,938	24,269	24,330	24,557	24,692	24,819	24,807	869	3.6%
Lower Far Northeast	31,433	31,835	32,080	32,378	32,667	32,893	32,853	1,420	4.5%
Upper Far Northeast	34,473	34,820	35,192	35,456	35,831	35,977	35,958	1,485	4.3%
Burlington County	**241,298**	**246,351**	**251,368**	**255,562**	**258,363**	**261,195**	**263,622**	**22,324**	**9.3%**
Bass River Township	1,556	1,572	1,566	1,556	1,558	1,571	1,544	-12	-0.8%
Beverly City	400	417	446	472	485	493	519	119	29.8%
Bordentown City	1,437	1,452	1,447	1,439	1,441	1,451	1,428	-9	-0.6%
Bordentown Township	5,424	5,530	5,624	5,703	5,760	5,824	5,858	434	8.0%
Burlington City	5,162	5,229	5,237	5,231	5,251	5,298	5,242	80	1.5%
Burlington Township	17,266	17,584	17,772	17,879	17,949	18,054	18,013	747	4.3%
Chesterfield Township	1,770	1,800	1,819	1,833	1,846	1,865	1,863	93	5.3%
Cinnaminson Township	9,862	9,981	9,978	9,949	9,979	10,064	9,938	76	0.8%
Delanco Township	1,193	1,234	1,296	1,353	1,383	1,403	1,455	262	22.0%
Delran Township	7,181	7,263	7,249	7,217	7,234	7,295	7,190	9	0.1%
Eastampton Township	949	980	1,027	1,070	1,092	1,109	1,147	198	20.9%
Edgewater Park Township	2,738	2,795	2,849	2,896	2,928	2,961	2,985	247	9.0%
Evesham Township	27,494	27,914	28,117	28,240	28,412	28,688	28,559	1,065	3.9%
Fieldsboro Borough	87	88	89	91	91	92	92	5	5.7%
Florence Township	3,424	3,650	3,889	4,017	4,112	4,190	4,297	873	25.5%
Hainesport Township	3,128	3,287	3,567	3,834	3,962	4,037	4,299	1,171	37.4%
Lumberton Township	6,605	6,926	7,488	8,022	8,279	8,433	8,954	2,349	35.6%
Mansfield Township	2,794	2,935	3,186	3,422	3,537	3,604	3,838	1,044	37.4%
Maple Shade Township	6,792	6,875	6,877	6,860	6,881	6,942	6,858	66	1.0%
Medford Lakes Borough	800	808	805	800	800	807	793	-7	-0.9%
Medford Township	11,762	11,938	12,189	12,416	12,559	12,653	12,855	1,093	9.3%
Moorestown Township	30,721	31,403	32,129	32,756	33,157	33,552	33,945	3,224	10.5%
Mount Holly Township	7,793	7,890	7,894	7,877	7,904	7,972	7,879	86	1.1%
Mount Laurel Township	37,270	38,050	38,815	39,464	39,903	40,362	40,714	3,444	9.2%
New Hanover Township	4,627	4,707	4,791	4,874	4,957	5,040	5,127	500	10.8%
North Hanover Township	1,451	1,455	1,437	1,429	1,422	1,416	1,401	-50	-3.4%
Palmyra Borough	2,008	2,021	1,994	1,963	1,957	1,971	1,916	-92	-4.6%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Pemberton Borough	541	547	544	541	541	546	537	-4	-0.7%
Pemberton Township	7,035	7,204	7,420	7,616	7,725	7,816	7,970	935	13.3%
Riverside Township	1,726	1,759	1,787	1,811	1,827	1,847	1,856	130	7.5%
Riverton Borough	836	844	839	832	832	840	823	-13	-1.6%
Shamong Township	1,695	1,713	1,705	1,693	1,696	1,709	1,680	-15	-0.9%
Southampton Township	3,705	3,744	3,729	3,704	3,709	3,739	3,677	-28	-0.8%
Springfield Township	1,513	1,543	1,593	1,640	1,666	1,681	1,726	213	14.1%
Tabernacle Township	2,042	2,063	2,054	2,041	2,044	2,061	2,026	-16	-0.8%
Washington Township	245	247	247	245	246	247	243	-2	-0.8%
Westampton Township	7,379	7,776	8,490	9,169	9,495	9,682	10,357	2,978	40.4%
Willingboro Township	8,184	8,388	8,632	8,850	8,979	9,093	9,253	1,069	13.1%
Woodland Township	1,893	1,911	1,899	1,882	1,883	1,897	1,860	-33	-1.7%
Wrightstown Borough	2,810	2,828	2,852	2,875	2,881	2,890	2,905	95	3.4%
Camden County	**263,582**	**265,169**	**266,753**	**268,359**	**269,750**	**270,892**	**271,869**	**8,287**	**3.1%**
Audubon Borough	2,882	2,878	2,858	2,840	2,834	2,839	2,809	-73	-2.5%
Audubon Park Borough	122	122	121	120	120	120	119	-3	-2.5%
Barrington Borough	2,919	2,916	2,900	2,885	2,881	2,886	2,860	-59	-2.0%
Bellmawr Borough	4,855	4,861	4,856	4,853	4,855	4,867	4,848	-7	-0.1%
Berlin Borough	4,889	4,908	4,936	4,965	4,981	4,998	5,012	123	2.5%
Berlin Township	6,474	6,492	6,514	6,537	6,551	6,572	6,574	100	1.5%
Brooklawn Borough	979	980	979	978	978	981	976	-3	-0.3%
Camden City	41,786	42,644	43,370	44,057	44,850	45,205	45,992	4,206	10.1%
Cherry Hill Township	66,799	66,845	66,734	66,641	66,648	66,808	66,479	-320	-0.5%
Chesilhurst Borough	268	267	264	262	261	261	257	-11	-4.1%
Clementon Borough	1,391	1,391	1,388	1,385	1,384	1,388	1,379	-12	-0.9%
Collingswood Borough	4,307	4,308	4,296	4,285	4,283	4,292	4,266	-41	-1.0%
Gibbsboro Borough	1,885	1,884	1,875	1,866	1,864	1,867	1,852	-33	-1.8%
Gloucester City	4,709	4,888	5,290	5,692	5,866	5,942	6,345	1,636	34.7%
Gloucester Township	19,959	19,964	19,911	19,863	19,857	19,901	19,782	-177	-0.9%
Haddon Township	4,577	4,590	4,606	4,624	4,634	4,649	4,651	74	1.6%
Haddonfield Borough	6,525	6,526	6,508	6,491	6,488	6,503	6,463	-62	-1.0%
Haddon Heights Borough	3,220	3,227	3,234	3,242	3,248	3,257	3,254	34	1.1%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Hi-Nella Borough	201	201	201	201	201	202	201	0	0.0%
Laurel Springs Borough	468	468	465	463	463	464	460	-8	-1.7%
Lawnside Borough	1,916	1,911	1,894	1,877	1,872	1,874	1,850	-66	-3.4%
Lindenwold Borough	3,140	3,147	3,152	3,158	3,163	3,172	3,168	28	0.9%
Magnolia Borough	1,064	1,063	1,058	1,052	1,051	1,053	1,043	-21	-2.0%
Merchantville Borough	1,408	1,409	1,406	1,404	1,404	1,407	1,400	-8	-0.6%
Mount Ephraim Borough	1,137	1,137	1,133	1,129	1,128	1,131	1,123	-14	-1.2%
Oaklyn Borough	991	990	986	981	980	982	974	-17	-1.7%
Pennsauken Township	25,712	25,798	25,799	25,816	25,889	26,018	25,945	233	0.9%
Pine Hill Borough	1,618	1,625	1,627	1,629	1,634	1,643	1,640	22	1.4%
Pine Valley Borough	185	185	185	184	184	184	183	-2	-1.1%
Runnemede Borough	3,101	3,099	3,084	3,070	3,066	3,072	3,047	-54	-1.7%
Somerdale Borough	2,376	2,377	2,375	2,372	2,373	2,378	2,367	-9	-0.4%
Stratford Borough	6,353	6,354	6,335	6,318	6,315	6,329	6,289	-64	-1.0%
Tavistock Borough	50	50	50	50	50	50	50	0	0.0%
Voorhees Township	20,328	20,474	20,749	21,028	21,161	21,258	21,479	1,151	5.7%
Waterford Township	3,606	3,637	3,698	3,760	3,789	3,808	3,860	254	7.0%
Winslow Township	10,976	11,147	11,510	11,875	12,038	12,124	12,466	1,490	13.6%
Woodlynne Borough	406	406	406	406	406	407	406	0	0.0%
Gloucester County	**121,382**	**128,161**	**134,902**	**141,752**	**147,682**	**152,554**	**156,686**	**35,304**	**29.1%**
Clayton Borough	2,236	2,380	2,549	2,718	2,847	2,947	3,076	840	37.6%
Deptford Township	14,845	15,536	16,047	16,583	17,165	17,692	17,824	2,979	20.1%
East Greenwich Township	2,593	2,718	2,817	2,920	3,027	3,121	3,155	562	21.7%
Elk Township	1,106	1,240	1,465	1,684	1,813	1,894	2,126	1,020	92.2%
Franklin Township	4,372	4,642	4,944	5,247	5,488	5,676	5,895	1,523	34.8%
Glassboro Borough	7,359	7,860	8,475	9,089	9,543	9,883	10,380	3,021	41.1%
Greenwich Township	2,436	2,516	2,524	2,539	2,600	2,670	2,601	165	6.8%
Harrison Township	3,492	3,812	4,291	4,762	5,063	5,266	5,724	2,232	63.9%
Logan Township	9,726	10,183	10,529	10,892	11,277	11,624	11,726	2,000	20.6%
Mantua Township	5,333	5,786	6,436	7,078	7,501	7,792	8,396	3,063	57.4%

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County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015–2045	Percentage Change 2015–2045
Monroe Township	11,219	12,024	13,054	14,078	14,812	15,352	16,218	4,999	44.6%
National Park Borough	430	445	448	453	464	477	467	37	8.6%
Newfield Borough	441	456	457	460	471	484	472	31	7.0%
Paulsboro Borough	1,707	1,760	1,760	1,765	1,804	1,852	1,796	89	5.2%
Pitman Borough	2,481	2,590	2,659	2,733	2,823	2,908	2,911	430	17.3%
South Harrison Township	1,000	1,066	1,143	1,221	1,280	1,324	1,385	385	38.5%
Swedesboro Borough	1,618	1,681	1,708	1,740	1,790	1,841	1,822	204	12.6%
Washington Township	19,175	19,988	20,465	20,982	21,650	22,291	22,242	3,067	16.0%
Wenonah Borough	520	541	553	565	582	599	596	76	14.6%
West Deptford Township	13,690	14,441	15,169	15,910	16,564	17,107	17,534	3,844	28.1%
Westville Borough	1,784	1,860	1,904	1,953	2,015	2,075	2,070	286	16.0%
Woodbury City	9,289	9,538	9,440	9,372	9,545	9,783	9,366	77	0.8%
Woodbury Heights Borough	1,887	1,940	1,925	1,915	1,953	2,002	1,923	36	1.9%
Woolwich Township	2,643	3,158	4,140	5,093	5,605	5,894	6,981	4,338	164.1%
Mercer County	**286,295**	**290,864**	**295,408**	**300,025**	**304,021**	**307,302**	**310,084**	**23,789**	**8.3%**
East Windsor Township	17,414	17,737	18,170	18,607	18,858	19,015	19,359	1,945	11.2%
Ewing Township	22,150	22,877	23,322	23,772	24,047	24,230	24,680	2,530	11.4%
Hamilton Township	49,812	50,303	50,848	51,406	51,824	52,157	52,345	2,533	5.1%
Hightstown Borough	2,775	2,796	2,812	2,828	2,846	2,862	2,857	82	3.0%
Hopewell Borough	982	990	987	984	986	990	980	-2	-0.2%
Hopewell Township	14,696	14,797	15,282	15,771	17,012	18,290	18,408	3,712	25.3%
Lawrence Township	28,005	28,973	29,178	29,392	29,586	29,760	30,015	2,010	7.2%
Pennington Borough	2,412	2,449	2,502	2,555	2,587	2,608	2,646	234	9.7%
Princeton	26,211	27,014	27,617	28,227	28,585	28,815	29,399	3,188	12.2%
Robbinsville	6,542	6,815	7,186	7,558	7,743	7,836	8,212	1,670	25.5%
Trenton City	78,922	79,280	79,783	80,307	80,812	81,280	81,096	2,174	2.8%
West Windsor Township	36,374	36,833	37,721	38,618	39,135	39,459	40,087	3,713	10.2%

Source: Delaware Valley Regional Planning Commission, September 2016. Base employment data from the National Establishments Time Series (NETS) database, 2010 and 2013.

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Report Title: **Analytical Data Report # 023: County- and Municipal-Level Employment Forecasts, 2015–2045**

Publication No.: ADR023

Date Published: October 2016

Geographic Area Covered: DVRPC's nine-county region, including Burlington, Camden, Gloucester, and Mercer counties in New Jersey, and Bucks, Chester, Delaware, Montgomery, and Philadelphia counties in Pennsylvania.

Key Words: employment, employment forecasts, National Establishments Time Series database, NETS, Connections 2045, long-range plan

ABSTRACT: This report presents the Delaware Valley Regional Planning Commission's (DVRPC's) adopted 2045 county- and municipal-level employment forecasts and describes the method used to develop them. Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of DVRPC's long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan.

DVRPC last adopted employment forecasts through the year 2040 in September 2012. In March 2016, DVRPC acquired a National Establishments Time Series (NETS) database that included 2013 employment data and revised 2010 data. The 2010 and 2013 employment data was reviewed and revised by DVRPC staff, utilizing resources that included CoStar, on-line business directories, company web sites, and, when appropriate, direct telephone calls. The revised data was then sent to the county planning staffs for additional revision. Additionally, during the summer of 2016, DVRPC acquired improved geocoding resources that allowed staff to further correct the spatial locations of employers.

Based on changes in the NETS employment between 2010 and 2013, and changes in employment in each county between 2010 and 2015, as reported by the U.S. Bureau of Labor Statistics, 2015 employment was estimated by county and municipality. Studies have shown that there is a direct relationship between the number of workers living in an area and the number of jobs. County-level employment was forecasted in five-year increments through 2045, by estimating a future ratio of population to employment in each county and applying it to DVRPC's adopted population forecasts. Together with the 2045 population forecasts adopted by the DVRPC Board in July 2016, these employment forecasts, adopted by the Board in October 2016, will serve as the basis for DVRPC's planning and modeling activities, and support the region's 2045 long-range plan, scheduled for adoption in July 2017.

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East Whiteland Township Wastewater System Assets

Total Debt	16065468	16760932	17486396
Purchase of Capital Assets	740070	393256	1005551

	2019	2018	2017
Income (Loss) Before Transfers	74280	1706829	-594968
Interest paid	522264	539353	553075
Depreciation	774783	718700	687892
Total Source	$1,371,327	$2,964,882	$645,999
Income tax	0	0	0
Principal	715000	745000	725000
Interest paid	522264	539353	553075
Total Use	$1,237,264	$1,284,353	$1,278,075

W/Out Trans

Debt Service Coverage	1.11	2.31	0.51
Pre-Tax Interest Coverage - Including AFC(3)(x)	1.14	4.16	-0.08
Post-Tax Interest Coverage - Including AFC(3)(x)	1.14	4.16	-0.08
GCF / Interest Coverage(4)(x)	2.63	5.50	1.17
GCF / Tot. Debt(7)(%)	5.29	14.47	0.53
GCF / Construction(6)(%)	114.73	616.78	9.24

Comparable Group

Debt Service Coverage - As Reported

Comparable Group	2019	2018	2017
AMERICAN STATES WATER COMPANY	2.2	5.4	2.4
AMERICAN WATER WORKS COMPANY, INC.	1.8	1.7	1.0
ARTESIAN RESOURCES CORPORATION	3.7	4.1	4.0
CALIFORNIA WATER SERVICE GROUP	0.4	3.4	3.0
ESSENTIAL UTILITIES, INC.	0.4	0.5	1.0
MIDDLESEX WATER COMPANY	4.0	4.0	3.7
SJW GROUP	3.7	4.9	5.2
THE YORK WATER COMPANY	0.3	0.8	1.1
Median	2.0	3.7	2.7

Company Name	2019 DEPRECIATION	2018 DEPRECIATION	2017 DEPRECIATION	2019 TOTAL INTERST EXPENSE	2018 TOTAL INTERST EXPENSE	2017 TOTAL INTERST EXPENSE
AMERICAN STATES WATER COMPANY	35.713	40.663	39.273	24.586	23.433	22.582
AMERICAN WATER WORKS COMPANY, INC.	582.000	545.000	492.000	386.000	361.000	356.000
ARTESIAN RESOURCES CORPORATION	10.803	10.288	9.555	7.024	6.252	6.177
CALIFORNIA WATER SERVICE GROUP	91.288	85.707	78.592	44.891	39.917	36.288
ESSENTIAL UTILITIES, INC.	156.476	146.673	136.724	149.125	158.833	88.543
MIDDLESEX WATER COMPANY	17.232	15.780	14.846	7.264	6.758	5.506
SJW GROUP	68.489	56.907	50.501	31.796	24.332	22.929
THE YORK WATER COMPANY	7.688	7.010	6.769	5.124	5.509	5.348

	2019 INCOME TO PREF+COMM	2018 INCOME TO PREF+COMM	2017 INCOME TO PREF+COMM	2019 REPAY LT DEBT	2018 REPAY LT DEBT	2017 REPAY LT DEBT
AMERICAN STATES WATER COMPANY	84.342	63.871	69.367	40.325	0.326	31.329
AMERICAN WATER WORKS COMPANY, INC.	621.000	567.000	426.000	495.000	526.000	896.000
ARTESIAN RESOURCES CORPORATION	14.925	14.278	13.983	1.725	1.344	1.218
CALIFORNIA WATER SERVICE GROUP	63.116	65.584	72.940	405.568	16.532	26.829
ESSENTIAL UTILITIES, INC.	224.543	191.988	239.738	1,073.708	914.125	359.068
MIDDLESEX WATER COMPANY	33.888	32.452	22.809	7.343	7.024	6.159
SJW GROUP	23.403	38.767	59.204	1.400	0.000	2.717
THE YORK WATER COMPANY	14.402	13.376	12.974	85.906	25.691	17.533

Company Name	Pretax Operating Income			Interest expense			Net Income		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	133.598	105.321	130.923	24.586	23.433	22.582	84.342	63.871	69.367
AMERICAN WATER WORKS CO INC	1,219.000	1,150.000	1,268.000	386.000	361.000	356.000	621.000	567.000	426.000
ARTESIAN RESOURCES -CL A	27.130	25.521	27.455	7.024	6.252	6.177	14.925	14.278	13.983
CALIFORNIA WATER SERVICE GP	125.678	121.373	146.055	44.891	39.917	36.288	63.116	65.584	72.940
ESSENTIAL UTILITIES, INC.	360.651	337.152	345.195	149.125	158.833	88.543	224.543	191.988	239.738
MIDDLESEX WATER CO	38.012	40.134	39.415	7.264	6.758	5.506	33.888	32.452	22.809
SJW GROUP	63.653	73.164	117.526	31.796	24.332	22.929	23.403	38.767	59.204
YORK WATER CO	21.766	21.376	22.865	5.124	5.509	5.348	14.402	13.376	12.974

Company Name	Gross Cash Flow			Total debt			CAPX		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	126.678	98.761	120.792	499.928	416.907	380.363	151.940	126.561	113.126
AMERICAN WATER WORKS CO INC	1,398.000	1,294.000	1,372.000	9,557.000	8,625.000	7,728.000	1,654.000	1,586.000	1,434.000
ARTESIAN RESOURCES -CL A	21.079	24.763	31.428	153.846	133.646	116.845	40.677	49.053	41.094
CALIFORNIA WATER SERVICE GP	168.402	165.097	185.996	998.102	880.038	806.813	273.770	271.707	259.194
ESSENTIAL UTILITIES, INC.	354.411	310.688	375.031	3,097.913	2,627.187	2,146.801	550.273	495.737	478.089
MIDDLESEX WATER CO	46.410	45.909	44.897	263.687	208.694	173.910	89.125	72.094	50.301
SJW GROUP	86.320	83.332	106.462	1,423.078	531.424	456.092	164.325	135.973	141.213
YORK WATER CO	22.365	20.215	21.363	103.282	96.173	93.338	20.537	16.882	25.074

Company Name	Pretax Interest Coverage			Posttax Interest Coverage			GCF Interest Coverage		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	5.4	4.5	5.8	4.4	3.7	4.1	6.2	5.2	6.3
AMERICAN WATER WORKS CO INC	3.2	3.2	3.6	2.6	2.6	2.2	4.6	4.6	4.9
ARTESIAN RESOURCES -CL A	3.9	4.1	4.4	3.1	3.3	3.3	4.0	5.0	6.1
CALIFORNIA WATER SERVICE GP	2.8	3.0	4.0	2.4	2.6	3.0	4.8	5.1	6.1
ESSENTIAL UTILITIES, INC.	2.4	2.1	3.9	2.5	2.2	3.7	3.4	3.0	5.2
MIDDLESEX WATER CO	5.2	5.9	7.2	5.7	5.8	5.1	7.4	7.8	9.2
SJW GROUP	2.0	3.0	5.1	1.7	2.6	3.6	3.7	4.4	5.6
YORK WATER CO	4.2	3.9	4.3	3.8	3.4	3.4	5.4	4.7	5.0
Median	3.6	3.6	4.4	2.9	3.0	3.5	4.7	4.9	5.9

Company Name	GCF To Debt			GCF To CAPX		
	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	25.3	23.7	31.8	83.4	78.0	106.8
AMERICAN WATER WORKS CO INC	14.6	15.0	17.8	84.5	81.6	95.7
ARTESIAN RESOURCES -CL A	13.7	18.5	26.9	51.8	50.5	76.5
CALIFORNIA WATER SERVICE GP	16.9	18.8	23.1	61.5	60.8	71.8
ESSENTIAL UTILITIES, INC.	11.4	11.8	17.5	64.4	62.7	78.4
MIDDLESEX WATER CO	17.6	22.0	25.8	52.1	63.7	89.3
SJW GROUP	6.1	15.7	23.3	52.5	61.3	75.4
YORK WATER CO	21.7	21.0	22.9	108.9	119.7	85.2
Median	15.8	18.7	23.2	63.0	63.2	81.8

	2019	2018	2017
Pre-Tax Interest Coverage - Including AFC(3)(x)	3.6	3.6	4.4
Post-Tax Interest Coverage - Including AFC(3)(x)	2.9	3.0	3.5
GCF / Interest Coverage(4)(x)	4.7	4.9	5.9
GCF / Tot. Debt(7)(%)	15.8	18.7	23.2
GCF / Construction(6)(%)	63.0	63.2	81.8

	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-		83,116,429	84,848,729	86,000,797	87,168,507	88,352,072	89,551,708	90,767,632	92,000,066	93,249,234
Accumulated Depreciation	-	-	-		30,116,429	31,177,154	32,364,614	33,568,198	34,788,123	36,024,613	37,277,892	38,548,188	39,835,732
NET PPE	-	-	-		53,000,000	53,671,575	53,636,183	53,600,309	53,563,949	53,527,095	53,489,740	53,451,878	53,413,502
Total Debt	-	-	-	-	-	16,065,468							
Net Equity	-	-	-	-	-	26,447,777							
Investor Provided Capital	-	-	-	-	-	42,513,245	-						
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.63%							
Muni CAPX					0	2,038,000	0	0	0	0	0	0	0
IOU savings				0%			100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE							1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
CAPX					2,738,000	2,038,000	1,355,374	1,373,777	1,392,430	1,411,336	1,430,499	1,449,922	1,469,609
Dep rate					0.00%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
Half yr. Dep					0.00%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%
Dep on CAPX					-	16,610	11,046	11,196	11,348	11,502	11,659	11,817	11,977
Rate of retirement					15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Retired property					410,700	305,700	203,306	206,067	208,865	211,700	214,575	217,488	220,441
Dep on Retired property					-	4,983	3,314	3,359	3,404	3,451	3,498	3,545	3,593
Dep on Prior yr. GROSS					774,783	1,354,798	1,383,034	1,401,813	1,420,847	1,440,139	1,459,693	1,479,512	1,499,601
Total Dep					774,783	1,366,425	1,390,766	1,409,650	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985
E Whiteland													
Depreciation Expense	-	-	718,700	774,783	1,354,798								
				part of OCN									

NET PPE PURTA 0.001527765
Rev Reg Assessment Fee 0.005652534

					2020	2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028
E Whiteland													
FIX CIP				CIP	$ -	$ 2,038,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					part of OCN	= to DepX							
					2,738,000	2,038,000							
									191	71	72	56	
					2020	2021							
						2,612,500.00	3,519,750.00	3,234,750.00	2,033,000.00	204,250.00	745,750.00	755,250.00	769,500.00
Sewer Rental Charges	0	0	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,135,170	4,390,240	4,498,570			
EDUs	0	0	0	0	7,908	7,908	8649	9330	9758	9801	9958	10117	10279
					0	550	741	681	428	43	157	159	162
		0	0	0	3954	7908	8278.5	8989.5	9544	9779.5			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	499.2412747								
						$ 460.00	$ 460.00	$ 460.00	$ 460.00	$ 460.00			
		#DIV/0!	#DIV/0!	#DIV/0!	998.4825493	499.2412747							
E Whiteland					C	3,895	62						
					E	7,908	127						
						0.49							
				1742000									
Customer Growth						271	365	335	211	21	1.60%	1.60%	1.60%
Delivered to Customer			-	15.40	15	16	18	19	20	20	20	21	21
E Whiteland Customers			3,895	3,895	3,895	4,166	4,531	4,866	5,077	5,098	5,180	5,262	5,347
Total Revenue (Less TAP)			3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291	4,521,585	9,161,633	9,253,986	9,402,050	9,552,483
										201.79%			100.00%
avg CUST rev			977.98	965.80	1,013.61	947.67	909.50	878.19	890.60	1,797.10	1,786.63	1,786.63	1,786.63
avg CUST flow			-	0	0	0	0	0	0	0	0	0	0
avg EDU rev			#DIV/0!	#DIV/0!	499.24	499.24	476.47	458.02	463.37	934.77	929.30	929.33	929.32
avg EDU flow			#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0
Rev Calculated						4,222,688	4,120,950	4,273,291	4,365,940	4,530,936	9,234,926	9,328,018	9,477,266

WORKING NOTES								WORKING NOTES					
2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

	2021	2022	2023	2024	2025	2026	2027	2028
	Change			98.0%				-2.6%
$ 1,013.61	$ 947.67	$ 909.50	$ 909.50	$ 1,800.81	$ 1,800.81	$ 1,800.81	$ 1,800.81	$ 1,753.99
			$ -	$ 891.31	$ -	$ -	$ -	$ (46.82)
	137,344	172,950	152,341	8,952,739	9,351	73,293	74,032	75,216
	4,085,344	4,120,950	4,273,291	4,521,585	9,161,633	9,253,986	9,402,050	9,552,483
	-	-	-	4,431,154	-	-	-	(248,365)

Prior yr									
NET PURTA	0.1432%			76,858	76,807	76,756	76,704	76,651	76,597	76,543
REV Reg Assessment	0.5690%			24,626	25,610	26,477	53,103	54,292	54,817	55,660
				101,484	102,417	103,233	129,807	130,943	131,414	132,203

East Whiteland Township Wastewater System Assets

Investor Provide	42,513,245
Gross PP&E	83,116,429
Net PP&E	53,000,000
Revenues	4,328,000
EBITDA	1,942,553
EBIT	576,127
Customers	3,895
Population	14,720

G PPE	-	-	83,116,429	84,848,729	
NPPE	-	-	53,000,000	53,671,575	
Cust	3,895	3,895	3,895	4,166	

	2016	2017	2018	2019	2020	2021	2022		
E Whiteland									
LESS: EOS - Wages & Benefits	0	-	-	-	-	863,183		0.15	LESS: EOS - Wages Wages & Benefits
LESS: EOS - Professional Services	0	0	0	0	-	206,250		0.5	LESS: EOS - Profes Net Professional Services
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-			LESS: EOS - Eli Tranfers
E Whiteland									
Wages			0	0	0	863,183			
Professional Services					0	206,250			
Eliminated Exp			0	0	0	0			

E Whiteland					included in OCN	= to DepX
Reported CAPX - from the financials	0	0	393,256	740,070	2,738,000	2,038,000

	2016	2017	2018	2019	2020	Assets	Per Books	Difference
GROSS Property, plant and equipment	-	-	-	-	83,116,429	83,116,429	-	

	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Accumulated Depreciation	-	-	-	-	30,116,429			30,116,429	-				
NET PPE	-	-	-	-	53,000,000			53,000,000	-	53,000,000			
Total Debt	-	-	-	-	16,065,468			1,354,798					
Net Equity	-	-	-	-	26,447,777								
Investor Provided Capital	-	-	-	-	42,513,245								
Depreciation Rate	0.00%	0.00%	0.00%	#DIV/0!	1.63%								
Depreciation Expense	-	-	718,700	774,783	1,354,798.00								

	2021	2022	2023	2024	2025
CAPX	2,038,000	0	0	0	0

		2021	2022	2023	2024	2025	2026	2027	2028
	XYZ's LTCP	0	0	0	0	0	0	0	0
E Whiteland	State of Good Repair	2038000	0	0	0	0	0	0	0
	XYZ's Base CAPX	0	0	0	0	0	0	0	0
	Base & LTCP	0	0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	Expand WWTP		0	0	0	0	0	0	0
	PWD Base charge		0	0	0	0	0	0	0
	CAPX	2038000	0	0	0	0	0	0	0
	Expand WWTP work area		0	0	0	0	0	0	0
	State of Good Repair		0	0	0	0	0	0	0
	XYZ's Base CAPX		0	0	0	0	0	0	0
	Base & LTCP		0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP		0	0	0	0	0	0	0
	OpEx	0	0	0	0	0	0	0	0

State of Good Repair	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Propert
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
CAPX note	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Propert
State of Good Repair	No Additional O&M.
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
Additional OpEx note	No Additional O&M.

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROSS Property, plant and equipment	94,515,363	95,798,683	97,099,428	98,417,834	99,754,141	101,108,593	102,481,436	103,872,918	105,283,294	106,712,820	108,161,756	109,630,366	111,118,916	112,627,678	114,156,926	115,706,938	117,277,996
Accumulated Depreciation	41,140,759	42,463,505	43,804,211	45,163,120	46,540,481	47,936,543	49,351,562	50,785,792	52,239,497	53,712,941	55,206,390	56,720,117	58,254,398	59,809,511	61,385,739	62,983,369	64,602,692
NET PPE	53,374,604	53,335,178	53,295,217	53,254,714	53,213,660	53,172,050	53,129,874	53,087,126	53,043,797	52,999,879	52,955,366	52,910,249	52,864,518	52,818,167	52,771,187	52,723,569	52,675,304

id Total Debt
Net Equity
Investor Provided Capital

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	1,489,563	1,509,788	1,530,288	1,551,066	1,572,126	1,593,473	1,615,109	1,637,038	1,659,266	1,681,795	1,704,631	1,727,776	1,751,235	1,775,014	1,799,115	1,823,543	1,848,303
	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%
	12,140	12,305	12,472	12,641	12,813	12,987	13,163	13,342	13,523	13,707	13,893	14,081	14,273	14,466	14,663	14,862	15,064
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	223,434	226,468	229,543	232,660	235,819	239,021	242,266	245,556	248,890	252,269	255,695	259,166	262,685	266,252	269,867	273,531	277,245
	3,642	3,691	3,742	3,792	3,844	3,896	3,949	4,003	4,057	4,112	4,168	4,224	4,282	4,340	4,399	4,459	4,519
	1,519,963	1,540,600	1,561,519	1,582,721	1,604,211	1,625,992	1,648,070	1,670,447	1,693,129	1,716,118	1,739,419	1,763,037	1,786,975	1,811,238	1,835,831	1,860,758	1,886,023
	1,528,461	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966	1,821,364	1,846,095	1,871,161	1,896,568

E Whiteland
Depreciation Expense

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	779,000.00	793,250.00	807,500.00	817,000.00	831,250.00	845,500.00	859,750.00	874,000.00	888,250.00	902,500.00	916,750.00	931,000.00	945,250.00	959,500.00	973,750.00	992,750.00	1,007,000.00

Sewer Rental Charges

EDUs	10443	10610	10780	10952	11127	11305	11486	11670	11857	12047	12240	12436	12635	12837	13042	13251	13463
	164	167	170	172	175	178	181	184	187	190	193	196	199	202	205	209	212

E Whiteland

	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	21	22	22	23	23	23	24	24	24	25	25	26	26	26	27	27	28
E Whiteland	5,432	5,519	5,607	5,697	5,788	5,881	5,975	6,071	6,168	6,266	6,367	6,469	6,572	6,677	6,784	6,893	7,003
	9,452,984	9,604,232	9,757,899	9,914,026	10,072,650	9,937,032	10,096,024	10,257,561	10,421,682	10,588,429	10,488,898	10,656,720	10,827,227	11,000,463	11,176,470	11,094,122	11,271,621
	1,740.18	1,740.18	1,740.18	1,740.18	1,740.18	1,689.72	1,689.72	1,689.72	1,689.72	1,689.72	1,647.47	1,647.47	1,647.47	1,647.47	1,647.47	1,609.58	1,609.58
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	905.20	905.21	905.19	905.23	905.24	878.99	878.99	878.97	878.95	878.93	856.94	856.93	856.92	856.93	856.96	837.23	837.23
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9,628,903	9,528,608	9,681,066	9,835,962	9,993,338	10,153,231	10,016,528	10,176,792	10,339,621	10,505,055	10,673,136	10,572,809	10,741,974	10,913,845	11,088,467	11,265,882	11,182,875

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
					-2.9%					-2.5%					-2.3%		
	$ 1,753.99	$ 1,753.99	$ 1,753.99	$ 1,753.99	$ 1,703.13	$ 1,703.13	$ 1,703.13	$ 1,703.13	$ 1,703.13	$ 1,660.55	$ 1,660.55	$ 1,660.55	$ 1,660.55	$ 1,660.55	$ 1,622.35	$ 1,622.35	$ 1,622.35
	$ -	$ -	$ -	$ -	$ (50.87)	$ -	$ -	$ -	$ -	$ (42.58)	$ -	$ -	$ -	$ -	$ (38.19)	$ -	$ -
	76,420	75,624	76,834	78,063	79,312	80,581	79,496	80,768	82,060	83,373	84,707	83,911	85,254	86,618	88,004	89,412	88,753
	9,452,984	9,604,232	9,757,899	9,914,026	10,072,650	9,937,032	10,096,024	10,257,561	10,421,682	10,588,429	10,488,898	10,656,720	10,827,227	11,000,463	11,176,470	11,094,122	11,271,628
	-	-	-	-	(292,107)	-	-	-	-	(264,711)	-	-	-	-	(257,059)	-	-
	76,488	76,432	76,376	76,319	76,261	76,202	76,142	76,082	76,021	75,959	75,896	75,832	75,767	75,702	75,636	75,568	75,500
	55,103	55,950	56,810	57,685	58,573	57,813	58,704	59,609	60,528	61,462	60,904	61,844	62,799	63,769	64,755	64,294	65,288
	131,591	132,382	133,186	134,004	134,834	134,015	134,846	135,691	136,549	137,421	136,800	137,676	138,566	139,471	140,391	139,862	140,788

E Whiteland

LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	100% savings	100%	1

E Whiteland

Wages

Professional Services

Eliminated Exp

E Whiteland

Reported CAPX - from the financials

GROSS Property, plant and equipment

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Accumulated Depreciation																	
NET PPE																	
Total Debt																	
Net Equity																	
Investor Provided Capital																	
Depreciation Rate																	
Depreciation Expense																	
CAPX																	

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

y, plant and equipment.

y, plant and equipment.

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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-		43,447,309	45,179,609	45,804,344	46,437,717	47,079,849	47,730,860	48,390,873	49,060,013	49,738,405
Accumulated Depreciation	-	-	-		10,491,713	10,919,463	11,563,468	12,216,377	12,878,316	13,549,407	14,229,778	14,919,557	15,618,874
NET PPE	-	-	-		32,955,596	34,260,146	34,240,876	34,221,340	34,201,533	34,181,453	34,161,095	34,140,456	34,119,531
Total Debt	-	-	-	-	-	16,065,468							
Net Equity	-	-	-	-	-	26,447,777							
Investor Provided Capital	-	-	-	-	-	42,513,245	-						

Depreciation / GROSS PPE #DIV/0! #DIV/0! #DIV/0! 0.00% 0.00% 1.66%

			Muni CAPX	0	2,038,000	0	0	0	0	0	0	0	0
		IOU savings	0%			100%	100%	100%	100%	100%	100%	100%	100%
			CAPX/Prior Yr. GROSS PPE			1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
			CAPX	2,738,000	2,038,000	734,982	745,145	755,449	765,895	776,486	787,223	798,108	
			Dep rate	0.00%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	
			Half yr. Dep	0.00%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	
			Dep on CAPX	-	16,915	6,100	6,185	6,270	6,357	6,445	6,534	6,624	
			Rate of retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
			Retired property	410,700	305,700	110,247	111,772	113,317	114,884	116,473	118,083	119,716	
			Dep on Retired property	-	5,075	1,830	1,855	1,881	1,907	1,933	1,960	1,987	
			Dep on Prior yr. GROSS	774,783	721,610	749,982	760,352	770,866	781,525	792,332	803,288	814,396	
			Total Dep	774,783	733,450	754,251	764,682	775,255	785,975	796,844	807,862	819,033	
E Whiteland													
Depreciation Expense	-	-	718,700	774,783	721,610								
				part of OCN									

NET PPE PURTA 0.001527765
Rev Reg Assessment Fee 0.005652534

					2020	2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028
E Whiteland													
FIX CIP			CIP		$ -	$ 2,038,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					part of OCN	= to DepX							
					2,738,000	2,038,000							
									191	71	72	56	
					2020	2021							
						2,612,500.00	3,519,750.00	3,234,750.00	2,033,000.00	204,250.00	745,750.00	755,250.00	769,500.00
Sewer Rental Charges	0	0	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,135,170	4,390,240	4,498,570			
EDUs	0	0	0	0	7,908	7,908	8649	9330	9758	9801	9958	10117	10279
					0	550	741	681	428	43	157	159	162
		0	0	0	3954	7908	8278.5	8989.5	9544	9779.5			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	499.2412747								
						$ 460.00	$ 460.00	$ 460.00	$ 460.00	$ 460.00			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	998.4825493	499.2412747							
E Whiteland					C	3,895	62						
					E	7,908	127						
						0.49							
				1742000									
Customer Growth						271	365	335	211	21	1.60%	1.60%	1.60%
Delivered to Customer			-	15.40	15	16	18	19	20	20	20	21	21
E Whiteland Customers			3,895	3,895	3,895	4,166	4,531	4,866	5,077	5,098	5,180	5,262	5,347
Total Revenue (Less TAP)			3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291	4,521,585	6,616,735	6,683,434	6,790,369	6,899,015
										145.73%			100.00%
avg CUST rev			977.98	965.80	1,013.61	947.67	909.50	878.19	890.60	1,297.91	1,290.35	1,290.35	1,290.35
avg CUST flow			-	0	0	0	0	0	0	0	0	0	0
avg EDU rev			#DIV/0!	#DIV/0!	499.24	499.24	476.47	458.02	463.37	675.11	671.16	671.18	671.18
avg EDU flow			#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0
Rev Calculated						4,222,688	4,120,950	4,273,291	4,365,940	4,530,936	6,669,669	6,736,901	6,844,692

WORKING NOTES								WORKING NOTES					
2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

	2021	2022	2023	2024	2025	2026	2027	2028
	Change			43.0%				
	$ 1,013.61 $ 947.67	$ 909.50	$ 909.50	$ 1,300.59	$ 1,300.59	$ 1,300.59	$ 1,300.59	$ 1,300.59
			$ -	$ 391.09	$ -	$ -	$ -	$ -
	137,344	172,950	152,341	6,465,867	9,351	52,934	53,467	54,323
	4,085,344	4,120,950	4,273,291	4,521,585	6,616,735	6,683,434	6,790,369	6,899,015
	-	-	-	1,944,282	-	-	-	-

Prior yr								
NET PURTA	0.1432%	49,061	49,033	49,005	48,977	48,948	48,919	48,889
REV Reg Assessment	0.5690%	24,626	25,610	26,477	38,953	39,811	40,191	40,799
		73,687	74,643	75,482	87,930	88,759	89,110	89,688

East Whiteland Township Wastewater System Assets

Investor Provide	42,513,245
Gross PP&E	43,447,309
Net PP&E	32,955,596
Revenues	4,328,000
EBITDA	1,942,553
EBIT	1,209,102
Customers	3,895
Population	14,720

G PPE	-	-	43,447,309	45,179,609	
NPPE	-	-	32,955,596	34,260,146	
Cust	3,895	3,895	3,895	4,166	

	2016	2017	2018	2019	2020	2021	2022		
E Whiteland									
LESS: EOS - Wages & Benefits	0	-	-	-	-	863,183		0.15	LESS: EOS - Wages Wages & Benefits
LESS: EOS - Professional Services	0	0	0	0	-	206,250		0.5	LESS: EOS - Profes Net Professional Services
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-			LESS: EOS - Eli Tranfers
E Whiteland									
Wages			0	0	0	863,183			
Professional Services					0	206,250			
Eliminated Exp			0	0	0	0			

E Whiteland					included in OCN	= to DepX
Reported CAPX - from the financials	0	0	393,256	740,070	2,738,000	2,038,000

	2016	2017	2018	2019	2020	Assets	Per Books	Difference
GROSS Property, plant and equipment	-	-	-	-	43,447,309	43,447,309	-	

	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Accumulated Depreciation	-	-	-	-	10,491,713			10,491,713	-				
NET PPE	-	-	-	-	32,955,596			32,955,596	-	32,955,596			
Total Debt	-	-	-	-	16,065,468			721,610					
Net Equity	-	-	-	-	26,447,777								
Investor Provided Capital	-	-	-	-	42,513,245								
Depreciation Rate	0.00%	0.00%	0.00%	#DIV/0!	1.66%								
Depreciation Expense	-	-	718,700	774,783	721,610.00								

	2021	2022	2023	2024	2025
CAPX	2,038,000	0	0	0	0

		2021	2022	2023	2024	2025	2026	2027	2028
	XYZ's LTCP	0	0	0	0	0	0	0	0
E Whiteland	State of Good Repair	2038000	0	0	0	0	0	0	0
	XYZ's Base CAPX	0	0	0	0	0	0	0	0
	Base & LTCP	0	0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	Expand WWTP		0	0	0	0	0	0	0
	PWD Base charge		0	0	0	0	0	0	0
	CAPX	2038000	0	0	0	0	0	0	0
	Expand WWTP work area		0	0	0	0	0	0	0
	State of Good Repair		0	0	0	0	0	0	0
	XYZ's Base CAPX		0	0	0	0	0	0	0
	Base & LTCP		0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP		0	0	0	0	0	0	0
	OpEx	0	0	0	0	0	0	0	0

State of Good Repair	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
CAPX note	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
State of Good Repair	No Additional O&M.
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
Additional OpEx note	No Additional O&M.

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROSS Property, plant and equipment	50,426,177	51,123,460	51,830,385	52,547,085	53,273,696	54,010,354	54,757,198	55,514,369	56,282,011	57,060,268	57,849,286	58,649,214	59,460,203	60,282,407	61,115,980	61,961,080	62,817,866
Accumulated Depreciation	16,327,861	17,046,652	17,775,382	18,514,188	19,263,211	20,022,592	20,792,473	21,572,999	22,364,319	23,166,580	23,979,936	24,804,538	25,640,543	26,488,107	27,347,392	28,218,559	29,101,772
NET PPE	34,098,316	34,076,808	34,055,003	34,032,897	34,010,485	33,987,762	33,964,725	33,941,370	33,917,692	33,893,688	33,869,350	33,844,676	33,819,660	33,794,300	33,768,588	33,742,521	33,716,094

id Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
	809,144	820,333	831,676	843,177	854,836	866,656	878,640	890,790	903,108	915,596	928,256	941,092	954,105	967,299	980,674	994,235	1,007,983
	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%
	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
	6,716	6,809	6,903	6,998	7,095	7,193	7,293	7,394	7,496	7,599	7,705	7,811	7,919	8,029	8,140	8,252	8,366
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	121,372	123,050	124,751	126,477	128,225	129,998	131,796	133,619	135,466	137,339	139,238	141,164	143,116	145,095	147,101	149,135	151,197
	2,015	2,043	2,071	2,100	2,129	2,158	2,188	2,218	2,249	2,280	2,311	2,343	2,376	2,409	2,442	2,476	2,510
	825,658	837,075	848,649	860,384	872,282	884,343	896,572	908,969	921,539	934,281	947,200	960,298	973,577	987,039	1,000,688	1,014,525	1,028,554
	830,359	841,841	853,482	865,283	877,248	889,378	901,677	914,145	926,786	939,601	952,594	965,766	979,120	992,660	1,006,386	1,020,302	1,034,410

E Whiteland

Depreciation Expense

	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	779,000.00	793,250.00	807,500.00	817,000.00	831,250.00	845,500.00	859,750.00	874,000.00	888,250.00	902,500.00	916,750.00	931,000.00	945,250.00	959,500.00	973,750.00	992,750.00	1,007,000.00
Sewer Rental Charges																	
EDUs	10443	10610	10780	10952	11127	11305	11486	11670	11857	12047	12240	12436	12635	12837	13042	13251	13463
	164	167	170	172	175	178	181	184	187	190	193	196	199	202	205	209	212

E Whiteland

	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	21	22	22	23	23	23	24	24	24	25	25	26	26	26	27	27	28
E Whiteland	5,432	5,519	5,607	5,697	5,788	5,881	5,975	6,071	6,168	6,266	6,367	6,469	6,572	6,677	6,784	6,893	7,003
	7,009,399	7,121,550	7,235,495	7,167,481	7,282,161	7,398,675	7,517,054	7,637,327	7,759,524	7,883,676	7,809,570	7,934,523	8,061,475	8,190,459	8,321,506	8,454,650	8,589,925
	1,290.35	1,290.35	1,290.35	1,258.09	1,258.09	1,258.09	1,258.09	1,258.09	1,258.09	1,258.09	1,226.64	1,226.64	1,226.64	1,226.64	1,226.64	1,226.63	1,226.63
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	671.21	671.21	671.20	654.44	654.46	654.46	654.45	654.44	654.43	654.41	638.04	638.03	638.03	638.04	638.05	638.04	638.04
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6,954,207	7,065,474	7,178,522	7,293,379	7,224,821	7,340,418	7,457,864	7,577,190	7,698,426	7,821,600	7,946,745	7,872,047	7,997,999	8,125,967	8,255,983	8,388,078	8,522,287

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
			-2.5%							-2.5%							
	$ 1,300.59	$ 1,300.59	$ 1,268.07	$ 1,268.07	$ 1,268.07	$ 1,268.07	$ 1,268.07	$ 1,268.07	$ 1,268.07	$ 1,236.37	$ 1,236.37	$ 1,236.37	$ 1,236.37	$ 1,236.37	$ 1,236.37	$ 1,236.37	$ 1,236.37
	$ -	$ -	$ (32.51)	$ -	$ -	$ -	$ -	$ -	$ -	$ (31.70)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	55,192	56,075	56,972	57,884	57,340	58,257	59,189	60,136	61,099	62,076	63,069	62,477	63,476	64,492	65,524	66,572	67,637
	7,009,399	7,121,550	7,235,495	7,167,481	7,282,161	7,398,675	7,517,054	7,637,327	7,759,524	7,883,676	7,809,570	7,934,523	8,061,475	8,190,459	8,321,506	8,454,650	8,589,925
	-	-	(180,887)	-	-	-	-	-	-	(197,092)	-	-	-	-	-	-	-
	48,859	48,829	48,798	48,767	48,735	48,703	48,670	48,637	48,604	48,570	48,536	48,501	48,466	48,430	48,393	48,357	48,319
	41,418	42,046	42,684	42,303	42,945	43,598	44,261	44,934	45,619	46,314	45,899	46,599	47,310	48,032	48,766	49,512	50,269
	90,277	90,875	91,482	91,070	91,680	92,301	92,931	93,571	94,223	94,884	94,435	95,100	95,776	96,462	97,159	97,869	98,588

E Whiteland

LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	100% savings	100%	1

E Whiteland

Wages

Professional Services

Eliminated Exp

E Whiteland

Reported CAPX - from the financials

GROSS Property, plant and equipment

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Accumulated Depreciation																	
NET PPE																	
Total Debt																	
Net Equity																	
Investor Provided Capital																	
Depreciation Rate																	
Depreciation Expense																	
CAPX																	

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

y, plant and equipment.

y, plant and equipment.

EXHIBIT 20
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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-		83,116,429	84,848,729	86,000,797	87,168,507	88,352,072	89,551,708	90,767,632	92,000,066	93,249,234
Accumulated Depreciation	-	-	-		30,116,429	31,177,154	32,364,614	33,568,198	34,788,123	36,024,613	37,277,892	38,548,188	39,835,732
NET PPE	-	-	-		53,000,000	53,671,575	53,636,183	53,600,309	53,563,949	53,527,095	53,489,740	53,451,878	53,413,502
Total Debt	-	-	-	-	-	16,065,468							
Net Equity	-	-	-	-	-	26,447,777							
Investor Provided Capital	-	-	-	-	-	42,513,245	-						
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.63%							
Muni CAPX					0	2,038,000	0	0	0	0	0	0	0
IOU savings				0%			100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE							1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
CAPX					2,738,000	2,038,000	1,355,374	1,373,777	1,392,430	1,411,336	1,430,499	1,449,922	1,469,609
Dep rate					0.00%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
Half yr. Dep					0.00%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%
Dep on CAPX					-	16,610	11,046	11,196	11,348	11,502	11,659	11,817	11,977
Rate of retirement					15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Retired property					410,700	305,700	203,306	206,067	208,865	211,700	214,575	217,488	220,441
Dep on Retired property					-	4,983	3,314	3,359	3,404	3,451	3,498	3,545	3,593
Dep on Prior yr. GROSS					774,783	1,354,798	1,383,034	1,401,813	1,420,847	1,440,139	1,459,693	1,479,512	1,499,601
Total Dep					774,783	1,366,425	1,390,766	1,409,650	1,428,790	1,448,190	1,467,854	1,487,784	1,507,985
E Whiteland													
Depreciation Expense	-	-	718,700	774,783	1,354,798								
				part of OCN									

NET PPE PURTA 0.001527765
Rev Reg Assessment Fee 0.005652534

					2020	2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028
E Whiteland													
FIX CIP			CIP		$ -	$ 2,038,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					part of OCN	= to DepX							
					2,738,000	2,038,000							
									191	71	72	56	
					2020	2021							
						2,612,500.00	3,519,750.00	3,234,750.00	2,033,000.00	204,250.00	745,750.00	755,250.00	769,500.00
Sewer Rental Charges	0	0	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,135,170	4,390,240	4,498,570			
EDUs	0	0	0	0	7,908	7,908	8649	9330	9758	9801	9958	10117	10279
					0	550	741	681	428	43	157	159	162
		0	0	0	3954	7908	8278.5	8989.5	9544	9779.5			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	499.2412747								
						$ 460.00	$ 460.00	$ 460.00	$ 460.00	$ 460.00			
		#DIV/0!	#DIV/0!	#DIV/0!	998.4825493	499.2412747							
E Whiteland					C	3,895	62						
					E	7,908	127						
						0.49							
				1742000									
Customer Growth						271	365	335	211	21	1.60%	1.60%	1.60%
Delivered to Customer			-	15.40	15	16	18	19	20	20	20	21	21
E Whiteland Customers			3,895	3,895	3,895	4,166	4,531	4,866	5,077	5,098	5,180	5,262	5,347
Total Revenue (Less TAP)			3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291	4,521,585	5,830,130	5,888,900	5,983,123	6,078,853
										128.41%			100.00%
avg CUST rev			977.98	965.80	1,013.61	947.67	909.50	878.19	890.60	1,143.61	1,136.95	1,136.95	1,136.95
avg CUST flow			-	0	0	0	0	0	0	0	0	0	0
avg EDU rev			#DIV/0!	#DIV/0!	499.24	499.24	476.47	458.02	463.37	594.85	591.37	591.39	591.39
avg EDU flow			#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0
Rev Calculated						4,222,688	4,120,950	4,273,291	4,365,940	4,530,936	5,876,771	5,936,011	6,030,988

WORKING NOTES								WORKING NOTES					
2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

	2021	2022	2023	2024	2025	2026	2027	2028
	Change			26.0%				
$ 1,013.61	$ 947.67	$ 909.50	$ 909.50	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97
			$ -	$ 236.47	$ -	$ -	$ -	$ -
	137,344	172,950	152,341	5,697,197	9,351	46,641	47,111	47,865
	4,085,344	4,120,950	4,273,291	4,521,585	5,830,130	5,888,900	5,983,123	6,078,853
	-	-	-	1,175,612	-	-	-	-

Prior yr								
NET PURTA	0.1432%			76,858	76,807	76,756	76,704	76,651	76,597	76,543
REV Reg Assessment	0.5690%			24,626	25,610	26,477	34,579	35,336	35,670	36,206
				101,484	102,417	103,233	111,283	111,987	112,267	112,749

East Whiteland Township Wastewater System Assets

Investor Provide	42,513,245
Gross PP&E	83,116,429
Net PP&E	53,000,000
Revenues	4,328,000
EBITDA	1,942,553
EBIT	576,127
Customers	3,895
Population	14,720

G PPE	-	-	83,116,429	84,848,729	
NPPE	-	-	53,000,000	53,671,575	
Cust	3,895	3,895	3,895	4,166	

	2016	2017	2018	2019	2020	2021	2022		
E Whiteland									
LESS: EOS - Wages & Benefits	0	-	-	-	-	863,183		0.15	LESS: EOS - Wages Wages & Benefits
LESS: EOS - Professional Services	0	0	0	0	-	206,250		0.5	LESS: EOS - Profes Net Professional Services
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-			LESS: EOS - Eli Tranfers
E Whiteland									
Wages			0	0	0	863,183			
Professional Services					0	206,250			
Eliminated Exp			0	0	0	0			

E Whiteland					included in OCN	= to DepX
Reported CAPX - from the financials	0	0	393,256	740,070	2,738,000	2,038,000

	2016	2017	2018	2019	2020	Assets	Per Books	Difference
GROSS Property, plant and equipment	-	-	-	-	83,116,429	83,116,429	-	

	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Accumulated Depreciation	-	-	-	-	30,116,429			30,116,429	-				
NET PPE	-	-	-	-	53,000,000			53,000,000	-	53,000,000			
Total Debt	-	-	-	-	16,065,468			1,354,798					
Net Equity	-	-	-	-	26,447,777								
Investor Provided Capital	-	-	-	-	42,513,245								
Depreciation Rate	0.00%	0.00%	0.00%	#DIV/0!	1.63%								
Depreciation Expense	-	-	718,700	774,783	1,354,798.00								

	2021	2022	2023	2024	2025
CAPX	2,038,000	0	0	0	0

		2021	2022	2023	2024	2025	2026	2027	2028
	XYZ's LTCP	0	0	0	0	0	0	0	0
E Whiteland	State of Good Repair	2038000	0	0	0	0	0	0	0
	XYZ's Base CAPX	0	0	0	0	0	0	0	0
	Base & LTCP	0	0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	Expand WWTP		0	0	0	0	0	0	0
	PWD Base charge		0	0	0	0	0	0	0
	CAPX	2038000	0	0	0	0	0	0	0
	Expand WWTP work area		0	0	0	0	0	0	0
	State of Good Repair		0	0	0	0	0	0	0
	XYZ's Base CAPX		0	0	0	0	0	0	0
	Base & LTCP		0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP		0	0	0	0	0	0	0
	OpEx	0	0	0	0	0	0	0	0

State of Good Repair	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Propert
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
CAPX note	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.60% of prior year-end GROSS Propert
State of Good Repair	No Additional O&M.
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
Additional OpEx note	No Additional O&M.

EXHIBIT 20
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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROSS Property, plant and equipment	94,515,363	95,798,683	97,099,428	98,417,834	99,754,141	101,108,593	102,481,436	103,872,918	105,283,294	106,712,820	108,161,756	109,630,366	111,118,916	112,627,678	114,156,926	115,706,938	117,277,996
Accumulated Depreciation	41,140,759	42,463,505	43,804,211	45,163,120	46,540,481	47,936,543	49,351,562	50,785,792	52,239,497	53,712,941	55,206,390	56,720,117	58,254,398	59,809,511	61,385,739	62,983,369	64,602,692
NET PPE	53,374,604	53,335,178	53,295,217	53,254,714	53,213,660	53,172,050	53,129,874	53,087,126	53,043,797	52,999,879	52,955,366	52,910,249	52,864,518	52,818,167	52,771,187	52,723,569	52,675,304

id Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	1,489,563	1,509,788	1,530,288	1,551,066	1,572,126	1,593,473	1,615,109	1,637,038	1,659,266	1,681,795	1,704,631	1,727,776	1,751,235	1,775,014	1,799,115	1,823,543	1,848,303
	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%	0.82%
	12,140	12,305	12,472	12,641	12,813	12,987	13,163	13,342	13,523	13,707	13,893	14,081	14,273	14,466	14,663	14,862	15,064
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	223,434	226,468	229,543	232,660	235,819	239,021	242,266	245,556	248,890	252,269	255,695	259,166	262,685	266,252	269,867	273,531	277,245
	3,642	3,691	3,742	3,792	3,844	3,896	3,949	4,003	4,057	4,112	4,168	4,224	4,282	4,340	4,399	4,459	4,519
	1,519,963	1,540,600	1,561,519	1,582,721	1,604,211	1,625,992	1,648,070	1,670,447	1,693,129	1,716,118	1,739,419	1,763,037	1,786,975	1,811,238	1,835,831	1,860,758	1,886,023
	1,528,461	1,549,214	1,570,249	1,591,569	1,613,180	1,635,083	1,657,284	1,679,787	1,702,595	1,725,713	1,749,144	1,772,893	1,796,966	1,821,364	1,846,095	1,871,161	1,896,568

E Whiteland

Depreciation Expense

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	779,000.00	793,250.00	807,500.00	817,000.00	831,250.00	845,500.00	859,750.00	874,000.00	888,250.00	902,500.00	916,750.00	931,000.00	945,250.00	959,500.00	973,750.00	992,750.00	1,007,000.00

Sewer Rental Charges

EDUs	10443	10610	10780	10952	11127	11305	11486	11670	11857	12047	12240	12436	12635	12837	13042	13251	13463
	164	167	170	172	175	178	181	184	187	190	193	196	199	202	205	209	212

E Whiteland

	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	21	22	22	23	23	23	24	24	24	25	25	26	26	26	27	27	28
E Whiteland	5,432	5,519	5,607	5,697	5,788	5,881	5,975	6,071	6,168	6,266	6,367	6,469	6,572	6,677	6,784	6,893	7,003
	6,176,114	6,274,932	6,375,331	6,477,336	6,580,974	6,686,269	6,793,249	6,901,941	7,012,373	7,124,570	7,238,564	7,354,381	7,472,051	7,591,604	7,713,069	7,836,478	7,969,824
	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,136.95	1,138.00
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	591.41	591.42	591.40	591.43	591.44	591.44	591.44	591.43	591.41	591.40	591.39	591.38	591.38	591.38	591.40	591.39	591.98
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6,127,484	6,225,523	6,325,131	6,426,334	6,529,155	6,633,622	6,739,759	6,847,595	6,957,157	7,068,472	7,181,567	7,296,473	7,413,216	7,531,827	7,652,337	7,774,774	7,899,176

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
																0.1%	
	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,145.97	$ 1,147.12	$ 1,147.12
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.15	$ -
	48,631	49,409	50,199	51,003	51,819	52,648	53,490	54,346	55,216	56,099	56,997	57,909	58,835	59,776	60,733	61,705	62,692
	6,176,114	6,274,932	6,375,331	6,477,336	6,580,974	6,686,269	6,793,249	6,901,941	7,012,373	7,124,570	7,238,564	7,354,381	7,472,051	7,591,604	7,713,069	7,836,478	7,969,824
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,836	-
	76,488	76,432	76,376	76,319	76,261	76,202	76,142	76,082	76,021	75,959	75,896	75,832	75,767	75,702	75,636	75,568	75,500
	36,751	37,304	37,867	38,438	39,018	39,608	40,207	40,816	41,434	42,063	42,701	43,350	44,009	44,678	45,358	46,050	46,796
	113,239	113,736	114,243	114,757	115,279	115,810	116,349	116,898	117,455	118,022	118,597	119,182	119,776	120,380	120,994	121,618	122,296

E Whiteland

LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	100% savings	100%	1

E Whiteland

Wages

Professional Services

Eliminated Exp

E Whiteland

Reported CAPX - from the financials

GROSS Property, plant and equipment

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Accumulated Depreciation																	
NET PPE																	
Total Debt																	
Net Equity																	
Investor Provided Capital																	
Depreciation Rate																	
Depreciation Expense																	
CAPX																	

2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

y, plant and equipment.

y, plant and equipment.

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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-		43,447,309	45,179,609	45,804,344	46,437,717	47,079,849	47,730,860	48,390,873	49,060,013	49,738,405
Accumulated Depreciation	-	-	-		10,491,713	10,919,463	11,563,468	12,216,377	12,878,316	13,549,407	14,229,778	14,919,557	15,618,874
NET PPE	-	-	-		32,955,596	34,260,146	34,240,876	34,221,340	34,201,533	34,181,453	34,161,095	34,140,456	34,119,531
Total Debt	-	-	-	-	-	16,065,468							
Net Equity	-	-	-	-	-	26,447,777							
Investor Provided Capital	-	-	-	-	-	42,513,245	-						

Depreciation / GROSS PPE #DIV/0! #DIV/0! #DIV/0! 0.00% 0.00% 1.66%

Muni CAPX				0	2,038,000	0	0	0	0	0	0	0	0
IOU savings	0%					100%	100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE						1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
CAPX				2,738,000	2,038,000	734,982	745,145	755,449	765,895	776,486	787,223	798,108	
Dep rate				0.00%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	
Half yr. Dep				0.00%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	
Dep on CAPX				-	16,915	6,100	6,185	6,270	6,357	6,445	6,534	6,624	
Rate of retirement				15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
Retired property				410,700	305,700	110,247	111,772	113,317	114,884	116,473	118,083	119,716	
Dep on Retired property				-	5,075	1,830	1,855	1,881	1,907	1,933	1,960	1,987	
Dep on Prior yr. GROSS				774,783	721,610	749,982	760,352	770,866	781,525	792,332	803,288	814,396	
Total Dep				774,783	733,450	754,251	764,682	775,255	785,975	796,844	807,862	819,033	

E Whiteland

Depreciation Expense - - 718,700 774,783 721,610

part of OCN

NET PPE PURTA 0.001527765

Rev Reg Assessment Fee 0.005652534

					2020	2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028
E Whiteland													
FIX CIP			CIP		$ -	$ 2,038,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					part of OCN	= to DepX							
					2,738,000	2,038,000							
									191	71	72	56	
					2020	2021							
						2,612,500.00	3,519,750.00	3,234,750.00	2,033,000.00	204,250.00	745,750.00	755,250.00	769,500.00
Sewer Rental Charges	0	0	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,135,170	4,390,240	4,498,570			
EDUs	0	0	0	0	7,908	7,908	8649	9330	9758	9801	9958	10117	10279
					0	550	741	681	428	43	157	159	162
		0	0	0	3954	7908	8278.5	8989.5	9544	9779.5			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	499.2412747								
						$ 460.00	$ 460.00	$ 460.00	$ 460.00	$ 460.00			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	998.4825493	499.2412747							
E Whiteland					C	3,895	62						
					E	7,908	127						
						0.49							
				1742000									
Customer Growth						271	365	335	211	21	1.60%	1.60%	1.60%
Delivered to Customer			-	15.40	15	16	18	19	20	20	20	21	21
E Whiteland Customers			3,895	3,895	3,895	4,166	4,531	4,866	5,077	5,098	5,180	5,262	5,347
Total Revenue (Less TAP)			3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291	4,521,585	4,627,087	4,673,730	4,748,510	4,824,486
										101.91%			100.00%
avg CUST rev			977.98	965.80	1,013.61	947.67	909.50	878.19	890.60	907.63	902.34	902.34	902.34
avg CUST flow			-	0	0	0	0	0	0	0	0	0	0
avg EDU rev			#DIV/0!	#DIV/0!	499.24	499.24	476.47	458.02	463.37	472.10	469.34	469.36	469.35
avg EDU flow			#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0
Rev Calculated						4,222,688	4,120,950	4,273,291	4,365,940	4,530,936	4,664,104	4,711,120	4,786,498

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WORKING NOTES								WORKING NOTES					
2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

					2021	2022	2023	2024	2025	2026	2027	2028
					Change							
				$ 1,013.61	$ 947.67	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50
							$ -	$ -	$ -	$ -	$ -	$ -
					137,344	172,950	152,341	4,521,585	9,351	37,017	37,390	37,988
					4,085,344	4,120,950	4,273,291	4,521,585	4,627,087	4,673,730	4,748,510	4,824,486
					-	-	-	-	-	-	-	-

Prior yr											
NET PURTA	0.1432%				49,061	49,033	49,005	48,977	48,948	48,919	48,889
REV Reg Assessment	0.5690%				24,626	25,610	26,477	27,890	28,490	28,756	29,181
					73,687	74,643	75,482	76,867	77,438	77,675	78,070

East Whiteland Township Wastewater System Assets

Investor Provide	42,513,245
Gross PP&E	43,447,309
Net PP&E	32,955,596
Revenues	4,328,000
EBITDA	1,942,553
EBIT	1,209,102
Customers	3,895
Population	14,720

G PPE	-	-	43,447,309	45,179,609		
NPPE	-	-	32,955,596	34,260,146		
Cust	3,895	3,895	3,895	4,166		

	2016	2017	2018	2019	2020	2021	2022			
E Whiteland										
LESS: EOS - Wages & Benefits	0	-	-	-	-	863,183		0.15	LESS: EOS - Wages	Wages & Benefits
LESS: EOS - Professional Services	0	0	0	0	-	206,250		0.5	LESS: EOS - Profes	Net Professional Services
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-			LESS: EOS - Eli	Tranfers
E Whiteland										
Wages			0	0	0	863,183				
Professional Services					0	206,250				
Eliminated Exp			0	0	0	0				

E Whiteland					included in OCN	= to DepX
Reported CAPX - from the financials	0	0	393,256	740,070	2,738,000	2,038,000

	2016	2017	2018	2019	2020	Assets	Per Books	Difference
GROSS Property, plant and equipment	-	-	-	-	43,447,309	43,447,309	-	

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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Accumulated Depreciation	-	-	-	-	10,491,713			10,491,713	-				
NET PPE	-	-	-	-	32,955,596			32,955,596	-	32,955,596			
Total Debt	-	-	-	-	16,065,468			721,610					
Net Equity	-	-	-	-	26,447,777								
Investor Provided Capital	-	-	-	-	42,513,245								
Depreciation Rate	0.00%	0.00%	0.00%	#DIV/0!	1.66%								
Depreciation Expense	-	-	718,700	774,783	721,610.00								

	2021	2022	2023	2024	2025
CAPX	2,038,000	0	0	0	0

		2021	2022	2023	2024	2025	2026	2027	2028
	XYZ's LTCP	0	0	0	0	0	0	0	0
E Whiteland	State of Good Repair	2038000	0	0	0	0	0	0	0
	XYZ's Base CAPX	0	0	0	0	0	0	0	0
	Base & LTCP	0	0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	Expand WWTP		0	0	0	0	0	0	0
	PWD Base charge		0	0	0	0	0	0	0
	CAPX	2038000	0	0	0	0	0	0	0
	Expand WWTP work area		0	0	0	0	0	0	0
	State of Good Repair		0	0	0	0	0	0	0
	XYZ's Base CAPX		0	0	0	0	0	0	0
	Base & LTCP		0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP		0	0	0	0	0	0	0
	OpEx	0	0	0	0	0	0	0	0

State of Good Repair	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
CAPX note	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
State of Good Repair	No Additional O&M.
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
Additional OpEx note	No Additional O&M.

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROSS Property, plant and equipment	50,426,177	51,123,460	51,830,385	52,547,085	53,273,696	54,010,354	54,757,198	55,514,369	56,282,011	57,060,268	57,849,286	58,649,214	59,460,203	60,282,407	61,115,980	61,961,080	62,817,866
Accumulated Depreciation	16,327,861	17,046,652	17,775,382	18,514,188	19,263,211	20,022,592	20,792,473	21,572,999	22,364,319	23,166,580	23,979,936	24,804,538	25,640,543	26,488,107	27,347,392	28,218,559	29,101,772
NET PPE	34,098,316	34,076,808	34,055,003	34,032,897	34,010,485	33,987,762	33,964,725	33,941,370	33,917,692	33,893,688	33,869,350	33,844,676	33,819,660	33,794,300	33,768,588	33,742,521	33,716,094

id Total Debt
Net Equity
Investor Provided Capital

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
	809,144	820,333	831,676	843,177	854,836	866,656	878,640	890,790	903,108	915,596	928,256	941,092	954,105	967,299	980,674	994,235	1,007,983
	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%
	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
	6,716	6,809	6,903	6,998	7,095	7,193	7,293	7,394	7,496	7,599	7,705	7,811	7,919	8,029	8,140	8,252	8,366
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	121,372	123,050	124,751	126,477	128,225	129,998	131,796	133,619	135,466	137,339	139,238	141,164	143,116	145,095	147,101	149,135	151,197
	2,015	2,043	2,071	2,100	2,129	2,158	2,188	2,218	2,249	2,280	2,311	2,343	2,376	2,409	2,442	2,476	2,510
	825,658	837,075	848,649	860,384	872,282	884,343	896,572	908,969	921,539	934,281	947,200	960,298	973,577	987,039	1,000,688	1,014,525	1,028,554
	830,359	841,841	853,482	865,283	877,248	889,378	901,677	914,145	926,786	939,601	952,594	965,766	979,120	992,660	1,006,386	1,020,302	1,034,410

E Whiteland
Depreciation Expense

	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	779,000.00	793,250.00	807,500.00	817,000.00	831,250.00	845,500.00	859,750.00	874,000.00	888,250.00	902,500.00	916,750.00	931,000.00	945,250.00	959,500.00	973,750.00	992,750.00	1,007,000.00
Sewer Rental Charges																	
EDUs	10443	10610	10780	10952	11127	11305	11486	11670	11857	12047	12240	12436	12635	12837	13042	13251	13463
	164	167	170	172	175	178	181	184	187	190	193	196	199	202	205	209	212

E Whiteland

	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	21	22	22	23	23	23	24	24	24	25	25	26	26	26	27	27	28
E Whiteland	5,432	5,519	5,607	5,697	5,788	5,881	5,975	6,071	6,168	6,266	6,367	6,469	6,572	6,677	6,784	6,893	7,003
	4,901,678	4,980,105	5,059,786	5,140,743	5,222,995	5,359,628	5,445,383	5,532,509	5,621,029	5,710,965	5,802,341	5,895,178	5,989,501	6,085,333	6,182,698	6,281,621	6,445,949
	902.34	902.34	902.34	902.34	902.34	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	920.47
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	469.37	469.38	469.37	469.39	469.40	474.09	474.09	474.08	474.07	474.06	474.05	474.04	474.04	474.05	474.06	474.05	478.79
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4,863,082	4,940,891	5,019,946	5,100,264	5,181,869	5,264,779	5,402,505	5,488,946	5,576,769	5,665,997	5,756,653	5,848,760	5,942,339	6,037,417	6,134,016	6,232,160	6,331,874

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
					1.0%											1.0%	
	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 927.78	$ 927.78
	$ -	$ -	$ -	$ -	$ 9.10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9.19	$ -
	38,596	39,213	39,841	40,478	41,126	41,784	42,877	43,563	44,260	44,968	45,688	46,419	47,161	47,916	48,683	49,462	50,253
	4,901,678	4,980,105	5,059,786	5,140,743	5,222,995	5,359,628	5,445,383	5,532,509	5,621,029	5,710,965	5,802,341	5,895,178	5,989,501	6,085,333	6,182,698	6,281,621	6,445,949
	-	-	-	-	52,230	-	-	-	-	-	-	-	-	-	-	62,816	-
	48,859	48,829	48,798	48,767	48,735	48,703	48,670	48,637	48,604	48,570	48,536	48,501	48,466	48,430	48,393	48,357	48,319
	29,614	30,053	30,499	30,952	31,413	32,178	32,658	33,146	33,642	34,146	34,658	35,178	35,706	36,242	36,788	37,342	38,262
	78,473	78,882	79,297	79,719	80,148	80,881	81,328	81,783	82,246	82,716	83,194	83,679	84,172	84,672	85,181	85,699	86,581

E Whiteland

LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	100% savings	100%	1

E Whiteland

Wages

Professional Services

Eliminated Exp

E Whiteland

Reported CAPX - from the financials

GROSS Property, plant and equipment

EXHIBIT 20
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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Accumulated Depreciation																	
NET PPE																	
Total Debt																	
Net Equity																	
Investor Provided Capital																	
Depreciation Rate																	
Depreciation Expense																	
CAPX																	

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

y, plant and equipment.

y, plant and equipment.

EXHIBIT 20
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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-		43,447,309	45,179,609	45,804,344	46,437,717	47,079,849	47,730,860	48,390,873	49,060,013	49,738,405
Accumulated Depreciation	-	-	-		10,491,713	10,919,463	11,563,468	12,216,377	12,878,316	13,549,407	14,229,778	14,919,557	15,618,874
NET PPE	-	-	-		32,955,596	34,260,146	34,240,876	34,221,340	34,201,533	34,181,453	34,161,095	34,140,456	34,119,531
Total Debt	-	-	-	-	-	16,065,468							
Net Equity	-	-	-	-	-	26,447,777							
Investor Provided Capital	-	-	-	-	-	42,513,245	-						

Depreciation / GROSS PPE #DIV/0! #DIV/0! #DIV/0! 0.00% 0.00% 1.66%

			Muni CAPX	0	2,038,000	0	0	0	0	0	0	0	0
		IOU savings	0%			100%	100%	100%	100%	100%	100%	100%	100%
			CAPX/Prior Yr. GROSS PPE			1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
			CAPX	2,738,000	2,038,000	734,982	745,145	755,449	765,895	776,486	787,223	798,108	
			Dep rate	0.00%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	
			Half yr. Dep	0.00%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	
			Dep on CAPX	-	16,915	6,100	6,185	6,270	6,357	6,445	6,534	6,624	
			Rate of retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
			Retired property	410,700	305,700	110,247	111,772	113,317	114,884	116,473	118,083	119,716	
			Dep on Retired property	-	5,075	1,830	1,855	1,881	1,907	1,933	1,960	1,987	
			Dep on Prior yr. GROSS	774,783	721,610	749,982	760,352	770,866	781,525	792,332	803,288	814,396	
			Total Dep	774,783	733,450	754,251	764,682	775,255	785,975	796,844	807,862	819,033	
E Whiteland													
Depreciation Expense	-	-	718,700	774,783	721,610								
				part of OCN									

NET PPE PURTA 0.001527765
Rev Reg Assessment Fee 0.005652534

					2020	2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028
E Whiteland													
FIX CIP			CIP		$ -	$ 2,038,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
					part of OCN	= to DepX							
					2,738,000	2,038,000							
									191	71	72	56	

					2020	2021							
						2,612,500.00	3,519,750.00	3,234,750.00	2,033,000.00	204,250.00	745,750.00	755,250.00	769,500.00
Sewer Rental Charges	0	0	3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,135,170	4,390,240	4,498,570			
EDUs	0	0	0	0	7,908	7,908	8649	9330	9758	9801	9958	10117	10279
					0	550	741	681	428	43	157	159	162
		0	0	0	3954	7908	8278.5	8989.5	9544	9779.5			
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	499.2412747								
						$ 460.00	$ 460.00	$ 460.00	$ 460.00	$ 460.00			
		#DIV/0!	#DIV/0!	#DIV/0!	998.4825493	499.2412747							

E Whiteland					C	3,895	62						
					E	7,908	127						
						0.49							
				1742000									
	Customer Growth					271	365	335	211	21	1.60%	1.60%	1.60%
	Delivered to Customer		-	15.40	15	16	18	19	20	20	20	21	21
E Whiteland	Customers		3,895	3,895	3,895	4,166	4,531	4,866	5,077	5,098	5,180	5,262	5,347
	Total Revenue (Less TAP)		3,809,229	3,761,787	3,948,000	3,948,000	4,120,950	4,273,291	4,521,585	4,627,087	4,673,730	4,748,510	4,824,486
										101.91%			100.00%
	avg CUST rev		977.98	965.80	1,013.61	947.67	909.50	878.19	890.60	907.63	902.34	902.34	902.34
	avg CUST flow		-	0	0	0	0	0	0	0	0	0	0
	avg EDU rev		#DIV/0!	#DIV/0!	499.24	499.24	476.47	458.02	463.37	472.10	469.34	469.36	469.35
	avg EDU flow		#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0
	Rev Calculated					4,222,688	4,120,950	4,273,291	4,365,940	4,530,936	4,664,104	4,711,120	4,786,498

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WORKING NOTES								WORKING NOTES					
2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028

					2021	2022	2023	2024	2025	2026	2027	2028
					Change							
				$ 1,013.61	$ 947.67	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 909.50
							$ -	$ -	$ -	$ -	$ -	$ -
					137,344	172,950	152,341	4,521,585	9,351	37,017	37,390	37,988
					4,085,344	4,120,950	4,273,291	4,521,585	4,627,087	4,673,730	4,748,510	4,824,486
					-	-	-	-	-	-	-	-

Prior yr											
NET PURTA	0.1432%				49,061	49,033	49,005	48,977	48,948	48,919	48,889
REV Reg Assessment	0.5690%				24,626	25,610	26,477	27,890	28,490	28,756	29,181
					73,687	74,643	75,482	76,867	77,438	77,675	78,070

East Whiteland Township Wastewater System Assets

Investor Provide	42,513,245
Gross PP&E	43,447,309
Net PP&E	32,955,596
Revenues	4,328,000
EBITDA	1,105,722
EBIT	372,272
Customers	3,895
Population	14,720

G PPE	-	-	43,447,309	45,179,609		
NPPE	-	-	32,955,596	34,260,146		
Cust	3,895	3,895	3,895	4,166		

	2016	2017	2018	2019	2020	2021	2022			
E Whiteland										
LESS: EOS - Wages & Benefits	0	-	-	-	-	863,183		0.15	LESS: EOS - Wages	Wages & Benefits
LESS: EOS - Professional Services	0	0	0	0	-	206,250		0.5	LESS: EOS - Profes	Net Professional Services
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-			LESS: EOS - Eli	Tranfers
E Whiteland										
Wages			0	0	0	863,183				
Professional Services					0	206,250				
Eliminated Exp			0	0	0	0				

E Whiteland					included in OCN	= to DepX
Reported CAPX - from the financials	0	0	393,256	740,070	2,738,000	2,038,000

	2016	2017	2018	2019	2020	Assets	Per Books	Difference
GROSS Property, plant and equipment	-	-	-	-	43,447,309	43,447,309	-	

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	WORKING NOTES							WORKING NOTES					
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Accumulated Depreciation	-	-	-	-	10,491,713			10,491,713	-				
NET PPE	-	-	-	-	32,955,596			32,955,596	-	32,955,596			
Total Debt	-	-	-	-	16,065,468			721,610					
Net Equity	-	-	-	-	26,447,777								
Investor Provided Capital	-	-	-	-	42,513,245								
Depreciation Rate	0.00%	0.00%	0.00%	#DIV/0!	1.66%								
Depreciation Expense	-	-	718,700	774,783	721,610.00								

	2021	2022	2023	2024	2025
CAPX	2,038,000	0	0	0	0

		2021	2022	2023	2024	2025	2026	2027	2028
	XYZ's LTCP	0	0	0	0	0	0	0	0
E Whiteland	State of Good Repair	2038000	0	0	0	0	0	0	0
	XYZ's Base CAPX	0	0	0	0	0	0	0	0
	Base & LTCP	0	0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	xyz LTCP		0	0	0	0	0	0	0
	Expand WWTP		0	0	0	0	0	0	0
	PWD Base charge		0	0	0	0	0	0	0
	CAPX	2038000	0	0	0	0	0	0	0
	Expand WWTP work area		0	0	0	0	0	0	0
	State of Good Repair		0	0	0	0	0	0	0
	XYZ's Base CAPX		0	0	0	0	0	0	0
	Base & LTCP		0	0	0	0	0	0	0
	Base & LTCP & Expand WWTP		0	0	0	0	0	0	0
	OpEx	0	0	0	0	0	0	0	0

State of Good Repair	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
CAPX note	Capital Expenditures - Pre-2028 based on financials/budget. Post-2027 years are estimates at 1.63% of prior year-end GROSS Propert
State of Good Repair	No Additional O&M.
XYZ's Base CAPX	dummy
Base & LTCP	dummy
Base & LTCP & Expand WWTP	dummy
Additional OpEx note	No Additional O&M.

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
GROSS Property, plant and equipment	50,426,177	51,123,460	51,830,385	52,547,085	53,273,696	54,010,354	54,757,198	55,514,369	56,282,011	57,060,268	57,849,286	58,649,214	59,460,203	60,282,407	61,115,980	61,961,080	62,817,866
Accumulated Depreciation	16,327,861	17,046,652	17,775,382	18,514,188	19,263,211	20,022,592	20,792,473	21,572,999	22,364,319	23,166,580	23,979,936	24,804,538	25,640,543	26,488,107	27,347,392	28,218,559	29,101,772
NET PPE	34,098,316	34,076,808	34,055,003	34,032,897	34,010,485	33,987,762	33,964,725	33,941,370	33,917,692	33,893,688	33,869,350	33,844,676	33,819,660	33,794,300	33,768,588	33,742,521	33,716,094

id Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%	1.63%
	809,144	820,333	831,676	843,177	854,836	866,656	878,640	890,790	903,108	915,596	928,256	941,092	954,105	967,299	980,674	994,235	1,007,983
	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%	1.66%
	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
	6,716	6,809	6,903	6,998	7,095	7,193	7,293	7,394	7,496	7,599	7,705	7,811	7,919	8,029	8,140	8,252	8,366
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	121,372	123,050	124,751	126,477	128,225	129,998	131,796	133,619	135,466	137,339	139,238	141,164	143,116	145,095	147,101	149,135	151,197
	2,015	2,043	2,071	2,100	2,129	2,158	2,188	2,218	2,249	2,280	2,311	2,343	2,376	2,409	2,442	2,476	2,510
	825,658	837,075	848,649	860,384	872,282	884,343	896,572	908,969	921,539	934,281	947,200	960,298	973,577	987,039	1,000,688	1,014,525	1,028,554
	830,359	841,841	853,482	865,283	877,248	889,378	901,677	914,145	926,786	939,601	952,594	965,766	979,120	992,660	1,006,386	1,020,302	1,034,410

E Whiteland

Depreciation Expense

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	779,000.00	793,250.00	807,500.00	817,000.00	831,250.00	845,500.00	859,750.00	874,000.00	888,250.00	902,500.00	916,750.00	931,000.00	945,250.00	959,500.00	973,750.00	992,750.00	1,007,000.00
Sewer Rental Charges																	
EDUs	10443	10610	10780	10952	11127	11305	11486	11670	11857	12047	12240	12436	12635	12837	13042	13251	13463
	164	167	170	172	175	178	181	184	187	190	193	196	199	202	205	209	212

E Whiteland

	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	21	22	22	23	23	23	24	24	24	25	25	26	26	26	27	27	28
E Whiteland	5,432	5,519	5,607	5,697	5,788	5,881	5,975	6,071	6,168	6,266	6,367	6,469	6,572	6,677	6,784	6,893	7,003
	4,901,678	4,980,105	5,059,786	5,140,743	5,222,995	5,359,628	5,445,383	5,532,509	5,621,029	5,710,965	5,802,341	5,895,178	5,989,501	6,085,333	6,182,698	6,281,621	6,445,949
	902.34	902.34	902.34	902.34	902.34	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	911.36	920.47
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	469.37	469.38	469.37	469.39	469.40	474.09	474.09	474.08	474.07	474.06	474.05	474.04	474.04	474.05	474.06	474.05	478.79
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4,863,082	4,940,891	5,019,946	5,100,264	5,181,869	5,264,779	5,402,505	5,488,946	5,576,769	5,665,997	5,756,653	5,848,760	5,942,339	6,037,417	6,134,016	6,232,160	6,331,874

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
					1.0%											1.0%	
	$ 909.50	$ 909.50	$ 909.50	$ 909.50	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 918.60	$ 927.78	$ 927.78
	$ -	$ -	$ -	$ -	$ 9.10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9.19	$ -
	38,596	39,213	39,841	40,478	41,126	41,784	42,877	43,563	44,260	44,968	45,688	46,419	47,161	47,916	48,683	49,462	50,253
	4,901,678	4,980,105	5,059,786	5,140,743	5,222,995	5,359,628	5,445,383	5,532,509	5,621,029	5,710,965	5,802,341	5,895,178	5,989,501	6,085,333	6,182,698	6,281,621	6,445,949
	-	-	-	-	52,230	-	-	-	-	-	-	-	-	-	-	62,816	-
	48,859	48,829	48,798	48,767	48,735	48,703	48,670	48,637	48,604	48,570	48,536	48,501	48,466	48,430	48,393	48,357	48,319
	29,614	30,053	30,499	30,952	31,413	32,178	32,658	33,146	33,642	34,146	34,658	35,178	35,706	36,242	36,788	37,342	38,262
	78,473	78,882	79,297	79,719	80,148	80,881	81,328	81,783	82,246	82,716	83,194	83,679	84,172	84,672	85,181	85,699	86,581

E Whiteland

LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	100% savings	100%	1

E Whiteland

Wages

Professional Services

Eliminated Exp

E Whiteland

Reported CAPX - from the financials

GROSS Property, plant and equipment

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Accumulated Depreciation																	
NET PPE																	
Total Debt																	
Net Equity																	
Investor Provided Capital																	
Depreciation Rate																	
Depreciation Expense																	
CAPX																	

2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

y, plant and equipment.

y, plant and equipment.

Pennsylvania Municipalities, Total Decennial Population, 2010 & 2000

Prepared by The Pennsylvania State Data Center

Source: U.S. Census Bureau,Census 2000 & 2010 Redistricting Data (Public Law 94-171) Summary File.

March 9, 2011

		Census: April 1, 2010			Census: April 1, 2000			Change: 2000 to 2010			
2010 State, County & Munic. FIPS Code	Geographic Area	Number	Percent Share of State Total	Munic. Pop. Rank	Number	Percent Share of State Total	Munic. Pop. Rank	Number	Munic. Rank	Percent	Munic. Rank
4200000000	**Pennsylvania**	**12,702,379**	**100.0%**	**-**	**12,281,054**	**100.0%**	**-**	**421,325**	**-**	**3.4%**	**-**
4202900000	**Chester County**	**498,886**	**3.9%**	**-**	**433,501**	**3.5%**	**-**	**65,385**	**-**	**15.1%**	**-**
4202922056	East Whiteland township	10,650	0.1%	232	9,333	0.1%	254	1,317	165	14.1%	323

	BCWSA			ACSA			ALTOONA WATER AUTHORITY			CRWA		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
NET Property, plant and equipment	453,174,193	444,814,214	447,915,121	629,097,945	622,343,318	608,600,195	100,528,196	106,598,286	112,668,376	203,420,262	178,131,377	156,382,360
Operating Income	19,821,564	15,116,318	19,747,701	75,382,370	68,023,690	73,355,348	12,227,127	14,022,174	8,988,742	21,336,089	20,313,529	15,628,727
ROR/N PPE	4.37%	3.40%	4.41%	11.98%	10.93%	12.05%	12.16%	13.15%	7.98%	10.49%	11.40%	9.99%
3-Year Average	4.06%			11.66%			11.10%			10.63%		

Median of Each Year	5.08%	
Median of Each Entity	5.90%	
Conclusion		5.49%

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	CHESTER WATER AUTHORITY			ERIE CITY WATER AUTHORITY			LASA*			RAWA		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**
NET Property, plant and equipment	282,920,765	277,881,505	271,133,389	194,099,358	191,070,499	187,981,855	140,405,221	142,318,075	141,219,375	66,455,706	64,973,550	59,036,648
Operating Income	4,705,194	1,487,430	2,795,223	9,549,652	10,005,109	11,356,179	6,901,580	6,054,460	5,520,628	3,556,133	2,945,874	5,516,028
ROR/N PPE	1.66%	0.54%	1.03%	4.92%	5.24%	6.04%	4.92%	4.25%	3.91%	5.35%	4.53%	9.34%
3-Year Average	1.08%			5.40%			4.36%			6.41%		

* Fiscal year 3/31

Median of Each Year

Median of Each Entity

Conclusion

EXHIBIT 20
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	WCMA*			PITTSBURGH WATER & SEWER		
	2019	**2018**	**2017**	**2019**	**2018**	**2017**
NET Property, plant and equipment	590,631,677	554,245,152	510,067,669	830,578,000	757,480,000	689,807,000
Operating Income	23,281,341	27,079,696	21,532,860	65,808,000	61,660,000	29,604,000
ROR/N PPE	3.94%	4.89%	4.22%	7.92%	8.14%	4.29%
3-Year Average	4.35%			6.78%		

*Fiscal Year 3/31

Median of Each Year

Median of Each Entity

Conclusion

EXHIBIT 20
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BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2019 AND 2018

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2019 and 2018 segment information is as follows:

	2019			
Assets	Sewer System	Water System	Administrative Account	Totals
Current Assets				
Cash and Investments	$ 14,429,267	$ 11,367,223	$ 3,126,116	$ 28,922,606
Accounts Receivable, Unbilled Revenue and Net Intercompany Transfers	6,989,222	17,310,475	(9,104,024)	15,195,673
Other	608,655	83,531	-	692,186
Non-Current Assets				
Restricted Assets	48,050,977	12,345,721	4,370,043	64,766,741
Capital Assets	304,158,678	142,902,978	6,112,537	453,174,193
Total Assets	374,236,799	184,009,928	4,504,672	562,751,399
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	2,839,649	5,978,362	-	8,818,011
Pension: Changes in Assumptions	465,033	126,073	-	591,106
Pension: Difference Between Expected and Actual Experience	674,207	130,920	-	805,127
Pension: Difference Between Projected and Actual Earnings on Investments	1,437,679	253,707	-	1,691,386
Pension: Contributions Made Subsequent to Measurement Date	3,275,976	1,050,776	-	4,326,752
OPEB: Difference Between Expected and Actual Experience	29,645	5,232	-	34,877
OPEB: Difference Between Projected and Actual Earnings on Plan Investments	1,676	296	-	1,972
Total Deferred Outflows of Resources	8,723,865	7,545,366	-	16,269,231
Liabilities and Net Position				
Liabilities				
Current Liabilities	29,501,359	3,745,556	789,063	34,035,978
Non-Current Liabilities	150,796,046	88,247,692	3,715,609	242,759,347
Total Liabilities	180,297,405	91,993,248	4,504,672	276,795,325
Deferred Inflows of Resources				
Pension: Changes in Assumptions	27,086	5,032	-	32,118
Pension: Difference Between Projected and Actual Earnings on Investments	(165,256)	165,256	-	-
OPEB: Changes in Assumptions	273,297	48,229	-	321,526
Proceeds from Sale of Future Revenues	-	3,967,975	-	3,967,975
Total Deferred Inflows of Resources	135,127	4,186,492	-	4,321,619
Net Position				
Net Investment in Capital Assets	156,941,099	53,025,395	6,112,537	216,079,031
Restricted for Capital Activity	5,071,173	6,352,002	654,434	12,077,609
Restricted for Debt Service	25,520,284	5,993,716	-	31,514,000
Unrestricted	14,995,576	30,004,441	(6,766,971)	38,233,046
Total Net Position	$ 202,528,132	$ 95,375,554	$ -	$ 297,903,686

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2019 AND 2018

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018			
Assets	Sewer System	Water System	Administrative Account	Totals
Current Assets				
Cash and Investments	$ 13,996,611	$ 9,258,718	$ 1,343,631	$ 24,598,960
Accounts Receivable, Unbilled Revenue and Net Intercompany Transfers	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	293,945,954	145,484,365	5,383,895	444,814,214
Total Assets	362,192,175	185,168,408	4,141,806	551,502,389
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
Pension: Changes in Assumptions	632,513	155,628	-	788,141
Pension: Difference Between Expected and Actual Experience	162,431	40,607	-	203,038
Pension: Contributions Made Subsequent to Measurement Date	6,428,229	1,607,056	-	8,035,285
Total Deferred Outflows of Resources	10,726,542	8,265,853	-	18,992,395
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	156,519,961	91,561,281	3,496,528	251,577,770
Total Liabilities	180,660,511	94,934,773	4,141,806	279,737,090
Deferred Inflows of Resources				
Pension: Changes in Assumptions	36,187	6,638	-	42,825
Pension: Difference Between Projected and Actual Earnings on Investments	2,478,081	619,520	-	3,097,601
Proceeds from the Sale of Future Revenues	-	4,140,496	-	4,140,496
Total Deferred Inflows of Resources	2,514,268	4,766,654	-	7,280,922
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	12,679,810	26,202,109	(5,875,828)	33,006,091
Total Net Position	$ 189,743,938	$ 93,732,834	$ -	$ 283,476,772

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31, 2019 AND 2018

ASSETS	2019	2018
Current Assets		
Cash and Cash Equivalents	$ 5,870,876	$ 3,803,232
Investments	23,051,730	20,795,728
Accounts Receivable, Net of Allowance for Doubtful Accounts	6,175,101	7,707,994
Unbilled Revenue Receivable	9,020,572	9,970,317
Prepaid Expenses	692,186	695,549
Total Current Assets	44,810,465	42,972,820
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,922,837	3,541,256
Investments	60,095,138	59,883,991
Interest Receivable	748,766	290,108
Total Restricted Assets	64,766,741	63,715,355
Capital Assets		
Land, Rights-of-Way and CIP	77,851,553	79,376,857
Other Capital Assets, Net of Accumulated Depreciation	375,322,640	365,437,357
Total Capital Assets, Net	453,174,193	444,814,214
Total Non-Current Assets	517,940,934	508,529,569
Total Assets	562,751,399	551,502,389
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	8,818,011	9,965,931
Pension: Changes in Assumptions	591,106	788,141
Pension: Difference Between Expected and Actual Experience	805,127	203,038
Pension: Difference Between Projected and Actual Earnings on Investments	1,691,386	-
Pension: Contributions Made Subsequent to Measurement Date	4,326,752	8,035,285
OPEB: Difference Between Expected and Actual Experience	34,877	-
OPEB: Difference Between Projected and Actual Earnings on Plan Investments	1,972	-
Total Deferred Outflows of Resources	16,269,231	18,992,395
LIABILITIES AND NET POSITION		
Current Liabilities		
Accounts Payable and Accrued Expenses	11,887,091	6,872,214
Current Portion of Bonds Payable	21,345,000	20,460,000
Interest Payable	803,887	827,106
Total Current Liabilities	34,035,978	28,159,320
Non-Current Liabilities		
Customer and Developer Deposits	3,715,610	3,496,528
Bonds Payable, Net of Unamortized Bond Discount and Premium	233,209,683	239,927,805
Net Pension Liability	1,880,256	2,296,351
Net OPEB Liability	3,953,798	5,857,086
Total Non-Current Liabilities	242,759,347	251,577,770
Total Liabilities	276,795,325	279,737,090
Deferred Inflows of Resources		
Pension: Changes in Assumptions	32,118	42,825
Pension: Difference Between Projected and Actual Earnings on Investments	-	3,097,601
OPEB: Changes in Assumptions	321,526	-
Proceeds from Sale of Future Revenues	3,967,975	4,140,496
Total Deferred Inflows of Resources	4,321,619	7,280,922
Net Position		
Net Investment in Capital Assets	216,079,031	196,121,343
Restricted for Capital Activity	12,077,609	19,214,098
Restricted for Debt Service	31,514,000	35,135,240
Unrestricted	38,233,046	33,006,091
Total Net Position	$ 297,903,686	$ 283,476,772

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES,
AND CHANGES IN NET POSITION
YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues		
Retail Sewer Service	$ 49,612,675	$ 48,634,267
Wholesale Sewer Service	20,728,839	19,105,200
Retail Water Service	11,481,175	11,755,194
Wholesale Water Service	4,315,851	4,357,235
Improvement and Tapping Fees	580,375	279,425
Other Revenues	5,875,885	4,697,553
Total Operating Revenues	92,594,800	88,828,874
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	20,534,850	20,862,709
Water Procurement	5,352,970	5,611,587
Total Sewage Treatment and Water Procurement	25,887,820	26,474,296
Plant Operations		
Payroll and Related Costs	1,927,213	1,592,995
Repairs and Maintenance	1,292,778	1,251,844
Electricity	405,213	461,808
Water and Sewage Testing	256,279	218,091
Total Plant Operations	3,881,483	3,524,738
Collection, Transmission and Distribution Service		
Payroll and Related Costs	9,070,825	8,191,888
Repairs and Maintenance	2,347,631	1,992,003
Electricity	807,210	995,191
Other Related Costs	274,544	298,459
Total Collection, Transmission and Distribution Service	12,500,210	11,477,541
Total Operating Expenses	42,269,513	41,476,575
General and Administrative Expenses		
Payroll and Related Costs	4,536,162	6,780,772
Professional Fees	2,732,816	1,981,255
Insurance	522,165	476,597
Other	3,199,536	4,933,790
Total General and Administrative Expense	10,990,679	14,172,414
Total Expenses	53,260,192	55,648,989
Income From Operations Before Depreciation	39,334,608	33,179,885
Depreciation	(19,513,044)	(18,063,567)
Operating Income	19,821,564	15,116,318
Nonoperating Revenue (Expense)		
Interest Expense,		
Net of Amounts Capitalized	(8,517,857)	(9,017,615)
Investment Income	2,078,449	2,015,753
Other	-	4,824
Improvement and Tapping Fees	1,262,884	2,750,737
Amortization	(218,126)	(51,377)
Total Nonoperating Expense	(5,394,650)	(4,297,678)
Increase In Net Position, Before Contributed Capital	14,426,914	10,818,640
Contributed Capital	-	779,914
Net Position - Beginning of Year, as Previously Reported	283,476,772	275,130,457
Adjustment for GASB No. 75	-	(3,252,239)
Net Position - Beginning of Year, Restated	283,476,772	271,878,218
Net Position - End of Year	$ 297,903,686	$ 283,476,772

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2018 and 2017 segment information is as follows:

	2018			
Assets	Sewer System	Water System	Administrative Account	Totals
Current Assets				
Cash and Investments	$ 13,996,611	$ 9,258,718	$ 1,343,631	$ 24,598,960
Accounts Receivable and Unbilled Revenue	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	293,945,954	145,484,365	5,383,895	444,814,214
Total Assets	362,192,175	185,168,408	4,141,806	551,502,389
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
Changes in Assumptions	632,513	155,628	-	788,141
Difference Between Expected and Actual Experience	162,431	40,607	-	203,038
Contributions Made Subsequent to Measurement Date	6,428,229	1,607,056	-	8,035,285
Total Deferred Outflows of Resources	10,726,542	8,265,853	-	18,992,395
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	156,519,961	91,561,281	3,496,528	251,577,770
Total Liabilities	180,660,511	94,934,773	4,141,806	279,737,090
Deferred Inflows of Resources				
Changes in Assumptions	36,187	6,638	-	42,825
Difference Between Projected and Actual Earnings on Investments	2,478,081	619,520	-	3,097,601
Proceeds from the Sale of Future Revenues	-	4,140,496	-	4,140,496
Total Deferred Inflows of Resources	2,514,268	4,766,654	-	7,280,922
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	12,679,810	26,202,109	(5,875,828)	33,006,091
Total Net Position	$ 189,743,938	$ 93,732,834	$ -	$ 283,476,772

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017			
Assets	Sewer System	Water System	Administrative Account	Totals
Current Assets				
Cash and Investments	$ 8,904,986	$ 11,194,811	$ 1,393,738	$ 21,493,535
Accounts Receivable & Unbilled Revenue	22,076,404	4,854,323	(6,223,024)	20,707,703
Other	576,394	79,590	-	655,984
Non-Current Assets				
Restricted Assets	48,012,438	22,338,930	3,907,802	74,259,170
Capital Assets	294,731,969	147,991,214	5,191,938	447,915,121
Total Assets	374,302,191	186,458,868	4,270,454	565,031,513
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	4,223,088	6,924,098	-	11,147,186
Changes in Assumptions	788,141	197,035	-	985,176
Difference Between Expected and Actual Experience	208,819	52,205	-	261,024
Difference Between Projected and Actual Earnings on Investments	680,277	170,069	-	850,346
Contributions Made Subsequent to Measurement Date	1,562,388	390,597	-	1,952,985
Total Deferred Outflows of Resources	7,462,713	7,734,004	-	15,196,717
Liabilities and Net Position				
Liabilities				
Current Liabilities	22,888,994	3,518,492	809,871	27,217,357
Non-Current Liabilities	175,965,552	94,087,732	3,460,583	273,513,867
Total Liabilities	198,854,546	97,606,224	4,270,454	300,731,224
Deferred Inflows of Resources				
Changes in Assumptions	42,826	10,706	-	53,532
Proceeds from the Sale of Future Revenues	-	4,313,017	-	4,313,017
Total Deferred Inflows of Resources	42,826	4,323,723	-	4,366,549
Net Position				
Net Investment in Capital Assets	128,626,008	55,498,881	5,191,931	189,316,820
Restricted for Capital Activity	6,277,232	16,463,309	447,206	23,187,747
Restricted for Debt Service	24,622,642	5,870,408	-	30,493,050
Unrestricted	23,341,650	14,430,327	(5,639,137)	32,132,840
Total Net Position	$ 182,867,532	$ 92,262,925	$ -	$ 275,130,457

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018		
	Sewer System	Water System	Totals
Operating Revenues			
Retail Sewer Service	$ 48,634,267	$ -	$ 48,634,267
Wholesale Sewer Service	19,105,200	-	19,105,200
Retail Water Service	-	11,755,194	11,755,194
Wholesale Water Service	-	4,357,235	4,357,235
Improvement and Tapping Fees	-	279,425	279,425
Other Revenues	3,130,165	1,567,388	4,697,553
Total Operating Revenues	70,869,632	17,959,242	88,828,874
Expenses			
Operating Expenses			
Sewage Treatment and Water Procurement			
Sewage Treatment	20,862,709	-	20,862,709
Water Procurement	-	5,611,587	5,611,587
Total Sewage and Water Procurement	20,862,709	5,611,587	26,474,296
Plant Operations			
Payroll and Related Costs	1,592,995	-	1,592,995
Repairs and Maintenance	1,251,844	-	1,251,844
Electricity	461,808	-	461,808
Water and Sewage Testing	218,091	-	218,091
Total Plant Operations	3,524,738	-	3,524,738
Collection, Transmission and Distribution Service			
Payroll and related costs	6,404,591	1,787,297	8,191,888
Repairs and maintenance	1,660,514	331,489	1,992,003
Electricity	822,812	172,379	995,191
Other related costs	209,224	89,235	298,459
Total Collection, Transmission and Distribution	9,097,141	2,380,400	11,477,541
Service Expense			
Total Operating Expense	33,484,588	7,991,987	41,476,575
General and Administrative Expenses			
Payroll and related costs	5,714,319	1,066,453	6,780,772
Professional fees	1,747,815	233,440	1,981,255
Insurance	395,522	81,075	476,597
Other	4,821,938	111,852	4,933,790
Total General and Administrative Expenses	12,679,594	1,492,820	14,172,414
Income from Operations before depreciation	24,705,450	8,474,435	33,179,885
Depreciation	(14,696,296)	(3,367,271)	(18,063,567)
Operating Income	10,009,154	5,107,164	15,116,318
Nonoperating Revenue (Expense)			
Interest Expense, net of Amounts Capitalized	(5,405,915)	(3,611,700)	(9,017,615)
Investment Income	1,623,182	392,571	2,015,753
Other	4,824	-	4,824
Improvement and Tapping Fees	2,750,737	-	2,750,737
Amortization	(51,377)	-	(51,377)
Total Nonoperating Expense	(1,078,549)	(3,219,129)	(4,297,678)
Increase in Net Position, Before Contributed Capital	8,930,605	1,888,035	10,818,640
Contributed Capital	710,204	69,710	779,914
Net Position - Beginning of Year, as Previously Reported	182,867,532	92,262,925	275,130,457
Adjustment for GASB No. 75	(2,764,403)	(487,836)	(3,252,239)
Net Position - Beginning of Year, Restated	180,103,129	91,775,089	271,878,218
Net Position, End of Year	$ 189,743,938	$ 93,732,834	$ 283,476,772

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017		
	Sewer System	Water System	Totals
Operating Revenues			
Retail Sewer Service	$ 45,876,948	$ -	$ 45,876,948
Wholesale Sewer Service	15,432,198	-	15,432,198
Retail Water Service	-	11,949,872	11,949,872
Wholesale Water Service	-	6,647,724	6,647,724
Improvement & Tapping Fees	-	232,767	232,767
Other Revenues	3,249,727	1,629,253	4,878,980
Total Operating Revenues	64,558,873	20,459,616	85,018,489
Expenses			
Operating Expenses			
Sewage Treatment and Water Procurement			
Sewage Treatment	17,676,455	-	17,676,455
Water Procurement	-	6,530,098	6,530,098
Total Sewage and Water Procurement	17,676,455	6,530,098	24,206,553
Plant Operations			
Payroll and Related Costs	1,566,670	-	1,566,670
Repairs and Maintenance	958,914	-	958,914
Electricity	407,469	-	407,469
Water and Sewage Testing	219,714	-	219,714
Total Plant Operations	3,152,767	-	3,152,767
Collection, Transmission and Distribution Service			
Payroll and related costs	6,419,918	1,969,201	8,389,119
Repairs and maintenance	1,314,607	262,103	1,576,710
Electricity	672,888	158,476	831,364
Other related costs	105,932	65,769	171,701
Total Collection, Transmission and Distribution Service Expense	8,513,345	2,455,549	10,968,894
Total Operating Expense	29,342,567	8,985,647	38,328,214
General and Administrative Expenses			
Payroll and related costs	3,206,904	623,007	3,829,911
Professional fees	1,322,262	265,487	1,587,749
Insurance	353,433	90,023	443,456
Other	3,503,737	393,590	3,897,327
Total General and Administrative Expenses	8,386,336	1,372,107	9,758,443
Income from Operations before depreciation	26,829,970	10,101,862	36,931,832
Depreciation	(13,769,257)	(3,414,874)	(17,184,131)
Operating Income	13,060,713	6,686,988	19,747,701
Non-Operating Revenue (Expense)			
Interest Expense, net of Amounts Capitalized	(4,463,766)	(4,352,345)	(8,816,111)
Investment Income	1,224,604	435,695	1,660,299
Improvement and Tapping Fees	1,497,598	-	1,497,598
Amortization	(280,152)	(736,050)	(1,016,202)
Total Non-Operating Expense	(2,021,716)	(4,652,700)	(6,674,416)
Increase in Net Position	11,038,997	2,034,288	13,073,285
Net Position, Beginning of Year	171,828,535	90,228,637	262,057,172
Net Position, End of Year	$ 182,867,532	$ 92,262,925	$ 275,130,457

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018			
	Sewer System	Water System	Administrative Account	Totals
Cash Flows from Operating Activities				
Cash Received from Customers	$ 72,660,789	$ 17,539,631	$ -	$ 90,200,420
Payments to Suppliers	(31,373,585)	(6,551,971)	-	(37,925,556)
Payroll and Related Payments	(13,711,973)	(3,095,494)	-	(16,807,467)
Other Operating (Payments) / Transactions	12,644,098	(13,022,354)	222,511	(155,745)
Net Cash Provided from Operations	40,219,329	(5,130,188)	222,511	35,311,652
Cash Flows from Capital and Related Financing Activities				
Acquisition and Construction of Capital Assets	(12,799,197)	(860,416)	(191,958)	(13,851,571)
Improvement and Tapping Fees	2,750,737	-	-	2,750,737
Bond Principal Repayments	(17,784,999)	(2,475,000)	-	(20,259,999)
Interest Paid	(6,364,234)	(3,537,201)	-	(9,901,435)
Net Cash Used in Capital and Related Financing Activities	(34,197,693)	(6,872,617)	(191,958)	(41,262,268)
Cash Flows from Investing Activities				
Sale of Investments, Net	(5,599,131)	12,069,155	-	6,470,024
Interest Received	14,790	392,571	-	407,361
Net Cash Used in Investing Activities	(5,584,341)	12,461,726	-	6,877,385
Net Increase (Decrease) in Cash and Cash Equivalents	437,295	458,921	30,553	926,769
Cash and Cash Equivalents - Beginning of Year	1,529,900	33,485	4,854,334	6,417,719
Cash and Cash Equivalents - End of Year	$ 1,967,195	$ 492,406	$ 4,884,887	$ 7,344,488
Displayed as:				
Cash and Cash Equivalents	$ 1,967,195	$ 492,406	$ 1,343,631	$ 3,803,232
Restricted Cash and Cash Equivalents	-	-	3,541,256	3,541,256
	$ 1,967,195	$ 492,406	$ 4,884,887	$ 7,344,488
Reconciliation of Operating Income to Net Cash Provided from Operations:				
Operating Income	$ 10,009,154	$ 5,107,164	$ -	$ 15,116,318
Adjustments to Reconcile Operating Income to Net Cash Provided from Operating Activities				
Depreciation	14,696,296	3,367,271	-	18,063,567
Changes in Assets and Liabilities:				
Receivables and Unbilled Revenue, Net	3,276,483	(247,091)	-	3,029,392
Prepaid Expenses	(34,155)	(5,410)	-	(39,565)
Intercompany Receivables (Payables)	12,685,022	(13,036,180)	351,158	-
Accounts Payable and Accrued Expenses	531,336	(121,266)	(164,592)	245,478
Interest Payable	(37,555)	16,262	-	(21,293)
Customer and Developer Deposits	-	-	35,945	35,945
Net Pension and OPEB Liabilities and Related Pension Deferrals	(907,252)	(210,938)	-	(1,118,190)
Net Cash Provided from Operations	$ 40,219,329	$ (5,130,188)	$ 222,511	$ 35,311,652

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017			
	Sewer System	Water System	Administrative Account	Totals
Cash Flows from Operating Activities				
Cash Received from Customers	$ 62,575,421	$ 20,069,302	$ -	$ 82,644,723
Payments to Suppliers	(25,232,863)	(7,175,732)	457,880	(31,950,715)
Payroll and Related Payments	(11,445,049)	(2,595,164)	-	(14,040,213)
Other Operating (Payments) / Transactions	(253,988)	(1,470,351)	1,625,942	(98,397)
Net Cash Provided from Operations	25,643,521	8,828,055	2,083,822	36,555,398
Cash Flows from Capital and Related Financing Activities				
Acquisition and Construction of Capital Assets	(15,016,258)	(3,846,355)	(1,629,962)	(20,492,575)
Improvement and Tapping Fees	1,497,598	-	-	1,497,598
Bond Principal Repayments	(17,375,000)	(2,390,000)	-	(19,765,000)
Bond Issuance Proceeds	34,112,802	80,744,268	-	114,857,070
Transfer to Escrow Agent for Bond Defeasance	(35,441,434)	(97,773,208)	-	(133,214,642)
Interest Paid	(7,346,730)	(4,899,811)	-	(12,246,541)
Net Cash Used in Capital and Related Financing Activities	(39,569,022)	(28,165,106)	(1,629,962)	(69,364,090)
Cash Flows from Investing Activities				
Sale of Investments, Net	12,001,747	17,241,059	-	29,242,806
Interest Received	1,241,452	435,696	-	1,677,148
Net Cash Provided by Investing Activities	13,243,199	17,676,755	-	30,919,954
Net Increase (Decrease) in Cash and Cash Equivalents	(682,302)	(1,660,296)	453,860	(1,888,738)
Cash and Cash Equivalents - Beginning of Year	2,212,202	1,693,781	4,400,474	8,306,457
Cash and Cash Equivalents - End of Year	$ 1,529,900	$ 33,485	$ 4,854,334	$ 6,417,719
Displayed as:				
Cash and Cash Equivalents	$ 1,529,900	$ 33,485	$ 1,393,738	$ 2,957,123
Restricted Cash and Cash Equivalents	-	-	3,460,596	3,460,596
	$ 1,529,900	$ 33,485	$ 4,854,334	$ 6,417,719
Reconciliation of Operating Income to Net Cash Provided from Operations:				
Operating Income	$ 13,060,713	$ 6,686,988	$ -	$ 19,747,701
Adjustments to Reconcile Operating Income to Net Cash Provided from Operating Activities				
Depreciation	13,769,257	3,414,874	-	17,184,131
Changes in Assets and Liabilities:				
Receivables and Unbilled Revenue, Net	(2,092,088)	578,398	-	(1,513,690)
Prepaid Expenses	(31,647)	9,560	155,474	133,387
Intercompany Receivables (Payables)	77,451	(1,420,368)	1,342,917	-
Accounts Payable and Accrued Expenses	935,352	(293,880)	341,623	983,095
Interest Payable	(63,616)	(144,543)	-	(208,159)
Customer and Developer Deposits	-	-	243,808	243,808
Net Pension Liability and Related Pension Deferrals	(11,901)	(2,974)	-	(14,875)
Net Cash Provided from Operations	$ 25,643,521	$ 8,828,055	$ 2,083,822	$ 36,555,398

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31, 2016 AND 2015

ASSETS	2016	2015
Current Assets		
Cash and Cash Equivalents	$ 5,089,665	$ 5,731,089
Investments	24,374,913	17,814,990
Accounts Receivable, Net of Allowance for Doubtful Accounts	10,620,665	10,570,311
Unbilled Revenue	8,573,348	7,935,326
Prepaid Expenses	789,370	260,954
Total Current Assets	49,447,961	42,312,670
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,216,792	3,161,760
Investments	94,684,066	135,009,814
Interest Receivable	59,621	64,688
Total Restricted Assets	97,960,479	138,236,262
Capital Assets		
Land, Rights-of-Way and CIP	77,719,725	74,796,483
Other Capital Assets, Net of Accumulated Depreciation	365,717,807	335,450,721
Total Capital Assets, Net	443,437,532	410,247,204
Total Non-Current Assets	541,398,011	548,483,466
Total Assets	590,845,972	590,796,136
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	3,184,947	3,396,951
Pension: Difference between expected and Actual Experience	144,527	173,432
Pension: Difference between projected and actual earnings on investments	1,676,529	181,362
Pension: Contributions made subsequent to measurement date	1,754,573	1,714,497
Total Deferred Outflows of Resources	6,760,576	5,466,242
LIABILITIES AND NET POSITION		
Current Liabilities		
Accounts Payable and Accrued Expenses	5,516,076	4,231,827
Current Portion of Bonds Payable	19,765,000	17,535,000
Interest Payable	1,031,332	1,073,303
Total Current Liabilities	26,312,408	22,840,130
Non-Current Liabilities		
Customer and Developer Deposits	3,216,788	3,161,756
Bonds Payable, Net of Unamortized Bond Discount and Premium	293,958,458	315,287,483
Net Pension Liability	6,800,663	5,114,435
Total Non-Current Liabilities	303,975,909	323,563,674
Total Liabilities	330,288,317	346,403,804
Deferred Inflows of Resources		
Pension: Changes in Assumptions	64,329	-
Proceeds from sale of future revenues	5,196,730	5,206,301
Total Deferred Inflows of Resources	5,261,059	5,206,301
Net Position		
Net Investment in Capital Assets	163,868,064	171,371,418
Restricted for Capital Activity	24,324,428	20,752,536
Restricted for Debt Service	30,964,216	34,304,360
Unrestricted	42,900,464	18,223,959
Total Net Position	$ 262,057,172	$ 244,652,273

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
YEARS ENDED DECEMBER 31, 2016 AND 2015

	2016	2015
Operating Revenues		
Retail Sewer Service	$ 43,421,110	$ 40,074,901
Wholesale Sewer Service	14,897,563	15,357,443
Retail Water Service	11,916,548	8,704,536
Wholesale Water Service	12,191,561	11,633,096
Improvement and Tapping Fees	110,550	320,175
Other Revenues	4,481,483	4,144,208
Total Operating Revenues	87,018,815	80,234,359
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	16,253,379	13,646,982
Water Procurement	8,547,084	8,073,320
Total Sewage Treatment and Water Procurement	24,800,463	21,720,302
Plant Operations		
Payroll and Related Costs	1,755,388	1,633,434
Repairs and Maintenance	968,414	984,929
Electricity	470,001	386,706
Water and Sewage Testing	165,530	118,633
Total Plant Operations	3,359,333	3,123,702
Collection, Transmission and Distribution Service		
Payroll and Related Costs	8,220,765	8,072,542
Repairs and Maintenance	1,468,471	1,540,762
Electricity	874,124	995,081
Other Related Costs	178,188	257,882
Total Collection, Transmission and Distribution Service	10,741,548	10,866,267
Total Operating Expenses	38,901,344	35,710,271
General and Administrative Expenses		
Payroll and Related Costs	3,343,236	3,444,298
Professional Fees	1,133,397	1,573,043
Insurance	471,189	518,425
Bad Debt	-	-
Other	3,844,235	2,781,201
Total General and Administrative Expense	8,792,057	8,316,967
Total Expenses	47,693,401	44,027,238
Income From Operations Before Depreciation	39,325,414	36,207,121
Depreciation	(15,983,865)	(15,105,344)
Operating Income	23,341,549	21,101,777
Non-Operating Revenue (Expense)		
Interest Expense,		
Net of Amounts Capitalized	(10,941,064)	(10,312,121)
Investment Income	1,338,537	903,993
Other	3,012	-
Improvement and Tapping Fees	4,048,410	3,033,482
Amortization	(385,545)	(1,174,018)
Total Non-Operating Expense	(5,936,650)	(7,548,664)
Increase In Net Position, Before Contributed Capital	17,404,899	13,553,113
Contributed Capital	-	192,833
Increase in Net Position	17,404,899	13,745,946
Net Position - Beginning of Year	244,652,273	234,178,514
Cumulative Change	-	(3,272,187)
Net Position - Beginning of Year, Restated	244,652,273	230,906,327
Net Position - End of Year	$ 262,057,172	$ 244,652,273

See accompanying notes to the financial statements.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2019 AND 2018

Assets and Deferred Outflows of Resources

	2019	2018
Assets:		
Current assets:		
Cash and cash equivalents	$ 175,476,686	$ 142,482,220
Accounts receivable:		
Billed sewer revenue	16,702,983	16,544,587
Unbilled sewer revenue	43,666,409	41,408,016
Other	30,225	4,469
Other current assets	6,604,244	6,556,274
Total current assets	242,480,547	206,995,566
Restricted/designated assets:		
Cash and cash equivalents	150,150,904	83,445,720
Investments	84,963,478	167,782,528
Accrued interest receivable	375,444	622,842
Total restricted/designated assets	235,489,826	251,851,090
Prepaid bond costs	6,591,319	7,187,959
Nondepreciable capital assets:		
Land	5,344,896	5,344,896
Construction in progress	81,287,241	59,836,813
Total nondepreciable capital assets	86,632,137	65,181,709
Depreciable capital assets - at cost, net of accumulated depreciation	542,465,808	557,161,609
Total	629,097,945	622,343,318
Net pension asset	-	2,705,577
Total Assets	1,113,659,637	1,091,083,510
Deferred Outflows of Resources:		
Related to pensions	35,676,281	17,633,917
Other post-retirement benefits	853,236	932,894
Refunding adjustment	6,278,101	7,077,328
Total Deferred Outflows of Resources	42,807,618	25,644,139
Total Assets and Deferred Outflows of Resources	$ 1,156,467,255	$ 1,116,727,649

Liabilities, Deferred Inflows of Resources, and Net Position

	2019	2018
Liabilities:		
Current liabilities:		
Accounts payable	$ 7,349,003	$ 7,180,579
Accrued liabilities:		
Compensated absences	4,994,678	4,539,483
Salaries and wages	1,751,181	1,529,529
Accrued interest on bonds	2,638,762	2,745,875
Reserve for litigation	2,371,900	2,371,900
Pretreatment advance payments	1,850	24,375
Current maturities of sewer revenue bonds	27,635,000	26,630,000
Total current liabilities	46,742,374	45,021,741
Long-term liabilities:		
Other post-employment benefits	12,087,137	13,297,158
Net pension liability	28,684,748	6,121,872
Sewer revenue bonds - less current maturities	650,300,000	677,935,000
Unamortized bond premium	50,763,732	55,857,500
Net long-term debt	701,063,732	733,792,500
Total long-term liabilities	741,835,617	753,211,530
Total Liabilities	788,577,991	798,233,271
Deferred Inflows of Resources:		
Related to pensions	9,341,236	12,389,471
Other post-retirement benefits	1,904,424	-
Total Deferred Inflows of Resources	11,245,660	12,389,471
Net Position:		
Net investment in capital assets	142,167,140	120,849,236
Unrestricted	214,476,464	185,255,671
Total Net Position	356,643,604	306,104,907
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 1,156,467,255	$ 1,116,727,649

The notes to financial statements are an integral part of this statement.

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ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2018 AND 2017

Assets and Deferred Outflows of Resources	2018	2017
Assets:		
Current assets:		
Cash and cash equivalents	$ 142,482,220	$ 119,248,255
Accounts receivable:		
Billed sewer revenue	16,544,587	17,185,654
Unbilled sewer revenue	41,408,016	40,232,780
Other	4,469	4,635
Other current assets	6,556,274	6,432,263
Total current assets	206,995,566	183,103,587
Restricted/designated assets:		
Cash and cash equivalents	83,445,720	100,289,509
Investments	167,782,528	-
Accrued interest receivable	622,842	-
Total restricted/designated assets	251,851,090	100,289,509
Prepaid bond costs	7,187,959	6,472,479
Nondepreciable capital assets:		
Land	5,344,896	5,344,896
Construction in progress	59,836,813	38,371,565
Total nondepreciable capital assets	65,181,709	43,716,461
Depreciable capital assets - at cost, net of accumulated depreciation	557,161,609	564,883,734
Total	622,343,318	608,600,195
Net pension asset	2,705,577	-
Total Assets	1,091,083,510	898,465,770
Deferred Outflows of Resources:		
Related to pensions	17,633,917	21,247,515
Other post-retirement benefits	932,894	-
Refunding adjustment	7,077,328	8,074,203
Total Deferred Outflows of Resources	25,644,139	29,321,718
Total Assets and Deferred Outflows of Resources	$ 1,116,727,649	$ 927,787,488

Liabilities, Deferred Inflows of Resources, and Net Position	2018	2017
Liabilities:		
Current liabilities:		
Accounts payable	$ 7,180,579	$ 7,167,120
Accrued liabilities:		
Compensated absences	4,539,483	4,689,828
Salaries and wages	1,529,529	1,441,024
Accrued interest on bonds	2,745,875	2,260,535
Reserve for litigation	2,371,900	2,371,900
Pretreatment advance payments	24,375	71,600
Current maturities of sewer revenue bonds	26,630,000	25,395,000
Total current liabilities	45,021,741	43,397,007
Long-term liabilities:		
Other post-employment benefits	13,297,158	6,199,726
Net pension liability	6,121,872	16,421,705
Sewer revenue bonds - less current maturities	677,935,000	547,335,000
Unamortized bond premium	55,857,500	48,952,220
Net long-term debt	733,792,500	596,287,220
Total long-term liabilities	753,211,530	618,908,651
Total Liabilities	798,233,271	662,305,658
Deferred Inflows of Resources:		
Related to pensions	12,389,471	2,935,957
Net Position:		
Net investment in capital assets	120,849,236	95,281,689
Unrestricted	185,255,671	167,264,184
Total Net Position	306,104,907	262,545,873
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 1,116,727,649	$ 927,787,488

The notes to financial statements are an integral part of this statement.

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ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2017 AND 2016

Assets and Deferred Outflows of Resources

	2017	2016
Assets:		
Current assets:		
Cash and cash equivalents	$ 119,248,255	$ 91,684,772
Accounts receivable:		
Billed sewer revenue	17,185,654	14,582,462
Unbilled sewer revenue	40,232,780	35,405,033
Other	4,635	40,361
Other current assets	6,432,263	6,129,723
Total current assets	183,103,587	147,842,351
Restricted/designated assets:		
Cash and cash equivalents	100,289,509	92,275,291
Investments	-	31,442,508
Accrued interest receivable	-	156,762
Total restricted/designated assets	100,289,509	123,874,561
Prepaid bond costs	6,472,479	7,165,980
Nondepreciable capital assets:		
Land	5,344,896	5,344,896
Construction in progress	38,371,565	30,816,357
Total nondepreciable capital assets	43,716,461	36,161,253
Depreciable capital assets - at cost, net of accumulated depreciation	564,883,734	559,206,163
Total	608,600,195	595,367,416
Capital fees receivable	-	40,000
Total Assets	898,465,770	874,290,308
Deferred Outflows of Resources:		
Related to pensions	21,247,515	19,454,240
Refunding adjustment	8,074,203	9,259,327
Total Deferred Outflows of Resources	29,321,718	28,713,567
Total Assets and Deferred Outflows of Resources	$ 927,787,488	$ 903,003,875

Liabilities, Deferred Inflows of Resources, and Net Position

	2017	2016
Liabilities:		
Current liabilities:		
Accounts payable	$ 7,167,120	$ 8,192,941
Accrued liabilities:		
Compensated absences	4,689,828	4,543,017
Salaries and wages	1,441,024	1,315,045
Accrued interest on bonds	2,260,535	2,007,614
Reserve for litigation	2,371,900	2,371,900
Pretreatment advance payments	71,600	53,300
Current maturities of sewer revenue bonds	25,395,000	24,205,000
Total current liabilities	43,397,007	42,688,817
Long-term liabilities:		
Other post-employment benefits	6,199,726	5,173,881
Net pension liability	16,421,705	10,265,284
Sewer revenue bonds - less current maturities	547,335,000	572,730,000
Unamortized bond premium	48,952,220	54,514,841
Net long-term debt	596,287,220	627,244,841
Total long-term liabilities	618,908,651	642,684,006
Total Liabilities	662,305,658	685,372,823
Deferred Inflows of Resources:		
Related to pensions	2,935,957	4,102,436
Net Position:		
Net investment in capital assets	95,281,689	77,051,463
Unrestricted	167,264,184	136,477,153
Total Net Position	262,545,873	213,528,616
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 927,787,488	$ 903,003,875

The notes to financial statements are an integral part of this statement.

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ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues	$ 180,238,305	$ 169,724,327
Operating Expenses:		
Treatment	49,805,868	47,633,280
Intercepting sewer systems	8,753,813	8,490,808
Upper Allegheny system	298,412	563,244
Administrative and engineering	15,962,845	14,736,160
Billing and collecting	3,572,073	3,482,212
Management information systems	3,690,385	3,723,344
Total operating expenses before depreciation	82,083,396	78,629,048
Operating Income Before Depreciation	98,154,909	91,095,279
Depreciation	22,772,539	23,071,589
Operating Income	75,382,370	68,023,690
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	8,966,272	3,127,451
Interest expense on bonds	(28,261,390)	(20,735,872)
Amortization of prepaid bond costs	(596,640)	(629,995)
Change in value of pension related items	(4,177,854)	(61,702)
Change in value of OPEB related items	(774,061)	(789,172)
Total non-operating revenues (expenses)	(24,843,673)	(19,089,290)
Change in Net Position	50,538,697	48,934,400
Net Position:		
Beginning of year	306,104,907	257,170,507
End of year	$ 356,643,604	$ 306,104,907

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues	$ 169,724,327	$ 170,182,173
Operating Expenses:		
Treatment	47,633,280	44,821,531
Intercepting sewer systems	8,490,808	7,100,846
Upper Allegheny system	563,244	487,512
Administrative and engineering	14,736,160	13,772,696
Billing and collecting	3,482,212	4,439,250
Management information systems	3,723,344	3,778,272
Total operating expenses before depreciation	78,629,048	74,400,107
Operating Income Before Depreciation	91,095,279	95,782,066
Depreciation	23,071,589	22,426,718
Operating Income	68,023,690	73,355,348
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	3,127,451	1,096,517
Interest expense on bonds, net of amounts capitalized	(20,735,872)	(21,544,440)
Amortization of prepaid bond costs	(629,995)	(693,501)
Change in value of pension related items	(61,702)	(3,196,667)
Change in value of OPEB related items	(789,172)	-
Total non-operating revenues (expenses)	(19,089,290)	(24,338,091)
Change in Net Position	48,934,400	49,017,257
Net Position:		
Beginning of year, as restated for 2018	257,170,507	213,528,616
End of year	$ 306,104,907	$ 262,545,873

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Operating Revenues	$ 170,182,173	$ 151,390,618
Operating Expenses:		
Treatment	44,821,531	44,955,562
Intercepting sewer systems	7,100,846	5,896,400
Upper Allegheny system	487,512	451,733
Administrative and engineering	13,772,696	12,366,247
Billing and collecting	4,439,250	3,348,876
Management information systems	3,778,272	3,571,943
Total operating expenses before depreciation	74,400,107	70,590,761
Operating Income Before Depreciation	95,782,066	80,799,857
Depreciation	22,426,718	21,271,326
Operating Income	73,355,348	59,528,531
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	1,096,517	310,794
Interest expense on bonds, net of amounts capitalized	(21,544,440)	(23,172,637)
Amortization of prepaid bond costs	(693,501)	(1,306,549)
Change in value of pension related items	(3,196,667)	(123,155)
Total non-operating revenues (expenses)	(24,338,091)	(24,291,547)
Change in Net Position	49,017,257	35,236,984
Net Position:		
Beginning of year	213,528,616	178,291,632
End of year	$ 262,545,873	$ 213,528,616

The notes to financial statements are an integral part of this statement.

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2016

Assets and Deferred Outflows of Resources	
Assets:	
Current assets:	
Cash and cash equivalents	$ 31,370,479
Accounts receivable, net of allowance for uncollectible accounts of $4,798,347	8,391,183
Due from the City of Harrisburg	2,995,798
Prepaid expenses	291,184
Inventory	489,164
Total current assets	43,537,808
Restricted assets:	
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	4,723,331
Investments - restricted under trust indentures	37,547,376
Total restricted assets	42,270,707
Noncurrent assets:	
Capital assets, not being depreciated	12,360,288
Capital assets, net of accumulated depreciation of $118,292,680	136,420,246
Total noncurrent assets	148,780,534
Total Assets	234,589,049
Deferred Outflows of Resources:	
Deferred loss on refunding	8,778,954
Deferred outflows of resources for pensions	757,778
Total Deferred Outflows of Resources	9,536,732
Total Assets and Deferred Outflows of Resources	$244,125,781

CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2016

Operating Revenues:	
User charges	$ 38,184,824
Total operating revenues	38,184,824
Operating Expenses:	
Operating	13,802,610
Administrative	5,051,155
Depreciation	4,298,812
Total operating expenses	23,152,577
Operating Income	15,032,247
Non-Operating Revenues (Expenses):	
Investment income	2,192,129
Intergovernmental revenue	16,177
Gain on sale of easements	4,671,738
Miscellaneous expense	(240,506)
Interest expense	(7,713,386)
Total non-operating revenues (expenses)	(1,073,848)
Change in Net Position Before Special Item	13,958,399
Special item	92,933
Change in Net Position	14,051,332
Net Position:	
Beginning of year	35,564,284
End of year	$ 49,615,616

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2017

Assets and Deferred Outflows of Resources

Assets:	
Current assets:	
Cash and cash equivalents	$ 39,042,983
Accounts receivable, net of allowance for uncollectible accounts of $5,381,652	10,642,831
Due from the City of Harrisburg	2,999,854
Prepaid expenses	330,564
Inventory	475,789
Total current assets	53,492,021
Restricted assets:	
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	28,128,910
Investments - restricted under trust indentures	19,919,838
Total restricted assets	48,048,748
Noncurrent assets:	
Capital assets, not being depreciated	6,640,532
Capital assets, net of accumulated depreciation of $123,593,986	149,741,828
Total noncurrent assets	156,382,360
Total Assets	257,923,129
Deferred Outflows of Resources:	
Deferred loss on refunding	7,666,840
Deferred outflows of resources for pensions	1,087,971
Total Deferred Outflows of Resources	8,754,811
Total Assets and Deferred Outflows of Resources	$ 266,677,940

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2018

Assets and Deferred Outflows of Resources

Assets:	
Current assets:	
Cash and cash equivalents	$ 48,169,716
Accounts receivable, net of allowance for uncollectible accounts of $5,914,774	10,001,747
Grants receivable	905,431
Due from the City of Harrisburg	3,686,285
Prepaid expenses	403,089
Inventory	347,960
Total current assets	63,514,228
Restricted assets:	
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	19,430,292
Investments - restricted under trust indentures	19,433,058
Total restricted assets	38,863,350
Noncurrent assets:	
Capital assets, not being depreciated	16,946,141
Capital assets, net of accumulated depreciation of $128,988,007	160,175,578
Net pension asset	1,009,658
Total noncurrent assets	178,131,377
Total Assets	280,508,955
Deferred Outflows of Resources:	
Deferred loss on refunding	7,877,263
Deferred outflows of resources for other postemployment benefits	77,533
Deferred outflows of resources for pension	651,522
Total Deferred Outflows of Resources	8,606,318
Total Assets and Deferred Outflows of Resources	$ 289,115,273

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2019

(with comparative totals as of December 31, 2018)

	2019	2018
Assets and Deferred Outflows of Resources		
Assets:		
Current assets:		
Cash and cash equivalents	$ 37,818,930	$ 48,169,716
Accounts receivable, net of allowance for uncollectible accounts of $6,179,939 and $5,914,774	11,392,879	10,001,747
Grants receivable	481,413	905,431
Due from the City of Harrisburg	3,030,340	3,686,285
Prepaid expenses	407,379	403,089
Inventory	219,675	347,960
Total current assets	53,350,616	63,514,228
Restricted assets:		
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	10,728,097	19,430,292
Investments - restricted under trust indentures	23,792,020	19,433,058
Total restricted assets	34,520,117	38,863,350
Noncurrent assets:		
Capital assets, not being depreciated	25,938,916	16,946,141
Capital assets, net of accumulated depreciation of $132,254,413 and $128,988,007	177,481,346	160,175,578
Net pension asset	-	1,009,658
Total noncurrent assets	203,420,262	178,131,377
Total Assets	291,290,995	280,508,955
Deferred Outflows of Resources:		
Deferred loss on refunding	6,849,812	7,877,263
Deferred outflows of resources for other postemployment benefits	78,714	77,533
Deferred outflows of resources for pension	1,518,157	651,522
Total Deferred Outflows of Resources	8,446,683	8,606,318
Total Assets and Deferred Outflows of Resources	$ 299,737,678	$ 289,115,273

CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2017

Operating Revenues:	
User charges	$ 40,503,481
Total operating revenues	40,503,481
Operating Expenses:	
Operating	14,206,161
Administrative	5,367,287
Depreciation	5,301,306
Total operating expenses	24,874,754
Operating Income	15,628,727
Non-Operating Revenues (Expenses):	
Investment income	682,914
Intergovernmental revenue	471,421
Miscellaneous expense	(135,908)
Interest expense	(7,450,743)
Total non-operating revenues (expenses)	(6,432,316)
Change in Net Position	9,196,411
Net Position:	
Beginning of year - restated	47,619,135
End of year	$ 56,815,546

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2018

Operating Revenues:	
User charges	$ 44,895,271
Total operating revenues	44,895,271
Operating Expenses:	
Operating	13,894,496
Administrative	5,293,225
Depreciation	5,394,021
Total operating expenses	24,581,742
Operating Income	20,313,529
Non-Operating Revenues (Expenses):	
Investment income	568,004
Grant revenue	1,502,468
Gain on sale of easements	4,838,927
Miscellaneous expense	(180,383)
Interest expense	(6,812,458)
Total non-operating revenues (expenses)	(83,442)
Change in Net Position	20,230,087
Net Position:	
Beginning of year - restated	55,942,804
End of year	$ 76,172,891

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2019

(with comparative totals for the year ended December 31, 2018)

	2019	2018
Operating Revenues:		
User charges	$ 47,556,016	$ 44,895,271
Total operating revenues	47,556,016	44,895,271
Operating Expenses:		
Operating	14,776,480	13,894,496
Administrative	5,788,495	5,293,225
Depreciation	5,654,952	5,394,021
Total operating expenses	26,219,927	24,581,742
Operating Income	21,336,089	20,313,529
Non-Operating Revenues (Expenses):		
Investment income	1,193,936	568,004
Grant revenue	1,184,617	1,502,468
Gain on sale of easements	40,000	4,838,927
Miscellaneous income (expense)	606,499	(180,383)
Loss on disposal of capital assets	(74,363)	-
Interest expense	(5,836,796)	(6,812,458)
Total non-operating revenues (expenses)	(2,886,107)	(83,442)
Change in Net Position	18,449,982	20,230,087
Net Position:		
Beginning of year	76,172,891	55,942,804
End of year	$ 94,622,873	$ 76,172,891

The accompanying notes are an integral part of these financial statements.

ALTOONA WATER AUTHORITY
STATEMENTS OF NET POSITION

	December 31, 2017	December 31, 2016
ASSETS		
Current Assets		
Cash	$ 1,187,229	$ 2,426,395
Investments	3,009,242	3,590,996
Accounts Receivable	3,728,307	3,890,186
Accrued Interest Receivable	15,956	--
Prepaid Expenses	476,123	301,183
Total Current Assets	8,416,857	10,208,760
Restricted Assets		
Capital Projects	243,872	1,220,873
Debt Service	1,152,851	1,053,440
Debt Service Reserve	2,036,583	2,132,427
Surplus Fund	1,081,611	364,266
Total Restricted Assets	4,514,917	4,771,006
Right to Use Asset		
Right to Use Asset Net	112,668,376	--
Capital Assets		
Total Plant and Properties	--	348,811,369
Less: Accumulated Depreciation	--	(126,269,611)
Net Plant and Properties	--	222,541,758
TOTAL ASSETS	**125,600,150**	**237,521,524**
DEFERRED OUTFLOWS OF RESOURCES		
Outflow Related to Pension	1,526,330	792,553
LIABILITIES		
Current Liabilities		
Accounts Payable	1,211,479	1,353,287
Accrued Expenses	353,388	382,098
Accrued Payroll and Taxes	236,925	234,996
Deposits and Credits	99,009	98,909
Current Portion of City Lease Obligation	29,982	
Current Portion of Notes Payable	2,682,406	1,862,721
Current Portion of Bonds Payable	6,010,000	5,725,000
Total Current Liabilities	10,623,189	9,657,011
Long Term Liabilities		
City Lease Obligation	113,242,714	--
Loans Payable – PennVest	38,640,937	41,937,165
Bonds Payable	31,728,617	37,372,825
Net Pension Liability	2,570,058	2,101,758
Unearned Interest - Series of 1994	105,310	157,966
Total Long Term Liabilities	186,287,636	81,569,714
TOTAL LIABILITIES	**196,910,825**	**91,226,725**
DEFERRED INFLOWS OF RESOURCES		
Inflow Related to Pension	829,998	192,683
NET POSITION		
Invested in Capital Assets Net of Related Debt	--	138,861,752
Restricted for:		
Construction	222,881	499,882
Debt Service	1,045,329	1,053,419
Unrestricted	(71,882,553)	6,479,616
TOTAL NET POSITION	**$(70,614,343)**	**$ 146,894,669**

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
STATEMENTS OF NET POSITION

	December 31, 2018	December 31, 2017
ASSETS		
Current Assets		
Cash	$ 2,420,679	$ 1,187,229
Investments	4,484,450	3,009,242
Accounts Receivable	4,460,455	3,728,307
Accrued Interest Receivable	29,077	15,956
Prepaid Expenses	307,825	476,123
Total Current Assets	11,702,486	8,416,857
Restricted Assets		
Capital Projects	247,194	243,872
Debt Service	1,041,048	1,152,851
Debt Service Reserve	2,067,009	2,036,583
Surplus Fund	1,097,730	1,081,611
Total Restricted Assets	4,452,981	4,514,917
Right to Use Asset		
Right to Use Asset Net	106,598,286	112,668,376
TOTAL ASSETS	**122,753,753**	**125,600,150**
DEFERRED OUTFLOWS OF RESOURCES		
Outflow Related to Pension	2,359,034	1,526,330
LIABILITIES		
Current Liabilities		
Accounts Payable	1,079,614	1,211,479
Accrued Expenses	352,761	353,388
Accrued Payroll and Taxes	274,897	236,925
Deposits and Credits	92,183	99,009
Demand Note	1,464,081	--
Current Portion of City Lease Obligation	1,114,720	29,982
Current Portion of Notes Payable	2,974,950	2,682,406
Current Portion of Bonds Payable	6,305,000	6,010,000
Total Current Liabilities	13,658,206	10,623,189
Long Term Liabilities		
City Lease Obligation	112,127,994	113,242,714
Loans Payable – PennVest	35,892,461	38,640,937
Bonds Payable	25,798,561	31,728,617
Net Pension Liability	4,271,068	2,570,058
Unearned Interest - Series of 1994	52,655	105,310
Total Long Term Liabilities	178,142,739	186,287,636
TOTAL LIABILITIES	**191,800,945**	**196,910,825**
DEFERRED INFLOWS OF RESOURCES		
Inflow Related to Pension	642,998	829,998
NET POSITION		
Restricted for:		
Construction	226,203	222,881
Debt Service	1,040,814	1,045,329
Unrestricted	(68,598,173)	(71,882,553)
TOTAL NET POSITION	**$(67,331,156)**	**$(70,614,343)**

See Accompanying Notes to Financial Statements

CITY OF ALTOONA
BLAIR COUNTY, PENNSYLVANIA
STATEMENT OF NET POSITION
DECEMBER 31, 2019
(AMOUNTS EXPRESSED IN WHOLE DOLLARS)

	PRIMARY GOVERNMENT	COMPONENT UNITS		
	Governmental Activities	Altoona Water Authority	Redevelopment Authority of Altoona	The Parking Authority of the City of Altoona
ASSETS				
Cash and Cash Equivalents	$ 24,556,757	$ 2,142,068	$ 217,510	$ 157,819
Investments	366,982	12,127,836	0	0
Taxes Receivable	4,174,803	0	0	0
Accounts Receivable	0	3,750,328	2,816	3,568
Intergovernmental Receivables	321,540	0	0	0
Loans Receivable – Current	795,935	0	8,972	0
Other Receivables	193,952	14,619	0	0
Prepaid Expenses	314,090	25,755	0	1,667
Inventory	512,219	0	0	0
Loans Receivable – Long-Term	5,374,360	0	103,723	0
Right to Use Asset, Net	0	100,528,196	0	0
Capital Assets, Net of Accumulated Depreciation	405,378,818	0	254,542	2,527,780
TOTAL ASSETS	$441,989,456	$118,588,802	$ 587,563	$2,690,834
Deferred Outflows of Resources				
Deferred Charges:				
Bond Discounts	$ 780,363	$ 0	$ 0	$ 0
Defined Benefit Pensions	10,878,514	1,651,319		
OPEB Plans	1,130,677	0	0	0
Total Deferred Outflows of Resources	$ 12,789,554	$ 1,651,319	$ 0	$ 0
LIABILITIES				
Accounts Payable	$ 2,790,042	$ 1,732,865	$ 4,978	$ 14,842
Accrued Payroll	362,296	0	0	0
Payroll Taxes and Benefits Payable	134,704	0	0	3,459
Accrued Expenses	0	0	0	2,958
Accrued Payroll, Taxes, and Withholding	0	427,226	0	0
Accumulated Compensated Absences	0	279,288	0	2,119
Accrued Interest	295,444	0	0	321
Deposits Held	112,334	83,805	0	0
Unearned Revenues – Grants	6,271,037	0	0	0
Unearned Revenues - Rent Received in Advance	0	0	200	39,412
Noncurrent Liabilities:				
Due Within One Year	3,835,073	7,205,690	0	22,257
Due in More Than One Year	118,568,396	150,406,922	0	164,998
TOTAL LIABILITIES	$132,369,326	$160,135,796	$ 5,178	$ 250,366
Deferred Inflows of Resources				
Defined Benefit Pensions	$ 12,696,000	$ 1,965,233	$ 0	$ 0
NET POSITION				
Net Investment in Capital Assets	$345,530,381	$ 0	$ 254,542	$2,340,525
Restricted for:			0	0
Highway Aid	894,316	0	0	0
Capital Expenditures	8,184,878	0	0	0
Recreation	231,511	0	0	0
Other Projects	5,470,093	0	339,715	0
Water Authority	0	0	0	0
Unrestricted (Deficit)	(50,597,495)	(41,860,908)	(11,872)	99,943
TOTAL NET POSITION	$309,713,684	($ 41,860,908)	$ 582,385	$2,440,468

See Accompanying Notes and Independent Auditor's Report

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31, 2017	2016
Operating Revenues, Securing Revenue Bonds		
Water/Sewer Rentals	$ 28,033,026	$ 27,234,701
Installations and Renewals Service Lines	119,509	116,080
Meter Sales, Shut-Offs, and Remotes	224,910	224,676
Timber Sales	40,197	142,007
Septic Hauler Fees	75,649	81,269
Fire Hydrant and Line Rentals	343,767	331,999
Service to Wastewater Division	1,057,455	1,097,406
Miscellaneous	322,114	414,937
Intermunicipal Service Reimbursements	1,409,183	1,346,227
Total Operating Revenues	31,625,810	30,989,302
Operating Expenses - Functional and Departmental		
Administration	2,117,738	5,106,472
Billing and Collection	709,035	750,662
Purification and Distribution/Disposal	5,001,575	5,078,445
Meter Division	482,163	476,819
Maintenance	3,823,793	3,918,953
Fringe Benefits and Insurance	3,706,216	3,838,891
Depreciation and Amortization	6,796,548	7,861,126
Total Operating Expenses-Functional and Departmental	22,637,068	27,031,368
Operating Income	8,988,742	3,957,934
Nonoperating Revenues and (Expenses)		
Capital Contribution to City of Altoona	(223,701,014)	--
Investment Income	80,223	50,052
Interest Expense	(2,813,892)	(2,983,688)
Fees and Miscellaneous	(379)	(839)
Gain on Disposition of Fixed Assets	45,961	34,612
Contributed Capital	16,825	--
Amortization Bond Issue Costs	(125,478)	(126,251)
Total Nonoperating Revenues and (Expenses)	(226,497,754)	(3,026,114)
Net Income	(217,509,012)	931,820
Net Position - January 1	146,894,669	145,962,849
Net Position - December 31	**$(70,614,343)**	**$ 146,894,669**

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31, 2018	2017
Operating Revenues, Securing Revenue Bonds		
Water/Sewer Rentals	$ 30,794,341	$ 28,033,026
Installations and Renewals Service Lines	139,503	119,509
Meter Sales, Shut-Offs, and Remotes	250,565	224,910
Timber Sales	116,337	40,197
Septic Hauler Fees	2,269,905	75,649
Fire Hydrant and Line Rentals	341,023	343,767
Service to Wastewater Division	1,047,022	1,057,455
Miscellaneous	421,392	322,114
Intermunicipal Service Reimbursements	1,231,099	1,409,183
Total Operating Revenues	36,611,187	31,625,810
Operating Expenses - Functional and Departmental		
Administration	2,180,781	2,117,738
Billing and Collection	681,880	709,035
Purification and Distribution/Disposal	5,060,425	5,001,575
Meter Division	505,784	482,163
Maintenance	3,956,167	3,823,793
Fringe Benefits and Insurance	4,133,886	3,706,216
Depreciation and Amortization	6,070,090	6,796,548
Total Operating Expenses-Functional and Departmental	22,589,013	22,637,068
Operating Income	14,022,174	8,988,742
Nonoperating Revenues and (Expenses)		
Capital Contribution to City of Altoona	(4,277,135)	(223,701,014)
Investment Income	170,111	80,223
Interest Expense	(6,783,092)	(2,813,892)
Fees and Miscellaneous	--	(379)
Gain on Disposition of Fixed Assets	105,075	45,961
Contributed Capital	201,042	16,825
Amortization Bond Issue Costs	(154,988)	(125,478)
Total Nonoperating Revenues and (Expenses)	(10,738,987)	(226,497,754)
Net Income/(Loss)	3,283,187	(217,509,012)
Net Position - January 1	(70,614,343)	146,894,669
Net Position - December 31	**$(67,331,156)**	**$(70,614,343)**

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
REVENUE	
WATER SALES	17,474,179
SALES TO OTHER UTILITIES	450,000
BULK SALES	-
CAPITAL SURCHARGE	500,000
PENALTIES	90,000
INSTALL/RENEW-SERVICE LINES	95,000
METER INCOME	30,000
SHUT OFFS	60,000
FIRE LINES	330,000
FINAL READINGS	45,000
CAPACITY FEES	30,000
REIMBURSEMENTS-BELLWOOD BORO	261,257
REIMBURSEMENTS-HOLLIDAYSBURG BORO	743,153
INTEREST INCOME	70,000
SERVICE-WASTEWATER DIVISION	1,112,400
TIMBER SALES	50,000
OTHER RENTALS	172,000
MISCELLANEOUS INCOME	96,000
BAD DEBT RECOVERY	4,000
TOTAL REVENUES	**21,612,989**
EXPENDITURES-ADMINSITRATIVE	
WAGES	770,879
OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	45,000
AUDITING	15,000
LEGAL FEES	25,000
TRUSTEES EXPENSE	4,200
OTHER PROFESSIONAL FEES	100,000
ADVERTISING	6,000
PUBLIC RELATIONS AND MARKETING	1,000
TRAVEL/CONFERENCES/EDUCATION	2,500
DUES & SUPSCRIPTIONS	6,500
MAINTENANCE BUILDING	15,000
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	6,000
POSTAGE	2,000
LEASE PAYMENT	2,730,010
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	12,000
TELEPHONE EXPENSE	15,000
BAD DEBT EXPENSE	20,000
UTILITIES	22,000
SMALL TOOLS, EQUIPMENT, FURNITURE	2,500
TOTAL ADMINISTRATIVE EXPENDITURES	**3,816,289**

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-BILLING & COLLECTION	
WAGES	467,320
TRAVEL/CONFERENCES/EDUCATION	500
MAINTENANCE-EQUIPMENT	10,000
OFFICE SUPPLIES	20,000
UTILITY BILLING SOFTWARE HOSTING	85,000
POSTAGE	145,000
COLLECTION EXPENSE	7,000
TELEPHONE EXPENSE	3,000
SMALL TOOLS, EQUIPMENT, FURNITURE	4,000
TOTAL BILLING & COLLECTION EXPENDITRURES	**741,820**
EXPENDITURES-PURIFICATION & DISTRIBUTION	
WAGES	1,247,592
TRAVEL/CONFERENCES/EDUCATION	7,000
DAM INSPECTIONS	27,000
TELEPHONE EXPENSE	2,700
MAINTENANCE-WATER PUMP STATION	-
MAINTENANCE-TANKS	-
MAINTENANCE-WATERSHED	15,000
SOURCE WATER PROTECTION	6,000
UTILITIES	105,000
SMALL TOOLS, EQUIPMENT, FURNITURE	8,000
TOTAL PURIFICATION & DISTRIBUTION EXPENDITURES	**1,418,292**
EXPENDITURES-HORSESHOE CURVE WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	4,200
ELECTRICITY	130,000
CHEMICALS	89,250
MAINTENANCE	86,250
SLUDGE DISPOSAL	10,000
UTILITIES - PROPANE HEATING	65,000
TOTAL HORSESHOE CURVE EXPENDITURES	**417,200**
EXPENDITURES-MILL RUN WTP	
LAB COSTS/SUPPLIES	17,300
TELEPHONE EXPENSE	1,300
ELECTRICITY	40,000
CHEMICALS	18,900
MAINTENANCE	25,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	15,000
TOTAL MILL RUN EXPENDITURES	**120,500**

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-TIPTON WTP	
LAB COSTS/SUPPLIES	25,800
TELEPHONE EXPENSE	1,500
ELECTRICITY	54,000
CHEMICALS	31,500
MAINTENANCE	23,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	10,000
TOTAL TIPTON EXPENDITURES	**148,800**
EXPENDITURES-KETTLE WTP	
LAB COSTS/SUPPLIES	3,000
TELEPHONE EXPENSE	1,000
ELECTRICITY	7,000
CHEMICALS	2,000
MAINTENANCE	5,000
SLUDGE DISPOSAL	
UTILITIES - PROPANE HEATING	4,500
TOTAL KETTLE EXPENDITURES	**22,500**
EXPENDITURES-HOMER GAP WTP	
LAB COSTS/SUPPLIES	2,000
TELEPHONE EXPENSE	400
ELECTRICITY	7,000
CHEMICALS	2,000
MAINTENANCE	4,000
SLUDGE DISPOSAL	-
UTILITIES - PROPANE HEATING	5,000
TOTAL HOMER GAP EXPENDITURES	**20,400**
EXPENDITURES-PLANE NINE WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	1,500
ELECTRICITY	75,000
CHEMICALS	31,500
MAINTENANCE	23,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	15,000
INSURANCE	11,000
TOTAL PLANE NINE EXPENDITURES	**192,500**

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-BELLWOOD WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	1,400
ELECTRICITY	75,000
CHEMICALS	54,600
MAINTENANCE	28,750
SLUDGE DISPOSAL	4,000
UTILITIES - PROPANE HEATING	20,000
INSURANCE	10,000
TOTAL BELLWOOD EXPENDITURES	**226,250**
EXPENDITURES-METER DIVISION	
WAGES	450,182
MAINTENANCE-EQUIPMENT	30,000
TELEPHONE EXPENSE	5,000
OFFICE SUPPLIES/UNIFORMS/MAINT.	2,000
MATERIALS & SUPPLIES	20,000
GASOLINE & OIL	18,000
SMALL TOOLS, EQUIPMENT, FURNITURE	3,500
	-
TOTAL METER DIVISION EXPENDITURES	**528,682**
EXPENDITURES-MAINTENANCE	
WAGES	2,446,757
TRAVEL/CONFERENCES/EDUCATION	14,000
MAINTENANCE-BUILDING	10,000
MAINTENANCE-EQUIPMENT	8,000
MAINTENANCE-COMMUNICATION EQUIPMENT	500
OFFICE SUPPLIES	3,000
GIS SYSTEM EXPENSE	11,200
TELEPHONE EXPENSE	16,000
SAFETY EQUIPMENT/CLOTHING	10,000
MAINTENANCE - WATER PUMP STATIONS	12,000
MAINTENANCE - TANKS	30,000
UTILITIES	18,000
MECHANICS UNIFORMS	2,000
MATERIALS & SUPPLIES	400,000
LEASE EXPENSE	14,051
MAINTENANCE-VEHICLE	75,000
GASOLINE & OIL	55,000
DIESEL FUEL	65,000
STREET CUTS	325,000
ONE CALL SYSTEM EXPENSE	7,000
SMALL TOOLS, EQUIPMENT, FURNITURE	15,000
TOTAL MAINTENANCE EXPENDITURES	**3,537,508**

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE	
SOCIAL SECURITY	411,779
WORKMENS COMPENSATION	140,000
PA UNEMPLOYMENT COMPENSATION	5,000
PENSION	486,300
GROUP LIFE, AD&D, LTD , STD	90,000
HOSPITALIZATION & MAJOR MEDICAL	1,480,000
HEALTH & WELFARE(AFSCME)	28,329
MEDICAL EXAMINATIONS	8,000
INSURANCE-FLEET	24,601
INSURANCE-ALL RISK PROPERTY	147,898
INSURANCE-PUBLIC OFFICIAL LIABILITY	3,685
CONTINGENCIES	-
TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	**2,825,592**
TOTAL OPERATING EXPENDITURES	**14,016,333**
CAPITAL EXPENDITURES	
CONSTRUCTION & RENEWAL	612,912
VEHICLES	-
OFFICE FURNITURE & EQUIPMENT	-
METERS	-
COMPUTER EQUIPMENT	-
FIRE HYDRANTS	-
PLANT EQUIPMENT/RENEWAL	-
OTHER EQUIPMENT	-
TOTAL CAPITAL EXPENDITURES	**612,912**
DEBT SERVICE & INTEREST	
DEBT SERVICE PAYMENT	6,435,936
TOTAL DEBT SERVICE PAYMENT	**6,435,936**
TOTAL EXPENDITURES	**21,065,181**
NET REVENUE/(DEFICIT)	**547,808**

ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

	2019 BUDGET
REVENUE	**0%**
WASTEWATER RENTALS	11,343,481
CAPITAL SURCHARGE	500,000
PENALTIES	65,000
CAPACITY FEES	10,000
SEWER INSTALL/TAP FEES	20,000
SEWER-SURCHARGE/PRETREATMENT	150,000
SEPTIC HAULER FEES	190,000
INTERMUNICIPAL SERVICE REIMBURSEMENT	592,855
INTEREST INCOME	25,000
MISCELLANEOUS INCOME	90,000
RECOVERY - CHARGED OFF ACCOUNTS	2,000
TOTAL REVENUES	**12,988,336**
EXPENDITURES-ADMINISTRATIVE	
OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	113,000
AUDITING	12,000
LEGAL FEES	40,000
TRUSTEE EXPENSE	5,200
OTHER PROFESSIONAL FEES	35,000
ADVERTISING	3,000
PUBLIC RELATIONS EXPENSE	1,000
TRAVEL/CONFERENCES/EDUCATION	5,000
DUES & SUPSCRIPTIONS	6,700
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	5,000
POSTAGE	3,000
PAYMENT FOR CITY SERVICES	1,535,630
PAYMENT FOR WATER DIVISION SERVICES	1,112,400
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	10,000
BAD DEBT EXPENSE	15,000
TELEPHONE EXPENSE	7,000
SMALL TOOLS, EQUIPMENT, FURNITURE	2,000
TOTAL ADMINISTRATIVE EXPENDITURES	**2,926,630**

ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

	2019 BUDGET
EXPENDITURES-DISPOSAL PLANTS	
WAGES	1,338,792
TRAVEL/CONFERENCE/EDUCATION	16,000
PRETREATMENT MONITORING	60,000
TELEPHONE EXPENSE	4,500
SAFETY EQUIPMENT/CLOTHING	1,500
MAINTENANCE - PUMP STATIONS	4,000
SMALL TOOLS, EQUIPMENT, FURNITURE	10,000
TOTAL DISPOSAL PLANTS EXPENDITURES	**1,434,792**
EXPENDITURES - EASTERLY PLANT	
LAB COSTS & SUPPLIES	55,000
TELEPHONE EXPENSE	2,000
ELECTRICITY-PLANTS	350,000
CHEMICALS	70,000
MAINTENANCE-PLANTS	103,000
MAINTENANCE-CSO'S	15,000
SLUDGE DISPOSAL	20,000
NATURAL GAS & OIL	35,000
TOTAL EASTERLY PLANT EXPENDITURES	**650,000**
EXPENDITURES - WESTERLY PLANT	
LAB COSTS & SUPPLIES	55,000
TELEPHONE EXPENSE	10,000
ELECTRICITY-PLANTS	500,000
CHEMICALS	95,000
MAINTENANCE-PLANTS	204,000
MAINTENANCE-CSO'S	15,000
SLUDGE DISPOSAL	20,000
NATURAL GAS & OIL	55,000
TOTAL WESTERLY PLANT EXPENDITURES	**954,000**

ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

	2019 BUDGET
EXPENDITURES-SANITARY SEWERS	
WAGES	682,400
MAINTENANCE-BUILDING	4,000
GIS SYSTEM EXPENSE	11,200
TELEPHONE EXPENSE	2,400
SAFETY EQUIPMENT/CLOTHING	4,000
MATERIALS & SUPPLIES	180,000
MAINTENANCE-VEHICLE	40,000
GASOLINE & OIL	20,000
DIESEL FUEL	30,000
STREET CUTS	150,000
ONE CALL SYSTEM EXPENSE	4,000
SMALL TOOLS, EQUIPMENT, FURNITURE	3,000
TOTAL SANITARY SEWERS EXPENDITURES	**1,131,000**
EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE	
SOCIAL SECURITY	154,621
WORKMENS COMPENSATION	68,000
PA UNEMPLOYMENT COMPENSATION	2,500
PENSION	230,000
GROUP LIFE, AD&D, LTD	30,000
HOSPITALIZATION & MAJR MEDICAL	636,354
HEALTH & WELFARE(AFSCME)	11,600
MEDICAL EXAMINATIONS	5,000
INSURANCE-FLEET	16,436
INSURANCE-ALL RISK PROPERTY	103,458
INSURANCE-BOILER MACHINERY	-
INSURANCE-PUBLIC OFFICIAL LIAB	3,474
CONTINGENCIES	-
TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	**1,261,443**
TOTAL OPERATING EXPENDITURES	**8,357,865**

ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

	2019 BUDGET
CAPITAL EXPENTITURES	
CONSTRUCTION & RENEWAL	-
VEHICLES	431,000
OFFICE FURNITURE & EQUIPMENT	8,000
COMPUTER EQUIPMENT	15,500
PLANT EQUIPMENT/RENEWAL	-
OTHER EQUIPMENT	9,000
TOTAL CAPITAL EXPENDITURES	**463,500**
DEBT SERVICE & INTEREST	
DEBT SERVICE PAYMENT	4,154,608
TOTAL DEBT SERVICE PAYMENT	**4,154,608**
TOTAL EXPENDITURES	**12,975,973**
NET REVENUE/(DEFICIT)	**12,363**

CITY OF READING

COMBINING STATEMENT OF NET POSITION - WATER FUNDS

December 31, 2019

	City Water Fund	Reading Area Water Authority	Eliminations	Total Water Fund
ASSETS				
Current assets:				
Cash	$ 1,858,893	$ 13,894,351	$ -	$ 15,753,244
Investments	119,120	-	-	119,120
Accounts receivable, net	1,687	5,230,760	-	5,232,447
Interfund receivables	293,208	-	(224,755)	68,453
Inventory	-	160,309	-	160,309
Prepaid expenses	-	54,600	-	54,600
Total current assets	2,272,908	19,340,020	(224,755)	21,388,173
Restricted assets - cash and investments	-	9,570,456	-	9,570,456
Noncurrent assets:				
Capital assets not being depreciated	2,059,359	270,252	-	2,329,611
Capital assets, net of accumulated depreciation	9,380,774	66,185,454	-	75,566,228
Total capital assets, net	11,440,133	66,455,706	-	77,895,839
Rights to leased land	-	917,715	-	917,715
Total noncurrent assets	11,440,133	67,373,421	-	78,813,554
TOTAL ASSETS	13,713,041	96,283,897	(224,755)	109,772,183
DEFERRED OUTFLOWS				
Deferred charge on bond refunding	123,536	917,612	-	1,041,148
Deferred outflows of resources for pension	599,238	-	-	599,238
Deferred outflows of resources for other postemployment benefits	20,939	-	-	20,939
TOTAL DEFERRED OUTFLOWS	743,713	917,612	-	1,661,325
LIABILITIES				
Current liabilities:				
Accounts payable	14,606	378,233	-	392,839
Interfund payables	4,214,064	224,755	(224,755)	4,214,064
Accrued interest	-	297,398	-	297,398
Accrued payroll and compensated absences	-	790,915	-	790,915
Escrow deposits	-	107,245	-	107,245
Current portion notes and bonds payable	99,498	3,379,254	-	3,478,752
Total current liabilities	4,328,168	5,177,800	(224,755)	9,281,213
Noncurrent liabilities:				
Notes and Bonds payable, net	3,065,323	77,462,829	-	80,528,152
Net pension liability	1,178,813	-	-	1,178,813
Other postemployment benefits	144,972	-	-	144,972
Total noncurrent liabilities	4,389,108	77,462,829	-	81,851,937
TOTAL LIABILITIES	8,717,276	82,640,629	(224,755)	91,133,150
DEFERRED INFLOWS				
Deferred inflows of resources for pension	576,698	-	-	576,698
Deferred inflows of resources for other postemployment benefits	1,900	-	-	1,900
TOTAL DEFERRED INFLOWS	578,598	-	-	578,598
NET POSITION				
Net investment in capital assets	8,398,848	(13,468,765)	-	(5,069,917)
Restricted for debt service	-	7,592,650	-	7,592,650
Restricted for capital assets	-	1,879,990	-	1,879,990
Unrestricted	(3,237,968)	18,557,005	-	15,319,037
TOTAL NET POSITION	$ 5,160,880	$ 14,560,880	$ -	$ 19,721,760

See note to supplementary information.

CITY OF READING

COMBINING STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - WATER FUNDS

Year Ended December 31, 2019

	City Water Fund	Reading Area Water Authority	Eliminations	Total Water Fund
OPERATING REVENUES				
Charges for services	$ 12,151,531	$ 32,093,301	$ (12,151,531)	$ 32,093,301
Other	487,110	41,836	-	528,946
TOTAL OPERATING REVENUES	12,638,641	32,135,137	(12,151,531)	32,622,247
OPERATING EXPENSES				
Lease payments	-	12,142,535	(12,142,535)	-
Personnel	441,051	6,372,046	-	6,813,097
Depreciation and amortization	596,856	4,311,994	-	4,908,850
Risk management	65,800	-	-	65,800
Contracted Services	-	907,019	-	907,019
Chemicals and supplies	-	1,173,058	-	1,173,058
Utilities	-	655,444	-	655,444
Other	1,869,230	3,016,908	(8,996)	4,877,142
TOTAL OPERATING EXPENSES	2,972,937	28,579,004	(12,151,531)	19,400,410
OPERATING INCOME	9,665,704	3,556,133	-	13,221,837
NONOPERATING REVENUES (EXPENSES)				
Intergovernmental revenue	-	125,000	-	125,000
Interest income	2,445	597,173	-	599,618
Interest expense	(154,896)	(3,768,727)	-	(3,923,623)
Gain (loss) on sale of solid waste accounts receivable	-	68,728	-	68,728
Other	-	19,797	-	19,797
NET NONOPERATING REVENUES (EXPENSES)	(152,451)	(2,958,029)	-	(3,110,480)
INCOME BEFORE TRANSFERS	9,513,253	598,104	-	10,111,357
Transfers out - lease payments	(9,774,710)	-	-	(9,774,710)
CHANGE IN NET POSITION	(261,457)	598,104	-	336,647
NET POSITION - BEGINNING OF YEAR - RESTATED	5,422,337	13,962,776	-	19,385,113
NET POSITION - END OF YEAR	$ 5,160,880	$ 14,560,880	$ -	$ 19,721,760

Financial Information

Net Position - The following schedule presents a summary of net position comparison at December 31, 2018, 2017, and 2016:

	2018	2017 (As Restated)	2016 (As Restated)
Assets			
Unrestricted current assets	**$ 25,886,197**	$ 24,371,571	$ 20,614,911
Restricted current assets	**3,389,010**	11,067,725	19,177,064
Capital assets, net	**64,973,550**	59,036,648	55,262,527
Other asset	**351,810**	1,020,000	1,020,000
Deferred Outflow of Resources	**1,054,979**	1,197,798	1,346,286
Total Assets and Deferred Outflow of Resources	**$ 102,255,546**	$ 96,693,742	$ 97,420,788
Liabilities			
Current liabilities	**$ 7,496,258**	$ 5,387,837	$ 5,985,559
Long-term debt	**80,796,512**	84,017,089	87,200,895
Total Liabilities	**$ 88,292,770**	$ 89,404,926	$ 93,186,454
Net Position			
Net investment in capital assets	**$ (18,130,096)**	$ (27,177,795)	$ (22,222,481)
Restricted for debt service	**7,513,275**	7,426,839	7,409,503
Unrestricted	**24,579,597**	27,039,772	19,047,312
Total Net Position	**$ 13,962,776**	$ 7,288,816	$ 4,234,334

Current liabilities increased by 39.1% in 2018 compared to a decrease by 10.0% in 2017 and an increase by 20.7% in 2016. The 2018 increase is attributable to increases in capital accounts payable.

Revenues - The following schedule presents a summary of revenues for the years ended December 31, 2018, 2017, and 2016:

	2018	2017	2016
Operating Revenues			
Water billings	**$ 29,663,185**	$ 29,736,140	$ 29,622,297
Interest and penalty charges	**541,209**	472,340	586,502
Tampered meter and other charges	**310,720**	449,933	591,344
Tapping and connection fees	**50,610**	177,175	86,244
Abandonment fees	**20,107**	60,907	32,001
Total Operating Revenues	**$ 30,585,831**	$ 30,896,495	$ 30,918,388

The 2018 fiscal year's total operating revenue decreased by 1.0% compared to 2017, and decreased by 0.1% and increased by 11.7% in 2017 and 2016, respectively.

Financial Information (continued)

Expenses - The following schedule presents a summary of expenses for the years ended December 31, 2018, 2017, and 2016:

	2018	2017 (As Restated)	2016 (As Restated)
Operating Expenses			
Lease payments, City of Reading	**$ 11,640,032**	$ 11,426,339	$ 11,441,419
Chemical supplies	**1,051,101**	746,486	1,197,002
Meter reading	**-**	-	539,483
Salaries, payroll taxes, and employee benefits	**6,213,345**	5,877,245	5,529,809
Contracted services	**967,302**	849,520	1,089,676
Other	**3,895,738**	3,176,042	2,881,120
Total Operating Expenses	**$ 23,767,518**	$ 22,075,632	$ 22,678,509

The $1,691,886 increase in expenses is primarily the result of the increase in chemical supplies, salaries, payroll taxes and employee benefits, and bad debt expense.

Changes in Net Position - The following schedule presents a summary of changes in net position for the years ended December 31, 2018, 2017, and 2016:

	2018	2017 (As Restated)	2016 (As Restated)
Operating revenues	**$ 30,585,831**	$ 30,896,495	$ 30,918,388
Operating expenses	**23,767,518**	22,075,632	22,678,509
Operating Income before Depreciation	**6,818,313**	8,820,863	8,239,879
Depreciation and amortization	**3,872,439**	3,304,835	2,946,682
Operating Income	**2,945,874**	5,516,028	5,293,197
Nonoperating revenues (expenses), net	**3,728,086**	(2,461,546)	(3,468,433)
Increase in Net Position	**$ 6,673,960**	$ 3,054,482	$ 1,824,764

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2017, 2016, and 2015 as restated. The change in net position increased from $ 3.7 million in fiscal year 2016 to $ 4.6 million in fiscal year 2017. Operating income increased $ 1.1 million over last year while non-operating revenue (expense) increased $ 1.1 million over fiscal year 2016.

	2017	2016	2015
Operating revenue	$ 20,849,832	$ 19,713,716	$ 17,642,797
Operating expenses	15,710,138	14,557,000	12,620,147
Operating income	5,139,694	5,156,716	5,022,650
Non-operating revenue (expenses)	(908,165)	(1,983,244)	(741,293)
Income before capital contribution	4,231,529	3,173,472	4,281,357
Capital contribution	324,142	551,477	638,017
Change in net position	4,555,671	3,724,949	4,919,374
Net position, beginning of year	76,825,172	73,100,223	68,180,849
Net position, end of year	$ 81,380,843	$ 76,825,172	$ 73,100,223

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2017 Operating Revenue and Operating Expenses, respectively.

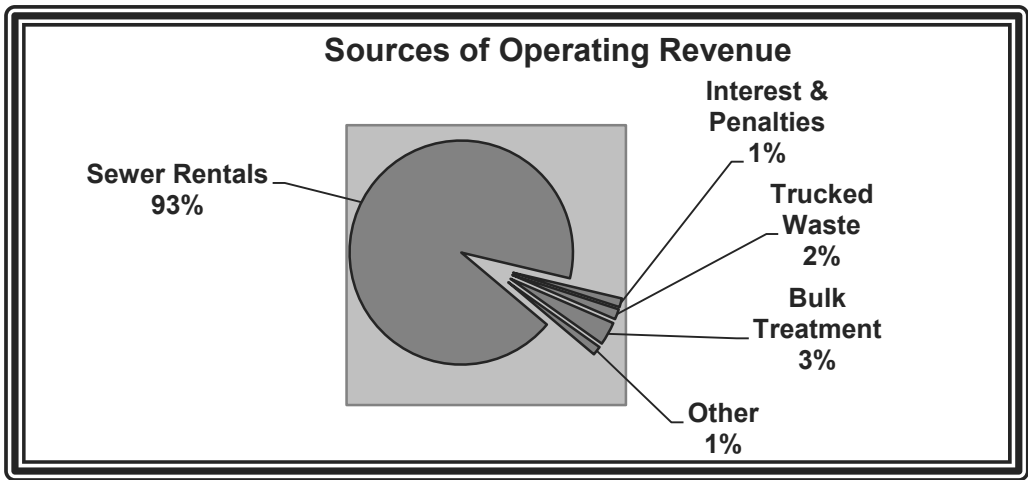


Table 3 - Sources of Operating Revenue - Fiscal Year 2017

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2018, 2017, and 2016. The change in net position increased from $ 4.6 million in fiscal year 2017 to $ 9.0 million in fiscal year 2018. Operating income increased $ 381,000 over last year while non-operating revenue (expense) increased $ 3.2 million over fiscal year 2017.

	2018	2017	2016
Operating revenue	$ 21,499,186	$ 20,849,832	$ 19,713,716
Operating expenses	15,978,558	15,710,138	14,557,000
Operating income	5,520,628	5,139,694	5,156,716
Non-operating revenue (expenses)	2,251,417	(908,165)	(1,983,244)
Income before capital contribution	7,772,045	4,231,529	3,173,472
Capital contribution	1,224,093	324,142	551,477
Change in net position	8,996,138	4,555,671	3,724,949
Net position, beginning of year	81,380,843	76,825,172	73,100,223
Net position, end of year	$ 90,376,981	$ 81,380,843	$ 76,825,172

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2018 Operating Revenue and Operating Expenses, respectively.

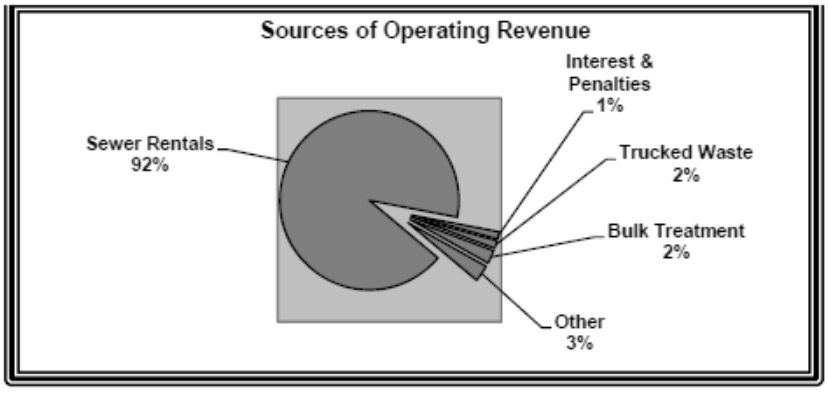


Table 3 - Sources of Operating Revenue - Fiscal Year 2018

Financial Analysis (Continued)

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2019, 2018, and 2017. The change in net position decreased from $ 9.0 million in fiscal year 2018 to $ 6.1 million in fiscal year 2019. Operating income increased $ 564,000 over last year while non-operating revenue (expense) decreased $ 3.1 million over fiscal year 2018.

	2019	2018	2017
Operating revenue	$ 22,974,614	$ 21,499,186	$ 20,849,832
Operating expenses	16,889,502	15,978,558	15,710,138
Operating income	6,085,112	5,520,628	5,139,694
Non-operating revenue (expenses)	(825,158)	2,251,417	(908,165)
Income before capital contribution	5,259,954	7,772,045	4,231,529
Capital contribution	840,017	1,224,093	324,142
Change in net position	6,099,971	8,996,138	4,555,671
Net position, beginning of year	90,376,981	81,380,843	76,825,172
Net position, end of year	$ 96,476,952	$ 90,376,981	$ 81,380,843

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2019 Operating Revenue and Operating Expenses, respectively.

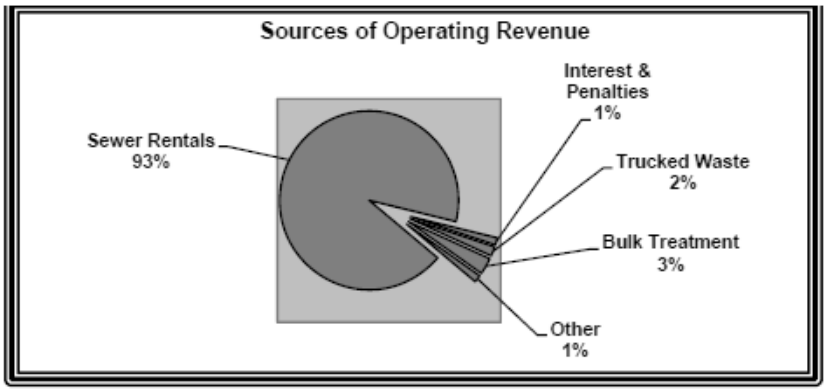


Table 3 - Sources of Operating Revenue - Fiscal Year 2019

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2020, 2019, and 2018. The change in net position increased from $ 6.1 million in fiscal year 2019 to $ 7.6 million in fiscal year 2020. Operating income increased $ 847,000 over last year while non-operating expenses decreased $ 650,000 over fiscal year 2019.

	2020	2019	2018
Operating revenue	$ 23,304,048	$ 22,943,962	$ 21,499,186
Operating expenses	16,402,468	16,889,502	15,978,558
Operating income	6,901,580	6,054,460	5,520,628
Non-operating revenue (expenses)	(144,188)	(794,506)	2,251,417
Income before capital contribution	6,757,392	5,259,954	7,772,045
Capital contribution	851,741	840,017	1,224,093
Change in net position	7,609,133	6,099,971	8,996,138
Net position, beginning of year	96,476,952	90,376,981	81,380,843
Net position, end of year	$ 104,086,085	$ 96,476,952	$ 90,376,981

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2020 Operating Revenue and Operating Expenses, respectively.

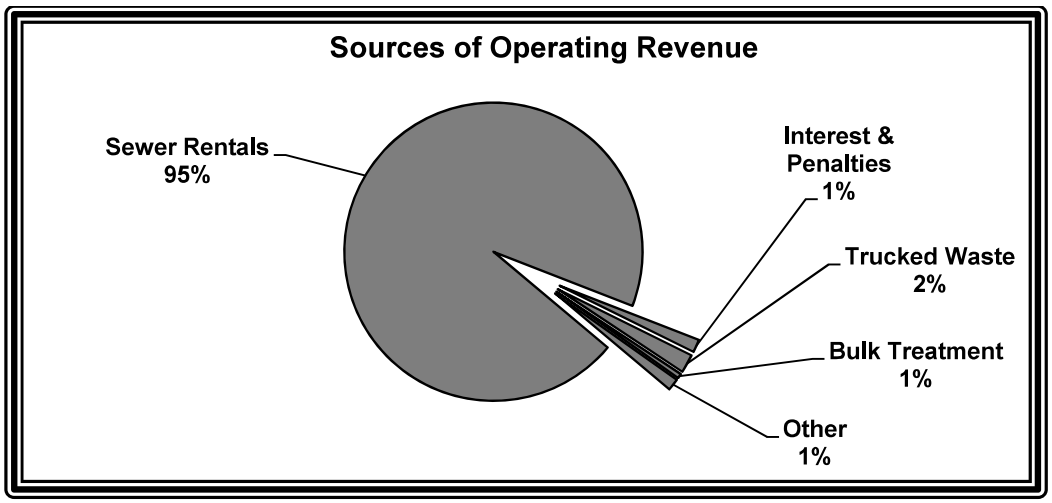


Table 3 - Sources of Operating Revenue - Fiscal Year 2020

Revenue

In fiscal year 2017, revenue exceeded budgeted revenue by 1.0% resulting from additional investment income earned from higher than expected rates of return and below projection draws on construction funds.

Expenses

Expenses, excluding depreciation, were 1.3% under budget. Interest expenses were below budget as 24% of paid interest expenses were capitalized as project costs. This was offset by above-budget expenditures in Administrative and Treatment Plant expenses. Higher than budgeted employee health care costs of $ 113,000 in the self-funded health insurance plan and amortization of pension liability of $ 52,000 generated above-budget Administrative expenses. Treatment plant expenses for nutrient credit purchases to remain in compliance with the Authority's discharge permit were over-budget by $ 131,000 and expenses for sludge disposal were over-budget by $ 63,000 to cover disposal costs during an extended repair of the centrifuge. Above-budget expense for depreciation account for 48.5% of the negative budget variance in operating expenses. Prior period adjustments to correct the posting of capitalized interest increased the asset value of constructed assets leading to above-budget depreciation costs.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2017 were $ 119.7 million. The Authority capitalizes all assets costing more than $ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2017, 2016, and 2015 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2017	2016	2015
Construction in progress	$ 24,247,571	$ 8,328,405	$ 6,383,634
Land	95,181	95,181	36,257
Sewer System			
Lines	99,909,426	99,088,012	89,292,400
Pump stations	33,042,528	32,887,101	32,787,258
Treatment plant	38,039,056	37,266,392	37,189,692
Buildings and improvements	3,640,150	3,199,420	3,199,420
Technology	1,353,402	1,295,369	1,295,369
Vehicles	1,760,826	1,706,256	1,699,097
Equipment	830,745	830,745	830,745
	202,918,885	184,696,881	172,713,872
Total accumulated depreciation	(83,211,180)	(78,843,305)	(74,748,106)
Total Capital Assets	$ 119,707,705	$ 105,853,576	$ 97,965,766

Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2017, 2016, and 2015

Revenue

In fiscal year 2018, revenue exceeded budgeted revenue by 7.2% resulting from capacity reservation and tapping fee income exceeding budget, which offset below-budget investment and other income.

Expenses

Expenses, excluding depreciation, were 5.3% over budget. Interest expense was below budget as 52% of paid interest expense was capitalized as project costs. This was offset by above-budget expenditures in Administrative and Treatment Plant expenses. Higher than budgeted legal expenses of $ 31,000 and amortization of pension liability of $ 58,000 generated above-budget Administrative expenses. Treatment plant expenses for nutrient credit purchases to remain in compliance with the Authority's discharge permit were over-budget by $ 62,000 and expenses for sludge disposal were over-budget by $ 91,000. Above-budget expense for depreciation of $ 573,000 accounts for 71.2% of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2018 were $ 141.2 million. The Authority capitalizes all assets costing more than $ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2018, 2017, and 2016 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2018	2017	2016
Construction in progress	$ 41,124,606	$ 24,247,571	$ 8,328,405
Land	95,181	95,181	95,181
Sewer System			
Lines	102,594,800	99,909,426	99,088,012
Pump stations	38,845,592	33,042,528	32,887,101
Treatment plant	38,193,779	38,039,056	37,266,392
Buildings and improvements	3,640,150	3,640,150	3,199,420
Technology	1,424,091	1,353,402	1,295,369
Vehicles	2,291,170	1,760,826	1,706,256
Equipment	830,745	830,745	830,745
	229,040,114	202,918,885	184,696,881
Total accumulated depreciation	(87,820,739)	(83,211,180)	(78,843,305)
Total Capital Assets	$ 141,219,375	$ 119,707,705	$ 105,853,576

Table 6 - Condensed Statement of Capital Assets - Fiscal Years 2018, 2017, and 2016

Budgetary Highlights (Continued)

Revenue

In fiscal year 2019, actual revenue exceeded budgeted revenue by $ 820,000 resulting from sewer rental, investment, and other income exceeding budget. These were partially offset by below-budget revenue in capacity reservation and tapping fee income.

Expenses

Expenses, excluding depreciation, were $ 1.5 million over budget. Above average rainfall generated a 40% increase in flow through the collection system and treatment plant for the year. Consequently, electricity and chemical costs, sewer treatment costs from the City of Lancaster and the Borough of Columbia, and nutrient credit purchase costs were $ 1.4 million over budget. When combined with extensive rehabilitation of the centrifuge at the treatment plant, the operating expenses, excluding depreciation, exceeded budget by $ 1.5 million. Above-budget expense for depreciation of $ 308,000 accounts for the balance of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2019 were $ 142.3 million. The Authority capitalizes all assets costing more than $ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2019, 2018, and 2017 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2019	2018	2017
Construction in progress	$ 37,011,554	$ 41,124,606	$ 24,247,571
Land	95,181	95,181	95,181
Sewer System			
Lines	110,392,727	102,594,800	99,909,426
Pump stations	40,897,235	38,845,592	33,042,528
Treatment plant	38,262,279	38,193,779	38,039,056
Buildings and improvements	3,640,150	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,353,402
Vehicles	2,295,745	2,291,170	1,760,826
Equipment	977,181	830,745	830,745
	234,996,143	229,040,114	202,918,885
Total accumulated depreciation	(92,678,068)	(87,820,739)	(83,211,180)
Total Capital Assets	$ 142,318,075	$ 141,219,375	$ 119,707,705

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2019, 2018, and 2017**

In fiscal year 2020, actual revenue was below budgeted revenue by $ 7,000 resulting from below-budget revenue in sewer rental and surcharges. These were offset by above-budget revenue in capacity reservation and tapping fee income and investment income.

Expenses

Expenses were $ 127,000 under budget. Above-budget expenses for required equipment maintenance in our collection system were offset by below-budget depreciation costs as well as below-budget expenditures at the treatment plant and laboratory.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's total capital assets, net of accumulated depreciation, as of March 31, 2020 were $ 140.4 million. The Authority capitalizes all assets costing more than $ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2020, 2019, and 2018 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2020	2019	2018
Construction in progress	$ 5,206,076	$ 37,011,554	$ 41,124,606
Land	95,181	95,181	95,181
Sewer System			
Lines	112,758,402	110,392,727	102,594,800
Pump stations	41,163,499	40,897,235	38,845,592
Treatment plant	70,517,190	38,262,279	38,193,779
Buildings and improvements	3,669,937	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,424,091
Vehicles	2,346,319	2,295,745	2,291,170
Equipment	996,387	977,181	830,745
	238,177,082	234,996,143	229,040,114
Total accumulated depreciation	(97,771,861)	(92,678,068)	(87,820,739)
Total Capital Assets	$ 140,405,221	$ 142,318,075	$ 141,219,375

Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2020, 2019, and 2018

Debt Administration

As of March 31, 2020, the Authority had $ 66.4 million of bonds outstanding including $ 56.5 million in Sewer Revenue Bonds and $ 9.9 million of bonds through a subsidy agreement with the Borough of Columbia. Unamortized bond premiums of $ 2.8 million bring the total bonds payable liability to $ 69.3 million. Bond principal payments of $ 5.8 million and amortization of bond premiums of $ 0.3 million reduced the total bonds payable liability by $ 6.1 million from the March 31, 2019 balance of $ 75.4 million.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2020 and 2019

	2020	2019
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	$ 29,663,969	$ 27,812,712
Accounts receivable, customers (net of allowance for doubtful accounts of $474,033 in 2020 and $473,827 in 2019)	7,014,694	6,547,940
Unbilled water and sewer service	10,722,797	9,852,958
Surcharges receivable, current portion	350,000	350,000
Other receivables	216,612	498,933
Material and supplies	3,630,945	2,868,304
Prepaid expenses	1,121,573	352,547
Total Current Assets	52,720,590	48,283,394
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	816,019,835	767,648,700
Less: accumulated depreciation	(225,388,158)	(213,403,548)
Property, Plant and Equipment, Net	590,631,677	554,245,152
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of $200,000 in 2020 and 2019	1,465,670	1,509,942
Prepaid bond insurance	867,810	913,328
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	176,264,906	207,837,151
Restricted cash held by the Authority (Note 6)	6,663,291	16,415,126
Total Non-Current Assets	185,261,677	226,675,547
Total Assets	828,613,944	829,204,093
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	7,199,443	30,552
Changes in assumptions related to pensions	-	57,541
Difference between expected and actual experience related to pensions	835,078	602,541
Contribution to pension plan subsequent to measurement date	-	150,548
Difference between expected and actual experience related to OPEB	20,431	24,517
Changes in assumptions related to OPEB	7,138,277	1,501,026
Deferred losses on bond refundings, net of amortization (Note 8)	3,413,275	4,283,283
Total Deferred Outflows of Resources	18,606,504	6,650,008

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2019 and 2018

	2019	Restated 2018
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	$ 27,812,712	$ 19,209,356
Accounts receivable, customers (net of allowance for doubtful accounts of $473,827 in 2019 and $470,533 in 2018)	6,547,940	6,298,373
Unbilled water and sewer service	9,852,958	9,851,714
Surcharges receivable, current portion	350,000	350,000
Other receivables	498,933	1,070,190
Inventory - material and supplies	2,868,304	2,515,551
Prepaid expenses	352,547	200,121
Total Current Assets	48,283,394	39,495,305
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	767,648,700	711,563,565
Less: accumulated depreciation	(213,403,548)	(201,495,896)
Property, Plant and Equipment, Net	554,245,152	510,067,669
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of $200,000 in 2019 and 2018	1,509,942	1,653,673
Prepaid bond insurance	913,328	958,845
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	207,837,151	234,717,525
Restricted cash held by the Authority (Note 6)	16,415,126	19,597,310
Total Non-Current Assets	226,675,547	256,927,353
Total Assets	829,204,093	806,490,327
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	30,552	-
Changes in assumptions related to pensions	57,541	77,283
Difference between expected and actual experience related to pensions	602,541	825,024
Contribution to pension plan subsequent to measurement date	150,548	56,041
Difference between expected and actual experience related to OPEB	24,517	-
Changes in assumptions related to OPEB	1,501,026	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,283,283	4,612,214
Total Deferred Outflows of Resources	6,650,008	5,570,562

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2018 and 2017

	2018	2017
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	$ 19,209,356	$ 15,067,865
Accounts receivable, customers (net of allowance for doubtful accounts of $470,533 in 2018 and $458,506 in 2017)	6,298,373	5,597,012
Unbilled water and sewer service	9,851,714	9,777,602
Surcharges receivable, current portion	350,000	350,000
Other receivables	1,070,190	5,178,590
Inventory - material and supplies	2,515,551	2,289,998
Prepaid expenses	200,121	129,312
Total Current Assets	39,495,305	38,390,379
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	711,563,565	662,320,792
Less: accumulated depreciation	(201,495,896)	(189,824,163)
Property, Plant and Equipment, net	510,067,669	472,496,629
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of $200,000 in 2018 and 2017	1,653,673	1,959,138
Prepaid bond insurance	958,845	596,655
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	234,717,525	254,963,842
Restricted cash held by authority (Note 6)	19,597,310	19,003,328
Total Non-Current Assets	256,927,353	276,522,963
Total Assets	806,490,327	787,409,971
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	-	170,728
Changes in assumptions related to pensions	77,283	-
Difference between expected and actual experience related to pensions	825,024	104,074
Contribution to pension plan subsequent to measurement date	56,041	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,612,214	1,205,212
Total Deferred Outflows of Resources	5,570,562	1,480,014

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2020 and 2019

	2020	2019
Operating Revenues		
Water	$ 86,373,308	$ 86,597,707
Wastewater	16,156,229	15,286,438
Other operating revenues	2,930,304	5,450,849
Total Operating Revenues	105,459,841	107,334,994
Operating Expenses		
Source of supply	1,072,453	935,776
Treatment system	8,651,822	8,810,618
Distribution	20,592,367	18,735,370
Engineering	1,599,655	1,530,906
Wastewater system	8,871,707	8,444,588
Landfill	4,790	4,765
Depreciation and amortization	14,151,165	13,433,385
Commercial and general	25,934,541	27,059,890
Management fee	1,300,000	1,300,000
Total Operating Expenses	82,178,500	80,255,298
Operating Income Before Non-Operating Expenses	23,281,341	27,079,696
Non-Operating Revenues (Expenses)		
Investment income	4,775,646	4,943,913
Net increase in the fair value of investments	43,786	20,450
Interest expense	(21,188,625)	(20,975,541)
Loss on disposals of property, plant and equipment	(775,797)	(403,367)
Total Non-Operating Expenses	(17,144,990)	(16,414,545)
Income Before Capital Contributions	6,136,351	10,665,151
Capital Contributions	5,193,678	6,523,749
Increase in Net Position	11,330,029	17,188,900
Total Net Position, Beginning of Fiscal Year	145,177,760	127,988,860
Total Net Position, End of Fiscal Year	$ 156,507,789	$ 145,177,760

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2019 and 2018

	2019	Restated 2018
Operating Revenues		
Water	$ 86,597,707	$ 81,638,410
Wastewater	15,286,438	14,901,786
Other operating revenues	5,450,849	3,527,303
Total Operating Revenues	107,334,994	100,067,499
Operating Expenses		
Source of supply	935,776	865,364
Treatment system	8,810,618	8,002,831
Distribution	18,735,370	17,775,014
Engineering	1,530,906	1,307,465
Wastewater system	8,444,588	8,509,813
Landfill	4,765	43,367
Depreciation and amortization	13,433,385	12,577,264
Commercial and general	27,059,890	28,228,521
Management fee	1,300,000	1,225,000
Total Operating Expenses	80,255,298	78,534,639
Operating Income Before Non-Operating Revenues	27,079,696	21,532,860
Non-Operating Revenues (Expenses)		
Investment income	4,943,913	3,535,070
Net increase (decrease) in the fair value of investments	20,450	(407,750)
Interest expense	(20,975,541)	(15,262,836)
Loss on disposals of property	(403,367)	(336,175)
Total Non-Operating Expenses	(16,414,545)	(12,471,691)
Income Before Capital Contributions	10,665,151	9,061,169
Capital Contributions	6,523,749	13,400,327
Increase in Net Position	17,188,900	22,461,496
Total Net Position, Beginning of Fiscal Year	127,988,860	135,957,658
Prior Period Adjustment, see Note 19	-	(30,430,294)
Total Net Position, End of Fiscal Year	$ 145,177,760	$ 127,988,860

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2018 and 2017

	2018	2017
Operating Revenues		
Water	$ 81,638,410	$ 77,440,502
Wastewater	14,901,786	14,121,562
Other operating revenues	3,527,303	2,858,021
Total Operating Revenues	100,067,499	94,420,085
Operating Expenses		
Source of supply	865,364	861,886
Treatment system	8,002,831	8,006,826
Distribution	17,775,014	17,459,687
Engineering	1,307,465	1,271,392
Wastewater system	8,509,813	7,632,386
Landfill	43,367	12,005
Depreciation and amortization	12,577,264	11,562,121
Commercial and general	28,228,521	25,817,145
Management fee	1,225,000	1,200,000
Total Operating Expenses	78,534,639	73,823,448
Operating Income Before Non-Operating Revenues	21,532,860	20,596,637
Non-Operating Revenues (Expenses)		
Investment income	3,535,070	3,225,914
Net increase (decrease) in the fair value of investments	(407,750)	431,964
Interest expense	(15,262,836)	(15,032,096)
Loss on disposals of property	(336,175)	(1,732,987)
Total Non-Operating Expenses	(12,471,691)	(13,107,205)
Income Before Capital Contributions	9,061,169	7,489,432
Capital Contributions	13,400,327	13,432,729
Increase in Net Position	22,461,496	20,922,161
Total Net Position, Beginning of Year	135,957,658	115,035,497
Total Net Position, End of Year	$ 158,419,154	$ 135,957,658

See accompanying notes to the financial statements.

Erie City Water Authority
Statements of Financial Position

	As of December 31,			
	2019	2018	Change	% Change
ASSETS				
Current assets	$ 20,057,629	$ 17,026,267	$ 3,031,362	17.80%
Restricted investments	28,746,310	32,386,195	(3,639,885)	-11.24%
Capital assets, net of accumulated depreciation	194,099,358	191,070,499	3,028,859	1.59%
Other non-current assets	10,462,221	10,481,961	(19,740)	-0.19%
Deferred outflows of resources	32,762,058	34,530,203	(1,768,145)	-5.12%
Total Assets and Deferred Outflows	$ 286,127,576	$ 285,495,125	$ 632,451	0.22%
LIABILITIES AND NET POSITION				
Current liabilities	$ 7,175,123	$ 8,766,073	$ (1,590,950)	-18.15%
Long-term debt, net of unaccreted discounts	306,968,863	310,547,787	(3,578,924)	-1.15%
Other non-current liabilities	25,881,649	21,044,412	4,837,237	22.99%
Deferred inflow of resources	1,888,035	-	1,888,035	0.00%
Total liabilities and deferred inflow of resources	341,913,670	340,358,272	1,555,398	0.46%
Net position -				
Net investment in capital assets	15,948,959	11,468,894	4,480,065	39.06%
Restricted for capital projects, debt service	8,864,436	9,849,537	(985,101)	-10.00%
Unrestricted	(80,599,489)	(76,181,578)	(4,417,911)	5.80%
Total net position	(55,786,094)	(54,863,147)	(922,947)	1.68%
Total liabilities and net position	$ 286,127,576	$ 285,495,125	$ 632,451	0.22%

Changes in Net Position –

The Authority's net position decreased by $922,947 in 2019. The 2019 decrease in the net position resulted from several factors related to materials and supplies costs and personnel related costs that was offset by savings on interest expense.

Total operating revenues for the year ended December 31, 2019 of $40,086,711 increased $316,562 (0.80%) compared to December 31, 2018.

Total operating expenses of $22,143,829 increased $756,012 (3.53%).

Total 2019 expenses of $42,660,918 compared to $44,001,398 in 2018 decreased $1,340,480 (11.11%).

to $285.50 million. Total liabilities and inflows increased $36.14 million [11.88%] to $340.36 million. The primary reasons for the increase are discussed in the following *Changes in Net Position* section.

Restricted investments of $32.39 million increased $21.03 million [285.19%], primarily from $27 million of new capital project funds from the 2018 bond issue.

Capital assets (net of depreciation) increased $3.09 million. Gross capital assets (before depreciation) increased $11.47 million representing capital additions in accordance with the Authority's adopted capital project program.

ERIE CITY WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION

	As of December 31,			
	2018	2017	$ Change	% Change
ASSETS				
Current assets	$ 17,026,267	$ 13,116,705	$ 3,909,562	29.8%
Restricted investments	32,386,195	11,356,255	21,029,940	185.2%
Capital assets, net of accumulated depreciation	191,070,499	187,981,855	3,088,644	1.6%
Other non-current assets	10,481,961	10,665,706	(183,745)	(1.7%)
Deferred outflows of resources	34,530,203	30,999,314	3,530,889	11.4%
Total Assets and Deferred Outflows	$ 285,495,125	$ 254,119,835	$ 31,375,290	12.3%

	As of December 31,			
	2018	2017	$ Change	% Change
LIABILITIES AND NET ASSETS				
Current liabilities	$ 8,766,073	$ 7,893,978	$ 872,095	29.8%
Long-term debt, net of unaccreted discounts	310,547,787	284,395,079	26,152,708	9.2%
Other non-current liabilities	21,044,412	11,930,218	(9,114,194)	76.4%
Deferred inflow of resources	-	1,113,991	(1,113,991)	-
Total liabilities and deferred outflow of resources	340,358,272	305,333,266	35,025,006	11.5%
Net position –				
Invested in capital assets, net of related debt	11,468,894	7,320,870	4,148,024	56.7%
Restricted for capital projects, debt service	9,849,537	7,691,083	2,158,454	28.1%
Unrestricted	(76,181,578)	(66,225,384)	(9,956,194)	(15.0%)
Total net position	(54,863,147)	(51,213,431)	(3,649,716)	(7.1%)
Total liabilities and net position	$ 285,495,125	$ 254,119,835	($ 31,375,290)	(12.3%)

Changes in Net Position –

The Authority's net position decreased by <$3.65> million in 2018, compared to a <$.84> million decrease in 2017. The 2018 decrease in the net position resulted from several factors – $1.84 million increase in pension costs, $1.1 million increase in interest expense and $1.03 million of bond issue costs.

Total operating revenues for the year ended December 31, 2018 of $39.8 million increased $1.3 million [3.3%] compared to December 31, 2017.

Total operating expenses of $21.4 million increased $2.48 million [13.1%]. The majority of the

ERIE CITY WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION

	As of December 31,			
	2017	2016	$ Change	% Change
ASSETS				
Current assets	$ 13,116,705	$ 13,797,317	($ 680,612)	(4.9%)
Restricted investments	11,356,255	20,831,757	(9,475,502)	(45.5%)
Capital assets, net of accumulated depreciation	187,981,855	182,608,316	5,373,539	2.9%
Other non-current assets	10,665,706	11,274,848	(609,142)	(5.4%)
Deferred outflows of resources	30,999,314	34,010,414	(3,011,100)	(8.9%)
Total Assets and Deferred Outflows	$ 254,119,835	$ 262,522,652	($ 8,402,817)	(3.2%)

	As of December 31,			
	2017	2016	$ Change	% Change
LIABILITIES AND NET ASSETS				
Current liabilities	$ 7,893,978	$ 7,918,630	($ 24,652)	(4.9%)
Long-term debt, net of unaccreted discounts	284,395,079	289,960,220	(5,565,141)	(1.9%)
Other non-current liabilities	11,930,218	15,019,944	(3,089,726)	20.6%
Deferred inflow of resources	1,113,991	-	1,113,991	-
Total liabilities and deferred outflow of resources	305,333,266	312,898,794	(7,565,528)	2.4%
Net position –				
Invested in capital assets, net of related debt	7,320,870	7,270,325	50,545	0.7%
Restricted for capital projects, debt service	7,691,083	13,216,103	5,525,020	41.8%
Unrestricted	(66,225,384)	(70,862,570)	(4,637,186)	(6.5%)
Total net position	(51,213,431)	(50,376,142)	(837,289)	(1.7%)
Total liabilities and net position	$ 254,119,835	$ 262,522,652	($ 8,402,817)	(3.2%)

Changes in Net Position –

The Authority's net position decreased by $.84 million in 2017, compared to a $1.92 million in 2016. The 2017 increase in the net position deficit of $.85 million resulted from several factors – $2.6 million increase in net operating revenue - $19.6 million in 2017 versus $17.0 million in 2016 and a $.4 million increase in interest expense - $13.2 million in 2017 versus $12.7 million in 2016.

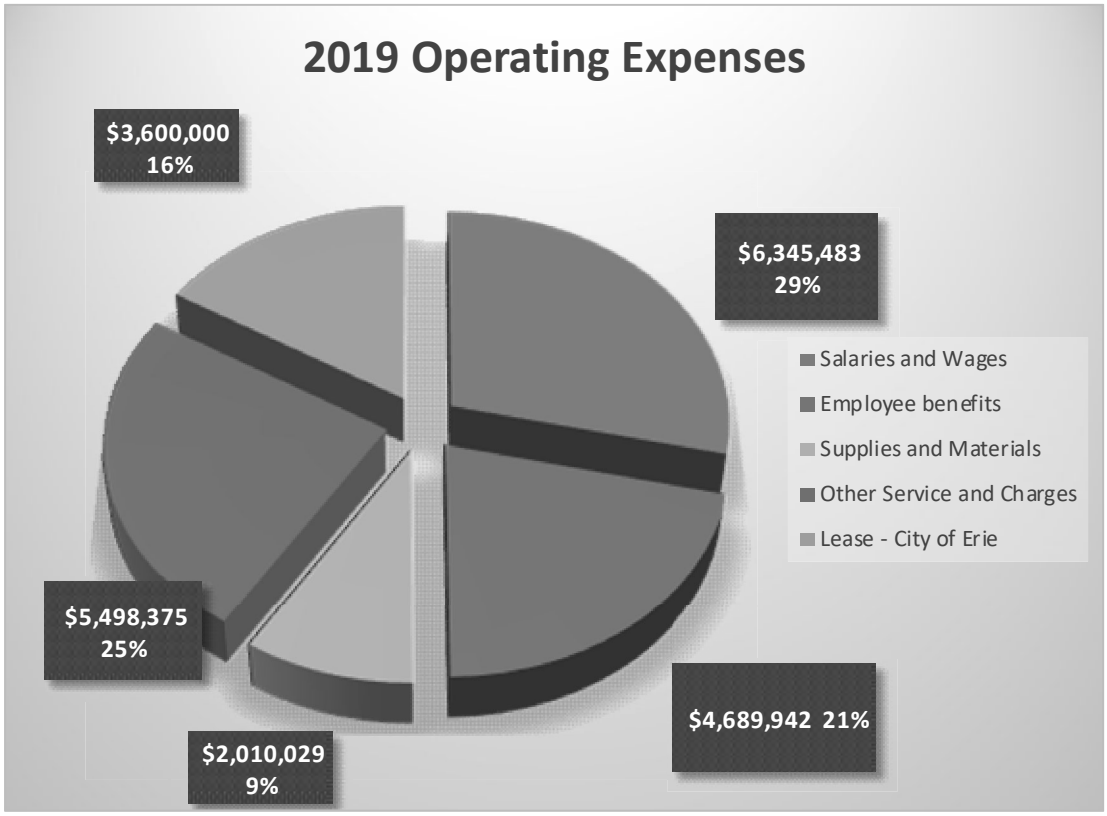
Total operating revenues for the year ended December 31, 2017 of $38.5 million increased $1.8 million (4.9%) compared to December 31, 2016.

Total operating expenses of $18.9 million decreased $.77 million (3.9%). The majority of the 2017 decrease in operating expenses was attributable to lower repair costs on water mains.

Total 2017 expenses of $40.3 million increased $.15 million (.04%) compared to 2016.

ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	For the year ended December 31,			
	2019	2018	Change	% Change
Operations				
Operating revenues	$ 40,086,711	$ 39,770,149	$ 316,562	0.80%
Operating expenses	(22,143,829)	(21,387,817)	(756,012)	3.53%
Depreciation	(8,393,230)	(8,377,223)	(16,007)	0.19%
Operating income	$ 9,549,652	$ 10,005,109	$ (455,457)	-4.55%
Non-operating revenue (expense)				
Interest expense	$ (12,123,859)	$ (14,236,358)	$ 2,112,499	-14.84%
Other revenues	2,302,321	1,948,092	354,229	18.18%
Other expenses	(651,061)	(1,446,534)	795,473	-54.99%
	(10,472,599)	(13,734,800)	3,262,201	-23.75%
Net loss before capital contributions	(922,947)	(3,729,691)	2,806,744	-75.25%
Capital assets contributions	-	79,975	(79,975)	-100.00%
Change in net position	$ (922,947)	$ (3,649,716)	$ 2,726,769	-74.71%

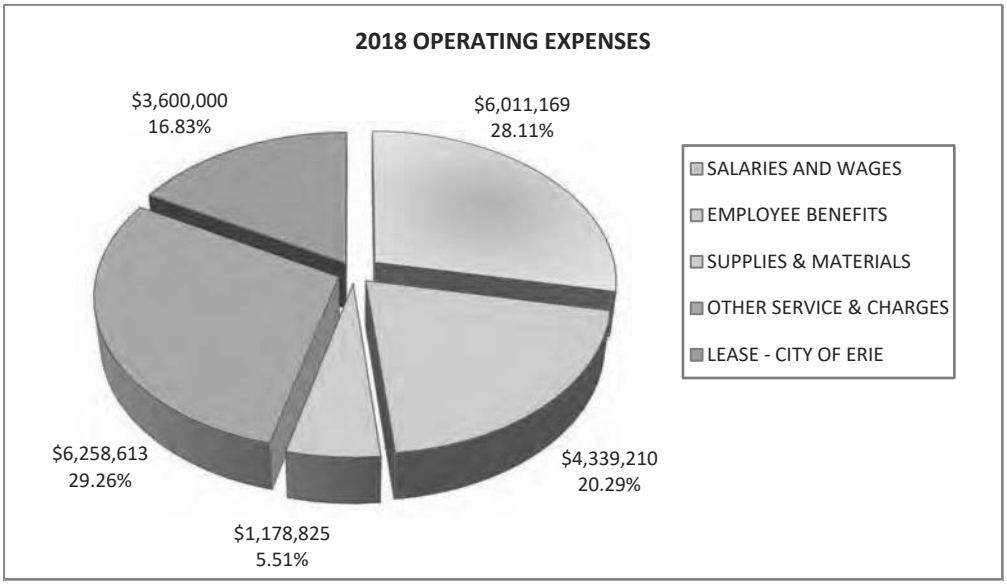


2018 decrease in operating expenses was attributable to higher pension costs and contracted services.

Total 2018 expenses of $44.0 million $40.3 million increased $3.7 million [9.18%] compared to 2017.

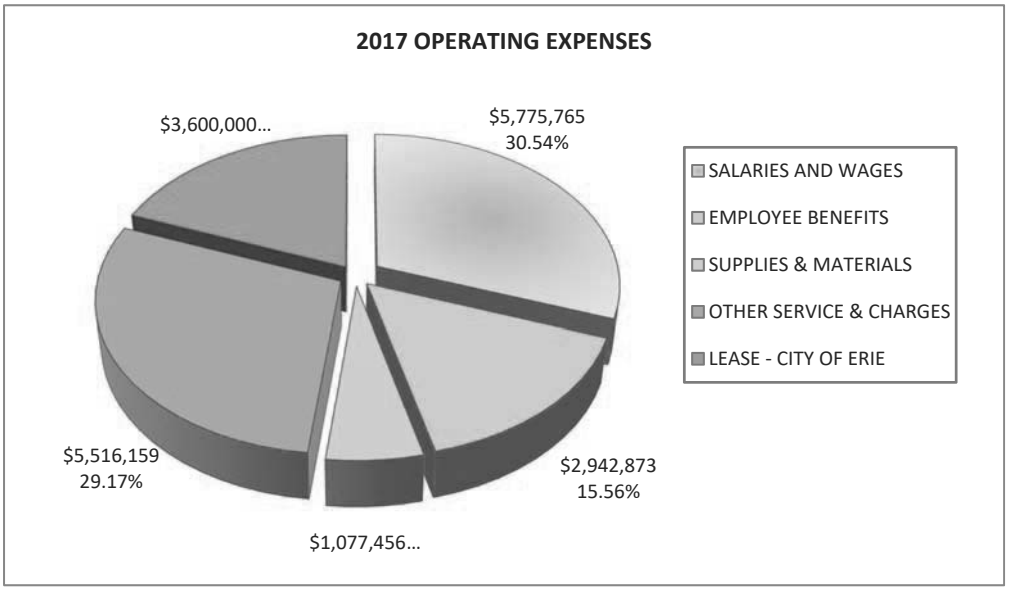
ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	For the year ended December 31,			
	2018	2017	$ Change	% Change
Operations -				
Operating revenues	$ 39,770,149	$ 38,483,311	$ 1,286,838	3.3%
Operating expenses	(21,387,817)	(18,912,253)	2,475,564	13.1%
Depreciation	(8,377,223)	(8,214,879)	162,344	(2.0%)
Operating income	10,005,109	11,356,179	1,351,070	(11.9%)
Non-operating revenue (expense)				
Interest expense	(14,236,358)	(13,165,069)	1,071,289	8.1%
Other revenues	1,948,092	1,326,328	621,764	46.9%
Other expenses	(1,446,534)	(354,727)	1,091,807	307.8%
	(13,734,800)	(12,193,468)	1,541,332	12.6%
Net loss before capital contributions	(3,729,691)	(837,289)	(2,892,402)	(345.4%)
Capital asset contributions	79,975		79,975	-
Change in net position	($ 3,649,716)	($ 837,289)	($ 2,812,427)	(335.9%)



ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	For the year ended December 31,			
	2017	2016	$ Change	% Change
Operations -				
Operating revenues	$ 38,483,311	$ 36,687,234	$ 1,796,077	4.9%
Operating expenses	(18,912,253)	(19,686,218)	773,965	3.9%
Depreciation	(8,214,879)	(8,033,694)	(181,185)	(2.3%)
Operating income	11,356,179	8,967,322	(2,388,857)	(26.6%)
Non-operating revenue (expense)				
Interest expense	(13,165,069)	(12,733,444)	431,625	3.4%
Other revenues	1,326,328	1,292,480	33,848	2.6%
Other expenses	(354,727)	(924,621)	569,894	61.6%
	(12,193,468)	(12,365,585)	172,117	1.4%
Net loss before capital contributions	(837,289)	(3,398,263)	(2,560,974)	(75.4%)
Capital asset contributions		211,506	211,506	100.0%
Change in net position	($ 837,289)	($ 3,186,757)	($ 2,349,468)	(73.7%)



CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

As of December 31, 2017, the Authority had $307.0 million of gross investment in capital assets, with $119.0 million in accumulated depreciation, for a net book value of $188.0 million. This amount represents a 3.0% increase over the prior year. Net capital assets make up 82.6% of the Authority's total

Chester Water Authority
Statements of Net Position
December 31, 2017and 2016

Assets and Deferred Outflows of Resources

	December 31, 2017	December 31, 2016
Current Assets		
Cash and cash equivalents	$ 12,277,333	$ 15,403,124
Investments	1,185,056	2,006,735
Accounts receivable, net of allowance for doubtful accounts of $300,000 in both 2017 and 2016	4,018,123	4,041,759
Unbilled revenue	4,100,936	4,657,916
Materials and supplies	2,438,785	1,992,837
Other current assets	72,551	87,336
Total Current Assets	24,092,784	28,189,707
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	271,133,389	264,773,275
Net pension asset	1,501,182	-
Total Non-Current Assets	272,634,571	264,773,275
Restricted Assets		
Cash and cash equivalents	7,549,260	11,607,560
Total Restricted Assets	7,549,260	11,607,560
Total Assets	304,276,615	304,570,542
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	1,479,458	1,387,427
Deferred debt issuance costs	-	58,717
Total Deferred Outflows of Resources	1,479,458	1,446,144
Total Assets and Deferred Outflows of Resources	$ 305,756,073	$ 306,016,686

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2018 and 2017

Assets and Deferred Outflows of Resources

	December 31, 2018	December 31, 2017
Current Assets		
Cash and cash equivalents	$ 9,680,971	$ 12,277,333
Investments	1,207,385	1,185,056
Accounts receivable, net of allowance for doubtful accounts of $300,000 in both 2018 and 2017	4,215,519	4,018,123
Unbilled revenue	4,143,347	4,100,936
Materials and supplies	2,894,794	2,438,785
Other current assets	44,734	72,551
Total Current Assets	22,186,750	24,092,784
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	277,881,505	271,133,389
Net pension asset	-	1,501,182
Total Non-Current Assets	277,881,505	272,634,571
Restricted Assets		
Cash and cash equivalents	7,629,992	7,549,260
Total Restricted Assets	7,629,992	7,549,260
Total Assets	307,698,247	304,276,615
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	4,646,383	1,479,458
Changes in OPEB investment returns and actuarial assumptions	420,158	-
Total Deferred Outflows of Resources	5,066,541	1,479,458
Total Assets and Deferred Outflows of Resources	$ 312,764,788	$ 305,756,073

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2019 and 2018

Assets and Deferred Outflows of Resources

	December 31, 2019	December 31, 2018
Current Assets		
Cash and cash equivalents	$ 12,498,028	$ 9,680,971
Investments	1,224,596	1,207,385
Accounts receivable, net of allowance for doubtful accounts of $300,000 in both 2019 and 2018	4,715,593	4,215,519
Unbilled revenue	4,184,067	4,143,347
Materials and supplies	2,392,807	2,894,794
Other current assets	225,137	44,735
Total Current Assets	25,240,228	22,186,751
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	282,114,520	277,881,505
Net pension asset	806,245	-
Total Non-Current Assets	282,920,765	277,881,505
Restricted Assets		
Cash and cash equivalents	28,304,535	7,629,992
Total Restricted Assets	28,304,535	7,629,992
Total Assets	336,465,528	307,698,248
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	1,134,806	4,646,383
Changes in OPEB investment returns and actuarial assumptions	1,912,766	420,158
Total Deferred Outflows of Resources	3,047,572	5,066,541
Total Assets and Deferred Outflows of Resources	$ 339,513,100	$ 312,764,789

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2017 and 2016

	December 31, 2017	December 31, 2016
Operating Revenues		
Residential	$ 16,471,074	$ 15,921,450
Commercial	5,885,341	7,832,237
Industrial	7,414,215	7,555,707
Fire protection	4,001,045	3,741,370
Capacity charges, flat and late fee revenues	1,360,899	933,218
Sales to other water utilities	7,158,892	6,674,498
Total Operating Revenues	42,291,466	42,658,480
Operating Expenses		
Purification and Pumping	7,326,031	7,857,889
Distribution	7,159,659	6,740,726
Administrative	11,664,820	11,925,625
Finance/customer service, billing and collections	3,824,583	3,721,092
Depreciation	9,521,150	8,644,302
Total Operating Expenses	39,496,243	38,889,634
Operating Income	2,795,223	3,768,846
Non-Operating Revenues (Expenses)		
Net investment income	146,144	113,603
Interest expense	(2,681,713)	(2,384,151)
Other nonoperating revenues/expenses	982,798	294,218
Amortization of bond discounts and debt issue costs	250,136	20,360
Loss on disposal of property and equipment	(481,900)	(12,038)
Total Non-Operating Revenues/(Expenses)	(1,784,535)	(1,968,008)
Income Before Contributions	1,010,688	1,800,838
Capital Contributions	2,699,498	1,623,074
Change In Net Position	3,710,186	3,423,912
Net Position—Beginning of year	229,828,321	226,404,409
Net Position—End of year	$ 233,538,507	$ 229,828,321

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2018 and 2017

	December 31, 2018	December 31, 2017
Operating Revenues		
Residential	$ 16,270,379	$ 16,471,074
Commercial	7,006,726	5,885,341
Industrial	8,262,780	7,414,215
Fire protection	3,902,103	4,001,045
Capacity charges, flat and late fee revenues	1,134,612	1,360,899
Sales to other water utilities	6,749,553	7,158,892
Total Operating Revenues	43,326,153	42,291,466
Operating Expenses		
Purification and Pumping	7,479,180	7,326,031
Distribution	7,989,652	7,159,659
Administrative	12,605,483	11,664,820
Finance/customer service, billing and collections	4,189,300	3,824,583
Depreciation	9,575,108	9,521,150
Total Operating Expenses	41,838,723	39,496,243
Operating Income	1,487,430	2,795,223
Non-Operating Revenues (Expenses)		
Net investment income	131,632	146,144
Interest expense	(2,776,729)	(2,681,713)
Other nonoperating revenues	514,231	982,798
Amortization of bond discounts and debt issuance costs	401,140	250,136
Gain (loss) on disposal of property and equipment	17,882	(481,900)
Total Non-Operating Revenues/(Expenses)	(1,711,844)	(1,784,535)
(Loss) Income Before Contributions	(224,414)	1,010,688
Capital Contributions	5,652,845	2,699,498
Change In Net Position	5,428,431	3,710,186
Net Position—Beginning of year, as previously reported	233,538,507	229,828,321
Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability	(4,932,637)	-
Net Position - Beginning of year, restated	228,605,870	229,828,321
Net Position—End of year	$ 234,034,301	$ 233,538,507

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2019 and 2018

	December 31, 2019	December 31, 2018
Operating Revenues		
Residential	$ 16,511,126	$ 16,270,379
Commercial	7,179,069	7,006,726
Industrial	9,832,034	8,262,780
Fire protection	4,063,901	3,902,103
Capacity charges, flat and late fee revenues	1,374,484	1,134,612
Sales to other water utilities	6,802,562	6,749,553
Total Operating Revenues	45,763,176	43,326,153
Operating Expenses		
Purification and Pumping	7,409,809	7,479,180
Distribution	6,687,166	7,989,652
Administrative	13,672,346	12,605,483
Finance/customer service, billing and collections	3,834,971	4,189,300
Depreciation	9,453,690	9,575,108
Total Operating Expenses	41,057,982	41,838,723
Operating Income	4,705,194	1,487,430
Non-Operating Revenues/(Expenses)		
Net investment income	155,689	131,632
Interest expense	(2,810,444)	(2,776,729)
Other nonoperating revenues	311,563	514,232
Amortization of bond discounts and debt issuance costs	479,795	401,140
Gain (loss) on disposal of property and equipment	302,194	17,882
Total Non-Operating Revenues/(Expenses)	(1,561,203)	(1,711,843)
Income (Loss) Before Contributions	3,143,991	(224,413)
Capital Contributions	894,723	5,652,845
Change In Net Position	4,038,714	5,428,432
Net Position - Beginning of year, as previously reported	234,034,302	233,538,507
Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability	-	(4,932,637)
Net Position - Beginning of year, restated	234,034,302	228,605,870
Net Position - End of year	$ 238,073,016	$ 234,034,302

See accompanying notes to financial statements.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	$ 11,076	$ 21,620
Accounts receivable, net:		
Water:		
Billed	9,335	6,388
Unbilled	6,760	5,886
Total water	16,095	12,274
Wastewater treatment:		
Billed	9,975	10,844
Unbilled	3,746	3,719
Total wastewater treatment	13,721	14,563
Other receivables	1,074	797
Total accounts receivable, net	30,890	27,634
Prepaid expenses	674	65
Inventory	3,777	2,218
Total current assets	46,417	51,537
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	18,264	11,900
Investments	11,684	14,437
Total restricted assets	29,948	26,337
Capital assets, not being depreciated	100,240	88,861
Capital assets, net of accumulated depreciation	589,567	587,937
Total noncurrent assets	719,755	703,135
Total Assets	766,172	754,672
Deferred Outflows of Resources		
Deferred charge on refunding	110,326	25,008
Accumulated decrease in fair value of hedging derivatives	3,279	70,897
Total Deferred Outflows of Resources	113,605	95,905

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2018 AND 2017

	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	$ 46,920	$ 11,076
Accounts receivable, net:		
Water:		
Billed	8,537	9,335
Unbilled	8,583	6,760
Total water	17,120	16,095
Wastewater treatment:		
Billed	7,014	9,975
Unbilled	3,719	3,746
Total wastewater treatment	10,733	13,721
Other receivables	1,510	1,074
Total accounts receivable, net	29,363	30,890
Prepaid expenses	520	674
Inventory	1,984	3,777
Total current assets	78,787	46,417
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	13,970	18,264
Investments	9,356	11,684
Total restricted assets	23,326	29,948
Hedging derivative - interest rate swap	4,750	-
Capital assets, not being depreciated	139,303	100,240
Capital assets, net of accumulated depreciation	618,177	589,567
Total noncurrent assets	785,556	719,755
Total Assets	864,343	766,172
Deferred Outflows of Resources		
Deferred charge on refunding	102,534	110,326
Accumulated decrease in fair value of hedging derivatives	757	3,279
Total Deferred Outflows of Resources	103,291	113,605

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2019 AND 2018

	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	$ 64,680	$ 46,920
Accounts receivable, net:		
Water:		
Billed	7,138	8,537
Unbilled	8,965	8,583
Total water	16,103	17,120
Wastewater treatment:		
Billed	2,130	7,014
Unbilled	3,725	3,719
Total wastewater treatment	5,855	10,733
Other receivables	2,450	1,510
Total accounts receivable, net	24,408	29,363
Prepaid expenses	707	520
Inventory	1,597	1,984
Total current assets	91,392	78,787
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	16,360	13,970
Investments	9,604	9,356
Total restricted assets	25,964	23,326
Hedging derivative - interest rate swap	-	4,750
Capital assets, not being depreciated	135,287	139,303
Capital assets, net of accumulated depreciation	695,291	618,177
Total noncurrent assets	856,542	785,556
Total Assets	947,934	864,343
Deferred Outflows of Resources		
Deferred charge on refunding	99,012	102,534
Accumulated decrease in fair value of hedging derivatives	13,351	757
Total Deferred Outflows of Resources	112,363	103,291

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Operating Revenues:		
Residential, commercial, and industrial water sales	$ 128,488	$ 113,818
Wastewater treatment	68,935	62,125
Other	5,573	4,784
Total operating revenues	202,996	180,727
Operating Expenses:		
Direct operating expenses	71,156	60,687
Wastewater treatment	75,107	62,125
Cooperation agreement operating expenses:		
Indirect cost allocation - sewer conveyance	2,250	2,846
Indirect cost allocation - water	3,113	4,304
Expense of water provided by other entities:		
Subsidy of customers located in the City	5,594	1,974
Depreciation	16,172	16,657
Total operating expenses	173,392	148,593
Operating Income	29,604	32,134
Non-operating Revenues (Expenses):		
Donated property	1,595	981
Interest revenue	460	383
Investment income (loss) - change in fair value of swap	835	1,690
Interest and amortization	(34,913)	(36,966)
Bond issuance costs	(3,894)	-
Total non-operating revenues (expenses)	(35,917)	(33,912)
Net Income (Loss)	(6,313)	(1,778)
Net Position:		
Beginning of year	(37,523)	(35,745)
End of year	$ (43,836)	$ (37,523)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues:		
Residential, commercial, and industrial water sales	$ 159,506	$ 128,488
Wastewater treatment	67,261	68,935
Other	4,967	5,573
Total operating revenues	231,734	202,996
Operating Expenses:		
Direct operating expenses	72,633	71,156
Wastewater treatment	71,822	75,107
Reimbursement for City of Pittsburgh services	4,911	5,363
Expense of water provided by other entities:		
Subsidy of customers located in the City	3,814	5,594
Depreciation	16,894	16,172
Total operating expenses	170,074	173,392
Operating Income	61,660	29,604
Non-operating Revenues (Expenses):		
Donated property	13,649	1,595
Interest revenue	469	460
Investment income (loss) - change in fair value of swap	2,542	835
Interest and amortization	(34,365)	(34,913)
Bond issuance costs	-	(3,894)
Total non-operating revenues (expenses)	(17,705)	(35,917)
Special Item:		
Private lead line replacement	(4,478)	-
Net Income (Loss)	39,477	(6,313)
Net Position:		
Beginning of year	(43,836)	(37,523)
End of year	$ (4,359)	$ (43,836)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues:		
Residential, commercial, and industrial water sales	$ 171,681	$ 159,506
Wastewater treatment	70,970	67,261
Other	6,398	4,967
Total operating revenues	249,049	231,734
Operating Expenses:		
Direct operating expenses	89,512	72,633
Wastewater treatment	72,389	71,822
Reimbursement for City of Pittsburgh services	1,991	4,911
Expense of water provided by other entities:		
Subsidy of customers located in the City	1,338	3,814
Depreciation	18,011	16,894
Total operating expenses	183,241	170,074
Operating Income	65,808	61,660
Non-operating Revenues (Expenses):		
Federal and private grants	6,922	-
Donated property	110	13,649
Interest revenue	719	469
Investment income (loss) - change in fair value of swap	(4,180)	2,542
Interest and amortization	(38,740)	(34,365)
Bond issuance costs	(2,462)	-
Total non-operating revenues (expenses)	(37,631)	(17,705)
Net Income before Special Item	28,177	43,955
Special Item:		
Private lead line replacement	(22,283)	(4,478)
Net Income	5,894	39,477
Net Position:		
Beginning of year	(4,359)	(43,836)
End of year	$ 1,535	$ (4,359)

The notes to financial statements are an integral part of this statement.

DUFF & PHELPS

2019 SBBI® Yearbook

Stocks, Bonds, Bills, and Inflation®

U.S. Capital Markets Performance by
Asset Class 1926–2018

Exhibit 7.1: Aggregate Market Capitalization and Company Counts of the CRSP (NYSE/NYSE MKT/NASDAQ) Deciles and Size Groupings
December 31, 2018

Decile	Historic Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in $thousands)	Recent Percentage of Total Capitalization
1-Largest	63.22%	191	19,292,756,366	69.06%
2	13.91%	202	3,374,015,549	12.08%
3	7.53%	192	1,736,953,613	6.22%
4	4.72%	222	1,163,165,541	4.16%
5	3.25%	219	736,762,076	2.64%
6	2.41%	286	631,058,072	2.26%
7	1.79%	284	403,045,100	1.44%
8	1.33%	348	307,565,042	1.10%
9	1.02%	444	200,061,186	0.72%
10-Smallest	0.81%	725	89,596,785	0.32%
Mid-Cap 3-5	15.50%	633	3,636,881,230	13.02%
Low-Cap 6-8	5.52%	918	1,341,668,214	4.80%
Micro-Cap 9-10	1.84%	1,169	289,657,971	1.04%

Source of data: CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP, visit crsp.com.

In Exhibit 7.2, the largest company in each of the CRSP (NYSE/NYSE MKT/NASDAQ) deciles and size groupings (by market capitalization) are listed as of September 30, 2018.

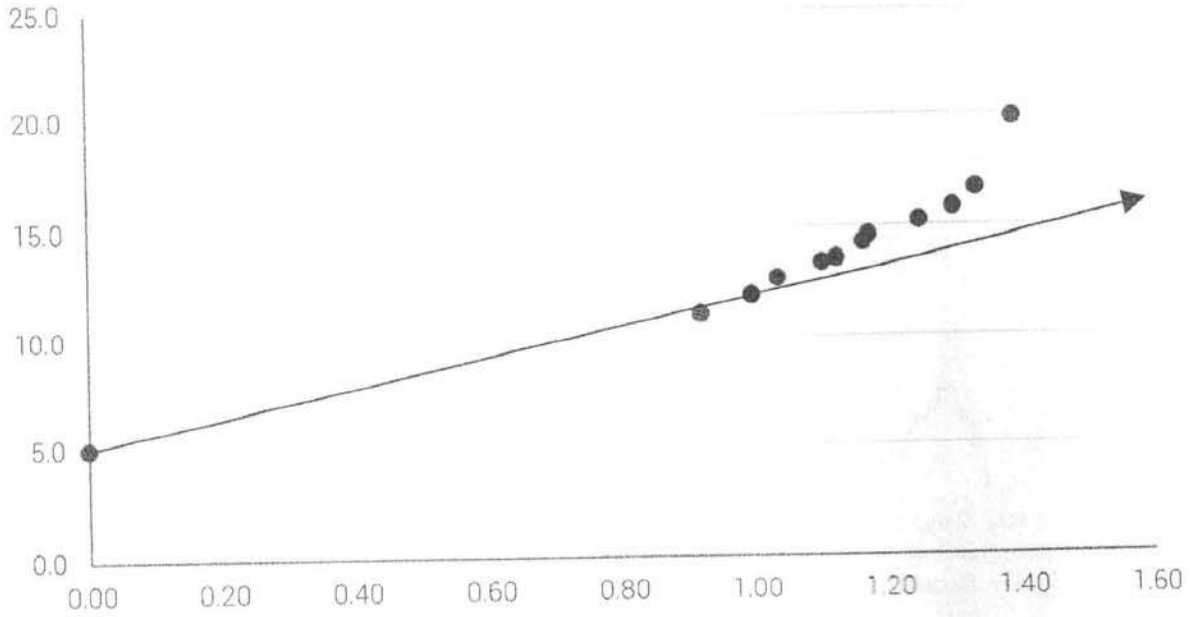
Exhibit 7.6: Summary Statistics of Annual Returns (CRSP NYSE/NYSE MKT/NASDAQ Deciles) (%)
1926–2018

Decile	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Serial Correlation
1 - Largest	9.3	11.0	18.8	0.06
2	10.4	12.7	21.4	0.00
3	10.9	13.4	23.2	-0.03
4	10.7	13.6	25.4	-0.03
5	11.2	14.3	26.0	-0.03
6	11.2	14.6	27.0	0.01
7	11.4	15.2	28.9	0.01
8	11.3	15.8	32.7	0.00
9	11.3	16.7	36.8	0.06
10	12.9	19.8	42.1	0.14
Mid-Cap	10.9	13.6	24.3	-0.03
Low-Cap	11.3	15.0	28.5	0.01
Micro-Cap	11.9	17.7	38.5	0.08
The "Market" (Deciles 1-10)	9.8	11.7	19.9	0.01

Source of underlying data: CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP, visit crsp.com. All calculations performed by Duff & Phelps.

Exhibit 7.7 is a graphical depiction of the year-end index levels presented in Exhibit 7.5 for mid-cap stocks (a portfolio comprised of CRSP deciles 3, 4, and 5), low-cap stocks (a portfolio comprised of CRSP deciles 6, 7, and 8), micro-cap stocks (a portfolio comprised of CRSP deciles 9 and 10), and the "market" (a portfolio comprised of CRSP deciles 1–10).

Exhibit 7.9: Security Market Line Versus a Scatter-Plot of Average Arithmetic Total Returns of the CRSP NYSE/NYSE MKT/NADAQ Deciles 1–10 and Their Respective Betas.



Sources of underlying data: Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1926–December 2018. Historical riskless rate measured by the 93-year arithmetic mean income return component of SBBI® 20-year government bonds (4.97%). Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (11.88%) minus the arithmetic mean income return component of SBBI® 20-year government bonds (4.97%) from 1926–2018. Sources of underlying data: (i) Morningstar, Inc. Used with permission. All rights reserved. (ii) CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP, visit crsp.com. All calculations performed by Duff & Phelps.

Serial Correlation in Small-Cap Stock Returns

Serial correlation, or first-order autocorrelation, measures the degree to which the return of a given series is related from period to period. Serial correlation, like cross-correlation, ranges from 1.0 to negative 1.0. A positive serial correlation can be an indicator of a trend in a return series. A serial correlation of 1.0 indicates that returns from one period have a perfectly positive relationship to the returns of the next period; returns are therefore perfectly predictable from one period to the next. A negative serial correlation can be an indicator of a cycle in a return series. A serial correlation of negative 1.0 indicates that returns from one period have a perfectly negative relationship to the next period. A serial correlation near zero indicates that returns are random or unpredictable.

If stock returns have a positive or a negative serial correlation, one can gain some information about future performance based on prior period returns. The serial correlation of returns on large-cap stocks is near zero (see Exhibit 7.6). For the smallest deciles of stocks, the serial correlation tends to be higher. This observation bears further examination.

The Water Utility Industry consists of eight companies that provide water services mostly to residential customers. The group continues to be highly ranked among the 97 industries that are followed by *Value Line*. Much of the appeal of owning these securities has to do with their well-defined earnings and dividend growth prospects. These equities also provide diversification for professional money managers who overseeing funds that must be put invested in regulated utilities.

Due to the small number of equities available here, they trade at high Price/Earnings ratios.

As a group, these stocks have underperformed the S&P 500 Index since the beginning of the year.

INDUSTRY TIMELINESS: 7 (of 97)

Earnings Remain Steady

COVID-19 has not caused any real problems for water utilities. This is due to two main reasons. First, the demand for water is relatively inelastic. Whether GDP is rising or falling substantially, the demand for water will not change much. (Regulators can occasionally impose price increases for emergencies, such as a drought, to reduce usage.) People just have to consume this essential resource. Secondly, because utilities must file petitions with state authorities to change rates, the price of water is typically known for the next year or two. For example, in California, the process is so lengthy that a utility will file well in advance to establish rates for the next three-year period. The end result of this is that companies' level of profitability is very predictable relative to that of other industries. Of course, there is a cost for this as investors must pay a premium for these stocks. Furthermore, because profits here are less volatile, so too is dividend growth. The average increase for water utilities is currently in the range of 5% to 10%.

Industry Fundamentals

Change in this Industry historically doesn't occur overnight. Indeed, the storyline here has been consistent for some time. Following years and years of underinvestment, the nation found itself with an aging water infrastructure that is in poor condition. Many pipelines were installed 50 to 75 years ago. In badly need of replacement, water utilities have been spending heaving to replace old assets. This high level of expenditures will have to be maintained for decades.

Regulation

As we have highlighted in the past, one of the most significant factors in determining the profitability of a utility is the regulatory climate where it operates. Fortunately for the Water Utility Industry, state authorities and water utilities both realize what needs to be done, and are working constructively to address the issues. Regulators agree that the outlays being made to upgrade the country's infrastructure are required, so they are allowing fair return on investment to be made. Having a positive relationship may seem reasonable, but this is not the case for gas and electric utilities. Conflicts are not unusual.

Balance Sheets

Internally generated funds are not sufficient for these entities to cover their capital budgets. As a result, external financing is needed to make up the difference. The trend has been to sell debt rather than issuing new equity. We attribute this primarily to the low interest rates environment that has been prevalent for some time now. Still, on the whole, balance sheets here aren't overleveraged, as Financial Strength ratings average B+ to B++.

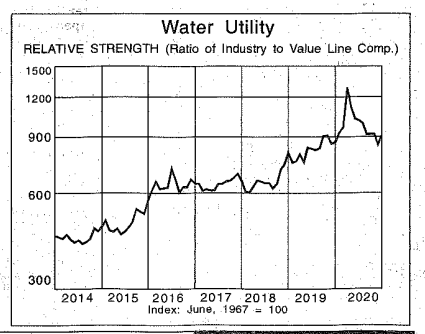
Scarcity

The market capitalization of all the stocks combined in this group total about $47 billion. (For example, Consolidated Edison, a New York-based electric utility has a market cap itself of approximately $25 billion.) Hence, water stocks always seem to be pricey because the demand outstrips supply.

Conclusion

Since the start of this year, the stock of *Middlesex Water* has been the only one out of the seven regulated water utilities to have outperformed the market averages. Still, though there are some timely stocks in the group, none can be considered inexpensive. Rather, the premium investors are willing to pay for these equities has been reduced. Certain Wall Street analysts have attributed the sluggish showing to rising yields on long-term Treasury bonds. Utilities are bought for the income they generate and this makes bonds look more attractive. In our opinion, the Water Utility Industry has not traded like electric and gas utilities for some time. Indeed, the average dividend yield of these equities is lower than the *Value Line* median. It should also be noted, that the typical member of this sector has below-average total return prospects out to 2024-2026. Nevertheless, very conservative accounts may find this a small price to pay for the low volatility and well-defined prospects. As always, we advise subscribers to read each individual report carefully before making any commitments to better understand the potential risk being assumed.

James A. Flood



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TIMELINESS 3 Raised 3/5/21
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Lowered 4/9/21
BETA .65 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$62-$108 $85 (10%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	85	(+10%)	5%
Low	60	(-20%)	-3%

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	135	121	121
to Sell	129	135	142
Hld's(000)	25635	25731	25483

High: 19.8 18.2 24.1 33.1 38.7 44.1 47.2 58.4 69.6 96.0 96.6 83.1
Low: 15.6 15.3 17.0 24.0 27.0 35.8 37.3 41.1 50.1 63.3 65.1 70.1

LEGENDS
1.35 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 9/13
Options: Yes
Shaded area indicates recession

Target Price Range 2024 2025 2026

% TOT. RETURN 2/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-3.0	50.1
3 yr.	43.9	45.4
5 yr.	88.1	108.8

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	13.24	13.55	13.75	Revenues per sh	17.20
1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	3.34	3.50	3.65	"Cash Flow" per sh	4.80
.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	2.33	2.40	2.55	Earnings per sh A	3.05
.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	1.28	1.40	1.52	Div'd Decl'd per sh B■	2.00
2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	3.54	4.05	4.00	Cap'l Spending per sh	4.25
7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	17.39	18.95	20.00	Book Value per sh D	23.20
33.60	34.10	34.46	34.60	37.05	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	36.89	37.25	37.50	Common Shs Outst'g C	37.50
21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	34.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	24.0
1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.83	1.78			Relative P/E Ratio	1.35
3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	1.6%			Avg Ann'l Div'd Yield	2.8%
419.3	466.9	472.1	465.8	458.6	496.1	440.6	436.8	473.9	488.2	505	515	Revenues ($mill)	645
42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	86.4	90.0	95.0	Net Profit ($mill)	115
41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	23.0%	24.0%	Income Tax Rate	23.0%
2.0%	2.5%	--	--	--	--	--	--	2.5%	--	1.0%	1.0%	AFUDC % to Net Profit	1.0%
45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	47.2%	45.0%	45.5%	Long-Term Debt Ratio	53.5%
54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	52.8%	55.0%	54.5%	Common Equity Ratio	46.5%
749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	1216.2	1280	1380	Total Capital ($mill)	1620
896.5	917.8	987.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	1512.0	1600	1700	Net Plant ($mill)	1925
7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	8.0%	8.0%	8.0%	Return on Total Cap'l	8.5%
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.0%	12.5%	Return on Shr. Equity	13.0%
10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.0%	12.5%	Return on Com Equity	13.0%
5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	6.1%	6.0%	5.0%	Retained to Com Eq	4.5%
49%	45%	47%	53%	54%	56%	52%	61%	51%	55%	58%	60%	All Div'ds to Net Prof	66%

CAPITAL STRUCTURE as of 12/31/20
Total Debt $575.0 mill. Due in 5 Yrs $136.0 mill.
LT Debt $574.6 mill. LT Interest $22.5 mill. (47% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.6 mill.
Pension Assets-12/19 $213.1 mill. Oblig. $272.8 mill.

Pfd Stock None

Common Stock 36,898,213 shs. as of 2/19/20

MARKET CAP: $2.8 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	7.1	1.3	36.7
Accts Receivable	23.4	20.9	29.2
Other	101.0	100.3	91.2
Current Assets	131.5	122.5	157.1
Accts Payable	59.5	55.6	63.8
Debt Due	40.3	5.3	4
Other	46.8	55.1	54.4
Current Liab.	146.6	116.0	118.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.5%	.5%	5.0%
"Cash Flow"	5.5%	3.0%	7.0%
Earnings	9.0%	5.5%	6.5%
Dividends	8.5%	7.5%	9.5%
Book Value	5.5%	5.0%	5.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	108.1	121.3	133.6	124.2	488.2
2021	115	125	145	120	505
2022	118	127	148	122	515

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	.54	2.33
2021	.45	.67	.75	.53	2.40
2022	.48	.72	.78	.57	2.55

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	1.28
2021	.335				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 261,976 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,545 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 15.9% of out. shares; Vanguard, 11.9%; off. & dir. 1.0%. (4/20 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

Shares of American States Water have not performed well lately. Over the past three-month period, the price of the stock has declined about 2%. By comparison, the S&P 500 Index has increased 7%, a difference of nearly 900 basis points. **Meanwhile, a major rate case is pending.** California is a state where water utilities file a petition to raise prices once every three years. Last summer, the Golden States Water Company (GSWC) submitted the papers for rate hikes that would cover the years 2022 to 2024. The final decision on the case is not expected until late this year, at the earliest. Our earnings assumptions are based upon a reasonable ruling, as relations with the regulators has been mostly positive. An unexpectedly harsh decision would have a negative impact on the bottom line. **Earnings should advance at a decent clip both this year and next.** The company's year-over-year share net will likely only increase 3% in 2021. (Utilities often see earnings growth slow in the year before new rates are determined.) In 2022, with the assistance of higher rates, we are estimating that earnings per share will climb 6%. **Dividend growth prospects seem to be somewhat brighter.** At the company's August board meeting, we think the distribution per share will be raised $0.03, a 9% increase. This is near the very high end of the range for water utilities. **The company's nonregulated operations offer some potential upside.** Through its ASUS business, the company operates water systems at U.S. Army installations. ASUS has been reasonably successful in winning its share of the many contracts the military has put out for bid. With more privatizations of these facilities planned, this segment could provide higher-margined revenues. That's because returns here are not capped, so there isn't a limit on profitability. **These neutrally ranked shares do not have appeal, at this time.** Despite lagging the market, AWR is only ranked to perform in line with the major indexes in the year ahead. Moreover, over the pull to 2024-2026, total return potential is well-below the *Value Line* median, as the equity is already in its Target Price Range.

James A. Flood *April 9, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due mid-May.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions; adjusted for split.
(D) Includes intangibles. As of 12/31/20; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	85

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EXHIBIT 20

AMERICAN WATER NYSE-AWK

RECENT PRICE 147.91 | P/E RATIO 35.4 (Trailing: 37.8 / Median: 24.0) | RELATIVE P/E RATIO 1.62 | DIV'D YLD 1.6% | VALUE LINE 1790

TIMELINESS 2 Lowered 11/13/20
SAFETY 3 New 7/25/08
TECHNICAL 3 Lowered 4/9/21
BETA .85 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$114-$247 $181 (20%)

2024-26 PROJECTIONS
Price Gain Ann'l Total Return
High 155 (+5%) 3%
Low 105 (-30%) -6%

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 363 401 449
to Sell 371 337 344
Hld's(000) 151102 150689 148917

	High:	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6	166.1	Target Price Range 2024	2025	2026
	Low:	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0	131.0			

LEGENDS
1.10 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

% TOT. RETURN 2/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	16.5	50.1
3 yr.	87.7	45.4
5 yr.	139.0	108.8

2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	©VALUE LINE PUB. LLC	24-26
--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.83	*22.10*	*23.30*	Revenues per sh	*25.80*
--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.24	*7.70*	*8.25*	"Cash Flow" per sh	*9.70*
--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.98	3.15	3.43	3.91	*4.25*	*4.60*	Earnings per sh A	*5.50*
--	--	--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	*2.35*	*2.55*	Div'd Decl'd per sh B■	*3.10*
--	4.31	4.74	5.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.05	*12.80*	*12.60*	Cap'l Spending per sh	*11.75*
--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	35.58	*37.45*	*39.40*	Book Value per sh D	*50.00*
--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.30	*181.50*	*182.00*	Common Shs Outst'g C	*190.00*
--	--	--	--	16.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3	*Bold figures are Value Line estimates*	Avg Ann'l P/E Ratio	*23.5*
--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.75	1.83		Relative P/E Ratio	*1.30*
--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%		Avg Ann'l Div'd Yield	*2.4%*
							2866.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3777.0	*4010*	*4240*	Revenues ($mill)	*4900*
							304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	709.0	*770*	*835*	Net Profit ($mill)	*1045*
							39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	23.3%	*23.5%*	*23.5%*	Income Tax Rate	*24.0%*
							--	6.2%	5.1%	--	--	--	--	--	5.1%	4.0%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
							55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.1%	*59.5%*	*61.5%*	Long-Term Debt Ratio	*61.0%*
							44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.9%	*40.5%*	*39.5%*	Common Equity Ratio	*39.0%*
							9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	15787	*16800*	*19000*	Total Capital ($mill)	*20000*
							11021	11739	12391	12900	13933	14992	16246	17409	18232	19710	*21150*	*22650*	Net Plant ($mill)	*24500*
							4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	5.7%	*6.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
							7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.5%*	*11.5%*	Return on Shr. Equity	*11.0%*
							7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	*11.5%*	*11.5%*	Return on Com Equity	*11.0%*
							3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	*5.0%*	*5.0%*	Retained to Com Eq	*4.5%*
							52%	57%	40%	50%	50%	56%	68%	56%	57%	55%	*55%*	*55%*	All Div'ds to Net Prof	*56%*

CAPITAL STRUCTURE as of 12/31/20
Total Debt $10691 mil. Due in 5 Yrs $2500 mil.
LT Debt $9329 mil. LT Interest $354 mil.
(59% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets12/19 $1747.0 mill
Oblig. $2161.0 mill.
Pfd Stock $4.0 mill. Pfd Div'd $.3 mill

Common Stock 181,439,255 shares as of 2/19/21

MARKET CAP: $26.8 billion (Large Cap)

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	158	91	576
Accts Receivable	301	294	321
Other	322	900	1009
Current Assets	781	1285	1906
Accts Payable	175	203	189
Debt Due	1035	814	1611
Other	884	1028	1081
Current Liab.	2094	2045	2881

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	3.5%	*4.5%*
"Cash Flow"	6.0%	7.0%	*6.5%*
Earnings	10.5%	8.0%	*8.5%*
Dividends	11.0%	11.5%	*8.5%*
Book Value	3.5%	4.5%	*5.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	923	3777
2021	*880*	*995*	*1140*	*995*	*4010*
2022	*935*	*1055*	*1200*	*1050*	*4240*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.66	.97	1.46	.80	3.91
2021	*.73*	*1.05*	*1.60*	*.87*	*4.25*
2022	*.80*	*1.15*	*1.70*	*.95*	*4.60*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	2.15
2021	.55				

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2020 revenues. New Jersey is its largest market accounting for 24.5% of regulated revenues; Pennsylvania, 22.5%; Missouri, 10.6%. Has 6,800 employees. The Vanguard Grp, owns 11.7% of outstanding shares; BlackRock, Inc., 8.1%; officers & directors, less than 1.0%. (3/21 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works completed another very successful year in 2020. Due in part to a strong fourth quarter, the water utility managed to post an impressive 14% share-earnings increase over 2019. One of the most attractive qualities about this industry is that the demand for water is relatively inelastic. Hence, the pandemic has had no real impact on the company.

The earnings picture remains bright. American Water has an aggressive acquisition policy (more below). This, plus solid cost controls, an expanding rate base, and the stable need for water, should ensure solid yearly earnings per share increases for the foreseeable future. We think the company's share net will rise 8% both this year and in 2022. Through 2024 to 2026, we estimate growth here should be in the 7%-10% range, a much higher rate than the typical utility.

The company ought to continue to following what has been a successful strategy. Management has been acquiring small, independent water districts for many years. Indeed, in 2020, 23 such purchases were made. Domestically, there are literally thousands of these undersized water entities that are run by local municipalities. Often they are inefficient and undercapitalized. American Water can merge these operations into its existing business and attain significant economies of scale. As a result, the utility's margins should continue to widen annually as long as this policy is in place.

Capital expenditures are large, but manageable. Like others in the group, the company is spending heavily to upgrade its pipelines and other assets. Also, most of the acquisitions require investment to ensure that they are in compliance with federal mandates. Over the past 10 years, capital outlays have totaled $28 billion. Out to mid-decade, annual outlays may average $2.2 billion to $2.5 billion. The balance sheet will likely handle this without deteriorating much.

These shares are timely. Since our January report, the equity has underperformed the market indexes by about 750 basis points. Thus, the premium investors usually have to pay for this industry standout has declined to some degree.

James A. Flood April 9, 2021

(A) Diluted earnings. Excludes nonrecur. losses: '06, $4.62; '09, $2.63; '11, $0.07. Discr. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-May. (B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available. (C) In millions. (D) Includes intangibles. On 12/31/20: $1.559 billion, $8.59/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	85

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE 56.17 | P/E RATIO 31.4 (Trailing: 29.0 / Median: 24.0) | RELATIVE P/E RATIO 1.43 | DIV'D YLD 1.6% | VALUE LINE 1791

TIMELINESS 1 Raised 3/19/21
SAFETY 3 Lowered 7/27/07
TECHNICAL 2 Lowered 4/9/21
BETA .55 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$43-$81 $62 (10%)

2024-26 PROJECTIONS
Price Gain Ann'l Total Return
High 65 (+15%) 6%
Low 45 (-20%) -3%

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 109 101 122
to Sell 107 106 91
Hld's(000) 35580 36492 37534

	High:	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4	60.5	Target Price Range 2024	2025	2026
	Low:	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7	51.8			

LEGENDS
1.33 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession

% TOT. RETURN 2/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	16.6	50.1
3 yr.	51.7	45.4
5 yr.	142.7	108.8

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	©VALUE LINE PUB. LLC	24-26
8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	15.78	*16.00*	*15.95*	Revenues per sh	*16.30*
1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	3.88	*3.45*	*3.55*	"Cash Flow" per sh	*3.75*
.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	*1.90*	*2.00*	Earnings per sh A	*2.25*
.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	*.92*	*.98*	Div'd Decl'd per sh B■	*1.15*
2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	5.93	*5.25*	*5.50*	Cap'l Spending per sh	*5.85*
7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.26	12.54	13.11	13.41	13.75	14.44	15.19	16.07	18.30	*18.35*	*18.25*	Book Value per sh C	*19.80*
36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	*51.00*	*52.00*	Common Shs Outst'g D	*53.00*
24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.5	29.6	26.9	30.3	39.3	24.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.09	1.29			Relative P/E Ratio	*1.30*
3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	1.7%			Avg Ann'l Div'd Yield	*2.1%*
						501.8	560.0	564.1	597.5	588.4	609.4	666.9	698.2	714.6	794.3	*815*	*830*	Revenues ($mill) E	*865*
						36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	96.8	*97.0*	*105*	Net Profit ($mill)	*120*
						40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	11.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	3.3%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
						51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	45.9%	*44.5%*	*43.5%*	Long-Term Debt Ratio	*38.0%*
						48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	54.1%	*55.5%*	*56.5%*	Common Equity Ratio	*62.0%*
						931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	1702.4	*1685*	*1675*	Total Capital ($mill)	*1700*
						1381.1	1457.1	1515.6	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	2650.6	*2675*	*2700*	Net Plant ($mill)	*2850*
						5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	7.0%	*6.5%*	*7.0%*	Return on Total Cap'l	*8.0%*
						8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*10.5%*	*11.0%*	Return on Shr. Equity	*11.5%*
						8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	*10.5%*	*11.0%*	Return on Com Equity	*11.5%*
						2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	6.0%	*5.5%*	*5.5%*	Retained to Com Eq	*5.5%*
						71%	62%	56%	55%	71%	68%	51%	55%	60%	43%	*48%*	*49%*	All Div'ds to Net Prof	*51%*

CAPITAL STRUCTURE as of 12/31/20
Total Debt $1156.2 mill. Due in 5 Yrs $357.0 mill.
LT Debt $781.1 mill. LT Interest $40.0 mill.
(Total interest coverage: 5.2x) (46% of Cap'l)

Pension Assets-12/20 $716.8 mill.
Oblig. $833.9 mill.

Pfd Stock None

Common Stock 50,330,000 shs.

MARKET CAP: $2.8 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	47.2	42.7	44.6
Other	141.5	142.0	221.4
Current Assets	188.7	184.7	266.0
Accts Payable	95.6	108.5	131.7
Debt Due	170.0	197.0	375.1
Other	55.6	53.2	81.9
Current Liab.	321.2	358.7	588.7

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.5%	4.0%	*1.5%*
"Cash Flow"	6.0%	8.0%	*2.0%*
Earnings	5.0%	8.0%	*6.5%*
Dividends	3.0%	4.0%	*6.5%*
Book Value	5.0%	5.0%	*4.0%*

Calendar	QUARTERLY REVENUES ($ mill.) E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	189.1	794.3
2021	*155*	*205*	*255*	*200*	*815*
2022	*160*	*205*	*260*	*205*	*830*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	.31	1.97
2021	*.08*	*.45*	*.95*	*.42*	*1.90*
2022	*.10*	*.45*	*1.00*	*.45*	*2.00*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	.85
2021	.230				

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 492,600 customers in 100 communities in the state of California. Accounts for about 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '20: residential, 70%; business, 18%; industrial, 4%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/20 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group reported solid financial results to wrap up 2020. The West Coast water service provider generated revenues of $189 million in the December period, or a 7% annual increase, thanks largely to rate hikes associated with the recently approved general rate case. Meanwhile, fourth-quarter share profits of $0.31, which were also buoyed by benefits from the general rate case decision, specifically higher operating income and lower taxes, logged a healthy 29% advance compared to the year-earlier tally.

California Water is on a buying spree. The company's subsidiary, Hawaii Water Service, announced that it has received approval to acquire the assets of Kapalua Water and Kapalua Waste Treatment Company, which will add roughly 1,000 service connections in the area. In addition, a deal has been inked to purchase the water system assets of Skylanda Mutual Water Company. Pending regulatory approval, the transaction, which would add almost 19,000 service connection in California, is expected to be finalized early next year. Overall, tuck-in acquisitions will probably be a staple in the company's long-term growth strategy.

The company is in the early innings of a massive infrastructure improvement program. Indeed, management is taking an aggressive approach to upgrading and revamping its aging water delivery, transportation, and treatment facilities. For this year, its capital spending budget for infrastructure-related projects is approximately $285 million. Over the pull to 2025, the company is likely to invest upwards of $700 million. Lastly, California Water has already been given the green light by the California Public Utilities Commission to tap the debt and equity markets.

We continue to like this issue for subscribers with a short-term investment horizon. The stock has been raised one notch on our Timeliness Ranking Scale, to 1 (Highest) and, thus is slated to outpace the broader market averages over the coming six to 12 months. On the other hand, buy-and-hold accounts should turn the page, as total return potential out to 2024-2026 is unenticing at recent levels.

Nicholas P. Patrikis April 9, 2021

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early May. (B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available. (C) Incl. intangible assets. In '20 : $27.6 mill., $0.55/sh. (D) In millions, adjusted for split. (E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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CONSOL. WATER CO. NDQ-CWCO

RECENT PRICE 13.48 | P/E RATIO 26.4 (Trailing: 40.8 / Median: 24.0) | RELATIVE P/E RATIO 1.21 | DIV'D YLD 2.5% | VALUE LINE 1792

TIMELINESS 5 Lowered 2/12/21
SAFETY 3 New 1/17/14
TECHNICAL 4 Raised 3/26/21
BETA .85 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$9-$21 $15 (10%)

2024-26 PROJECTIONS
Price Gain Ann'l Total Return
High 35 (+160%) 30%
Low 25 (+85%) 20%

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 48 28 40
to Sell 45 57 43
Hld's(000) 8027 7661 7487

High: 15.1 11.7 9.2 16.9 14.5 13.8 14.7 14.0 15.4 17.9 18.8 15.4
Low: 8.1 7.3 6.7 7.5 8.4 9.6 9.8 10.0 10.8 11.1 10.0 11.7

LEGENDS
2.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2024 | 2025 | 2026

% TOT. RETURN 2/21
THIS STOCK | VL ARITH.* INDEX
1 yr. -17.7 | 50.1
3 yr. 11.2 | 45.4
5 yr. 35.0 | 108.8

Percent shares traded

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
1.12	2.71	3.41	4.52	3.99	3.49	3.79	4.49	4.35	4.46	3.86	3.89	4.18	4.39	4.57	4.90	4.60	4.95	Revenues per sh	8.75
.37	.67	1.20	.95	1.18	.86	.83	1.17	.96	.80	.89	.95	1.12	1.15	1.05	.85	1.05	1.10	"Cash Flow" per sh	2.00
.23	.59	.79	.50	.74	.43	.42	.64	.58	.42	.51	.27	.41	.68	.56	.35	.55	.60	Earnings per sh A	1.45
.12	.24	.20	.33	.28	.30	.30	.30	.30	.30	.30	.30	.31	.34	.34	.34	.34	.34	Div'd Decl'd per sh B■	.75
.77	1.83	.54	.46	.18	.09	.96	.31	.29	.32	.21	.23	.31	1.08	.23	.15	.25	.25	Cap'l Spending per sh	.45
2.54	7.49	8.21	8.36	8.53	8.69	8.83	9.20	9.44	9.58	9.81	9.79	9.91	10.34	10.88	11.20	11.45	11.70	Book Value per sh D	12.80
23.46	14.13	14.40	14.53	14.54	14.55	14.57	14.59	14.69	14.72	14.76	14.87	14.92	14.98	15.05	15.20	15.30	15.40	Common Shs Outst'g C	16.00
NMF	43.0	35.4	37.8	19.0	26.9	22.4	12.4	20.0	28.3	22.7	44.8	29.0	19.4	25.7	Bold figures are Value Line estimates			Avg Ann'l P/E Ratio	22.0
NMF	2.32	1.88	2.27	1.27	1.71	1.41	.79	1.12	1.49	1.14	2.35	1.46	1.05	1.37				Relative P/E Ratio	1.20
.7%	.9%	.7%	1.7%	2.0%	2.6%	3.2%	3.8%	2.6%	2.5%	2.6%	2.5%	2.6%	2.6%	2.4%				Avg Ann'l Div'd Yield	2.5%
55.2	65.5	63.8	65.6	57.1	57.9	62.3	65.7	68.9	75.0	70.0	76.0	Revenues ($mill)	140
6.1	9.3	8.6	6.3	7.5	4.0	6.1	10.2	8.6	5.5	8.5	9.0	Net Profit ($mill)	23.0
--	--	--	--	--	--	--	--	--	1.0%	NMF	NMF	NMF	Income Tax Rate	NMF
--	--	--	--	--	--	--	--	--	--	Nil	Nil	Nil	AFUDC % to Net Profit	NMF
4.0%	--	--	--	--	--	--	--	--	--	Nil	Nil	Nil	Long-Term Debt Ratio	Nil
5.1%	3.7%	--	--	--	--	--	--	--	--	100%	100%	100%	Common Equity Ratio	100%
94.9%	96.3%	99.8%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100%	100%	100%	Total Capital ($mill)	205
135.6	139.4	138.9	141.2	145.0	145.6	147.9	155.0	163.8	170	175	180	Net Plant ($mill)	205
64.3	61.6	58.6	56.4	53.7	53.1	50.5	64.9	61.2	61.0	62.0	62.0	Return on Total Cap'l	75.0
5.0%	7.0%	6.2%	4.4%	5.2%	2.7%	4.2%	6.6%	5.2%	3.0%	5.0%	5.0%	Return on Shr. Equity	11.0%
4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.2%	6.6%	5.2%	3.0%	5.0%	5.0%	Return on Com Equity	11.0%
4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.1%	6.6%	5.2%	3.0%	5.0%	5.0%	Retained to Com Eq	11.0%
1.0%	3.6%	3.0%	1.2%	2.1%	NMF	1.1%	3.3%	2.1%	NMF	2.0%	2.0%	All Div'ds to Net Prof	5.5%
79%	48%	51%	73%	59%	112%	73%	50%	60%	97%	62%	57%		52%

CAPITAL STRUCTURE as of 9/30/20
Total Debt $0.1 Due in 5 Yrs $0.1
LT Debt $0.1 LT Interest NMF
(0% of Total Cap'l)
Leases, Uncapitalized: Annual rentals $.9 mill.
No Defined Benefit Pension Plan
Pfd Stock NMF (33,059 shares out.) Div'd NMF
Common Stock 15,112,975 shs. as of 11/10/20
MARKET CAP: $200 million (Small Cap)

CURRENT POSITION ($MILL.) 2018 2019 9/30/20
Cash Assets 31.3 42.9 36.2
Accts Receivable 24.2 23.2 24.4
Other 6.9 7.3 9.0
Current Assets 62.4 73.4 71.6
Accts Payable 4.6 3.7 3.1
Debt Due -- -- --
Other 3.3 4.5 4.6
Current Liab. 7.9 8.2 7.7

ANNUAL RATES of change (per sh) Past 10 Yrs. Past 5 Yrs. Est'd '17-'19 to '24-'26
Revenues 5.0% .5% 12.0%
"Cash Flow" 2.0% .5% 9.0%
Earnings -3.0% -4.5% 15.0%
Dividends 5.0% -- 12.5%
Book Value 5.0% 2.0% 2.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	14.3	15.9	18.8	16.7	65.7
2019	17.0	18.3	15.9	17.6	68.8
2020	20.8	19.1	17.7	17.4	75.0
2021	19.0	17.0	17.0	17.0	70.0
2022	21.0	18.0	19.0	18.0	76.0

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.14	.14	.30	.10	.68
2019	.17	.16	.11	.12	.56
2020	.19	d.04	.09	.11	.35
2021	.13	.15	.12	.15	.55
2022	.15	.16	.14	.15	.60

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.075	.075	.075	.075	.30
2018	.085	.085	.085	.085	.34
2019	.085	.085	.085	.085	.34
2020	.085	.085	.085	.085	.34
2021	.085				

BUSINESS: Consolidated Water Co. Ltd. develops and operates desalination plants and water distribution systems in areas where naturally occurring supplies of water are scarce. It provides water in the Cayman Islands, the Bahamas, and the British Virgin Islands. At 12/31/19, it operated 12 plants with a capacity of 25.6 million gallons per day. Sold Bali operations and divested Belize assets in '19. Also manufactures products for the industry through Aerex sub. Inc.: Cayman Is. Employs 105. Pres./CEO: F. McTaggart. Based on 4/19 proxy Offs./ Dirs. own 4.8% of stock; Amundi Asset, 7.7%; BlackRock, 5.6%. (No proxy filed in 2020). Addr.: Regatta Off. Pk. Windward Three, West Bay Rd., P.O. Box 1114 Grand Cayman, KYI-1102, Cayman Is. Tel.: (345) 945-4277. Int.: www.cwco.com.

Investors will have to wait for Consolidated Water's full-year 2020 results. The company will not file its fourth-quarter results until after this report goes to press. Since the value of certain assets must be evaluated quarterly, (with the largest changes usually occurring at year end), we have less confidence in our December period's bottom-line estimate.

Meanwhile, Consolidated is looking to recover from a significant blow suffered last year. In 2016, the builder and operator of desalination plants began development of the Rosarito project, which was a proposed Mexico-based facility that would provide badly needed water to the city of Tijuana. Despite some bumps in the road, progress seemed on track. However, Mexican authorities terminated the contract. Thus, four years of management's efforts and funds were wasted. Rosarito was classified as a discontinued operation, removing losses from its 2020 earnings. This also marked the second-straight time that Consolidated wrote off a major desalination facility, as was the case with Indonesia-based CW-Bali.

The focus seems to be shifting toward the United States. California has persistently struggled to provide residents with potable water. With its large coastline, there are ample opportunities to build new desalination facilities in the state. Currently, there are 11 such projects that are in operation and 10 proposed. We expect to see the company make its next major push here. This would also improve its exposure to regulatory risk (more below). In Arizona, research is underway on how to treat a large amount of brackish water deposits using the desalination process.

The main regulated foreign operations should remain the same. Consolidated provides clean water to the Cayman Islands, the Bahamas, and the British Virgin Islands. Basically, operations are sound. However, there has been sometimes difficult relationships with the countries' regulators, who determine what rates can be charged.

These shares carry our lowest rank for Timeliness (5). Conservative water utility investors should also note that this equity carries a much different risk profile than others in the industry.

James A. Flood April 9, 2021

Company's Financial Strength B
Stock's Price Stability 70
Price Growth Persistence 45
Earnings Predictability 45

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(A) Fully diluted earnings. Excludes gains from discontinued operations: '17, $0.07 a share; '18, $0.07 a share; '19, $0.24 a share; losses in 2020 of $0.30 a share. Next earnings report due late May. (B) Dividends historically paid in late January, April, July, and October. ■ Dividend reinvestment plan available. (C) In millions, adjusted for stock split. (D) Includes intangibles. As of 9/30/20, $17.7 million/$1.17 a share.

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ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE 44.64 | P/E RATIO 27.4 (Trailing: 39.9 / Median: 23.0) | RELATIVE P/E RATIO 1.25 | DIV'D YLD 2.4% | VALUE LINE 1793

TIMELINESS 2 Raised 2/5/21
SAFETY 3 Lowered 1/6/21
TECHNICAL 3 Lowered 4/9/21
BETA .95 (1.00 = Market)
5-for-4 split 9/13

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$32-$77 $55 (20%)

2024-26 PROJECTIONS
Price Gain Ann'l Total Return
High 60 (+35%) 10%
Low 40 (-10%) Nil

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 250 237 264
to Sell 235 227 221
Hld's(000) 161504 167836 169334

High: 18.4 19.0 21.5 28.1 28.2 31.1 35.8 39.6 39.4 47.3 54.5 48.9
Low: 13.2 15.4 16.8 20.6 22.4 24.4 28.0 29.4 32.1 32.7 30.4 41.1

LEGENDS
1.60 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2024 | 2025 | 2026

% TOT. RETURN 2/21
THIS STOCK | VL ARITH.* INDEX
1 yr. -0.0 | 50.1
3 yr. 31.1 | 45.4
5 yr. 53.6 | 108.6

Percent shares traded

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.71	4.03	5.96	8.00	8.50	Revenues per sh	8.60
.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	1.90	1.73	2.21	2.40	2.65	"Cash Flow" per sh	2.85
.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	1.12	1.65	1.80	Earnings per sh A	1.90
.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	.97	1.03	1.10	Div'd Decl'd per sh B■	1.40
1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	2.49	3.41	4.00	4.00	Cap'l Spending per sh	3.75
5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.28	17.58	19.09	19.70	20.30	Book Value per sh	23.35
161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	245.39	250.00	252.50	Common Shs Outst'g C	270.00
31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	32.6	39.1	39.6	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	27.0
1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.76	2.08	2.06			Relative P/E Ratio	1.50
1.8%	1.8%	2.1%	2.6%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.8%	2.3%	2.4%	2.4%	2.2%	2.2%			Avg Ann'l Div'd Yield	2.8%
712.0	757.8	768.6	779.9	814.2	819.9	809.5	838.1	889.7	1462.7	2000	2150	Revenues ($mill)	2320
144.8	153.1	205.0	213.9	201.8	234.2	239.7	192.0	224.5	284.8	310	365	Net Profit ($mill)	515
32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	--	6.6%	6.6%	5.0%	6.0%	Income Tax Rate	8.0%
--	--	1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	4.5%	7.0%	7.5%	AFUDC % to Net Profit	7.0%
52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	54.0%	55.0%	56.0%	Long-Term Debt Ratio	56.0%
47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	46.0%	45.0%	44.0%	Common Equity Ratio	44.0%
2646.8	2829.7	3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	10192	11000	11775	Total Capital ($mill)	14300
3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	9512.9	10175	10800	Net Plant ($mill)	12100
6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	3.7%	3.5%	4.5%	Return on Total Cap'l	5.5%
11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	6.0%	7.0%	Return on Shr. Equity	9.5%
11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	6.0%	7.0%	Return on Com Equity	9.5%
4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	.9%	1.1%	1.5%	1.5%	Retained to Com Eq	2.0%
60%	61%	50%	52%	60%	56%	59%	79%	84%	82%	76%	76%	All Div'ds to Net Prof	74%

CAPITAL STRUCTURE as of 12/31/20
Total Debt $5670.3 mill. Due in 5 Yrs $1032 mill.
LT Debt $5507.7 mill. LT Interest $185.0 mill. (54% of Cap'l)
Pension Assets-12/20 $426.8 mill. Oblig. $486.2 mill.
Pfd Stock None
Common Stock 245,393,761 shares as of 2/15/21
MARKET CAP: $11.0 billion (Large Cap)

CURRENT POSITION ($MILL.) 2018 2019 12/31/20
Cash Assets 3.6 1868.9 4.8
Receivables 101.2 67.1 154.8
Inventory (AvgCst) 15.8 18.4 58.4
Other 26.6 58.3 182.2
Current Assets 147.2 2012.7 380.2
Accts Payable 77.3 74.9 177.5
Debt Due 160.0 130.8 162.6
Other 161.7 113.1 263.8
Current Liab. 399.0 318.8 603.9

ANNUAL RATES of change (per sh) Past 10 Yrs. Past 5 Yrs. Est'd '18-'20 to '24-'26
Revenues 2.0% 2.0% 10.0%
"Cash Flow" 4.5% 1.0% 6.5%
Earnings 5.5% -1.5% 10.0%
Dividends 7.5% 7.5% 7.5%
Book Value 9.5% 11.5% 4.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	194.3	211.9	226.2	205.7	838.1
2019	201.1	218.9	243.6	226.1	889.7
2020	255.6	384.5	348.6	474.0	1462.7
2021	650	385	430	535	2000
2022	690	415	460	585	2150

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	.29	.37	.44	d.02	1.08
2019	.09	.25	.38	.28	1.04
2020	.21	.29	.22	.40	1.12
2021	.63	.30	.30	.42	1.65
2022	.67	.33	.35	.45	1.80

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047	.219	.219	.85
2019	.219	.219	.2343	.2343	.91
2020	.2343	.2343	.2507	.2507	.97
2021	.2507				

BUSINESS: Essential Utilities, Inc. became the new name for Aqua America on Feb. 3, 2020, to reflect the acquisition of Peoples, a natural gas utility, which occurred in 3/20. In 2020, Aqua Amer. provided water and wastewater services to about 5 million people in PA, OH, TX, IL, NC, NJ, IN, VA NS WS. Employed 3,180 Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water respn. for 65% of revenues in 2020; residential, 39%; commercial, 10%; industrial, wastewater & other, 26%. Gas 35%. Off. & dir. own less than 1% of the common stock; BlackRock, 10.5%; Vanguard, 10.4%; (4/20 proxy). Canadian Pension Plan about 8.8%. Pres. & CEO: Christopher Franklin. Inc.: PA Addr.: 762 W Lancaster Ave., Bryn Mawr, PA 19010. Tel.: 610-525-1400. Int.: www.essential.co.

Starting in the June quarter, Essential Utilities' figures ought to be comparable to 2020's. In mid-March of last year, Essential became a much different company (including taking on a new name), when it made the large acquisition of Peoples Gas for total consideration of about $5.3 billion. The purchase turned the new entity into one that is not totally water based. Despite not generating revenues for almost 85% of the first quarter, which is usually an important period for a gas entity, Peoples still accounted for 35% of Essential's revenues last year.

The outlook for earnings is positive. The company was able to increase its share net last year even though it had to absorb many merger-related charges. The process is mostly completed now. So, aided by cost-containment efforts, we expect WTRG to have a very strong share-net showing in 2021 and 2022.

The balance sheet is more leveraged. As a result of the merger, Essential's debt load increased significantly. As can be seen in the numbers array, long-term debt-to-equity rose from 43% to 54% during 2020. Capital expenditures are estimated to be $1 billion this year, which means that more borrowing will be required. Following 2022, we think the situation will likely stabilize, and Essential's finances should remain average for a water utility.

Essential's regulatory treatment will probably not be on par with other members of the group. Gas and electric utilities have historically not had great relations with the authorities that determine the rates they can charge customers. On the other hand, water utilities and the authorities have worked well together. Part of this is due to water regulators' understanding that there has been under investment in the domestic infrastructure and large amounts of capital spending are required to make upgrades.

These shares have moved up a notch in rank, to 2 (Above Average), since our January report. The equity is pegged to outperform the market averages in the year ahead. Long-term total return potential is still unattractive even though WTRG has trailed the S&P 500 Index significantly over the past three months.

James A. Flood April 9, 2021

Company's Financial Strength B+
Stock's Price Stability 90
Price Growth Persistence 70
Earnings Predictability 60

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(A) Diluted eqs. Excl. nonrec. gains: '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. Quarterly EPS do not add in '19 due to a large change in the number of shares outstanding in the Dec. period. Next earnings report May 5th. (B) Dividends historically paid in early March, June, Sept., & Dec. ■ Div'd. reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Includes intangibles: 12/31/20, $2,325 bill./$9.47 a share.

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EXHIBIT 20

MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 80.66 | P/E RATIO 36.7 (Trailing: 37.0 / Median: 23.0) | RELATIVE P/E RATIO 1.68 | DIV'D YLD 1.4% | VALUE LINE 1794

TIMELINESS 1 Raised 11/13/20
SAFETY 2 New 10/21/11
TECHNICAL 4 Lowered 4/9/21
BETA .70 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$58-$106 $82 (0%)

2024-26 PROJECTIONS
Ann'l Total Return
Price Gain (-5%) Nil
High 75 (-30%) -7%
Low 55

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 68 52 67
to Sell 55 69 49
Hld's(000) 10359 10357 10675

Target Price Range 2024 2025 2026

% TOT. RETURN 2/21
THIS STOCK | VL ARITH.* INDEX
1 yr. 17.2 | 50.1
3 yr. 103.1 | 45.4
5 yr. 168.7 | 108.8

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	8.10	*8.45*	*8.70*	Revenues per sh	*9.15*
1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	3.25	*3.15*	*3.25*	"Cash Flow" per sh	*3.70*
.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	*2.25*	*2.35*	Earnings per sh A	*2.70*
.57	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	*1.10*	*1.15*	Div'd Decl'd per sh B■	*1.35*
2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	6.04	*5.50*	*5.50*	Cap'l Spending per sh	*6.25*
8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	16.57	19.61	*19.45*	*19.60*	Book Value per sh	*20.85*
11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	17.47	*17.75*	*17.85*	Common Shs Outst'g C	*18.00*
27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	30.1	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.58	1.56			Relative P/E Ratio	*1.30*
3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	1.6%			Avg Ann'l Div'd Yield	*2.1%*
CAPITAL STRUCTURE as of 12/31/20						102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	141.6	*150*	*155*	Revenues ($mill)	*165*
Total Debt $282.5 mill. Due in 5 Yrs $43.7 mill.						13.4	14.4	16.6	18.4	20.0	22.7	22.6	32.5	33.9	38.4	*40.0*	*42.0*	Net Profit ($mill)	*49.0*
LT Debt $273.2 mill. LT Interest $7.5 mill.						32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
(Total interest coverage: 7.3x) (44% of Cap'l)						6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	3.9%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
						42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	44.0%	*42.5%*	*41.5%*	Long-Term Debt Ratio	*40.0%*
Pension Assets-12/20 $88.9 mill. Oblig. $115.9 mill.						56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	55.7%	*57.0%*	*58.0%*	Common Equity Ratio	*60.0%*
Pfd Stock $2.4 mill. Pfd Div'd: $.1 mill.						312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	621.5	*610*	*600*	Total Capital ($mill)	*630*
						422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	796.6	*800*	*815*	Net Plant ($mill)	*835*
Common Stock 17,473,000 shs.						5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	6.8%	*7.0%*	*7.5%*	Return on Total Cap'l	*8.0%*
						7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	11.0%	*11.5%*	*12.0%*	Return on Shr. Equity	*13.0%*
						7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	11.1%	*11.5%*	*12.0%*	Return on Com Equity	*13.0%*
MARKET CAP: $1.4 billion (Mid-Cap)						1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.6%	7.0%	5.4%	5.8%	*6.0%*	*6.0%*	Retained to Com Eq	*6.5%*
						87%	83%	73%	67%	63%	58%	62%	46%	48%	48%	*49%*	*49%*	All Div'ds to Net Prof	*50%*

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	3.7	2.2	4.5
Other	27.1	26.9	29.6
Current Assets	30.8	29.1	34.1
Accts Payable	19.3	23.3	30.4
Debt Due	55.8	27.2	9.3
Other	19.3	14.5	17.1
Current Liab.	94.4	65.0	56.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.0%	2.0%	*2.0%*
"Cash Flow"	7.5%	10.5%	*3.5%*
Earnings	9.0%	12.5%	*4.5%*
Dividends	3.0%	5.0%	*5.5%*
Book Value	5.5%	6.0%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	34.6	141.6
2021	*33.0*	*37.0*	*44.0*	*36.0*	*150*
2022	*34.0*	*38.0*	*45.0*	*38.0*	*155*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	.47	2.18
2021	*.45*	*.55*	*.73*	*.52*	*2.25*
2022	*.47*	*.57*	*.76*	*.55*	*2.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	1.04
2021	.2725				

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2020, the Middlesex System accounted for 59% of operating revenues. At 12/31/20, the company had 348 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.1% of the com. stock; BlackRock Inst. Trust Co., 7.7% (4/20 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Shares of Middlesex Water continue to march higher. The equity established yet another all-time high in early February, but has since retracted modestly to slightly above $80 per share. Still, the stock is up about 10% in price since our early-January review, keeping intact its enviable multiyear price ascent. Based on our Timeliness ranking scale, MSEX shares are slated to outperform (1: Highest) the broader market over the coming six to 12 months. Thus, they may pique the interest of near-term accounts.

The stage is set for respectable top- and bottom-line growth this year. Favorable operating trends, which were evident in the fourth quarter, are likely to persist over the near- to intermediate-terms. These include increased residential and wholesale water consumption owing to more people staying at home and greater handwashing frequency, as well as an expanding customer base in its Delaware water system. A recently inked contract with Highland Park in its New Jersey system is a positive, too. Adding it all up, revenues are poised to expand 6%, to $150 million, and will likely be accompanied by a 3% earnings advance, to $2.25 per share.

From a financial perspective, the company ought to be a stable performer over the pull to mid-decade. Modest revenue and earnings growth is likely on tap for 2022. Meanwhile, significant infrastructure spending may well overflow into the 3- to 5-year time frame. Management has laid out a budget of nearly $300 million through its Water For Tomorrow program, which aims to upgrade watermains, piping, and wastewater treatment facilities. Most recently, the company announced a $10 million investment to improve its drinking water infrastructure in New Jersey. Overall, aggressive spending ought to eventually curb unnecessary operating costs, and may well facilitate additional rate hikes going forward.

Shares of Middlesex Water are currently trading beyond the upper end of our 3- to 5-year Target Price parameters. This is so even after modestly lifting our P/E multiple to 24x. All in all, subscribers with an investment horizon of 18 months or longer can find more-attractive options elsewhere, at this juncture.

Nicholas P. Patrikis April 9, 2021

(A) Diluted earnings. Next earnings report due early May.
(B) Dividends historically paid in mid-Feb., May, Aug., and November. ■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength B++
Stock's Price Stability 85
Price Growth Persistence 65
Earnings Predictability 85

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SJW GROUP NYSE-SJW

RECENT PRICE 63.42 | P/E RATIO 26.9 (Trailing: 29.6 / Median: 21.0) | RELATIVE P/E RATIO 1.23 | DIV'D YLD 2.1% | VALUE LINE 1795

TIMELINESS — E
SAFETY 3 New 4/22/11
TECHNICAL — E
BETA .85 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$53-$123 $88 (40%)

2024-26 PROJECTIONS
Ann'l Total Return
Price Gain (+60%) 14%
High 100 (Nil) 3%
Low 65

Institutional Decisions
2Q2020 3Q2020 4Q2020
to Buy 78 62 80
to Sell 75 77 68
Hld's(000) 19939 19827 19850

Target Price Range 2024 2025 2026

% TOT. RETURN 2/21
THIS STOCK | VL ARITH.* INDEX
1 yr. 4.5 | 50.1
3 yr. 24.8 | 45.4
5 yr. 89.0 | 108.8

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	16.97	14.00	14.78	19.77	*20.00*	*20.65*	Revenues per sh	*22.15*
2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	5.28	*4.25*	*4.40*	"Cash Flow" per sh	*5.30*
1.12	1.19	1.04	1.08	.51	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	2.14	*2.55*	*2.70*	Earnings per sh A	*3.65*
.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	1.28	*1.36*	*1.44*	Div'd Decl'd per sh B■	*1.72*
2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	7.44	*6.75*	*7.00*	Cap'l Spending per sh	*7.50*
10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	32.12	*35.60*	*36.95*	Book Value per sh	*40.85*
18.27	18.28	18.36	18.16	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	28.56	*29.50*	*29.75*	Common Shs Outst'g C	*30.00*
19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	30.0	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*23.0*
1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.55	1.56			Relative P/E Ratio	*1.30*
2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	2.0%			Avg Ann'l Div'd Yield	*2.1%*
CAPITAL STRUCTURE as of 12/31/20						239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	564.5	*590*	*615*	Revenues ($mill)	*665*
Total Debt $1363.8 mill. Due in 5 Yrs $22.4 mill.						20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	61.5	*75.0*	*80.0*	Net Profit ($mill)	*110*
LT Debt $1287.6 mill. LT Interest $50.0 mill.						41.1%	41.1%	38.7%	32.5%	36.1%	38.8%	36.7%	20.6%	25.3%	12.0%	*21.0%*	*21.5%*	Income Tax Rate	*21.0%*
(LT Interest Coverage: 3.8x) (58% of Cap'l)						--	--	--	--	--	--	--	--	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
						56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	58.4%	*53.5%*	*51.0%*	Long-Term Debt Ratio	*38.0%*
						43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	41.6%	*46.5%*	*49.0%*	Common Equity Ratio	*62.0%*
Pension Assets-12/20 $278.1 mill. Oblig. $386.1 mill.						607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	2204.7	*2250*	*2350*	Total Capital ($mill)	*1975*
Pfd Stock None.						756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	2334.9	*2450*	*2565*	Net Plant ($mill)	*2775*
Common Stock 28,560,000 shs.						4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	4.0%	*4.0%*	*4.0%*	Return on Total Cap'l	*6.0%*
						7.9%	8.1%	7.3%	10.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*7.0%*	*7.5%*	Return on Shr. Equity	*9.0%*
MARKET CAP: $1.8 billion (Mid Cap)						7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	6.7%	*7.0%*	*7.5%*	Return on Com Equity	*9.0%*
						3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	2.7%	*3.5%*	*3.5%*	Retained to Com Eq	*4.5%*
						61%	59%	62%	29%	42%	31%	36%	60%	88%	59%	*53%*	*53%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	420.7	17.9	9.3
Accts Receivable	19.2	36.3	58.1
Other	62.8	67.8	59.9
Current Assets	502.7	122.0	127.3
Accts Payable	24.9	34.9	34.2
Debt Due	--	22.3	76.2
Other	139.1	177.4	240.4
Current Liab.	164.0	234.6	350.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	5.5%	2.0%	*4.5%*
Earnings	7.0%	-.5%	*13.0%*
Dividends	6.0%	10.0%	*6.0%*
Book Value	8.5%	12.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	135.6	564.5
2021	*120*	*150*	*175*	*145*	*590*
2022	*125*	*155*	*185*	*150*	*615*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	.46	2.14
2021	*.20*	*.75*	*.95*	*.65*	*2.55*
2022	*.23*	*.77*	*1.00*	*.70*	*2.70*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	1.28
2021	.34				

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/21 proxy). Chairman & CEO: Eric Thornburg. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group posted better-than-expected top- and bottom-line results to close 2020. December-period revenues of $136 million came in about $5 million above our call, while earnings of $0.46 a share exceeded our $0.42 expectation. The overall outperformance was driven primarily by greater customer usage, cumulative water rate increases, slimmer operating expenses due to lower merger-related costs, and a decline in general & administrative expenses.

Noteworthy share-profit expansion is likely in the cards this year and next. Water production costs are apt to rise in conjunction with increased water consumption and a widening customer base, but operating expenses may well trend lower. Not to mention, we think significant merger synergies are likely to develop. All told, we think SJW will earn $2.55 a share this year, and $2.70 a share in 2022.

The coast-to-coast regulated water utility has tapped the equity markets. Specifically, the company recently closed a public offering of over one million shares, netting proceeds of almost $61 million. Management's plan for the raised funds include paying down outstanding obligations, various capital expenditures, and general corporate purposes.

The long-term growth narrative remains largely unaltered. Increased residential and wholesale water consumption, alongside periodic rate hikes, ought to keep revenues moving in the right direction. SJW Group's diverse geographical footprint is advantageous, and should expand further down the road. From an operational standpoint, robust capital spending on infrastructure upgrades ought to boost efficiency, as much of these costs can eventually be passed along to the consumer.

Unranked SJW shares are a bit more appealing for patient accounts following their recent step back in price. At recent levels, capital appreciation potential out to mid-decade is slightly above average, thus presenting a decent entry point for interested subscribers to start building a position. What's more, the dividend yield is now comfortably above the *Value Line* median, and ranks among the top payers in the Water Utilities Industry.

Nicholas P. Patrikis April 9, 2021

(A) Diluted earnings. Excludes nonrecurring losses: '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early May. Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength B+
Stock's Price Stability 75
Price Growth Persistence 70
Earnings Predictability 95

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EXHIBIT 20

The Brokers & Exchanges Industry seems well positioned for the near term. The financial companies experienced a turbulent year in 2020. The global coronavirus pandemic and ensuing market pressures weighed heavily on these stocks last March, though most companies herein and their quotations came roaring back in the following months, ultimately closing the year on strong footing.

What's more, the brokers and securities exchanges have been focused on strengthening their businesses, and we are optimistic that these measures will support their top- and bottom-line growth over the long haul.

The Market Backdrop

The rapid global spread of COVID-19 caused markets to quake last March. The record number of patients and very high death toll (more than 550,000 American lives lost, and 2.5 million victims across the globe) has been tragic.

Although there has been much progress on the public health front, including the ongoing rollout of the Pfizer, Moderna, and Johnson & Johnson vaccinations and the lifting of shelter-in-place orders, the negative reverberations may continue to hinder the worldwide economy. The lockdowns aimed to curb the spread of the virus; however some businesses did not recover, causing higher unemployment rates, which may still be seen in economic figures in the months and years to come.

Too, inflationary pressures and the volatile commodities markets that have led to rising operating costs that have been a detrimental side effect.

The United States is rolling out a second stimulus package to counter the economic struggles that many of its citizens have been facing. What's more, there has been some optimism that other measures the new presidential administration is taking will bolster the domestic economy.

Meanwhile, the Federal Reserve cut the federal funds rate to zero last year. And Chairman Jerome Powell has reiterated that interest rates will remain at historic lows for the time being. However, there has been recent speculation about the bond market and Treasury yields, which has spurred some investment activity.

All told, the recent market volatility has not necessarily been all bad for the companies herein, as the market players can benefit from the increased trading volume associated with both bull and bear markets.

Profit Margins

In the meantime, many here have been shoring up their operations. Some have focused on cost-cutting measures, while others have turned to productivity enhancements. To this end, technological investments have made some of the trading platforms more efficient, which should benefit the companies in the near term. All told, these moves should widen operating margins moving forward.

Likewise, some may continue to streamline their portfolios, shedding underperforming holdings. And a few have relied on the integration of acquisitions to spur these measures.

INDUSTRY TIMELINESS: 26 (of 97)

Business Improvements

These companies operate in a fairly competitive environment. We imagine technological investments and product innovation will be integral to their long-term growth strategies. Likewise, some may pursue bolt-on acquisitions to shore up their asset rosters, as well as expand their market reach and geographic footprints.

Last year saw the tie-ups of several online brokers. The e-brokers struggled since late-2019, when in an industrywide move, they eliminated transaction fees on most trades. *Charles Schwab* acquired erstwhile industry member TD Ameritrade, and E*TRADE Financial was bought by Morgan Stanley.

Conclusion

The Brokers & Exchanges Industry, as a whole, has made tremendous progress over the past few months. Indeed, many stocks here are trading well above the levels they achieved prior to the pandemic, and are ranked to outperform the broader market averages in the coming year. The group, as a whole, is ranked in the upper third of the *Value Line* investment universe for year-ahead Timeliness.

On the other hand, these issues' long-term capital appreciation potential may not be as compelling. Much of the good news we anticipate over the 2024-2026 span is already factored into their recent quotations. Consequently, we advise patient investors stay on the sidelines for a better entry point.

As for the industry's conservative appeal, it all depends on how you look at it. From one side, investors may be pleased by the companies' long histories and solid finances, which earn several herein high marks for Financial Strength and Safety. However, from a different perspective, the financial firms tend to be more vulnerable to the market's upswings and downswings, as they have their finger on the pulse of the market, so to speak.

All told, we caution readers from painting with too broad a brush, and recommend evaluating each individual report before making any capital commitments.

Orly Seidman

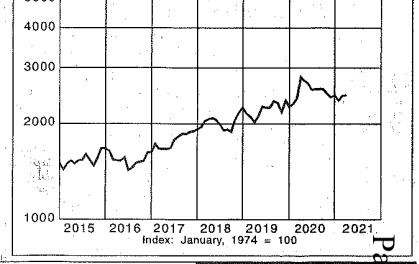

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EXHIBIT 20

YORK WATER NDQ-YORW

RECENT PRICE 48.74 | P/E RATIO 38.1 (Trailing: 38.4) (Median: 26.0) | RELATIVE P/E RATIO 1.74 | DIV'D YLD 1.5% | VALUE LINE 1796

TIMELINESS 3 Lowered 1/15/21
SAFETY 3 Lowered 7/17/15
TECHNICAL 3 Lowered 4/2/21
BETA .80 (1.00 = Market)

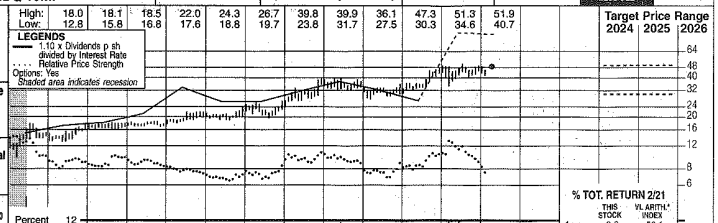
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$36-$76 $56 (15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	2%
Low	35	(-30%)	-6%

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	59	46	56
to Sell	48	53	46
Hld's(000)	5479	5302	5341



% TOT. RETURN 2/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	0.0	50.1
3 yr.	58.3	45.4
5 yr.	64.3	108.8

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2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	4.13	*4.20*	*4.35*	Revenues per sh	*5.10*
.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	1.88	*1.95*	*2.10*	"Cash Flow" per sh	*2.45*
.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	1.27	*1.35*	*1.40*	Earnings per sh A	*1.65*
.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	.73	*.78*	*.83*	Div'd Decl'd per sh B	*1.00*
1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	--	.16	*.85*	*1.35*	*1.45*	Cap'l Spending per sh	*1.85*
4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	10.97	*11.55*	*12.00*	Book Value per sh	*12.90*
10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	13.06	*13.00*	*12.90*	Common Shs Outst'g C	*12.80*
26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	35.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*25.0*
1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.80	1.85			Relative P/E Ratio	*1.40*
2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	1.6%			Avg Ann'l Div'd Yield	*2.4%*
40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	53.9	*54.5*	*56.0*	Revenues ($mill)	*65.0*
9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	16.8	*17.5*	*18.0*	Net Profit ($mill)	*21.0*
35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	*18.5%*	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	*1.5%*	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	46.3%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*37.5%*
52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	53.7%	*55.5%*	*57.5%*	Common Equity Ratio	*62.5%*
180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	266.9	*270*	*270*	Total Capital ($mill)	*265*
233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	343.6	*355*	*370*	Net Plant ($mill)	*405*
6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	7.1%	*7.5%*	*7.5%*	Return on Total Cap'l	*9.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.5%	*11.5%*	*11.5%*	Return on Shr. Equity	*13.0%*
9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.5%	*11.5%*	*11.5%*	Return on Com Equity	*13.0%*
2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	4.9%	*5.0%*	*4.5%*	Retained to Com Eq	*5.0%*
73%	74%	74%	64%	62%	67%	63%	64%	62%	58%	*58%*	*59%*	All Div'ds to Net Prof	*61%*

CAPITAL STRUCTURE as of 12/31/20
Total Debt $123.6 mill. Due in 5 Yrs $42.5 mill.
LT Debt $123.6 mill. LT Interest $5.5 mill.
(46% of Cap'l)
Pension Assets 12/20 $56.3 mill. Oblig. $54.1 mill.
Pfd Stock None
Common Stock 13,060,817 shs.
MARKET CAP: $625 million (Small Cap)

CURRENT POSITION ($MILL.)	2018	2019	12/31/20
Cash Assets	--	--	5.0
Accounts Receivable	4.8	4.4	5.2
Inventory (Avg. Cost)	.9	1.0	1.0
Other	3.3	4.0	5.1
Current Assets	9.0	9.4	16.3
Accts Payable	3.0	3.4	6.5
Debt Due	1.0	6.5	--
Other	6.8	5.3	5.5
Current Liab.	10.8	15.2	12.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '24-'26
Revenues	3.0%	2.5%	4.0%
"Cash Flow"	6.0%	5.5%	6.5%
Earnings	6.0%	6.0%	6.5%
Dividends	3.0%	4.0%	6.0%
Book Value	4.5%	4.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	13.4	53.9
2021	*13.0*	*13.5*	*14.5*	*13.5*	*54.5*
2022	*13.5*	*13.7*	*15.0*	*13.8*	*56.0*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	.28	1.27
2021	*.28*	*.35*	*.37*	*.35*	*1.35*
2022	*.30*	*.36*	*.38*	*.36*	*1.40*

Calendar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	.73
2021	.1874				

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2020, the company's average daily availability was 35.6 million gallons and its service territory had an estimated population of 202,000. Has more than 72,600 customers. Residential customers accounted for 66% of 2020 revenues; commercial and industrial (26%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 108 full-time employees at 12/31/20. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.3% of the common stock (3/21 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water delivered decent top- and bottom-line results to conclude 2020. In the December period, revenues of $13.4 million rose 2%, year over year, while earnings of $0.28 advanced 8%. For the full year, the regulated water utility benefited from rate increases, higher residential water consumption due to more people staying at home, and strong customer base expansion. Capital investment was robust in 2020, as the company spent more than $30 million on infrastructure upgrades such as standpipe replacements and raw water pumping station and wastewater treatment improvements.

Our preliminary 2022 financial projections suggest modest expansion is likely to persist. For the current year, we are maintaining our revenue call of $54.5 million, but are adding a nickel to our earnings forecast, to $1.35 per share. For next year, we anticipate low single-digit top- and bottom-line growth of 3% and 4%, respectively.

The long-term outlook is bright, as well. Water consumption ought to remain stable, and possibly trend higher, as York's customer base expands further. In addition, the company is likely to keep its foot on the gas in terms of capital investments, as its aging infrastructure demands increased attention. This ought to precipitate periodic rate hikes, which help to alleviate some of these expenses.

The stock is trading around recently minted all-time high territory. Underpinning the investment community's notable enthusiasm of late, in our view, is a combination of strong quarterly operating performances and a broad-based flight-to-safety approach amidst an uncertain, albeit improving economic backdrop. York Water is indeed a noncyclical, conservative security, as its water utility operations stand at the core of everyday life, and are largely immune to economic shocks.

We do not recommend starting a position at the recent quotation. On the contrary, committed investors may want to consider locking in some profits following the multiyear price ascent. Moreover, the equity is pegged as a year-ahead market performer, and offers limited price upside over the pull to 2024-2026. The dividend yield leaves much to be desired, too.

Nicholas P. Patrikis April 9, 2021

(A) Diluted earnings. Next earnings report due early May.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	65
Earnings Predictability	100

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Consensus Forecast of U.S. Interest Rates and Key Assumptions

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Qtr	2Q	3Q	4Q	1Q	2Q	3Q
	Apr 23	Apr 16	Apr 9	Apr 2	Mar	Feb	Jan	1Q 2021	2021	2021	2021	2022	2022	2022
Federal Funds Rate	0.07	0.07	0.07	0.07	0.07	0.08	0.09	0.08	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.18	0.19	0.19	0.20	0.19	0.19	0.22	0.20	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.04	0.05	0.05	0.06	0.07	0.06	0.08	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.03	0.02	0.02	0.02	0.03	0.04	0.08	0.05	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
Treasury bill, 6-mo.	0.04	0.04	0.04	0.04	0.05	0.06	0.09	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.07	0.06	0.06	0.06	0.08	0.07	0.10	0.08	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**
Treasury note, 2 yr.	0.16	0.16	0.16	0.16	0.15	0.12	0.13	0.13	**0.2**	**0.3**	**0.3**	**0.4**	**0.5**	**0.5**
Treasury note, 5 yr.	0.82	0.85	0.88	0.92	0.82	0.54	0.45	0.60	**0.9**	**1.0**	**1.1**	**1.2**	**1.2**	**1.3**
Treasury note, 10 yr.	1.58	1.62	1.68	1.72	1.61	1.26	1.08	1.32	**1.7**	**1.8**	**1.9**	**2.0**	**2.1**	**2.1**
Treasury bond, 30 yr.	2.26	2.29	2.34	2.38	2.34	2.04	1.82	2.07	**2.4**	**2.5**	**2.6**	**2.7**	**2.7**	**2.8**
Corporate Aaa bond	3.02	3.02	3.07	3.16	3.15	2.84	2.64	2.88	**3.0**	**3.2**	**3.3**	**3.3**	**3.4**	**3.4**
Corporate Baa bond	3.49	3.49	3.54	3.63	3.62	3.30	3.14	3.35	**3.9**	**4.0**	**4.2**	**4.2**	**4.3**	**4.3**
State & Local bonds	2.63	2.66	2.71	2.74	2.74	2.63	2.65	2.68	**2.7**	**2.8**	**2.9**	**3.0**	**2.9**	**3.0**
Home mortgage rate	2.97	3.04	3.13	3.18	3.08	2.81	2.74	2.88	**3.2**	**3.3**	**3.4**	**3.5**	**3.6**	**3.7**
	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022
Fed's AFE Index	110.4	110.6	110.5	111.4	112.4	107.3	105.2	103.4	**103.9**	**103.9**	**104.1**	**104.0**	**104.2**	**104.2**
Real GDP	1.5	2.6	2.4	-5.0	-31.4	33.4	4.3	6.4	**9.0**	**7.1**	**4.9**	**3.8**	**3.1**	**2.6**
GDP Price Index	2.5	1.5	1.4	1.4	-1.8	3.5	2.0	4.1	**2.4**	**2.2**	**2.1**	**2.2**	**2.2**	**2.2**
Consumer Price Index	3.5	1.3	2.6	1.0	-3.1	4.7	2.4	3.7	**2.8**	**2.4**	**2.2**	**2.2**	**2.2**	**2.2**
PCE Price Index	2.5	1.4	1.5	1.3	-1.6	3.7	1.5	3.5	**2.5**	**2.2**	**2.1**	**2.1**	**2.1**	**2.1**

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Company Name	AMERICAN STATES WATER COMPANY	AMERICAN WATER WORKS COMPANY, INC.	ARTESIAN RESOURCES CORPORATION	CALIFORNIA WATER SERVICE GROUP	ESSENTIAL UTILITIES, INC.	MIDDLESEX WATER COMPANY	SJW GROUP	THE YORK WATER COMPANY
2015 Sales-Net[y15]	458.641	3159	77.024	588.368	814.204	126.025	305.082	47.089
2016 Sales-Net[y16]	436.087	3302	79.089	609.37	819.875	132.906	339.706	47.584
2017 Sales-Net[y17]	440.603	3357	82.235	676.113	809.525	130.775	389.225	48.589
2018 Sales-Net[y18]	436.816	3440	80.411	698.196	838.091	138.077	397.699	48.437
2019 Sales-Net[y19]	473.869	3610	83.595	714.557	889.692	134.598	420.482	51.578
2020 Sales-Net[y20]	488.243	3777	88.141	794.307	1462.698	141.592	564.526	53.852
2015 Cash & Short Term Investment[y15]	4.364	45	0.209	8.837	3.229	3.469	5.239	2.879
2016 Cash & Short Term Investment[y16]	0.436	75	0.226	25.492	3.763	3.879	6.349	4.209
2017 Cash & Short Term Investment[y17]	0.214	55	0.952	94.776	4.204	4.937	7.799	0.002
2018 Cash & Short Term Investment[y18]	7.141	130	0.293	47.176	3.627	3.705	420.722	0.002
2019 Cash & Short Term Investment[y19]	1.334	60	0.596	42.653	1868.922	2.23	12.944	0.002
2020 Cash & Short Term Investment[y20]	36.737	547	0.028	44.555	4.827	4.491	5.269	0.002
2015 Current Assets-Total[y15]	132.697	657	14.444	127.578	128.37	24.41	73.376	11.577
2016 Current Assets-Total[y16]	166.875	784	14.635	142.069	128.65	26.716	99.611	12.62
2017 Current Assets-Total[y17]	155.463	720	18.985	227.873	131.246	29.247	66.858	8.611
2018 Current Assets-Total[y18]	131.468	781	16.118	188.702	147.172	30.815	502.722	9.011
2019 Current Assets-Total[y19]	122.456	1285	14.207	184.712	2015.127	29.133	122.046	9.384
2020 Current Assets-Total[y20]	157.115	1906	17.619	266.016	380.22	34.123	127.331	16.29
2015 Debt in Current Liabilities[y15]	28.312	682	12.322	39.658	52.314	8.739	38.091	0.044
2016 Debt in Current Liabilities[y16]	90.33	1423	8.478	123.308	169.822	18.159	14.325	0.044
2017 Debt in Current Liabilities[y17]	59.324	1230	11.258	291.02	139.048	34.865	25	1.044
2018 Debt in Current Liabilities[y18]	40.32	1049	17.784	170.011	228.723	55.843	100	1.03
2019 Debt in Current Liabilities[y19]	7.193	814	9.24	198.42	142.941	27.178	139.481	6.5
2020 Debt in Current Liabilities[y20]	2.371	1624	28.695	376.884	214.22	9.955	251.335	0
2015 Current Liabilities-Total[y15]	123.507	1533	22.403	147.898	193.199	28.319	79.623	6.197
2016 Current Liabilities-Total[y16]	177.944	2392	19.328	250.23	301.536	47.056	63.573	8.184
2017 Current Liabilities-Total[y17]	156.662	2325	28.461	490.959	284.488	64.537	85.052	9.145
2018 Current Liabilities-Total[y18]	146.585	2094	37.731	321.166	398.977	94.363	163.985	10.841
2019 Current Liabilities-Total[y19]	115.998	2045	25.599	358.721	323.461	64.981	234.567	15.156
2020 Current Liabilities-Total[y20]	118.572	2881	43.724	588.706	603.873	56.848	350.795	11.993
2015 noncash wkcap	33.138	-239	4.154	10.501	-15.744	1.361	26.605	2.545
2016 noncash wkcap	78.825	-260	3.559	-10.345	-6.827	-6.06	44.014	0.271
2017 noncash wkcap	57.911	-430	0.83	-66.842	-18.398	-25.877	74.914	9.653
2018 noncash wkcap	18.062	-394	-4.122	-9.629	-26.709	-11.41	18.015	-0.802
2019 noncash wkcap	12.317	-6	-2.748	-18.242	-34.315	-10.9	14.016	0.726
2020 noncash wkcap	4.177	102	2.562	9.639	-14.26	-17.261	22.602	4.295
2016 Change Non cashWrk Cap	45.687	-21	-0.595	-20.846	8.917	-7.421	17.409	-2.274
2017 Change Non cashWrk Cap	-20.914	-170	-2.729	-56.497	-11.571	-19.817	30.9	9.382
2018 Change Non cashWrk Cap	-39.849	36	-4.952	57.213	-8.311	14.467	-56.899	-10.455
2019 Change Non cashWrk Cap	-5.745	388	1.374	-8.613	-7.606	0.51	-3.999	1.528
2020 Change Non cashWrk Cap	-8.14	108	5.31	27.881	20.055	-6.361	8.586	3.569
2016	10.48%	-0.64%	-0.75%	-3.42%	1.09%	-5.58%	5.12%	-4.78%
2017 WK cap/sale	-4.75%	-5.06%	-3.32%	-8.36%	-1.43%	-15.15%	7.94%	19.31%
2018 WK cap/sale	-9.12%	1.05%	-6.16%	8.19%	-0.99%	10.48%	-14.31%	-21.58%
2019 WK cap/sale	-1.21%	10.75%	1.64%	-1.21%	-0.85%	0.38%	-0.95%	2.96%
2020 WK cap/sale	-1.67%	2.86%	6.02%	3.51%	1.37%	-4.49%	1.52%	6.63%
Average	-1.25%	1.79%	-0.51%	-0.26%	-0.16%	-2.87%	-0.13%	0.51%
						Median		-0.21%

EXHIBIT R

FAIR MARKET VALUE APPRAISAL
AUS CONSULTANTS

Jerome C. Weinert
Principal & Director

AUS Consultants
Depreciation and Valuation
8555 West Forest Home Avenue
Suite 201
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Telephone 414-529-5755
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E-Mail weinertj@auswest.net

June 20, 2021

Mr. John Nagel
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: UVE Market Value Appraisal of East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity

Enclosed is AUS Consultants' fair market value appraisal report for East Whiteland Township's wastewater collection system and purchased treatment capacity (System) as of January 8, 2021, prepared for East Whiteland Township, Pennsylvania. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) Paragraph 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

Based on our appraisal the Fair Market Value of East Whiteland Township's wastewater System's property, plant, and equipment operating as a Pennsylvania rate regulated wastewater utility is $58,100,696 determined based on the cost, income, and market approaches to value, as detailed in the following table:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value Appraisal

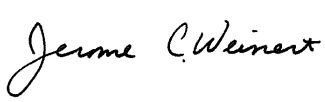
Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Inventory of Assets				
Original Cost ($OC)		43,447,309		
Depreciated Original Cost ($OCLD)		33,403,972		
Intangible Assets (Treatement contracts)		1,768,832		
Cost Approach of all assets Conclusion		35,172,804		
Replacement Cost				
Replacement Cost New (COR)		85,964,664		
Depreciated Replacement Cost New (CORLD)	$	**58,078,339**		
External or Economic Obsolescence	$	-	AUS Input	
Market Value of Tangible Assets	$	**58,078,339**		
Intangible Assets (Treatement contracts)	$	1,768,832		
Cost Approach of all assets Conclusion		**59,847,171**		
Cost Approach Conclusion		**59,847,171**	**50%**	**29,923,586**
Income Approach				
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)		55,600,045		
Income Approach Conclusion		**55,600,045**	**40%**	**22,240,018**
Market Approach				
Market Comparables (to)				
OCLD		65,048,584		
CORLD		56,178,539		
Customers		34,298,172		
Cash Flows (EBITDA)		43,140,348		
Market Financials (to)				
OCLD		70,482,381		
Market Approach Conclusion		**56,178,539**	**10%**	**5,617,854**
Appraisal Conclusion	$	**57,781,458**	**100%**	**57,781,458**
Conclusion (cost approach)	$	**59,847,171**		

As the purpose of this appraisal was to fulfill the requirements of Act 12 in the establishment of value for rate making of the East Whiteland Township's wastewater collection system's

property, plant and equipment the appraisal's conclusion of $58,100,696 is consistent with the purpose of this appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Respectfully Submitted,
AUS Consultants, Depreciation & Valuation
June 20, 2021

By: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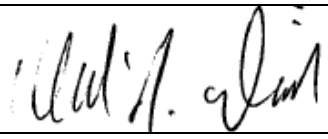	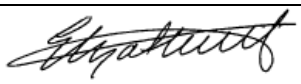
Michael J. Diedrich, ASA, P.E., CDP Certified General Appraiser Principal	Elizabeth A. Weinert Associate

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P.E.: Registered Professional Engineer State of Wisconsin
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East Whiteland Township's
Wastewater Collection System
And
Purchased Treatment Capacity

Fair Market Value Appraisal Report
As of January 8, 2021
for
East Whiteland Township, Pennsylvania

AUS Consultants
Depreciation and Depreciation
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AUS CONSULTANTS

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EASMENT CURRENT COST

June 17, 2021

East Whiteland Township
Mechanicsburg, Pennsylvania

AUS Consultants
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RE: UVE Market Value Appraisal of East Whiteland Township's Wastewater Collection System and Purchased Treatment

Enclosed is AUS Consultants' fair market value appraisal report of the East Whiteland Township's (Pennsylvania) wastewater collection system and purchased treatment capacity (System) as of January 8, 2021, prepared for our client East Whiteland Township. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated (PA CS) Statues Section 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are East Whiteland Township and the Pennsylvania Public Utility Commission.

Based on our appraisal, the Fair Market Value of the East Whiteland Township's (Pennsylvania) wastewater collection system's property, plant, and equipment operating as Pennsylvania rate regulated wastewater utility is $58,100,696 determined based on the cost, income, and market approaches to value, as detailed in the following table:

AUS CONSULTANTS

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
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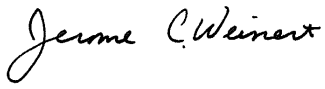
OCLD		70,482,381		
Market Approach Conclusion		**56,178,539**	**10%**	**5,617,854**
Appraisal Conclusion	**$**	**57,781,458**	**100%**	**57,781,458**
Conclusion (cost approach)	**$**	**59,847,171**		

AUS CONSULTANTS

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the East Whiteland Township's wastewater system's property, plant and equipment this appraisal's conclusion of $58,100,696 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property, this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Respectfully Submitted,
AUS Consultants, Depreciation & Valuation
June 20, 2021

By: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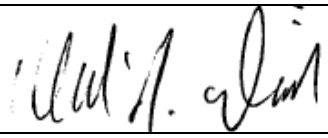	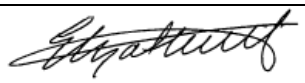
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AUS CONSULTANTS

APPRAISAL CERTIFICATION
for the Fair Market Appraisal of
East Whiteland Township Sewer Authority, Pennsylvania's
Wastewater Collection System and Purchased Treatment Capacity
As of January 8, 2021
Prepared for
East Whiteland Township, Pennsylvania

AUS Consultants, Depreciation & Valuation, certifies that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- Prior to this appraisal during the last three-year period, AUS Consultants has not previously appraised these properties.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- Neither AUS Consultants, Depreciation & Valuation, nor its professional staff has no present or prospective interest in the property that is the subject of this report and has no personal interest with respect to the parties involved.

- Neither AUS Consultants, Depreciation & Valuation, nor its professional staff has any bias with respect to the property that is the subject of this report or to the parties involved.

- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2020-2021 Edition.

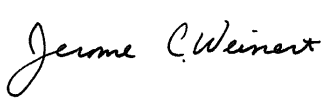
- The signers of this report have not made personal inspections of the property that is the subject of this report.

AUS CONSULTANTS

- No individuals provided significant professional assistance to the persons signing this report. However, Scott Shearer Managing Director and Garrett Moore – Senior Analyst of PFM Financial Advisors, LLC provided assistance in obtaining information and data from East Whiteland Township, Pennsylvania and the Engineer's Assessment report prepared by Pennoni Associates, Inc. which was the inventory starting point of the Cost Approach.

AUS Consultants, Depreciation & Valuation
June 20, 2021

By: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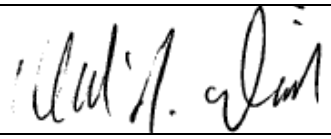	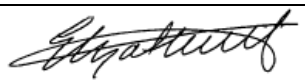
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AUS CONSULTANTS

NARRATIVE REPORT

EXECUTIVE SUMMARY

The purpose of this value appraisal is the determination of the fair market value of the property plant and equipment of the East Whiteland Township's wastewater collection system and purchased treatment capacity (System) for our client East Whiteland Township, Pennsylvania. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues Paragraph 1329: "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12) and the Pennsylvania Public Utility Commission's Final Implementation Order M-2016-2543193 adopted October 27, 2016. The intended users of this appraisal are East Whiteland Township, Pennsylvania and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."* *The Appraisal of Real Estate, 14th Edition, page 58.*

In arriving at our opinion of value of the System's property, plant, and equipment as it is operated as an investor-owned Pennsylvania PUC rate regulated wastewater utility the cost, income, and market approaches to value were considered. Detailed explanations of each approach to value are included below in the section "Appraisal Procedures and Results". The following summarizes the data, analysis and conclusions of each of those valuation approaches.

Cost Approach - The philosophy in the cost approach to value is that the maximum value of a property's tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

Reproduction cost and replacement cost are defined as:

> Reproduction cost – "Reproduction cost is the estimated cost to construct, as of the effective appraisal date, an exact duplicate or replica of the building [property] being appraised, insofar as possible, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject improvements [property]."[1]
>
> Replacement cost – "Replacement cost is the estimated cost to construct, as of the effective appraisal date, a substitute for the building [property] being appraised using contemporary materials, standards, design and layout. When this cost basis is used, some existing obsolescence in the property may be cured. Replacement cost may be the only alternative if reproduction cost cannot be estimated"[2]
>
> In the wastewater industry the property's reproduction costs and replacement costs are quite similar; therefore, the most of the property's cost new was determined based on its reproduction/replacement cost new. However, for the easements the replacement cost were developed based on current costs.

The trended original cost method was utilized in preparing the replacement cost new. "Trending is a method of estimating a property's replacement cost new in which an *index* or *trend factor* is applied to the property's *historical costs* to convert the known historical costs into an indication of current (appraisal date) costs. Simply put, trending reflects the movement of price over time."[3] In the trended original cost method, East Whiteland Township's investment in wastewater collection plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property's original investment. AUS Consultants utilized the Engineer's Assessment performed by Pennoni Associates, Inc. (Engineer's Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer's Assessment AUS Consultants developed the System's original cost less depreciation (OCLD) and replacement cost new less depreciation (CORLD) in property, plant and equipment on January 8, 2021 (Cost Approach tab).

The cost trends were applied to each of the System's various investment categories (NARUC plant accounts) by original year of placement for that investment. The cost

[1] The Appraisal of Real Estate, 14th Edition. pages 569-570
[2] Ibid, page 570
[3] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Third Edition. Page 50

indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry in the northeastern region of the United States which includes the Commonwealth of Pennsylvania, the AUS General Plant Indexes, and various United States Bureau of Labor Statistics (US BLS) indexes as detailed in the following table:

1 2 3 4 5 6 7

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

Using the trended original cost method, the System's investment in plant, property and equipment of $43,447,309.24 was determined to have a reproduction cost new of $85,233,123 and a replacement cost new of $85,964,664 as summarized in the following table:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	AUS Input NARUC Code	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc. Asset Description	Eng Assmnt Original Cost	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.20	353.20	Land & Land Rights - Original Basin	668.00	USBLS1	2.87	1,920	375.01	720,020
353.30	353.30	Land & Land Rights - Pumping	13.00	USBLS1	2.08	27	498.82	13,468
354.30	354.30	Stuctures & Improvements - Pumping	8,005,275.38	HWW-18	1.52	12,142,235	1.00	12,142,235
360.21	360.21	Collection Sewers - Force - Mains	2,304,354.55	HWW-144	2.59	5,971,267	1.00	5,971,267
361.21	361.21	Collection Sewers - Gravity - Mains	10,767,737.96	HWW-144	2.84	30,582,161	1.00	30,582,161
361.23	361.23	Collection Sewers - Gravity - Manholes	4,350,867.01	HWW-145	2.32	10,108,723	1.00	10,108,723
363.20	363.20	Service Laterals	6,619,976.03	HWW-139	1.85	12,259,833	1.00	12,259,833
365.20	365.20	Flow Measuring Installations Meter Pits	78,670.00	HWW-140	4.95	389,338	1.00	389,338
354.20	354.20	Stuctures & Improvements - Treatment	11,085,241.50	HWW-115	1.22	13,511,701	1.00	13,511,701
390.70	390.70	Office Furniture and Equipment	21,550.00	AUST-115	1.16	25,084	1.00	25,084
391.70	391.70	Transportation Equipment	212,955.81	AUST-14	1.13	240,834	1.00	240,834
		Grand Total	43,447,309.24		1.96	85,233,123	1.01	85,964,664

Easement - For easement, the appraisal date cost to obtain and register an easement was developed as follows:

Current cost of Easements

Activity	Engineer	Legal	Fees	Total
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	54	100		
Total Cost	486	300	250	1,036

Replacement Cost New Less Depreciation - The replacement cost described above reflects the cost of new property; however, East Whiteland Township's wastewater collection system property is not new and has experienced normal depreciation and potentially functional and/or economic obsolescence. These various forms of depreciation are defined as follows:

> Normal depreciation/deterioration, akin to physical deterioration, is "loss in value caused by wear, tear, age and use."[4]
>
> Functional obsolescence is "the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient of less costly replacement property that new technology has developed."[5]
>
> Economic, or external, obsolescence is defined as "a loss in value caused by factors outside a property"[6] and is most often indicated by insufficient earning.

Based on our experience in regard to water and wastewater depreciation studies and our analysis of East Whiteland Township's wastewater collection system operating performance; we found that the Borough of Brentwood's wastewater utility's property experiences normal depreciation but not any significant functional obsolescence; economic obsolescence is best evaluated after the results of the income and market approaches to values are determined (see Cost Approach Revisited).

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, AUS Consultants' experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with PAWC and Aqua America rate cases. With each of their

[4] The Dictionary of Real Estate Appraisal, 4th Edition
[5] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.
[6] The Appraisal of Real Estate, 13th Edition, page 442.

recent rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. AUS Consultants has reviewed the PAWC studies which are summarized in the following table:

9 10 11 12 13

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(4a)	(4b)	(5)	(6)	(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve		Normal Service Life	Economic Obsolescence	Tax Depreciation		
				years	% of CORLD	Table		Life
353.20	Land & Land Rights - Original Basin	ZNonDep		0.00	0.00%	Non-Depr		0.00
353.30	Land & Land Rights - Pumping	ZNonDep		0.00	0.00%	Non-Depr		0.00
354.20	Stuctures & Improvements - Treatment	R4.0		55.00	0.00%	MACRS		25.00
354.30	Stuctures & Improvements - Pumping	R4.0		45.00	0.00%	MACRS		25.00
360.21	Collection Sewers - Force - Mains	R3.0		75.00	0.00%	MACRS		25.00
361.21	Collection Sewers - Gravity - Mains	R2.5		80.00	0.00%	MACRS		25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5		80.00	0.00%	MACRS		25.00
363.20	Service Laterals	R3.0		70.00	0.00%	MACRS		25.00
365.20	Flow Measuring Installations Meter Pits	S2.0		30.00	0.00%	MACRS		25.00
390.70	Office Furniture and Equipment	R3.0		12.00	0.00%	MACRS		12.00
391.70	Transportation Equipment	R3.0		10.00	0.00%	MACRS		10.00

Normal Depreciation – The extent of the normal depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property's depreciation or condition is estimated using the following formulas:

$$\text{Depreciation (\%)} = \frac{\text{Age (years)} \times 100\%}{\text{Service Life (years)}}$$

$$\text{Condition (\%)} = \frac{\text{Remaining Life (years)} \times (100\%)}{\text{Service Life (years)}}$$

where: the property's Service Life = Age + Remaining Life and
Remaining Life = *f*(Survival Characteristic, Service Life, and Age)

However, due to the age of some of the assets the extent of the depreciation was limited to 85% of the asset's original cost and its replacement cost new.

When the above depreciation lives are used to quantify the property's depreciation is applied to the replacement cost new (COR) of $85,964,664 the resultant COR less normal depreciation (CORLD) was found to be $58,078,339 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR $s		years	years	years	% of COR	CORLD $s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.20	Land & Land Rights - Original Basin	31.62	720,020	ZNonDep	-	-	-	-	720,020
353.30	Land & Land Rights - Pumping	20.27	13,468	ZNonDep	-	-	-	-	13,468
354.30	Stuctures & Improvements - Pumping	14.58	12,142,235	R4.0	45.00	31.23	45.82	45.00	8,379,553
360.21	Collection Sewers - Force - Mains	29.95	5,971,267	R3.0	75.00	47.21	77.16	75.00	3,669,861
361.21	Collection Sewers - Gravity - Mains	33.23	30,582,161	R2.5	80.00	50.80	84.03	80.00	18,623,208
361.23	Collection Sewers - Gravity - Manholes	32.21	10,108,723	R2.5	80.00	51.66	83.87	80.00	6,272,518
363.20	Service Laterals	22.75	12,259,833	R3.0	70.00	48.95	71.70	70.00	8,428,787
365.20	Flow Measuring Installations Meter Pits	44.50	389,338	S2.0	30.00	4.50	49.00	30.00	58,401
354.20	Stuctures & Improvements - Treatment	6.78	13,511,701	R4.0	55.00	48.11	54.89	55.00	11,842,733
390.70	Office Furniture and Equipment	12.50	25,084	R3.0	12.00	2.20	14.70	12.00	3,763
391.70	Transportation Equipment	11.45	240,834	R3.0	10.00	2.91	14.35	10.00	66,027
Grand Total		24.57	85,964,664		68.23	46.41	70.71	0.68	58,078,339

The preliminary cost approach to value of East Whiteland Township's tangible wastewater system property was found to be $58,078,339.

Intangible Assets

In addition to the above-described tangible assets are the intangible assets, in East Whiteland Township's case which consist of the contract associated with its wastewater treatment contracts with the following communities:

Municipality	2020 YTD Projected
Charlestown Township	
Treatment Charge	80,068
Subtotal Charlestown Twp	80,068
Malvern Borough	
Treatment Charge	150,300
Subtotal Malvern Borough	150,300
East Whiteland Service Revenues	
Total Revenues	3,761,787

These contract represent value assets which are included in the overall income and market approaches which are not specifically address in the cost approach of the tangible assets; therefore, in order to make the cost approach comparable to the income and market these intangible assets were separately appraised and included in the cost approach totals. AUS Consultants developed using an income approach estimate to the value of the above contracts.

Income Approach to Treatment Contracts – AUS Consultants also developed a income approach analysis of the treatment contracts. Using the 2020 budget estimate the revenues and expenses of the treatment contracts in order to develop the estimated operating income as a surrogate for the cash flows associated the treatment contracts. The estimated cash flows were next discounted to appraisal date values using the cost of capital of 5.65% i.e., the cost of capital of 7.57% with the embedded growth rate of 1.82% removed; the development which is described in the Cost of Capital section of the workpapers. The income approach to the treatment contract was developed as follows:

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Income Approach to Trearment Agreements Valuation

Municipality	2020 YTD Actual	2021 Projected		Expenses	Operating Income	Value Capitalized @ 5.65%
						5.65%
Charlestown Township						
Treatment Charge	80,068					
Subtotal Charlestown Twp	80,068	80,068	1.39%	45,324	34,744	614,938
Malvern Borough						
Treatment Charge	150,300					
Subtotal Malvern Borough	150,300	150,300	2.61%	85,105	65,195	1,153,894
Total East Whiteland Revenues						
Total Revenues	5,428,667	5,759,816		3,260,709		1,768,832

Based on the income analysis of the treatment contracts value were determined to be $1,768,832 which was included in the final cost approach to value.

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
Original Cost (OC)	(9)	43,447,309
Replacement Cost New (RCN)	(16)	85,964,664
Replacement Cost New less Depreciation (RCNLD)	(31)	58,078,339
Intangible Assets - Treatment Contracts		1,768,832
Fair Market Vaue (FMV)	(41)	59,847,171
Depreciated Original Cost (OCLD)		
Original Cost (OC)	(46)	43,447,309
Original Cost less Depreciation (OCLD)	(57)	33,403,972
Intangible Assets - Treatment Contracts		1,768,832
Depreciated Original Cost (OCLD)		35,172,804
Cost Approach Conclusion		59,847,171

Income Approach

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The East Whiteland Township's wastewater system's operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state, and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis (Income Approach tab), first the results from the East Whiteland Township's wastewater system's operations were evaluated based on an analysis of historical operating performances over the period 2016 through budgetary 2019 (Financials tab) resulting in operating statistics such as revenues and their growth, various operating expenses stated as function of their typical drivers (revenues, plant investment, income from operations, etc.). Next, the results of future periods operations were forecast for a period of 20 years based on the migration of the East Whiteland Township's historical operations over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utility. Finally, the resultant cash flows from future period operations on the System were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility. The following table details the market discount rate developed using the weighted average cost of capital (WACC) of the market debt and equity:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	**100.0%**						**7.57%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.65%**

The following table presents the results of the discounted cash flow analysis:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	5,759,816	3,305,486	2,193,634	2,454,330	260,696	75,315	806,090	(78,093)	1,651,018	0.964	1,591,581	1,591,581
2	1.5	5,759,816	3,371,594	2,218,239	2,388,222	169,983	49,108	812,135	-	1,526,979	0.896	1,368,173	2,959,754
3	2.5	5,759,816	3,439,026	2,243,274	2,320,790	77,516	22,394	818,227	-	1,480,169	0.833	1,232,981	4,192,735
4	3.5	7,775,752	3,507,806	2,268,741	4,267,946	1,999,205	577,570	824,363	(27,334)	2,893,347	0.775	2,242,344	6,435,079
5	4.5	7,775,752	3,577,962	2,294,647	4,197,790	1,903,143	549,818	830,547	-	2,817,425	0.720	2,028,546	8,463,625
6	5.5	9,719,690	3,649,522	2,320,996	6,070,168	3,749,172	1,083,136	836,776	(26,356)	4,176,612	0.669	2,794,153	11,257,778
7	6.5	9,719,690	3,722,512	2,315,050	5,997,178	3,682,128	1,063,767	721,779	-	4,211,632	0.622	2,619,635	13,877,413
8	7.5	9,719,690	3,796,962	2,338,381	5,922,728	3,584,347	1,035,518	727,193	-	4,160,017	0.579	2,408,650	16,286,063
9	8.5	10,691,659	3,872,902	2,362,106	6,818,757	4,456,651	1,287,526	732,647	(13,178)	4,811,762	0.538	2,588,728	18,874,791
10	9.5	10,691,659	3,950,359	2,386,228	6,741,300	4,355,072	1,258,180	738,141	-	4,744,979	0.500	2,372,490	21,247,281
11	10.5	10,691,659	4,029,366	2,410,754	6,662,293	4,251,539	1,228,270	743,679	-	4,690,344	0.465	2,181,010	23,428,291
12	11.5	11,333,159	4,109,952	2,435,686	7,223,207	4,787,521	1,383,115	749,257	(8,698)	5,099,533	0.432	2,202,998	25,631,289
13	12.5	11,333,159	4,192,151	2,461,029	7,141,008	4,679,979	1,352,046	754,875	-	5,034,087	0.402	2,023,703	27,654,992
14	13.5	11,333,159	4,275,994	2,486,788	7,057,165	4,570,377	1,320,382	760,535	-	4,976,248	0.373	1,856,141	29,511,133
15	14.5	12,013,149	4,361,513	2,512,970	7,651,636	5,138,666	1,484,561	766,240	(9,219)	5,410,054	0.347	1,877,289	31,388,422
16	15.5	12,013,149	4,448,744	2,539,579	7,564,405	5,024,826	1,451,672	771,988	-	5,340,745	0.323	1,725,061	33,113,483
17	16.5	12,013,149	4,537,720	2,566,617	7,475,429	4,908,812	1,418,156	777,777	-	5,279,496	0.300	1,583,849	34,697,332
18	17.5	12,733,938	4,628,474	2,594,092	8,105,464	5,511,372	1,592,235	783,611	(9,773)	5,739,391	0.279	1,601,290	36,298,622
19	18.5	12,733,938	4,721,044	2,622,008	8,012,894	5,390,886	1,557,427	789,487	-	5,665,980	0.259	1,467,489	37,766,111
20 and beyond	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	3.184	17,833,934	55,600,045
								15,540,755					
Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.241				Net Plant		44,551,804			
PW to Perpetuity = 1/Capitalization Rate				13.210				ADIT		(6,443,119)			
$PW_{(20and Beyond)}$ = PW to Perpetuity * PW $Factor_{(19.5)}$				3.184				Rate Base		38,108,685	0.241	9,184,193	46,950,304
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		87,105,453	0.241	20,992,414	58,758,525
								PP	54,930,000				
								OCLD	33,403,972				
								PP/OCLD	1.644				
								RCNLD	58,078,339				
								RCNLD/PP		1.057315474			
										40,292,902.78	0.241	9,710,590	47,476,701
								Average					52,196,394

Based on the above-described discounted cash flow analysis, the Income Approach to value of the System's property operating as a rate regulated wastewater utility under the regulation of the Pennsylvania Public Utility Commission (PA PUC) was determined to be $56,398,141. To ensure that the above-described forecast captured the entire economic returns of the property an additional 40-year period beyond the original 20-year forecast was made. This additional forecast indicated the reasonableness of the initial forecast results.

Market Approach

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach of Pennsylvania water and wastewater systems and market value to book value ratios based on investor-owned water utilities' financial performance as reported in Value Line Investment Survey (January 8, 2021).

Market Sales – In the comparable sale market approach, the sales of Pennsylvania municipal water and wastewater systems to investor-owned water/wastewater utilities were used to insure comparability. As the purpose of this appraisal is to define the value of East Whiteland Township's wastewater system under Section 1329 of the PA CS the market comparable sales were limited to sales subsequent to the passage of Section 1329 in 2016. The following sales were considered:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment Capacity	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional Wa	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD),

depreciated replacement cost (CORLD), customers, and cashflow (EBITDA) for an average 5-year and 13-year periods (Market Approach tab).

Financial Market Ratios – In the market approach based on market financial ratios the market data of companies (nine) in the water/wastewater industry as reported in Value Line Investment Surveys (January 2021) were analyzed. In the analysis the companies' stock (market) and debt (book value) per share are compared as a ratio to the book investment value per share.

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

Central Tendancy and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted	
Mean	1.7594	1.8494	
Standard Deviation	0.5882	0.4204	
Median	1.49	1.4355	
Mode	1.4418	1.4418	
Conclusion		1.8494	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD		35,172,804	Cost Approach - OCLD
Market Value Indication		**65,048,584**	

Market Sales Analysis - PP/CORLD

	Simple	Weighted	
Mean	0.8087	0.9337	
Standard Deviation	0.1746	0.1695	
Median	0.8229	0.7558	
Mode	0.6918	0.6918	
Conclusion		0.9387	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity CORLD		59,847,171	Cost Approach - CORLD
Market Value Indication		**56,178,539**	

Market Sales Analysis - PP/Customer

	Simple	Weighted	
Water Tretment & Distribution			
Mean	6,123	10,962	
Standard Deviation		4,613	
Median	5,021	4,963	
Wastewater Collection & Treatment		16,785	
Mean	9,579		
Standard Deviation		-	AUS Input
Median	8,754		
Wastewater Collection			
Mean	6,507		
Standard Deviation			
Median	6,636		
Watewater Treatment Only			
Mean	3,072		
Standard Deviation			
Median	2,118		
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Customers		3,918	AUS Input
Wastewater Collection & Treatment PP/Customer		8,754	AUS Input
Collection and Treatement Customers Market Value Indica		**34,298,172**	
Treatement Only Market Value Indication			
Treatment Only PP/customer		2,118	AUS Input
Treatment Only Customers		-	AUS Input
Market Value Indication Treatment Only		-	
Total Market Value Indication		**34,298,172**	

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.40	
Market to Book (equity and debt)	2.11	
Use (equity and debt)	2.11	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD	33,403,972	Cost Approach - OCLD
Market Value Indication	**70,482,381**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted	
Mean	17.48	15.32	
Standard Deviation	5.71	5.10	
Median	17.41	18.13	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		18.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash Flows		2,396,686	Income Approach
Market Value Indication		**43,140,348**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted	
Mean	11.62	11.45	
Standard Deviation	2.67	2.14	
Median	11.65	12.07	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		12.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash		3,264,195	Income Approach
Market Value Indication		**39,170,336**	

Summary of Market Analyses

Indicators	
OCLD	65,048,584
CORLD	56,178,539
Customers	34,298,172
Cash Flows	
EBITDA Periods 1-5	43,140,348
EBITDA Periods 1-13	39,170,336
Value Line	70,482,381
Mean	51,386,393
Median	49,659,444
Conclusion	**56,178,539**

The market approach conclusion of this appraisal was determined to be $56,178,539.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of $59,847,171, including intangibles, needs to be reviewed in light of the above-described income and market analyses in order to evaluate if external obsolescence exists in the preliminary replacement cost new less depreciation conclusion. The appraisal literature in regard to developing a cost approach states:

> "The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called "external obsolescence") has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.
>
> The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence."[7]

The above-described income approach value conclusion of $56,398,141 and the market approach conclusion of $56,178,539 for the East Whiteland Township's future wastewater system compared to the preliminary cost approach conclusion of $59,847,171 indicates no significant external obsolescence exists in the cost approach conclusion of $59,847,171 detailed as follows:

[7] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
		CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.20	Land & Land Rights - Original Basin	720,020	0.00%	720,020
353.30	Land & Land Rights - Pumping	13,468	0.00%	13,468
354.30	Stuctures & Improvements - Pumping	8,379,553	0.00%	8,379,553
360.21	Collection Sewers - Force - Mains	3,669,861	0.00%	3,669,861
361.21	Collection Sewers - Gravity - Mains	18,623,208	0.00%	18,623,208
361.23	Collection Sewers - Gravity - Manholes	6,272,518	0.00%	6,272,518
363.20	Service Laterals	8,428,787	0.00%	8,428,787
365.20	Flow Measuring Installations Meter Pits	58,401	0.00%	58,401
354.20	Stuctures & Improvements - Treatment	11,842,733	0.00%	11,842,733
390.70	Office Furniture and Equipment	3,763	0.00%	3,763
391.70	Transportation Equipment	66,027	0.00%	66,027
	Grand Total	58,078,339	0.00%	58,078,339

Value Conclusion

The Fair Market Value of the East Whiteland Township's wastewater collection system's property, plant and equipment and its operation was determined to be $58,100,696 as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Inventory of Assets				
Original Cost ($OC)		43,447,309		
Depreciated Original Cost ($OCLD)		33,403,972		
Intangible Assets (Treatement contracts)		1,768,832		
Cost Approach of all assets Conclusion		35,172,804		
Replacement Cost				
Replacement Cost New (COR)		85,964,664		
Depreciated Replacement Cost New (CORLD)	**$**	**58,078,339**		
External or Economic Obsolescence	**$**	-	AUS Input	
Market Value of Tangible Assets	**$**	**58,078,339**		
Intangible Assets (Treatement contracts)	$	1,768,832		
Cost Approach of all assets Conclusion		**59,847,171**		
Cost Approach Conclusion		**59,847,171**	**50%**	**29,923,586**
Income Approach				
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)		55,600,045		
Income Approach Conclusion		**55,600,045**	**40%**	**22,240,018**
Market Approach				
Market Comparables (to)				
OCLD		65,048,584		
CORLD		56,178,539		
Customers		34,298,172		
Cash Flows (EBITDA)		43,140,348		
Market Financials (to)				
OCLD		70,482,381		
Market Approach Conclusion		**56,178,539**	**10%**	**5,617,854**
Appraisal Conclusion	**$**	**57,781,458**	**100%**	**57,781,458**
Conclusion (cost approach)	**$**	**59,847,171**		

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the East Whiteland Township's property, plant and equipment this appraisal's conclusion of $58,100,696 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

PURPOSE AND SCOPE OF WORK

The purpose of this appraisal of the East Whiteland Township's wastewater collection system and purchased treatment capacity is the determination of the fair market value of the property plant and equipment of wastewater utility. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) Paragraph 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are our client East Whiteland Township, Pennsylvania and the Pennsylvania Public Utility Commission.

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."* *The Appraisal of Real Estate, 14th Edition, page 58.*

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending December 31) East Whiteland Township (Pennsylvania) wastewater collection and treatment operational financial statements cover the period 2016 through 2019 and budgets for 2019 and 2021.

- The Pennoni Associates, Inc.'s Engineer's Assessment and inventory of the Borough of Brentwood's wastewater system's property dated June 17, 2021.

- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for the period 1912 through January 1, 2021, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the System's property, plant and equipment, and its operations: the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system's operation. A detailed explanation of each approach to value is included below in the section "Appraisal Procedures and Results".

WATER/WASTEWATER INDUSTRY NATIONALLY AND IN PENNSYLVANIA AND EAST WHITELAND TOWNSHIP, PENNSYLVANIA WASTEWATER COLLECTION SYSTEM AND PURCHASED TREATMENT CAPACITY

Water/wastewater Industry

The water and wastewater industry in the United States consist of both municipal authorities (literally thousands) and private investor-owned companies. Of the investor owned there are nine which are large enough to be tracked by Value Line Investment Surveys, of which, two are major players in the northeast portion of the United States, American Water Works Company, Inc. and Aqua America, Inc. (on February 3, 2020, Aqua's name changed to Essential Utilities, Inc.) American and Aqua have been particularly active in the acquisition of municipal water and wastewater systems.

Pennsylvania Water / Wastewater Industry

The water and wastewater industry in Pennsylvania also consist of both municipal and investor-owned systems. Over last several years the need for infrastructure improvements has led the Pennsylvania legislature to pass legislation facilitating the acquisition of municipal water and/or wastewater systems to a private investor-owned rate regulated companies such as American Water and Aqua America. This legislation was Act 12 of the Pennsylvania legislator's 2016 legislative session (Act 12). The Act 12 legislation added a section (1329) modifying Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PA CS) adding Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12. This appraisal was developed to meet the valuation criteria established by Section 1329 and the PA PUC's subsequent Implementation Orders in the valuation of acquired water and wastewater systems.

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity[8]

East Whiteland Township is responsible for the safe collection and transmission of an average over 1.062 million gallons per day (MGD) of wastewater generated in southeastern Pennsylvania. East Whiteland Township's facilities serve residential, commercial, institutional, and industrial customers all within Chester County. The Township owns and operates a system consisting of 12 pump stations and associated force mains, and approximately 60 miles of gravity collection system mains and interceptor sewers for the conveyance of wastewater to the Valley Forge Sewer Authority Wastewater Treatment Plant via the Valley Creek Trunk Sewer. The Township does not have any property held for future use.

In addition to customers within the Township, East Whiteland Township also collects/conveys sewage to/from municipalities that border the Township including Malvern Borough, Tredyffrin Township Charlestown Township and Willistown Township. Agreements with these municipalities, (or entities operating their respective system) outline the responsibilities regarding this relationship.

[8] Extracted from East Whiteland Township's Engineers Assessment

APPRAISAL PROCEDURES AND RESULTS

The purpose of this appraisal of the East Whiteland Township's wastewater collection system and purchased treatment capacity is the determination of the fair market value of the wastewater's property plant and equipment as of January 8, 2021. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (PS CS) Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the Pennsylvania legislator's 2016 legislative session (Act 12). The intended users of this appraisal are East Whiteland Township, Pennsylvania and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

> *"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress."* *The Appraisal of Real Estate, 14th Edition, page 58.*

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending December 31) East Whiteland Township's wastewater system's operational financial statements cover the period 2016 through budgetary 2021.

- The Pennoni Associates, Inc.' Engineer's Assessment and inventory of the East Whiteland Township's wastewater system's property date June 17, 2021.

- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for the period 1912 through January 1, 2021, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the System's wastewater system's property, plant and equipment, and its operations; the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system's operation. Detailed explanation of each approach to value is included below.

Cost Approach (Cost Approach tab) - The philosophy in the cost approach to value is that the maximum value of a property's tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

Reproduction cost and replacement cost are defined as:

> Reproduction cost – "The estimated cost to construct, at current prices as of the effective date of the appraisal, an exact duplicate or replica of the [property] being appraised, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject [property]."[9]
>
> Replacement cost – "The estimated cost to construct, at current prices as of the effective appraisal date, a substitute for the [property] being appraised using modern materials and current standards, design and layout."[10]
>
> In the wastewater industry the property's reproduction costs and replacement costs are quite similar; therefore, the most of the property's cost new was determined based on its reproduction/replacement cost new. However, for the easements the replacement cost were developed based on current costs.

The trended original cost method was utilized in preparing the replacement cost new. "Trending is a method of estimating a property's replacement cost new in which an *index*

[9] The Appraisal of Real Estate, 13th Edition. Page 385
[10] ibid

or *trend factor* is applied to the property's *historical cost* to convert the known cost into an indication of current cost. Simply put, trending reflects the movement of price over time."[11] In the trended original cost method, the System's investment in wastewater plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property's original investment. AUS Consultants utilized the Engineer's Assessment performed by Pennoni Associates, Inc. (Engineers Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer's Assessment of the System's original cost in property, plant and equipment AUS Consultants developed the plant's depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) on January 8, 2021 (Cost Approach tab).

The cost trends are applied to each of the various investment categories (NARUC plant accounts) by original year of placement for that investment. The cost indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry of the northeastern region of the United States which includes the Commonwealth of Pennsylvania (HW), the AUS Consultants of General Plant Indexes AUS), and various United States Bureau of Labor Statistics (US BLS) indexes. The following table details the costing parameters using in the trending costing procedures:

1	2	3	4	5	6	7
East Whiteland Township, Pennsylvania						
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity						
Wastewater Collection System and Purchased Treatment Capacity						
Investor-Owned Utility						
January 8, 2021						

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

[11] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 59

The following table presents the development of the cost approach for the gravity mains (Accounts 361.21) portion of East Whiteland Township's wastewater service area this example will be used to describe the entire cost approach process:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Average Year Installed	Average Year Installed	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed	Units	Quantity	COR Cost	Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
		COLLECTION SEWERS - GRAVITY - MAINS													
361.21	361.21	18" ACP	1975	1975	0	1841.805095	0	58,356.08	HWW-144	122	674.5	5.529	322,651	1	322,651
361.21	361.21	12" ACP	1975	1975	0	2830.245172	0	68,677.29	HWW-144	122	674.5	5.529	379,717	1	379,717
361.21	361.21	12" ACP	1978	1978	0	2027.433529	0	61,740.49	HWW-144	145.4	674.5	4.639	286,414	1	286,414
361.21	353.20	8" CSP	1983	1983	0	2489.772983	0	77,680.40	HWW-144	199.6	674.5	3.379	262,482	1	262,482
361.21	353.20	20" PVC	2014	2014	0	98.42282607	0	12,406.81	HWW-144	556	674.5	1.213	15,049	1	15,049
361.21	353.20	21" PVC	2014	2014	0	74.08715289	0	9,339.15	HWW-144	556	674.5	1.213	11,328	1	11,328
Subtotal 261.21		COLLECTION SEWERS - GRAVITY - MAINS						10,767,737.96					30,582,161	1.000	30,582,161

Using the trended original cost method, East Whiteland Township's investment in this example of $10,767,737.96 was determined to have a replacement cost new of $30,582,161. For brevity not all of the investment data was included in this example

When the trended cost method is applied to each of East Whiteland Township's investment in plant, property and equipment of $43,447,309.24 was determined to have a reproduction cost new of $85,233,123 replacement cost new of $85,964,664 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	AUS Input NARUC Code	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc. Asset Description	Eng Assmnt Original Cost	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.20	353.20	Land & Land Rights - Original Basin	668.00	USBLS1	2.87	1,920	375.01	720,020
353.30	353.30	Land & Land Rights - Pumping	13.00	USBLS1	2.08	27	498.82	13,468
354.30	354.30	Stuctures & Improvements - Pumping	8,005,275.38	HWW-18	1.52	12,142,235	1.00	12,142,235
360.21	360.21	Collection Sewers - Force - Mains	2,304,354.55	HWW-144	2.59	5,971,267	1.00	5,971,267
361.21	361.21	Collection Sewers - Gravity - Mains	10,767,737.96	HWW-144	2.84	30,582,161	1.00	30,582,161
361.23	361.23	Collection Sewers - Gravity - Manholes	4,350,867.01	HWW-145	2.32	10,108,723	1.00	10,108,723
363.20	363.20	Service Laterals	6,619,976.03	HWW-139	1.85	12,259,833	1.00	12,259,833
365.20	365.20	Flow Measuring Installations Meter Pits	78,670.00	HWW-140	4.95	389,338	1.00	389,338
354.20	354.20	Stuctures & Improvements - Treatment	11,085,241.50	HWW-115	1.22	13,511,701	1.00	13,511,701
390.70	390.70	Office Furniture and Equipment	21,550.00	AUST-115	1.16	25,084	1.00	25,084
391.70	391.70	Transportation Equipment	212,955.81	AUST-14	1.13	240,834	1.00	240,834
		Grand Total	43,447,309.24		1.96	85,233,123	1.01	85,964,664

Easement - For easement, the appraisal date cost to obtain and register an easement was developed as follows:

Current cost of Easements

Activity	Engineer	Legal	Fees	Total
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	54	100		
Total Cost	486	300	250	1,036

Replacement Cost New less Depreciation - The replacement cost described above reflects the cost of new property; however, the Borough of Brentwood's wastewater system property is not new and has experienced normal depreciation and potentially functional and or economic obsolescence. These various forms of depreciation are defined as follows:

> Normal depreciation/deterioration, akin to physical deterioration, is "loss in value caused by wear, tear, age and use."[12]
>
> Functional obsolescence is "the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient of less costly replacement property that new technology has developed."[13]
>
> Economic, or external, obsolescence is defined as "A loss in value caused by factors outside a property"[14] and is most often indicated by insufficient earning.

Wastewater Depreciation Service Life Experience in Pennsylvania

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, AUS Consultants' experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with PAWC and Aqua America rate cases. With each of their recent rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. AUS Consultants has reviewed the PAWC studies which are summarized in the following table:

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[12] The Dictionary of Real Estate Appraisal, 4th Edition
[13] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.
[14] The Appraisal of Real Estate, 13th Edition, page 442.

Summary of PAWC & Aqua Depreciation Studies Prepared for Rate Case

Account	Account Description	Iowa Curves			Service Life		
		PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018	PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018
					years	years	
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	R3	R3	S0.5	45	45	55
354.30	STRUCTURES AND IMPROVEMENTS - SPP	R2.5	S0	S1.0	50	55	60
354.40	STRUCTURES AND IMPROVEMENTS - TDP	R2	S0	R2.0	65	55	50
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	S1	S1	R3.0	35	35	50
355.00	POWER GENERATION EQUIPMENT	R2.5	S0.5		35	35	
360.10	COLLECTION SEWERS - FORCE MAINS	S2	R3	R2.5	70	75	75
361.10	COLLECTION SEWERS - GRAVITY MAINS	R2.5	R2.5	R2.5	70	80	75
361.20	MANHOLES	S1.5	S2.5		50	50	
363.00	SERVICES	R3	R3	R4.0	38	47	70
364.00	FLOW MEASURING DEVICES	L3	L2.5		20	15	
365.00	FLOW MEASURING INSTALLATIONS	S1.5	S2		30	25	
370.00	RECEIVING WELLS	R3	R3		50	50	
371.00	PUMPING EQUIPMENT	SO	S0.5	L0.5	40	30	25
380.00	TREATMENT EQUIPMENT	5-R2	S1.5	S0.0	45	35	40
381.00	PLANT SEWERS	R3	R3	R1.5	50	50	40
382.00	OUTFALL SEWER LINES	R3	R3	R2.5	50	50	40
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	52.5	S2.5		20	20	
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	SQ	SQ	L3.0	20	5	20
390.00	OFFICE FURNITURE AND EQUIPMENT	L4	SQ	SQ	15	20	20
391.00	TRANSPORTATION EQUIPMENT	SQ	L4		25	14	
392.00	STORES EQUIPMENT	SQ	SQ		20	25	
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	SQ	SQ	SQ	15	20	20
394.00	LABORATORY EQUIPMENT	L2.5	SQ	SQ	16	15	25
395.00	POWER OPERATED EQUIPMENT	SQ	R2		15	22	
396.00	COMMUNICATION EQUIPMENT	SQ	SQ		15	15	
397.00	MISCELLANEOUS EQUIPMENT		SQ			15	
398.00	OTHER TANGIBLE PLANT		SQ			25	

It is of particular importance in the above table the service life extension of the mains plant categories between the 2016 and the 2020 studies. The mains service lives increased as follows:

Account	Description	Service Life	
		2016	2020
360.10	COLLECTION SEWERS - FORCE MAINS	70	75
361.10	COLLECTION SEWERS - GRAVITY MAINS	70	80

AUS Consultants believe this increase in service lives is attributable to the widespread use of relining older mains instead of replacing mains which are in need of repair. The practice of relining mains with a cured in place plastic liner not only repairs specific main but has the effect of extending the life of the original mains by the length of time which the relining can be expected to last. Most relining vendors warranty their product and procedure for 50 years. Thus, in essence the original main's service life will be extended by 50 plus years at the date the relining occurred. For those mains associated with

relining their installation date was established at the date of their relining and their depreciation parameters were established the same as the depreciation parameters of the relining, i.e., R2.5 – 60 years.

The following table details the lives used in the depreciation portion of the replacement cost new less depreciation analysis:

9 10 11 12 13

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(4a)	(4b)	(5)	(6)	(6a)	(6b)
Account Number	Description		Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence		Tax Depreciation	
				years	% of CORLD		Table	Life
353.20	Land & Land Rights - Original Basin		ZNonDep	0.00	0.00%		Non-Depr	0.00
353.30	Land & Land Rights - Pumping		ZNonDep	0.00	0.00%		Non-Depr	0.00
354.20	Stuctures & Improvements - Treatment		R4.0	55.00	0.00%		MACRS	25.00
354.30	Stuctures & Improvements - Pumping		R4.0	45.00	0.00%		MACRS	25.00
360.21	Collection Sewers - Force - Mains		R3.0	75.00	0.00%		MACRS	25.00
361.21	Collection Sewers - Gravity - Mains		R2.5	80.00	0.00%		MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes		R2.5	80.00	0.00%		MACRS	25.00
363.20	Service Laterals		R3.0	70.00	0.00%		MACRS	25.00
365.20	Flow Measuring Installations Meter Pits		S2.0	30.00	0.00%		MACRS	25.00
390.70	Office Furniture and Equipment		R3.0	12.00	0.00%		MACRS	12.00
391.70	Transportation Equipment		R3.0	10.00	0.00%		MACRS	10.00

As the above table demonstrates, the depreciation lives selected for the AUS Consultants appraisal are consistent with the depreciation studies' finding for wastewater plant.

Normal Depreciation – The extent of the depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property's depreciation or condition is estimated using the following formulas:

$$\text{Depreciation (\%)} = \frac{\text{Age (years) x100\%}}{\text{Service Life (years)}}$$

$$\text{Condition (\%)} = \frac{\text{Remaining Life (years) x (100\%)}}{}$$

Service Life (years)

where: the property's Service Life = Age + Remaining Life
and Remaining Life = f(Survival Characteristic, Service Life, Age)

However due to the age of some of the property the extent of the depreciation was limited to 85% of the assets original cost and its replacement cost new.

When the above depreciation lives are used to quantify the property's depreciation is applied to the replacement cost new of the gravity mains example East Whiteland Township's wastewater service area of $30,582,161, the replacement cost new less depreciation was determined to be $18,623,208 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	2021-((20)+0.5)	Col (18)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup Iowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (34)
Account	Description	Year1	Age	RCN	Iowa	NLife	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR *Nlife
COLLECTION SEWERS - GRAVITY - MAINS																	
361.21	18" ACP	1975	45.50	322,651	R2.5	80	57	R2.5057	0.50654	40.52	86.02	47.105324%	151,986	14,680,621	13,073,819	27,754,439	25,812,080
361.21	12" ACP	1975	45.50	379,717	R2.5	80	57	R2.5057	0.50654	40.52	86.02	47.105324%	178,867	17,277,124	15,386,133	32,663,256	30,377,360
361.21	12" ACP	1978	42.50	286,414	R2.5	80	53	R2.5053	0.53711	42.97	85.47	50.274950%	143,995	12,172,595	12,307,210	24,479,805	22,913,120
353.2	8" CSP	1983	37.50	262,482	R2.5	80	47	R2.5047	0.58438	46.75	84.25	55.489614%	145,650	9,843,075	12,271,034	22,114,109	20,998,560
353.2	20" PVC	2014	6.50	15,049	R2.5	80	8	R2.5008	0.92492	73.99	80.49	91.924463%	13,834	97,819	1,113,476	1,211,294	1,203,920
353.2	21" PVC	2014	6.50	11,328	R2.5	80	8	R2.5008	0.92492	73.99	80.49	91.924463%	10,413	73,632	838,159	911,791	906,240
COLLECTION SEWERS - GRAVITY - MAINS				30,582,161									18,623,208	1,016,285,003	1,553,520,505	2,569,805,485	2,446,572,880

When the above depreciation lives are used to quantify the property's depreciation is applied to each of the East Whiteland Township's investment in plant, property and equipment the replacement cost new (RCN) of $85,964,664 the resultant RCN less depreciation (RCNLD) was found to be $58,078,339 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR $s		years	years	years	% of COR	CORLD $s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.20	Land & Land Rights - Original Basin	31.62	720,020	ZNonDep	-	-	-	-	720,020
353.30	Land & Land Rights - Pumping	20.27	13,468	ZNonDep	-	-	-	-	13,468
354.30	Stuctures & Improvements - Pumping	14.58	12,142,235	R4.0	45.00	31.23	45.82	45.00	8,379,553
360.21	Collection Sewers - Force - Mains	29.95	5,971,267	R3.0	75.00	47.21	77.16	75.00	3,669,861
361.21	Collection Sewers - Gravity - Mains	33.23	30,582,161	R2.5	80.00	50.80	84.03	80.00	18,623,208
361.23	Collection Sewers - Gravity - Manholes	32.21	10,108,723	R2.5	80.00	51.66	83.87	80.00	6,272,518
363.20	Service Laterals	22.75	12,259,833	R3.0	70.00	48.95	71.70	70.00	8,428,787
365.20	Flow Measuring Installations Meter Pits	44.50	389,338	S2.0	30.00	4.50	49.00	30.00	58,401
354.20	Stuctures & Improvements - Treatment	6.78	13,511,701	R4.0	55.00	48.11	54.89	55.00	11,842,733
390.70	Office Furniture and Equipment	12.50	25,084	R3.0	12.00	2.20	14.70	12.00	3,763
391.70	Transportation Equipment	11.45	240,834	R3.0	10.00	2.91	14.35	10.00	66,027
Grand Total		24.57	85,964,664		68.23	46.41	70.71	0.68	58,078,339

The preliminary cost approach to value of the tangible assets of East Whiteland Township's wastewater utility property was found to be $58,078,339.

Intangible Assets

In addition to the above-described tangible assets are the intangible assets, in East Whiteland Township's case which consist of the contract associated with its wastewater treatment contracts with the following communities:

Municipality	2020 YTD Projected
Charlestown Township	
Treatment Charge	80,068
Subtotal Charlestown Twp	80,068
Malvern Borough	
Treatment Charge	150,300
Subtotal Malvern Borough	150,300
East Whiteland Service Revenues	
Total Revenues	3,761,787

These contract represent value assets which are included in the overall income and market approaches which are not specifically address in the cost approach of the tangible assets; therefore, in order to make the cost approach comparable to the income and market these intangible assets were separately appraised and included in the cost approach totals. AUS Consultants developed an income approach estimate to the value of the above contracts.

Income Approach to Treatment Contracts – AUS Consultants also developed a income approach analysis of the treatment contracts. Using the 2020 budget estimate the revenues and expenses of the treatment contracts in order to develop the estimated operating income as a surrogate for the cash flows associated the treatment contracts. The estimated cash flows were next discounted to appraisal date values using the cost of capital of 5.65% i.e., the cost of capital of 7.57% with the embedded growth rate of 1.82% removed; the development which is described in the Cost of Capital section of the workpapers. The income approach to the treatment contract was developed as follows:

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Income Approach to Trearment Agreements Valuation

Municipality	2020 YTD Actual	2021 Projected		Expenses	Operating Income	Value Capitalized @ 5.65%
						5.65%
Charlestown Township						
Treatment Charge	80,068					
Subtotal Charlestown Twp	80,068	80,068	1.39%	45,324	34,744	614,938
Malvern Borough						
Treatment Charge	150,300					
Subtotal Malvern Borough	150,300	150,300	2.61%	85,105	65,195	1,153,894
Total East Whiteland Revenues						
Total Revenues	5,428,667	5,759,816		3,260,709		1,768,832

Based on income analysis of the treatment contracts their value were determined to be $1,768,832 which was included in the final cost approach to value.

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
Original Cost (OC)	(9)	43,447,309
Replacement Cost New (RCN)	(16)	85,964,664
Replacement Cost New less Depreciation (RCNLD)	(31)	58,078,339
Intangible Assets - Treatment Contracts		1,768,832
Fair Market Vaue (FMV)	(41)	59,847,171
Depreciated Original Cost (OCLD)		
Original Cost (OC)	(46)	43,447,309
Original Cost less Depreciation (OCLD)	(57)	33,403,972
Intangible Assets - Treatment Contracts		1,768,832
Depreciated Original Cost (OCLD)		35,172,804
Cost Approach Conclusion		59,847,171

Income Approach (Income Approach tabs)

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The East Whiteland Township's wastewater operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis first the results from the Borough of Brentwood's wastewater utility's operations were evaluated based on an analysis of historical operating performances over the period 2016 through budgetary 2019 (Financials tab). In this analysis operating statistics such as revenues and their growth, various operating expenses were stated as function of their typical drivers (revenues, plant investment, income from operations, etc.) were analyzed. Details are provided in Income Approach tab. Using the above-described analyses, the results of future periods operations were forecast based on the migration of the East Whiteland Township's of historical operations type experience over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utilities. These forecasts are detailed in the Income Approach tab.

In this appraisal, future operating results were forecasted as follows:

- Revenues
- Operating Expenses
  - Operating and Maintenance Expense
  - Depreciation & Amortization
- Total Operating Expenses
- Operating Income (Revenues less Operating Expenses)
- Taxes
  - Property
  - Income (state & federal)
- Total Taxes
- After Tax Income (Operating Income less Total Taxes)
- Net Cash Flows
  - Plus: After Tax Income
  - Plus: Depreciation
  - Less: Capital Expenditures
  - Plus/less: Change in Working Capital
- Equals: Debt-free after-tax net cash flows

In the above-described table, the depreciation expense (both book and tax) and the capital expenditures were forecast based on the investment in property plant and equipment at the appraisal date and in subsequent periods. The initial investment in the plant and depreciation forecast were based on the criteria established in Section 1329 for the acquisition and subsequent regulation (rate base) of the acquired property by the acquiring investor-owned utility company. The following table details the forecasts of plant investment, book depreciation, tax depreciation forecast, and the resultant net plant investment and rate base as follows:

- Plant Investment
  - Initial Investment/ Beginning Plant Balance
  - Additions (Capital Expenditures)
  - Retirements

Ending Plant Balance

Depreciation (book)

Initial Book Depreciation Reserve / Beginning Book Reserve Balance

Book Depreciation & Amortization

Retirements

Ending Book Reserve Balance

Depreciation (tax)

Initial Tax Reserve / Beginning Tax Reserve

Tax Depreciation

Retirement

Ending Tax Reserve Balance

In these forecasts, the initial plant investment was based on the allocated purchase price of $54,930,000. Initially, the Cost Approach results are utilized to allocate the purchase price by category of plant (NARUC account). The Cost Approach results also define the property's ages and remaining lives of the various plant investment categories. Using these inputs, the future periods book and tax depreciation can be forecast, as well as the accumulated deferred taxes and resulting rate base.

With a forecast of the future rate base and an estimate of the Pennsylvania Commission's authorized return on rate base, the future return on rate base can be estimated which along with the forecast operating expenses (operating expenses, depreciation, and taxes) the future period revenue requirement forecasts can be made. An estimate of the PA Commission return on rate base is detailed as follows:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	**100.0%**						**7.21%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.21%**

Based on a comparison of the forecast revenues and the forecast of the estimated revenue requirement, future period rate increases were forecast. The criteria in making future period rate adjustments was to bring the forecast achieved return in line with the required return. Based on this process the results of future operations were forecast for the next 20-year period. Period 20 of the forecast was treated in the discounted cash flow as the forecast for period 20 through perpetuity.

Finally, the resultant cash flows from future period operations of the System were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility (Cost of Capital / Required Return tab). The following table details the market discount rate developed using the weighted average cost of capital (WACC) of the market debt and equity:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	**100.0%**						**7.57%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.65%**

The market cost of debt was developed based on market returns for utilities debt as reported in the Value Line Investment Survey. The market cost of equity was developed

using the capital asset pricing model (CAPM) and the dividend-growth model (DGM). Input to these equity costing models were developed based on Value Line Investment Surveys for the water industry published for January 1, 2021, consisting of the following nine companies:

Company	
American States Water (NYSE-AWR)	Consolidated Water Company (NDQ-CWCO)
American Water ((NYSE-AWK)	Middlesex Water (NDQ-MSEX)
Essential Utilities, Inc. (NYSE-WTRG)	SJW Corporation (NYSE-SJW)
California Water (NYSE-CWT)	York Water (NDQ-YORW)
In the January 2020 Issue Value Line dropped Connecticut Water (NDQ-CTWS) out of its list of Water Utility Industry companies	

The Value Line data was also used to develop the market capital structure used in the WACC determination. The market required return analysis can be found in the Cost of Capital / Required Return tab.

The following table presents the results of the discounted cash flow analysis:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	5,759,816	3,305,486	2,193,634	2,454,330	260,696	75,315	806,090	(78,093)	1,651,018	0.964	1,591,581	1,591,581
2	1.5	5,759,816	3,371,594	2,218,239	2,388,222	169,983	49,108	812,135	-	1,526,979	0.896	1,368,173	2,959,754
3	2.5	5,759,816	3,439,026	2,243,274	2,320,790	77,516	22,394	818,227	-	1,480,169	0.833	1,232,981	4,192,735
4	3.5	7,775,752	3,507,806	2,268,741	4,267,946	1,999,205	577,570	824,363	(27,334)	2,893,347	0.775	2,242,344	6,435,079
5	4.5	7,775,752	3,577,962	2,294,647	4,197,790	1,903,143	549,818	830,547	-	2,817,425	0.720	2,028,546	8,463,625
6	5.5	9,719,690	3,649,522	2,320,996	6,070,168	3,749,172	1,083,136	836,776	(26,356)	4,176,612	0.669	2,794,153	11,257,778
7	6.5	9,719,690	3,722,512	2,315,050	5,997,178	3,682,128	1,063,767	721,779	-	4,211,632	0.622	2,619,635	13,877,413
8	7.5	9,719,690	3,796,962	2,338,381	5,922,728	3,584,347	1,035,518	727,193	-	4,160,017	0.579	2,408,650	16,286,063
9	8.5	10,691,659	3,872,902	2,362,106	6,818,757	4,456,651	1,287,526	732,647	(13,178)	4,811,762	0.538	2,588,728	18,874,791
10	9.5	10,691,659	3,950,359	2,386,228	6,741,300	4,355,072	1,258,180	738,141	-	4,744,979	0.500	2,372,490	21,247,281
11	10.5	10,691,659	4,029,366	2,410,754	6,662,293	4,251,539	1,228,270	743,679	-	4,690,344	0.465	2,181,010	23,428,291
12	11.5	11,333,159	4,109,952	2,435,686	7,223,207	4,787,521	1,383,115	749,257	(8,698)	5,099,533	0.432	2,202,998	25,631,289
13	12.5	11,333,159	4,192,151	2,461,029	7,141,008	4,679,979	1,352,046	754,875	-	5,034,087	0.402	2,023,703	27,654,992
14	13.5	11,333,159	4,275,994	2,486,788	7,057,165	4,570,377	1,320,382	760,535	-	4,976,248	0.373	1,856,141	29,511,133
15	14.5	12,013,149	4,361,513	2,512,970	7,651,636	5,138,666	1,484,561	766,240	(9,219)	5,410,054	0.347	1,877,289	31,388,422
16	15.5	12,013,149	4,448,744	2,539,579	7,564,405	5,024,826	1,451,672	771,988	-	5,340,745	0.323	1,725,061	33,113,483
17	16.5	12,013,149	4,537,720	2,566,617	7,475,429	4,908,812	1,418,156	777,777	-	5,279,496	0.300	1,583,849	34,697,332
18	17.5	12,733,938	4,628,474	2,594,092	8,105,464	5,511,372	1,592,235	783,611	(9,773)	5,739,391	0.279	1,601,290	36,298,622
19	18.5	12,733,938	4,721,044	2,622,008	8,012,894	5,390,886	1,557,427	789,487	-	5,665,980	0.259	1,467,489	37,766,111
20 and beyond	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	3.184	17,833,934	55,600,045
								15,540,755					

Age	19.5				
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$	0.241				
PW to Perpetuity = 1/Capitalization Rate	13.210				
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * PW Factor$_{(19.5)}$	3.184				
		Net Plant		44,551,804	
		ADIT		(6,443,119)	
		Rate Base		38,108,685	0.241
		Annual Plant Construction Inflation Rate		0.0422 Input	
		Plant Inflation over 19.5 years		87,105,453	0.241
		PP	54,930,000		
		OCLD	33,403,972		
		PP/OCLD	1.644		
		RCNLD	58,078,339		
		RCNLD/PP		1.057315474	
				40,292,902.78	0.241
		Average			

9,184,193	46,950,304	
20,992,414	58,758,525	
9,710,590	47,476,701	
	52,196,394	

Based on the above-described discounted cash flow analysis, the Income Approach to value of the System's wastewater property and its operations was determined to be $56,398,141. To ensure that the above-described forecast captured the entire economic returns of the property an additional 40-year period beyond the original 20-year forecast was made. This additional forecast indicated the reasonableness of the initial forecast results.

Market Approach (Market Approach tab)

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach using Pennsylvania water and wastewater

systems and market value to book value ratios based on investor-owned water utilities reported in Value Line Investment Survey.

Market Sales – In the comparable sales market approach the sales of Pennsylvania municipal water and wastewater systems to investor-owned water/wastewater utilities following the passage of Section 1329 were used to insure comparability. The following sales were considered:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment Capacity	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional Wa	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD), depreciated replacement cost (RCNLD), customers, and cashflows (EBITDA) for an average 5-year and 13-year periods (Market Approach tab).

The following tables details the market sales analyses:

Purchase Price to Original Cost less Depreciation (OCLD)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/OCLD

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Depreciated Original Cost (OCLD) (AUS Consultants Determination	Purchase Price to (PP/OCLD)	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	159,000,000	19%	80,085,602	1.9854	0.226	0.136	0.0185
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29,500,000	3%	18,567,728	1.5888	-0.1706	-0.2606	0.0679
Limerick Township	Wastewater Collection and Treatment System	64,373,378	8%	46,153,867	1.3948	-0.3646	-0.4546	0.2067
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,000,000	1%	5,383,591	0.9287	-0.8307	-0.9207	0.8477
Mahoning	Water Distribution System	4,734,800	1%	3,507,138	1.3500	-0.4094	-0.4994	0.2494
Mahoning	Wastewater Collection	4,765,200	1%	3,234,859	1.4731	-0.2863	-0.3763	0.1416
Cheltenham	Wastewater Collection	50,250,000	6%	15,784,463	3.1835	1.4241	1.3341	1.7798
Steelton	Water Distribution and Treatment	21,750,000	3%	14,433,435	1.5069	-0.2525	-0.3425	0.1173
Sadsbury	Wastewater Collection	8,600,000	1%	6,128,876	1.4032	-0.3562	-0.4462	0.1991
Exeter	Wastewater Collection and Treatment	93,500,000	11%	40,057,634	2.3341	0.5747	0.4847	0.2349
East Norriton	Wastewater Collection	21,000,000	2%	8,407,007	2.4979	0.7385	0.6485	0.4206
Kane	Wastewater Collection and Treatment	17,560,000	2%	12,070,455	1.4548	-0.3046	-0.3946	0.1557
Royersford	Wastewater Collection and Treatment	13,000,000	2%	5,173,559	2.5128	0.7534	0.6634	0.4401
Valley	Water Treatment and Distribution System	7,325,000	1%	5,370,438	1.3639	-0.3955	-0.4855	0.2357
Valley	Wastewater Collection System	13,950,000	2%	9,214,738	1.5139	-0.2455	-0.3355	0.1126
Delaware County Regional Water Quality Au	Wastewater Collection and Treatment	276,500,000	32%	191,774,486	1.4418	-0.3176	-0.4076	0.1661
Upper Pottsgrove	Wastewater Collection	13,750,000	2%	11,769,925	1.1682	-0.5912	-0.6812	0.464
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53,000,000	6%	20,644,920	2.5672	0.8078	0.7178	0.5152
		857,558,378	100%	497,762,721	1.7228			6.3729

Simple Mean		1.7594	Square Root[(Variance to Wtd Mean)^2]/Count
Standard Deviation		0.5882	2.52446
SimpleMedian		1.4900	18
Simple Mode	DELCOR	1.4418	0.140248
Weighted Mean		1.849	
Standard Deviation		0.4204	
Wtd Median		1.4355	
Wtd Mode	DELCOR	1.4418	

Property Acquired	Type of System and Attributes	Depreciated Original Cost (OCLD) (AUS Consultants Determination	Purchase Price to (PP/OCLD)	Accummulated OCLD
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,383,591	0.9287	5,383,591
Upper Pottsgrove	Wastewater Collection	11,769,925	1.1682	17,153,516
Mahoning	Water Distribution System	3,507,138	1.35	20,660,654
Valley	Water Treatment and Distribution System	5,370,438	1.3639	26,031,092
Limerick Township	Wastewater Collection and Treatment System	46,153,867	1.3948	72,184,959
Sadsbury	Wastewater Collection	6,128,876	1.4032	78,313,835
Delaware County Regional Water Quality Au	Wastewater Collection and Treatment	191,774,486	1.4418	270,088,321
Kane	Wastewater Collection and Treatment	12,070,455	1.4548	282,158,776
Mahoning	Wastewater Collection	3,234,859	1.4731	285,393,635
Steelton	Water Distribution and Treatment	14,433,435	1.5069	299,827,070
Valley	Wastewater Collection System	9,214,738	1.5139	309,041,808
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	18,567,728	1.5888	327,609,536
City of McKeesport	Wastewater Collection and Treatment	80,085,602	1.9854	407,695,138
Exeter	Wastewater Collection and Treatment	40,057,634	2.3965	447,752,772
East Norriton	Wastewater Collection	8,407,007	2.4979	456,159,779
Royersford	Wastewater Collection and Treatment	5,173,559	2.5128	461,333,338
Cheltenham	Wastewater Collection	15,784,463	3.1835	477,117,801
		477,117,801	2.5672	

Middle OCLD			238,558,901
Bottomvalue of the range containng the Middle Value		1.4032	78,313,835
Top value of the range containing the Middle Value		1.4418	270,088,321
Range containng the middle value		0.0386	191,774,486
Range from bottom value to middle value		0.0323	160,245,066
Median Value		1.4355	

Purchase Price to Replacement Cost New less Depreciation (CORLD)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/CORLD

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Replacement Cost New less Depreciation (CORLD)	Purchase Price to CORLD	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	159,000,000	19%	156,524,909	1.0158	0.2071	0.0821	0.0067
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29,500,000	3%	30,615,410	0.9636	0.1549	0.0299	0.0009
Limerick Township	Wastewater Collection and Treatment System	64,373,378	8%	73,068,377	0.881	0.0723	-0.0527	0.0028
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,000,000	1%	9,236,581	0.5413	-0.2674	-0.3924	0.154
Mahoning	Water Distribution System	4,734,800	1%	8,899,336	0.532	-0.2767	-0.4017	0.1614
Mahoning	Wastewater Collection	4,765,200	1%	7,991,234	0.5963	-0.2124	-0.3374	0.1138
Cheltenham	Wastewater Collection	50,250,000	6%	49,940,486	1.0062	0.1975	0.0725	0.0053
Steelton	Water Distribution and Treatment	21,750,000	3%	23,921,473	0.9092	0.1005	-0.0245	0.0006
Sadsbury	Wastewater Collection	8,600,000	1%	8,517,587	1.0097	0.2010	0.076	0.0058
Exeter	Wastewater Collection and Treatment	93,500,000	11%	99,589,819	0.9389	0.1302	0.0052	0
East Norriton	Wastewater Collection	21,000,000	2%	27,461,356	0.7647	-0.0440	-0.169	0.0286
Kane	Wastewater Collection and Treatment	17,560,000	2%	29,015,055	0.6052	-0.2035	-0.3285	0.1079
Royersford	Wastewater Collection and Treatment	13,000,000	2%	13,376,109	0.9719	0.1632	0.0382	0.0015
Valley	Water Treatment and Distribution System	7,325,000	1%	11,664,026	0.628	-0.1807	-0.3057	0.0935
Valley	Wastewater Collection System	13,950,000	2%	19,252,333	0.7246	-0.0841	-0.2091	0.0437
Delaware County Regional Water Quality Authority	Wastewater Collection and Treatment	276,500,000	32%	399,664,111	0.6918	-0.1169	-0.2419	0.0585
Upper Pottsgrove	Wastewater Collection	13,750,000	2%	18,460,028	0.7449	-0.0638	-0.1888	0.0356
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53,000,000	6%	51,414,555	1.0308	0.2221	0.0971	0.0094
		857,558,378	100%	1,038,612,785	0.8257			

Simple Mean	
	0.8087
Standard Deviation	0.1746
SimpleMedian	0.8229
Simple Mode	0.6918

Weighted Mean	0.9337
Standard Deviation	0.1695
Wtd Median	0.7558
Wtd Mode	0.6918

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Replacement Cost New less Depreciation (CORLD)	Purchase Price to CORLD	Accummulated CORLD
Mahoning	Water Distribution System	4734800	1%	8,899,336	0.532	8,899,336
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5000000	1%	9,236,581	0.5413	18,135,917
Mahoning	Wastewater Collection	4765200	1%	7,991,234	0.5963	26,127,151
Kane	Wastewater Collection and Treatment	17560000	2%	29,015,055	0.6052	55,142,206
Valley	Water Treatment and Distribution System	7325000	1%	11,664,026	0.628	66,806,232
Delaware County Regional Water Quality Authority	Wastewater Collection and Treatment	276500000	32%	399,664,111	0.6918	466,470,343
Valley	Wastewater Collection System	13950000	2%	19,252,333	0.7246	485,722,676
Upper Pottsgrove	Wastewater Collection	13750000	2%	18,460,028	0.7449	504,182,704
East Norriton	Wastewater Collection	21000000	2%	27,461,356	0.7647	531,644,060
Limerick Township	Wastewater Collection and Treatment System	64373378	7%	73,068,377	0.881	604,712,437
Steelton	Water Distribution and Treatment	21750000	3%	23,921,473	0.9092	628,633,910
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29500000	3%	30,615,410	0.9636	659,249,320
Exeter	Wastewater Collection and Treatment	96000000	11%	99,589,819	0.964	758,839,139
Royersford	Wastewater Collection and Treatment	13000000	2%	13,376,109	0.9719	772,215,248
Cheltenham	Wastewater Collection	50250000	6%	49,940,486	1.0062	822,155,734
Sadsbury	Wastewater Collection	8600000	1%	8,517,587	1.0097	830,673,321
City of McKeesport	Wastewater Collection and Treatment	159000000	18%	156,524,909	1.0158	987,198,230
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53000000	6%	51,414,555	1.0308	1,038,612,785
		860058378	1	1,038,612,785	0.8281	

Middle OCLD		519,306,393
Bottomvalue of the range containng the Middle Value	0.7449	504,182,704
Top value of the range containing the Middle Value	0.7647	531,644,060
Range containg the middle value	0.0198	27,461,356
Range from bottom value to middle value	0.0109	15,123,689
Median Value	0.7558	

Purchase Price to Customers

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/Customer

Property Acquired	Type of System and Attributes		Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	2	2016.67	159,000,000	19%	21,953	7,243	(720)	(3,719)	13,830,961
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2	2016.59	29,500,000	3%	2,106	14,008	6,045	3,046	9,278,116
Limerick Township	Wastewater Collection and Treatment System	2	2016.88	64,373,378	8%	5,434	11,846	3,883	884	781,456
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2	2017.94	5,000,000	1%	1,248	4,006	(3,957)	(6,956)	48,385,936
Mahoning	Water Distribution System	1	2018.30	4,734,800	1%	1,186	3,992	(3,971)	(6,970)	48,580,900
Mahoning	Wastewater Collection	3	2018.30	4,740,200	1%	1,451	3,284	(4,679)	(7,678)	58,951,684
Cheltenham	Wastewater Collection	3	2018.42	50,250,000	6%	10,500	4,786	(3,177)	(6,176)	38,142,976
Steelton	Water Distribution and Treatment	1	2018.87	21,750,000	3%	2,325	9,355	1,392	(1,607)	2,582,449
Sadsbury	Wastewater Collection	3	2017.00	8,600,000	1%	998	8,617	654	(2,345)	5,499,025
Exeter	Wastewater Collection and Treatment	2	2018.41	93,500,000	11%	9,000	10,389	2,426	(573)	328,329
East Norriton	Wastewater Collection	3	2018.83	21,000,000	2%	4,950	4,242	(3,721)	(6,720)	45,158,400
Kane	Wastewater Collection and Treatment	2	2018.75	17,560,000	2%	2,006	8,754	791	(2,208)	4,875,264
Royersford	Wastewater Collection and Treatment	2	2019.94	13,000,000	2%	1,596	8,145	182	(2,817)	7,935,489
Valley	Water Treatment and Distribution System	1	2019.96	7,325,000	1%	1,459	5,021	(2,942)	(5,941)	35,295,481
Valley	Wastewater Collection System	3	2019.96	13,950,000	2%	1,644	8,485	522	(2,477)	6,135,529
Delaware County Regional Water Quality Au	Wastewater Collection and Treatment	2	2020.00	276,500,000	32%	16,473	16,785	8,822	5,823	33,907,329
Upper Pottsgrove	Wastewater Collection	3	2020.33	13,750,000	2%	1,428	9,629	1,666	(1,333)	1,776,889
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2	2020.71	53,000,000	6%	11,151	4,753	(3,210)	(6,209)	38,551,681
				857,558,378	100%	96,908	8,849			
Simple Mean										
							7963			
Standard Deviation							3637			
SimpleMedian							8,355			
Simple Mode							16,785			
Weighted Mean							10962			
Standard Deviation							4613			
Wtd Median							4,963			
Wtd Mode							16,785			
Forecast			2019.944064				7,600			
			2021				7,301			

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Accummulated Customers
Mahoning	Wastewater Collection	2018.30	4,740,200	1%	1,451	3,284	1,451
Mahoning	Water Distribution System	2018.30	4,734,800	1%	1,186	3,992	2,637
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	1,248	4,006	3,885
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	4,950	4,242	8,835
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	11,151	4,753	19,986
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	10,500	4,786	30,486
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	1,459	5,021	31,945
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	18%	21,953	7,243	53,898
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	1,596	8,145	55,494
Valley	Wastewater Collection System	2019.96	13,950,000	2%	1,644	8,485	57,138
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	998	8,617	58,136
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	2,006	8,754	60,142
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	2,325	9,355	62,467
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	1,428	9,629	63,895
Exeter	Wastewater Collection and Treatment	2018.41	96,000,000	11%	9,000	10,667	72,895
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	7%	5,434	11,846	78,329
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	2,106	14,008	80,435
Delaware County Regional Water Quality Au	Wastewater Collection and Treatment	2020.00	276,500,000	32%	16,473	16,785	96,908
			860,058,378	100%	96,908	8,875	
Middle OCLD							48,454
Bottomvalue of the range containing the Middle Value						4,786	31,945
Top value of the range containing the Middle Value						5,021	53,898
Range containing the middle value						235	21,953
Range from bottom value to middle value						177	16,509
Median Value						4,963	

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Accummulated Customers
Water Distribution and Treatment							
Mahoning	Water Distribution System	2018.304795	4,734,800	0.005505208	1186	3992	2637
Valley	Water Treatment and Distribution System	2019.963242	7,325,000	0.008516884	1459	5021	31945
Steelton	Water Distribution and Treatment	2018.871489	21,750,000	0.025288981	2325	9355	62467
Mean						6122.66667	
Median						5021	
Wastewater Collection and Treatment							
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.944064	5,000,000	0.005813559	1248	4006	3885
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.713242	53,000,000	0.061623724	11151	4753	19986
City of McKeesport	Wastewater Collection and Treatment	2016.669406	159,000,000	0.184871172	21953	7243	53898
Royersford	Wastewater Collection and Treatment	2019.944064	13,000,000	0.015115253	1596	8145	55494
Kane	Wastewater Collection and Treatment	2018.748858	17,560,000	0.020417219	2006	8754	60142
Exeter	Wastewater Collection and Treatment	2018.410046	96,000,000	0.11162033	9000	10667	72895
Limerick Township	Wastewater Collection and Treatment System	2016.877169	64,373,378	0.074847684	5434	11846	78329
New Garden Twp. SA	Wastewater Collection and Paid for and Owned T	2016.586073	29,500,000	0.034299997	2106	14008	80435
Delaware County Regional Water Quality Au	Wastewater Collection and Treatment	2020.001598	276,500,000	0.321489885	16473	16785	96908
Mean						9578.53556	
Median						8754	
Wastewater Collection Only							
Mahoning	Wastewater Collection	2018.304795	4,740,200	0.005540554	1451	3284	1451
East Norriton	Wastewater Collection	2018.829452	21,000,000	0.034416947	4950	4242	8835
Cheltenham	Wastewater Collection	2018.419406	50,250,000	0.058426267	10500	4786	30486
Valley	Wastewater Collection System	2019.963242	13,950,000	0.016219829	1644	8485	57138
Sadsbury	Wastewater Collection	2017.00274	8,600,000	0.009999321	998	8617	58136
Upper Pottsgrove	Wastewater Collection	2020.326712	13,750,000	0.015987287	1428	9629	63895
Mean						6507.16667	
Median						6635.5	

Description of Service	Purchase Price per Customer Mean	Median
Water Distribution and Treatment	6,123	5,021
Wastewater Collection and Treatment	9,579	8,754
Wastewater Collection	6,507	6,636
Wastewater Treatment Only	3,072	2,118

Purchase Price to Cash Flows (EBITDA Period 1-5)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/Cash Flow (EBITDA Periods 1-5)

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-5)	Purchase Price to Cash Flow	Variance to Simple Mean	Variance to Wtd Mean	Variance Squared	Wtd Mean Cash Flow
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	19%	7,409,096	21.46	3.98	6.14	37.70	3.98
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	1,717,347	17.18	(0.30)	1.86	3.46	0.59
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	8%	3,542,124	18.17	0.69	2.85	8.12	1.36
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	283,367	17.64	0.16	2.32	5.38	0.10
Mahoning	Water Distribution System	2018.30	4,734,800	1%	233,922	20.24	2.76	4.92	24.21	0.11
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	233,922	20.37	2.89	5.05	25.50	0.11
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,754,020	10.57	(6.91)	(4.75)	22.56	0.62
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	2,278,514	9.55	(7.93)	(5.77)	33.29	0.24
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	714,645	12.03	(5.45)	(3.29)	10.82	0.12
Exeter	Wastewater Collection and Treatment	2018.41	93,500,000	11%	7,279,978	12.84	(4.64)	(2.48)	6.15	1.40
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	1,265,269	16.60	(0.88)	1.28	1.64	0.41
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,039,593	16.89	(0.59)	1.57	2.46	0.35
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	600,765	21.64	4.16	6.32	39.94	0.33
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	398,458	18.38	0.90	3.06	9.36	0.16
Valley	Wastewater Collection System	2019.96	13,950,000	2%	392,972	35.50	18.02	20.18	407.23	0.58
Delaware County Regional Wa	Wastewater Collection and Treatment	2020.00	276,500,000	32%	25,883,282	10.68	(6.80)	(4.64)	21.53	3.44
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	845,182	16.27	(1.21)	0.95	0.90	0.26
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	2,839,988	18.66	1.18	3.34	11.16	1.15
			857,558,378	100%	61,712,444					
Simple Mean						17.48				
Standard Deviation						5.71				
SimpleMedian						17.41				
Simple Mode						Not Applicable				
Weighted Mean						15.32				
Standard Deviation						5.10				
Wtd Median						18.13				
Wtd Mode						Not Applicable				

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-5)	Purchase Price to Cash Flow	Accummulated Cashflow (EBITDA Period 1-5)
Steelton	Water Distribution and Treatment	2018.871689	21750000	0.025288981	2278514	9.55	9.55
Cheltenham	Wastewater Collection	2018.419406	50250000	0.058426267	4754020	10.57	20.12
Delaware County Regional Wa	Wastewater Collection and Treatme	2020.001598	276500000	0.321489805	25883282	10.68	30.8
Sadsbury	Wastewater Collection	2017.00274	8600000	0.009999321	714645	12.03	42.83
Exeter	Wastewater Collection and Treatme	2018.410046	96000000	0.11162033	7279978	13.19	56.02
Upper Pottsgrove	Wastewater Collection	2020.326712	13750000	0.015987287	845182	16.27	72.29
East Norriton	Wastewater Collection	2018.829452	21000000	0.024416947	1265269	16.6	88.89
Kane	Wastewater Collection and Treatme	2018.748858	17560000	0.020417219	1039593	16.89	105.78
New Garden Twp. SA	Wastewater Collection and Paid for	2016.586073	29500000	0.034299997	1717347	17.18	122.96
East Bradford Township	Wastewater Collection and paid for	2017.944064	5000000	0.005813559	283367	17.64	140.6
Limerick Township	Wastewater Collection and Treatme	2016.877169	64373378	0.074847684	3542124.2	18.17	158.77
Valley	Water Treatment and Distribution Sy	2019.963242	7325000	0.008516864	398458	18.38	177.15
Lower Makefield	Wastewater Collection and Purchase	2020.713242	53000000	0.061623724	2839988	18.66	195.81
Mahoning	Water Distribution System	2018.304795	4734800	0.005505208	233922	20.24	216.05
Mahoning	Wastewater Collection	2018.304795	4765200	0.005540554	233922	20.37	236.42
City of McKeesport	Wastewater Collection and Treatme	2016.669406	159000000	0.184871172	7409096	21.46	257.88
Royersford	Wastewater Collection and Treatme	2019.944064	13000000	0.015115253	600765	21.64	279.52
Valley	Wastewater Collection System	2019.963242	13950000	0.016219829	392972	35.5	315.02
			860058378	1	61712444.2		
Middle Cash Flow							157.51
Bottomvalue of the range containng the Middle Value						17.64	140.60
Top value of the range containing the Middle Value						18.17	158.77
Range containng the middle value						0.53	18.17
Range from bottom value to middle value						0.49	16.91
Median Value						18.13	

Purchase Price to Cash Flows (EBITDA Periods 1-13)

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Comparable Sales Approach

Market Sales Analysis - PP/Cash Flow (EBITDA Periods 1-13)

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-13)	Purchase Price to Cash Flow	Variance to Simple Mean	Variance to Wtd Mean	Variance Squared	Wtd Mean Cash Flow
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	19%	11,958,224	13.30	1.68	1.85	3.42	2.47
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	2,625,115	11.24	(0.38)	(0.21)	0.04	0.39
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	8%	5,212,045	12.35	0.73	0.90	0.81	0.93
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	632,892	7.90	(3.72)	(3.55)	12.60	0.05
Mahoning	Water Distribution System	2018.30	4,734,800	1%	348,409	13.59	1.97	2.14	4.58	0.08
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	348,409	13.68	2.06	2.23	4.97	0.08
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,326,210	11.62	-	0.17	0.03	0.68
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	3,893,757	5.59	(6.03)	(5.86)	34.34	0.14
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	895,128	9.61	(2.01)	(1.84)	3.39	0.10
Exeter	Wastewater Collection and Treatment	2018.41	93,500,000	11%	8,011,315	11.67	0.05	0.22	0.05	1.27
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	2,011,465	10.44	(1.18)	(1.01)	1.02	0.26
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,446,948	12.14	0.52	0.69	0.48	0.25
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	1,209,765	10.75	(0.87)	(0.70)	0.49	0.16
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	817,993	8.95	(2.67)	(2.50)	6.25	0.08
Valley	Wastewater Collection System	2019.96	13,950,000	2%	844,046	16.53	4.91	5.08	25.81	0.27
Delaware County Regional Water Q	Wastewater Collection and Treatment	2020.00	276,500,000	32%	28,960,162	9.55	(2.07)	(1.90)	3.61	3.08
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	932,042	14.75	3.13	3.30	10.89	0.24
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	3,432,340	15.44	3.82	3.99	15.92	0.95
			857,558,378	100%	77,906,265					

Simple Mean	11.62
Standard Deviation	2.67
SimpleMedian	11.65
Simple Mode	Not Applicable
Weighted Mean	11.45
Standard Deviation	2.14
Wtd Median	12.07
Wtd Mode	Not Applicable

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-13)	Purchase Price to Cash Flow	Accummulated Cashflow (EBITDA Period 1-13)
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	3,893,757	5.59	5.59
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	632,892	7.90	13.49
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	817,993	8.95	22.44
Delaware County Regional Water Q	Wastewater Collection and Treatment	2020.00	276,500,000	32%	28,960,162	9.55	31.99
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	895,128	9.61	41.60
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	2,011,465	10.44	52.04
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	1,209,765	10.75	62.79
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	2,625,115	11.24	74.03
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,326,210	11.62	85.65
Exeter	Wastewater Collection and Treatment	2018.41	96,000,000	11%	8,011,315	11.98	97.63
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,446,948	12.14	109.77
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	7%	5,212,045	12.35	122.12
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	18%	11,958,224	13.30	135.42
Mahoning	Water Distribution System	2018.30	4,734,800	1%	348,409	13.59	149.01
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	348,409	13.68	162.69
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	932,042	14.75	177.44
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	3,432,340	15.44	192.88
Valley	Wastewater Collection System	2019.96	13,950,000	2%	844,046	16.53	209.41
			860,058,378	100%	77,906,265		

Middle Cash Flow		104.71
Bottomvalue of the range containng the Middle Value	11.98	97.63
Top value of the range containing the Middle Value	12.14	109.77
Range containng the middle value	0.16	12.14
Range from bottom value to middle value	0.09	7.08
Median Value	12.07	

Financial Market Ratios – In the market approach based on market financial ratios the market data of companies (nine) in the water industry as reported in Value Line Investment Surveys (January 2021) were analyzed. In the analysis the companies' stock (market) and debt (book) per share are compared as a ratio to the book value per share which is detailed in the following table:

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Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Aqua America	California Water	Consol. Water Co.	Middlesex Water	SJW Corp	York	Totals
Price per Share			87.33	123.05	47.08	51.52	16.46	63.56	71.79	46.38	
Book value per share			16.1	34.4	18	15.85	10.95	15.7	31.2	10.4	
Market to Book Equity Ratio			5.42	3.58	2.62	3.25	1.5	4.05	2.3	4.46	
Minimum	1.5	2.62									
Mean	3.40	3.1		3.58	2.62						
Standard Deviation	1.18	0.480									
Weighted Market to Debt Ratio	3.41		20,013.22	112,367.28	34,710.24	11,207.07	371.03	5,481.74	5,874.18	3,135.10	193,159.86
Median	3.415	3.1									
Maximum	5.42	3.58									
Debt (Total) $s millions			475.3	9,143.0	3,086.4	967.9	-	294.0	511.1	100.7	
Outstanding Shares (millions)			36.84	180.78	215.84	48.15	15.03	16.67	28.46	12.98	
Debt per share			12.9	50.58	14.3	20.1	0	17.64	17.96	7.76	
Equity (Total) $s millions			3,217.18	22,244.51	10,161.78	2,480.43	247.35	1,059.52	2,042.89	602.24	
Total Capital (Debt + Equity)			3,692.48	31,387.51	13,248.18	3,448.33	247.35	1,353.52	2,553.99	702.94	56,634.30
			0.07	0.55	0.23	0.06	-	0.02	0.05	0.01	0.99
Market Value per Share (Equity+Debt)			100.23	173.63	61.38	71.62	16.46	81.2	89.75	54.14	
Book Value per Share (Equity+Debt)			29	84.98	32.3	35.95	10.95	33.34	49.16	18.16	
Market to Book (Total Capital) Ratio			3.46	2.04	1.9	1.99	1.5	2.44	1.83	2.98	
Minimum	1.5	1.9									
Mean	2.27	1.97		2.04	1.9						
Standard Deviation	0.61	0.070									
Weighted Market to Book (Debt&Equity) Ratio	2.11		12,775.97	64,030.52	25,171.55	6,862.18	371.03	3,302.58	4,673.80	2,094.75	119,282.38
Variance to Wtd Mean	0.1392		1.35	(0.07)	(0.21)	(0.12)	(0.61)	0.33	(0.28)	0.87	
Median	2.015	1.97									
Maximum	3.46	2.04									

1. Value Line Investment Survey January 10, 2020
2. Value Line dropped Connecticut Water in its January 10, 2020 publication

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

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Comparable Sales Approach

Market Sales Data

Central Tendancy and Reliability Analysis

Market Sales Analysis - PP/OCLD	Simple	Weighted	
Mean	1.7594	1.8494	
Standard Deviation	0.5882	0.4204	
Median	1.49	1.4355	
Mode	1.4418	1.4418	
Conclusion		1.8494	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD		35,172,804	Cost Approach - OCLD
Market Value Indication		**65,048,584**	

Market Sales Analysis - PP/CORLD	Simple	Weighted	
Mean	0.8087	0.9337	
Standard Deviation	0.1746	0.1695	
Median	0.8229	0.7558	
Mode	0.6918	0.6918	
Conclusion		0.9387	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity CORLD		59,847,171	Cost Approach - CORLD
Market Value Indication		**56,178,539**	

Market Sales Analysis - PP/Customer	Simple	Weighted	
Water Tretment & Distribution			
Mean	6,123	10,962	
Standard Deviation		4,613	
Median	5,021	4,963	
Wastewater Collection & Treatment		16,785	
Mean	9,579		
Standard Deviation		-	AUS Input
Median	8,754		
Wastewater Collection			
Mean	6,507		
Standard Deviation			
Median	6,636		
Watewater Treatment Only			
Mean	3,072		
Standard Deviation			
Median	2,118		
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Customers		3,918	AUS Input
Wastewater Collection & Treatment PP/Customer		8,754	AUS Input
Collection and Treatement Customers Market Value Indica		**34,298,172**	
Treatement Only Market Value Indication			
Treatment Only PP/customer		2,118	AUS Input
Treatment Only Customers		-	AUS Input
Market Value Indication Treatment Only		-	
Total Market Value Indication		**34,298,172**	

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.40	
Market to Book (equity and debt)	2.11	
Use (equity and debt)	2.11	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD	33,403,972	Cost Approach - OCLD
Market Value Indication	**70,482,381**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)	Simple	Weighted	
Mean	17.48	15.32	
Standard Deviation	5.71	5.10	
Median	17.41	18.13	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		18.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash Flows		2,396,686	Income Approach
Market Value Indication		**43,140,348**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)	Simple	Weighted	
Mean	11.62	11.45	
Standard Deviation	2.67	2.14	
Median	11.65	12.07	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		12.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash		3,264,195	Income Approach
Market Value Indication		**39,170,336**	

Summary of Market Analyses

Indicators	
OCLD	65,048,584
CORLD	56,178,539
Customers	34,298,172
Cash Flows	
EBITDA Periods 1-5	43,140,348
EBITDA Periods 1-13	39,170,336
Value Line	70,482,381
Mean	51,386,393
Median	49,659,444
Conclusion	**56,178,539**

The market approach conclusion of this appraisal was determined to be $56,178,539.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of $59,847,171, including intangibles, needs to be evaluated to determine if external obsolescence exists in the preliminary replacement cost new less depreciation conclusion of $59,847,171. The appraisal literature regarding developing a cost approach state:

> "The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called "external obsolescence") has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.
>
> The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence."[15]

The above-described income approach value conclusion of $56,398,141 and the market approach conclusion of $56,178,539 for the East Whiteland Township's future wastewater system compared to the preliminary cost approach conclusion of $59,847,171 indicates no significant external obsolescence exists in the cost approach conclusion of $59,847,171 detailed as follows:

[15] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

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(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	CORLD	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
	COLLECTION SEWERS - GRAVITY - MAINS				
361.21	18" ACP	1975	151,986	0.00%	151,986
361.21	12" ACP	1975	178,867	0.00%	178,867
361.21	12" ACP	1978	143,995	0.00%	143,995
353.2	8" CSP	1983	145,650	0.00%	145,650
353.2	20" PVC	2014	13,834	0.00%	13,834
353.2	21" PVC	2014	10,413	0.00%	10,413
	COLLECTION SEWERS - GRAVITY - MAINS		18,623,208		18,623,208

Therefore, the preliminary cost approach conclusion of $59,847,171 can be considered the final cost approach conclusion as follows:

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Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
		CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.20	Land & Land Rights - Original Basin	720,020	0.00%	720,020
353.30	Land & Land Rights - Pumping	13,468	0.00%	13,468
354.30	Stuctures & Improvements - Pumping	8,379,553	0.00%	8,379,553
360.21	Collection Sewers - Force - Mains	3,669,861	0.00%	3,669,861
361.21	Collection Sewers - Gravity - Mains	18,623,208	0.00%	18,623,208
361.23	Collection Sewers - Gravity - Manholes	6,272,518	0.00%	6,272,518
363.20	Service Laterals	8,428,787	0.00%	8,428,787
365.20	Flow Measuring Installations Meter Pits	58,401	0.00%	58,401
354.20	Stuctures & Improvements - Treatment	11,842,733	0.00%	11,842,733
390.70	Office Furniture and Equipment	3,763	0.00%	3,763
391.70	Transportation Equipment	66,027	0.00%	66,027
	Grand Total	58,078,339	0.00%	58,078,339

Value Conclusion

The Fair Market Value of the East Whiteland Township's, wastewater property, plant and equipment and its operation were determined to be $58,100,696 as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Inventory of Assets				
Original Cost ($OC)		43,447,309		
Depreciated Original Cost ($OCLD)		33,403,972		
Intangible Assets (Treatement contracts)		1,768,832		
Cost Approach of all assets Conclusion		35,172,804		
Replacement Cost				
Replacement Cost New (COR)		85,964,664		
Depreciated Replacement Cost New (CORLD)	**$**	**58,078,339**		
External or Economic Obsolescence	**$**	-	AUS Input	
Market Value of Tangible Assets	**$**	**58,078,339**		
Intangible Assets (Treatement contracts)	$	1,768,832		
Cost Approach of all assets Conclusion		**59,847,171**		
Cost Approach Conclusion		**59,847,171**	**50%**	**29,923,586**
Income Approach				
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)		55,600,045		
Income Approach Conclusion		**55,600,045**	**40%**	**22,240,018**
Market Approach				
Market Comparables (to)				
OCLD		65,048,584		
CORLD		56,178,539		
Customers		34,298,172		
Cash Flows (EBITDA)		43,140,348		
Market Financials (to)				
OCLD		70,482,381		
Market Approach Conclusion		**56,178,539**	**10%**	**5,617,854**
Appraisal Conclusion	**$**	**57,781,458**	**100%**	**57,781,458**
Conclusion (cost approach)	**$**	**59,847,171**		

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the East Whiteland Township's wastewater collection system's property, plant and equipment this appraisal's conclusion of $58,100,696 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the water industry account classifications and the installation year of the property, this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

- State the identity of the client and any intended users, by name or type:
  East Whiteland Township, PA and the Pennsylvania Public Utility Commission

- State the intended use of the appraisal
  To establish the Fair Market Value of East Whiteland Township's (PA) Wastewater Collection System (System), Purchased Treatment Capacity and other assets.

- Describe information sufficient to identify the property, real, personal, and intangible, involved in the appraisal, including the physical and economic property characteristics relevant to the assignment.

  The system consists of collection mains and laterals of various sizes and types, pumping structures, improvements and equipment, and purchased treatment capacity. The property is in good condition based on physical inspections and reviews or operating statements. The property is an operating wastewater system the economics of which were analyzed based on seven years of operating financials which were incorporated into the income approach to value analysis in this appraisal.

- State the real property interests appraised
  The system's land rights agreements necessary to access its property.

- State the type and definition of value and city the source of the definition, including whether the opinion of value is in terms of cash or of financing terms equivalent to cash, or based on non-market financing or financing with unusual conditions or incentives
  - *Market Value definition:*
    "The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 12th Edition, page 22.

- State the effective date of the appraisal and the date of the report
  The effective date of the appraisal is January 8, 2021, and the appraisal report date is June 20, 2021.

- Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal
  The appraisal considered all three approaches to value: the cost, income and market. Briefly the scopes of work for each are as follows:

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

Cost Approach – The cost approach utilized the trended cost method utilizing the investment inventory developed by Pennoni Associates, Inc's "Engineers Assessment". The Handy Whitman Index of Public Utility Construction Costs for the water industry were used in the trending. Depreciation was assessed based on straight line age-life depreciation method based on service life expectation for each of the various account categories.

Income Approach – The income approach utilized the discounted cash flow (DCF) method that facilitates the development of cash flows from operations as the property migrates from municipal operation to a regulated investor-owned operation. The Townships' operating experience was analyzed (2016-2019) in order to estimate the initial cash flows. Future customer tariff rates address the rates agreed to by the parties in the Asset Purchase Agreement between the parties. The operations were forecast for 19 periods in the future and a 20th period which is intended to reflect operation beyond that time. The discount rate was developed based on market debt and equity rates at the appraisal date.

Market Approach – The market approach was developed based on market comparable sales of Pennsylvania wastewater properties and market to book ratios developed for the water industry based on information published by Value Line Investment Surveys at the appraisal date.

Valuation Approaches Reconciliation - The appraisal conclusion was based on reconciliation of each of the approaches and the intended purpose of the appraisal.

- Clearly and conspicuously:
  - State all extraordinary assumptions and hypothetical conditions;

    There were no extraordinary assumptions or hypothetical conditions in this appraisal.

  - State that their use might have affected the assignment results

    Not applicable.

- Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment

  Not applicable.

- Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

See scope of work above.

- State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal – when reporting an opinion of market value, describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate

- State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal – a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken

  No departures for Standard 1 were made.

- Include a signed certification in accordance with Standards Rule 2-3

  Contained in Narrative Report.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

AUS Consultants, Valuation and Depreciation Services Group certify that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- AUS Consultants, Valuation and Depreciation Services Group has not performed an appraisal of the East Whiteland Township's wastewater collection system previously in the last three year.

- AUS Consultants, Valuation and Depreciation Services Group, nor its professional staff has any present or prospective interest in the property that is the subject of this report and has no interest or bias with respect to the parties involved.

- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

- Our engagement in this assignment is not contingent upon developing or reporting predetermined results.

- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2020-2021.

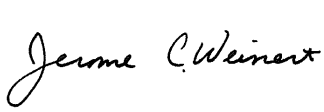
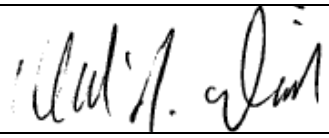
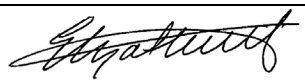
- The signers of this report have not made a personal inspection of the property that is the subject of this report.

- Individuals providing significant appraisal assistance to the person signing this certification include: Scott Shearer- Managing Director and Garrett Moore – Senior Analyst both oof PFM Financials Advisors, LLC whom provided information obtained from East Whiteland Township and the Engineer's Assessment report prepared by Pennoni Associates, Inc.which was the inventory starting point of the Cost Approach.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

AUS Consultants, Depreciation & Valuation
By:

	
Jerome C. Weinert, AM, P.E., CDP Principal and Director	David A. Sheffer Principal
	
Michael J. Diedrich, ASA, P.E., CDP Certified General Appraiser Principal	Elizabeth A. Weinert Associate

ASA: Accredited Senior Appraiser in the Machinery and Equipment (Public Utilities) discipline of the American Society of Appraisers
AMA: Accredited Member Appraiser in the Machinery and Equipment (Public Utilities) discipline of the American Society of Appraisers
P.E.: Registered Professional Engineer State of Wisconsin
CDP: Certified Depreciation Professions in the Society of Depreciation Professionals

Curriculum Vitae (CV) of Jerome C. Weinert, P.E., CDP, ASA

Mr. Weinert is currently Principal and Director of AUS Consultants, Depreciation and Valuation. He has forty-nine (2021-1972) years' experience in valuation and depreciation consulting and management. AUS, with offices across the country, has provided consulting services to the regulated utility industry nationally for over thirty-nine years. A partial list of services provided includes valuations depreciation studies, rate of return studies, cost of service studies, and rate design.

Prior to joining AUS in 1987, Mr. Weinert was employed by American Appraisal Associates, Inc. (American) for sixteen years in their Regulated Industries Group. He held various positions at American, the last being supervising appraiser. Among his other valuation responsibilities, he directed the firm's utility industry capital recovery studies and AUS Consultant's valuation of communication company assets and businesses.

Mr. Weinert graduated from the Milwaukee School of Engineering with a Bachelor of Science degree in Mechanical Engineering and received a master's in business administration from Marquette University. He is a registered professional engineer (1976) (by examination) in the state of Wisconsin as well as a senior member (1982) of the American Society of Appraisers in the public utility valuation field. This latter designation is obtained by written examination primarily in the areas of utility valuation, depreciation, and the economics of regulated firms. He is also a Certified Depreciation Professional (1997) (CDP) and founding member of the Society of Depreciation Professionals and the Society's 1995 President and sponsor of the Society's Certification and re-certification program as such Mr. Weinert developed these programs and oversaw their initial introduction into the Society. He also worked in conjunction with Society members in the development of the Society's training programs which as of 2003 has become the only such formalized depreciation training program in the North America and is an instructor in several of its courses.

During his professional career related to valuations and depreciation matters Mr. Weinert has testified before various courts and public service commissions on these subjects. He has also assisted numerous utilities in preparing capital recovery plans which specifically address the issues of plant replacement. Mr. Weinert has also presented expert testimony on valuation matters. Mr. Weinert has testified before the Pennsylvania Public Utility Commission on regulatory matters associated with Pennsylvania Section 1329 matters. On matters related to eminent domain issues, Mr. Weinert has presented expert testimony in the Massachusetts Superior Court, the Court of Common Pleas, Fayette County, Ohio, the New Hampshire Public Utilities Commission, the Twentieth Judicial Court (deposition only) in Charlotte County, Florida, the Nineteenth Judicial Circuit Court in St. Lucie County, Florida (deposition only). In regard to ad valorem taxation, Mr. Weinert has presented study results to the New York State Board of Equalization and Assessment (now the New York Office of Real Property Services (NY ORPS)), pertaining to useful life and net salvage values for all types of utility property subject to the Board's mass appraisal model. Mr. Weinert has appeared before the Valuation Adjustment Board in Florida for Duval, Hillsborough, Okeechobee, and Palm Beach counties, the Twelfth Judicial Circuit Sarasota County, Florida, the California Board of Equalization and Assessment, the Arizona Board of Assessment, the Missouri Board of Taxation, the Colorado and Texas Departments of Review, the Massachusetts Tax Appeal Court, the Superior Court of the State of Arizona in the County of Maricopa, the State Tax Appeal Board of the State of Montana, the New York City Tax Commission and the Public Utility Commission of Pennsylvania Section 1329 hearings (8).

Mr. Weinert has appeared before regulatory bodies in Alaska, Arkansas, Illinois, Indiana, Iowa, Missouri, Nevada, Nebraska, North Carolina, Ohio, Oregon, Pennsylvania, and South Carolina in support of rate-base valuation determination and capital recovery. He has presented testimony on depreciation matters before the Canadian Radio-Television and Telecommunications Commission (CRTC) and the United

States Federal Energy Regulatory Commission (FERC). In terms of water and wastewater acquisitions and applications for regulatory approval of rate base Mr. Weinert has testified for two investor-owned acquisitions of municipal wastewater authorities one representing the municipality and secondly for the acquiring investor-owned utility. He has submitted study results to the State Commissions of Alabama, Alaska, Arkansas, Idaho, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Carolina, Oregon, Pennsylvania, South Carolina, Washington, and Wisconsin, and the Federal Communications Commission.

Mr. Weinert has presented papers on valuation and depreciation topics to professional and utility industry trade organizations. He also directed AUS Consultants' semi-annual week-long depreciation training programs (1988-1997). These specialized training courses, offered at basic and advanced levels, teach depreciation study techniques to public utility and public service commission staff specialists. The training includes depreciation theory and concepts and hands-on experience with personal computer-based analytical depreciation programs.

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
2021				
AT&T Communications	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	California	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2020	2021	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2020	2021	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2020	2021	Ad Valorem Tax Appraisal
Lower Makefield	Lower Makefield Wastewater	2020	2021	Fair Market Value 1329
Pennsylvania American Water Company	Brentwood Borough Wastewater	2020	2021	Fair Market Value 1329
2020				
AT&T Communications	North America	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	California	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2019	2020	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2019	2020	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2019	2020	Ad Valorem Tax Appraisal
East Norriton Township, PA	East Norriton Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Kane Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Royersford Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Water	2019	2020	Fair Market Value 1329
Lehigh County Authority	Allentown Water & Sewer	2020	2020	Financing
Pennsylvania American Water Company	Upper Pottsgrove wastewater	2020	2020	Fair Market Value 1329
2019				
AT&T Communications	North America	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	California	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2018	2019	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2018	2019	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2018	2019	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2018	2019	Ad Valorem Tax Appraisal
Cheltenham Township, PA	Cheltenham Wastewater	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Steelton Water	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Exeter Wastewater	2018	2019	Fair Market Value 1329
2018				
AT&T Communications	North America	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	California	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2017	2018	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2017	2018	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2017	2018	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
East Bradford Township, PA	East Bradford Wastewater	2018	2018	Fair Market Value 1329

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Pennsylvania American Water Company	Sadsbury Wastewater	2017	2018	Fair Market Value Appraisal
Pennsylvania American Water Company	Kane Wastewater	2017	2018	Fair Market Value Appraisal
2017				
AT&T Communications	North America	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	California	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2016	2017	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	California	2016	2017	Ad Valorem Tax Appraisal
Whitpain Township, PA	Whitpain Wastewater	2016	2017	Appraisal for Planning
Plymouth Township, PA	Plymouth Wastewater	2016	2017	Appraisal for Planning
East Norriton Township, PA	East Norriton Wastewater	2016	2017	Appraisal for Planning
Pennsylvania American Water Company	Sadsbury Wastewater	2016	2017	Fair Market Value Appraisal
Pennsylvania American Water Company	McKeesport Wastewater	2016	2017	Fair Market Value Appraisal
Intermountain Gas Company	Idaho	2016	2017	Depreciation Study
2016				
AT&T Communications	North America	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	California	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2015	2016	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	California	2015	2016	Ad Valorem Tax Appraisal
New Garden Township, PA	New Garden Wastewater	2016	2016	Fair Market Value Appraisal
2015				
AT&T Communications	North America	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	California	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2014	2015	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	California	2014	2015	Ad Valorem Tax Appraisal
Verizon Wireless	Nationwide	2014	2015	Ad Valorem Tax Appraisal
2014				
AT&T Communications	North America	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	California	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2013	2014	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
AT&T - Indiana Bell Telephone Company	Indiana	2013	2014	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	California	2013	2014	Ad Valorem Tax Appraisal
Cascade Natural Gas Corporation	Oregon & Washington	2013	2014	Depreciation Study
Intermountain Gas Company	Idaho	2013	2014	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2013	2014	Depreciation Study
Verizon Wireless	Nationwide	2013	2014	Ad Valorem Tax Appraisal
2013				
AT&T Communications	North America	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	California	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2012	2013	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2012	2013	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2012	2013	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2012	2013	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2012	2013	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2012	2013	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2013	Ad Valorem Tax Appraisal
2012				
AT&T Communications	North America	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	California	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2011	2012	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2011	2012	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2011	2012	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2011	2012	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2011	2012	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2011	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2012	Ad Valorem Tax Appraisal
2011				
AT&T Communications	North America	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	California	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2010	2011	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
AT&T - Michigan Bell Telephone Company	Michigan	2010	2011	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2010	2011	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2010	2011	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2010	2011	Ad Valorem Tax Appraisal
Global Crossing	North America	2010	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Sprint Nextel Corporation	North America	2010	2011	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2010	2011	Technical Update of Depreciation Study
2010				
AT&T Communications	North America	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	California	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2009	2010	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2009	2010	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2009	2010	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2009	2010	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2009	2010	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2009	2010	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2009	2010	Ad Valorem Tax Appraisal
Global Crossing	North America	2009	2010	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2009	2010	Ad Valorem Tax Appraisal
2009				
AT&T Communications	North America	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	California	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2008	2009	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2008	2009	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2008	2009	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2008	2009	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2008	2009	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2008	2009	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Embarq Virginia	Virginia	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2008	2009	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2008	2009	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2008	2009	Ad Valorem Tax Appraisal
Global Crossing	North America	2008	2009	Ad Valorem Tax Appraisal
AboveNet, Inc	North America/California	2003	2009	Ad Valorem Tax Appraisal
Verizon Wireless	Ohio Properties	2004-2005	2009	Ad Valorem Tax Appraisal
Virgin Islands Telephone Corporation	US Virgin Islands	2008	2009	Depreciation Study
Sprint Nextel Corporation	North America	2008	2009	Ad Valorem Tax Appraisal
2008				
AT&T Communications	North America	2007	2008	Ad Valorem Tax Appraisal
AT&T Communications	California	2007	2008	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2007	2008	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2007	2008	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2007	2008	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2007	2008	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2007	2008	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2007	2008	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	California	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2008	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2007	2008	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2007	2008	Ad Valorem Tax Appraisal
Global Crossing	North America	2007	2007	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2007	2008	Depreciation Study
2007				
AT&T Communications	North America	2006	2007	Ad Valorem Tax Appraisal
AT&T Communications	California	2006	2007	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2006	2007	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2006	2007	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2006	2007	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2006	2007	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas,	2006	2007	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2006	2007	Ad Valorem Tax Appraisal
Embarq North Carolina	North Carolina	2006	2007	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	California	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2006	2007	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2006	2007	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Qwest Communications Corporation	North America California	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan, & Arizona	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002 - 2006	2007	Ad Valorem Tax Appraisal
Global Crossing	North America	2006	2007	Ad Valorem Tax Appraisal
Alaska Communications System, Inc. (ACS)	ACS of Alaska ACS of Anchorage ACS of Fairbanks ACS of the Northland ACS Holdings	2006	2007	Depreciation Studies
Intermountain Gas Company	Idaho	2006	2007	Depreciation Study
2006				
AT&T Communications	Palm Beach Florida	2000 - 2003	2006	Ad Valorem Tax Appraisal
AT&T Communications	North America	2005	2006	Ad Valorem Tax Appraisal
AT&T Communications	California	2005	2006	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2005	2006	Ad Valorem Tax Appraisal
Sprint Texas, Inc.	Texas,	2005	2006	Ad Valorem Tax Appraisal
Sprint Missouri, Inc.	Missouri	2005	2006	Ad Valorem Tax Appraisal
Sprint North Carolina	North Carolina	2005	2006	Ad Valorem Tax Appraisal
Sprint Virginia	Virginia	2005	2006	Ad Valorem Tax Appraisal
Embarq Nevada	Nevada	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	California	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2005	2006	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	Massachusetts	2002-2--5	2006	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2005	2006	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002-2006	2006	Ad Valorem Tax Appraisal
Global Crossing	North America	2005	2006	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2005	2006	Depreciation Study
2005				
AT&T Communications	North America	2004	2005	Ad Valorem Tax Appraisal
AT&T Communications	California	2004	2005	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2004	2005	Ad Valorem Tax Appraisal
Sprint PCS	North America	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	California	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2004	2005	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2004	2005	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	New York Special Franchise Property	2003 & 2004	2005	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2004	2005	Depreciation Study
2004				
Sprint Florida, Inc.	Florida	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	California	2003	2004	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Verizon Communications	Northwest	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	New England	2003	2004	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2003	2004	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2003	2004	Ad Valorem Tax Appraisal
Global Crossing	North America	2003	2004	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	North America	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	California	2003	2004	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2003	2004	Depreciation Study
2003				
Sprint Florida, Inc.	Florida	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	California	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2002	2003	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2002	2003	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2002	2003	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	North America	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	California	2002	2003	Ad Valorem Tax Appraisal
Global Crossing	North America	2002	2003	Ad Valorem Tax Appraisal
Verizon Wireless	Broward County, FL	1998 through 2002	2003	Ad Valorem Tax Appraisal
2002				
Sprint Florida, Inc.	Florida	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	California	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2001	2002	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2001	2002	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Global Crossing	North America	2001	2002	Ad Valorem Tax Appraisal
AT&T Wireless	Plymouth, MI	2001	2002	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2001	2002	Ad Valorem Tax Appraisal
AT&T Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2001	2002	Depreciation Study
AT&T Communications	California	2001	2002	Ad Valorem Tax Appraisal
2001				
Verizon	Verizon - New York	2001	2001-2	Functional Obsolescence & Useful Life studies for valuation
Sprint Florida, Inc.	Sprint Florida, Inc.	2000	2001	Ad Valorem Tax Appraisal
Verizon Communications	California	2000	2001	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2000	2001	Ad Valorem Tax Appraisal
Global Crossing	North America	2000	2001	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2000	2001	Ad Valorem Tax Appraisal
Sprint Corporation	Centel - Nevada	2000	2001-2	Depreciation Study
Alaska Communications System, Inc. (ACS)	ACS of Alaska ACS of Anchorage ACS of Fairbanks ACS of the Northland ACS Holdings	2000	2001	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
2000				
Sprint PCS	BTS Equipment	2000	2000	Economic Life Study
Telus Communications	Telus - Alberta & British Columbia	2000	2000	Depreciation study Phase III Price Caps
Sprint Florida, Inc.	Florida	1999	2000	Ad Valorem Tax Appraisal
Verizon Communications	California	1999	2000	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1999	2000	Ad Valorem Tax Appraisal
1999				
Sprint Corporation	Centel - Nevada	1998	1999	Depreciation Study
Intermountain Gas Company	Intermountain Gas Company	1998	1999	Depreciation Study
Sprint Florida, Inc.	Florida	1998	1999	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1998	1999	Ad Valorem Tax Appraisal
1998				
Frontier Corporation	Frontier Telephone of Rochester	1998	1997	Valuation depreciation Lives and Net Salvage Parameters
Pacific Telecom, Inc.	Telephone Utilities of Washington	1997	1998	Depreciation Study
Sprint Florida, Inc.	Florida	1997	1998	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1997	1998	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1997	1998	Ad Valorem Tax Appraisal
Sprint Corporation	United Telephone Company of South Carolina	1998	1998	Depreciation Expense Universal Service Fund
Sprint Corporation	Carolina Telephone and Telegraph and Central Telephone of North Carolina	1998	1998	Depreciation Expense Universal Service Fund
Telus Communications	Telus - Edmonton (TCE)	1997	1998	Depreciation Study Phase II Price Caps
1997				
Sprint Corporation	Centel - Nevada	1997	1997	Unbundling/ Inter-connection Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Oregon	1996	1997	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Alaska And the Northland	1996	1997	Depreciation Study
Telus Communications	Telus - TCI formerly AGT	1996	1997	Depreciation Study Phase II Price Caps
Indianapolis Power & Light	IPL	1996	1997	Depreciation Study
Sprint Florida, Inc.	Florida	1996	1997	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Verizon Communications	Florida	1996	1997	Ad Valorem Tax Appraisal
Pacific Telecom, Inc.	Eagle Telephone (Colorado)	1996	1997	Depreciation Study
1996				
Intermountain Gas Company	Intermountain Gas Company	1995	1996	Depreciation Study
Sprint Florida, Inc.	Florida	1995	1996	Ad Valorem Tax Appraisal
Century Telephone	Century Telephone of Ohio, Inc.	1995	1996	Depreciation Study
Telus Communications	AGT Limited (Alberta Government Telephones)	1995	1996	Depreciation Study
Johnson County Kansas Office of the Assessor	Useful Life of Computer Equipment	1995	1995	Useful/Market Life Analysis
Milwaukee Metropolitan Sewerage District	Milwaukee Metropolitan Sewerage District	1995	1996	Depreciation Study
Sprint Corporation	Long Distance Division	1995	1995	Depreciation/Recovery Status Study
Sprint Corporation	Cellular Division	1995	1995	Depreciation/Recovery Status Study
Pacific Telecom, Inc.	Alascom, Inc.	1994	1995	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of the Northland	1993	1994	Depreciation Study
	Telephone Utilities of Alaska	1993	1994	Depreciation Study
Indiana Energy	Indiana Gas Company	1993	1994	Depreciation Study
Columbia Gas Transmission	Gas Pipeline Property in Sullivan County, NY	1993	1993	Useful Life Study
United Telephone - Midwest Group	United Telephone Company of Missouri	1993	1993	Modernization/ Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1992	1993	Depreciation Study
Pacific Telecom, Inc.	Alascom, Inc.	1992	1993	Depreciation Study
	Telephone Utilities of Oregon, Inc.	1991	1992	Depreciation Study
	Telephone Utilities of Washington, Inc.	1991	1992	Depreciation Study
Small Telephone Company Coalition	Oregon Small Telephone Companies	1991	1992	Depreciation Support

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
United Telephone Systems	United Telephone Co. of Pennsylvania	1991	1992	Instructional Depreciation Study
New York State Division of Equalization and Assessment	Electric, Gas, Water, Telephone, Pipeline, Steam, CATV	1991	1992	Useful Lives and Net Salvage Values
Rochester Telephone Company	Enterprise Telephone	1991	1992	Study Review
Indiana Energy	Indiana Gas/Richmond Gas/ Terre Haute Gas	1990	1991	Depreciation Study
American Electric Power	Indiana/Michigan Power Co.	1990	1991	Depreciation Study
Rochester Telephone Company	Rochester Telephone Co.	1990	1991	Study Review
United Telephone Systems	United Telephone Co. of Florida	1990	1991	Instructional Depreciation Study
United Telephone Systems	United Telephone Co. of Oregon	1989	1990	Study Review
Telephone and Data Systems, Inc.	Quincy Telephone Company	1990	1991	Depreciation Study
Telephone and Data Systems, Inc.	Wolverine Telephone Company	1989	1990	Depreciation Study
Indiana Energy	Indiana Gas Company, Inc.	1989	1990	Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1989	1990	Remaining Life/Net Salvage Support
North-West Telephone Company	North-West Telephone Company	1989	1990	Study Review
United Telephone System	United of Texas	1989	1990	Instructional Depreciation Study
	United of Missouri	1989	1990	Instructional Depreciation Study
Milwaukee Water	Milwaukee Water	1989	1990	Depreciation Study
Indiana Natural Gas Corp.	Indiana Natural Gas Corp.	1989	1990	Depreciation Study
Pacific Telecom	Telephone Utilities of the Northland	1989	1990	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Year	Study Year Performed	Activity
	Telephone Utilities of Alaska	1989	1990	Depreciation Study
	Alascom	1989	1990	Depreciation Study
	Telephone Utilities of Washington, Inc.	1988	1989	Depreciation Study
WICOR	Wisconsin Gas Company	1988	1989	Depreciation Study
ALLTEL	ALLTEL - Kentucky, Inc.	1987	1989	Depreciation Study
	ALLTEL - Ohio, Inc.	1988	1989	Depreciation Study
	Western Reserve Telephone Company	1988	1989	Depreciation Study
Milwaukee Metropolitan Sewer District	Milwaukee Metropolitan Sewer District	1988	1989	Depreciation Study
United Telephone	United of Ohio	1988	1989	ELG Support
Telephone Company	Telephone Company	1988	1989	ELG Support
United Telecom	U.S. Sprint	1988	1988	Useful Life Study
Pacific Telecom	Telephone Utilities of Oregon	1987	1988	Depreciation Study
	Telephone Utilities of Eastern Oregon	1987	1988	Depreciation Study
	Rose Valley Telephone Company	1987	1988	Depreciation Study
United Telephone	United of Minnesota	1987	1988	Capital Planning Support
Wisconsin Southern Gas	Wisconsin Southern Gas	1987	1988	Depreciation Study
Pacific Telecom	Glacier State Telephone Company	1986	1987	Depreciation Study
	Sitka Telephone Co.	1986	1987	Depreciation Study
	Juneau-Douglas Tel Company	1986	1987	Depreciation Study
Pacific Telecom	Telephone Utilities of Alaska	1986	1987	Depreciation Study
	Alascom	1986	1987	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Year	Study Year Performed	Activity
Lincoln Telecommunications	Lincoln Telephone and Telegraph Company	1986	1987	Digital Switching Service Life
Northwest Natural Gas Corporation	Northwest Natural Gas Corporation	1985	1986	Depreciation Study
ALLTEL	Western Reserve Telephone Company	1984	1985	Depreciation Study
	ALLTEL - Ohio	1984	1985	Depreciation Study
	ALLTEL - Alabama	1984	1985	Depreciation Study
Gulf Telephone Co.	Gulf Telephone Company	1984	1985	Depreciation Study
United Telephone Systems, Inc.	United of Iowa	1984	1985	Depreciation Study
	United of Arkansas	1984	1985	Depreciation Study
Pacific Telecom	Telephone Utilities of Washington	1983	1984	Depreciation Study
	Telephone Utilities of Eastern Oregon	1983	1984	Depreciation Study
Pacific Telecom	Telephone Utilities of Oregon	1983	1984	Depreciation Study
	Northwestern Telephone Systems, Inc., Oregon	1983	1984	Depreciation Study
	Rose Valley Telephone Company	1983	1984	Depreciation Study
United Telecommunications	All United Telephone Companies	1983	1984	Capital Recovery Strategy
Lincoln Telecommunications	Lincoln Telephone & Telegraph Company	1983	1984	Depreciation Study
ALLTEL	ALLTEL - Mississippi	1982	1983	Depreciation Study
	ALLTEL - Michigan	1982	1983	Depreciation Study
North Carolina Natural Gas Corp.	North Carolina Natural Gas Corporation	1982	1983	Depreciation Study
Mid Continent Telephone (Currently ALLTEL)	Western Reserve Telephone	1982	1983	Depreciation Study
	Mid Ohio Telephone	1982	1982	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
	Florence Telephone Company	1980	1981	Depreciation Study
	Leeds Telephone Co.	1980	1981	Depreciation Study
	Elmore Coosa Tel Company	1980	1981	Depreciation Study
	Brookville Telephone Company	1980	1981	Depreciation Study
	Mid-Pennsylvania Telegraph	1980	1981	Depreciation Study
Telephone Utilities (Currently Pacific Telecom)	Telephone Utilities of Oregon	1979	1980	Depreciation Study
	Telephone Utilities of Eastern Oregon	1979	1980	Depreciation Study
	Northwestern Telephone Systems, Inc.-Oregon	1979	1980	Depreciation Study
	Rose Valley Telephone Company	1979	1980	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1979	1980	Depreciation Study
Telephone Utilities	Telephone Utilities of Washington	1978	1979	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1978	1979	Depreciation Study
Rochester Telephone	Rochester Telephone (Indiana)	1977	1978	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1977	1978	Depreciation Study
Princeton Telephone	Princeton Telephone (Indiana)	1976	1977	Depreciation Study
Northwestern Telephone	Northwestern Telephone (Illinois)	1975	1976	Depreciation Study

Papers and Seminars

2011 Training Instructor Depreciation Basics Sessions A & B and Life and Salvage Analysis
Society of Depreciation Professionals 25th Annual Meeting
Atlanta, GA September 20-22, 2011

2010 Will the Real Cost Approach Please Stand Up?
National Association of Property Tax Representatives Transportation, Energy, & Communications (NAPTR·TEC)
Scottsdale, Arizona October 25-27, 2010

Issues Affecting Assessment of Regulated Industries
Institute for Professionals in Taxation (IPT) Property Tax Symposium
Austin, Texas October 31 – November 3, 2010

2009 (Valuing) Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 28, 2009

Fair Value Accounting (Appraisal Panelist)
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 29, 2009

2008 Valuation Issues Valuation of Assets and the Impact of Depreciation
Society of Depreciation Professionals Annual Meeting
Greenville, SC September 21-26, 2008

Obsolescence in the Long-Distance and Local Transport Networks
Technology Futures Inc. Asset Valuation Conference
Austin Texas February 8, 2008

2007 Communications Industry Issues
National Association of Property Tax Representative – Transportation, Energy, & Communications
New Orleans, LA October 30, 2007

2006 Appraisal Procedures & Issues in a Changing communications Industry
Florida Chapter International Association of Assessing Officers' Tangible Personal Property Conference
Ocala, Florida January 12, 2006

Valuation of Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 25, 2006

SDP 20 years of History and Beyond
Society of Depreciation Professionals 20th Annual Meeting
Long Beach, CA September 18, 2006

2005 Valuation in a World with Asset Impairments
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas August 1, 2005

Papers and Seminars

2004 Depreciation in the Valuation of Assets
Society of Depreciation Professionals' Eighteenth Annual Meeting
Washington, D.C., September 13, 2004

2003 Cost Approach and the Use of Appraisal Guidelines
Institute for Professionals in Taxation – Property Tax Symposium
Fort Lauderdale, FL, September 17, 2003

Cost Approach – Obsolescence and Depreciation
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 28, 2003

2000 Appraisal Issues Associated with Technological Change in the Wireline Telecommunications Industry
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 31, 2000

The Impact of Advancing Technology and the Changing Regulatory Environment on Obsolescence Calculations for Ad Valorem Valuation Purposes
Journal of Property Tax Management, Spring 2000

1996 How to Develop a Reproduction/Replacement Cost New Less Depreciation Approach to Value
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, August 4, 1996

1995 Valuation Method, Techniques and Strategies (How to Quantify Stranded Investment) (Market, Income, & Cost Approach
AGA Depreciation Committee Meeting
Denver, Colorado, August 6-9, 1995, jointly presented with Earl Robinson of AUS Consultants

1994 Integrating Future Expectations for the Telephone Industry into Historical Depreciation Analysis
United States Telephone Association (USTA's 1994 Capital Recovery Seminar)
Scottsdale, Arizona, September 12-13, 1994

1994 Capital Recovery: United States versus Canada
Canadian Telephone Industry's Annual Capital Recovery Seminar
Edmonton, Alberta, Canada June 14-15, 1994

1990 Capital Recovery: Methods, Terminology, Procedures, and Record Keeping
United States Telephone Association (USTA)'s
1990 Non-FCC Subject and Small Company Capital Recovery Seminar
Minneapolis, Minnesota April 10_11, 1990

Integration of Technology Forecasting Into Historical Life Studies
29th Iowa State Regulatory Conference
Ames, Iowa May 15-17, 1990

The 1990's and the Second Wave of Major Plant Retirements in the Communications Industry
NARUC's Seventh Biennial Information Conference
Columbus, Ohio September 12-14, 1990

Papers and Seminars

How Do We Incorporate Change into the Study Filing Procedures?
USTA's 1990 Capital Recovery Seminar
Chicago, Illinois October 16_17, 1990

1989 Plant Modernization: Capital Planning and Capital Recovery
Midwest Utilities Conference
Chicago, Illinois September 11_14, 1989

Price Indexes Today: Procedures, Uses, and Misuses
Society of Depreciation Professionals' Third Annual Meeting
New Orleans, Louisiana December 6_7, 1989

1988 Plant Modernization: Capital Planning and Capital Recovery
National Association of Regulatory Utility Commissioners (NARUC)'s
Sixth Biennial Regulatory Information Conference
Columbus, Ohio September 14_16, 1988

Papers and Seminars

1997	Sprint Corporation - West Finance Center Overland Park, Kansas, August 1997
1997	Rochester Telephone Corporation Rochester, New York, April 1997
1996	Sprint-Florida-Vista United Telecommunications Altamonte Springs, Florida August 27-29, 1996
1994	Saskatchewan Telecommunications Regina, Saskatchewan, Canada, June 1994
1994	AUS Consultants/Leroy J. Murphy and Associates 1994 Capital Recovery Seminar May 1994
1993	Manitoba Telephone System, Winnipeg, Manitoba, December 1993
1993	Society of Depreciation Professionals Annual Meeting Charleston, South Carolina September 30, 1993
1993	SPRINT - Local Telephone Division Atlanta, Georgia August 11-12, 1993
1993	AUS Consultants/Leroy J. Murphy and Associates 1993 Capital Recovery Seminar Chicago, Illinois May 11 - 13, 1993
1993	Canadian Telephone Capital Recovery Seminar Halifax, Nova Scotia April 20 - 22, 1993
1993	United Telephone, Midwest Group Overland Park, Kansas January 20, 1993
1992	BellSouth Corporation Birmingham, Alabama November 23, 1992
1992	Sprint - Local Telephone Division Kansas City, Kansas November 18 - 20, 1992
1992	Society of Depreciation Professionals Annual Meeting San Antonio, Texas September 9 - 10, 1992
1992	AUS Consultants/Leroy J. Murphy and Associates 1992 Capital Recovery Seminar Chicago, Illinois October 6 - 8, 1992
1991	Society of Depreciation Professionals Annual Meeting Nashville, Tennessee November 20-22, 1991
1991	ALLTEL Corporation Microcomputer Depreciation Studies System Training Hudson, Ohio October 14-16, 1991

Capital Recovery Training

2016 Society of Depreciation Professionals
Annual Training
Charleston, South Carolina, September 18-23, 2016

2015 Society of Depreciation Professionals
Annual Training
Austin Texas September 2015

2014 Society of Depreciation Professionals
Annual Training
New Orleans, Louisiana September 2014

2013 Society of Depreciation Professionals
Annual Training
Salt Lake City, Utah September 2013

2012 Society of Depreciation Professionals
Annual Training
Minneapolis, Minnesota, September 16-18, 2012

1991 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training
Kansas City, Kansas September 23-25, 1991

1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Lake Geneva, Wisconsin September 17-19, 1991

1991 Rochester Telephone Corporation, Capital Recovery/Microcomputer Depreciation Studies System Training, Rochester, New York September 3-7, 1991

1991 Ameritech Services, Microcomputer Depreciation Studies System Training
Chicago, Illinois May 16-17, 1991

1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Washington, D.C. April 9_11, 1991

1990 United Telecommunications, Inc., Capital Recovery Seminar
Overland Park, Kansas December 1990

1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois September 24_27, 1990

1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois January 29-February 1, 1990

1990 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1990

1989 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1989

Capital Recovery Training

1989	AUS Consultants/Leroy J. Murphy and Associates 1989 Capital Recovery Seminar Chicago, Illinois March 6_9, 1989
1988	AUS Consultants/Leroy J. Murphy and Associates 1988 Capital Recovery Seminar Chicago, Illinois July 25_28, 1988
1988	United Telecommunications, Inc., Microcomputer Depreciation Studies System Training Kansas City, Kansas January 1988

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Valuation Summary

AUS Consultants
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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value Appraisal

Appraisal Approach		Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach				
Inventory of Assets				
Original Cost ($OC)		43,447,309		
Depreciated Original Cost ($OCLD)		33,403,972		
Intangible Assets (Treatement contracts)		1,768,832		
Cost Approach of all assets Conclusion		35,172,804		
Replacement Cost				
Replacement Cost New (COR)		85,964,664		
Depreciated Replacement Cost New (CORLD)	**$**	**58,078,339**		
External or Economic Obsolescence	**$**	**-**	AUS Input	
Market Value of Tangible Assets	**$**	**58,078,339**		
Intangible Assets (Treatement contracts)	$	1,768,832		
Cost Approach of all assets Conclusion		**59,847,171**		
Cost Approach Conclusion		**59,847,171**	**50%**	**29,923,586**
Income Approach				
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)		55,600,045		
Income Approach Conclusion		**55,600,045**	**40%**	**22,240,018**
Market Approach				
Market Comparables (to)				
OCLD		65,048,584		
CORLD		56,178,539		
Customers		34,298,172		
Cash Flows (EBITDA)		43,140,348		
Market Financials (to)				
OCLD		70,482,381		
Market Approach Conclusion		**56,178,539**	**10%**	**5,617,854**
Appraisal Conclusion	**$**	**57,781,458**	**100%**	**57,781,458**
Conclusion (cost approach)	$	59,847,171		

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach

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Greenfield, Wisconsin 53228
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East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

	Column Reference in OCLD & RCNLD	Amount in $s		
Depreciated Replacement Cost (RCNLD)				
Original Cost (OC)	(9)	43,447,309		
Replacement Cost New (RCN)	(16)	85,964,664		
Replacement Cost New less Depreciation (RCNLD)	(31)	58,078,339	54,930,000.00	Purchase Price
Intangible Assets - Treatment Contracts		1,768,832		
				Economic
Fair Market Vaue (FMV)	(41)	59,847,171	-	Obsolescence
			-	Condition
Depreciated Original Cost (OCLD)				
Original Cost (OC)	(46)	43,447,309		
Original Cost less Depreciation (OCLD)	(57)	33,403,972		
Intangible Assets - Treatment Contracts		1,768,832		
Depreciated Original Cost (OCLD)		35,172,804		
Cost Approach Conclusion		59,847,171		

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Income Approach to Trearment Agreements Valuation

Municipality	2020 YTD Actual	2021 Projected		Expenses	Operating Income	Value Capitalized @ 5.65%
						5.65%
Charlestown Township						
Treatment Charge	80,068					
Subtotal Charlestown Twp	80,068	80,068	1.39%	45,324	34,744	614,938
Malvern Borough						
Treatment Charge	150,300					
Subtotal Malvern Borough	150,300	150,300	2.61%	85,105	65,195	1,153,894
Total Revenues						
Total Revenues	5,428,667	5,759,816		3,260,709		1,768,832

EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WASTEWATER SYSTEM
AS OF JUNE 17, 2021

ACCOUNT	DESCRIPTION		ORIGINAL COST ($)
353.2	LAND AND LAND RIGHTS - COLLECTION	$	668.00
353.3	LAND AND LAND RIGHTS - PUMPING	$	13.00
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT	$	11,085,241.50
354.3	STRUCTURES AND IMPROVEMENTS - PUMPING	$	8,005,275.38
360.21	COLLECTION SEWERS - FORCE - MAINS	$	2,304,354.55
361.21	COLLECTION SEWERS - GRAVITY - MAINS	$	10,767,737.96
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES	$	4,350,867.01
363.2	SERVICES TO CUSTOMERS	$	6,619,976.03
365.2	FLOW MEASURING INSTALLATIONS	$	78,670.00
390.7	COMPUTER AND SOFTWARE	$	21,550.00
391.7	TRANSPORTATION EQUIPMENT	$	212,955.81
	SYSTEM TOTAL	$	43,447,309.24

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach
Replacement Cost New

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input			AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Original Cost	Cost Index Table	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	Land & Land Rights - Original Basin	668.00	USBLS1	2.87	1,920	375.01	720,020
353.30	353.30	Land & Land Rights - Pumping	13.00	USBLS1	2.08	27	498.82	13,468
354.30	354.30	Stuctures & Improvements - Pumping	8,005,275.38	HWW-18	1.52	12,142,235	1.00	12,142,235
360.21	360.21	Collection Sewers - Force - Mains	2,304,354.55	HWW-144	2.59	5,971,267	1.00	5,971,267
361.21	361.21	Collection Sewers - Gravity - Mains	10,767,737.96	HWW-144	2.84	30,582,161	1.00	30,582,161
361.23	361.23	Collection Sewers - Gravity - Manholes	4,350,867.01	HWW-145	2.32	10,108,723	1.00	10,108,723
363.20	363.20	Service Laterals	6,619,976.03	HWW-139	1.85	12,259,833	1.00	12,259,833
365.20	365.20	Flow Measuring Installations Meter Pits	78,670.00	HWW-140	4.95	389,338	1.00	389,338
354.20	354.20	Stuctures & Improvements - Treatment	11,085,241.50	HWW-115	1.22	13,511,701	1.00	13,511,701
390.70	390.70	Office Furniture and Equipment	21,550.00	AUST-115	1.16	25,084	1.00	25,084
391.70	391.70	Transportation Equipment	212,955.81	AUST-14	1.13	240,834	1.00	240,834
		Grand Total	43,447,309.24		1.96	85,233,123	1.01	85,964,664

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

Current cost of Easements

Activity	Engineer	Legal	Fees	Total
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	54	100		
Total Cost	486	300	250	1,036

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach
Replacement Cost New less Depreciation

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR $s		years	years	years	% of COR	CORLD $s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.20	Land & Land Rights - Original Basin	31.62	720,020	ZNonDep	-	-	-	-	720,020
353.30	Land & Land Rights - Pumping	20.27	13,468	ZNonDep	-	-	-	-	13,468
354.30	Stuctures & Improvements - Pumping	14.58	12,142,235	R4.0	45.00	31.23	45.82	45.00	8,379,553
360.21	Collection Sewers - Force - Mains	29.95	5,971,267	R3.0	75.00	47.21	77.16	75.00	3,669,861
361.21	Collection Sewers - Gravity - Mains	33.23	30,582,161	R2.5	80.00	50.80	84.03	80.00	18,623,208
361.23	Collection Sewers - Gravity - Manholes	32.21	10,108,723	R2.5	80.00	51.66	83.87	80.00	6,272,518
363.20	Service Laterals	22.75	12,259,833	R3.0	70.00	48.95	71.70	70.00	8,428,787
365.20	Flow Measuring Installations Meter Pits	44.50	389,338	S2.0	30.00	4.50	49.00	30.00	58,401
354.20	Stuctures & Improvements - Treatment	6.78	13,511,701	R4.0	55.00	48.11	54.89	55.00	11,842,733
390.70	Office Furniture and Equipment	12.50	25,084	R3.0	12.00	2.20	14.70	12.00	3,763
391.70	Transportation Equipment	11.45	240,834	R3.0	10.00	2.91	14.35	10.00	66,027
Grand Total		24.57	85,964,664		68.23	46.41	70.71	0.68	58,078,339

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
		CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.20	Land & Land Rights - Original Basin	720,020	0.00%	720,020
353.30	Land & Land Rights - Pumping	13,468	0.00%	13,468
354.30	Stuctures & Improvements - Pumping	8,379,553	0.00%	8,379,553
360.21	Collection Sewers - Force - Mains	3,669,861	0.00%	3,669,861
361.21	Collection Sewers - Gravity - Mains	18,623,208	0.00%	18,623,208
361.23	Collection Sewers - Gravity - Manholes	6,272,518	0.00%	6,272,518
363.20	Service Laterals	8,428,787	0.00%	8,428,787
365.20	Flow Measuring Installations Meter Pits	58,401	0.00%	58,401
354.20	Stuctures & Improvements - Treatment	11,842,733	0.00%	11,842,733
390.70	Office Furniture and Equipment	3,763	0.00%	3,763
391.70	Transportation Equipment	66,027	0.00%	66,027
	Grand Total	58,078,339	0.00%	58,078,339

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Original Cost less Depreciation

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost
Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.20	Land & Land Rights - Original Basin	668	ZNonDep	-	32.06	-	-	0.00%	-	668
353.30	Land & Land Rights - Pumping	13	ZNonDep	-	20.77	-	-	0.00%	-	13
354.30	Stuctures & Improvements - Pumping	8,005,275	R4.0	45.00	10.35	35.02	45.37	22.00%	1,800,950	6,204,325
360.21	Collection Sewers - Force - Mains	2,304,355	R3.0	75.00	23.91	52.62	76.52	31.00%	712,885	1,591,470
361.21	Collection Sewers - Gravity - Mains	10,767,738	R2.5	80.00	25.14	57.61	82.74	30.00%	3,226,805	7,540,933
361.23	Collection Sewers - Gravity - Manholes	4,350,867	R2.5	80.00	24.70	57.94	82.64	30.00%	1,283,915	3,066,952
363.20	Service Laterals	6,619,976	R3.0	70.00	15.43	55.45	70.88	22.00%	1,424,567	5,195,409
365.20	Flow Measuring Installations Meter Pits	78,670	S2.0	30.00	44.50	4.50	49.00	85.00%	66,870	11,800
354.20	Stuctures & Improvements - Treatment	11,085,242	R4.0	55.00	6.72	48.18	54.89	12.00%	1,357,375	9,727,867
390.70	Office Furniture and Equipment	21,550	R3.0	12.00	12.50	2.20	14.70	85.00%	18,318	3,232
391.70	Transportation Equipment	212,956	R3.0	10.00	11.16	3.04	14.20	71.00%	151,652	61,304
Grand Total		43,447,309		64.92	16.08	50.09	66.17	23.12%	10,043,337	33,403,972

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.20	Land & Land Rights - Original Basin	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.30	Land & Land Rights - Pumping	ZNonDep	0.00	0.00%	Non-Depr	0.00
354.20	Stuctures & Improvements - Treatment	R4.0	55.00	0.00%	MACRS	25.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
360.21	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.21	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5	80.00	0.00%	MACRS	25.00
363.20	Service Laterals	R3.0	70.00	0.00%	MACRS	25.00
365.20	Flow Measuring Installations Meter Pits	S2.0	30.00	0.00%	MACRS	25.00
390.70	Office Furniture and Equipment	R3.0	12.00	0.00%	MACRS	12.00
391.70	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Income Approach

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	5,759,816	3,305,486	2,193,634	2,454,330	260,696	75,315	806,090	(78,093)	1,651,018	0.964	1,591,581	1,591,581
2	1.5	5,759,816	3,371,594	2,218,239	2,388,222	169,983	49,108	812,135	-	1,526,979	0.896	1,368,173	2,959,754
3	2.5	5,759,816	3,439,026	2,243,274	2,320,790	77,516	22,394	818,227	-	1,480,169	0.833	1,232,981	4,192,735
4	3.5	7,775,752	3,507,806	2,268,741	4,267,946	1,999,205	577,570	824,363	(27,334)	2,893,347	0.775	2,242,344	6,435,079
5	4.5	7,775,752	3,577,962	2,294,647	4,197,790	1,903,143	549,818	830,547	-	2,817,425	0.720	2,028,546	8,463,625
6	5.5	9,719,690	3,649,522	2,320,996	6,070,168	3,749,172	1,083,136	836,776	(26,356)	4,176,612	0.669	2,794,153	11,257,778
7	6.5	9,719,690	3,722,512	2,315,050	5,997,178	3,682,128	1,063,767	721,779	-	4,211,632	0.622	2,619,635	13,877,413
8	7.5	9,719,690	3,796,962	2,338,381	5,922,728	3,584,347	1,035,518	727,193	-	4,160,017	0.579	2,408,650	16,286,063
9	8.5	10,691,659	3,872,902	2,362,106	6,818,757	4,456,651	1,287,526	732,647	(13,178)	4,811,762	0.538	2,588,728	18,874,791
10	9.5	10,691,659	3,950,359	2,386,228	6,741,300	4,355,072	1,258,180	738,141	-	4,744,979	0.500	2,372,490	21,247,281
11	10.5	10,691,659	4,029,366	2,410,754	6,662,293	4,251,539	1,228,270	743,679	-	4,690,344	0.465	2,181,010	23,428,291
12	11.5	11,333,159	4,109,952	2,435,686	7,223,207	4,787,521	1,383,115	749,257	(8,698)	5,099,533	0.432	2,202,998	25,631,289
13	12.5	11,333,159	4,192,151	2,461,029	7,141,008	4,679,979	1,352,046	754,875	-	5,034,087	0.402	2,023,703	27,654,992
14	13.5	11,333,159	4,275,994	2,486,788	7,057,165	4,570,377	1,320,382	760,535	-	4,976,248	0.373	1,856,141	29,511,133
15	14.5	12,013,149	4,361,513	2,512,970	7,651,636	5,138,666	1,484,561	766,240	(9,219)	5,410,054	0.347	1,877,289	31,388,422
16	15.5	12,013,149	4,448,744	2,539,579	7,564,405	5,024,826	1,451,672	771,988	-	5,340,745	0.323	1,725,061	33,113,483
17	16.5	12,013,149	4,537,720	2,566,617	7,475,429	4,908,812	1,418,156	777,777	-	5,279,496	0.300	1,583,849	34,697,332
18	17.5	12,733,938	4,628,474	2,594,092	8,105,464	5,511,372	1,592,235	783,611	(9,773)	5,739,391	0.279	1,601,290	36,298,622
19	18.5	12,733,938	4,721,044	2,622,008	8,012,894	5,390,886	1,557,427	789,487	-	5,665,980	0.259	1,467,489	37,766,111
20 and beyond	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	3.184	17,833,934	55,600,045
								15,540,755					

Age 19.5
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$ 0.241
PW to Perpetuity = 1/Capitalization Rate 13.210
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * $PW\ Factor_{(19.5)}$ 3.184

Net Plant		44,551,804		
ADIT		(6,443,119)		
Rate Base		38,108,685	0.241	9,184,193	46,950,304
Annual Plant Construction Inflation Rate		0.0422 Input			
Plant Inflation over 19.5 years		87,105,453	0.241	20,992,414	58,758,525
PP	54,930,000				
OCLD	33,403,972				
PP/OCLD	1.644				
RCNLD	58,078,339				
RCNLD/PP		1.057315474			
		40,292,902.78	0.241	9,710,590	47,476,701
Average					52,196,394

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Ratemaking Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)=(6)	(9) - (6)				(11)+(12)+(13)	(9)/(14)		(10)/(16)
1	0.5	5,759,816	3,305,486	1,258,810	657,820	537,700	155,341	1,040,179	382,359	54,477,279	(78,093)	(270,070)	54,129,116	1.92%	58,107,277	0.66%
2	1.5	5,759,816	3,371,594	1,235,592	637,528	515,102	148,813	1,003,817	366,289	54,053,822	(78,093)	(553,957)	53,421,772	1.88%	58,473,566	0.63%
3	2.5	5,759,816	3,439,026	1,238,242	618,311	464,237	134,118	948,430	330,119	53,633,807	(78,093)	(844,311)	52,711,403	1.80%	58,803,685	0.56%
4	3.5	7,775,752	3,507,806	1,243,980	597,701	2,426,265	700,948	2,323,018	1,725,317	53,214,190	(105,427)	(1,140,364)	51,968,399	4.47%	60,529,002	2.85%
5	4.5	7,775,752	3,577,962	1,253,783	577,777	2,366,230	683,604	2,260,403	1,682,626	52,790,953	(105,427)	(1,441,070)	51,244,456	4.41%	62,211,627	2.70%
6	5.5	9,719,690	3,649,522	1,266,757	558,518	4,244,893	1,226,350	3,577,061	3,018,543	52,360,973	(131,783)	(1,745,640)	50,483,550	7.09%	65,230,171	4.63%
7	6.5	9,719,690	3,722,512	1,263,283	539,901	4,193,994	1,211,645	3,522,250	2,982,349	51,819,469	(131,783)	(2,049,496)	49,638,190	7.10%	68,212,520	4.37%
8	7.5	9,719,690	3,796,962	1,272,326	521,904	4,128,498	1,192,723	3,457,679	2,935,775	51,274,335	(131,783)	(2,357,479)	48,785,073	7.09%	71,148,294	4.13%
9	8.5	10,691,659	3,872,902	1,283,163	504,507	5,031,087	1,453,481	4,082,113	3,577,606	50,723,819	(144,961)	(2,669,186)	47,909,672	8.52%	74,725,900	4.79%
10	9.5	10,691,659	3,950,359	1,294,982	487,690	4,958,628	1,432,548	4,013,770	3,526,080	50,166,978	(144,961)	(2,984,447)	47,037,570	8.53%	78,251,980	4.51%
11	10.5	10,691,659	4,029,366	1,301,010	471,434	4,889,849	1,412,677	3,948,606	3,477,172	49,609,648	(144,961)	(3,305,052)	46,159,635	8.55%	81,729,153	4.25%
12	11.5	11,333,159	4,109,952	1,304,247	455,720	5,463,240	1,578,330	4,340,630	3,884,910	49,054,657	(153,659)	(3,631,925)	45,269,073	9.59%	85,614,062	4.54%
13	12.5	11,333,159	4,192,151	1,317,942	440,529	5,382,537	1,555,015	4,268,051	3,827,522	48,491,590	(153,659)	(3,962,163)	44,375,768	9.62%	89,441,584	4.28%
14	13.5	11,333,159	4,275,994	1,325,816	425,845	5,305,504	1,532,760	4,198,589	3,772,744	47,926,309	(153,659)	(4,297,568)	43,475,082	9.66%	93,214,328	4.05%
15	14.5	12,013,149	4,361,513	1,324,075	411,650	5,915,911	1,709,107	4,618,454	4,206,804	47,368,474	(162,878)	(4,641,040)	42,564,556	10.85%	97,421,132	4.32%
16	15.5	12,013,149	4,448,744	1,333,017	397,928	5,833,460	1,685,287	4,546,101	4,148,173	46,807,445	(162,878)	(4,989,616)	41,654,951	10.91%	101,569,305	4.08%
17	16.5	12,013,149	4,537,720	1,341,466	384,664	5,749,299	1,660,972	4,472,991	4,088,327	46,243,756	(162,878)	(5,343,562)	40,737,316	10.98%	105,657,632	3.87%
18	17.5	12,733,938	4,628,474	1,352,522	371,842	6,381,100	1,843,500	4,909,442	4,537,600	45,674,846	(172,651)	(5,702,252)	39,799,943	12.34%	110,195,233	4.12%
19	18.5	12,733,938	4,721,044	1,349,227	359,447	6,304,220	1,821,289	4,842,378	4,482,931	45,115,106	(172,651)	(6,069,958)	38,872,497	12.46%	114,678,164	3.91%
20	19.5	12,733,938	4,815,465	1,358,709	347,465	6,212,299	1,794,733	4,765,031	4,417,566	44,551,804	(172,651)	(6,443,119)	37,936,034	12.56%	119,095,729	3.71%
										10,736,984.86						

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
20	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	0.241	1,349,868	39,115,979
21	20.5	13,497,974	4,911,774	2,679,185	8,586,200	5,907,015	1,706,537	801,375	(10,359)	6,088,647	0.224	1,363,857	40,479,836
22	21.5	13,497,974	5,010,009	2,708,454	8,487,965	5,779,511	1,669,701	807,384	-	6,010,880	0.208	1,250,263	41,730,099
23	22.5	13,497,974	5,110,209	2,738,187	8,387,765	5,649,578	1,632,163	813,440	-	5,942,162	0.194	1,152,779	42,882,878
24	23.5	14,307,852	5,212,413	2,768,387	9,095,439	6,327,052	1,827,885	819,542	(10,981)	6,458,993	0.180	1,162,619	44,045,497
25	24.5	14,307,852	5,316,662	2,799,057	8,991,190	6,192,133	1,788,907	825,688	-	6,376,595	0.167	1,064,891	45,110,388
26	25.5	14,307,852	5,422,995	831,880	8,884,857	8,052,977	2,326,505	831,880	-	5,726,472	0.156	893,330	46,003,718
27	26.5	15,166,323	5,531,456	838,118	9,634,867	8,796,749	2,541,381	838,118	(11,639)	6,267,007	0.145	908,716	46,912,434
28	27.5	15,166,323	5,642,086	844,404	9,524,237	8,679,833	2,507,604	844,404	-	6,172,229	0.134	827,079	47,739,513
29	28.5	15,166,323	5,754,928	850,737	9,411,395	8,560,658	2,473,174	850,737	-	6,087,484	0.125	760,936	48,500,449
30	29.5	15,166,323	5,870,025	857,118	9,296,298	8,439,180	2,438,079	857,118	-	6,001,101	0.116	696,128	49,196,577
31	30.5	15,166,323	5,987,426	863,547	9,178,897	8,315,350	2,402,305	863,547	-	5,913,045	0.108	638,609	49,835,186
32	31.5	15,166,323	6,107,174	870,023	9,059,149	8,189,126	2,365,839	870,023	-	5,823,287	0.100	582,329	50,417,515
33	32.5	15,166,323	6,229,318	876,548	8,937,005	8,060,457	2,328,666	876,548	-	5,731,791	0.093	533,057	50,950,572
34	33.5	15,166,323	6,353,904	883,122	8,812,419	7,929,297	2,290,774	883,122	-	5,638,523	0.087	490,552	51,441,124
35	34.5	15,166,323	6,480,982	889,746	8,685,341	7,795,595	2,252,147	889,746	-	5,543,448	0.081	449,019	51,890,143
36	35.5	15,166,323	6,610,601	896,419	8,555,722	7,659,303	2,212,773	896,419	-	5,446,530	0.075	408,490	52,298,633
37	36.5	15,166,323	6,742,813	903,142	8,423,510	7,520,368	2,172,634	903,142	-	5,347,734	0.070	374,341	52,672,974
38	37.5	15,166,323	6,877,669	909,916	8,288,654	7,378,738	2,131,717	909,916	-	5,247,021	0.065	341,056	53,014,030
39	38.5	15,166,323	7,015,223	916,739	8,151,100	7,234,361	2,090,007	916,739	-	5,144,354	0.060	308,661	53,322,691
40	39.5	15,166,323	7,155,528	923,616	8,010,795	7,087,179	2,047,486	923,616	-	5,039,693	0.056	282,223	53,604,914
41	40.5	15,166,323	7,298,639	930,542	7,867,684	6,937,142	2,004,140	930,542	-	4,933,002	0.052	256,516	53,861,430
42	41.5	15,166,323	7,444,612	937,521	7,721,711	6,784,190	1,959,952	937,521	-	4,824,238	0.048	231,563	54,092,993
43	42.5	15,166,323	7,593,504	982,336	7,572,819	6,590,483	1,903,990	944,554	-	4,724,275	0.045	212,592	54,305,585
44	43.5	15,166,323	7,745,376	1,027,770	7,420,947	6,393,177	1,846,989	951,639	-	4,622,319	0.042	194,137	54,499,722
45	44.5	15,166,323	7,900,284	1,035,477	7,266,039	6,230,562	1,800,009	958,775	-	4,507,255	0.039	175,783	54,675,505
46	45.5	15,166,323	8,058,289	1,043,243	7,108,034	6,064,791	1,752,118	965,966	-	4,389,950	0.036	158,038	54,833,543
47	46.5	15,166,323	8,219,456	1,051,067	6,946,867	5,895,800	1,703,297	973,210	-	4,270,360	0.034	145,192	54,978,735
48	47.5	15,166,323	8,383,846	1,058,950	6,782,477	5,723,527	1,653,527	980,509	-	4,148,441	0.031	128,602	55,107,337
49	48.5	15,166,323	8,551,523	1,066,893	6,614,800	5,547,907	1,602,790	987,864	-	4,024,146	0.029	116,700	55,224,037
50	49.5	15,166,323	8,722,554	1,074,894	6,443,769	5,368,875	1,551,068	995,272	-	3,897,429	0.027	105,231	55,329,268
51	50.5	15,166,323	8,897,006	1,082,956	6,269,317	5,186,361	1,498,340	1,002,737	-	3,768,240	0.025	94,206	55,423,474
52	51.5	15,166,323	9,074,946	1,091,076	6,091,377	5,000,301	1,444,587	1,010,256	-	3,636,534	0.023	83,640	55,507,114
53	52.5	15,166,323	9,256,446	1,099,260	5,909,877	4,810,617	1,389,787	1,017,833	-	3,502,257	0.022	77,050	55,584,164
54	53.5	15,166,323	9,441,576	1,107,507	5,724,747	4,617,240	1,333,921	1,025,469	-	3,365,357	0.020	67,307	55,651,471
55	54.5	15,166,323	9,630,407	1,115,812	5,535,916	4,420,104	1,276,968	1,033,159	-	3,225,789	0.019	61,290	55,712,761
56	55.5	15,166,323	9,823,016	1,124,182	5,343,307	4,219,125	1,218,905	1,040,909	-	3,083,493	0.017	52,419	55,765,180
57	56.5	15,166,323	10,019,477	1,132,612	5,146,846	4,014,234	1,159,712	1,048,715	-	2,938,419	0.016	47,015	55,812,195
58	57.5	15,166,323	10,219,867	1,141,107	4,946,456	3,805,349	1,099,365	1,056,581	-	2,790,510	0.015	41,858	55,854,053
59	58.5	15,166,323	10,424,265	1,149,665	4,742,058	3,592,393	1,037,842	1,064,505	-	2,639,711	0.014	36,956	55,891,009
60	59.5	15,166,323	10,632,751	1,158,287	4,533,572	3,375,285	975,120	1,072,488	-	2,485,964	0.172	427,586	56,318,595
								38,016,416					

Age				59.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.013				Net Plant		26,481,778			
PW to Perpetuity = 1/Capitalization Rate				13.210				ADIT		(4,411,713)			
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * $PW\ Factor_{(19.5)}$				0.172				Rate Base		22,070,065	0.013	286,911	56,177,920
								Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 59.5 years		258,161,931	0.013	3,356,105	59,247,114
								PP	54,930,000				
								RCNLD	58,078,339				
								RCNLD/PP		1.057315474			
										23,335,020.85	0.013	303,355	56,194,364

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Ratemaking Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)+(6)	(9) - (6)				(11)+(12)+(13)	(9)/(14)		(10)/(16)
20	19.5	12,733,938	4,815,465	1,358,709	347,465	6,212,299	1,794,733	4,765,031	4,417,566	44,551,804	(172,651)	(6,443,119)	37,936,034	12.56%	119,095,729	3.71%
20	20.5	13,497,974	4,911,774	1,366,549	335,883	6,883,768	1,988,721	5,230,930	4,895,047	43,986,630	(183,010)	(6,822,340)	36,981,280	14.14%	123,990,776	3.95%
20	21.5	13,497,974	5,010,009	1,362,390	324,687	6,800,888	1,964,777	5,160,798	4,836,111	43,431,625	(183,010)	(7,211,218)	36,037,397	14.32%	128,826,888	3.75%
20	22.5	13,497,974	5,110,209	1,374,124	313,864	6,699,777	1,935,566	5,078,075	4,764,211	42,870,941	(183,010)	(7,605,296)	35,082,635	14.47%	133,591,099	3.57%
20	23.5	14,307,852	5,212,413	1,374,966	303,402	7,417,071	2,142,792	5,577,681	5,274,279	42,315,517	(193,991)	(8,007,855)	34,113,671	16.35%	138,865,378	3.80%
20	24.5	14,307,852	5,316,662	1,382,034	293,289	7,315,867	2,113,554	5,495,602	5,202,313	41,759,171	(193,991)	(8,417,233)	33,147,947	16.58%	144,067,691	3.61%
20	25.5	14,307,852	5,422,995	1,382,866	283,512	7,218,479	2,085,419	5,416,572	5,133,060	41,208,185	(193,991)	(8,258,054)	32,756,140	16.54%	149,200,751	3.44%
20	26.5	15,166,323	5,531,456	1,394,024	274,062	7,966,781	2,301,603	5,939,240	5,665,178	40,652,279	(205,630)	(8,097,453)	32,349,196	18.36%	154,865,929	3.66%
20	27.5	15,166,323	5,642,086	1,391,056	264,927	7,868,254	2,273,138	5,860,043	5,595,116	40,105,627	(205,630)	(7,939,525)	31,960,472	18.34%	160,461,045	3.49%
20	28.5	15,166,323	5,754,928	1,396,962	256,096	7,758,337	2,241,384	5,773,049	5,516,953	39,559,402	(205,630)	(7,781,721)	31,572,051	18.29%	165,977,998	3.32%
20	29.5	15,166,323	5,870,025	1,398,780	247,559	7,649,959	2,210,073	5,687,445	5,439,886	39,017,740	(205,630)	(7,625,235)	31,186,875	18.24%	171,417,884	3.17%
20	30.5	15,166,323	5,987,426	1,400,275	239,307	7,539,315	2,178,108	5,600,514	5,361,207	38,481,012	(205,630)	(7,470,174)	30,805,208	18.18%	176,779,091	3.03%
20	31.5	15,166,323	6,107,174	1,405,611	231,330	7,422,208	2,144,276	5,509,262	5,277,932	37,945,424	(205,630)	(7,315,443)	30,424,351	18.11%	182,057,023	2.90%
20	32.5	15,166,323	6,229,318	1,398,379	223,619	7,315,007	2,113,305	5,425,321	5,201,702	37,423,593	(205,630)	(7,164,686)	30,053,277	18.05%	187,258,725	2.78%
20	33.5	15,166,323	6,353,904	1,405,952	216,165	7,190,302	2,077,278	5,329,189	5,113,024	36,900,763	(205,630)	(7,013,640)	29,681,493	17.95%	192,371,749	2.66%
20	34.5	15,166,323	6,480,982	1,405,849	208,960	7,070,532	2,042,677	5,236,815	5,027,855	36,384,660	(205,630)	(6,864,538)	29,314,492	17.86%	197,399,604	2.55%
20	35.5	15,166,323	6,610,601	1,405,176	201,994	6,948,552	2,007,437	5,143,109	4,941,115	35,875,903	(205,630)	(6,717,558)	28,952,715	17.76%	202,340,719	2.44%
20	36.5	15,166,323	6,742,813	1,409,408	195,261	6,818,841	1,969,963	5,044,139	4,848,878	35,369,636	(205,630)	(6,571,298)	28,592,708	17.64%	207,189,596	2.34%
20	37.5	15,166,323	6,877,669	1,401,253	188,753	6,698,648	1,935,239	4,952,162	4,763,409	34,878,299	(205,630)	(6,429,350)	28,243,319	17.53%	211,953,005	2.25%
20	38.5	15,166,323	7,015,223	1,412,498	182,461	6,556,141	1,894,069	4,844,533	4,662,072	34,382,540	(205,630)	(6,286,125)	27,890,785	17.37%	216,615,077	2.15%
20	39.5	15,166,323	7,155,528	1,405,954	176,379	6,428,462	1,857,183	4,747,658	4,571,279	33,900,202	(205,630)	(6,146,778)	27,547,794	17.23%	221,186,356	2.07%
20	40.5	15,166,323	7,298,639	1,399,524	170,499	6,297,661	1,819,394	4,648,766	4,478,267	33,431,220	(205,630)	(6,011,289)	27,214,301	17.08%	225,664,623	1.98%
20	41.5	15,166,323	7,444,612	1,392,677	164,816	6,164,218	1,780,843	4,548,191	4,383,375	32,976,064	(205,630)	(5,879,795)	26,890,639	16.91%	230,047,998	1.91%
20	42.5	15,166,323	7,593,504	1,399,178	159,322	6,014,319	1,737,537	4,436,104	4,276,782	32,521,440	(205,630)	(5,759,370)	26,556,440	16.70%	234,324,780	1.83%
20	43.5	15,166,323	7,745,376	1,399,404	154,012	5,867,531	1,695,130	4,326,413	4,172,401	32,073,675	(205,630)	(5,652,005)	26,216,040	16.50%	238,497,181	1.75%
20	44.5	15,166,323	7,900,284	1,386,508	148,878	5,730,653	1,655,586	4,223,945	4,075,067	31,645,943	(205,630)	(5,550,592)	25,889,721	16.32%	242,572,249	1.68%
20	45.5	15,166,323	8,058,289	1,387,556	143,915	5,576,563	1,611,069	4,109,409	3,965,494	31,224,353	(205,630)	(5,451,120)	25,567,603	16.07%	246,537,743	1.61%
20	46.5	15,166,323	8,219,456	1,384,304	139,118	5,423,445	1,566,833	3,995,730	3,856,612	30,813,259	(205,630)	(5,354,848)	25,252,781	15.82%	250,394,355	1.54%
20	47.5	15,166,323	8,383,846	1,382,505	134,481	5,265,491	1,521,200	3,878,772	3,744,291	30,411,263	(205,630)	(5,261,373)	24,944,260	15.55%	254,138,646	1.47%
20	48.5	15,166,323	8,551,523	1,373,723	129,998	5,111,079	1,476,591	3,764,486	3,634,488	30,025,404	(205,630)	(5,172,730)	24,647,044	15.27%	257,773,134	1.41%
20	49.5	15,166,323	8,722,554	1,373,892	125,665	4,944,212	1,428,383	3,641,494	3,515,829	29,646,784	(205,630)	(5,086,350)	24,354,804	14.95%	261,288,963	1.35%
20	50.5	15,166,323	8,897,006	1,371,200	121,476	4,776,641	1,379,971	3,518,146	3,396,670	29,278,321	(205,630)	(5,003,076)	24,069,615	14.62%	264,685,633	1.28%
20	51.5	15,166,323	9,074,946	1,359,051	117,427	4,614,899	1,333,244	3,399,082	3,281,655	28,929,526	(205,630)	(4,925,658)	23,798,238	14.28%	267,967,288	1.22%
20	52.5	15,166,323	9,256,446	1,370,652	113,513	4,425,712	1,278,588	3,260,637	3,147,124	28,576,706	(205,630)	(4,847,253)	23,523,823	13.86%	271,114,411	1.16%
20	53.5	15,166,323	9,441,576	1,357,387	109,729	4,257,631	1,230,030	3,137,330	3,027,601	28,244,788	(205,630)	(4,775,063)	23,264,095	13.49%	274,142,012	1.10%
20	54.5	15,166,323	9,630,407	1,352,196	106,071	4,077,649	1,178,033	3,005,687	2,899,616	27,925,751	(205,630)	(4,706,772)	23,013,349	13.06%	277,041,628	1.05%
20	55.5	15,166,323	9,823,016	1,351,772	102,536	3,888,999	1,123,532	2,868,003	2,765,467	27,614,888	(205,630)	(4,641,021)	22,768,237	12.60%	279,807,095	0.99%
20	56.5	15,166,323	10,019,477	1,348,237	99,118	3,699,491	1,068,783	2,729,826	2,630,708	27,315,366	(205,630)	(4,578,727)	22,531,009	12.12%	282,437,803	0.93%
20	57.5	15,166,323	10,219,867	1,344,043	95,814	3,506,599	1,013,057	2,589,356	2,493,542	27,027,904	(205,630)	(4,520,099)	22,302,175	11.61%	284,931,345	0.88%
20	58.5	15,166,323	10,424,265	1,337,385	92,620	3,312,053	956,852	2,447,821	2,355,201	26,755,024	(205,630)	(4,465,867)	22,083,527	11.08%	287,286,546	0.82%
20	59.5	15,166,323	10,632,751	1,345,734	89,533	3,098,305	895,100	2,292,738	2,203,205	26,481,778	(205,630)	(4,411,713)	21,864,435	10.49%	289,489,751	0.76%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	100.0%						**7.57%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.65%**

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	29%	Market	2.79%	Market	Not Applicable	Not Applicable	0.81%
Equity	71%	Market	9.85%	Market	Not Applicable	Not Applicable	6.99%
Total Capital r	100.0%						**7.80%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.87%**

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	100.0%						**7.21%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.21%**

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Market Approach

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

Central Tendancy and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted	
Mean	1.7594	1.8494	
Standard Deviation	0.5882	0.4204	
Median	1.49	1.4355	
Mode	1.4418	1.4418	
Conclusion		1.8494	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD		35,172,804	Cost Approach - OCLD
Market Value Indication		**65,048,584**	

Market Sales Analysis - PP/CORLD

	Simple	Weighted	
Mean	0.8087	0.9337	
Standard Deviation	0.1746	0.1695	
Median	0.8229	0.7558	
Mode	0.6918	0.6918	
Conclusion		0.9387	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity CORLD		59,847,171	Cost Approach - CORLD
Market Value Indication		**56,178,539**	

Market Sales Analysis - PP/Customer

	Simple	Weighted	
Water Tretment & Distribution			
Mean	6,123	10,962	
Standard Deviation		4,613	
Median	5,021	4,963	
Wastewater Collection & Treatment		16,785	
Mean	9,579		
Standard Deviation		-	AUS Input
Median	8,754		
Wastewater Collection			
Mean	6,507		
Standard Deviation			
Median	6,636		
Watewater Treatment Only			
Mean	3,072		
Standard Deviation			
Median	2,118		
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Customers		3,918	AUS Input
Wastewater Collection & Treatment PP/Customer		8,754	AUS Input
Collection and Treatement Customers Market Value Indic		**34,298,172**	

Treatement Only Market Value Indication

Treatment Only PP/customer	2,118	AUS Input
Treatment Only Customers	-	AUS Input
Market Value Indication Treatment Only	-	

Total Market Value Indication **34,298,172**

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.40	
Market to Book (equity and debt)	2.11	
Use (equity and debt)	2.11	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD	33,403,972	Cost Approach - OCLD
Market Value Indication	**70,482,381**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted	
Mean	17.48	15.32	
Standard Deviation	5.71	5.10	
Median	17.41	18.13	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		18.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash Flows		2,396,686	Income Approach
Market Value Indication		**43,140,348**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted	
Mean	11.62	11.45	
Standard Deviation	2.67	2.14	
Median	11.65	12.07	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		12.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash		3,264,195	Income Approach
Market Value Indication		**39,170,336**	

Summary of Market Analyses

Indicators	
OCLD	65,048,584
CORLD	56,178,539
Customers	34,298,172
Cash Flows	
EBITDA Periods 1-5	43,140,348
EBITDA Periods 1-13	39,170,336
Value Line	70,482,381
Mean	51,386,393
Median	49,659,444
Conclusion	**56,178,539**

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional Wa	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach

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East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

	Column Reference in OCLD & RCNLD	Amount in $s		
Depreciated Replacement Cost (RCNLD)				
Original Cost (OC)	(9)	43,447,309		
Replacement Cost New (RCN)	(16)	85,964,664		
Replacement Cost New less Depreciation (RCNLD)	(31)	58,078,339	54,930,000.00	Purchase Price
Intangible Assets - Treatment Contracts		1,768,832		
				Economic
Fair Market Vaue (FMV)	(41)	59,847,171	-	Obsolescence
			-	Condition
Depreciated Original Cost (OCLD)				
Original Cost (OC)	(46)	43,447,309		
Original Cost less Depreciation (OCLD)	(57)	33,403,972		
Intangible Assets - Treatment Contracts		1,768,832		
Depreciated Original Cost (OCLD)		35,172,804		
Cost Approach Conclusion		59,847,171		

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Income Approach to Trearment Agreements Valuation

Municipality	2020 YTD Actual	2021 Projected		Expenses	Operating Income	Value Capitalized @ 5.65%
						5.65%
Charlestown Township						
Treatment Charge	80,068					
Subtotal Charlestown Twp	80,068	80,068	1.39%	45,324	34,744	614,938
Malvern Borough						
Treatment Charge	150,300					
Subtotal Malvern Borough	150,300	150,300	2.61%	85,105	65,195	1,153,894
Total Revenues						
Total Revenues	5,428,667	5,759,816		3,260,709		1,768,832

EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WASTEWATER SYSTEM
AS OF JUNE 17, 2021

ACCOUNT	DESCRIPTION		ORIGINAL COST ($)
353.2	LAND AND LAND RIGHTS - COLLECTION	$	668.00
353.3	LAND AND LAND RIGHTS - PUMPING	$	13.00
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT	$	11,085,241.50
354.3	STRUCTURES AND IMPROVEMENTS - PUMPING	$	8,005,275.38
360.21	COLLECTION SEWERS - FORCE - MAINS	$	2,304,354.55
361.21	COLLECTION SEWERS - GRAVITY - MAINS	$	10,767,737.96
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES	$	4,350,867.01
363.2	SERVICES TO CUSTOMERS	$	6,619,976.03
365.2	FLOW MEASURING INSTALLATIONS	$	78,670.00
390.7	COMPUTER AND SOFTWARE	$	21,550.00
391.7	TRANSPORTATION EQUIPMENT	$	212,955.81
	SYSTEM TOTAL	$	43,447,309.24

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach
Replacement Cost New

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input			AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Original Cost	Cost Index Table	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	Land & Land Rights - Original Basin	668.00	USBLS1	2.87	1,920	375.01	720,020
353.30	353.30	Land & Land Rights - Pumping	13.00	USBLS1	2.08	27	498.82	13,468
354.30	354.30	Stuctures & Improvements - Pumping	8,005,275.38	HWW-18	1.52	12,142,235	1.00	12,142,235
360.21	360.21	Collection Sewers - Force - Mains	2,304,354.55	HWW-144	2.59	5,971,267	1.00	5,971,267
361.21	361.21	Collection Sewers - Gravity - Mains	10,767,737.96	HWW-144	2.84	30,582,161	1.00	30,582,161
361.23	361.23	Collection Sewers - Gravity - Manholes	4,350,867.01	HWW-145	2.32	10,108,723	1.00	10,108,723
363.20	363.20	Service Laterals	6,619,976.03	HWW-139	1.85	12,259,833	1.00	12,259,833
365.20	365.20	Flow Measuring Installations Meter Pits	78,670.00	HWW-140	4.95	389,338	1.00	389,338
354.20	354.20	Stuctures & Improvements - Treatment	11,085,241.50	HWW-115	1.22	13,511,701	1.00	13,511,701
390.70	390.70	Office Furniture and Equipment	21,550.00	AUST-115	1.16	25,084	1.00	25,084
391.70	391.70	Transportation Equipment	212,955.81	AUST-14	1.13	240,834	1.00	240,834
		Grand Total	43,447,309.24		1.96	85,233,123	1.01	85,964,664

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
Account 353.20		LAND AND LAND RIGHTS - COLLECTION													
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	FLAT ROAD DRAINAGE AREA (FR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	FLAT ROAD DRAINAGE AREA (FR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	FLAT ROAD DRAINAGE AREA (FR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	FLAT ROAD DRAINAGE AREA (FR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	FLAT ROAD DRAINAGE AREA (FR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	-	USBLS1	172	262	1.523	-	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	-	USBLS1	172	262	1.523	-	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	-	USBLS1	172	262	1.523	-	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	-	USBLS1	172	262	1.523	-	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	-	USBLS1	172	262	1.523	-	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988			1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	KING ROAD DRAINAGE AREA (KR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LAPP ROAD DRAINAGE AREA (LR)	1987	1987				1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007				1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000				1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15) Reproduction Cost New (RCN) to Replacement Cost New (COR)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)		Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00 USBLS1	118	262	2.220	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	-	USBLS1	118	262	2.220	-	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	1988				1,036	1.00	USBLS1	118	262	2.220	2	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
353.20	353.20	MEADOW VIEW DRAINAGE AREA (MV)	1980	1980				1,036	-	USBLS1	82	262	3.195	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036

Cost Approach

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	-	USBLS1	57	262	4.596	-	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	MILL LANE DRAINAGE AREA (ML)	1976	1976				1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	-	USBLS1	251	262	1.044	-	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	PLANEBROOK DRAINAGE AREA (PB)	2018	2018				1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	-	USBLS1	163	262	1.607	-	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s				~	RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
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Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	WESTGATE DRAINAGE AREA (WG)	1998	1998				1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	353.20	353.20 WESTGATE DRAINAGE AREA (WG)	1998	1998			1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
	353.20	353.20 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
	353.20	353.20 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
	353.20	353.20 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
	353.20	353.20 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
	353.20	353.20 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
Subtotal 353.20		LAND AND LAND RIGHTS - COLLECTION						668.00					**1,920**		**720,020**
Saccout 353.3		LAND AND LAND RIGHTS - PUMPING													
	353.30	353.30 DEER RUN DRAINAGE AREA (DR)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
	353.30	353.30 HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
	353.30	353.30 KING ROAD DRAINAGE AREA (KR)	2004	2004			1,036	1.00	USBLS1	189	262	1.386	1	1.000	1,036
	353.30	353.30 LAPP ROAD DRAINAGE AREA (LR)	1987	1987			1,036	1.00	USBLS1	114	262	2.298	2	1.000	1,036
	353.30	353.30 LEE BOULEVARD DRAINAGE AREA (LB)	2007	2007			1,036	1.00	USBLS1	207	262	1.266	1	1.000	1,036
	353.30	353.30 MALVERN HUNT DRAINAGE AREA (MAL)	2000	2000			1,036	1.00	USBLS1	172	262	1.523	2	1.000	1,036
	353.30	353.30 MEADOW VIEW DRAINAGE AREA (MV)	1980	1980			1,036	1.00	USBLS1	82	262	3.195	3	1.000	1,036
	353.30	353.30 MILL LANE DRAINAGE AREA (ML)	1976	1976			1,036	1.00	USBLS1	57	262	4.596	5	1.000	1,036
	353.30	353.30 0	2020	2020			1,036	1.00	USBLS1	259	262	1.012	1	1.000	1,036
	353.30	353.30 PLANEBROOK DRAINAGE AREA (PB)	2018	2018			1,036	1.00	USBLS1	251	262	1.044	1	1.000	1,036
	353.30	353.30 0	2020	2020			1,036	1.00	USBLS1	259	262	1.012	1	1.000	1,036
	353.30	353.30 WESTGATE DRAINAGE AREA (WG)	1998	1998			1,036	1.00	USBLS1	163	262	1.607	2	1.000	1,036
	353.30	353.30 WILBURDALE ROAD DRAINAGE AREA (WB)	2017	2017			1,036	1.00	USBLS1	245	262	1.069	1	1.000	1,036
Subtotal 353.3		**LAND AND LAND RIGHTS - PUMPING**						**13.00**					**27**		**13,468**
Subtotal 354.4		STRUCTURES AND IMPROVEMENTS - PUMPING													
	354.30	354.30 (P.S. 1) Deer Run	1976	1976				78,670.00	HWW-18	130	762	5.862	461,164	1.000	461,164
	354.30	354.30 (P.S. 1) Deer Run	2018	2018				51,550.00	HWW-18	704	762	1.082	55,777	1.000	55,777
	354.30	354.30 (P.S. 11) Hillbrook Circle	2000	2000				464,526.14	HWW-18	362	762	2.105	977,828	1.000	977,828
	354.30	354.30 (P.S. 12) King Road	2004	2004				233,129.00	HWW-18	420.8	762	1.811	422,197	1.000	422,197
	354.30	354.30 (P.S. 13) Malvern Hunt	2000	2000				374,100.00	HWW-18	362	762	2.105	787,481	1.000	787,481
	354.30	354.30 (P.S. 14) Planebrook Road	2018	2018				353,800.00	HWW-18	704	762	1.082	382,812	1.000	382,812
	354.30	354.30 (P.S. 14) Planebrook Road	2018	2018				79,730.00	HWW-18	704	762	1.082	86,268	1.000	86,268
	354.30	354.30 (P.S. 2) Mill Lane	2014	2014				3,001,023.00	HWW-18	630.8	762	1.208	3,625,236	1.000	3,625,236
	354.30	354.30 (P.S. 2) Mill Lane	1976	1976				40,000.00	HWW-18	130	762	5.862	234,480	1.000	234,480
	354.30	354.30 (P.S. 3) Wilburdale	2017	2017				469,600.00	HWW-18	675.3	762	1.128	529,709	1.000	529,709
	354.30	354.30 (P.S. 3) Wilburdale	2017	2017				95,500.00	HWW-18	675.3	762	1.128	107,724	1.000	107,724
	354.30	354.30 (P.S. 4) Lee Boulevard	2007	2007				556,117.00	HWW-18	496.3	762	1.535	853,640	1.000	853,640
	354.30	354.30 0	2002	2002				49,664.45	HWW-18	388.8	762	1.960	97,342	1.000	97,342
	354.30	354.30 (P.S. 5) Meadowview	1980	1980				106,067.00	HWW-18	181	762	4.210	446,542	1.000	446,542
	354.30	354.30 (P.S. 6) Flat Road	2019	2019				352,000.00	HWW-18	715.5	762	1.065	374,880	1.000	374,880
	354.30	354.30 (P.S. 7) Lapp Road	1987	1987				179,265.00	HWW-18	239	762	3.188	571,497	1.000	571,497
	354.30	354.30 (P.S. 7) Lapp Road	2006	2006				131,119.57	HWW-18	466.3	762	1.634	214,249	1.000	214,249
	354.30	354.30 (P.S. 8) Westgate	1988	1988				78,824.35	HWW-18	251	762	3.036	239,311	1.000	239,311
	354.30	354.30 (P.S. 8) Westgate	2001	2001				89,972.00	HWW-18	378	762	2.016	181,384	1.000	181,384
	354.30	354.30 0	2007	2007				23,866.00	HWW-18	496.3	762	1.535	36,634	1.000	36,634

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Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
354.30	354.30	0	2009	2009				53,907.50	HWW-18	543.8	762	1.401	75,524	1.000	75,524
354.30	354.30	0	2014	2014				1,142,844.37	HWW-18	630.8	762	1.208	1,380,556	1.000	1,380,556
Subtotal 354.30		**STRUCTURES AND IMPROVEMENTS - PUMPING**						**8,005,275.38**					**12,142,235**		**12,142,235**
Account 360.21		COLLECTION SEWERS - FORCE - MAINS													
360.21	360.21	(P.S. 1) Deer Run FM - 4" ACP	1976	1976		830		31,269.40	HWW-144	129.8	674.5	5.196	162,476	1.000	162,476
360.21	360.21	(P.S. 11) Hillbrook Circle FM - 4" PVC	2000	2000		785		85,964.86	HWW-144	313.6	674.5	2.151	184,910	1.000	184,910
360.21	360.21	(P.S. 12) King Road FM - 4" PVC	2004	2004		2,400		286,021.50	HWW-144	362.6	674.5	1.860	532,000	1.000	532,000
360.21	360.21	(P.S. 13) Malvern Hunt FM - 6" DIP	2000	2000		2,860		279,122.94	HWW-144	313.6	674.5	2.151	600,393	1.000	600,393
360.21	360.21	(P.S. 14) Planebrook FM - 8" PVC	2017	2017		2,545		443,454.75	HWW-144	573.5	674.5	1.176	521,503	1.000	521,503
360.21	360.21	(P.S. 2) Mill Lane FM - 14" DIP	1976	1976		3,400		193,322.11	HWW-144	129.8	674.5	5.196	1,004,502	1.000	1,004,502
360.21	360.21	(P.S. 3) Wilburdale Rd FM - 10" PVC Replacement	2016	2016		1,935		89,428.47	HWW-144	567.3	674.5	1.189	106,330	1.000	106,330
360.21	360.21	(P.S. 4) Lee Blvd FM - 8" DIP	1987	1987		3,310		276,127.99	HWW-144	217.2	674.5	3.105	857,377	1.000	857,377
360.21	360.21	(P.S. 5) Meadow View FM - 4" ACP	1980	1980		1,245		63,237.44	HWW-144	173	674.5	3.899	246,563	1.000	246,563
360.21	360.21	(P.S. 6) Flat Rd FM - 6" ACP	1979	1979		1,655		77,969.12	HWW-144	160.5	674.5	4.202	327,626	1.000	327,626
360.21	360.21	(P.S. 7) Lapp Rd FM - 6" PVC	1987	1987		3,715		340,443.41	HWW-144	217.2	674.5	3.105	1,057,077	1.000	1,057,077
360.21	360.21	(P.S. 8) Westgate FM - 8" PVC	1988	1988		1,620		137,992.57	HWW-144	251.2	674.5	2.685	370,510	1.000	370,510
Subtotal 360.21		**COLLECTION SEWERS - FORCE - MAINS**						**2,304,354.55**					**5,971,267**		**5,971,267**
Account 361.21		COLLECTION SEWERS - GRAVITY - MAINS													
361.21	361.21	18" ACP	1975	1975		1,842		58,356.08	HWW-144	122	674.5	5.529	322,651	1.000	322,651
361.21	361.21	12" ACP	1975	1975		2,830		68,677.29	HWW-144	122	674.5	5.529	379,717	1.000	379,717
361.21	361.21	12" ACP	1978	1978		2,027		61,740.49	HWW-144	145.4	674.5	4.639	286,414	1.000	286,414
361.21	361.21	10" ACP	1975	1975		4,486		75,582.08	HWW-144	122	674.5	5.529	417,893	1.000	417,893
361.21	361.21	10" ACP	1977	1977		2,296		45,057.04	HWW-144	137.1	674.5	4.920	221,681	1.000	221,681
361.21	361.21	10" ACP	2012	2012		109		7,711.37	HWW-144	564.1	674.5	1.196	9,223	1.000	9,223
361.21	361.21	36" ACP	1967	1967		157		3,625.87	HWW-144	73.6	674.5	9.164	33,227	1.000	33,227
361.21	361.21	27" ACP	1967	1967		3,833		67,279.78	HWW-144	73.6	674.5	9.164	616,552	1.000	616,552
361.21	361.21	24" ACP	1967	1967		243		3,557.15	HWW-144	73.6	674.5	9.164	32,598	1.000	32,598
361.21	361.21	24" ACP	1975	1975		632		19,081.73	HWW-144	122	674.5	5.529	105,503	1.000	105,503
361.21	361.21	10" PVC	1991	1991		1,427		52,555.09	HWW-144	263.4	674.5	2.561	134,594	1.000	134,594
361.21	361.21	10" PVC	1992	1992		1,054		40,012.42	HWW-144	253.3	674.5	2.663	106,553	1.000	106,553
361.21	361.21	10" PVC	1993	1993		183		7,273.99	HWW-144	264.5	674.5	2.550	18,549	1.000	18,549
361.21	361.21	10" PVC	2007	2007		8,646		524,646.93	HWW-144	465.8	674.5	1.448	759,689	1.000	759,689
361.21	361.21	10" PVC	2019	2019		492		42,281.39	HWW-144	601.5	674.5	1.121	47,397	1.000	47,397
361.21	361.21	10" PVC	2020	2020		1,275		111,336.08	HWW-144	631.9	674.5	1.067	118,796	1.000	118,796
361.21	361.21	8" ACP	1951	1951		719		2,995.29	HWW-144	47.5	674.5	14.200	42,533	1.000	42,533
361.21	361.21	8" ACP	1954	1954		2,913		14,038.43	HWW-144	52.1	674.5	12.946	181,742	1.000	181,742
361.21	361.21	8" ACP	1967	1967		3,298		27,177.06	HWW-144	73.6	674.5	9.164	249,051	1.000	249,051
361.21	361.21	8" ACP	1970	1970		5,901		62,533.31	HWW-144	82.9	674.5	8.136	508,771	1.000	508,771
361.21	361.21	8" ACP	1971	1971		2,094		25,402.60	HWW-144	92.5	674.5	7.292	185,236	1.000	185,236
361.21	361.21	8" ACP	1972	1972		1,725		23,205.13	HWW-144	97.5	674.5	6.918	160,533	1.000	160,533
361.21	361.21	8" ACP	1973	1973		6,653		96,745.87	HWW-144	100	674.5	6.745	652,551	1.000	652,551
361.21	361.21	8" ACP	1974	1974		6,831		105,874.72	HWW-144	112.6	674.5	5.990	634,190	1.000	634,190
361.21	361.21	8" ACP	1975	1975		49,832		845,813.84	HWW-144	122	674.5	5.529	4,676,505	1.000	4,676,505
361.21	361.21	8" ACP	1977	1977		7,370		145,673.10	HWW-144	137.1	674.5	4.920	716,712	1.000	716,712

Cost Approach

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
361.21	361.21	8" ACP	1978	1978		16,989		361,879.62	HWW-144	145.4	674.5	4.639	1,678,760	1.000	1,678,760
361.21	361.21	8" ACP	1979	1979		4,942		113,876.97	HWW-144	160.5	674.5	4.202	478,511	1.000	478,511
361.21	361.21	8" ACP	1981	1981		7,549		204,755.08	HWW-144	185.5	674.5	3.636	744,489	1.000	744,489
361.21	361.21	8" ACP	2012	2012		430		30,744.03	HWW-144	564.1	674.5	1.196	36,770	1.000	36,770
361.21	361.21	8" PVC	1970	1970		346		3,668.20	HWW-144	82.9	674.5	8.136	29,844	1.000	29,844
361.21	361.21	8" PVC	1983	1983		1,492		46,541.18	HWW-144	199.6	674.5	3.379	157,263	1.000	157,263
361.21	361.21	8" PVC	1984	1984		3,842		122,229.73	HWW-144	200.5	674.5	3.364	411,181	1.000	411,181
361.21	361.21	8" PVC	1985	1985		794		25,549.19	HWW-144	204.6	674.5	3.297	84,236	1.000	84,236
361.21	361.21	8" PVC	1987	1987		13,171		445,308.18	HWW-144	217.2	674.5	3.105	1,382,682	1.000	1,382,682
361.21	361.21	8" PVC	1988	1988		16,918		586,647.87	HWW-144	251.2	674.5	2.685	1,575,150	1.000	1,575,150
361.21	361.21	8" PVC	1990	1990		8,876		322,292.20	HWW-144	268.4	674.5	2.513	809,920	1.000	809,920
361.21	361.21	8" PVC	1991	1991		3,676		136,365.76	HWW-144	263.4	674.5	2.561	349,233	1.000	349,233
361.21	361.21	8" PVC	1992	1992		1,919		73,418.31	HWW-144	253.3	674.5	2.663	195,513	1.000	195,513
361.21	361.21	8" PVC	1993	1993		2,966		118,574.34	HWW-144	264.5	674.5	2.550	302,365	1.000	302,365
361.21	361.21	8" PVC	1994	1994		1,176		48,812.47	HWW-144	264.7	674.5	2.548	124,374	1.000	124,374
361.21	361.21	8" PVC	1996	1996		409		17,626.35	HWW-144	284.9	674.5	2.367	41,722	1.000	41,722
361.21	361.21	8" PVC	1997	1997		4,377		195,693.34	HWW-144	291.1	674.5	2.317	453,421	1.000	453,421
361.21	361.21	8" PVC	1998	1998		3,549		161,226.12	HWW-144	295	674.5	2.286	368,563	1.000	368,563
361.21	361.21	8" PVC	1999	1999		4,126		191,811.88	HWW-144	299.7	674.5	2.251	431,769	1.000	431,769
361.21	361.21	8" PVC	2000	2000		17,626		841,402.41	HWW-144	313.6	674.5	2.151	1,809,857	1.000	1,809,857
361.21	361.21	8" PVC	2001	2001		697		33,916.65	HWW-144	327.2	674.5	2.061	69,902	1.000	69,902
361.21	361.21	8" PVC	2002	2002		11,437		573,796.70	HWW-144	338.8	674.5	1.991	1,142,429	1.000	1,142,429
361.21	361.21	8" PVC	2003	2003		2,539		130,439.13	HWW-144	341	674.5	1.978	258,009	1.000	258,009
361.21	361.21	8" PVC	2004	2004		2,760		150,691.88	HWW-144	362.6	674.5	1.860	280,287	1.000	280,287
361.21	361.21	8" PVC	2005	2005		18,989		1,084,944.19	HWW-144	393.8	674.5	1.713	1,858,509	1.000	1,858,509
361.21	361.21	8" PVC	2006	2006		423		25,135.71	HWW-144	433.5	674.5	1.556	39,111	1.000	39,111
361.21	361.21	8" PVC	2007	2007		784		47,935.30	HWW-144	465.8	674.5	1.448	69,410	1.000	69,410
361.21	361.21	8" PVC	2011	2011		1,899		132,177.28	HWW-144	540	674.5	1.249	165,089	1.000	165,089
361.21	361.21	8" PVC	2012	2012		2,913		208,075.48	HWW-144	564.1	674.5	1.196	248,858	1.000	248,858
361.21	361.21	8" PVC	2013	2013		380		27,836.86	HWW-144	551.7	674.5	1.223	34,044	1.000	34,044
361.21	361.21	8" PVC	2014	2014		111		8,385.04	HWW-144	556	674.5	1.213	10,171	1.000	10,171
361.21	361.21	8" PVC	2017	2017		3,251		267,817.00	HWW-144	573.5	674.5	1.176	314,953	1.000	314,953
361.21	361.21	8" PVC	2018	2018		1,398		118,706.70	HWW-144	587.2	674.5	1.149	136,394	1.000	136,394
361.21	361.21	8" DIP	1954	1954		862		4,154.49	HWW-144	52.1	674.5	12.946	53,784	1.000	53,784
361.21	361.21	8" DIP	1975	1975		274		4,654.72	HWW-144	122	674.5	5.529	25,736	1.000	25,736
361.21	361.21	8" CIP	1975	1975		123		2,079.98	HWW-144	122	674.5	5.529	11,500	1.000	11,500
361.21	361.21	20" ACP	1975	1975		4,544		129,196.92	HWW-144	122	674.5	5.529	714,330	1.000	714,330
361.21	361.21	16" ACP	1975	1975		349		9,050.37	HWW-144	122	674.5	5.529	50,039	1.000	50,039
361.21	361.21	12" PVC	1970	1970		1,503		22,773.69	HWW-144	82.9	674.5	8.136	185,287	1.000	185,287
361.21	361.21	12" PVC	2012	2012		81		8,301.62	HWW-144	564.1	674.5	1.196	9,929	1.000	9,929
361.21	361.21	12" PVC	2016	2016		1,348		152,918.81	HWW-144	567.3	674.5	1.189	181,820	1.000	181,820
361.21	361.21	15" PVC	2013	2013		916		81,957.99	HWW-144	551.7	674.5	1.223	100,235	1.000	100,235
361.21	361.21	15" PVC	2017	2017		2,253		226,562.48	HWW-144	573.5	674.5	1.176	266,437	1.000	266,437
361.21	361.21	18" PVC	1988	1988		1,496		96,804.77	HWW-144	251.2	674.5	2.685	259,921	1.000	259,921
361.21	361.21	18" PVC	2013	2013		2,835		387,731.42	HWW-144	551.7	674.5	1.223	474,196	1.000	474,196
361.21	361.21	18" PVC	2014	2014		139		19,571.48	HWW-144	556	674.5	1.213	23,740	1.000	23,740

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
361.21	361.21	18" PVC	2017	2017		621		95,579.17	HWW-144	573.5	674.5	1.176	112,401	1.000	112,401
361.21	361.21	10" DI	2020	2020		93		8,118.65	HWW-144	631.9	674.5	1.067	8,663	1.000	8,663
361.21	361.21	8" CSP	1978	1978		1,049		22,339.74	HWW-144	145.4	674.5	4.639	103,634	1.000	103,634
361.21	361.21	8" CSP	1983	1983		2,490		77,680.40	HWW-144	199.6	674.5	3.379	262,482	1.000	262,482
361.21	361.21	20" PVC	2014	2014		98		12,406.81	HWW-144	556	674.5	1.213	15,049	1.000	15,049
361.21	361.21	21" PVC	2014	2014		74		9,339.15	HWW-144	556	674.5	1.213	11,328	1.000	11,328
Subtotal 261.21		**COLLECTION SEWERS - GRAVITY - MAINS**						**10,767,737.96**					**30,582,161**		**30,582,161**
Account 361.23		COLLECTION SEWERS - GRAVITY - MANHOLES													
361.23	361.23	Manholes	1951	1951		6		2,077.71	HWW-145	41.3	586.4	14.199	29,501	1.000	29,501
361.23	361.23	Manholes	1954	1954		22		8,810.81	HWW-145	47.3	586.4	12.397	109,228	1.000	109,228
361.23	361.23	Manholes	1967	1967		35		23,972.06	HWW-145	65.6	586.4	8.939	214,286	1.000	214,286
361.23	361.23	Manholes	1970	1970		28		24,659.55	HWW-145	82	586.4	7.151	176,340	1.000	176,340
361.23	361.23	Manholes	1971	1971		9		9,074.19	HWW-145	90.4	586.4	6.487	58,864	1.000	58,864
361.23	361.23	Manholes	1972	1972		5		5,589.66	HWW-145	94.6	586.4	6.199	34,650	1.000	34,650
361.23	361.23	Manholes	1973	1973		40		48,339.55	HWW-145	100	586.4	5.864	283,463	1.000	283,463
361.23	361.23	Manholes	1974	1974		30		38,646.13	HWW-145	112	586.4	5.236	202,351	1.000	202,351
361.23	361.23	Manholes	1975	1975		297		418,962.34	HWW-145	125.1	586.4	4.687	1,963,676	1.000	1,963,676
361.23	361.23	Manholes	1977	1977		50		82,138.97	HWW-145	138.5	586.4	4.234	347,776	1.000	347,776
361.23	361.23	Manholes	1978	1978		83		146,936.93	HWW-145	148.4	586.4	3.951	580,548	1.000	580,548
361.23	361.23	Manholes	1979	1979		24		45,962.11	HWW-145	166	586.4	3.533	162,384	1.000	162,384
361.23	361.23	Manholes	1980	1980		2		4,128.63	HWW-145	185.7	586.4	3.158	13,038	1.000	13,038
361.23	361.23	Manholes	1981	1981		36		81,156.88	HWW-145	205.4	586.4	2.855	231,703	1.000	231,703
361.23	361.23	Manholes	1983	1983		17		44,080.82	HWW-145	229.5	586.4	2.555	112,627	1.000	112,627
361.23	361.23	Manholes	1984	1984		24		63,456.18	HWW-145	237.5	586.4	2.469	156,673	1.000	156,673
361.23	361.23	Manholes	1985	1985		5		13,376.28	HWW-145	248.1	586.4	2.364	31,622	1.000	31,622
361.23	361.23	Manholes	1987	1987		67		188,257.68	HWW-145	255.6	586.4	2.294	431,863	1.000	431,863
361.23	361.23	Manholes	1988	1988		89		256,487.24	HWW-145	260.6	586.4	2.250	577,096	1.000	577,096
361.23	361.23	Manholes	1990	1990		40		120,708.58	HWW-145	263	586.4	2.230	269,180	1.000	269,180
361.23	361.23	Manholes	1991	1991		30		92,502.00	HWW-145	273	586.4	2.148	198,694	1.000	198,694
361.23	361.23	Manholes	1992	1992		16		50,864.94	HWW-145	276	586.4	2.125	108,088	1.000	108,088
361.23	361.23	Manholes	1993	1993		19		63,128.39	HWW-145	282.2	586.4	2.078	131,181	1.000	131,181
361.23	361.23	Manholes	1994	1994		7		24,141.72	HWW-145	290.8	586.4	2.017	48,694	1.000	48,694
361.23	361.23	Manholes	1996	1996		2		7,168.03	HWW-145	310.5	586.4	1.889	13,540	1.000	13,540
361.23	361.23	Manholes	1997	1997		23		85,453.87	HWW-145	309.8	586.4	1.893	161,764	1.000	161,764
361.23	361.23	Manholes	1998	1998		30		113,259.95	HWW-145	326.7	586.4	1.795	203,302	1.000	203,302
361.23	361.23	Manholes	1999	1999		20		77,279.51	HWW-145	333.4	586.4	1.759	135,935	1.000	135,935
361.23	361.23	Manholes	2000	2000		111		440,368.85	HWW-145	341.5	586.4	1.717	756,113	1.000	756,113
361.23	361.23	Manholes	2001	2001		4		16,180.36	HWW-145	355.8	586.4	1.648	26,665	1.000	26,665
361.23	361.23	Manholes	2002	2002		61		254,336.19	HWW-145	371	586.4	1.581	402,106	1.000	402,106
361.23	361.23	Manholes	2003	2003		13		55,496.10	HWW-145	377.9	586.4	1.552	86,130	1.000	86,130
361.23	361.23	Manholes	2004	2004		15		68,061.20	HWW-145	375.6	586.4	1.561	106,244	1.000	106,244
361.23	361.23	Manholes	2005	2005		98		465,353.00	HWW-145	398.8	586.4	1.470	684,069	1.000	684,069
361.23	361.23	Manholes	2006	2006		4		19,772.02	HWW-145	412.5	586.4	1.422	28,116	1.000	28,116
361.23	361.23	Manholes	2007	2007		36		182,884.21	HWW-145	443.3	586.4	1.323	241,956	1.000	241,956
361.23	361.23	Manholes	2011	2011		9		52,057.49	HWW-145	483.7	586.4	1.212	63,094	1.000	63,094

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	361.23	361.23 Manholes	2012	2012		17		100,911.05	HWW-145	491.1	586.4	1.194	120,488	1.000	120,488
	361.23	361.23 Manholes	2013	2013		14		85,237.04	HWW-145	493.6	586.4	1.188	101,262	1.000	101,262
	361.23	361.23 Manholes	2014	2014		4		25,014.12	HWW-145	506.5	586.4	1.158	28,966	1.000	28,966
	361.23	361.23 Manholes	2016	2016		5		32,964.00	HWW-145	530.8	586.4	1.105	36,425	1.000	36,425
	361.23	361.23 Manholes	2017	2017		36		246,501.10	HWW-145	542.1	586.4	1.082	266,714	1.000	266,714
	361.23	361.23 Manholes	2018	2018		11		77,599.65	HWW-145	548.3	586.4	1.069	82,954	1.000	82,954
	361.23	361.23 Manholes	2019	2019		2		14,388.35	HWW-145	555.8	586.4	1.055	15,180	1.000	15,180
	361.23	361.23 Manholes	2020	2020		8		58,497.23	HWW-145	576.1	586.4	1.018	59,550	1.000	59,550
	361.23	361.23 Manholes	2021	2021		2		14,624.31	HWW-145	586.4	586.4	1.000	14,624	1.000	14,624
Subtotal 361.23		**COLLECTION SEWERS - GRAVITY - MANHOLES**						**4,350,867.01**					**10,108,723**		**10,108,723**
Account 363.20		SERVICES TO CUSTOMERS													
	363.20	363.20 4" PVC	1982	1982		3,190		102,469.43	HWW-139	198	712	3.596	368,480	1.000	368,480
	363.20	363.20 4" PVC	1985	1985		1,485		52,315.53	HWW-139	221	712	3.222	168,561	1.000	168,561
	363.20	363.20 4" PVC	1986	1986		1,320		47,611.22	HWW-139	226	712	3.150	149,975	1.000	149,975
	363.20	363.20 4" PVC	1987	1987		996		36,853.27	HWW-139	230	712	3.096	114,098	1.000	114,098
	363.20	363.20 4" PVC	1988	1988		2,952		112,029.11	HWW-139	245	712	2.906	325,557	1.000	325,557
	363.20	363.20 4" PVC	1989	1989		5,578		216,183.43	HWW-139	256	712	2.760	596,666	1.000	596,666
	363.20	363.20 4" PVC	1993	1993		1,629		71,273.98	HWW-139	292	712	2.438	173,766	1.000	173,766
	363.20	363.20 4" PVC	1995	1995		628		28,853.50	HWW-139	307	712	2.319	66,911	1.000	66,911
	363.20	363.20 4" PVC	1996	1996		227		10,713.57	HWW-139	321	712	2.218	23,763	1.000	23,763
	363.20	363.20 4" PVC	1997	1997		936		45,795.05	HWW-139	323	712	2.204	100,932	1.000	100,932
	363.20	363.20 4" PVC	1998	1998		2,142		106,491.11	HWW-139	330	712	2.158	229,808	1.000	229,808
	363.20	363.20 4" PVC	1999	1999		1,592		81,005.82	HWW-139	334	712	2.132	172,704	1.000	172,704
	363.20	363.20 4" PVC	2000	2000		622		32,495.47	HWW-139	348	712	2.046	66,486	1.000	66,486
	363.20	363.20 4" PVC	2001	2001		6,397		340,755.79	HWW-139	304	712	2.342	798,050	1.000	798,050
	363.20	363.20 4" PVC	2002	2002		2,486		136,495.47	HWW-139	359.8	712	1.979	270,125	1.000	270,125
	363.20	363.20 4" PVC	2003	2003		464		26,084.10	HWW-139	367.5	712	1.937	50,525	1.000	50,525
	363.20	363.20 4" PVC	2004	2004		6,820		407,503.61	HWW-139	388.3	712	1.834	747,362	1.000	747,362
	363.20	363.20 4" PVC	2012	2012		54,800		4,283,602.02	HWW-139	597.8	712	1.191	5,101,770	1.000	5,101,770
	363.20	363.20 4" ACP	1970	1970		6,016		69,770.80	HWW-139	79	712	9.013	628,844	1.000	628,844
	363.20	363.20 4" ACP	1976	1976		13,260		267,367.04	HWW-139	130	712	5.477	1,464,369	1.000	1,464,369
	363.20	363.20 4" ACP	1978	1978		2,749		64,086.47	HWW-139	145	712	4.910	314,665	1.000	314,665
	363.20	363.20 4" ACP	1980	1980		2,951		80,220.26	HWW-139	175	712	4.069	326,416	1.000	326,416
Subtotal 363.20		**SERVICES TO CUSTOMERS**						**6,619,976.03**					**12,259,833**		**12,259,833**
Account 365.20		FLOW MEASURING INSTALLATIONS													
	365.20	365.20 Meter Pits	1976	1976				78,670.00	HWW-140	98	485	4.949	389,338	1.000	389,338
Subtotal 365.20		**FLOW MEASURING INSTALLATIONS**						**78,670.00**					**389,338**		**389,338**
Account 390.70		COMPUTER AND SOFTWARE													
	390.70	390.70 PIPE TECH SOFTWARE AND DURABOOK LAPTOP	2008	2008				21,550.00	AUST-115	263.4	306.6	1.164	25,084	1.000	25,084
Subtotal 390.70		**COMPUTER AND SOFTWARE**						**21,550.00**					**25,084**		**25,084**
Account 391.70		TRANSPORTATION EQUIPMENT													
	391.70	391.70 2001 FORD E350 TRUCK	2001	2001				39,952.00	AUST-14	266	310	1.165	46,544	1.000	46,544

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Year Installed	Effective Installation Year	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input				Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
391.70	391.70	2003 GMC PICKUP TRUCK	2003	2003				25,808.00	AUST-14	257	310	1.206	31,124	1.000	31,124
391.70	391.70	2018 Carmate 20' Custom Cargo Trailer	2018	2018				7,264.50	AUST-14	306	310	1.013	7,359	1.000	7,359
391.70	391.70	2010 FORD F550 TRUCK	2010	2010				62,722.85	AUST-14	269	310	1.152	72,257	1.000	72,257
391.70	391.70	2011 GMC PICKUP TRUCK	2011	2011				23,738.01	AUST-14	273	310	1.136	26,966	1.000	26,966
391.70	391.70	2011 GMC PICKUP TRUCK	2011	2011				20,470.45	AUST-14	273	310	1.136	23,254	1.000	23,254
391.70	391.70	2019 Ford F-150 Unit	2019	2019				33,000.00	AUST-14	307	310	1.010	33,330	1.000	33,330
Subtotal 391.70		**TRANSPORTATION EQUIPMENT**						**212,955.81**					**240,834**		**240,834**
Grand Total		**SYSTEM TOTAL**						**32,362,067.74**					**71,721,422**		**72,452,963**
Account 380		Purchased Treatment Capacity													
354.20	354.20	Sewer Capacity Rights	2017	2017				2,168,888.00	HWW-115	675.3	762	1.128	2,446,506	1.000	2,446,506
354.20	354.20	VFSA Capacity Rights	2013	2013				8,916,353.50	HWW-115	613.8	762	1.241	11,065,195	1.000	11,065,195
Subtotal 380		**Purchased Treatment Capacity**						**11,085,241.50**					**13,511,701**		**13,511,701**
Grand Grand Total		**System Total plus Purchased Treatment Capacity**						**43,447,309.24**					**85,233,123**		**85,964,664**

Current cost of Easements

Activity	Engineer	Legal	Fees	Total
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	54	100		
Total Cost	486	300	250	1,036

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach
Replacement Cost New less Depreciation

AUS Consultants
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8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR $s		years	years	years	% of COR	CORLD $s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.20	Land & Land Rights - Original Basin	31.62	720,020	ZNonDep	-	-	-	-	720,020
353.30	Land & Land Rights - Pumping	20.27	13,468	ZNonDep	-	-	-	-	13,468
354.30	Stuctures & Improvements - Pumping	14.58	12,142,235	R4.0	45.00	31.23	45.82	45.00	8,379,553
360.21	Collection Sewers - Force - Mains	29.95	5,971,267	R3.0	75.00	47.21	77.16	75.00	3,669,861
361.21	Collection Sewers - Gravity - Mains	33.23	30,582,161	R2.5	80.00	50.80	84.03	80.00	18,623,208
361.23	Collection Sewers - Gravity - Manholes	32.21	10,108,723	R2.5	80.00	51.66	83.87	80.00	6,272,518
363.20	Service Laterals	22.75	12,259,833	R3.0	70.00	48.95	71.70	70.00	8,428,787
365.20	Flow Measuring Installations Meter Pits	44.50	389,338	S2.0	30.00	4.50	49.00	30.00	58,401
354.20	Stuctures & Improvements - Treatment	6.78	13,511,701	R4.0	55.00	48.11	54.89	55.00	11,842,733
390.70	Office Furniture and Equipment	12.50	25,084	R3.0	12.00	2.20	14.70	12.00	3,763
391.70	Transportation Equipment	11.45	240,834	R3.0	10.00	2.91	14.35	10.00	66,027
Grand Total		24.57	85,964,664		68.23	46.41	70.71	0.68	58,078,339

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.20	Land & Land Rights - Original Basin	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.30	Land & Land Rights - Pumping	ZNonDep	0.00	0.00%	Non-Depr	0.00
354.20	Stuctures & Improvements - Treatment	R4.0	55.00	0.00%	MACRS	25.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
360.21	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.21	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5	80.00	0.00%	MACRS	25.00
363.20	Service Laterals	R3.0	70.00	0.00%	MACRS	25.00
365.20	Flow Measuring Installations Meter Pits	S2.0	30.00	0.00%	MACRS	25.00
390.70	Office Furniture and Equipment	R3.0	12.00	0.00%	MACRS	12.00
391.70	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LAPP ROAD DRAINAGE AREA (LR)		1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 LEE BOULEVARD DRAINAGE AREA (LB)		2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2 MALVERN HUNT DRAINAGE AREA (MAL)		2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
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As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MALVERN HUNT DRAINAGE AREA (MAL)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA (MAL)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA (MAL)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA (MAL)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) - (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)	
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
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Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (24) * (28)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MATTHEWS ROAD DRAINAGE AREA (MR)	1988	32.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	33,670	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
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Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	lowaCondition	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	lowaLookup	lowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-

East Whiteland Township, Pennsylvania
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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	lowaCondition	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	lowaLookup	lowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	lowaCondition	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	lowaLookup	lowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (24) * (28)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
				720,020									**720,020**	**22,767,654**	-	-	-
353.3	DEER RUN DRAINAGE AREA (DR)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.3	HILLBROOK CIRCLE DRAINAGE AREA (HB)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.3	KING ROAD DRAINAGE AREA (KR)	2004	16.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	17,094	-	-	-
353.3	LAPP ROAD DRAINAGE AREA (LR)	1987	33.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	34,706	-	-	-
353.3	LEE BOULEVARD DRAINAGE AREA (LB)	2007	13.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	13,986	-	-	-
353.3	MALVERN HUNT DRAINAGE AREA (MAL)	2000	20.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	21,238	-	-	-
353.3	MEADOW VIEW DRAINAGE AREA (MV)	1980	40.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	41,958	-	-	-
353.3	MILL LANE DRAINAGE AREA (ML)	1976	44.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	46,102	-	-	-
353.3	0	2020	0.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	518	-	-	-
353.3	PLANEBROOK DRAINAGE AREA (PB)	2018	2.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	2,590	-	-	-
353.3	0	2020	0.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	518	-	-	-
353.3	WESTGATE DRAINAGE AREA (WG)	1998	22.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	23,310	-	-	-
353.3	WILBURDALE ROAD DRAINAGE AREA (WB)	2017	3.50	1,036	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	1,036	3,626	-	-	-
				13,468									**13,468**	**272,986**	-	-	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354.3 (P.S. 1) Deer Run		1976	44.50	461,164	R4.0	45.0	99	R4.0099	0.15108	6.80	51.30	15.000000%	69,175	20,521,798	3,135,915	23,657,713	20,752,380
354.3 (P.S. 1) Deer Run		2018	2.50	55,777	R4.0	45.0	6	R4.0006	0.94008	42.30	44.80	94.419643%	52,664	139,443	2,359,367	2,498,810	2,509,965
354.3 (P.S. 11) Hillbrook Circle		2000	20.50	977,828	R4.0	45.0	46	R4.0046	0.54887	24.70	45.20	54.646018%	534,344	20,045,474	24,152,352	44,197,826	44,002,260
354.3 (P.S. 12) King Road		2004	16.50	422,197	R4.0	45.0	37	R4.0037	0.63414	28.54	45.04	63.365897%	267,529	6,966,251	12,049,502	19,015,753	18,998,865
354.3 (P.S. 13) Malvern Hunt		2000	20.50	787,481	R4.0	45.0	46	R4.0046	0.54887	24.70	45.20	54.646018%	430,327	16,143,361	19,450,781	35,594,141	35,436,645
354.3 (P.S. 14) Planebrook Road		2018	2.50	382,812	R4.0	45.0	6	R4.0006	0.94008	42.30	44.80	94.419643%	361,450	957,030	16,192,948	17,149,978	17,226,540
354.3 (P.S. 14) Planebrook Road		2018	2.50	86,268	R4.0	45.0	6	R4.0006	0.94008	42.30	44.80	94.419643%	81,454	215,670	3,649,136	3,864,806	3,882,060
354.3 (P.S. 2) Mill Lane		2014	6.50	3,625,236	R4.0	45.0	14	R4.0014	0.86031	38.71	45.21	85.622650%	3,104,023	23,564,034	140,332,886	163,896,920	163,135,620
354.3 (P.S. 2) Mill Lane		1976	44.50	234,480	R4.0	45.0	99	R4.0099	0.15108	6.80	51.30	15.000000%	35,172	10,434,360	1,594,464	12,028,824	10,551,600
354.3 (P.S. 3) Wilburdale		2017	3.50	529,709	R4.0	45.0	8	R4.0008	0.92012	41.41	44.91	92.206635%	488,427	1,853,982	21,935,250	23,789,231	23,836,905
354.3 (P.S. 3) Wilburdale		2017	3.50	107,724	R4.0	45.0	8	R4.0008	0.92012	41.41	44.91	92.206635%	99,329	377,034	4,460,851	4,837,885	4,847,580
354.3 (P.S. 4) Lee Boulevard		2007	13.50	853,640	R4.0	45.0	30	R4.0030	0.70211	31.59	45.09	70.059880%	598,059	11,524,140	26,966,488	38,490,628	38,413,800
354.3	0	2002	18.50	97,342	R4.0	45.0	41	R4.0041	0.59589	26.82	45.32	59.179170%	57,606	1,800,827	2,610,712	4,411,539	4,380,390
354.3 (P.S. 5) Meadowview		1980	40.50	446,542	R4.0	45.0	90	R4.0090	0.20092	9.04	49.54	18.247881%	81,484	18,084,951	4,036,740	22,121,691	20,094,390
354.3 (P.S. 6) Flat Road		2019	1.50	374,880	R4.0	45.0	3	R4.0003	0.97003	43.65	45.15	96.677741%	362,426	562,320	16,363,512	16,925,832	16,869,600
354.3 (P.S. 7) Lapp Road		1987	33.50	571,497	R4.0	45.0	74	R4.0074	0.31142	14.01	47.51	29.488529%	168,526	19,145,150	8,006,673	27,151,822	25,717,365
354.3 (P.S. 7) Lapp Road		2006	14.50	214,249	R4.0	45.0	32	R4.0032	0.68258	30.72	45.22	67.934542%	145,549	3,106,611	6,581,729	9,688,340	9,641,205
354.3 (P.S. 8) Westgate		1988	32.50	239,311	R4.0	45.0	72	R4.0072	0.32657	14.70	47.20	31.144068%	74,531	7,777,608	3,517,872	11,295,479	10,768,995
354.3 (P.S. 8) Westgate		2001	19.50	181,384	R4.0	45.0	43	R4.0043	0.57696	25.96	45.46	57.105147%	103,580	3,536,988	4,708,729	8,245,717	8,162,280
354.3	0	2007	13.50	36,634	R4.0	45.0	30	R4.0030	0.70211	31.59	45.09	70.059880%	25,666	494,559	1,157,268	1,651,827	1,648,530
354.3	0	2009	11.50	75,524	R4.0	45.0	26	R4.0026	0.74138	33.36	44.86	74.364690%	56,163	868,526	2,519,481	3,388,007	3,398,580
354.3	0	2014	6.50	1,380,556	R4.0	45.0	14	R4.0014	0.86031	38.71	45.21	85.622650%	1,182,069	8,973,614	53,441,323	62,414,937	62,125,020
				12,142,235									**8,379,553**	**177,093,731**	**379,223,979**	**556,317,706**	**546,400,575**
360.21 (P.S. 1) Deer Run FM - 4" ACP		1976	44.50	162,476	R3.0	75.0	59	R3.0059	0.46530	34.90	79.40	43.954660%	71,416	7,230,182	5,670,412	12,900,594	12,185,700
360.21 (P.S. 11) Hillbrook Circle FM - 4" PVC		2000	20.50	184,910	R3.0	75.0	27	R3.0027	0.74058	55.54	76.04	73.040505%	135,059	3,790,655	10,269,901	14,060,556	13,868,250
360.21 (P.S. 12) King Road FM - 4" PVC		2004	16.50	532,000	R3.0	75.0	22	R3.0022	0.78729	59.05	75.55	78.160159%	415,812	8,778,000	31,414,600	40,192,600	39,900,000
360.21 (P.S. 13) Malvern Hunt FM - 6" DIP		2000	20.50	600,393	R3.0	75.0	27	R3.0027	0.74058	55.54	76.04	73.040505%	438,530	12,308,057	33,345,827	45,653,884	45,029,475
360.21 (P.S. 14) Planebrook FM - 8" PVC		2017	3.50	521,503	R3.0	75.0	5	R3.0005	0.95090	71.32	74.82	95.322106%	497,108	1,825,261	37,193,594	39,018,854	39,112,725
360.21 (P.S. 2) Mill Lane FM - 14" DIP		1976	44.50	1,004,502	R3.0	75.0	59	R3.0059	0.46530	34.90	79.40	43.954660%	441,525	44,700,339	35,057,120	79,757,459	75,337,650
360.21 (P.S. 3) Wilburdale Rd FM - 10" PVC Replacement		2016	4.50	106,330	R3.0	75.0	6	R3.0006	0.94112	70.58	75.08	94.006393%	99,957	478,485	7,504,771	7,983,256	7,974,750
360.21 (P.S. 4) Lee Blvd FM - 8" DIP		1987	33.50	857,377	R3.0	75.0	45	R3.0045	0.58001	43.50	77.00	56.493506%	484,362	28,722,130	37,295,900	66,018,029	64,303,275
360.21 (P.S. 5) Meadow View FM - 4" ACP		1980	40.50	246,563	R3.0	75.0	54	R3.0054	0.50513	37.88	78.38	48.328655%	119,161	9,985,802	9,339,806	19,325,608	18,492,225
360.21 (P.S. 6) Flat Rd FM - 6" ACP		1979	41.50	327,626	R3.0	75.0	55	R3.0055	0.49706	37.28	78.78	47.321655%	155,038	13,596,479	12,213,897	25,810,376	24,571,950
360.21 (P.S. 7) Lapp Rd FM - 6" PVC		1987	33.50	1,057,077	R3.0	75.0	45	R3.0045	0.58001	43.50	77.00	56.493506%	597,180	35,412,080	45,982,850	81,394,929	79,280,775
360.21 (P.S. 8) Westgate FM - 8" PVC		1988	32.50	370,510	R3.0	75.0	43	R3.0043	0.59718	44.79	77.29	57.950576%	214,713	12,041,575	16,595,143	28,636,718	27,788,250
				5,971,267									**3,669,861**	**178,869,045**	**281,883,821**	**460,752,863**	**447,845,025**
361.21 18" ACP		1975	45.50	322,651	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	151,986	14,680,621	13,073,819	27,754,439	25,812,080
361.21 12" ACP		1975	45.50	379,717	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	178,867	17,277,124	15,386,133	32,663,256	30,377,360
361.21 12" ACP		1978	42.50	286,414	R2.5	80.0	53	R2.5053	0.53711	42.97	85.47	50.274950%	143,994	12,172,595	12,307,210	24,479,805	22,913,120
361.21 10" ACP		1975	45.50	417,893	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	196,850	19,014,132	16,933,024	35,947,156	33,431,440
361.21 10" ACP		1977	43.50	221,681	R2.5	80.0	54	R2.5054	0.52940	42.35	85.85	49.330227%	109,356	9,643,124	9,388,190	19,031,314	17,734,480
361.21 10" ACP		2012	8.50	9,223	R2.5	80.0	11	R2.5011	0.89711	71.77	80.27	89.410739%	8,246	78,396	661,935	740,330	737,840
361.21 36" ACP		1967	53.50	33,227	R2.5	80.0	67	R2.5067	0.43365	34.69	88.19	39.335526%	13,070	1,777,645	1,152,645	2,930,289	2,658,160
361.21 27" ACP		1967	53.50	616,552	R2.5	80.0	67	R2.5067	0.43365	34.69	88.19	39.335526%	242,524	32,985,532	21,388,189	54,373,721	49,324,160
361.21 24" ACP		1967	53.50	32,598	R2.5	80.0	67	R2.5067	0.43365	34.69	88.19	39.335526%	12,823	1,743,993	1,130,825	2,874,818	2,607,840

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

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Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361.21 24" ACP		1975	45.50	105,503	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	49,698	4,800,387	4,274,982	9,075,368	8,440,240
361.21 10" PVC		1991	29.50	134,594	R2.5	80.0	37	R2.5037	0.66661	53.33	82.83	64.384885%	86,658	3,970,523	7,177,898	11,148,421	10,767,520
361.21 10" PVC		1992	28.50	106,553	R2.5	80.0	36	R2.5036	0.67506	54.00	82.50	65.454545%	69,744	3,036,761	5,753,862	8,790,623	8,524,240
361.21 10" PVC		1993	27.50	18,549	R2.5	80.0	34	R2.5034	0.69207	55.37	82.87	66.815494%	12,394	510,098	1,027,058	1,537,156	1,483,920
361.21 10" PVC		2007	13.50	759,689	R2.5	80.0	17	R2.5017	0.84214	67.37	80.87	83.306541%	632,871	10,255,802	51,180,248	61,436,049	60,775,120
361.21 10" PVC		2019	1.50	47,397	R2.5	80.0	2	R2.5002	0.98112	78.49	79.99	98.124766%	46,508	71,096	3,720,191	3,791,286	3,791,760
361.21 10" PVC		2020	0.50	118,796	R2.5	80.0	1	R2.5001	0.99055	79.24	79.74	99.372962%	118,051	59,398	9,413,395	9,472,793	9,503,680
361.21 8" ACP		1951	69.50	42,533	R2.5	80.0	87	R2.5087	0.30585	24.47	93.97	26.040226%	11,076	2,956,044	1,040,783	3,996,826	3,402,640
361.21 8" ACP		1954	66.50	181,742	R2.5	80.0	83	R2.5083	0.32920	26.34	92.84	28.371392%	51,563	12,085,843	4,787,084	16,872,927	14,539,360
361.21 8" ACP		1967	53.50	249,051	R2.5	80.0	67	R2.5067	0.43365	34.69	88.19	39.335526%	97,966	13,324,229	8,639,579	21,963,808	19,924,080
361.21 8" ACP		1970	50.50	508,771	R2.5	80.0	63	R2.5063	0.46218	36.97	87.47	42.265920%	215,037	25,692,936	18,809,264	44,502,199	40,701,680
361.21 8" ACP		1971	49.50	185,236	R2.5	80.0	62	R2.5062	0.46944	37.56	87.06	43.142660%	79,916	9,169,182	6,957,464	16,126,646	14,818,880
361.21 8" ACP		1972	48.50	160,533	R2.5	80.0	61	R2.5061	0.47676	38.14	86.64	44.021237%	70,669	7,785,851	6,122,729	13,908,579	12,842,640
361.21 8" ACP		1973	47.50	652,551	R2.5	80.0	59	R2.5059	0.49155	39.32	86.82	45.289104%	295,535	30,996,173	25,658,305	56,654,478	52,204,080
361.21 8" ACP		1974	46.50	634,190	R2.5	80.0	58	R2.5058	0.49902	39.92	86.42	46.193011%	292,951	29,489,835	25,316,865	54,806,700	50,735,200
361.21 8" ACP		1975	45.50	4,676,505	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	2,202,883	212,780,978	189,491,983	402,272,960	374,120,400
361.21 8" ACP		1977	43.50	716,712	R2.5	80.0	54	R2.5054	0.52940	42.35	85.85	49.330227%	353,556	31,176,972	30,352,753	61,529,725	57,336,960
361.21 8" ACP		1978	42.50	1,678,760	R2.5	80.0	53	R2.5053	0.53711	42.97	85.47	50.274950%	843,996	71,347,300	72,136,317	143,483,617	134,300,800
361.21 8" ACP		1979	41.50	478,511	R2.5	80.0	52	R2.5052	0.54488	43.59	85.09	51.228111%	245,132	19,858,207	20,858,294	40,716,501	38,280,880
361.21 8" ACP		1981	39.50	744,489	R2.5	80.0	49	R2.5049	0.56844	45.48	84.98	53.518475%	398,439	29,407,316	33,859,360	63,266,675	59,559,120
361.21 8" ACP		2012	8.50	36,770	R2.5	80.0	11	R2.5011	0.89711	71.77	80.27	89.410739%	32,876	312,545	2,638,983	2,951,528	2,941,600
361.21 8" PVC		1970	50.50	29,844	R2.5	80.0	63	R2.5063	0.46218	36.97	87.47	42.265920%	12,614	1,507,122	1,103,333	2,610,455	2,387,520
361.21 8" PVC		1983	37.50	157,263	R2.5	80.0	47	R2.5047	0.58438	46.75	84.25	55.489614%	87,265	5,897,363	7,352,045	13,249,408	12,581,040
361.21 8" PVC		1984	36.50	411,181	R2.5	80.0	46	R2.5046	0.59241	47.39	83.89	56.490643%	232,279	15,008,107	19,485,868	34,493,974	32,894,480
361.21 8" PVC		1985	35.50	84,236	R2.5	80.0	44	R2.5044	0.60861	48.69	84.19	57.833472%	48,717	2,990,378	4,101,451	7,091,829	6,738,880
361.21 8" PVC		1987	33.50	1,382,682	R2.5	80.0	42	R2.5042	0.62498	50.00	83.50	59.880240%	827,953	46,319,847	69,134,100	115,453,947	110,614,560
361.21 8" PVC		1988	32.50	1,575,150	R2.5	80.0	41	R2.5041	0.63322	50.66	83.16	60.918711%	959,561	51,192,375	79,797,099	130,989,474	126,012,000
361.21 8" PVC		1990	30.50	809,920	R2.5	80.0	38	R2.5038	0.65821	52.66	83.16	63.323713%	512,871	24,702,560	42,650,387	67,352,947	64,793,600
361.21 8" PVC		1991	29.50	349,233	R2.5	80.0	37	R2.5037	0.66661	53.33	82.83	64.384885%	224,853	10,302,374	18,624,596	28,926,969	27,938,640
361.21 8" PVC		1992	28.50	195,513	R2.5	80.0	36	R2.5036	0.67506	54.00	82.50	65.454545%	127,972	5,572,121	10,557,702	16,129,823	15,641,040
361.21 8" PVC		1993	27.50	302,365	R2.5	80.0	34	R2.5034	0.69207	55.37	82.87	66.815494%	202,027	8,315,038	16,741,950	25,056,988	24,189,200
361.21 8" PVC		1994	26.50	124,374	R2.5	80.0	33	R2.5033	0.70063	56.05	82.55	67.898243%	84,448	3,295,911	6,971,163	10,267,074	9,949,920
361.21 8" PVC		1996	24.50	41,722	R2.5	80.0	31	R2.5031	0.71785	57.43	81.93	70.096424%	29,246	1,022,189	2,396,094	3,418,283	3,337,760
361.21 8" PVC		1997	23.50	453,421	R2.5	80.0	29	R2.5029	0.73522	58.82	82.32	71.452867%	323,982	10,655,394	26,670,223	37,325,617	36,273,680
361.21 8" PVC		1998	22.50	368,563	R2.5	80.0	28	R2.5028	0.74396	59.52	82.02	72.567666%	267,458	8,292,668	21,936,870	30,229,537	29,485,040
361.21 8" PVC		1999	21.50	431,769	R2.5	80.0	27	R2.5027	0.75273	60.22	81.72	73.690651%	318,173	9,283,034	26,001,129	35,284,163	34,541,520
361.21 8" PVC		2000	20.50	1,809,857	R2.5	80.0	26	R2.5026	0.76153	60.92	81.42	74.821911%	1,354,170	37,102,069	110,256,488	147,358,557	144,788,560
361.21 8" PVC		2001	19.50	69,902	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	53,246	1,363,089	4,357,691	5,720,780	5,592,160
361.21 8" PVC		2002	18.50	1,142,429	R2.5	80.0	23	R2.5023	0.78813	63.05	81.55	77.314531%	883,264	21,134,937	72,030,148	93,165,085	91,394,320
361.21 8" PVC		2003	17.50	258,009	R2.5	80.0	22	R2.5022	0.79706	63.76	81.26	78.464189%	202,445	4,515,158	16,450,654	20,965,811	20,640,720
361.21 8" PVC		2004	16.50	280,287	R2.5	80.0	21	R2.5021	0.80602	64.48	80.98	79.624599%	223,177	4,624,736	18,072,906	22,697,641	22,422,960
361.21 8" PVC		2005	15.50	1,858,509	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	1,504,703	28,806,890	122,512,913	151,319,803	148,680,720
361.21 8" PVC		2006	14.50	39,111	R2.5	80.0	18	R2.5018	0.83306	66.64	81.14	82.129652%	32,122	567,110	2,606,357	3,173,467	3,128,880
361.21 8" PVC		2007	13.50	69,410	R2.5	80.0	17	R2.5017	0.84214	67.37	80.87	83.306541%	57,823	937,035	4,676,152	5,613,187	5,552,800
361.21 8" PVC		2011	9.50	165,089	R2.5	80.0	12	R2.5012	0.88789	71.03	80.53	88.203154%	145,614	1,568,346	11,726,272	13,294,617	13,207,120
361.21 8" PVC		2012	8.50	248,858	R2.5	80.0	11	R2.5011	0.89711	71.77	80.27	89.410739%	222,506	2,115,293	17,860,539	19,975,832	19,908,640
361.21 8" PVC		2013	7.50	34,044	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	30,882	255,330	2,493,723	2,749,053	2,723,520
361.21 8" PVC		2014	6.50	10,171	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	9,350	66,112	752,552	818,664	813,680
361.21 8" PVC		2017	3.50	314,953	R2.5	80.0	4	R2.5004	0.96231	76.98	80.48	95.651093%	301,256	1,102,336	24,245,082	25,347,417	25,196,240
361.21 8" PVC		2018	2.50	136,394	R2.5	80.0	3	R2.5003	0.97170	77.74	80.24	96.884347%	132,144	340,985	10,603,270	10,944,255	10,911,520
361.21 8" DIP		1954	66.50	53,784	R2.5	80.0	83	R2.5083	0.32920	26.34	92.84	28.371392%	15,259	3,576,636	1,416,671	4,993,307	4,302,720

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361.21 8" DIP		1975	45.50	25,736	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	12,123	1,170,988	1,042,823	2,213,811	2,058,880
361.21 8" CIP		1975	45.50	11,500	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	5,417	523,250	465,980	989,230	920,000
361.21 20" ACP		1975	45.50	714,330	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	336,487	32,502,015	28,944,652	61,446,667	57,146,400
361.21 16" ACP		1975	45.50	50,039	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	23,571	2,276,775	2,027,580	4,304,355	4,003,120
361.21 12" PVC		1970	50.50	185,287	R2.5	80.0	63	R2.5063	0.46218	36.97	87.47	42.265920%	78,313	9,356,994	6,850,060	16,207,054	14,822,960
361.21 12" PVC		2012	8.50	9,929	R2.5	80.0	11	R2.5011	0.89711	71.77	80.27	89.410739%	8,878	84,397	712,604	797,001	794,320
361.21 12" PVC		2016	4.50	181,820	R2.5	80.0	6	R2.5006	0.94357	75.49	79.99	94.374297%	171,591	818,190	13,725,592	14,543,782	14,545,600
361.21 15" PVC		2013	7.50	100,235	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	90,925	751,763	7,342,214	8,093,976	8,018,800
361.21 15" PVC		2017	3.50	266,437	R2.5	80.0	4	R2.5004	0.96231	76.98	80.48	95.651093%	254,850	932,530	20,510,320	21,442,850	21,314,960
361.21 18" PVC		1988	32.50	259,921	R2.5	80.0	41	R2.5041	0.63322	50.66	83.16	60.918711%	158,341	8,447,433	13,167,598	21,615,030	20,793,680
361.21 18" PVC		2013	7.50	474,196	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	430,153	3,556,470	34,734,857	38,291,327	37,935,680
361.21 18" PVC		2014	6.50	23,740	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	21,823	154,310	1,756,523	1,910,833	1,899,200
361.21 18" PVC		2017	3.50	112,401	R2.5	80.0	4	R2.5004	0.96231	76.98	80.48	95.651093%	107,513	393,404	8,652,629	9,046,032	8,992,080
361.21 10" DI		2020	0.50	8,663	R2.5	80.0	1	R2.5001	0.99055	79.24	79.74	99.372962%	8,609	4,332	686,456	690,788	693,040
361.21 8" CSP		1978	42.50	103,634	R2.5	80.0	53	R2.5053	0.53711	42.97	85.47	50.274950%	52,102	4,404,445	4,453,153	8,857,598	8,290,720
361.21 8" CSP		1983	37.50	262,482	R2.5	80.0	47	R2.5047	0.58438	46.75	84.25	55.489614%	145,650	9,843,075	12,271,034	22,114,109	20,998,560
361.21 20" PVC		2014	6.50	15,049	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	13,834	97,819	1,113,476	1,211,294	1,203,920
361.21 21" PVC		2014	6.50	11,328	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	10,413	73,632	838,159	911,791	906,240
			33.23	**30,582,161**									**18,623,208**	**1,016,285,003**	**1,553,520,505**	**2,569,805,485**	**2,446,572,880**
361.23 Manholes		1951	69.50	29,501	R2.5	80.0	87	R2.5087	0.30585	24.47	93.97	26.040226%	7,682	2,050,320	721,889	2,772,209	2,360,080
361.23 Manholes		1954	66.50	109,228	R2.5	80.0	83	R2.5083	0.32920	26.34	92.84	28.371392%	30,990	7,263,662	2,877,066	10,140,728	8,738,240
361.23 Manholes		1967	53.50	214,286	R2.5	80.0	67	R2.5067	0.43365	34.69	88.19	39.335526%	84,291	11,464,301	7,433,581	18,897,882	17,142,880
361.23 Manholes		1970	50.50	176,340	R2.5	80.0	63	R2.5063	0.46218	36.97	87.47	42.265920%	74,532	8,905,170	6,519,290	15,424,460	14,107,200
361.23 Manholes		1971	49.50	58,864	R2.5	80.0	62	R2.5062	0.46944	37.56	87.06	43.142660%	25,395	2,913,768	2,210,932	5,124,700	4,709,120
361.23 Manholes		1972	48.50	34,650	R2.5	80.0	61	R2.5061	0.47676	38.14	86.64	44.021237%	15,253	1,680,525	1,321,551	3,002,076	2,772,000
361.23 Manholes		1973	47.50	283,463	R2.5	80.0	59	R2.5059	0.49155	39.32	86.82	45.289104%	128,378	13,464,493	11,145,765	24,610,258	22,677,040
361.23 Manholes		1974	46.50	202,351	R2.5	80.0	58	R2.5058	0.49902	39.92	86.42	46.193011%	93,472	9,409,322	8,077,852	17,487,173	16,188,080
361.23 Manholes		1975	45.50	1,963,676	R2.5	80.0	57	R2.5057	0.50654	40.52	86.02	47.105324%	924,996	89,347,258	79,568,152	168,915,410	157,094,080
361.23 Manholes		1977	43.50	347,776	R2.5	80.0	54	R2.5054	0.52940	42.35	85.85	49.330227%	171,559	15,128,256	14,728,314	29,856,570	27,822,080
361.23 Manholes		1978	42.50	580,548	R2.5	80.0	53	R2.5053	0.53711	42.97	85.47	50.274950%	291,870	24,673,290	24,946,148	49,619,438	46,443,840
361.23 Manholes		1979	41.50	162,384	R2.5	80.0	52	R2.5052	0.54488	43.59	85.09	51.228111%	83,186	6,738,936	7,078,319	13,817,255	12,990,720
361.23 Manholes		1980	40.50	13,038	R2.5	80.0	51	R2.5051	0.55269	44.22	84.72	52.195467%	6,805	528,039	576,540	1,104,579	1,043,040
361.23 Manholes		1981	39.50	231,703	R2.5	80.0	49	R2.5049	0.56844	45.48	84.98	53.518475%	124,004	9,152,269	10,537,852	19,690,121	18,536,240
361.23 Manholes		1983	37.50	112,627	R2.5	80.0	47	R2.5047	0.58438	46.75	84.25	55.489614%	62,496	4,223,513	5,265,312	9,488,825	9,010,160
361.23 Manholes		1984	36.50	156,673	R2.5	80.0	46	R2.5046	0.59241	47.39	83.89	56.490643%	88,506	5,718,565	7,424,733	13,143,298	12,533,840
361.23 Manholes		1985	35.50	31,622	R2.5	80.0	44	R2.5044	0.60861	48.69	84.19	57.833472%	18,288	1,122,581	1,539,675	2,662,256	2,529,760
361.23 Manholes		1987	33.50	431,863	R2.5	80.0	42	R2.5042	0.62498	50.00	83.50	59.880240%	258,601	14,467,411	21,593,150	36,060,561	34,549,040
361.23 Manholes		1988	32.50	577,096	R2.5	80.0	41	R2.5041	0.63322	50.66	83.16	60.918711%	351,559	18,755,620	29,235,683	47,991,303	46,167,680
361.23 Manholes		1990	30.50	269,180	R2.5	80.0	38	R2.5038	0.65821	52.66	83.16	63.323713%	170,455	8,209,990	14,175,019	22,385,009	21,534,400
361.23 Manholes		1991	29.50	198,694	R2.5	80.0	37	R2.5037	0.66661	53.33	82.83	64.384885%	127,929	5,861,473	10,596,351	16,457,824	15,895,520
361.23 Manholes		1992	28.50	108,088	R2.5	80.0	36	R2.5036	0.67506	54.00	82.50	65.454545%	70,749	3,080,508	5,836,752	8,917,260	8,647,040
361.23 Manholes		1993	27.50	131,181	R2.5	80.0	34	R2.5034	0.69207	55.37	82.87	66.815494%	87,649	3,607,478	7,263,492	10,870,969	10,494,480
361.23 Manholes		1994	26.50	48,694	R2.5	80.0	33	R2.5033	0.70063	56.05	82.55	67.898243%	33,062	1,290,391	2,729,299	4,019,690	3,895,520
361.23 Manholes		1996	24.50	13,540	R2.5	80.0	31	R2.5031	0.71785	57.43	81.93	70.096424%	9,491	331,730	777,602	1,109,332	1,083,200
361.23 Manholes		1997	23.50	161,764	R2.5	80.0	29	R2.5029	0.73522	58.82	82.32	71.452867%	115,585	3,801,454	9,514,958	13,316,412	12,941,120
361.23 Manholes		1998	22.50	203,302	R2.5	80.0	28	R2.5028	0.74396	59.52	82.02	72.567666%	147,532	4,574,295	12,100,535	16,674,830	16,264,160
361.23 Manholes		1999	21.50	135,935	R2.5	80.0	27	R2.5027	0.75273	60.22	81.72	73.690651%	100,171	2,922,603	8,186,006	11,108,608	10,874,800
361.23 Manholes		2000	20.50	756,113	R2.5	80.0	26	R2.5026	0.76153	60.92	81.42	74.821911%	565,738	15,500,317	46,062,404	61,562,720	60,489,040
361.23 Manholes		2001	19.50	26,665	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	20,312	519,968	1,662,296	2,182,264	2,133,200

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmt	Eng Assmt	Eng Assmt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	IowaCondition	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361.23 Manholes		2002	18.50	402,106	R2.5	80.0	23	R2.5023	0.78813	63.05	81.55	77.314531%	310,886	7,438,961	25,352,783	32,791,744	32,168,480
361.23 Manholes		2003	17.50	86,130	R2.5	80.0	22	R2.5022	0.79706	63.76	81.26	78.464189%	67,581	1,507,275	5,491,649	6,998,924	6,890,400
361.23 Manholes		2004	16.50	106,244	R2.5	80.0	21	R2.5021	0.80602	64.48	80.98	79.624599%	84,596	1,753,026	6,850,613	8,603,639	8,499,520
361.23 Manholes		2005	15.50	684,069	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	553,842	10,603,070	45,093,828	55,696,898	54,725,520
361.23 Manholes		2006	14.50	28,116	R2.5	80.0	18	R2.5018	0.83306	66.64	81.14	82.129652%	23,092	407,682	1,873,650	2,281,332	2,249,280
361.23 Manholes		2007	13.50	241,956	R2.5	80.0	17	R2.5017	0.84214	67.37	80.87	83.306541%	201,565	3,266,406	16,300,576	19,566,982	19,356,480
361.23 Manholes		2011	9.50	63,094	R2.5	80.0	12	R2.5012	0.88789	71.03	80.53	88.203154%	55,651	599,393	4,481,567	5,080,960	5,047,520
361.23 Manholes		2012	8.50	120,488	R2.5	80.0	11	R2.5011	0.89711	71.77	80.27	89.410739%	107,729	1,024,148	8,647,424	9,671,572	9,639,040
361.23 Manholes		2013	7.50	101,262	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	91,857	759,465	7,417,442	8,176,907	8,100,960
361.23 Manholes		2014	6.50	28,966	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	26,627	188,279	2,143,194	2,331,473	2,317,280
361.23 Manholes		2016	4.50	36,425	R2.5	80.0	6	R2.5006	0.94357	75.49	79.99	94.374297%	34,376	163,913	2,749,723	2,913,636	2,914,000
361.23 Manholes		2017	3.50	266,714	R2.5	80.0	4	R2.5004	0.96231	76.98	80.48	95.651093%	255,115	933,499	20,531,644	21,465,143	21,337,120
361.23 Manholes		2018	2.50	82,954	R2.5	80.0	3	R2.5003	0.97170	77.74	80.24	96.884347%	80,369	207,385	6,448,844	6,656,229	6,636,320
361.23 Manholes		2019	1.50	15,180	R2.5	80.0	2	R2.5002	0.98112	78.49	79.99	98.124766%	14,895	22,770	1,191,478	1,214,248	1,214,400
361.23 Manholes		2020	0.50	59,550	R2.5	80.0	1	R2.5001	0.99055	79.24	79.74	99.372962%	59,177	29,775	4,718,742	4,748,517	4,764,000
361.23 Manholes		2021	0.00	14,624	R2.5	80.0	0	R2.5000	1.00000	80.00	80.00	100.000000%	14,624	-	1,169,920	1,169,920	1,169,920
				10,108,723									**6,272,518**	**325,612,553**	**522,169,595**	**847,782,144**	**808,697,840**
363.2 4" PVC		1982	38.50	368,480	R3.0	70.0	55	R3.0055	0.49706	34.79	73.29	47.468959%	174,914	14,186,480	12,819,419	27,005,899	25,793,600
363.2 4" PVC		1985	35.50	168,561	R3.0	70.0	51	R3.0051	0.52965	37.08	72.58	51.088454%	86,115	5,983,916	6,250,242	12,234,157	11,799,270
363.2 4" PVC		1986	34.50	149,975	R3.0	70.0	49	R3.0049	0.54624	38.24	72.74	52.570800%	78,843	5,174,138	5,735,044	10,909,182	10,498,250
363.2 4" PVC		1987	33.50	114,098	R3.0	70.0	48	R3.0048	0.55461	38.82	72.32	53.678097%	61,246	3,822,283	4,429,284	8,251,567	7,986,860
363.2 4" PVC		1988	32.50	325,557	R3.0	70.0	46	R3.0046	0.57150	40.01	72.51	55.178596%	179,638	10,580,603	13,025,536	23,606,138	22,788,990
363.2 4" PVC		1989	31.50	596,666	R3.0	70.0	45	R3.0045	0.58001	40.60	72.10	56.310680%	335,987	18,794,979	24,224,640	43,019,619	41,766,620
363.2 4" PVC		1993	27.50	173,766	R3.0	70.0	39	R3.0039	0.63205	44.24	71.74	61.667131%	107,157	4,778,565	7,687,408	12,465,973	12,163,620
363.2 4" PVC		1995	25.50	66,911	R3.0	70.0	36	R3.0036	0.65866	46.11	71.61	64.390448%	43,084	1,706,231	3,085,266	4,791,497	4,683,770
363.2 4" PVC		1996	24.50	23,763	R3.0	70.0	35	R3.0035	0.66761	46.73	71.23	65.604380%	15,590	582,194	1,110,445	1,692,638	1,663,410
363.2 4" PVC		1997	23.50	100,932	R3.0	70.0	34	R3.0034	0.67660	47.36	70.86	66.836015%	67,459	2,371,902	4,780,140	7,152,042	7,065,240
363.2 4" PVC		1998	22.50	229,808	R3.0	70.0	32	R3.0032	0.69469	48.63	71.13	68.367777%	157,115	5,170,680	11,175,563	16,346,243	16,086,560
363.2 4" PVC		1999	21.50	172,704	R3.0	70.0	31	R3.0031	0.70380	49.27	70.77	69.619895%	120,236	3,713,136	8,509,126	12,222,262	12,089,280
363.2 4" PVC		2000	20.50	66,486	R3.0	70.0	29	R3.0029	0.72212	50.55	71.05	71.147080%	47,303	1,362,963	3,360,867	4,723,830	4,654,020
363.2 4" PVC		2001	19.50	798,050	R3.0	70.0	28	R3.0028	0.73133	51.19	70.69	72.414769%	577,906	15,561,975	40,852,180	56,414,155	55,863,500
363.2 4" PVC		2002	18.50	270,125	R3.0	70.0	26	R3.0026	0.74986	52.49	70.99	73.939992%	199,730	4,997,313	14,178,861	19,176,174	18,908,750
363.2 4" PVC		2003	17.50	50,525	R3.0	70.0	25	R3.0025	0.75917	53.14	70.64	75.226501%	38,008	884,188	2,684,899	3,569,086	3,536,750
363.2 4" PVC		2004	16.50	747,362	R3.0	70.0	24	R3.0024	0.76851	53.80	70.30	76.529161%	571,950	12,331,473	40,208,076	52,539,549	52,315,340
363.2 4" PVC		2012	8.50	5,101,770	R3.0	70.0	12	R3.0012	0.88279	61.80	70.30	87.908962%	4,484,913	43,365,045	315,289,386	358,654,431	357,123,900
363.2 4" ACP		1970	50.50	628,844	R3.0	70.0	72	R3.0072	0.36837	25.79	76.29	33.805217%	212,582	31,756,622	16,217,887	47,974,509	44,019,080
363.2 4" ACP		1976	44.50	1,464,369	R3.0	70.0	64	R3.0064	0.42683	29.88	74.38	40.172089%	588,268	65,164,421	43,755,346	108,919,766	102,505,830
363.2 4" ACP		1978	42.50	314,665	R3.0	70.0	61	R3.0061	0.44974	31.48	73.98	42.552041%	133,896	13,373,263	9,905,654	23,278,917	22,026,550
363.2 4" ACP		1980	40.50	326,416	R3.0	70.0	58	R3.0058	0.47316	33.12	73.62	44.987775%	146,847	13,219,848	10,810,898	24,030,746	22,849,120
				12,259,833									**8,428,787**	**278,882,218**	**600,096,167**	**878,978,380**	**858,188,310**
365.2 Meter Pits		1976	44.50	389,338	S2.0	30.0	148	S2.0148	0.15000	4.50	49.00	15.000000%	58,401	17,325,541	1,752,021	19,077,562	11,680,140
				389,338									**58,401**	**17,325,541**	**1,752,021**	**19,077,562**	**11,680,140**
390.7 PIPE TECH SOFTWARE AND DURABOOK LAPTOP		2008	12.50	25,084	R3.0	12.0	104	R3.0104	0.18372	2.20	14.70	15.000000%	3,763	313,550	55,185	368,735	301,008
				25,084									**3,763**	**313,550**	**55,185**	**368,735**	**301,008**

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2021-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
391.7 2001 FORD E350 TRUCK		2001	19.50	46,544	R3.0	10.0	195	R3.0195	0.15000	1.50	21.00	15.000000%	6,982	907,608	69,816	977,424	465,440
391.7 2003 GMC PICKUP TRUCK		2003	17.50	31,124	R3.0	10.0	175	R3.0175	0.15000	1.50	19.00	15.000000%	4,669	544,670	46,686	591,356	311,240
391.7 2018 Carmate 20' Custom Cargo Trailer		2018	2.50	7,359	R3.0	10.0	25	R3.0025	0.75917	7.59	10.09	75.222993%	5,536	18,398	55,855	74,252	73,590
391.7 2010 FORD F550 TRUCK		2010	10.50	72,257	R3.0	10.0	105	R3.0105	0.17945	1.79	12.29	15.000000%	10,839	758,699	129,340	888,039	722,570
391.7 2011 GMC PICKUP TRUCK		2011	9.50	26,966	R3.0	10.0	95	R3.0095	0.22643	2.26	11.76	19.217687%	5,182	256,177	60,943	317,120	269,660
391.7 2011 GMC PICKUP TRUCK		2011	9.50	23,254	R3.0	10.0	95	R3.0095	0.22643	2.26	11.76	19.217687%	4,469	220,913	52,554	273,467	232,540
391.7 2019 Ford F-150 Unit		2019	1.50	33,330	R3.0	10.0	15	R3.0015	0.85389	8.54	10.04	85.059761%	28,350	49,995	284,638	334,633	333,300
				240,834									**66,027**	**2,756,460**	**699,832**	**3,456,291**	**2,408,340**
				72,452,963									**46,235,606**	**2,020,178,741**	**3,339,401,105**	**5,336,539,166**	**5,122,094,118**
354.2 Sewer Capacity Rights		2017	3.50	2,446,506	R4.0	55.0	6	R4.0006	0.94008	51.70	55.20	93.659420%	2,291,383	8,562,771	126,484,360	135,047,131	134,557,830
354.2 VFSA Capacity Rights		2013	7.50	11,065,195	R4.0	55.0	14	R4.0014	0.86031	47.32	54.82	86.318862%	9,551,350	82,988,963	523,605,027	606,593,990	608,585,725
				13,511,701									**11,842,733**	**91,551,734**	**650,089,387**	**741,641,121**	**743,143,555**
				85,964,664									**58,078,339**	**2,111,730,475**	**3,989,490,492**	**6,078,180,287**	**5,865,237,673**

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
		CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.20	Land & Land Rights - Original Basin	720,020	0.00%	720,020
353.30	Land & Land Rights - Pumping	13,468	0.00%	13,468
354.30	Stuctures & Improvements - Pumping	8,379,553	0.00%	8,379,553
360.21	Collection Sewers - Force - Mains	3,669,861	0.00%	3,669,861
361.21	Collection Sewers - Gravity - Mains	18,623,208	0.00%	18,623,208
361.23	Collection Sewers - Gravity - Manholes	6,272,518	0.00%	6,272,518
363.20	Service Laterals	8,428,787	0.00%	8,428,787
365.20	Flow Measuring Installations Meter Pits	58,401	0.00%	58,401
354.20	Stuctures & Improvements - Treatment	11,842,733	0.00%	11,842,733
390.70	Office Furniture and Equipment	3,763	0.00%	3,763
391.70	Transportation Equipment	66,027	0.00%	66,027
	Grand Total	58,078,339	0.00%	58,078,339

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.20	Land & Land Rights - Original Basin	USBLS	PPI	1.00	USBLS1	1.00
353.30	Land & Land Rights - Pumping	USBLS	PPI	1.00	USBLS1	1.00
354.20	Stuctures & Improvements - Treatment	HW	W-1	15.00	HWW-115	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
360.21	Collection Sewers - Force - Mains	HW	W-1	44.00	HWW-144	1.00
361.21	Collection Sewers - Gravity - Mains	HW	W-1	44.00	HWW-144	1.00
361.23	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.20	Service Laterals	HW	W-1	39.00	HWW-139	1.00
365.20	Flow Measuring Installations Meter Pits	HW	W-1	40.00	HWW-140	1.00
390.70	Office Furniture and Equipment	AUS	T-1	15.00	AUST-115	1.00
391.70	Transportation Equipment	AUS	T-1	4.00	AUST-14	1.00

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Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.2	FLAT ROAD DRAINAGE AREA (F	1988	1,036	0.00%	1,036
353.2	FLAT ROAD DRAINAGE AREA (F	1988	1,036	0.00%	1,036
353.2	FLAT ROAD DRAINAGE AREA (F	1988	1,036	0.00%	1,036
353.2	FLAT ROAD DRAINAGE AREA (F	1988	1,036	0.00%	1,036
353.2	FLAT ROAD DRAINAGE AREA (F	1988	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
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Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	KING ROAD DRAINAGE AREA (K	1988	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
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As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
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As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

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			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
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353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MATTHEWS ROAD DRAINAGE A	1988	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036

36	37	38	39	40	41

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Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36)	(37)	(38)	(39)	(40)	(41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036

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East Whiteland Township, Pennsylvania
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Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036

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Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036

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Investor-Owned Utility
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Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036

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Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
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353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.2	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036
353.2	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036

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Fair Market Value

(36) (37) (38) (39) (40) (41)

Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353.2	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036
353.2	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036
353.2	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036
			720,020		**720,020**
353.3	DEER RUN DRAINAGE AREA (DI	1976	1,036	0.00%	1,036
353.3	HILLBROOK CIRCLE DRAINAGE	2000	1,036	0.00%	1,036
353.3	KING ROAD DRAINAGE AREA (K	2004	1,036	0.00%	1,036
353.3	LAPP ROAD DRAINAGE AREA (L	1987	1,036	0.00%	1,036
353.3	LEE BOULEVARD DRAINAGE AF	2007	1,036	0.00%	1,036
353.3	MALVERN HUNT DRAINAGE ARI	2000	1,036	0.00%	1,036
353.3	MEADOW VIEW DRAINAGE ARE	1980	1,036	0.00%	1,036
353.3	MILL LANE DRAINAGE AREA (MI	1976	1,036	0.00%	1,036
353.3	0	2020	1,036	0.00%	1,036
353.3	PLANEBROOK DRAINAGE AREA	2018	1,036	0.00%	1,036
353.3	0	2020	1,036	0.00%	1,036
353.3	WESTGATE DRAINAGE AREA (V	1998	1,036	0.00%	1,036
353.3	WILBURDALE ROAD DRAINAGE	2017	1,036	0.00%	1,036
			13,468		**13,468**
354.3	(P.S. 1) Deer Run	1976	69,175	0.00%	69,175
354.3	(P.S. 1) Deer Run	2018	52,664	0.00%	52,664
354.3	(P.S. 11) Hillbrook Circle	2000	534,344	0.00%	534,344
354.3	(P.S. 12) King Road	2004	267,529	0.00%	267,529
354.3	(P.S. 13) Malvern Hunt	2000	430,327	0.00%	430,327
354.3	(P.S. 14) Planebrook Road	2018	361,450	0.00%	361,450
354.3	(P.S. 14) Planebrook Road	2018	81,454	0.00%	81,454
354.3	(P.S. 2) Mill Lane	2014	3,104,023	0.00%	3,104,023
354.3	(P.S. 2) Mill Lane	1976	35,172	0.00%	35,172
354.3	(P.S. 3) Wilburdale	2017	488,427	0.00%	488,427

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Account	Description		Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
				CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input		Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt		Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description		Year	Prelim CORLD	EO%	FMV
354.3	(P.S. 3) Wilburdale		2017	99,329	0.00%	99,329
354.3	(P.S. 4) Lee Boulevard		2007	598,059	0.00%	598,059
354.3		0	2002	57,606	0.00%	57,606
354.3	(P.S. 5) Meadowview		1980	81,484	0.00%	81,484
354.3	(P.S. 6) Flat Road		2019	362,426	0.00%	362,426
354.3	(P.S. 7) Lapp Road		1987	168,526	0.00%	168,526
354.3	(P.S. 7) Lapp Road		2006	145,549	0.00%	145,549
354.3	(P.S. 8) Westgate		1988	74,531	0.00%	74,531
354.3	(P.S. 8) Westgate		2001	103,580	0.00%	103,580
354.3		0	2007	25,666	0.00%	25,666
354.3		0	2009	56,163	0.00%	56,163
354.3		0	2014	1,182,069	0.00%	1,182,069
				8,379,553		**8,379,553**
360.21	(P.S. 1) Deer Run FM - 4" ACP		1976	71,416	0.00%	71,416
360.21	(P.S. 11) Hillbrook Circle FM - 4" F		2000	135,059	0.00%	135,059
360.21	(P.S. 12) King Road FM - 4" PVC		2004	415,812	0.00%	415,812
360.21	(P.S. 13) Malvern Hunt FM - 6" DI		2000	438,530	0.00%	438,530
360.21	(P.S. 14) Planebrook FM - 8" PVC		2017	497,108	0.00%	497,108
360.21	(P.S. 2) Mill Lane FM - 14" DIP		1976	441,525	0.00%	441,525
360.21	(P.S. 3) Wilburdale Rd FM - 10" P\		2016	99,957	0.00%	99,957
360.21	(P.S. 4) Lee Blvd FM - 8" DIP		1987	484,362	0.00%	484,362
360.21	(P.S. 5) Meadow View FM - 4" ACI		1980	119,161	0.00%	119,161
360.21	(P.S. 6) Flat Rd FM - 6" ACP		1979	155,038	0.00%	155,038
360.21	(P.S. 7) Lapp Rd FM - 6" PVC		1987	597,180	0.00%	597,180
360.21	(P.S. 8) Westgate FM - 8" PVC		1988	214,713	0.00%	214,713
				3,669,861		**3,669,861**
361.21	18" ACP		1975	151,986	0.00%	151,986
361.21	12" ACP		1975	178,867	0.00%	178,867
361.21	12" ACP		1978	143,994	0.00%	143,994

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Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
361.21 10" ACP		1975	196,850	0.00%	196,850
361.21 10" ACP		1977	109,356	0.00%	109,356
361.21 10" ACP		2012	8,246	0.00%	8,246
361.21 36" ACP		1967	13,070	0.00%	13,070
361.21 27" ACP		1967	242,524	0.00%	242,524
361.21 24" ACP		1967	12,823	0.00%	12,823
361.21 24" ACP		1975	49,698	0.00%	49,698
361.21 10" PVC		1991	86,658	0.00%	86,658
361.21 10" PVC		1992	69,744	0.00%	69,744
361.21 10" PVC		1993	12,394	0.00%	12,394
361.21 10" PVC		2007	632,871	0.00%	632,871
361.21 10" PVC		2019	46,508	0.00%	46,508
361.21 10" PVC		2020	118,051	0.00%	118,051
361.21 8" ACP		1951	11,076	0.00%	11,076
361.21 8" ACP		1954	51,563	0.00%	51,563
361.21 8" ACP		1967	97,966	0.00%	97,966
361.21 8" ACP		1970	215,037	0.00%	215,037
361.21 8" ACP		1971	79,916	0.00%	79,916
361.21 8" ACP		1972	70,669	0.00%	70,669
361.21 8" ACP		1973	295,535	0.00%	295,535
361.21 8" ACP		1974	292,951	0.00%	292,951
361.21 8" ACP		1975	2,202,883	0.00%	2,202,883
361.21 8" ACP		1977	353,556	0.00%	353,556
361.21 8" ACP		1978	843,996	0.00%	843,996
361.21 8" ACP		1979	245,132	0.00%	245,132
361.21 8" ACP		1981	398,439	0.00%	398,439
361.21 8" ACP		2012	32,876	0.00%	32,876
361.21 8" PVC		1970	12,614	0.00%	12,614
361.21 8" PVC		1983	87,265	0.00%	87,265
361.21 8" PVC		1984	232,279	0.00%	232,279
361.21 8" PVC		1985	48,717	0.00%	48,717
361.21 8" PVC		1987	827,953	0.00%	827,953
361.21 8" PVC		1988	959,561	0.00%	959,561

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Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
361.21 8" PVC		1990	512,871	0.00%	512,871
361.21 8" PVC		1991	224,853	0.00%	224,853
361.21 8" PVC		1992	127,972	0.00%	127,972
361.21 8" PVC		1993	202,027	0.00%	202,027
361.21 8" PVC		1994	84,448	0.00%	84,448
361.21 8" PVC		1996	29,246	0.00%	29,246
361.21 8" PVC		1997	323,982	0.00%	323,982
361.21 8" PVC		1998	267,458	0.00%	267,458
361.21 8" PVC		1999	318,173	0.00%	318,173
361.21 8" PVC		2000	1,354,170	0.00%	1,354,170
361.21 8" PVC		2001	53,246	0.00%	53,246
361.21 8" PVC		2002	883,264	0.00%	883,264
361.21 8" PVC		2003	202,445	0.00%	202,445
361.21 8" PVC		2004	223,177	0.00%	223,177
361.21 8" PVC		2005	1,504,703	0.00%	1,504,703
361.21 8" PVC		2006	32,122	0.00%	32,122
361.21 8" PVC		2007	57,823	0.00%	57,823
361.21 8" PVC		2011	145,614	0.00%	145,614
361.21 8" PVC		2012	222,506	0.00%	222,506
361.21 8" PVC		2013	30,882	0.00%	30,882
361.21 8" PVC		2014	9,350	0.00%	9,350
361.21 8" PVC		2017	301,256	0.00%	301,256
361.21 8" PVC		2018	132,144	0.00%	132,144
361.21 8" DIP		1954	15,259	0.00%	15,259
361.21 8" DIP		1975	12,123	0.00%	12,123
361.21 8" CIP		1975	5,417	0.00%	5,417
361.21 20" ACP		1975	336,487	0.00%	336,487
361.21 16" ACP		1975	23,571	0.00%	23,571
361.21 12" PVC		1970	78,313	0.00%	78,313
361.21 12" PVC		2012	8,878	0.00%	8,878
361.21 12" PVC		2016	171,591	0.00%	171,591
361.21 15" PVC		2013	90,925	0.00%	90,925
361.21 15" PVC		2017	254,850	0.00%	254,850

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Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
361.21	18" PVC	1988	158,341	0.00%	158,341
361.21	18" PVC	2013	430,153	0.00%	430,153
361.21	18" PVC	2014	21,823	0.00%	21,823
361.21	18" PVC	2017	107,513	0.00%	107,513
361.21	10" DI	2020	8,609	0.00%	8,609
361.21	8" CSP	1978	52,102	0.00%	52,102
361.21	8" CSP	1983	145,650	0.00%	145,650
361.21	20" PVC	2014	13,834	0.00%	13,834
361.21	21" PVC	2014	10,413	0.00%	10,413
			18,623,208		**18,623,208**
361.23	Manholes	1951	7,682	0.00%	7,682
361.23	Manholes	1954	30,990	0.00%	30,990
361.23	Manholes	1967	84,291	0.00%	84,291
361.23	Manholes	1970	74,532	0.00%	74,532
361.23	Manholes	1971	25,395	0.00%	25,395
361.23	Manholes	1972	15,253	0.00%	15,253
361.23	Manholes	1973	128,378	0.00%	128,378
361.23	Manholes	1974	93,472	0.00%	93,472
361.23	Manholes	1975	924,996	0.00%	924,996
361.23	Manholes	1977	171,559	0.00%	171,559
361.23	Manholes	1978	291,870	0.00%	291,870
361.23	Manholes	1979	83,186	0.00%	83,186
361.23	Manholes	1980	6,805	0.00%	6,805
361.23	Manholes	1981	124,004	0.00%	124,004
361.23	Manholes	1983	62,496	0.00%	62,496
361.23	Manholes	1984	88,506	0.00%	88,506
361.23	Manholes	1985	18,288	0.00%	18,288
361.23	Manholes	1987	258,601	0.00%	258,601
361.23	Manholes	1988	351,559	0.00%	351,559
361.23	Manholes	1990	170,455	0.00%	170,455
361.23	Manholes	1991	127,929	0.00%	127,929

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			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
361.23 Manholes		1992	70,749	0.00%	70,749
361.23 Manholes		1993	87,649	0.00%	87,649
361.23 Manholes		1994	33,062	0.00%	33,062
361.23 Manholes		1996	9,491	0.00%	9,491
361.23 Manholes		1997	115,585	0.00%	115,585
361.23 Manholes		1998	147,532	0.00%	147,532
361.23 Manholes		1999	100,171	0.00%	100,171
361.23 Manholes		2000	565,738	0.00%	565,738
361.23 Manholes		2001	20,312	0.00%	20,312
361.23 Manholes		2002	310,886	0.00%	310,886
361.23 Manholes		2003	67,581	0.00%	67,581
361.23 Manholes		2004	84,596	0.00%	84,596
361.23 Manholes		2005	553,842	0.00%	553,842
361.23 Manholes		2006	23,092	0.00%	23,092
361.23 Manholes		2007	201,565	0.00%	201,565
361.23 Manholes		2011	55,651	0.00%	55,651
361.23 Manholes		2012	107,729	0.00%	107,729
361.23 Manholes		2013	91,857	0.00%	91,857
361.23 Manholes		2014	26,627	0.00%	26,627
361.23 Manholes		2016	34,376	0.00%	34,376
361.23 Manholes		2017	255,115	0.00%	255,115
361.23 Manholes		2018	80,369	0.00%	80,369
361.23 Manholes		2019	14,895	0.00%	14,895
361.23 Manholes		2020	59,177	0.00%	59,177
361.23 Manholes		2021	14,624	0.00%	14,624
			6,272,518		**6,272,518**
363.2 4" PVC		1982	174,914	0.00%	174,914
363.2 4" PVC		1985	86,115	0.00%	86,115
363.2 4" PVC		1986	78,843	0.00%	78,843
363.2 4" PVC		1987	61,246	0.00%	61,246
363.2 4" PVC		1988	179,638	0.00%	179,638

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			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
363.2	4" PVC	1989	335,987	0.00%	335,987
363.2	4" PVC	1993	107,157	0.00%	107,157
363.2	4" PVC	1995	43,084	0.00%	43,084
363.2	4" PVC	1996	15,590	0.00%	15,590
363.2	4" PVC	1997	67,459	0.00%	67,459
363.2	4" PVC	1998	157,115	0.00%	157,115
363.2	4" PVC	1999	120,236	0.00%	120,236
363.2	4" PVC	2000	47,303	0.00%	47,303
363.2	4" PVC	2001	577,906	0.00%	577,906
363.2	4" PVC	2002	199,730	0.00%	199,730
363.2	4" PVC	2003	38,008	0.00%	38,008
363.2	4" PVC	2004	571,950	0.00%	571,950
363.2	4" PVC	2012	4,484,913	0.00%	4,484,913
363.2	4" ACP	1970	212,582	0.00%	212,582
363.2	4" ACP	1976	588,268	0.00%	588,268
363.2	4" ACP	1978	133,896	0.00%	133,896
363.2	4" ACP	1980	146,847	0.00%	146,847
			8,428,787		**8,428,787**
365.2	Meter Pits	1976	58,401	0.00%	58,401
			58,401		**58,401**
390.7	PIPE TECH SOFTWARE AND DU	2008	3,763	0.00%	3,763
			3,763		**3,763**
391.7	2001 FORD E350 TRUCK	2001	6,982	0.00%	6,982
391.7	2003 GMC PICKUP TRUCK	2003	4,669	0.00%	4,669
391.7	2018 Carmate 20' Custom Cargo T	2018	5,536	0.00%	5,536
391.7	2010 FORD F550 TRUCK	2010	10,839	0.00%	10,839
391.7	2011 GMC PICKUP TRUCK	2011	5,182	0.00%	5,182

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			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
391.7	2011 GMC PICKUP TRUCK	2011	4,469	0.00%	4,469
391.7	2019 Ford F-150 Unit	2019	28,350	0.00%	28,350
			66,027		**66,027**
			46,235,606		**46,235,606**
354.2	Sewer Capacity Rights	2017	2,291,383	0.00%	2,291,383
354.2	VFSA Capacity Rights	2013	9,551,350	0.00%	9,551,350
			11,842,733		**11,842,733**
			58,078,339		**58,078,339**

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Original Cost less Depreciation

AUS Consultants
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Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
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Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost
Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.20	Land & Land Rights - Original Basin	668	ZNonDep	-	32.06	-	-	0.00%	-	668
353.30	Land & Land Rights - Pumping	13	ZNonDep	-	20.77	-	-	0.00%	-	13
354.30	Stuctures & Improvements - Pumping	8,005,275	R4.0	45.00	10.35	35.02	45.37	22.00%	1,800,950	6,204,325
360.21	Collection Sewers - Force - Mains	2,304,355	R3.0	75.00	23.91	52.62	76.52	31.00%	712,885	1,591,470
361.21	Collection Sewers - Gravity - Mains	10,767,738	R2.5	80.00	25.14	57.61	82.74	30.00%	3,226,805	7,540,933
361.23	Collection Sewers - Gravity - Manholes	4,350,867	R2.5	80.00	24.70	57.94	82.64	30.00%	1,283,915	3,066,952
363.20	Service Laterals	6,619,976	R3.0	70.00	15.43	55.45	70.88	22.00%	1,424,567	5,195,409
365.20	Flow Measuring Installations Meter Pits	78,670	S2.0	30.00	44.50	4.50	49.00	85.00%	66,870	11,800
354.20	Stuctures & Improvements - Treatment	11,085,242	R4.0	55.00	6.72	48.18	54.89	12.00%	1,357,375	9,727,867
390.70	Office Furniture and Equipment	21,550	R3.0	12.00	12.50	2.20	14.70	85.00%	18,318	3,232
391.70	Transportation Equipment	212,956	R3.0	10.00	11.16	3.04	14.20	71.00%	151,652	61,304
Grand Total		43,447,309		64.92	16.08	50.09	66.17	23.12%	10,043,337	33,403,972

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.20	Land & Land Rights - Original Basin	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.30	Land & Land Rights - Pumping	ZNonDep	0.00	0.00%	Non-Depr	0.00
354.20	Stuctures & Improvements - Treatment	R4.0	55.00	0.00%	MACRS	25.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
360.21	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.21	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5	80.00	0.00%	MACRS	25.00
363.20	Service Laterals	R3.0	70.00	0.00%	MACRS	25.00
365.20	Flow Measuring Installations Meter Pits	S2.0	30.00	0.00%	MACRS	25.00
390.70	Office Furniture and Equipment	R3.0	12.00	0.00%	MACRS	12.00
391.70	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	FLAT ROAD DRAINAGE AREA (FR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	-	ZNonDep	0	20.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	-	ZNonDep	0	20.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	-	ZNonDep	0	20.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	-	ZNonDep	0	20.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	KING ROAD DRAINAGE AREA (KR)	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS input	AUS input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	-	ZNonDep	0	32.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	-	ZNonDep	0	32.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	-	ZNonDep	0	32.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MATTHEWS ROAD DRAINAGE ARE	1988	1	ZNonDep	0	32.50	3	ZNonDep000	0.00000	0	0	0	-	1	33	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.2	MEADOW VIEW DRAINAGE AREA (	1980	-	ZNonDep	0	40.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	-	ZNonDep	0	44.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	-	ZNonDep	0	44.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
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As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	-	ZNonDep	0	2.50	0	ZNonDep000	0.00000	0	0	0	-	-	-	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
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Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-

East Whiteland Township, Pennsylvania
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Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
353.2	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
			668										**-**	**668**	**21,417**	**-**	**-**	**-**
353.3	DEER RUN DRAINAGE AREA (DR)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.3	HILLBROOK CIRCLE DRAINAGE AF	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.3	KING ROAD DRAINAGE AREA (KR)	2004	1	ZNonDep	0	16.50	6	ZNonDep000	0.00000	0	0	0	-	1	17	-	-	-
353.3	LAPP ROAD DRAINAGE AREA (LR)	1987	1	ZNonDep	0	33.50	3	ZNonDep000	0.00000	0	0	0	-	1	34	-	-	-
353.3	LEE BOULEVARD DRAINAGE ARE/	2007	1	ZNonDep	0	13.50	7	ZNonDep000	0.00000	0	0	0	-	1	14	-	-	-
353.3	MALVERN HUNT DRAINAGE AREA	2000	1	ZNonDep	0	20.50	5	ZNonDep000	0.00000	0	0	0	-	1	21	-	-	-
353.3	MEADOW VIEW DRAINAGE AREA (	1980	1	ZNonDep	0	40.50	2	ZNonDep000	0.00000	0	0	0	-	1	41	-	-	-
353.3	MILL LANE DRAINAGE AREA (ML)	1976	1	ZNonDep	0	44.50	2	ZNonDep000	0.00000	0	0	0	-	1	45	-	-	-
353.3	0	2020	1	ZNonDep	0	0.50	200	ZNonDep000	0.00000	0	0	0	-	1	1	-	-	-
353.3	PLANEBROOK DRAINAGE AREA (F	2018	1	ZNonDep	0	2.50	40	ZNonDep000	0.00000	0	0	0	-	1	3	-	-	-
353.3	0	2020	1	ZNonDep	0	0.50	200	ZNonDep000	0.00000	0	0	0	-	1	1	-	-	-
353.3	WESTGATE DRAINAGE AREA (WG	1998	1	ZNonDep	0	22.50	4	ZNonDep000	0.00000	0	0	0	-	1	23	-	-	-
353.3	WILBURDALE ROAD DRAINAGE AF	2017	1	ZNonDep	0	3.50	29	ZNonDep000	0.00000	0	0	0	-	1	4	-	-	-
			13										**-**	**13**	**270**	**-**	**-**	**-**
354.3	(P.S. 1) Deer Run	1976	78,670	R4.0	45	44.50	99	R4.0099	0.15108	6.8	51.3	0.85000	66,870	11,800	3,500,815	534,956	4,035,771	3,540,150
354.3	(P.S. 1) Deer Run	2018	51,550	R4.0	45	2.50	6	R4.0006	0.94008	42.3	44.8	0.05580	2,876	48,674	128,875	2,180,565	2,309,440	2,319,750
354.3	(P.S. 11) Hillbrook Circle	2000	464,526	R4.0	45	20.50	46	R4.0046	0.54887	24.7	45.2	0.45354	210,681	253,845	9,522,786	11,473,796	20,996,582	20,903,676
354.3	(P.S. 12) King Road	2004	233,129	R4.0	45	16.50	37	R4.0037	0.63414	28.54	45.04	0.36634	85,404	147,725	3,846,629	6,653,502	10,500,130	10,490,805

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
354.3	(P.S. 13) Malvern Hunt	2000	374,100	R4.0	45	20.50	46	R4.0046	0.54887	24.7	45.2	0.45354	169,669	204,431	7,669,050	9,240,270	16,909,320	16,834,500
354.3	(P.S. 14) Planebrook Road	2018	353,800	R4.0	45	2.50	6	R4.0006	0.94008	42.3	44.8	0.05580	19,742	334,058	884,500	14,965,740	15,850,240	15,921,000
354.3	(P.S. 14) Planebrook Road	2018	79,730	R4.0	45	2.50	6	R4.0006	0.94008	42.3	44.8	0.05580	4,449	75,281	199,325	3,372,579	3,571,904	3,587,850
354.3	(P.S. 2) Mill Lane	2014	3,001,023	R4.0	45	6.50	14	R4.0014	0.86031	38.71	45.21	0.14377	431,457	2,569,566	19,506,650	116,169,600	135,676,250	135,046,035
354.3	(P.S. 2) Mill Lane	1976	40,000	R4.0	45	44.50	99	R4.0099	0.15108	6.8	51.3	0.85000	34,000	6,000	1,780,000	272,000	2,052,000	1,800,000
354.3	(P.S. 3) Wilburdale	2017	469,600	R4.0	45	3.50	8	R4.0008	0.92012	41.41	44.91	0.07793	36,596	433,004	1,643,600	19,446,136	21,089,736	21,132,000
354.3	(P.S. 3) Wilburdale	2017	95,500	R4.0	45	3.50	8	R4.0008	0.92012	41.41	44.91	0.07793	7,442	88,058	334,250	3,954,655	4,288,905	4,297,500
354.3	(P.S. 4) Lee Boulevard	2007	556,117	R4.0	45	13.50	30	R4.0030	0.70211	31.59	45.09	0.29940	166,501	389,616	7,507,580	17,567,736	25,075,316	25,025,265
354.3	0	2002	49,664	R4.0	45	18.50	41	R4.0041	0.59589	26.82	45.32	0.40821	20,274	29,390	918,792	1,332,001	2,250,793	2,234,900
354.3	(P.S. 5) Meadowview	1980	106,067	R4.0	45	40.50	90	R4.0090	0.20092	9.04	49.54	0.81752	86,712	19,355	4,295,714	958,846	5,254,559	4,773,015
354.3	(P.S. 6) Flat Road	2019	352,000	R4.0	45	1.50	3	R4.0003	0.97003	43.65	45.15	0.03322	11,693	340,307	528,000	15,364,800	15,892,800	15,840,000
354.3	(P.S. 7) Lapp Road	1987	179,265	R4.0	45	33.50	74	R4.0074	0.31142	14.01	47.51	0.70511	126,402	52,863	6,005,378	2,511,503	8,516,880	8,066,925
354.3	(P.S. 7) Lapp Road	2006	131,120	R4.0	45	14.50	32	R4.0032	0.68258	30.72	45.22	0.32065	42,043	89,077	1,901,234	4,027,993	5,929,227	5,900,380
354.3	(P.S. 8) Westgate	1988	78,824	R4.0	45	32.50	72	R4.0072	0.32657	14.7	47.2	0.68856	54,275	24,549	2,561,791	1,158,718	3,720,509	3,547,096
354.3	(P.S. 8) Westgate	2001	89,972	R4.0	45	19.50	43	R4.0043	0.57696	25.96	45.46	0.42895	38,593	51,379	1,754,454	2,335,673	4,090,127	4,048,740
354.3	0	2007	23,866	R4.0	45	13.50	30	R4.0030	0.70211	31.59	45.09	0.29940	7,145	16,721	322,191	753,927	1,076,118	1,073,970
354.3	0	2009	53,908	R4.0	45	11.50	26	R4.0026	0.74138	33.36	44.86	0.25635	13,819	40,089	619,936	1,798,354	2,418,290	2,425,838
354.3	0	2014	1,142,844	R4.0	45	6.50	14	R4.0014	0.86031	38.71	45.21	0.14377	164,307	978,537	7,428,488	44,239,506	51,667,994	51,427,997
			8,005,275										**1,800,950**	**6,204,325**	**82,860,038**	**280,312,856**	**363,172,891**	**360,237,392**
360.21	(P.S. 1) Deer Run FM - 4" ACP	1976	31,269	R3.0	75	44.50	59	R3.0059	0.4653	34.9	79.4	0.56045	17,525	13,744	1,391,488	1,091,302	2,482,790	2,345,205
360.21	(P.S. 11) Hillbrook Circle FM - 4" PVC	2000	85,965	R3.0	75	20.50	27	R3.0027	0.74058	55.54	76.04	0.26959	23,175	62,790	1,762,280	4,774,488	6,536,768	6,447,364
360.21	(P.S. 12) King Road FM - 4" PVC	2004	286,022	R3.0	75	16.50	22	R3.0022	0.78729	59.05	75.55	0.21840	62,467	223,555	4,719,355	16,889,570	21,608,924	21,451,613
360.21	(P.S. 13) Malvern Hunt FM - 6" DIP	2000	279,123	R3.0	75	20.50	27	R3.0027	0.74058	55.54	76.04	0.26959	75,249	203,874	5,722,020	15,502,488	21,224,508	20,934,220
360.21	(P.S. 14) Planebrook FM - 8" PVC	2017	443,455	R3.0	75	3.50	5	R3.0005	0.9509	71.32	74.82	0.04678	20,745	422,710	1,552,092	31,627,193	33,179,284	33,259,106
360.21	(P.S. 2) Mill Lane FM - 14" DIP	1976	193,322	R3.0	75	44.50	59	R3.0059	0.4653	34.9	79.4	0.56045	108,347	84,975	8,602,834	6,746,942	15,349,776	14,499,158
360.21	(P.S. 3) Wilburdale Rd FM - 10" PVC	2016	89,428	R3.0	75	4.50	6	R3.0006	0.94112	70.58	75.08	0.05994	5,360	84,068	402,428	6,311,861	6,714,289	6,707,135
360.21	(P.S. 4) Lee Blvd FM - 8" DIP	1987	276,128	R3.0	75	33.50	45	R3.0045	0.58001	43.5	77	0.43506	120,132	155,996	9,250,288	12,011,567	21,261,855	20,709,599
360.21	(P.S. 5) Meadow View FM - 4" ACP	1980	63,237	R3.0	75	40.50	54	R3.0054	0.50513	37.88	78.38	0.51671	32,675	30,562	2,561,116	2,395,434	4,956,551	4,742,808
360.21	(P.S. 6) Flat Rd FM - 6" ACP	1979	77,969	R3.0	75	41.50	55	R3.0055	0.49706	37.28	78.78	0.52678	41,073	36,896	3,235,718	2,906,689	6,142,407	5,847,684
360.21	(P.S. 7) Lapp Rd FM - 6" PVC	1987	340,443	R3.0	75	33.50	45	R3.0045	0.58001	43.5	77	0.43506	148,113	192,330	11,404,854	14,809,288	26,214,142	25,533,256
360.21	(P.S. 8) Westgate FM - 8" PVC	1988	137,993	R3.0	75	32.50	43	R3.0043	0.59718	44.79	77.29	0.42049	58,024	79,969	4,484,758	6,180,687	10,665,446	10,349,443
			2,304,355										**712,885**	**1,591,470**	**55,089,231**	**121,247,509**	**176,336,740**	**172,826,591**
361.21	18" ACP	1975	58,356	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	30,867	27,489	2,655,202	2,364,588	5,019,790	4,668,486
361.21	12" ACP	1975	68,677	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	36,327	32,350	3,124,817	2,782,804	5,907,621	5,494,183
361.21	12" ACP	1978	61,740	R2.5	80	42.50	53	R2.5053	0.53711	42.97	85.47	0.49725	30,700	31,040	2,623,971	2,652,989	5,276,960	4,939,239
361.21	10" ACP	1975	75,582	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	39,979	35,603	3,438,985	3,062,586	6,501,571	6,046,567
361.21	10" ACP	1977	45,057	R2.5	80	43.50	54	R2.5054	0.5294	42.35	85.85	0.50670	22,830	22,227	1,959,981	1,908,166	3,868,147	3,604,563
361.21	10" ACP	2012	7,711	R2.5	80	8.50	11	R2.5011	0.89711	71.77	80.27	0.10589	817	6,894	65,547	553,445	618,991	616,909
361.21	36" ACP	1967	3,626	R2.5	80	53.50	67	R2.5067	0.43365	34.69	88.19	0.60664	2,200	1,426	193,984	125,782	319,766	290,070
361.21	27" ACP	1967	67,280	R2.5	80	53.50	67	R2.5067	0.43365	34.69	88.19	0.60664	40,815	26,465	3,599,468	2,333,935	5,933,403	5,382,382
361.21	24" ACP	1967	3,557	R2.5	80	53.50	67	R2.5067	0.43365	34.69	88.19	0.60664	2,158	1,399	190,307	123,397	313,705	284,572

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

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(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
361.21	24" ACP	1975	19,082	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	10,093	8,989	868,219	773,192	1,641,411	1,526,539
361.21	10" PVC	1991	52,555	R2.5	80	29.50	37	R2.5037	0.66661	53.33	82.83	0.35615	18,717	33,838	1,550,375	2,802,763	4,353,138	4,204,407
361.21	10" PVC	1992	40,012	R2.5	80	28.50	36	R2.5036	0.67506	54	82.5	0.34545	13,822	26,190	1,140,354	2,160,671	3,301,025	3,200,994
361.21	10" PVC	1993	7,274	R2.5	80	27.50	34	R2.5034	0.69207	55.37	82.87	0.33185	2,414	4,860	200,035	402,761	602,795	581,919
361.21	10" PVC	2007	524,647	R2.5	80	13.50	17	R2.5017	0.84214	67.37	80.87	0.16693	87,579	437,068	7,082,734	35,345,464	42,428,197	41,971,754
361.21	10" PVC	2019	42,281	R2.5	80	1.50	2	R2.5002	0.98112	78.49	79.99	0.01875	793	41,488	63,422	3,318,666	3,382,088	3,382,511
361.21	10" PVC	2020	111,336	R2.5	80	0.50	1	R2.5001	0.99055	79.24	79.74	0.00627	698	110,638	55,668	8,822,271	8,877,939	8,906,886
361.21	8" ACP	1951	2,995	R2.5	80	69.50	87	R2.5087	0.30585	24.47	93.97	0.73960	2,215	780	208,173	73,295	281,468	239,623
361.21	8" ACP	1954	14,038	R2.5	80	66.50	83	R2.5083	0.3292	26.34	92.84	0.71629	10,056	3,982	933,556	369,772	1,303,328	1,123,074
361.21	8" ACP	1967	27,177	R2.5	80	53.50	67	R2.5067	0.43365	34.69	88.19	0.60664	16,487	10,690	1,453,973	942,772	2,396,745	2,174,165
361.21	8" ACP	1970	62,533	R2.5	80	50.50	63	R2.5063	0.46218	36.97	87.47	0.57734	36,103	26,430	3,157,932	2,311,857	5,469,789	5,002,665
361.21	8" ACP	1971	25,403	R2.5	80	49.50	62	R2.5062	0.46944	37.56	87.06	0.56857	14,443	10,960	1,257,429	954,122	2,211,551	2,032,208
361.21	8" ACP	1972	23,205	R2.5	80	48.50	61	R2.5061	0.47676	38.14	86.64	0.55979	12,990	10,215	1,125,449	885,044	2,010,493	1,856,411
361.21	8" ACP	1973	96,746	R2.5	80	47.50	59	R2.5059	0.49155	39.32	86.82	0.54711	52,931	43,815	4,595,429	3,804,048	8,399,476	7,739,670
361.21	8" ACP	1974	105,875	R2.5	80	46.50	58	R2.5058	0.49902	39.92	86.42	0.53807	56,968	48,907	4,923,174	4,226,519	9,149,693	8,469,977
361.21	8" ACP	1975	845,814	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	447,393	398,421	38,484,530	34,272,377	72,756,907	67,665,107
361.21	8" ACP	1977	145,673	R2.5	80	43.50	54	R2.5054	0.5294	42.35	85.85	0.50670	73,813	71,860	6,336,780	6,169,256	12,506,036	11,653,848
361.21	8" ACP	1978	361,880	R2.5	80	42.50	53	R2.5053	0.53711	42.97	85.47	0.49725	179,945	181,935	15,379,884	15,549,967	30,929,851	28,950,370
361.21	8" ACP	1979	113,877	R2.5	80	41.50	52	R2.5052	0.54488	43.59	85.09	0.48772	55,540	58,337	4,725,894	4,963,897	9,689,792	9,110,158
361.21	8" ACP	1981	204,755	R2.5	80	39.50	49	R2.5049	0.56844	45.48	84.98	0.46482	95,174	109,581	8,087,826	9,312,261	17,400,087	16,380,407
361.21	8" ACP	2012	30,744	R2.5	80	8.50	11	R2.5011	0.89711	71.77	80.27	0.10589	3,255	27,489	261,324	2,206,499	2,467,823	2,459,522
361.21	8" PVC	1970	3,668	R2.5	80	50.50	63	R2.5063	0.46218	36.97	87.47	0.57734	2,118	1,550	185,244	135,613	320,857	293,456
361.21	8" PVC	1983	46,541	R2.5	80	37.50	47	R2.5047	0.58438	46.75	84.25	0.44510	20,715	25,826	1,745,294	2,175,800	3,921,094	3,723,294
361.21	8" PVC	1984	122,230	R2.5	80	36.50	46	R2.5046	0.59241	47.39	83.89	0.43509	53,181	69,049	4,461,385	5,792,467	10,253,852	9,778,378
361.21	8" PVC	1985	25,549	R2.5	80	35.50	44	R2.5044	0.60861	48.69	84.19	0.42167	10,773	14,776	906,996	1,243,990	2,150,986	2,043,935
361.21	8" PVC	1987	445,308	R2.5	80	33.50	42	R2.5042	0.62498	50	83.5	0.40120	178,658	266,650	14,917,824	22,265,409	37,183,233	35,624,654
361.21	8" PVC	1988	586,648	R2.5	80	32.50	41	R2.5041	0.63322	50.66	83.16	0.39081	229,268	357,380	19,066,056	29,719,581	48,785,637	46,931,829
361.21	8" PVC	1990	322,292	R2.5	80	30.50	38	R2.5038	0.65821	52.66	83.16	0.36676	118,204	204,088	9,829,912	16,971,907	26,801,819	25,783,376
361.21	8" PVC	1991	136,366	R2.5	80	29.50	37	R2.5037	0.66661	53.33	82.83	0.35615	48,567	87,799	4,022,790	7,272,386	11,295,176	10,909,261
361.21	8" PVC	1992	73,418	R2.5	80	28.50	36	R2.5036	0.67506	54	82.5	0.34545	25,362	48,056	2,092,422	3,964,589	6,057,011	5,873,465
361.21	8" PVC	1993	118,574	R2.5	80	27.50	34	R2.5034	0.69207	55.37	82.87	0.33185	39,349	79,225	3,260,794	6,565,461	9,826,256	9,485,947
361.21	8" PVC	1994	48,812	R2.5	80	26.50	33	R2.5033	0.70063	56.05	82.55	0.32102	15,670	33,142	1,293,530	2,735,939	4,029,469	3,904,997
361.21	8" PVC	1996	17,626	R2.5	80	24.50	31	R2.5031	0.71785	57.43	81.93	0.29904	5,271	12,355	431,846	1,012,281	1,444,127	1,410,108
361.21	8" PVC	1997	195,693	R2.5	80	23.50	29	R2.5029	0.73522	58.82	82.32	0.28547	55,865	139,828	4,598,794	11,510,682	16,109,476	15,655,467
361.21	8" PVC	1998	161,226	R2.5	80	22.50	28	R2.5028	0.74396	59.52	82.02	0.27432	44,228	116,998	3,627,588	9,596,179	13,223,767	12,898,090
361.21	8" PVC	1999	191,812	R2.5	80	21.50	27	R2.5027	0.75273	60.22	81.72	0.26309	50,464	141,348	4,123,955	11,550,911	15,674,867	15,344,950
361.21	8" PVC	2000	841,402	R2.5	80	20.50	26	R2.5026	0.76153	60.92	81.42	0.25178	211,848	629,554	17,248,749	51,258,235	68,506,984	67,312,193
361.21	8" PVC	2001	33,917	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	8,081	25,836	661,375	2,114,364	2,775,739	2,713,332
361.21	8" PVC	2002	573,797	R2.5	80	18.50	23	R2.5023	0.78813	63.05	81.55	0.22685	130,166	443,631	10,615,239	36,177,882	46,793,121	45,903,736
361.21	8" PVC	2003	130,439	R2.5	80	17.50	22	R2.5022	0.79706	63.76	81.26	0.21536	28,091	102,348	2,282,685	8,316,799	10,599,484	10,435,131
361.21	8" PVC	2004	150,692	R2.5	80	16.50	21	R2.5021	0.80602	64.48	80.98	0.20375	30,703	119,989	2,486,416	9,716,613	12,203,029	12,055,351
361.21	8" PVC	2005	1,084,944	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	206,541	878,403	16,816,635	71,519,521	88,336,156	86,795,535
361.21	8" PVC	2006	25,136	R2.5	80	14.50	18	R2.5018	0.83306	66.64	81.14	0.17870	4,492	20,644	364,468	1,675,044	2,039,512	2,010,857
361.21	8" PVC	2007	47,935	R2.5	80	13.50	17	R2.5017	0.84214	67.37	80.87	0.16693	8,002	39,933	647,127	3,229,401	3,876,527	3,834,824
361.21	8" PVC	2011	132,177	R2.5	80	9.50	12	R2.5012	0.88789	71.03	80.53	0.11797	15,593	116,584	1,255,684	9,388,552	10,644,236	10,574,182

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
361.21 8" PVC		2012	208,075	R2.5	80	8.50	11	R2.5011	0.89711	71.77	80.27	0.10589	22,033	186,042	1,768,642	14,933,577	16,702,219	16,646,039
361.21 8" PVC		2013	27,837	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09288	2,585	25,252	208,776	2,039,050	2,247,826	2,226,949
361.21 8" PVC		2014	8,385	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	677	7,708	54,503	620,409	674,912	670,803
361.21 8" PVC		2017	267,817	R2.5	80	3.50	4	R2.5004	0.96231	76.98	80.48	0.04349	11,647	256,170	937,360	20,616,553	21,553,912	21,425,360
361.21 8" PVC		2018	118,707	R2.5	80	2.50	3	R2.5003	0.9717	77.74	80.24	0.03116	3,699	115,008	296,767	9,228,258	9,525,025	9,496,536
361.21 8" DIP		1954	4,154	R2.5	80	66.50	83	R2.5083	0.3292	26.34	92.84	0.71629	2,976	1,178	276,274	109,429	385,703	332,359
361.21 8" DIP		1975	4,655	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	2,462	2,193	211,790	188,609	400,399	372,378
361.21 8" CIP		1975	2,080	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	1,100	980	94,639	84,281	178,920	166,399
361.21 20" ACP		1975	129,197	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	68,339	60,858	5,878,460	5,235,059	11,113,519	10,335,754
361.21 16" ACP		1975	9,050	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	4,787	4,263	411,792	366,721	778,513	724,029
361.21 12" PVC		1970	22,774	R2.5	80	50.50	63	R2.5063	0.46218	36.97	87.47	0.57734	13,148	9,626	1,150,071	841,943	1,992,015	1,821,895
361.21 12" PVC		2012	8,302	R2.5	80	8.50	11	R2.5011	0.89711	71.77	80.27	0.10589	879	7,423	70,564	595,808	666,371	664,130
361.21 12" PVC		2016	152,919	R2.5	80	4.50	6	R2.5006	0.94357	75.49	79.99	0.05626	8,603	144,316	688,135	11,543,841	12,231,976	12,233,505
361.21 15" PVC		2013	81,958	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09288	7,612	74,346	614,685	6,003,423	6,618,108	6,556,639
361.21 15" PVC		2017	226,562	R2.5	80	3.50	4	R2.5004	0.96231	76.98	80.48	0.04349	9,853	216,709	792,969	17,440,780	18,233,748	18,124,998
361.21 18" PVC		1988	96,805	R2.5	80	32.50	41	R2.5041	0.63322	50.66	83.16	0.39081	37,832	58,973	3,146,155	4,904,130	8,050,284	7,744,381
361.21 18" PVC		2013	387,731	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09288	36,012	351,719	2,907,986	28,401,326	31,309,312	31,018,513
361.21 18" PVC		2014	19,571	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	1,581	17,990	127,215	1,448,094	1,575,308	1,565,718
361.21 18" PVC		2017	95,579	R2.5	80	3.50	4	R2.5004	0.96231	76.98	80.48	0.04349	4,157	91,422	334,527	7,357,685	7,692,212	7,646,334
361.21 10" DI		2020	8,119	R2.5	80	0.50	1	R2.5001	0.99055	79.24	79.74	0.00627	51	8,068	4,059	643,322	647,381	649,492
361.21 8" CSP		1978	22,340	R2.5	80	42.50	53	R2.5053	0.53711	42.97	85.47	0.49725	11,108	11,232	949,439	959,939	1,909,378	1,787,179
361.21 8" CSP		1983	77,680	R2.5	80	37.50	47	R2.5047	0.58438	46.75	84.25	0.44510	34,576	43,104	2,913,015	3,631,559	6,544,574	6,214,432
361.21 20" PVC		2014	12,407	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	1,002	11,405	80,644	917,980	998,624	992,545
361.21 21" PVC		2014	9,339	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	754	8,585	60,704	691,003	751,708	747,132
			10,767,738			**25.14**							**3,226,805**	**7,540,933**	**270,666,401**	**620,287,551**	**890,953,948**	**861,419,033**
361.23 Manholes		1951	2,078	R2.5	80	69.50	87	R2.5087	0.30585	24.47	93.97	0.73960	1,537	541	144,401	50,842	195,242	166,217
361.23 Manholes		1954	8,811	R2.5	80	66.50	83	R2.5083	0.3292	26.34	92.84	0.71629	6,311	2,500	585,919	232,077	817,995	704,865
361.23 Manholes		1967	23,972	R2.5	80	53.50	67	R2.5067	0.43365	34.69	88.19	0.60664	14,542	9,430	1,282,506	831,591	2,114,098	1,917,766
361.23 Manholes		1970	24,660	R2.5	80	50.50	63	R2.5063	0.46218	36.97	87.47	0.57734	14,237	10,423	1,245,307	911,664	2,156,971	1,972,764
361.23 Manholes		1971	9,074	R2.5	80	49.50	62	R2.5062	0.46944	37.56	87.06	0.56857	5,159	3,915	449,172	340,827	789,999	725,935
361.23 Manholes		1972	5,590	R2.5	80	48.50	61	R2.5061	0.47676	38.14	86.64	0.55979	3,129	2,461	271,098	213,190	484,288	447,173
361.23 Manholes		1973	48,340	R2.5	80	47.50	59	R2.5059	0.49155	39.32	86.82	0.54711	26,447	21,893	2,296,129	1,900,711	4,196,840	3,867,164
361.23 Manholes		1974	38,646	R2.5	80	46.50	58	R2.5058	0.49902	39.92	86.42	0.53807	20,794	17,852	1,797,045	1,542,754	3,339,799	3,091,691
361.23 Manholes		1975	418,962	R2.5	80	45.50	57	R2.5057	0.50654	40.52	86.02	0.52895	221,610	197,352	19,062,786	16,976,354	36,039,140	33,516,987
361.23 Manholes		1977	82,139	R2.5	80	43.50	54	R2.5054	0.5294	42.35	85.85	0.50670	41,620	40,519	3,573,045	3,478,586	7,051,631	6,571,118
361.23 Manholes		1978	146,937	R2.5	80	42.50	53	R2.5053	0.53711	42.97	85.47	0.49725	73,064	73,873	6,244,820	6,313,880	12,558,699	11,754,954
361.23 Manholes		1979	45,962	R2.5	80	41.50	52	R2.5052	0.54488	43.59	85.09	0.48772	22,417	23,545	1,907,428	2,003,488	3,910,916	3,676,969
361.23 Manholes		1980	4,129	R2.5	80	40.50	51	R2.5051	0.55269	44.22	84.72	0.47805	1,974	2,155	167,210	182,568	349,778	330,291
361.23 Manholes		1981	81,157	R2.5	80	39.50	49	R2.5049	0.56844	45.48	84.98	0.46482	37,723	43,434	3,205,697	3,691,015	6,896,711	6,492,550
361.23 Manholes		1983	44,081	R2.5	80	37.50	47	R2.5047	0.58438	46.75	84.25	0.44510	19,620	24,461	1,653,031	2,060,779	3,713,809	3,526,466
361.23 Manholes		1984	63,456	R2.5	80	36.50	46	R2.5046	0.59241	47.39	83.89	0.43509	27,609	35,847	2,316,151	3,007,189	5,323,339	5,076,495
361.23 Manholes		1985	13,376	R2.5	80	35.50	44	R2.5044	0.60861	48.69	84.19	0.42167	5,640	7,736	474,858	651,291	1,126,149	1,070,102
361.23 Manholes		1987	188,258	R2.5	80	33.50	42	R2.5042	0.62498	50	83.5	0.40120	75,529	112,729	6,306,632	9,412,884	15,719,516	15,060,615

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
361.23 Manholes		1988	256,487	R2.5	80	32.50	41	R2.5041	0.63322	50.66	83.16	0.39081	100,238	156,249	8,335,835	12,993,643	21,329,479	20,518,979
361.23 Manholes		1990	120,709	R2.5	80	30.50	38	R2.5038	0.65821	52.66	83.16	0.36676	44,271	76,438	3,681,612	6,356,514	10,038,125	9,656,686
361.23 Manholes		1991	92,502	R2.5	80	29.50	37	R2.5037	0.66661	53.33	82.83	0.35615	32,945	59,557	2,728,809	4,933,132	7,661,941	7,400,160
361.23 Manholes		1992	50,865	R2.5	80	28.50	36	R2.5036	0.67506	54	82.5	0.34545	17,571	33,294	1,449,651	2,746,707	4,196,358	4,069,195
361.23 Manholes		1993	63,128	R2.5	80	27.50	34	R2.5034	0.69207	55.37	82.87	0.33185	20,949	42,179	1,736,031	3,495,419	5,231,450	5,050,271
361.23 Manholes		1994	24,142	R2.5	80	26.50	33	R2.5033	0.70063	56.05	82.55	0.32102	7,750	16,392	639,755	1,353,143	1,992,899	1,931,337
361.23 Manholes		1996	7,168	R2.5	80	24.50	31	R2.5031	0.71785	57.43	81.93	0.29904	2,144	5,024	175,617	411,660	587,277	573,442
361.23 Manholes		1997	85,454	R2.5	80	23.50	29	R2.5029	0.73522	58.82	82.32	0.28547	24,395	61,059	2,008,166	5,026,397	7,034,562	6,836,309
361.23 Manholes		1998	113,260	R2.5	80	22.50	28	R2.5028	0.74396	59.52	82.02	0.27432	31,069	82,191	2,548,349	6,741,232	9,289,581	9,060,796
361.23 Manholes		1999	77,280	R2.5	80	21.50	27	R2.5027	0.75273	60.22	81.72	0.26309	20,331	56,949	1,661,509	4,653,772	6,315,282	6,182,361
361.23 Manholes		2000	440,369	R2.5	80	20.50	26	R2.5026	0.76153	60.92	81.42	0.25178	110,876	329,493	9,027,561	26,827,270	35,854,832	35,229,508
361.23 Manholes		2001	16,180	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	3,855	12,325	315,517	1,008,683	1,324,200	1,294,429
361.23 Manholes		2002	254,336	R2.5	80	18.50	23	R2.5023	0.78813	63.05	81.55	0.22685	57,696	196,640	4,705,220	16,035,897	20,741,116	20,346,895
361.23 Manholes		2003	55,496	R2.5	80	17.50	22	R2.5022	0.79706	63.76	81.26	0.21536	11,952	43,544	971,182	3,538,431	4,509,613	4,439,688
361.23 Manholes		2004	68,061	R2.5	80	16.50	21	R2.5021	0.80602	64.48	80.98	0.20375	13,867	54,194	1,123,010	4,388,586	5,511,596	5,444,896
361.23 Manholes		2005	465,353	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	88,589	376,764	7,212,972	30,676,070	37,889,041	37,228,240
361.23 Manholes		2006	19,772	R2.5	80	14.50	18	R2.5018	0.83306	66.64	81.14	0.17870	3,533	16,239	286,694	1,317,608	1,604,302	1,581,762
361.23 Manholes		2007	182,884	R2.5	80	13.50	17	R2.5017	0.84214	67.37	80.87	0.16693	30,529	152,355	2,468,937	12,320,909	14,789,846	14,630,737
361.23 Manholes		2011	52,057	R2.5	80	9.50	12	R2.5012	0.88789	71.03	80.53	0.11797	6,141	45,916	494,546	3,697,643	4,192,190	4,164,599
361.23 Manholes		2012	100,911	R2.5	80	8.50	11	R2.5011	0.89711	71.77	80.27	0.10589	10,685	90,226	857,744	7,242,386	8,100,130	8,072,884
361.23 Manholes		2013	85,237	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09288	7,917	77,320	639,278	6,243,613	6,882,891	6,818,963
361.23 Manholes		2014	25,014	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	2,020	22,994	162,592	1,850,795	2,013,387	2,001,130
361.23 Manholes		2016	32,964	R2.5	80	4.50	6	R2.5006	0.94357	75.49	79.99	0.05626	1,855	31,109	148,338	2,488,453	2,636,791	2,637,120
361.23 Manholes		2017	246,501	R2.5	80	3.50	4	R2.5004	0.96231	76.98	80.48	0.04349	10,720	235,781	862,754	18,975,655	19,838,409	19,720,088
361.23 Manholes		2018	77,600	R2.5	80	2.50	3	R2.5003	0.9717	77.74	80.24	0.03116	2,418	75,182	193,999	6,032,597	6,226,596	6,207,972
361.23 Manholes		2019	14,388	R2.5	80	1.50	2	R2.5002	0.98112	78.49	79.99	0.01875	270	14,118	21,583	1,129,342	1,150,924	1,151,068
361.23 Manholes		2020	58,497	R2.5	80	0.50	1	R2.5001	0.99055	79.24	79.74	0.00627	367	58,130	29,249	4,635,321	4,664,569	4,679,779
361.23 Manholes		2021	14,624	R2.5	80	0.00	0	R2.5000	1	80	80	0.00000	-	14,624	-	1,169,945	1,169,945	1,169,945
			4,350,867										**1,283,915**	**3,066,952**	**107,469,745**	**252,092,513**	**359,562,252**	**348,069,361**
363.2 4" PVC		1982	102,469	R3.0	70	38.50	55	R3.0055	0.49706	34.79	73.29	0.52531	53,828	48,641	3,945,073	3,564,911	7,509,984	7,172,860
363.2 4" PVC		1985	52,316	R3.0	70	35.50	51	R3.0051	0.52965	37.08	72.58	0.48912	25,589	26,727	1,857,201	1,939,860	3,797,061	3,662,087
363.2 4" PVC		1986	47,611	R3.0	70	34.50	49	R3.0049	0.54624	38.24	72.74	0.47429	22,582	25,029	1,642,587	1,820,653	3,463,240	3,332,785
363.2 4" PVC		1987	36,853	R3.0	70	33.50	48	R3.0048	0.55461	38.82	72.32	0.46322	17,071	19,782	1,234,585	1,430,644	2,665,228	2,579,729
363.2 4" PVC		1988	112,029	R3.0	70	32.50	46	R3.0046	0.5715	40.01	72.51	0.44821	50,213	61,816	3,640,946	4,482,285	8,123,231	7,842,038
363.2 4" PVC		1989	216,183	R3.0	70	31.50	45	R3.0045	0.58001	40.6	72.1	0.43689	94,448	121,735	6,809,778	8,777,047	15,586,825	15,132,840
363.2 4" PVC		1993	71,274	R3.0	70	27.50	39	R3.0039	0.63205	44.24	71.74	0.38333	27,321	43,953	1,960,034	3,153,161	5,113,195	4,989,178
363.2 4" PVC		1995	28,854	R3.0	70	25.50	36	R3.0036	0.65866	46.11	71.61	0.35610	10,275	18,579	735,764	1,330,435	2,066,199	2,019,745
363.2 4" PVC		1996	10,714	R3.0	70	24.50	35	R3.0035	0.66761	46.73	71.23	0.34396	3,685	7,029	262,483	500,645	763,128	749,950
363.2 4" PVC		1997	45,795	R3.0	70	23.50	34	R3.0034	0.6766	47.36	70.86	0.33164	15,187	30,608	1,076,184	2,168,853	3,245,037	3,205,653
363.2 4" PVC		1998	106,491	R3.0	70	22.50	32	R3.0032	0.69469	48.63	71.13	0.31632	33,685	72,806	2,396,050	5,178,663	7,574,713	7,454,378
363.2 4" PVC		1999	81,006	R3.0	70	21.50	31	R3.0031	0.7038	49.27	70.77	0.30380	24,610	56,396	1,741,625	3,991,157	5,732,782	5,670,407
363.2 4" PVC		2000	32,495	R3.0	70	20.50	29	R3.0029	0.72212	50.55	71.05	0.28853	9,376	23,119	666,157	1,642,646	2,308,803	2,274,683
363.2 4" PVC		2001	340,756	R3.0	70	19.50	28	R3.0028	0.73133	51.19	70.69	0.27585	93,997	246,759	6,644,738	17,443,289	24,088,027	23,852,905

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Determination of the Depreciated Original Cost

(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at January 8, 2021 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2021-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
363.2	4" PVC	2002	136,495	R3.0	70	18.50	26	R3.0026	0.74986	52.49	70.99	0.26060	35,571	100,924	2,525,166	7,164,647	9,689,813	9,554,683
363.2	4" PVC	2003	26,084	R3.0	70	17.50	25	R3.0025	0.75917	53.14	70.64	0.24773	6,462	19,622	456,472	1,386,109	1,842,581	1,825,887
363.2	4" PVC	2004	407,504	R3.0	70	16.50	24	R3.0024	0.76851	53.8	70.3	0.23471	95,645	311,859	6,723,810	21,923,694	28,647,504	28,525,253
363.2	4" PVC	2012	4,283,602	R3.0	70	8.50	12	R3.0012	0.88279	61.8	70.3	0.12091	517,930	3,765,672	36,410,617	264,726,605	301,137,222	299,852,142
363.2	4" ACP	1970	69,771	R3.0	70	50.50	72	R3.0072	0.36837	25.79	76.29	0.66195	46,185	23,586	3,523,425	1,799,389	5,322,814	4,883,956
363.2	4" ACP	1976	267,367	R3.0	70	44.50	64	R3.0064	0.42683	29.88	74.38	0.59828	159,960	107,407	11,897,833	7,988,927	19,886,760	18,715,693
363.2	4" ACP	1978	64,086	R3.0	70	42.50	61	R3.0061	0.44974	31.48	73.98	0.57448	36,816	27,270	2,723,675	2,017,442	4,741,117	4,486,053
363.2	4" ACP	1980	80,220	R3.0	70	40.50	58	R3.0058	0.47316	33.12	73.62	0.55012	44,131	36,089	3,248,921	2,656,895	5,905,816	5,615,419
			6,619,976										**1,424,567**	**5,195,409**	**102,123,124**	**367,087,957**	**469,211,080**	**463,398,324**
365.2	Meter Pits	1976	78,670	S2.0	30	44.50	148	S2.0148	0.15	4.5	49	0.85000	66,870	11,800	3,500,815	354,015	3,854,830	2,360,100
			78,670										**66,870**	**11,800**	**3,500,815**	**354,015**	**3,854,830**	**2,360,100**
390.7	PIPE TECH SOFTWARE AND DUR/	2008	21,550	R3.0	12	12.50	104	R3.0104	0.18372	2.2	14.7	0.85000	18,318	3,232	269,375	47,410	316,785	258,600
			21,550										**18,318**	**3,232**	**269,375**	**47,410**	**316,785**	**258,600**
391.7	2001 FORD E350 TRUCK	2001	39,952	R3.0	10	19.50	195	R3.0195	0.15	1.5	21	0.85000	33,959	5,993	779,064	59,928	838,992	399,520
391.7	2003 GMC PICKUP TRUCK	2003	25,808	R3.0	10	17.50	175	R3.0175	0.15	1.5	19	0.85000	21,937	3,871	451,640	38,712	490,352	258,080
391.7	2018 Carmate 20' Custom Cargo Tra	2018	7,265	R3.0	10	2.50	25	R3.0025	0.75917	7.59	10.09	0.24777	1,800	5,465	18,161	55,138	73,299	72,645
391.7	2010 FORD F550 TRUCK	2010	62,723	R3.0	10	10.50	105	R3.0105	0.17945	1.79	12.29	0.85000	53,314	9,409	658,590	112,274	770,864	627,229
391.7	2011 GMC PICKUP TRUCK	2011	23,738	R3.0	10	9.50	95	R3.0095	0.22643	2.26	11.76	0.80782	19,176	4,562	225,511	53,648	279,159	237,380
391.7	2011 GMC PICKUP TRUCK	2011	20,470	R3.0	10	9.50	95	R3.0095	0.22643	2.26	11.76	0.80782	16,536	3,934	194,469	46,263	240,732	204,705
391.7	2019 Ford F-150 Unit	2019	33,000	R3.0	10	1.50	15	R3.0015	0.85389	8.54	10.04	0.14940	4,930	28,070	49,500	281,820	331,320	330,000
			212,956										**151,652**	**61,304**	**2,376,935**	**647,783**	**3,024,718**	**2,129,559**
			32,362,068										**8,685,962**	**23,676,106**	**624,377,351**	**1,642,077,594**	**2,266,433,244**	**2,210,698,960**
354.2	Sewer Capacity Rights	2017	2,168,888	R4.0	55	3.50	6	R4.0006	0.94008	51.7	55.2	0.06341	137,529	2,031,359	7,591,108	112,131,510	119,722,618	119,288,840
354.2	VFSA Capacity Rights	2013	8,916,354	R4.0	55	7.50	14	R4.0014	0.86031	47.32	54.82	0.13681	1,219,846	7,696,508	66,872,651	421,921,848	488,794,499	490,399,443
			11,085,242										**1,357,375**	**9,727,867**	**74,463,759**	**534,053,358**	**608,517,117**	**609,688,283**
			43,447,309										**10,043,337**	**33,403,972**	**698,841,110**	**2,176,130,952**	**2,874,950,361**	**2,820,387,243**

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Income Approach

AUS Consultants
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Greenfield, Wisconsin 53228
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J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	5,759,816	3,305,486	2,193,634	2,454,330	260,696	75,315	806,090	(78,093)	1,651,018	0.964	1,591,581	1,591,581
2	1.5	5,759,816	3,371,594	2,218,239	2,388,222	169,983	49,108	812,135	-	1,526,979	0.896	1,368,173	2,959,754
3	2.5	5,759,816	3,439,026	2,243,274	2,320,790	77,516	22,394	818,227	-	1,480,169	0.833	1,232,981	4,192,735
4	3.5	7,775,752	3,507,806	2,268,741	4,267,946	1,999,205	577,570	824,363	(27,334)	2,893,347	0.775	2,242,344	6,435,079
5	4.5	7,775,752	3,577,962	2,294,647	4,197,790	1,903,143	549,818	830,547	-	2,817,425	0.720	2,028,546	8,463,625
6	5.5	9,719,690	3,649,522	2,320,996	6,070,168	3,749,172	1,083,136	836,776	(26,356)	4,176,612	0.669	2,794,153	11,257,778
7	6.5	9,719,690	3,722,512	2,315,050	5,997,178	3,682,128	1,063,767	721,779	-	4,211,632	0.622	2,619,635	13,877,413
8	7.5	9,719,690	3,796,962	2,338,381	5,922,728	3,584,347	1,035,518	727,193	-	4,160,017	0.579	2,408,650	16,286,063
9	8.5	10,691,659	3,872,902	2,362,106	6,818,757	4,456,651	1,287,526	732,647	(13,178)	4,811,762	0.538	2,588,728	18,874,791
10	9.5	10,691,659	3,950,359	2,386,228	6,741,300	4,355,072	1,258,180	738,141	-	4,744,979	0.500	2,372,490	21,247,281
11	10.5	10,691,659	4,029,366	2,410,754	6,662,293	4,251,539	1,228,270	743,679	-	4,690,344	0.465	2,181,010	23,428,291
12	11.5	11,333,159	4,109,952	2,435,686	7,223,207	4,787,521	1,383,115	749,257	(8,698)	5,099,533	0.432	2,202,998	25,631,289
13	12.5	11,333,159	4,192,151	2,461,029	7,141,008	4,679,979	1,352,046	754,875	-	5,034,087	0.402	2,023,703	27,654,992
14	13.5	11,333,159	4,275,994	2,486,788	7,057,165	4,570,377	1,320,382	760,535	-	4,976,248	0.373	1,856,141	29,511,133
15	14.5	12,013,149	4,361,513	2,512,970	7,651,636	5,138,666	1,484,561	766,240	(9,219)	5,410,054	0.347	1,877,289	31,388,422
16	15.5	12,013,149	4,448,744	2,539,579	7,564,405	5,024,826	1,451,672	771,988	-	5,340,745	0.323	1,725,061	33,113,483
17	16.5	12,013,149	4,537,720	2,566,617	7,475,429	4,908,812	1,418,156	777,777	-	5,279,496	0.300	1,583,849	34,697,332
18	17.5	12,733,938	4,628,474	2,594,092	8,105,464	5,511,372	1,592,235	783,611	(9,773)	5,739,391	0.279	1,601,290	36,298,622
19	18.5	12,733,938	4,721,044	2,622,008	8,012,894	5,390,886	1,557,427	789,487	-	5,665,980	0.259	1,467,489	37,766,111
20 and beyond	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	3.184	17,833,934	55,600,045
								15,540,755					

Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.241									
PW to Perpetuity = 1/Capitalization Rate				13.210									
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * $PW\ Factor_{(19.5)}$				3.184									
								Net Plant		44,551,804			
								ADIT		(6,443,119)			
								Rate Base		38,108,685	0.241	9,184,193	46,950,304
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		87,105,453	0.241	20,992,414	58,758,525
								PP	54,930,000				
								OCLD	33,403,972				
								PP/OCLD	1.644				
								RCNLD	58,078,339				
								RCNLD/PP		1.057315474			
										40,292,902.78	0.241	9,710,590	47,476,701
								Average					52,196,394

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Ratemaking Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)=(6)	(9) - (6)				(11)+(12)+(13)	(9)/(14)		(10)/(16)
1	0.5	5,759,816	3,305,486	1,258,810	657,820	537,700	155,341	1,040,179	382,359	54,477,279	(78,093)	(270,070)	54,129,116	1.92%	58,107,277	0.66%
2	1.5	5,759,816	3,371,594	1,235,592	637,528	515,102	148,813	1,003,817	366,289	54,053,822	(78,093)	(553,957)	53,421,772	1.88%	58,473,566	0.63%
3	2.5	5,759,816	3,439,026	1,238,242	618,311	464,237	134,118	948,430	330,119	53,633,807	(78,093)	(844,311)	52,711,403	1.80%	58,803,685	0.56%
4	3.5	7,775,752	3,507,806	1,243,980	597,701	2,426,265	700,948	2,323,018	1,725,317	53,214,190	(105,427)	(1,140,364)	51,968,399	4.47%	60,529,002	2.85%
5	4.5	7,775,752	3,577,962	1,253,783	577,777	2,366,230	683,604	2,260,403	1,682,626	52,790,953	(105,427)	(1,441,070)	51,244,456	4.41%	62,211,627	2.70%
6	5.5	9,719,690	3,649,522	1,266,757	558,518	4,244,893	1,226,350	3,577,061	3,018,543	52,360,973	(131,783)	(1,745,640)	50,483,550	7.09%	65,230,171	4.63%
7	6.5	9,719,690	3,722,512	1,263,283	539,901	4,193,994	1,211,645	3,522,250	2,982,349	51,819,469	(131,783)	(2,049,496)	49,638,190	7.10%	68,212,520	4.37%
8	7.5	9,719,690	3,796,962	1,272,326	521,904	4,128,498	1,192,723	3,457,679	2,935,775	51,274,335	(131,783)	(2,357,479)	48,785,073	7.09%	71,148,294	4.13%
9	8.5	10,691,659	3,872,902	1,283,163	504,507	5,031,087	1,453,481	4,082,113	3,577,606	50,723,819	(144,961)	(2,669,186)	47,909,672	8.52%	74,725,900	4.79%
10	9.5	10,691,659	3,950,359	1,294,982	487,690	4,958,628	1,432,548	4,013,770	3,526,080	50,166,978	(144,961)	(2,984,447)	47,037,570	8.53%	78,251,980	4.51%
11	10.5	10,691,659	4,029,366	1,301,010	471,434	4,889,849	1,412,677	3,948,606	3,477,172	49,609,648	(144,961)	(3,305,052)	46,159,635	8.55%	81,729,153	4.25%
12	11.5	11,333,159	4,109,952	1,304,247	455,720	5,463,240	1,578,330	4,340,630	3,884,910	49,054,657	(153,659)	(3,631,925)	45,269,073	9.59%	85,614,062	4.54%
13	12.5	11,333,159	4,192,151	1,317,942	440,529	5,382,537	1,555,015	4,268,051	3,827,522	48,491,590	(153,659)	(3,962,163)	44,375,768	9.62%	89,441,584	4.28%
14	13.5	11,333,159	4,275,994	1,325,816	425,845	5,305,504	1,532,760	4,198,589	3,772,744	47,926,309	(153,659)	(4,297,568)	43,475,082	9.66%	93,214,328	4.05%
15	14.5	12,013,149	4,361,513	1,324,075	411,650	5,915,911	1,709,107	4,618,454	4,206,804	47,368,474	(162,878)	(4,641,040)	42,564,556	10.85%	97,421,132	4.32%
16	15.5	12,013,149	4,448,744	1,333,017	397,928	5,833,460	1,685,287	4,546,101	4,148,173	46,807,445	(162,878)	(4,989,616)	41,654,951	10.91%	101,569,305	4.08%
17	16.5	12,013,149	4,537,720	1,341,466	384,664	5,749,299	1,660,972	4,472,991	4,088,327	46,243,756	(162,878)	(5,343,562)	40,737,316	10.98%	105,657,632	3.87%
18	17.5	12,733,938	4,628,474	1,352,522	371,842	6,381,100	1,843,500	4,909,442	4,537,600	45,674,846	(172,651)	(5,702,252)	39,799,943	12.34%	110,195,233	4.12%
19	18.5	12,733,938	4,721,044	1,349,227	359,447	6,304,220	1,821,289	4,842,378	4,482,931	45,115,106	(172,651)	(6,069,958)	38,872,497	12.46%	114,678,164	3.91%
20	19.5	12,733,938	4,815,465	1,358,709	347,465	6,212,299	1,794,733	4,765,031	4,417,566	44,551,804	(172,651)	(6,443,119)	37,936,034	12.56%	119,095,729	3.71%
										10,736,984.86						

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
20	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	0.241	1,349,868	39,115,979
21	20.5	13,497,974	4,911,774	2,679,185	8,586,200	5,907,015	1,706,537	801,375	(10,359)	6,088,647	0.224	1,363,857	40,479,836
22	21.5	13,497,974	5,010,009	2,708,454	8,487,965	5,779,511	1,669,701	807,384	-	6,010,880	0.208	1,250,263	41,730,099
23	22.5	13,497,974	5,110,209	2,738,187	8,387,765	5,649,578	1,632,163	813,440	-	5,942,162	0.194	1,152,779	42,882,878
24	23.5	14,307,852	5,212,413	2,768,387	9,095,439	6,327,052	1,827,885	819,542	(10,981)	6,458,993	0.180	1,162,619	44,045,497
25	24.5	14,307,852	5,316,662	2,799,057	8,991,190	6,192,133	1,788,907	825,688	-	6,376,595	0.167	1,064,891	45,110,388
26	25.5	14,307,852	5,422,995	831,880	8,884,857	8,052,977	2,326,505	831,880	-	5,726,472	0.156	893,330	46,003,718
27	26.5	15,166,323	5,531,456	838,118	9,634,867	8,796,749	2,541,381	838,118	(11,639)	6,267,007	0.145	908,716	46,912,434
28	27.5	15,166,323	5,642,086	844,404	9,524,237	8,679,833	2,507,604	844,404	-	6,172,229	0.134	827,079	47,739,513
29	28.5	15,166,323	5,754,928	850,737	9,411,395	8,560,658	2,473,174	850,737	-	6,087,484	0.125	760,936	48,500,449
30	29.5	15,166,323	5,870,025	857,118	9,296,298	8,439,180	2,438,079	857,118	-	6,001,101	0.116	696,128	49,196,577
31	30.5	15,166,323	5,987,426	863,547	9,178,897	8,315,350	2,402,305	863,547	-	5,913,045	0.108	638,609	49,835,186
32	31.5	15,166,323	6,107,174	870,023	9,059,149	8,189,126	2,365,839	870,023	-	5,823,287	0.100	582,329	50,417,515
33	32.5	15,166,323	6,229,318	876,548	8,937,005	8,060,457	2,328,666	876,548	-	5,731,791	0.093	533,057	50,950,572
34	33.5	15,166,323	6,353,904	883,122	8,812,419	7,929,297	2,290,774	883,122	-	5,638,523	0.087	490,552	51,441,124
35	34.5	15,166,323	6,480,982	889,746	8,685,341	7,795,595	2,252,147	889,746	-	5,543,448	0.081	449,019	51,890,143
36	35.5	15,166,323	6,610,601	896,419	8,555,722	7,659,303	2,212,773	896,419	-	5,446,530	0.075	408,490	52,298,633
37	36.5	15,166,323	6,742,813	903,142	8,423,510	7,520,368	2,172,634	903,142	-	5,347,734	0.070	374,341	52,672,974
38	37.5	15,166,323	6,877,669	909,916	8,288,654	7,378,738	2,131,717	909,916	-	5,247,021	0.065	341,056	53,014,030
39	38.5	15,166,323	7,015,223	916,739	8,151,100	7,234,361	2,090,007	916,739	-	5,144,354	0.060	308,661	53,322,691
40	39.5	15,166,323	7,155,528	923,616	8,010,795	7,087,179	2,047,486	923,616	-	5,039,693	0.056	282,223	53,604,914
41	40.5	15,166,323	7,298,639	930,542	7,867,684	6,937,142	2,004,140	930,542	-	4,933,002	0.052	256,516	53,861,430
42	41.5	15,166,323	7,444,612	937,521	7,721,711	6,784,190	1,959,952	937,521	-	4,824,238	0.048	231,563	54,092,993
43	42.5	15,166,323	7,593,504	982,336	7,572,819	6,590,483	1,903,990	944,554	-	4,724,275	0.045	212,592	54,305,585
44	43.5	15,166,323	7,745,376	1,027,770	7,420,947	6,393,177	1,846,989	951,639	-	4,622,319	0.042	194,137	54,499,722
45	44.5	15,166,323	7,900,284	1,035,477	7,266,039	6,230,562	1,800,009	958,775	-	4,507,255	0.039	175,783	54,675,505
46	45.5	15,166,323	8,058,289	1,043,243	7,108,034	6,064,791	1,752,118	965,966	-	4,389,950	0.036	158,038	54,833,543
47	46.5	15,166,323	8,219,456	1,051,067	6,946,867	5,895,800	1,703,297	973,210	-	4,270,360	0.034	145,192	54,978,735
48	47.5	15,166,323	8,383,846	1,058,950	6,782,477	5,723,527	1,653,527	980,509	-	4,148,441	0.031	128,602	55,107,337
49	48.5	15,166,323	8,551,523	1,066,893	6,614,800	5,547,907	1,602,790	987,864	-	4,024,146	0.029	116,700	55,224,037
50	49.5	15,166,323	8,722,554	1,074,894	6,443,769	5,368,875	1,551,068	995,272	-	3,897,429	0.027	105,231	55,329,268
51	50.5	15,166,323	8,897,006	1,082,956	6,269,317	5,186,361	1,498,340	1,002,737	-	3,768,240	0.025	94,206	55,423,474
52	51.5	15,166,323	9,074,946	1,091,076	6,091,377	5,000,301	1,444,587	1,010,256	-	3,636,534	0.023	83,640	55,507,114
53	52.5	15,166,323	9,256,446	1,099,260	5,909,877	4,810,617	1,389,787	1,017,833	-	3,502,257	0.022	77,050	55,584,164
54	53.5	15,166,323	9,441,576	1,107,507	5,724,747	4,617,240	1,333,921	1,025,469	-	3,365,357	0.020	67,307	55,651,471
55	54.5	15,166,323	9,630,407	1,115,812	5,535,916	4,420,104	1,276,968	1,033,159	-	3,225,789	0.019	61,290	55,712,761
56	55.5	15,166,323	9,823,016	1,124,182	5,343,307	4,219,125	1,218,905	1,040,909	-	3,083,493	0.017	52,419	55,765,180
57	56.5	15,166,323	10,019,477	1,132,612	5,146,846	4,014,234	1,159,712	1,048,715	-	2,938,419	0.016	47,015	55,812,195
58	57.5	15,166,323	10,219,867	1,141,107	4,946,456	3,805,349	1,099,365	1,056,581	-	2,790,510	0.015	41,858	55,854,053
59	58.5	15,166,323	10,424,265	1,149,665	4,742,058	3,592,393	1,037,842	1,064,505	-	2,639,711	0.014	36,956	55,891,009
60	59.5	15,166,323	10,632,751	1,158,287	4,533,572	3,375,285	975,120	1,072,488	-	2,485,964	0.172	427,586	56,318,595
								38,016,416					

Age	59.5
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$	0.013
PW to Perpetuity = 1/Capitalization Rate	13.210
$PW_{(20and Beyond)}$ = PW to Perpetuity * PW Factor$_{(19.5)}$	0.172

Net Plant		26,481,778			
ADIT		(4,411,713)			
Rate Base		22,070,065	0.013	286,911	56,177,920
Plant Construction Inflation Rate		0.0422 Input			
Plant Inflation over 59.5 years		258,161,931	0.013	3,356,105	59,247,114
PP	54,930,000				
RCNLD	58,078,339				
RCNLD/PP		1.057315474			
		23,335,020.85	0.013	303,355	56,194,364

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Ratemaking Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)=(6)	(9) - (6)				(11)+(12)+(13)	(9)/(14)		(10)/(16)
20	19.5	12,733,938	4,815,465	1,358,709	347,465	6,212,299	1,794,733	4,765,031	4,417,566	44,551,804	(172,651)	(6,443,119)	37,936,034	12.56%	119,095,729	3.71%
20	20.5	13,497,974	4,911,774	1,366,549	335,883	6,883,768	1,988,721	5,230,930	4,895,047	43,986,630	(183,010)	(6,822,340)	36,981,280	14.14%	123,990,776	3.95%
20	21.5	13,497,974	5,010,009	1,362,390	324,687	6,800,888	1,964,777	5,160,798	4,836,111	43,431,625	(183,010)	(7,211,218)	36,037,397	14.32%	128,826,888	3.75%
20	22.5	13,497,974	5,110,209	1,374,124	313,864	6,699,777	1,935,566	5,078,075	4,764,211	42,870,941	(183,010)	(7,605,296)	35,082,635	14.47%	133,591,099	3.57%
20	23.5	14,307,852	5,212,413	1,374,966	303,402	7,417,071	2,142,792	5,577,681	5,274,279	42,315,517	(193,991)	(8,007,855)	34,113,671	16.35%	138,865,378	3.80%
20	24.5	14,307,852	5,316,662	1,382,034	293,289	7,315,867	2,113,554	5,495,602	5,202,313	41,759,171	(193,991)	(8,417,233)	33,147,947	16.58%	144,067,691	3.61%
20	25.5	14,307,852	5,422,995	1,382,866	283,512	7,218,479	2,085,419	5,416,572	5,133,060	41,208,185	(193,991)	(8,258,054)	32,756,140	16.54%	149,200,751	3.44%
20	26.5	15,166,323	5,531,456	1,394,024	274,062	7,966,781	2,301,603	5,939,240	5,665,178	40,652,279	(205,630)	(8,097,453)	32,349,196	18.36%	154,865,929	3.66%
20	27.5	15,166,323	5,642,086	1,391,056	264,927	7,868,254	2,273,138	5,860,043	5,595,116	40,105,627	(205,630)	(7,939,525)	31,960,472	18.34%	160,461,045	3.49%
20	28.5	15,166,323	5,754,928	1,396,962	256,096	7,758,337	2,241,384	5,773,049	5,516,953	39,559,402	(205,630)	(7,781,721)	31,572,051	18.29%	165,977,998	3.32%
20	29.5	15,166,323	5,870,025	1,398,780	247,559	7,649,959	2,210,073	5,687,445	5,439,886	39,017,740	(205,630)	(7,625,235)	31,186,875	18.24%	171,417,884	3.17%
20	30.5	15,166,323	5,987,426	1,400,275	239,307	7,539,315	2,178,108	5,600,514	5,361,207	38,481,012	(205,630)	(7,470,174)	30,805,208	18.18%	176,779,091	3.03%
20	31.5	15,166,323	6,107,174	1,405,611	231,330	7,422,208	2,144,276	5,509,262	5,277,932	37,945,424	(205,630)	(7,315,443)	30,424,351	18.11%	182,057,023	2.90%
20	32.5	15,166,323	6,229,318	1,398,379	223,619	7,315,007	2,113,305	5,425,321	5,201,702	37,423,593	(205,630)	(7,164,686)	30,053,277	18.05%	187,258,725	2.78%
20	33.5	15,166,323	6,353,904	1,405,952	216,165	7,190,302	2,077,278	5,329,189	5,113,024	36,900,763	(205,630)	(7,013,640)	29,681,493	17.95%	192,371,749	2.66%
20	34.5	15,166,323	6,480,982	1,405,849	208,960	7,070,532	2,042,677	5,236,815	5,027,855	36,384,660	(205,630)	(6,864,538)	29,314,492	17.86%	197,399,604	2.55%
20	35.5	15,166,323	6,610,601	1,405,176	201,994	6,948,552	2,007,437	5,143,109	4,941,115	35,875,903	(205,630)	(6,717,558)	28,952,715	17.76%	202,340,719	2.44%
20	36.5	15,166,323	6,742,813	1,409,408	195,261	6,818,841	1,969,963	5,044,139	4,848,878	35,369,636	(205,630)	(6,571,298)	28,592,708	17.64%	207,189,596	2.34%
20	37.5	15,166,323	6,877,669	1,401,253	188,753	6,698,648	1,935,239	4,952,162	4,763,409	34,878,299	(205,630)	(6,429,350)	28,243,319	17.53%	211,953,005	2.25%
20	38.5	15,166,323	7,015,223	1,412,498	182,461	6,556,141	1,894,069	4,844,533	4,662,072	34,382,540	(205,630)	(6,286,125)	27,890,785	17.37%	216,615,077	2.15%
20	39.5	15,166,323	7,155,528	1,405,954	176,379	6,428,462	1,857,183	4,747,658	4,571,279	33,900,202	(205,630)	(6,146,778)	27,547,794	17.23%	221,186,356	2.07%
20	40.5	15,166,323	7,298,639	1,399,524	170,499	6,297,661	1,819,394	4,648,766	4,478,267	33,431,220	(205,630)	(6,011,289)	27,214,301	17.08%	225,664,623	1.98%
20	41.5	15,166,323	7,444,612	1,392,677	164,816	6,164,218	1,780,843	4,548,191	4,383,375	32,976,064	(205,630)	(5,879,795)	26,890,639	16.91%	230,047,998	1.91%
20	42.5	15,166,323	7,593,504	1,399,178	159,322	6,014,319	1,737,537	4,436,104	4,276,782	32,521,440	(205,630)	(5,759,370)	26,556,440	16.70%	234,324,780	1.83%
20	43.5	15,166,323	7,745,376	1,399,404	154,012	5,867,531	1,695,130	4,326,413	4,172,401	32,073,675	(205,630)	(5,652,005)	26,216,040	16.50%	238,497,181	1.75%
20	44.5	15,166,323	7,900,284	1,386,508	148,878	5,730,653	1,655,586	4,223,945	4,075,067	31,645,943	(205,630)	(5,550,592)	25,889,721	16.32%	242,572,249	1.68%
20	45.5	15,166,323	8,058,289	1,387,556	143,915	5,576,563	1,611,069	4,109,409	3,965,494	31,224,353	(205,630)	(5,451,120)	25,567,603	16.07%	246,537,743	1.61%
20	46.5	15,166,323	8,219,456	1,384,304	139,118	5,423,445	1,566,833	3,995,730	3,856,612	30,813,259	(205,630)	(5,354,848)	25,252,781	15.82%	250,394,355	1.54%
20	47.5	15,166,323	8,383,846	1,382,505	134,481	5,265,491	1,521,200	3,878,772	3,744,291	30,411,263	(205,630)	(5,261,373)	24,944,260	15.55%	254,138,646	1.47%
20	48.5	15,166,323	8,551,523	1,373,723	129,998	5,111,079	1,476,591	3,764,486	3,634,488	30,025,404	(205,630)	(5,172,730)	24,647,044	15.27%	257,773,134	1.41%
20	49.5	15,166,323	8,722,554	1,373,892	125,665	4,944,212	1,428,383	3,641,494	3,515,829	29,646,784	(205,630)	(5,086,350)	24,354,804	14.95%	261,288,963	1.35%
20	50.5	15,166,323	8,897,006	1,371,200	121,476	4,776,641	1,379,971	3,518,146	3,396,670	29,278,321	(205,630)	(5,003,076)	24,069,615	14.62%	264,685,633	1.28%
20	51.5	15,166,323	9,074,946	1,359,051	117,427	4,614,899	1,333,244	3,399,082	3,281,655	28,929,526	(205,630)	(4,925,658)	23,798,238	14.28%	267,967,288	1.22%
20	52.5	15,166,323	9,256,446	1,370,652	113,513	4,425,712	1,278,588	3,260,637	3,147,124	28,576,706	(205,630)	(4,847,253)	23,523,823	13.86%	271,114,411	1.16%
20	53.5	15,166,323	9,441,576	1,357,387	109,729	4,257,631	1,230,030	3,137,330	3,027,601	28,244,788	(205,630)	(4,775,063)	23,264,095	13.49%	274,142,012	1.10%
20	54.5	15,166,323	9,630,407	1,352,196	106,071	4,077,649	1,178,033	3,005,687	2,899,616	27,925,751	(205,630)	(4,706,772)	23,013,349	13.06%	277,041,628	1.05%
20	55.5	15,166,323	9,823,016	1,351,772	102,536	3,888,999	1,123,532	2,868,003	2,765,467	27,614,888	(205,630)	(4,641,021)	22,768,237	12.60%	279,807,095	0.99%
20	56.5	15,166,323	10,019,477	1,348,237	99,118	3,699,491	1,068,783	2,729,826	2,630,708	27,315,366	(205,630)	(4,578,727)	22,531,009	12.12%	282,437,803	0.93%
20	57.5	15,166,323	10,219,867	1,344,043	95,814	3,506,599	1,013,057	2,589,356	2,493,542	27,027,904	(205,630)	(4,520,099)	22,302,175	11.61%	284,931,345	0.88%
20	58.5	15,166,323	10,424,265	1,337,385	92,620	3,312,053	956,852	2,447,821	2,355,201	26,755,024	(205,630)	(4,465,867)	22,083,527	11.08%	287,286,546	0.82%
20	59.5	15,166,323	10,632,751	1,345,734	89,533	3,098,305	895,100	2,292,738	2,203,205	26,481,778	(205,630)	(4,411,713)	21,864,435	10.49%	289,489,751	0.76%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	100.0%						7.57%
Growth (g)							1.82%
Rate without Growth: [(1+r)/(1+g)]-1							5.65%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	29%	Market	2.79%	Market	Not Applicable	Not Applicable	0.81%
Equity	71%	Market	9.85%	Market	Not Applicable	Not Applicable	6.99%
Total Capital r	100.0%						7.80%
Growth (g)							1.82%
Rate without Growth: [(1+r)/(1+g)]-1							5.87%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	100.0%						7.21%
Growth (g)						Not Applicable	0.00%
Rate without Growth: [(1+r)/(1+g)]-1							7.21%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth																				
Growth	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						0.0%				
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF										78.05%	78.00%	77.25%	76.99%	30.91%	30.81%	4.59%	4.31%	4.17%	-5.41%
Proposed Rate Increase	Calculated in DCF										0.0%	0.0%	0.0%	0.0%	35.0%	0.0%	25.0%	0.0%	0.0%	10.0%
Total Revenue Adjustments	Calculated										0.0%	0.0%	0.0%	0.0%	35.0%	0.0%	25.0%	0.0%	0.0%	10.0%
Base and Forecast	5,759,816										5,759,816	5,759,816	5,759,816	5,759,816	7,775,752	7,775,752	9,719,690	9,719,690	9,719,690	10,691,659
Operating Expenses											33%	33%	34%	35%	26%	27%	22%	22%	23%	21%
Expense Level 1: Sewer & Collection Fees	1,888,488										1,888,488	1,926,258	1,964,783	2,004,079	2,044,161	2,085,044	2,126,745	2,169,280	2,212,666	2,256,919
Expense Level 1: Sewer & Collection Fees Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	729,237										743,822	743,822	758,698	773,872	789,349	805,136	821,239	837,664	854,417	871,505
Expense Level 2: Wages & Benefits Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	250,824										255,840	255,840	260,957	266,176	271,500	276,930	282,469	288,118	293,880	299,758
Expense Level 3: Repair & Maintenance Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	43,650										44,523	44,523	45,413	46,321	47,247	48,192	49,156	50,139	51,142	52,165
Expense Level 4: Contracted Services Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097										87,819	87,819	89,575	91,367	93,194	95,058	96,959	98,898	100,876	102,894
Expense Level 5: Utilities Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376										247,224	247,224	252,168	257,211	262,355	267,602	272,954	278,413	283,981	289,661
Expense Level 6: Insurance & Other Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Property Taxes	81,302,701										-	-	-	-	-	-	-	-	-	-
Begin Plant											54,929,999	54,929,999	54,477,279	54,053,822	53,633,807	53,214,190	52,790,953	52,360,973	51,819,469	51,274,335
PT Rate % of beginning net plant	0.000%										0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-										1,258,810	1,258,810	1,235,592	1,238,242	1,243,980	1,253,783	1,266,757	1,263,283	1,272,326	1,283,163
Total Operating Expenses											4,526,526	4,564,296	4,607,186	4,677,268	4,751,786	4,831,745	4,916,279	4,985,795	5,069,288	5,156,065
Cost of Operation as % of Revenues (Calculation)											78.6%	79.2%	80.0%	81.2%	61.1%	62.1%	50.6%	51.3%	52.2%	48.2%
Operating Expenses less Depreciation											3,267,716	3,305,486	3,371,594	3,439,026	3,507,806	3,577,962	3,649,522	3,722,512	3,796,962	3,872,902
Operating Income											1,233,290	1,195,520	1,152,630	1,082,548	3,023,966	2,944,007	4,803,411	4,733,895	4,650,402	5,535,594
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense											657,820	657,820	637,528	618,311	597,701	577,777	558,518	539,901	521,904	504,507
Interest Exp as % of Debt	2.79%										2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%
Total nonoperating revenues (expenses)	-										657,820.00	657,820.00	637,528.00	618,311.00	597,701.00	577,777.00	558,518.00	539,901.00	521,904.00	504,507.00
Income (loss) before State and Federal Taxes	-										575,470	537,700	515,102	464,237	2,426,265	2,366,230	4,244,893	4,193,994	4,128,498	5,031,087
State and Federal Taxes	-										166,253	155,341	148,813	134,118	700,948	683,604	1,226,350	1,211,645	1,192,723	1,453,481
State and Federal Tax Rate	28.89%										28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-										409,217	382,359	366,289	330,119	1,725,317	1,682,626	3,018,543	2,982,349	2,935,775	3,577,606
Income After Taxes plus Interest											1,067,037	1,040,179	1,003,817	948,430	2,323,018	2,260,403	3,577,061	3,522,250	3,457,679	4,082,113
Earnings before Interest, Taxes, Depreciation, & Amortization	-										2,159,594	2,143,648	2,090,596	2,052,554	2,866,050	2,830,582	3,617,468	3,573,888	3,537,282	3,911,795
									EBITDA P1	2,143,648	EBITDA Periods 1-5	2,396,686								
									EBITDA P1-5	2,396,686										
									EBITDA P1-13	3,264,195										
Income (loss) before State and Federal Taxes											575,470	537,700	515,102	464,237	2,426,265	2,366,230	4,244,893	4,193,994	4,128,498	5,031,087
Book Depreciation											(1,258,810)	(1,258,810)	(1,235,592)	(1,238,242)	(1,243,980)	(1,253,783)	(1,266,757)	(1,263,283)	(1,272,326)	(1,283,163)
Tax Depreciation											-	(2,193,634)	(2,218,239)	(2,243,274)	(2,268,741)	(2,294,647)	(2,320,996)	(2,315,050)	(2,338,381)	(2,362,106)
Difference Tax over Book Depreciation											1,258,810	(934,823)	(982,647)	(1,005,032)	(1,024,761)	(1,040,863)	(1,054,239)	(1,051,767)	(1,066,055)	(1,078,943)
Income Adjusted for Tax Depreciation											1,834,280	(397,124)	(467,545)	(540,795)	1,401,504	1,325,366	3,190,654	3,142,227	3,062,443	3,952,144
Income Tax Rate											28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes											529,923	(114,729)	(135,074)	(156,236)	404,895	382,898	921,780	907,789	884,740	1,141,774
Income After Tax											1,304,357	(282,395)	(332,471)	(384,559)	996,609	942,468	2,268,874	2,234,438	2,177,703	2,810,370
Deferred Income Taxes											363,670	(270,070)	(283,887)	(290,354)	(296,053)	(300,706)	(304,570)	(303,856)	(307,983)	(311,707)
Accumulated Deferred Income Taxes											93,600	(270,070)	(553,957)	(844,311)	(1,140,364)	(1,441,070)	(1,745,640)	(2,049,496)	(2,357,479)	(2,669,186)
Income After Taxes (Book Depreciation)											409,217	382,359	366,289	330,119	1,725,317	1,682,626	3,018,543	2,982,349	2,935,775	3,577,606
Plus Deferred Taxes											363,670	(270,070)	(283,887)	(290,354)	(296,053)	(300,706)	(304,570)	(303,856)	(307,983)	(311,707)
Plus Interest											657,820	657,820	637,528	618,311	597,701	577,777	558,518	539,901	521,904	504,507
After Tax Income Debt Free											703,367	1,310,249	1,287,704	1,238,784	2,619,071	2,561,109	3,881,631	3,826,106	3,765,662	4,393,820
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	2,139,868										2,139,868	2,139,868	2,139,868	2,139,868	2,888,821	2,888,821	3,611,027	3,611,027	3,611,027	3,972,130
CA as % of Revenues	37.15%	37.15%	37.15%	37.15%	37.15%	37.15%	37.15%	37.15%	37.15%	37.15%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance											-	81,302,701.00	81,907,268.00	82,516,369.00	83,130,041.00	83,748,312.00	84,371,222.00	84,998,803.00	85,540,138.00	86,085,532.00
Additions											-	806,090.00	812,135.00	818,227.00	824,363.00	830,547.00	836,776.00	721,779.00	727,193.00	732,647.00
											-	-	-	-	-	-	-	-	-	-
Retirements											-	(201,523.00)	(203,034.00)	(204,555.00)	(206,092.00)	(207,637.00)	(209,195.00)	(180,444.00)	(181,799.00)	(183,160.00)
											-	-	-	-	-	-	-	-	-	-
End Balance	81,302,701.00										-	81,907,268.00	82,516,369.00	83,130,041.00	83,748,312.00	84,371,222.00	84,998,803.00	85,540,138.00	86,085,532.00	86,635,019.00
End Balance Check											-	81,907,268.00	82,516,369.00	83,130,041.00	83,748,312.00	84,371,222.00	84,998,803.00	85,540,138.00	86,085,532.00	86,635,019.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Begin Balance											-	(26,372,702.00)	(27,429,989.14)	(28,462,547.44)	(29,496,234.28)	(30,534,122.14)	(31,580,268.60)	(32,637,830.17)	(33,720,669.21)	(34,811,196.60)
Depreciation											-	(1,258,810.14)	(1,235,592.30)	(1,238,241.84)	(1,243,979.86)	(1,253,783.46)	(1,266,756.57)	(1,263,283.04)	(1,272,326.39)	(1,283,163.07)
Retirements											-	201,523.00	203,034.00	204,555.00	206,092.00	207,637.00	209,195.00	180,444.00	181,799.00	183,160.00
End Balance											-	(27,429,989.14)	(28,462,547.44)	(29,496,234.28)	(30,534,122.14)	(31,580,268.60)	(32,637,830.17)	(33,720,669.21)	(34,811,196.60)	(35,911,199.67)
End Balance Check											-	(27,429,989.14)	(28,462,547.44)	(29,496,234.28)	(30,534,122.14)	(31,580,268.60)	(32,637,830.17)	(33,720,669.21)	(34,811,196.60)	(35,911,199.67)
Net Plant																				
Begin Balance											-	54,929,999.00	54,477,278.86	54,053,821.56	53,633,806.72	53,214,189.86	52,790,953.40	52,360,972.83	51,819,468.79	51,274,335.40
End Balance											-	54,477,278.86	54,053,821.56	53,633,806.72	53,214,189.86	52,790,953.40	52,360,972.83	51,819,468.79	51,274,335.40	50,723,819.33
Total Assest																				
Tax Depreciation of Property, Plant, & Equipment											2,139,868.00	56,617,146.86	56,193,689.56	55,773,674.72	56,103,010.86	55,679,774.40	55,971,999.83	55,430,495.79	54,885,362.40	54,695,949.33
Total MACRS Depreciation																				
Begin Balance											-	-	-	-	-	-	-	-	-	-
Depreciation											-	(2,193,633.56)	(2,218,239.40)	(2,243,273.64)	(2,268,740.80)	(2,294,646.64)	(2,320,995.68)	(2,315,049.80)	(2,338,381.48)	(2,362,106.24)
Retirements											-	201,523.00	203,034.00	204,555.00	206,092.00	207,637.00	209,195.00	180,444.00	181,799.00	183,160.00
End Balance											-	(1,992,110.56)	(2,015,205.40)	(2,038,718.64)	(2,062,648.80)	(2,087,009.64)	(2,111,800.68)	(2,134,605.80)	(2,156,582.48)	(2,178,946.24)
End Balance Check											-	(1,992,110.56)	(2,015,205.40)	(2,038,718.64)	(2,062,648.80)	(2,087,009.64)	(2,111,800.68)	(2,134,605.80)	(2,156,582.48)	(2,178,946.24)
Net Plant																				
Begin Balance											-	81,302,701.00	81,907,268.00	82,516,369.00	83,130,041.00	83,748,312.00	84,371,222.00	84,998,803.00	85,540,138.00	86,085,532.00
End Balance											-	79,915,157.44	80,501,163.60	81,091,322.36	81,685,663.20	82,284,212.36	82,887,002.32	83,405,532.20	83,928,949.52	84,456,072.76
Tax											-	(2,193,633.56)	(2,218,239.40)	(2,243,273.64)	(2,268,740.80)	(2,294,646.64)	(2,320,995.68)	(2,315,049.80)	(2,338,381.48)	(2,362,106.24)
Book											-	(1,258,810.14)	(1,235,592.30)	(1,238,241.84)	(1,243,979.86)	(1,253,783.46)	(1,266,756.57)	(1,263,283.04)	(1,272,326.39)	(1,283,163.07)
											-	(934,823.42)	(982,647.10)	(1,005,031.80)	(1,024,760.94)	(1,040,863.18)	(1,054,239.11)	(1,051,766.76)	(1,066,055.09)	(1,078,943.17)

Balance Statement

Liabilities																				
Current Liabilities																				
Current Liabilities	2,217,961										2,217,961	2,217,961	2,217,961	2,217,961	2,994,248	2,994,248	3,742,810	3,742,810	3,742,810	4,117,091
CL as % of Revenues	38.51%	38.51%	38.51%	38.51%	38.51%	38.51%	38.51%	38.51%	38.51%	38.51%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Beg	23,577,783.00										23,577,783.00	23,577,783.00	22,850,478.00	22,161,685.00	21,422,962.00	20,708,863.00	20,018,568.00	19,351,282.00	18,706,239.00	18,082,698.00
Additional Debt	-										-	58,621.00	72,890.00	-	-	-	-	-	-	-
Debt Repayment											(785,926)	(785,926)	(761,683)	(738,723)	(714,099)	(690,295)	(667,286)	(645,043)	(623,541)	(602,757)
Debt Repayment years	30.00										30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End											22,791,857.00	22,850,478.00	22,161,685.00	21,422,962.00	20,708,863.00	20,018,568.00	19,351,282.00	18,706,239.00	18,082,698.00	17,479,941.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance													270,070	553,957	844,311	1,140,364	1,441,070	1,745,640	2,049,496	2,357,479
Additions to Deferred Asset																				
Total Deferred Tax Liability											(363,670)	270,070	283,887	290,354	296,053	300,706	304,570	303,856	307,983	311,707
											(363,670)	270,070	553,957	844,311	1,140,364	1,441,070	1,745,640	2,049,496	2,357,479	2,669,186
Total Liabilities											24,646,148.00	25,338,509.00	24,933,603.00	24,485,234.00	24,843,475.00	24,453,886.00	24,839,732.00	24,498,545.00	24,182,987.00	24,266,218.00
Equity																				
Proportion of Capital	71%																			
Beginning Equity Capital	57,724,918										57,724,918	57,724,918	58,107,277	58,473,566	58,803,685	60,529,002	62,211,627	65,230,171	68,212,520	71,148,294
Additions to Equity (Retained Earnings)											409,217	382,359	366,289	330,119	1,725,317	1,682,626	3,018,543	2,982,349	2,935,775	3,577,606
Deductions form Equity Dividends	0										0	-	-	0	0	0	0	0	0	0
Additional Paid In Capital											0	0	0	0	0	0	0	0	0	0
Ending Equity Capital											58,134,135	58,107,277	58,473,566	58,803,685	60,529,002	62,211,627	65,230,171	68,212,520	71,148,294	74,725,900
Operating Income											1,233,790	1,195,520	1,152,630	1,082,548	3,023,966	2,944,007	4,803,411	4,733,895	4,650,402	5,535,594
Return On Equity											2.12%	2.06%	1.97%	1.84%	5.00%	4.73%	7.36%	6.94%	6.54%	7.41%
Total Liabilities & Stockholders Equity											82,780,283	83,445,786	83,407,169	83,288,919	85,372,477	86,665,513	90,069,903	92,711,065	95,331,281	98,992,118
Assets											2,139,868	56,617,147	56,193,690	55,773,675	56,103,011	55,679,774	55,972,000	55,430,496	54,885,362	54,695,949
Liabilities & Stockholders Equity less Assets												26,828,639	27,213,479	27,515,244	29,269,466	30,985,739	34,097,903	37,280,569	40,445,919	44,296,169
Dividend												26,828,639	27,213,479	27,515,244	29,269,466	30,985,739	34,097,903	37,280,569	40,445,919	44,296,169
Final Stockholder Equity											82,780,283	56,617,147	56,193,690	55,773,675	56,103,011	55,679,774	55,972,000	55,430,496	54,885,362	54,695,949
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures											-	806,090.00	812,135.00	818,227.00	824,363.00	830,547.00	836,776.00	721,779.00	727,193.00	732,647.00
Changes to Working Capital																				
Current Assets	2,139,868										-	2,139,868	2,139,868	2,139,868	2,888,821	2,888,821	3,611,027	3,611,027	3,611,027	3,972,130
Current Liabilities	2,217,961										-	2,217,961	2,217,961	2,217,961	2,994,248	2,994,248	3,742,810	3,742,810	3,742,810	4,117,091
Working Capital	(78,093)										-	(78,093)	(78,093)	(78,093)	(105,427)	(105,427)	(131,783)	(131,783)	(131,783)	(144,961)
Changes to Working Capital											-	(78,093)	-	-	(27,334)	-	(26,356)	-	-	(13,178)
CASH FLOW																				
Income from Operations											1,067,037	1,040,179	1,003,817	948,430	2,323,018	2,260,403	3,577,061	3,522,250	3,457,679	4,082,113
Non Cash Expense (depreciation)											1,258,810	1,258,810	1,235,592	1,238,242	1,243,980	1,253,783	1,266,757	1,263,283	1,272,326	1,283,163
Capital Expenditures											-	806,090	812,135	818,227	824,363	830,547	836,776	721,779	727,193	732,647
Change in Working Capital											-	(78,093)	-	-	(27,334)	-	(26,356)	-	-	(13,178)
Net Cash Flows											2,325,847	1,570,992	1,427,274	1,368,445	2,769,969	2,683,639	4,033,398	4,063,754	4,002,812	4,645,807
Period											0.5	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
PW Factor																				
Discount Rate with growth	7.80%										7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Discount Rate without growth	5.87%										5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)											0.963	0.963	0.893	0.829	0.769	0.713	0.662	0.614	0.569	0.528
PW of Cashflow											2,239,791	1,512,865	1,274,566	1,134,441	2,130,308	1,913,435	2,670,109	2,495,145	2,277,600	2,452,986
Accumulated PW of Cashflows	56,426,092										2,752,656	1,512,865	2,787,421	3,921,862	6,051,968	7,965,403	10,635,512	13,130,657	15,408,257	17,861,243
CASH FLOW																				
Income from Operations											1,304,357	(282,395)	(332,471)	(384,559)	996,609	942,468	2,268,874	2,234,428	2,177,703	2,810,370
Depreciation											-	(2,193,634)	(2,218,239)	(2,243,274)	(2,268,741)	(2,294,647)	(2,320,996)	(2,315,050)	(2,338,381)	(2,362,106)
Capital Expenditures												806,090	812,135	838,227	824,363	830,547	836,776	721,779	727,193	732,647
Change in Working Capital											-	(78,093)			(27,334)		(26,356)			(13,178)
Net Cash Flows											1,304,357	1,183,242	1,073,633	1,040,488	2,468,321	2,406,568	3,779,450	3,827,709	3,788,891	4,453,007
Period											0.5	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
PW Factor																				
Discount Rate with growth	7.80%										7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
Discount Rate without growth	5.87%										5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)											0.963	0.963	0.893	0.829	0.769	0.713	0.662	0.614	0.569	0.528
PW of Cashflow											1,256,096	1,139,462	958,754	862,565	1,898,139	1,715,883	2,501,996	2,350,213	2,156,875	2,351,188
Accumulated PW of Cashflows	54,267,994										2,395,558	1,139,462	2,098,216	2,960,781	4,858,920	6,574,803	9,076,799	11,427,012	13,582,891	15,934,079
Rate Case Forecasts																				
Rate Base																				
Plant In Service											81,907,268.00	81,907,268.00	82,516,369.00	83,130,041.00	83,748,312.00	84,371,222.00	84,998,803.00	85,540,138.00	86,085,532.00	86,635,019.00
Accumulated Book Depreciation											(27,429,989.14)	(27,429,989.14)	(28,462,547.44)	(29,496,234.28)	(30,534,122.14)	(31,580,268.60)	(32,637,830.17)	(33,720,669.21)	(34,811,196.60)	(35,911,199.67)
Working Capital												(78,093.00)	(78,093.00)	(78,093.00)	(105,427.00)	(105,427.00)	(131,783.00)	(131,783.00)	(131,783.00)	(144,961.00)
Accumulated Deferred Income Tax											93,600	(270,070)	(553,957)	(844,311)	(1,140,364)	(1,441,070)	(1,745,540)	(2,049,496)	(2,357,479)	(2,669,186)
Rate Base											54,570,878.86	54,129,115.86	53,421,771.56	52,711,402.72	51,968,398.86	51,244,456.40	50,483,549.83	49,638,189.79	48,785,073.40	47,909,672.33
Authorized Return on Rate Base	7.21%										3,934,560.00	3,902,709.00	3,851,710.00	3,800,492.00	3,746,922.00	3,694,725.00	3,639,864.00	3,578,913.00	3,517,404.00	3,454,287.00
O&M Expenses											3,267,716.00	3,305,486.00	3,371,594.00	3,439,026.00	3,507,806.00	3,577,962.00	3,649,522.00	3,722,512.00	3,796,962.00	3,872,902.00
Book Depreciation											1,258,810.14	1,258,810.14	1,235,592.30	1,238,241.84	1,243,979.86	1,253,783.46	1,266,756.57	1,263,283.04	1,272,326.39	1,283,163.07
Remaining Interest Expense											657,820.00	657,820.00	637,528.00	618,311.00	597,701.00	577,777.00	558,518.00	539,901.00	521,904.00	504,507.00
Revenue Requirement											9,118,906.14	9,124,825.14	9,096,424.30	9,096,070.84	9,096,408.86	9,104,247.46	9,114,660.57	9,104,609.04	9,108,596.39	9,114,859.07
O&M Expenses											3,267,716.00	3,305,486.00	3,371,594.00	3,439,026.00	3,507,806.00	3,577,962.00	3,649,522.00	3,722,512.00	3,796,962.00	3,872,902.00
Depreciation Expense											1,258,810.14	1,258,810.14	1,235,592.30	1,238,241.84	1,243,979.86	1,253,783.46	1,266,756.57	1,263,283.04	1,272,326.39	1,283,163.07
Interest											657,820.00	657,820.00	637,528.00	618,311.00	597,701.00	577,777.00	558,518.00	539,901.00	521,904.00	504,507.00
Pretax Income											3,934,560.00	3,902,709.00	3,851,710.00	3,800,492.00	3,746,922.00	3,694,725.00	3,639,864.00	3,578,913.00	3,517,404.00	3,454,287.00
State & Federal Taxes @ 28.89%											1,136,694.00	1,127,493.00	1,112,759.00	1,097,962.00	1,082,486.00	1,067,406.00	1,051,557.00	1,033,968.00	1,016,178.00	997,944.00
After Tax Income											2,797,866.00	2,775,216.00	2,738,951.00	2,702,530.00	2,664,436.00	2,627,319.00	2,588,307.00	2,544,965.00	2,501,226.00	2,456,343.00
Current Revenue											5,759,816.00	5,759,816.00	5,759,816.00	5,759,816.00	7,775,752.00	7,775,752.00	9,719,690.00	9,719,690.00	9,719,690.00	10,691,659.00
Revenue Requirement											10,255,500.14	10,257,318.14	10,209,383.30	10,194,032.84	10,178,894.86	10,177,634.46	10,166,217.57	10,138,557.04	10,124,774.39	10,112,803.07
Required Revenue Increase											78%	78%	77%	77%	31%	31%	5%	4%	4%	4%
Income from Operations											1,067,037	1,040,179	1,003,817	948,430	2,323,018	2,260,403	3,577,061	3,522,250	3,457,679	4,082,113
Return on Rate Base											1.96%	1.92%	1.88%	1.80%	4.47%	4.41%	7.09%	7.10%	7.09%	8.52%
Required Return	7.21%										7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%
Authorized Return											3,934,560	3,902,709	3,851,710	3,800,492	3,746,922	3,694,725	3,639,864	3,578,913	3,517,404	3,454,287
After tax Net Income											409,217	382,359	366,289	330,119	1,725,317	1,682,626	1,018,543	2,982,349	2,935,775	3,977,606
Taxes											166,253	155,341	148,813	146,118	700,948	683,604	1,226,350	1,211,645	1,192,723	1,453,681
Pre-tax Net Income											575,470	537,700	515,102	464,237	2,426,265	2,366,230	4,244,893	4,193,994	4,128,498	5,431,287
Interest Expense											(657,820)	(657,820)	(637,528)	618,311	597,701	577,777	558,518	539,901	521,904	504,507
Operating Income											1,233,290	1,195,520	1,152,630	1,082,548	3,023,966	2,944,007	4,803,411	4,733,895	4,650,402	5,535,594
Operating Expenses											4,526,526	4,564,296	4,607,186	4,677,268	4,751,786	4,831,745	4,916,279	4,985,795	5,069,288	5,156,065
Revenue Requirement											5,759,816	5,759,816	5,759,816	5,759,816	7,775,752	7,775,752	9,719,690	9,719,690	9,719,690	10,691,659
Required Return											3,934,560	3,902,709	3,851,710	3,800,492	3,746,922	3,694,725	3,639,864	3,578,913	3,517,404	3,454,287
Operating Expenses											4,526,526	4,564,296	4,607,186	4,677,268	4,751,786	4,831,745	4,916,279	4,985,795	5,069,288	5,156,065
Revenue Requirement											8,461,086	8,467,005	8,458,896	8,477,760	8,498,708	8,526,470	8,556,143	8,564,708	8,586,692	8,610,352
Required Rate Increase											78.05%	78.00%	77.25%	76.99%	30.91%	30.81%	4.59%	4.31%	4.17%	5.41%
Proposed Rate Increase											0	1	2	3	4	5	6	7	8	9
Rate Increase Scenario	6										0%	0%	0%	0%	35%	0%	25%	0%	0%	10%
	0										0	1	2	3	4	5	6	7	8	9
No increases (Input 2)	7										0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases 6% every 3 year period starting in period 3 (Input 4)	4										0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%
Modest Rate Increases (Input 4)	5																			
Required Rate Increases 80% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6							55,600,045.00			0.0%	0.0%	0.0%	0.0%	35.0%	0.0%	25.0%	0.0%	0.0%	10.0%
Required Rate Increases (Input 6)	7										100.0%	100.0%	100.0%	100.0%	135.0%	135.0%	168.8%	168.8%	168.8%	185.6%
	4										0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Changes in Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)													-		748,953		722,206			361,103
Plant & Equipment																				
Additions (Source negative / Use positive)												806,090	812,135	838,227	824,363	830,547	836,776	721,779	727,193	732,647
Liabilities																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Change in Current Liabilities (Source Positive / Use negative)												-	-	-	776,287		748,562			374,281
Long Term Debt																				
Additional Long Term Debt Source Positive / Use Negative												(58,621.00)	(72,890.00)		-		-	-		
Principal Paid Long term Debt (Source positive / Use negative)												785,926	761,683	738,723	714,099	690,295	667,286	645,043	623,541	602,757
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)												382,359	366,289	330,119	1,725,317	1,682,626	3,018,543	2,982,349	2,935,775	3,577,606
Depreciation (Source positive use negative)												1,258,810	1,235,592	1,238,242	1,243,980	1,253,783	1,266,757	1,264,283	1,272,326	1,283,163
Current Liabilities (Source Positive)															776,287		748,562	-		374,281
												1,641,169	1,601,881	1,568,361	3,745,584	2,936,409	5,033,852	4,246,632	4,208,101	5,235,050
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets: Increase (Use)															748,954		722,206			361,103
Fixed Assets: Assets: Increase (Use)												806,090	812,135	818,227	824,363	830,547	836,776	721,779	727,193	732,647
Total Uses of Funds												806,090	812,135	818,227	1,573,316	830,547	1,558,982	721,779	727,193	1,093,750
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt												(58,621.00)	(72,890.00)		-					
Repayment of Long Term Debt												(785,926)	(761,683)	(738,723)	(714,099)	(690,295)	(667,286)	(645,043)	(623,541)	(602,757)
Funds tom Equity																				
Dividends Paid (Use)												0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activities												(844,547.00)	(834,573.00)	(738,723.00)	(714,099.00)	(690,295.00)	(667,286.00)	(645,043.00)	(623,541.00)	(602,757.00)
Total Funds Needed												(9,468.00)	(44,827.00)	11,411.00	1,458,169.00	1,415,567.00	2,807,594.00	2,878,810.00	2,857,367.00	3,538,543.00
Financing																				
Debt	29%											2,746.00	13,000.00	(3,309.00)	(422,869.00)	(410,514.00)	(814,202.00)	(834,855.00)	(828,636.00)	(1,026,177.00)
Equity	71%											6,722.00	31,827.00	(8,102.00)	(1,035,300.00)	(1,005,053.00)	(1,993,392.00)	(2,043,955.00)	(2,028,731.00)	(2,512,366.00)
Funds Provided by Financing												9,468.00	44,827.00	(11,411.00)	(1,458,169.00)	(1,415,567.00)	(2,807,594.00)	(2,878,810.00)	(2,857,367.00)	(3,538,543.00)
												58,621.00	72,890.00							
												166,843.00	207,455.00							

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth																				
Growth	0.0%	0.0%	0.0%	0.0%	0.0%					0.0%					0.0%					0.0%
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-5.49%	-5.61%	-11.09%	-11.11%	-11.17%	-16.32%	-16.34%	-16.35%	-21.07%	-21.14%	-21.10%	-25.54%	-25.57%	-25.48%	-29.68%	-29.60%
Proposed Rate Increase	Calculated in DCF				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Total Revenue Adjustments	Calculated				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Base and Forecast	5,759,816				10,691,659	10,691,659	11,333,159	11,333,159	11,333,159	12,013,149	12,013,149	12,013,149	12,733,938	12,733,938	12,733,938	13,497,974	13,497,974	13,497,974	14,307,852	14,307,852
Operating Expenses					22%	22%	21%	22%	22%	21%	22%	22%	21%	22%	22%	21%	22%	22%	21%	22%
Expense Level 1: Sewer & Collection Fees	1,888,488				2,302,057	2,348,098	2,395,060	2,442,961	2,491,820	2,541,656	2,592,489	2,644,339	2,697,226	2,751,171	2,806,194	2,862,318	2,919,564	2,977,955	3,037,514	3,098,264
Expense Level 1: Sewer & Collection Fees Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	729,237				888,935	906,714	924,848	943,345	962,212	981,456	1,001,085	1,021,107	1,041,529	1,062,360	1,083,607	1,105,279	1,127,385	1,149,933	1,172,932	1,196,391
Expense Level 2: Wages & Benefits Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	250,824				305,753	311,868	318,105	324,467	330,956	337,575	344,327	351,214	358,238	365,403	372,711	380,165	387,768	395,523	403,433	411,502
Expense Level 3: Repair & Maintenance Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	43,650				53,208	54,272	55,357	56,464	57,593	58,745	59,920	61,118	62,340	63,587	64,859	66,156	67,479	68,829	70,206	71,610
Expense Level 4: Contracted Services Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097				104,952	107,051	109,192	111,376	113,604	115,876	118,194	120,558	122,969	125,428	127,937	130,496	133,106	135,768	138,483	141,253
Expense Level 5: Utilities Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376				295,454	301,363	307,390	313,538	319,809	326,205	332,729	339,384	346,172	353,095	360,157	367,360	374,707	382,201	389,845	397,642
Expense Level 6: Insurance & Other Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Property Taxes	81,302,701				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Plant					50,723,819	50,166,978	49,609,648	49,054,657	48,491,590	47,926,309	47,368,474	46,807,445	46,243,756	45,674,846	45,115,106	44,551,804	43,986,630	43,431,625	42,870,941	42,315,517
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				1,294,982	1,301,010	1,304,247	1,317,942	1,325,816	1,324,075	1,333,017	1,341,466	1,352,522	1,349,227	1,358,709	1,366,549	1,362,390	1,374,124	1,374,966	1,382,034
Total Operating Expenses					5,245,341	5,330,376	5,414,199	5,510,093	5,601,810	5,685,588	5,781,761	5,879,186	5,980,996	6,070,271	6,174,174	6,278,323	6,372,399	6,484,333	6,587,379	6,698,696
Cost of Operation as % of Revenues (Calculation)					49.1%	49.9%	47.8%	48.6%	49.4%	47.3%	48.1%	48.9%	47.0%	47.7%	48.5%	46.5%	47.2%	48.0%	46.0%	46.8%
Operating Expenses less Depreciation					3,950,359	4,029,366	4,109,952	4,192,151	4,275,994	4,361,513	4,448,744	4,537,720	4,628,474	4,721,044	4,815,465	4,911,774	5,010,009	5,110,209	5,212,413	5,316,662
Operating Income					5,446,318	5,361,283	5,918,960	5,823,066	5,731,349	6,327,561	6,231,388	6,133,963	6,752,942	6,663,667	6,559,764	7,219,651	7,125,575	7,013,641	7,720,473	7,609,156
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					487,690	471,434	455,720	440,529	425,845	411,650	397,928	384,664	371,842	359,447	347,465	335,883	324,687	313,864	303,402	293,289
Interest Exp as % of Debt	2.79%				2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%
Total nonoperating revenues (expenses)	-				487,690.00	471,434.00	455,720.00	440,529.00	425,845.00	411,650.00	397,928.00	384,664.00	371,842.00	359,447.00	347,465.00	335,883.00	324,687.00	313,864.00	303,402.00	293,289.00
Income (loss) before State and Federal Taxes	-				4,958,628	4,889,849	5,463,240	5,382,537	5,305,504	5,915,911	5,833,460	5,749,299	6,381,100	6,304,220	6,212,299	6,883,768	6,800,888	6,699,777	7,417,071	7,315,867
State and Federal Taxes																				
State and Federal Tax Rate	28.89%				1,432,548	1,412,677	1,578,330	1,555,015	1,532,760	1,709,107	1,685,287	1,660,972	1,843,500	1,821,289	1,794,733	1,988,721	1,964,777	1,935,566	2,142,792	2,113,554
					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-				3,526,080	3,477,172	3,884,910	3,827,522	3,772,744	4,206,804	4,148,173	4,088,327	4,537,600	4,482,931	4,417,566	4,895,047	4,836,111	4,764,211	5,274,279	5,202,313
Income After Taxes plus Interest	-				4,013,770	3,948,606	4,340,630	4,268,051	4,198,589	4,618,454	4,546,101	4,472,991	4,909,442	4,842,378	4,765,031	5,230,930	5,160,798	5,078,075	5,577,681	5,495,602
Earnings before Interest, Taxes, Depreciation, & Amortization	-				3,876,204	3,836,939	4,066,547	4,030,978	3,991,645	4,233,422	4,193,831	4,153,485	4,418,464	4,370,316	4,329,007	4,608,758	4,558,411	4,516,633	4,809,855	4,764,082
Income (loss) before State and Federal Taxes					4,958,628	4,889,849	5,463,240	5,382,537	5,305,504	5,915,911	5,833,460	5,749,299	6,381,100	6,304,220	6,212,299	6,883,768	6,800,888	6,699,777	7,417,071	7,315,867
Book Depreciation					(1,294,982)	(1,301,010)	(1,304,247)	(1,317,942)	(1,325,816)	(1,324,075)	(1,333,017)	(1,341,466)	(1,352,522)	(1,349,227)	(1,358,709)	(1,366,549)	(1,362,390)	(1,374,124)	(1,374,966)	(1,382,034)
Tax Depreciation					(2,386,228)	(2,410,754)	(2,435,686)	(2,461,029)	(2,486,788)	(2,512,970)	(2,539,579)	(2,566,617)	(2,594,092)	(2,622,008)	(2,650,370)	(2,679,185)	(2,708,454)	(2,738,187)	(2,768,387)	(2,799,057)
Difference Tax over Book Depreciation					(1,091,246)	(1,109,744)	(1,131,439)	(1,143,087)	(1,160,972)	(1,188,895)	(1,206,562)	(1,225,151)	(1,241,571)	(1,272,781)	(1,291,661)	(1,312,636)	(1,346,064)	(1,364,062)	(1,393,421)	(1,417,023)
Income Adjusted for Tax Depreciation					3,867,382	3,780,105	4,331,801	4,239,450	4,144,532	4,727,016	4,626,898	4,524,148	5,139,530	5,031,439	4,920,638	5,571,132	5,454,824	5,335,714	6,023,650	5,898,844
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					1,117,287	1,092,072	1,251,457	1,224,777	1,197,355	1,366,635	1,336,711	1,307,026	1,484,810	1,453,583	1,421,572	1,609,500	1,575,899	1,541,488	1,740,233	1,704,176
Income After Tax					2,750,095	2,688,033	3,080,344	3,014,673	2,947,177	3,361,381	3,290,187	3,217,122	3,654,720	3,577,856	3,499,066	3,961,632	3,878,925	3,794,226	4,283,417	4,194,668
Deferred Income Taxes					(315,261)	(320,605)	(326,873)	(330,238)	(335,405)	(343,472)	(348,576)	(353,946)	(358,690)	(367,706)	(373,161)	(379,221)	(388,878)	(394,078)	(402,559)	(409,378)
Accumulated Deferred Income Taxes					(2,984,447)	(3,305,052)	(3,631,925)	(3,962,163)	(4,297,568)	(4,641,040)	(4,989,616)	(5,343,562)	(5,702,252)	(6,069,958)	(6,443,119)	(6,822,340)	(7,211,218)	(7,605,296)	(8,007,855)	(8,417,233)
Income After Taxes (Book Depreciation)					3,526,080	3,477,172	3,884,910	3,827,522	3,772,744	4,206,804	4,148,173	4,088,327	4,537,600	4,482,931	4,417,566	4,895,047	4,836,111	4,764,211	5,274,279	5,202,313
Plus Deferred Taxes					(315,261)	(320,605)	(326,873)	(330,238)	(335,405)	(343,472)	(348,576)	(353,946)	(358,690)	(367,706)	(373,161)	(379,221)	(388,878)	(394,078)	(402,559)	(409,378)
Plus Interest					487,690	471,434	455,720	440,529	425,845	411,650	397,928	384,664	371,842	359,447	347,465	335,883	324,687	313,864	303,402	293,289
After Tax Income Debt Free					4,329,031	4,269,211	4,667,503	4,598,289	4,533,994	4,961,926	4,894,677	4,826,937	5,268,132	5,210,084	5,138,192	5,610,151	5,549,676	5,472,153	5,980,240	5,904,980
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	2,139,868				3,972,130	3,972,130	4,210,457	4,210,457	4,210,457	4,463,085	4,463,085	4,463,085	4,730,870	4,730,870	4,730,870	5,014,722	5,014,722	5,014,722	5,315,605	5,315,605
CA as % of Revenues	37.15%	37.15%	37.15%	37.15%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					86,635,019.00	87,188,624.00	87,746,384.00	88,308,328.00	88,874,485.00	89,444,887.00	90,019,567.00	90,598,559.00	91,181,892.00	91,769,602.00	92,361,717.00	92,958,274.00	93,559,306.00	94,164,845.00	94,774,926.00	95,389,583.00
Additions					738,141.00	743,679.00	749,257.00	754,875.00	760,535.00	766,240.00	771,988.00	777,777.00	783,611.00	789,487.00	795,408.00	801,375.00	807,384.00	813,440.00	819,542.00	825,688.00
Retirements					(184,536.00)	(185,919.00)	(187,313.00)	(188,718.00)	(190,133.00)	(191,560.00)	(192,996.00)	(194,444.00)	(195,901.00)	(197,372.00)	(198,851.00)	(200,343.00)	(201,845.00)	(203,359.00)	(204,885.00)	(206,422.00)
End Balance	81,302,701.00				87,188,624.00	87,746,384.00	88,308,328.00	88,874,485.00	89,444,887.00	90,019,567.00	90,598,559.00	91,181,892.00	91,769,602.00	92,361,717.00	92,958,274.00	93,559,306.00	94,164,845.00	94,774,926.00	95,389,583.00	96,008,849.00
End Balance Check					87,188,624.00	87,746,384.00	88,308,328.00	88,874,485.00	89,444,887.00	90,019,567.00	90,598,559.00	91,181,892.00	91,769,602.00	92,361,717.00	92,958,274.00	93,559,306.00	94,164,845.00	94,774,926.00	95,389,583.00	96,008,849.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Begin Balance					(35,911,199.67)	(37,021,645.66)	(38,136,736.40)	(39,253,670.86)	(40,382,894.79)	(41,518,577.75)	(42,651,092.60)	(43,791,113.71)	(44,938,135.78)	(46,094,756.36)	(47,246,611.47)	(48,406,469.60)	(49,572,675.63)	(50,733,220.16)	(51,903,985.26)	(53,074,066.05)
Depreciation					(1,294,981.99)	(1,301,009.74)	(1,304,247.46)	(1,317,941.93)	(1,325,815.96)	(1,324,074.85)	(1,333,017.11)	(1,341,466.07)	(1,352,521.58)	(1,349,227.11)	(1,358,709.13)	(1,366,549.03)	(1,362,389.53)	(1,374,124.10)	(1,374,965.79)	(1,382,034.21)
Retirements					184,536.00	185,919.00	187,313.00	188,718.00	190,133.00	191,560.00	192,996.00	194,444.00	195,901.00	197,372.00	198,851.00	200,343.00	201,845.00	203,359.00	204,885.00	206,422.00
End Balance					(37,021,645.66)	(38,136,736.40)	(39,253,670.86)	(40,382,894.79)	(41,518,577.75)	(42,651,092.60)	(43,791,113.71)	(44,938,135.78)	(46,094,756.36)	(47,246,611.47)	(48,406,469.60)	(49,572,675.63)	(50,733,220.16)	(51,903,985.26)	(53,074,066.05)	(54,249,678.26)
End Balance Check					(37,021,645.66)	(38,136,736.40)	(39,253,670.86)	(40,382,894.79)	(41,518,577.75)	(42,651,092.60)	(43,791,113.71)	(44,938,135.78)	(46,094,756.36)	(47,246,611.47)	(48,406,469.60)	(49,572,675.63)	(50,733,220.16)	(51,903,985.26)	(53,074,066.05)	(54,249,678.26)
Net Plant																				
Begin Balance					50,723,819.33	50,166,978.34	49,609,647.60	49,054,657.14	48,491,590.21	47,926,309.25	47,368,474.40	46,807,445.29	46,243,756.22	45,674,845.64	45,115,105.53	44,551,804.40	43,986,630.37	43,431,624.84	42,870,940.74	42,315,516.95
End Balance					50,166,978.34	49,609,647.60	49,054,657.14	48,491,590.21	47,926,309.25	47,368,474.40	46,807,445.29	46,243,756.22	45,674,845.64	45,115,105.53	44,551,804.40	43,986,630.37	43,431,624.84	42,870,940.74	42,315,516.95	41,759,170.74
Total Assest					54,139,108.34	53,581,777.60	53,265,114.14	52,702,047.21	52,136,766.25	51,831,559.40	51,270,530.29	50,706,841.22	50,405,715.64	49,845,975.53	49,282,674.40	49,001,352.37	48,446,346.84	47,885,662.74	47,631,121.95	47,074,775.74
Tax Depreciation of Property, Plant, & Equipment																				
Total MACRS Depreciation																				
Begin Balance					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation					(2,386,228.28)	(2,410,753.88)	(2,435,685.96)	(2,461,028.88)	(2,486,788.16)	(2,512,970.16)	(2,539,578.64)	(2,566,616.92)	(2,594,092.44)	(2,622,007.76)	(2,650,370.00)	(2,679,184.88)	(2,708,454.00)	(2,738,186.52)	(2,768,386.64)	(2,799,057.44)
Retirements					184,536.00	185,919.00	187,313.00	188,718.00	190,133.00	191,560.00	192,996.00	194,444.00	195,901.00	197,372.00	198,851.00	200,343.00	201,845.00	203,359.00	204,885.00	206,422.00
End Balance					(2,201,692.28)	(2,224,834.88)	(2,248,372.96)	(2,272,310.88)	(2,296,655.16)	(2,321,410.16)	(2,346,582.64)	(2,372,172.92)	(2,398,191.44)	(2,424,635.76)	(2,451,519.00)	(2,478,841.88)	(2,506,609.00)	(2,534,827.52)	(2,563,501.64)	(2,592,635.44)
End Balance Check					(2,201,692.28)	(2,224,834.88)	(2,248,372.96)	(2,272,310.88)	(2,296,655.16)	(2,321,410.16)	(2,346,582.64)	(2,372,172.92)	(2,398,191.44)	(2,424,635.76)	(2,451,519.00)	(2,478,841.88)	(2,506,609.00)	(2,534,827.52)	(2,563,501.64)	(2,592,635.44)
Net Plant																				
Begin Balance					86,635,019.00	87,188,624.00	87,746,384.00	88,308,328.00	88,874,485.00	89,444,887.00	90,019,567.00	90,598,559.00	91,181,892.00	91,769,602.00	92,361,717.00	92,958,274.00	93,559,306.00	94,164,845.00	94,774,926.00	95,389,583.00
End Balance					84,986,931.72	85,521,549.12	86,059,955.04	86,602,174.12	87,148,231.84	87,698,156.84	88,251,976.36	88,809,719.08	89,371,410.56	89,937,081.24	90,506,755.00	91,080,464.12	91,658,236.00	92,240,098.48	92,826,081.36	93,416,213.56
Tax					(2,386,228.28)	(2,410,753.88)	(2,435,685.96)	(2,461,028.88)	(2,486,788.16)	(2,512,970.16)	(2,539,578.64)	(2,566,616.92)	(2,594,092.44)	(2,622,007.76)	(2,650,370.00)	(2,679,184.88)	(2,708,454.00)	(2,738,186.52)	(2,768,386.64)	(2,799,057.44)
Book					(1,294,981.99)	(1,301,009.74)	(1,304,247.46)	(1,317,941.93)	(1,325,815.96)	(1,324,074.85)	(1,333,017.11)	(1,341,466.07)	(1,352,521.58)	(1,349,227.11)	(1,358,709.13)	(1,366,549.03)	(1,362,389.53)	(1,374,124.10)	(1,374,965.79)	(1,382,034.21)
					(1,091,246.29)	(1,109,744.14)	(1,131,438.50)	(1,143,086.95)	(1,160,972.20)	(1,188,895.31)	(1,206,561.53)	(1,225,150.85)	(1,241,570.86)	(1,272,780.65)	(1,291,660.87)	(1,312,635.85)	(1,346,064.47)	(1,364,062.42)	(1,393,420.85)	(1,417,023.23)
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	2,217,961				4,117,091	4,117,091	4,364,116	4,364,116	4,364,116	4,625,963	4,625,963	4,625,963	4,903,521	4,903,521	4,903,521	5,197,732	5,197,732	5,197,732	5,509,596	5,509,596
CL as % of Revenues	38.51%	38.51%	38.51%	38.51%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Bec	23,577,783.00				17,479,941.00	16,897,276.00	16,334,033.00	15,789,565.00	15,263,246.00	14,754,471.00	14,262,655.00	13,787,233.00	13,327,659.00	12,883,404.00	12,453,957.00	12,038,825.00	11,637,531.00	11,249,613.00	10,874,626.00	10,512,138.00
Additional Debt	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repayment	-				(582,665)	(563,243)	(544,468)	(526,319)	(508,775)	(491,816)	(475,422)	(459,574)	(444,255)	(429,447)	(415,132)	(401,294)	(387,918)	(374,987)	(362,488)	(350,405)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					16,897,276.00	16,334,033.00	15,789,565.00	15,263,246.00	14,754,471.00	14,262,655.00	13,787,233.00	13,327,659.00	12,883,404.00	12,453,957.00	12,038,825.00	11,637,531.00	11,249,613.00	10,874,626.00	10,512,138.00	10,161,733.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					2,669,186	2,984,447	3,305,052	3,631,925	3,962,163	4,297,568	4,641,040	4,989,616	5,343,562	5,702,252	6,069,958	6,443,119	6,822,340	7,211,218	7,605,296	8,007,855
Additions to Deferred Asset					315,261	320,605	326,873	330,238	335,405	343,472	348,576	353,946	358,690	367,706	373,161	379,221	388,878	394,078	402,559	409,378
Total Deferred Tax Liability					2,984,447	3,305,052	3,631,925	3,962,163	4,297,568	4,641,040	4,989,616	5,343,562	5,702,252	6,069,958	6,443,119	6,822,340	7,211,218	7,605,296	8,007,855	8,417,233
Total Liabilities					23,998,814.00	23,756,176.00	23,785,606.00	23,589,525.00	23,416,155.00	23,529,658.00	23,402,812.00	23,297,184.00	23,489,177.00	23,427,436.00	23,385,465.00	23,657,603.00	23,658,563.00	23,677,654.00	24,029,589.00	24,088,562.00
Equity																				
Proportion of Capital	71%																			
Beginning Equity Capital	57,724,918				74,725,900	78,251,980	81,729,153	85,614,062	89,441,584	93,214,328	97,421,132	101,569,305	105,657,632	110,195,233	114,678,164	119,095,729	123,990,776	128,826,888	133,591,099	138,865,378
Additions to Equity (Retained Earnings)					3,526,080	3,477,172	3,884,910	3,827,522	3,772,744	4,206,804	4,148,173	4,088,327	4,537,600	4,482,931	4,417,566	4,895,047	4,836,111	4,764,211	5,274,279	5,202,313
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					78,251,980	81,729,153	85,614,062	89,441,584	93,214,328	97,421,132	101,569,305	105,657,632	110,195,233	114,678,164	119,095,729	123,990,776	128,826,888	133,591,099	138,865,378	144,067,691
Operating Income					5,446,318	5,361,283	5,918,960	5,823,066	5,731,349	6,327,561	6,231,388	6,133,963	6,752,942	6,663,667	6,559,764	7,219,651	7,125,575	7,013,641	7,720,473	7,609,156
Return On Equity					6.96%	6.56%	6.91%	6.51%	6.15%	6.50%	6.14%	5.81%	6.13%	5.81%	5.51%	5.82%	5.53%	5.25%	5.56%	5.28%
Total Liabilities & Stockholders Equity					102,250,794	105,485,329	109,399,668	113,031,109	116,630,483	120,950,790	124,972,117	128,954,816	133,684,410	138,105,600	142,481,194	147,648,379	152,485,451	157,268,753	162,894,967	168,156,253
Assets					54,139,108	53,581,778	53,265,114	52,702,047	52,136,766	51,831,559	51,270,530	50,706,841	50,405,716	49,845,976	49,282,674	49,001,352	48,446,347	47,885,663	47,631,122	47,074,776
Liabilities & Stockholders Equity less Assets					48,111,686	51,903,551	56,134,554	60,329,062	64,493,717	69,119,231	73,701,587	78,247,975	83,278,694	88,259,624	93,198,520	98,647,027	104,039,104	109,383,090	115,263,845	121,081,477
Dividend					48,111,686	51,903,551	56,134,554	60,329,062	64,493,717	69,119,231	73,701,587	78,247,975	83,278,694	88,259,624	93,198,520	98,647,027	104,039,104	109,383,090	115,263,845	121,081,477
Final Stockholder Equity					54,139,108	53,581,778	53,265,114	52,702,047	52,136,766	51,831,559	51,270,530	50,706,841	50,405,716	49,845,976	49,282,674	49,001,352	48,446,347	47,885,663	47,631,122	47,074,776
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					738,141.00	743,679.00	749,257.00	754,875.00	760,535.00	766,240.00	771,988.00	777,777.00	783,611.00	789,487.00	795,408.00	801,375.00	807,384.00	813,440.00	819,542.00	825,688.00
Changes to Working Capital																				
Current Assets	2,139,868				3,972,130	3,972,130	4,210,457	4,210,457	4,210,457	4,463,085	4,463,085	4,463,085	4,730,870	4,730,870	4,730,870	5,014,722	5,014,722	5,014,722	5,315,605	5,315,605
Current Liabilities	2,217,961				4,117,091	4,117,091	4,364,116	4,364,116	4,364,116	4,625,963	4,625,963	4,625,963	4,903,521	4,903,521	4,903,521	5,197,732	5,197,732	5,197,732	5,509,596	5,509,596
Working Capital	(78,093)				(144,961)	(144,961)	(153,659)	(153,659)	(153,659)	(162,878)	(162,878)	(162,878)	(172,651)	(172,651)	(172,651)	(183,010)	(183,010)	(183,010)	(193,991)	(193,991)
Changes to Working Capital					-	-	(8,698)	-	-	(9,219)	-	-	(9,773)	-	-	(10,359)	-	-	(10,981)	-
CASH FLOW																				
Income from Operations					4,013,770	3,948,606	4,340,630	4,268,051	4,198,589	4,618,454	4,546,101	4,472,991	4,909,442	4,842,378	4,765,031	5,230,930	5,160,798	5,078,075	5,577,681	5,495,602
Non Cash Expense (depreciation)					1,294,982	1,301,010	1,304,247	1,317,942	1,325,816	1,324,075	1,333,017	1,341,466	1,352,522	1,349,227	1,358,709	1,366,549	1,362,390	1,374,124	1,374,966	1,382,034
Capital Expenditures					738,141	743,679	749,257	754,875	760,535	766,240	771,988	777,777	783,611	789,487	795,408	801,375	807,384	813,440	819,542	825,688
Change in Working Capital					-	-	(8,698)	-	-	(9,219)	-	-	(9,773)	-	-	(10,359)	-	-	(10,981)	-
Net Cash Flows					4,570,611	4,505,937	4,904,318	4,831,118	4,763,870	5,185,508	5,107,130	5,036,680	5,488,126	5,402,118	5,328,332	5,806,463	5,715,804	5,638,759	6,144,086	6,051,948
Period					9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					0.49	0.454	0.422	0.391	0.363	0.337	0.312	0.29	0.269	0.249	17.036 0.231	17.036 0.214	17.036 0.199	17.036 0.185	17.036 0.171	17.036 0.159
PW of Cashflow					2,239,599	2,045,695	2,069,622	1,888,967	1,729,285	1,747,516	1,593,425	1,460,637	1,476,306	1,345,127	20,968,670	21,168,645	19,377,513	17,771,451	17,898,681	16,393,057
Accumulated PW of Cashflows	56,426,092				20,100,842	22,146,537	24,216,159	26,105,126	27,834,411	29,581,927	31,175,352	32,635,989	34,112,295	35,457,422	56,426,092	77,594,737	96,972,250	114,743,701	132,642,382	149,035,439
CASH FLOW																				
Income from Operations					2,750,095	2,688,033	3,080,344	3,014,673	2,947,177	3,361,381	3,290,187	3,217,122	3,654,720	3,577,856	3,499,066	3,961,632	3,878,925	3,794,226	4,283,417	4,194,668
Depreciation					(2,386,228)	(2,410,754)	(2,435,686)	(2,461,029)	(2,486,788)	(2,512,970)	(2,539,579)	(2,566,617)	(2,594,092)	(2,622,008)	(2,650,370)	(2,679,185)	(2,708,454)	(2,738,187)	(2,768,387)	(2,799,057)
Capital Expenditures					738,141	743,679	749,257	754,875	760,535	766,240	771,988	777,777	783,611	789,487	795,408	801,375	807,384	813,440	819,542	825,688
Change in Working Capital					-	-	(8,698)	-	-	(9,219)	-	-	(9,773)	-	-	(10,359)	-	-	(10,981)	-
Net Cash Flows					4,398,182	4,355,108	4,775,471	4,720,827	4,673,430	5,117,330	5,057,778	5,005,962	5,474,974	5,410,377	5,354,028	5,849,801	5,779,995	5,718,973	6,243,243	6,168,037
Period					9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					0.49	0.454	0.422	0.391	0.363	0.337	0.312	0.29	0.269	0.249	17.036 0.231	17.036 0.214	17.036 0.199	17.036 0.185	17.036 0.171	17.036 0.159
PW of Cashflow					2,155,109	1,977,219	2,015,249	1,845,843	1,696,455	1,724,540	1,578,027	1,451,729	1,472,768	1,347,184	21,069,792	21,326,643	19,595,131	18,024,258	18,187,541	16,707,510
Accumulated PW of Cashflows	54,267,994				18,089,188	20,066,407	22,081,656	23,927,499	25,623,954	27,348,494	28,926,521	30,378,250	31,851,018	33,198,202	54,267,994	75,594,637	95,189,768	113,214,026	131,401,567	148,109,077
Rate Case Forecasts																				
Rate Base																				
Plant In Service					87,186,624.00	87,746,384.00	88,308,328.00	88,874,485.00	89,444,887.00	90,019,567.00	90,598,559.00	91,181,892.00	91,769,602.00	92,361,717.00	92,958,274.00	93,559,306.00	94,164,845.00	94,774,926.00	95,389,583.00	96,008,849.00
Accumulated Book Depreciation					(37,021,645.66)	(38,136,736.40)	(39,253,670.86)	(40,382,894.79)	(41,518,577.75)	(42,651,092.60)	(43,791,113.71)	(44,938,135.78)	(46,094,756.36)	(47,246,611.47)	(48,406,469.60)	(49,572,675.63)	(50,733,220.16)	(51,903,985.26)	(53,074,066.05)	(54,249,678.26)
Working Capital					(144,961.00)	(144,961.00)	(153,659.00)	(153,659.00)	(153,659.00)	(162,878.00)	(162,878.00)	(162,878.00)	(172,651.00)	(172,651.00)	(172,651.00)	(183,010.00)	(183,010.00)	(183,010.00)	(193,991.00)	(193,991.00)
Accumulated Deferred Income Tax					(2,984,447)	(3,305,052)	(3,631,925)	(3,962,163)	(4,297,568)	(4,641,040)	(4,989,616)	(5,343,562)	(5,702,252)	(6,069,958)	(6,443,119)	(6,822,340)	(7,211,218)	(7,605,296)	(8,007,855)	(8,417,233)
Rate Base					47,037,570.34	46,159,634.60	45,269,073.14	44,375,768.21	43,475,082.25	42,564,556.40	41,654,951.29	40,737,316.22	39,799,942.64	38,872,496.53	37,936,034.40	36,981,280.37	36,037,396.84	35,082,634.74	34,113,670.95	33,147,946.74
Authorized Return on Rate Base	7.21%				3,391,409.00	3,328,110.00	3,263,900.00	3,199,493.00	3,134,553.00	3,068,905.00	3,003,322.00	2,937,160.00	2,869,576.00	2,802,707.00	2,735,188.00	2,666,350.00	2,598,296.00	2,529,458.00	2,459,596.00	2,389,967.00
O&M Expenses					3,950,359.00	4,029,366.00	4,109,952.00	4,192,151.00	4,275,994.00	4,361,513.00	4,448,744.00	4,537,720.00	4,628,474.00	4,721,044.00	4,815,465.00	4,911,774.00	5,010,009.00	5,110,209.00	5,212,413.00	5,316,662.00
Book Depreciation					1,294,981.99	1,301,009.74	1,304,247.46	1,317,941.93	1,325,815.96	1,324,074.85	1,333,017.11	1,341,466.07	1,352,521.58	1,349,227.11	1,358,709.13	1,366,549.03	1,362,389.53	1,374,124.10	1,374,965.79	1,382,034.21
Ratemaking Interest Expense					487,690.00	471,434.00	455,720.00	440,529.00	425,845.00	411,650.00	397,928.00	384,664.00	371,842.00	359,447.00	347,465.00	335,883.00	324,687.00	313,864.00	303,402.00	293,289.00
Revenue Requirement					9,124,439.99	9,129,919.74	9,133,819.46	9,150,114.93	9,162,207.96	9,166,142.85	9,183,011.11	9,201,010.07	9,222,413.58	9,232,425.11	9,256,827.13	9,280,556.03	9,295,381.53	9,327,655.10	9,350,376.79	9,381,952.21
O&M Expenses					3,950,359.00	4,029,366.00	4,109,952.00	4,192,151.00	4,275,994.00	4,361,513.00	4,448,744.00	4,537,720.00	4,628,474.00	4,721,044.00	4,815,465.00	4,911,774.00	5,010,009.00	5,110,209.00	5,212,413.00	5,316,662.00
Depreciation Expense					1,294,981.99	1,301,009.74	1,304,247.46	1,317,941.93	1,325,815.96	1,324,074.85	1,333,017.11	1,341,466.07	1,352,521.58	1,349,227.11	1,358,709.13	1,366,549.03	1,362,389.53	1,374,124.10	1,374,965.79	1,382,034.21
Interest					487,690.00	471,434.00	455,720.00	440,529.00	425,845.00	411,650.00	397,928.00	384,664.00	371,842.00	359,447.00	347,465.00	335,883.00	324,687.00	313,864.00	303,402.00	293,289.00
Pretax Income					3,391,409.00	3,328,110.00	3,263,900.00	3,199,493.00	3,134,553.00	3,068,905.00	3,003,322.00	2,937,160.00	2,869,576.00	2,802,707.00	2,735,188.00	2,666,350.00	2,598,296.00	2,529,458.00	2,459,596.00	2,389,967.00
State & Federal Taxes @ 28.89%					979,778.00	961,491.00	942,941.00	924,334.00	905,572.00	886,607.00	867,660.00	848,546.00	829,021.00	809,702.00	790,196.00	770,309.00	750,648.00	730,760.00	710,577.00	690,461.00
After Tax Income					2,411,631.00	2,366,619.00	2,320,959.00	2,275,159.00	2,228,981.00	2,182,298.00	2,135,662.00	2,088,614.00	2,040,555.00	1,993,005.00	1,944,992.00	1,896,041.00	1,847,648.00	1,798,698.00	1,749,019.00	1,699,506.00
Current Revenue					10,691,659.00	10,691,659.00	11,333,159.00	11,333,159.00	11,333,159.00	12,013,149.00	12,013,149.00	12,013,149.00	12,733,938.00	12,733,938.00	12,733,938.00	13,497,974.00	13,497,974.00	13,497,974.00	14,307,852.00	14,307,852.00
Revenue Requirement					10,104,217.99	10,091,410.74	10,076,760.46	10,074,448.93	10,067,779.96	10,052,749.85	10,050,671.11	10,049,556.07	10,051,434.58	10,042,127.11	10,047,023.13	10,050,865.03	10,046,029.53	10,058,415.10	10,060,963.79	10,072,413.21
Required Revenue Increase					-5%	-6%	-11%	-11%	-11%	-16%	-16%	-16%	-21%	-21%	-21%	-26%	-26%	-25%	-30%	-30%
Income from Operations					4,013,770	3,948,606	4,340,630	4,268,051	4,198,589	4,618,454	4,546,101	4,472,991	4,909,442	4,842,378	4,765,031	5,230,930	5,160,798	5,078,075	5,577,681	5,495,602
Return on Rate Base					8.53%	8.55%	9.59%	9.62%	9.66%	10.85%	10.91%	10.98%	12.34%	12.46%	12.56%	14.14%	14.32%	14.47%	16.35%	16.58%
Required Return	7.21%				7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%
Authorized Return					3,391,409	3,328,110	3,263,900	3,199,493	3,134,553	3,068,905	3,003,322	2,937,160	2,869,576	2,802,707	2,735,188	2,666,350	2,598,296	2,529,458	2,459,596	2,389,967
After-tax Net Income					3,526,080	3,477,172	3,884,910	3,827,522	3,772,744	4,206,804	4,148,173	4,088,327	4,537,600	4,482,931	4,417,566	4,895,047	4,836,121	4,764,211	5,274,279	5,202,313
Taxes					1,432,548	1,412,677	1,578,330	1,555,015	1,532,760	1,709,107	1,685,287	1,660,972	1,843,500	1,821,289	1,794,733	1,988,721	1,964,777	1,935,566	2,142,792	2,113,554
Pre-tax Net Income					4,958,628	4,889,849	5,463,240	5,382,537	5,305,504	5,915,911	5,833,460	5,749,299	6,381,100	6,304,220	6,212,299	6,883,768	6,800,888	6,699,777	7,417,071	7,315,867
Interest Expense					487,690	471,434	455,720	440,529	425,845	411,650	397,928	384,664	371,842	359,447	347,465	335,883	324,687	313,864	303,402	293,289
Operating Income					5,446,318	5,361,283	5,918,960	5,823,066	5,731,349	6,327,561	6,231,388	6,133,963	6,752,942	6,663,667	6,559,764	7,219,651	7,125,575	7,013,641	7,720,473	7,609,156
Operating Expenses					5,245,341	5,330,376	5,414,199	5,510,093	5,601,810	5,685,588	5,781,761	5,879,186	5,980,996	6,070,271	6,174,174	6,278,323	6,372,399	6,484,333	6,587,379	6,698,696
Revenue Requirement					10,691,659	10,691,659	11,333,159	11,333,159	11,333,159	12,013,149	12,013,149	12,013,149	12,733,938	12,733,938	12,733,938	13,497,974	13,497,974	13,497,974	14,307,852	14,307,852
Required Return					3,391,409	3,328,110	3,263,900	3,199,493	3,134,553	3,068,905	3,003,322	2,937,160	2,869,576	2,802,707	2,735,188	2,666,350	2,598,296	2,529,458	2,459,596	2,389,967
Operating Expenses					5,245,341	5,330,376	5,414,199	5,510,093	5,601,810	5,685,588	5,781,761	5,879,186	5,980,996	6,070,271	6,174,174	6,278,323	6,372,399	6,484,333	6,587,379	6,698,696
Revenue Requirement					8,636,750	8,658,486	8,678,099	8,709,586	8,736,363	8,754,493	8,785,083	8,816,346	8,850,572	8,872,978	8,909,362	8,944,673	8,970,695	9,013,791	9,046,975	9,088,663
Required Rate Increase					-5.49%	-5.61%	-11.09%	-11.11%	-11.17%	-16.32%	-16.34%	-16.35%	-21.07%	-21.14%	-21.10%	-25.54%	-25.57%	-25.48%	-29.68%	-29.60%
Proposed Rate Increase					10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Rate Increase Scenario	6				0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%
	0				10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
No increases (Input 2)	2				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Modest Rate Increases: (Input 4)	5																			
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Required Rate Increases: (Input 6)	7				185.6%	185.6%	196.8%	196.8%	196.8%	208.6%	208.6%	208.6%	221.1%	221.1%	221.1%	234.3%	234.3%	234.3%	248.4%	248.4%
	4				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Changes In Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)					-	-	238,327	-	-	252,628	-	-	267,785	-	-	283,852	-	-	300,883	-
Plant & Equipment																				
Additions (Source negative / Use positive)					738,141	743,679	749,257	754,875	760,535	766,240	771,988	777,777	783,611	789,487	795,408	801,375	807,384	813,440	819,542	825,688
Liabilities																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Change in Current Liabilities (Source Positive / Use negative)						-	247,025	-		261,847	-	-	277,558			294,211		-	311,864	
Long Term Debt																				
Additional Long Term Debt Source Positive / Use Negative					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Paid Long term Debt (Source positive / Use negative)					582,665	563,243	544,468	526,319	508,775	491,816	475,422	459,574	444,255	429,447	415,132	401,294	387,918	374,987	362,488	350,405
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)					3,526,080	3,477,172	3,884,930	3,827,522	3,772,744	4,206,804	4,148,173	4,088,327	4,537,600	4,482,931	4,417,566	4,895,047	4,836,111	4,764,211	5,276,279	5,202,313
Depreciation (Source positive /use negative)					1,296,982	1,301,010	1,304,247	1,317,942	1,325,816	1,324,075	1,333,017	1,341,466	1,352,522	1,349,227	1,358,709	1,366,549	1,362,490	1,374,124	1,374,966	1,382,034
Current Liabilities (Source Positive)							247,025	-		261,847			277,558			294,211		-	311,864	-
					4,823,062	4,778,182	5,436,182	5,145,464	5,098,560	5,792,726	5,481,190	5,429,793	6,367,680	5,832,158	5,776,275	6,555,807	6,198,601	6,138,335	6,961,109	6,584,347
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets. Increase (Use)						-	238,327			252,628	-		267,785			283,852	-		300,883	
Fixed Assets. Assets. Increase (Use)					738,141	743,679	749,257	754,875	760,535	766,240	771,988	777,777	783,611	789,487	795,408	801,375	807,384	813,440	819,542	825,688
Total Uses of Funds					738,141	743,679	987,584	754,875	760,535	1,018,868	771,988	777,777	1,051,396	789,487	795,408	1,085,227	807,384	813,440	1,120,425	825,688
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt																				
Repayment of Long Term Debt					(582,665)	(563,243)	(544,468)	(526,319)	(508,775)	(491,816)	(475,422)	(459,574)	(444,255)	(429,447)	(415,132)	(401,294)	(387,918)	(374,987)	(362,488)	(350,405)
Funds fom Equity																				
Dividends Paid (Use)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activities					(582,665.00)	(563,243.00)	(544,468.00)	(526,319.00)	(508,775.00)	(491,816.00)	(475,422.00)	(459,574.00)	(444,255.00)	(429,447.00)	(415,132.00)	(401,294.00)	(387,918.00)	(374,987.00)	(362,488.00)	(350,405.00)
Total Funds Needed					4,500,256.00	4,471,260.00	4,904,130.00	4,864,270.00	4,829,250.00	4,282,042.00	4,233,780.00	4,192,442.00	4,672,029.00	4,613,224.00	4,565,735.00	5,069,286.00	5,003,199.00	4,949,908.00	5,478,196.00	5,408,254.00
Financing																				
Debt	29%				(1,015,074.00)	(1,006,665.00)	(1,132,198.00)	(1,120,638.00)	(1,110,483.00)	(1,241,792.00)	(1,227,796.00)	(1,215,808.00)	(1,354,888.00)	(1,337,835.00)	(1,324,063.00)	(1,470,093.00)	(1,450,928.00)	(1,435,473.00)	(1,588,677.00)	(1,568,394.00)
Equity	71%				(2,485,182.00)	(2,464,595.00)	(2,771,932.00)	(2,743,632.00)	(2,718,768.00)	(3,040,250.00)	(3,005,984.00)	(2,976,634.00)	(3,317,141.00)	(3,275,389.00)	(3,241,672.00)	(3,599,193.00)	(3,552,271.00)	(3,514,435.00)	(3,889,519.00)	(3,839,860.00)
Funds Provided by Financing					(3,500,256.00)	(3,471,260.00)	(3,904,130.00)	(3,864,270.00)	(3,829,251.00)	(4,282,042.00)	(4,233,780.00)	(4,192,442.00)	(4,672,029.00)	(4,613,224.00)	(4,565,735.00)	(5,069,286.00)	(5,003,199.00)	(4,949,908.00)	(5,478,196.00)	(5,408,254.00)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth																				
Growth	0.0%	0.0%	0.0%	0.0%					0.0%					0.0%					0.0%	
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-29.18%	-32.71%	-32.30%	-31.81%	-31.33%	-30.84%	-30.30%	-29.82%	-29.22%	-28.66%	-28.08%	-27.44%	-26.86%	-26.14%	-25.51%	-24.85%
Proposed Rate Increase	Calculated in DCF				0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Revenue Adjustments	Calculated				0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Base and Forecast	5,759,816				14,307,852	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323
Operating Expenses					22%	21%	22%	22%	23%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Expense Level 1: Sewer & Collection Fees	1,888,488				3,160,229	3,223,434	3,287,903	3,353,661	3,420,734	3,489,149	3,558,932	3,630,111	3,702,713	3,776,767	3,852,302	3,929,348	4,007,935	4,088,094	4,169,856	4,253,253
Expense Level 1: Sewer & Collection Fees Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	729,237				1,220,319	1,244,725	1,269,620	1,295,012	1,320,912	1,347,330	1,374,277	1,401,763	1,429,798	1,458,394	1,487,562	1,517,313	1,547,659	1,578,612	1,610,184	1,642,388
Expense Level 2: Wages & Benefits Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	250,824				419,732	428,127	436,690	445,424	454,332	463,419	472,687	482,141	491,784	501,620	511,652	521,885	532,323	542,969	553,828	564,905
Expense Level 3: Repair & Maintenance Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	43,650				73,042	74,503	75,993	77,513	79,063	80,644	82,257	83,902	85,580	87,292	89,038	90,819	92,635	94,488	96,378	98,306
Expense Level 4: Contracted Services Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097				144,078	146,960	149,899	152,897	155,955	159,074	162,255	165,500	168,810	172,186	175,630	179,143	182,726	186,381	190,109	193,911
Expense Level 5: Utilities Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376				405,595	413,707	421,981	430,421	439,029	447,810	456,766	465,901	475,219	484,723	494,417	504,305	514,391	524,679	535,173	545,876
Expense Level 6: Insurance & Other Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Property Taxes	81,302,701				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Plant					41,759,171	41,208,185	40,652,279	40,105,627	39,559,402	39,017,740	38,481,012	37,945,424	37,423,593	36,900,763	36,384,660	35,875,903	35,369,636	34,878,299	34,382,540	33,900,202
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				1,382,866	1,394,024	1,391,056	1,396,962	1,398,780	1,400,275	1,405,611	1,398,379	1,405,952	1,405,849	1,405,176	1,409,408	1,401,253	1,412,498	1,405,954	1,399,524
Total Operating Expenses					6,805,861	6,925,480	7,033,142	7,151,890	7,268,805	7,387,701	7,512,785	7,627,697	7,759,856	7,886,831	8,015,777	8,152,221	8,278,922	8,427,721	8,561,482	8,698,163
Cost of Operation as % of Revenues (Calculation)					47.6%	45.7%	46.4%	47.2%	47.9%	48.7%	49.5%	50.3%	51.2%	52.0%	52.9%	53.8%	54.6%	55.6%	56.5%	57.4%
Operating Expenses less Depreciation					5,422,995	5,531,456	5,642,086	5,754,928	5,870,025	5,987,426	6,107,174	6,229,318	6,353,904	6,480,982	6,610,601	6,742,813	6,877,669	7,015,223	7,155,528	7,298,639
Operating Income					7,501,991	8,240,843	8,133,181	8,014,433	7,897,518	7,778,622	7,653,538	7,538,626	7,406,467	7,279,492	7,150,546	7,014,102	6,887,401	6,738,602	6,604,841	6,468,160
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					283,512	274,062	264,927	256,096	247,559	239,307	231,330	223,619	216,165	208,960	201,994	195,261	188,753	182,461	176,379	170,499
Interest Exp as % of Debt	2.79%				2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%
Total nonoperating revenues (expenses)	-				283,512.00	274,062.00	264,927.00	256,096.00	247,559.00	239,307.00	231,330.00	223,619.00	216,165.00	208,960.00	201,994.00	195,261.00	188,753.00	182,461.00	176,379.00	170,499.00
Income (loss) before State and Federal Taxes	-				7,218,479	7,966,781	7,868,254	7,758,337	7,649,959	7,539,315	7,422,208	7,315,007	7,190,302	7,070,532	6,948,552	6,818,841	6,698,648	6,556,141	6,428,462	6,297,661
State and Federal Taxes	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State and Federal Tax Rate	28.89%				2,085,419	2,301,603	2,273,138	2,241,384	2,210,073	2,178,108	2,144,276	2,113,305	2,077,278	2,042,677	2,007,437	1,969,963	1,935,239	1,894,069	1,857,183	1,819,394
					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-				5,133,060	5,665,178	5,595,116	5,516,953	5,439,886	5,361,207	5,277,932	5,201,702	5,113,024	5,027,855	4,941,115	4,848,878	4,763,409	4,662,072	4,571,279	4,478,267
Income After Taxes plus Interest	-				5,416,572	5,939,240	5,860,043	5,773,049	5,687,445	5,600,514	5,509,262	5,425,321	5,329,189	5,236,815	5,143,109	5,044,139	4,952,162	4,844,533	4,747,658	4,648,766
Earnings before Interest, Taxes, Depreciation, & Amortization	-				4,714,019	5,031,661	4,977,961	4,928,627	4,876,152	4,822,681	4,770,597	4,710,395	4,657,863	4,599,987	4,540,848	4,483,584	4,418,176	4,362,962	4,296,429	4,228,896
Income (loss) before State and Federal Taxes					7,218,479	7,966,781	7,868,254	7,758,337	7,649,959	7,539,315	7,422,208	7,315,007	7,190,302	7,070,532	6,948,552	6,818,841	6,698,648	6,556,141	6,428,462	6,297,661
Book Depreciation					(1,382,866)	(1,394,024)	(1,391,056)	(1,396,962)	(1,398,780)	(1,400,275)	(1,405,611)	(1,398,379)	(1,405,952)	(1,405,849)	(1,405,176)	(1,409,408)	(1,401,253)	(1,412,498)	(1,405,954)	(1,399,524)
Tax Depreciation					(831,880)	(838,118)	(844,404)	(850,737)	(857,118)	(863,547)	(870,023)	(876,548)	(883,122)	(889,746)	(896,419)	(903,142)	(909,916)	(916,739)	(923,616)	(930,542)
Difference Tax over Book Depreciation					550,986	555,906	546,652	546,225	541,662	536,728	535,588	521,831	522,830	516,103	508,757	506,266	491,337	495,759	482,338	468,982
Income Adjusted for Tax Depreciation					7,769,465	8,522,687	8,414,906	8,304,562	8,191,621	8,076,043	7,957,796	7,836,838	7,713,132	7,586,635	7,457,309	7,325,107	7,189,985	7,051,900	6,910,800	6,766,643
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					2,244,598	2,462,204	2,431,066	2,399,188	2,366,559	2,333,169	2,299,007	2,264,062	2,228,324	2,191,779	2,154,417	2,116,223	2,077,187	2,037,294	1,996,530	1,954,883
Income After Tax					5,524,867	6,060,483	5,983,840	5,905,374	5,825,062	5,742,874	5,658,789	5,572,776	5,484,808	5,394,856	5,302,892	5,208,884	5,112,798	5,014,606	4,914,270	4,811,760
Deferred Income Taxes					159,179	160,601	157,928	157,804	156,486	155,061	154,731	150,757	151,046	149,102	146,980	146,260	141,948	143,225	139,347	135,489
Accumulated Deferred Income Taxes					(8,258,054)	(8,097,453)	(7,939,525)	(7,781,721)	(7,625,235)	(7,470,174)	(7,315,443)	(7,164,686)	(7,013,640)	(6,864,538)	(6,717,558)	(6,571,298)	(6,429,350)	(6,286,125)	(6,146,778)	(6,011,289)
Income After Taxes (Book Depreciation)					5,133,060	5,665,178	5,595,116	5,516,953	5,439,886	5,361,207	5,277,932	5,201,702	5,113,024	5,027,855	4,941,115	4,848,878	4,763,409	4,662,072	4,571,279	4,478,267
Plus Deferred Taxes					159,179	160,601	157,928	157,804	156,486	155,061	154,731	150,757	151,046	149,102	146,980	146,260	141,948	143,225	139,347	135,489
Plus Interest					283,512	274,062	264,927	256,096	247,559	239,307	231,330	223,619	216,165	208,960	201,994	195,261	188,753	182,461	176,379	170,499
After Tax Income Debt Free					5,257,393	5,778,639	5,702,115	5,615,245	5,530,959	5,445,453	5,354,531	5,274,564	5,178,143	5,087,713	4,996,129	4,897,879	4,810,214	4,701,308	4,608,311	4,513,277
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	2,139,868				5,315,605	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542
CA as % of Revenues	37.15%	37.15%	37.15%	37.15%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					96,008,849.00	96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00
Additions					831,880.00	838,118.00	844,404.00	850,737.00	857,118.00	863,547.00	870,023.00	876,548.00	883,122.00	889,746.00	896,419.00	903,142.00	909,916.00	916,739.00	923,616.00	930,542.00
Retirements					(207,970.00)	(209,529.00)	(211,103.00)	(212,684.00)	(214,279.00)	(215,886.00)	(217,507.00)	(219,136.00)	(220,781.00)	(222,436.00)	(224,105.00)	(225,786.00)	(227,479.00)	(229,184.00)	(230,904.00)	(232,635.00)
End Balance	81,302,701.00				96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00	106,573,062.00
End Balance Check					96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00	106,573,062.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base		Periods:																	
		1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Begin Balance					(54,249,678.26)	(55,424,573.91)	(56,609,069.03)	(57,789,022.39)	(58,973,300.06)	(60,157,801.10)	(61,342,189.70)	(62,530,294.09)	(63,709,537.42)	(64,894,708.27)	(66,078,121.17)	(67,259,192.02)	(68,442,814.51)	(69,616,588.52)	(70,799,902.98)	(71,974,953.12)
Depreciation					(1,382,865.65)	(1,394,024.12)	(1,391,056.36)	(1,396,961.67)	(1,398,780.04)	(1,400,274.60)	(1,405,611.39)	(1,398,379.33)	(1,405,951.85)	(1,405,848.90)	(1,405,175.85)	(1,409,408.49)	(1,401,253.01)	(1,412,498.46)	(1,405,954.14)	(1,399,524.01)
Retirements					207,970.00	209,529.00	211,103.00	212,684.00	214,279.00	215,886.00	217,507.00	219,136.00	220,781.00	222,436.00	224,105.00	225,786.00	227,479.00	229,184.00	230,904.00	232,635.00
End Balance					(55,424,573.91)	(56,609,069.03)	(57,789,022.39)	(58,973,300.06)	(60,157,801.10)	(61,342,189.70)	(62,530,294.09)	(63,709,537.42)	(64,894,708.27)	(66,078,121.17)	(67,259,192.02)	(68,442,814.51)	(69,616,588.52)	(70,799,902.98)	(71,974,953.12)	(73,141,842.13)
End Balance Check					(55,424,573.91)	(56,609,069.03)	(57,789,022.39)	(58,973,300.06)	(60,157,801.10)	(61,342,189.70)	(62,530,294.09)	(63,709,537.42)	(64,894,708.27)	(66,078,121.17)	(67,259,192.02)	(68,442,814.51)	(69,616,588.52)	(70,799,902.98)	(71,974,953.12)	(73,141,842.13)
Net Plant																				
Begin Balance					41,759,170.74	41,208,185.09	40,652,278.97	40,105,626.61	39,559,401.94	39,017,739.90	38,481,012.30	37,945,423.91	37,423,592.58	36,900,762.73	36,384,659.83	35,875,902.98	35,369,636.49	34,878,299.48	34,382,540.02	33,900,201.88
End Balance					41,208,185.09	40,652,278.97	40,105,626.61	39,559,401.94	39,017,739.90	38,481,012.30	37,945,423.91	37,423,592.58	36,900,762.73	36,384,659.83	35,875,902.98	35,369,636.49	34,878,299.48	34,382,540.02	33,900,201.88	33,431,219.87
Total Assest					46,523,790.09	46,286,820.97	45,740,168.61	45,193,943.94	44,652,281.90	44,115,554.30	43,579,965.91	43,058,134.58	42,535,304.73	42,019,201.83	41,510,444.98	41,004,178.49	40,512,841.48	40,017,082.02	39,534,743.88	39,065,761.87
Tax Depreciation of Property, Plant, & Equipment																				
Total MACRS Depreciation					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Balance					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation					(831,880.00)	(838,118.00)	(844,404.00)	(850,737.00)	(857,118.00)	(863,547.00)	(870,023.00)	(876,548.00)	(883,122.00)	(889,746.00)	(896,419.00)	(903,142.00)	(909,916.00)	(916,739.00)	(923,616.00)	(930,542.00)
Retirements					207,970.00	209,529.00	211,103.00	212,684.00	214,279.00	215,886.00	217,507.00	219,136.00	220,781.00	222,436.00	224,105.00	225,786.00	227,479.00	229,184.00	230,904.00	232,635.00
End Balance					(623,910.00)	(628,589.00)	(633,301.00)	(638,053.00)	(642,839.00)	(647,661.00)	(652,516.00)	(657,412.00)	(662,341.00)	(667,310.00)	(672,314.00)	(677,356.00)	(682,437.00)	(687,555.00)	(692,712.00)	(697,907.00)
End Balance Check					(623,910.00)	(628,589.00)	(633,301.00)	(638,053.00)	(642,839.00)	(647,661.00)	(652,516.00)	(657,412.00)	(662,341.00)	(667,310.00)	(672,314.00)	(677,356.00)	(682,437.00)	(687,555.00)	(692,712.00)	(697,907.00)
Net Plant																				
Begin Balance					96,008,849.00	96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00
End Balance					96,008,849.00	96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00
Tax					(831,880.00)	(838,118.00)	(844,404.00)	(850,737.00)	(857,118.00)	(863,547.00)	(870,023.00)	(876,548.00)	(883,122.00)	(889,746.00)	(896,419.00)	(903,142.00)	(909,916.00)	(916,739.00)	(923,616.00)	(930,542.00)
Book					(1,382,865.65)	(1,394,024.12)	(1,391,056.36)	(1,396,961.67)	(1,398,780.04)	(1,400,274.60)	(1,405,611.39)	(1,398,379.33)	(1,405,951.85)	(1,405,848.90)	(1,405,175.85)	(1,409,408.49)	(1,401,253.01)	(1,412,498.46)	(1,405,954.14)	(1,399,524.01)
					550,985.65	555,906.12	546,652.36	546,224.67	541,662.04	536,727.60	535,588.39	521,831.33	522,829.85	516,102.90	508,756.85	506,266.49	491,337.01	495,759.46	482,338.14	468,982.01
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	2,217,961				5,509,596	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172
CL as % of Revenues	38.51%	38.51%	38.51%	38.51%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Beg	23,577,783.00				10,161,733.00	9,823,009.00	9,495,575.00	9,179,056.00	8,873,087.00	8,577,317.00	8,291,406.00	8,015,026.00	7,747,858.00	7,489,596.00	7,239,943.00	6,998,612.00	6,765,325.00	6,539,814.00	6,321,820.00	6,111,093.00
Additional Debt	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repayment					(338,724)	(327,434)	(316,519)	(305,969)	(295,770)	(285,911)	(276,380)	(267,168)	(258,262)	(249,653)	(241,331)	(233,287)	(225,511)	(217,994)	(210,727)	(203,703)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					9,823,009.00	9,495,575.00	9,179,056.00	8,873,087.00	8,577,317.00	8,291,406.00	8,015,026.00	7,747,858.00	7,489,596.00	7,239,943.00	6,998,612.00	6,765,325.00	6,539,814.00	6,321,820.00	6,111,093.00	5,907,390.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					8,417,233	8,258,054	8,097,453	7,939,525	7,781,721	7,625,235	7,470,174	7,315,443	7,164,686	7,013,640	6,864,538	6,717,558	6,571,298	6,429,350	6,286,125	6,146,778
Additions to Deferred Asset					(159,179)	(160,601)	(157,928)	(157,804)	(156,486)	(155,061)	(154,731)	(150,757)	(151,046)	(149,102)	(146,980)	(146,260)	(141,948)	(143,225)	(139,347)	(135,489)
Total Deferred Tax Liability					8,258,054	8,097,453	7,939,525	7,781,721	7,625,235	7,470,174	7,315,443	7,164,686	7,013,640	6,864,538	6,717,558	6,571,298	6,429,350	6,286,125	6,146,778	6,011,289
Total Liabilities					23,590,659.00	23,433,200.00	22,958,753.00	22,494,980.00	22,042,724.00	21,601,752.00	21,170,641.00	20,752,716.00	20,343,408.00	19,944,653.00	19,556,342.00	19,176,795.00	18,809,336.00	18,448,117.00	18,098,043.00	17,758,851.00
Equity																				
Proportion of Capital	71%																			
Beginning Equity Capital	57,724,918				144,067,691	149,200,751	154,865,929	160,461,045	165,977,998	171,417,884	176,779,091	182,057,023	187,258,725	192,371,749	197,399,604	202,340,719	207,189,596	211,953,005	216,615,077	221,186,356
Additions to Equity (Retained Earnings)					5,133,060	5,665,178	5,595,116	5,516,953	5,439,886	5,361,207	5,277,932	5,201,702	5,113,024	5,027,855	4,941,115	4,848,878	4,763,409	4,662,072	4,571,279	4,478,267
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					149,200,751	154,865,929	160,461,045	165,977,998	171,417,884	176,779,091	182,057,023	187,258,725	192,371,749	197,399,604	202,340,719	207,189,596	211,953,005	216,615,077	221,186,356	225,664,623
Operating Income					7,501,991	8,240,843	8,133,181	8,014,433	7,897,518	7,778,622	7,653,538	7,538,626	7,406,467	7,279,492	7,150,546	7,014,102	6,887,401	6,738,602	6,604,841	6,468,160
Return On Equity					5.03%	5.32%	5.07%	4.83%	4.61%	4.40%	4.20%	4.03%	3.85%	3.69%	3.53%	3.39%	3.25%	3.11%	2.99%	2.87%
Total Liabilities & Stockholders Equity					172,791,410	178,299,129	183,419,798	188,472,978	193,460,608	198,380,843	203,227,664	208,011,441	212,715,157	217,344,257	221,897,061	226,366,391	230,762,341	235,063,194	239,284,399	243,423,474
Assets					46,523,790	46,286,821	45,740,169	45,193,944	44,652,282	44,115,554	43,579,966	43,058,135	42,535,305	42,019,202	41,510,445	41,004,178	40,512,841	40,017,082	39,534,744	39,065,762
Liabilities & Stockholders Equity less Assets					126,267,620	132,012,308	137,679,629	143,279,034	148,808,326	154,265,289	159,647,698	164,953,306	170,179,852	175,325,055	180,386,616	185,362,213	190,249,500	195,046,112	199,749,655	204,357,712
Dividend					126,267,620	132,012,308	137,679,629	143,279,034	148,808,326	154,265,289	159,647,698	164,953,306	170,179,852	175,325,055	180,386,616	185,362,213	190,249,500	195,046,112	199,749,655	204,357,712
Final Stockholder Equity					46,523,790	46,286,821	45,740,169	45,193,944	44,652,282	44,115,554	43,579,966	43,058,135	42,535,305	42,019,202	41,510,445	41,004,178	40,512,841	40,017,082	39,534,744	39,065,762
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					831,880.00	838,118.00	844,404.00	850,737.00	857,118.00	863,547.00	870,023.00	876,548.00	883,122.00	889,746.00	896,419.00	903,142.00	909,916.00	916,739.00	923,616.00	930,542.00
Changes to Working Capital																				
Current Assets	2,139,868				5,315,605	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542
Current Liabilities	2,217,961				5,509,596	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172
Working Capital	(78,093)				(193,991)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)
Changes to Working Capital					-	(11,639)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CASH FLOW																				
Income from Operations					5,416,572	5,939,240	5,860,043	5,773,049	5,687,445	5,600,514	5,509,262	5,425,321	5,329,189	5,236,815	5,143,109	5,044,139	4,952,162	4,844,533	4,747,658	4,648,766
Non Cash Expense (depreciation)					1,382,866	1,394,024	1,391,056	1,396,962	1,398,780	1,400,275	1,405,611	1,398,379	1,405,952	1,405,849	1,405,176	1,409,408	1,401,253	1,412,498	1,405,954	1,399,524
Capital Expenditures					831,880	838,118	844,404	850,737	857,118	863,547	870,023	876,548	883,122	889,746	896,419	903,142	909,916	916,739	923,616	930,542
Change in Working Capital					-	(11,639)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Cash Flows					5,967,558	6,506,785	6,406,695	6,319,274	6,229,107	6,137,242	6,044,850	5,947,152	5,852,019	5,752,918	5,651,866	5,550,405	5,443,499	5,340,292	5,229,996	5,117,748
Period					25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036
PW of Cashflow					0.147	0.137	0.127	0.118	0.109	0.101	0.094	0.087	0.081	0.075	0.07	0.064	0.06	0.055	0.051	0.048
Accumulated PW of Cashflows	56,426,092				14,944,508 163,979,947	15,186,394 179,166,341	13,861,346 193,027,687	12,703,308 205,730,995	11,566,978 217,297,973	10,559,960 227,857,933	9,680,126 237,538,059	8,814,464 246,352,523	8,075,295 254,427,818	7,350,503 261,778,321	6,739,963 268,518,284	6,051,629 274,569,913	5,564,127 280,134,040	5,003,747 285,137,787	4,544,009 289,681,796	4,184,926 293,866,722
CASH FLOW																				
Income from Operations					5,524,867	6,060,483	5,983,840	5,905,374	5,825,062	5,742,874	5,658,789	5,572,776	5,484,808	5,394,856	5,302,892	5,208,884	5,112,798	5,014,606	4,914,270	4,811,760
Depreciation					(831,880)	(838,118)	(844,404)	(850,737)	(857,118)	(863,547)	(870,023)	(876,548)	(883,122)	(889,746)	(896,419)	(903,142)	(909,916)	(916,739)	(923,616)	(930,542)
Capital Expenditures					831,880	838,118	844,404	850,737	857,118	863,547	870,023	876,548	883,122	889,746	896,419	903,142	909,916	916,739	923,616	930,542
Change in Working Capital						(11,639)														
Net Cash Flows					5,524,867	6,072,122	5,983,840	5,905,374	5,825,062	5,742,874	5,658,789	5,572,776	5,484,808	5,394,856	5,302,892	5,208,884	5,112,798	5,014,606	4,914,270	4,811,760
Period					25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036
PW of Cashflow					0.147	0.137	0.127	0.118	0.109	0.101	0.094	0.087	0.081	0.075	0.07	0.064	0.06	0.055	0.051	0.048
Accumulated PW of Cashflows	54,267,994				13,835,880 161,944,957	14,171,920 176,116,877	12,946,469 189,063,346	11,871,266 200,934,612	10,816,697 211,751,309	9,881,396 221,632,705	9,061,894 230,694,599	8,259,590 238,954,189	7,568,574 246,522,763	6,893,008 253,415,771	6,323,805 259,739,576	5,679,267 265,418,843	5,226,098 270,644,941	4,698,586 275,343,527	4,269,695 279,613,222	3,934,711 283,547,933

Rate Case Forecasts																				
Rate Base																				
Plant In Service					96,632,759.00	97,261,348.00	97,894,649.00	98,532,702.00	99,175,541.00	99,823,202.00	100,475,718.00	101,133,130.00	101,795,471.00	102,462,781.00	103,135,095.00	103,812,451.00	104,494,888.00	105,182,443.00	105,875,155.00	106,573,062.00
Accumulated Book Depreciation					(55,424,573.91)	(56,609,069.03)	(57,789,022.39)	(58,973,300.06)	(60,157,801.10)	(61,342,189.70)	(62,530,294.09)	(63,709,537.42)	(64,894,708.27)	(66,078,121.17)	(67,259,192.02)	(68,442,814.51)	(69,616,588.52)	(70,799,902.98)	(71,974,953.12)	(73,141,842.13)
Working Capital					(193,991.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)
Accumulated Deferred Income Tax					(8,258,054)	(8,097,453)	(7,939,525)	(7,781,721)	(7,625,235)	(7,470,174)	(7,315,443)	(7,164,686)	(7,013,640)	(6,864,538)	(6,717,558)	(6,571,298)	(6,429,350)	(6,286,125)	(6,146,778)	(6,011,289)
Rate Base					32,756,140.09	32,349,195.97	31,960,471.61	31,572,050.94	31,186,874.90	30,805,208.30	30,424,350.91	30,053,276.58	29,681,492.73	29,314,491.83	28,952,714.98	28,592,708.49	28,243,319.48	27,890,785.02	27,547,793.88	27,214,300.87
Authorized Return on Rate Base	7.21%				2,361,718.00	2,332,377.00	2,304,350.00	2,276,345.00	2,248,574.00	2,221,056.00	2,193,596.00	2,166,841.00	2,140,036.00	2,113,575.00	2,087,491.00	2,061,534.00	2,036,343.00	2,010,926.00	1,986,196.00	1,962,151.00
O&M Expenses					5,422,995.00	5,531,456.00	5,642,086.00	5,754,928.00	5,870,025.00	5,987,426.00	6,107,174.00	6,229,318.00	6,353,904.00	6,480,982.00	6,610,601.00	6,742,813.00	6,877,669.00	7,015,223.00	7,155,528.00	7,298,639.00
Book Depreciation					1,382,865.65	1,394,024.12	1,391,056.36	1,396,961.67	1,398,780.04	1,400,274.60	1,405,611.39	1,398,379.33	1,405,951.85	1,405,848.90	1,405,175.85	1,409,408.49	1,401,253.01	1,412,498.46	1,405,954.14	1,399,524.01
Ratemaking Interest Expense					283,512.00	274,062.00	264,927.00	256,096.00	247,559.00	239,307.00	231,330.00	223,619.00	216,165.00	208,960.00	201,994.00	195,261.00	188,753.00	182,461.00	176,379.00	170,499.00
Revenue Requirement					9,451,090.65	9,531,919.12	9,602,419.36	9,684,330.67	9,764,938.04	9,848,063.60	9,937,711.39	10,018,157.33	10,116,056.85	10,209,365.90	10,305,261.85	10,409,016.49	10,504,018.01	10,621,108.46	10,724,057.14	10,830,813.01
O&M Expenses					5,422,995.00	5,531,456.00	5,642,086.00	5,754,928.00	5,870,025.00	5,987,426.00	6,107,174.00	6,229,318.00	6,353,904.00	6,480,982.00	6,610,601.00	6,742,813.00	6,877,669.00	7,015,223.00	7,155,528.00	7,298,639.00
Depreciation Expense					1,382,865.65	1,394,024.12	1,391,056.36	1,396,961.67	1,398,780.04	1,400,274.60	1,405,611.39	1,398,379.33	1,405,951.85	1,405,848.90	1,405,175.85	1,409,408.49	1,401,253.01	1,412,498.46	1,405,954.14	1,399,524.01
Interest					283,512.00	274,062.00	264,927.00	256,096.00	247,559.00	239,307.00	231,330.00	223,619.00	216,165.00	208,960.00	201,994.00	195,261.00	188,753.00	182,461.00	176,379.00	170,499.00
Pretax Income					2,361,718.00	2,332,377.00	2,304,350.00	2,276,345.00	2,248,574.00	2,221,056.00	2,193,596.00	2,166,841.00	2,140,036.00	2,113,575.00	2,087,491.00	2,061,534.00	2,036,343.00	2,010,926.00	1,986,196.00	1,962,151.00
State & Federal Taxes @ 28.89%					682,300.00	673,824.00	665,727.00	657,636.00	649,613.00	641,663.00	633,730.00	626,000.00	618,256.00	610,612.00	603,076.00	595,577.00	588,299.00	580,957.00	573,812.00	566,865.00
After Tax Income					1,679,418.00	1,658,553.00	1,638,623.00	1,618,709.00	1,598,961.00	1,579,393.00	1,559,866.00	1,540,841.00	1,521,780.00	1,502,963.00	1,484,415.00	1,465,957.00	1,448,044.00	1,429,969.00	1,412,384.00	1,395,286.00
Current Revenue					14,307,852.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00
Revenue Requirement					10,133,390.65	10,205,743.12	10,268,146.36	10,341,966.67	10,414,551.04	10,489,726.60	10,571,441.39	10,644,157.33	10,734,312.85	10,819,977.90	10,908,337.85	11,004,593.49	11,092,317.01	11,202,065.46	11,297,869.14	11,397,678.01
Required Revenue Increase					-29%	-33%	-32%	-32%	-31%	-31%	-30%	-30%	-29%	-29%	-28%	-27%	-27%	-26%	-26%	-25%
Income from Operations					5,416,572	5,939,240	5,860,043	5,773,049	5,687,445	5,600,514	5,509,262	5,425,321	5,329,189	5,236,815	5,143,109	5,044,139	4,952,162	4,844,533	4,747,658	4,648,766
Return on Rate Base					16.54%	18.36%	18.34%	18.29%	18.24%	18.18%	18.11%	18.05%	17.95%	17.86%	17.76%	17.64%	17.53%	17.37%	17.23%	17.08%
Required Return	7.21%				7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%
Authorized Return					2,361,718	2,332,377	2,304,350	2,276,345	2,248,574	2,221,056	2,193,596	2,166,841	2,140,036	2,113,575	2,087,491	2,061,534	2,036,343	2,010,926	1,986,196	1,962,151
After-tax Net Income					5,133,060	5,665,178	5,595,116	5,516,953	5,439,886	5,361,207	5,277,932	5,201,702	5,113,024	5,027,855	4,941,115	4,848,878	4,763,409	4,662,072	4,571,279	4,478,267
Taxes					2,085,419	2,301,603	2,273,138	2,241,384	2,210,073	2,178,108	2,144,276	2,113,305	2,077,278	2,042,677	2,007,437	1,969,963	1,935,239	1,894,069	1,857,183	1,819,394
Pre-tax Net Income					7,218,479	7,966,781	7,868,254	7,758,337	7,649,959	7,539,315	7,422,208	7,315,007	7,190,302	7,070,532	6,948,552	6,818,841	6,698,648	6,556,141	6,428,462	6,297,661
Interest Expense					283,512	274,062	264,927	256,096	247,559	239,307	231,330	223,619	216,165	208,960	201,994	195,261	188,753	182,461	176,379	170,499
Operating Income					7,501,991	8,240,843	8,133,181	8,014,433	7,897,518	7,778,622	7,653,538	7,538,626	7,406,467	7,279,492	7,150,546	7,014,102	6,887,401	6,738,602	6,604,841	6,468,160
Operating Expenses					6,805,861	6,925,480	7,033,142	7,151,890	7,268,805	7,387,701	7,512,785	7,627,697	7,759,856	7,886,831	8,015,777	8,152,221	8,278,922	8,427,721	8,561,482	8,698,163
Revenue Requirement					14,307,852	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323
Required Return					2,361,718	2,332,377	2,304,350	2,276,345	2,248,574	2,221,056	2,193,596	2,166,841	2,140,036	2,113,575	2,087,491	2,061,534	2,036,343	2,010,926	1,986,196	1,962,151
Operating Expenses					6,805,861	6,925,480	7,033,142	7,151,890	7,268,805	7,387,701	7,512,785	7,627,697	7,759,856	7,886,831	8,015,777	8,152,221	8,278,922	8,427,721	8,561,482	8,698,163
Revenue Requirement					9,167,579	9,257,857	9,337,492	9,428,235	9,517,379	9,608,757	9,706,381	9,794,538	9,899,892	10,000,406	10,103,268	10,213,755	10,315,265	10,438,647	10,547,678	10,660,314
Required Rate Increase					-29.18%	-32.71%	-32.30%	-31.81%	-31.33%	-30.84%	-30.30%	-29.82%	-29.22%	-28.66%	-28.08%	-27.44%	-26.86%	-26.14%	-25.51%	-24.85%
Proposed Rate Increase					26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Rate Increase Scenario	6				0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0				26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
No increases (Input 2)	2				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%
Modest Rate Increases: (Input 4)	5																			
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6				0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Required Rate Increases: (Input 6)	7				248.4%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%
	4				0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%
Changes In Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)					-	318,937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant & Equipment																				
Additions (Source negative / Use positive)					831,880	838,118	844,404	850,737	857,118	863,547	870,023	876,548	883,122	889,746	896,419	903,142	909,916	916,739	923,616	930,542
Liabilities																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods																
	1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Change in Current Liabilities (Source Positive / Use negative)				-	330,576	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Debt																			
Additional Long Term Debt Source Positive / Use Negative				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Paid Long term Debt (Source positive / Use negative)				338,724	327,434	316,519	305,969	295,770	285,911	276,380	267,168	258,262	249,653	241,331	233,287	225,511	217,994	210,727	203,703
Equity																			
Additions to Equity (Source Positive / Use Negative)																			
Dividend (Source negative / Use Positive)																			
Funds Provided from Operations																			
Sources of Funds																			
Net Income (Use Negative / Source Positive)				5,133,060	5,665,178	5,595,116	5,516,953	5,439,886	5,361,207	5,277,932	5,201,702	5,113,024	5,027,855	4,941,115	4,848,878	4,763,409	4,662,072	4,571,279	4,478,267
Depreciation (Source positive /use negative)				1,382,866	1,394,024	1,391,056	1,396,962	1,398,780	1,400,275	1,405,611	1,398,379	1,405,952	1,405,849	1,405,176	1,409,408	1,401,253	1,412,498	1,406,964	1,399,524
Current Liabilities (Source Positive)					330,576	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				6,515,926	7,389,778	6,986,172	6,913,915	6,838,666	6,761,482	6,683,543	6,600,081	6,518,975	6,433,704	6,346,291	6,258,286	6,164,662	6,074,570	5,977,233	5,877,791
Sources and Uses of Funds																			
Sources of Funds																			
Current Liabilities (Source Positive)																			
Uses of Funds																			
Current Assets. Increase (Use)					318,937														
Fixed Assets. Assets. Increase (Use)				831,880	838,118	844,404	850,737	857,118	863,547	870,023	876,548	883,122	889,746	896,419	903,142	909,916	916,739	923,616	930,542
Total Uses of Funds				831,880	1,157,055	844,404	850,737	857,118	863,547	870,023	876,548	883,122	889,746	896,419	903,142	909,916	916,739	923,616	930,542
Funds from Financing Activities																			
Changes in Debt																			
Increase in Long Term Debt																			
Repayment of Long Term Debt				(338,724)	(327,434)	(316,519)	(305,969)	(295,770)	(285,911)	(276,380)	(267,168)	(258,262)	(249,653)	(241,331)	(233,287)	(225,511)	(217,994)	(210,727)	(203,703)
Funds fom Equity																			
Dividends Paid (Use)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																			
Total Funds from Financing Activities				(338,724.00)	(327,434.00)	(316,519.00)	(305,969.00)	(295,770.00)	(285,911.00)	(276,380.00)	(267,168.00)	(258,262.00)	(249,653.00)	(241,331.00)	(233,287.00)	(225,511.00)	(217,994.00)	(210,727.00)	(203,703.00)
Total Funds Needed				5,345,322.00	5,905,289.00	5,825,249.00	5,757,209.00	5,685,778.00	5,612,024.00	5,537,140.00	5,456,365.00	5,377,592.00	5,294,305.00	5,208,541.00	5,121,857.00	5,029,235.00	4,939,837.00	4,842,890.00	4,743,546.00
Financing																			
Debt	29%			(1,550,143.00)	(1,712,534.00)	(1,689,322.00)	(1,669,591.00)	(1,648,876.00)	(1,627,487.00)	(1,605,771.00)	(1,582,346.00)	(1,559,502.00)	(1,535,348.00)	(1,510,477.00)	(1,485,339.00)	(1,458,478.00)	(1,432,553.00)	(1,404,438.00)	(1,375,628.00)
Equity	71%			(3,795,179.00)	(4,192,755.00)	(4,135,927.00)	(4,087,618.00)	(4,036,902.00)	(3,984,537.00)	(3,931,369.00)	(3,874,019.00)	(3,818,090.00)	(3,758,957.00)	(3,698,064.00)	(3,636,518.00)	(3,570,757.00)	(3,507,284.00)	(3,438,452.00)	(3,367,918.00)
Funds Provided by Financing				(5,345,322.00)	(5,905,289.00)	(5,825,249.00)	(5,757,209.00)	(5,685,778.00)	(5,612,024.00)	(5,537,140.00)	(5,456,365.00)	(5,377,592.00)	(5,294,305.00)	(5,208,541.00)	(5,121,857.00)	(5,029,235.00)	(4,939,837.00)	(4,842,890.00)	(4,743,546.00)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth																				
Growth	0.0%	0.0%	0.0%	0.0%				0.0%					0.0%					0.0%		
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-24.17%	-23.38%	-22.62%	-21.92%	-21.10%	-20.29%	-19.43%	-18.60%	-17.68%	-16.75%	-15.85%	-14.77%	-13.82%	-12.79%	-11.69%	-10.59%
Proposed Rate Increase	Calculated in DCF				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Revenue Adjustments	Calculated				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Base and Forecast	5,759,816				15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323
Operating Expenses					29%	29%	30%	30%	31%	32%	32%	33%	34%	34%	35%	36%	36%	37%	38%	38%
Expense Level 1: Sewer & Collection Fees	1,888,488				4,338,318	4,425,084	4,513,586	4,603,858	4,695,935	4,789,854	4,885,651	4,983,364	5,083,031	5,184,692	5,288,386	5,394,154	5,502,037	5,612,078	5,724,320	5,838,806
Expense Level 1: Sewer & Collection Fees Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	729,237				1,675,236	1,708,741	1,742,916	1,777,774	1,813,329	1,849,596	1,886,588	1,924,320	1,962,806	2,002,062	2,042,103	2,082,945	2,124,604	2,167,096	2,210,438	2,254,647
Expense Level 2: Wages & Benefits Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	250,824				576,203	587,727	599,482	611,472	623,701	636,175	648,899	661,877	675,115	688,617	702,389	716,437	730,766	745,381	760,289	775,495
Expense Level 3: Repair & Maintenance Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	43,650				100,272	102,277	104,323	106,409	108,537	110,708	112,922	115,180	117,484	119,834	122,231	124,676	127,170	129,713	132,307	134,953
Expense Level 4: Contracted Services Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097				197,789	201,745	205,780	209,896	214,094	218,376	222,744	227,199	231,743	236,378	241,106	245,928	250,847	255,864	260,981	266,201
Expense Level 5: Utilities Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376				556,794	567,930	579,289	590,875	602,693	614,747	627,042	639,583	652,375	665,423	678,731	692,306	706,152	720,275	734,681	749,375
Expense Level 6: Insurance & Other Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Property Taxes	81,302,701				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Plant					33,431,220	32,976,064	32,521,440	32,073,675	31,645,943	31,224,353	30,813,259	30,411,263	30,025,404	29,646,784	29,278,321	28,929,526	28,576,706	28,244,788	27,925,751	27,614,888
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				1,392,677	1,399,178	1,399,404	1,386,508	1,387,556	1,384,304	1,382,505	1,373,723	1,373,892	1,371,200	1,359,051	1,370,652	1,357,387	1,352,196	1,351,772	1,348,237
Total Operating Expenses					8,837,289	8,992,682	9,144,780	9,286,792	9,445,845	9,603,760	9,766,351	9,925,246	10,096,446	10,268,206	10,433,997	10,627,098	10,798,963	10,982,603	11,174,788	11,367,714
Cost of Operation as % of Revenues (Calculation)					58.3%	59.3%	60.3%	61.2%	62.3%	63.3%	64.4%	65.4%	66.6%	67.7%	68.8%	70.1%	71.2%	72.4%	73.7%	75.0%
Operating Expenses less Depreciation					7,444,612	7,593,504	7,745,376	7,900,284	8,058,289	8,219,456	8,383,846	8,551,523	8,722,554	8,897,006	9,074,946	9,256,446	9,441,576	9,630,407	9,823,016	10,019,477
Operating Income					6,329,034	6,173,641	6,021,543	5,879,531	5,720,478	5,562,563	5,399,972	5,241,077	5,069,877	4,898,117	4,732,326	4,539,225	4,367,360	4,183,720	3,991,535	3,798,609
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					164,816	159,322	154,012	148,878	143,915	139,118	134,481	129,998	125,665	121,476	117,427	113,513	109,729	106,071	102,536	99,118
Interest Exp as % of Debt	2.79%				2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%
Total nonoperating revenues (expenses)	-				164,816.00	159,322.00	154,012.00	148,878.00	143,915.00	139,118.00	134,481.00	129,998.00	125,665.00	121,476.00	117,427.00	113,513.00	109,729.00	106,071.00	102,536.00	99,118.00
Income (loss) before State and Federal Taxes	-				6,164,218	6,014,319	5,867,531	5,730,653	5,576,563	5,423,445	5,265,491	5,111,079	4,944,212	4,776,641	4,614,899	4,425,712	4,257,631	4,077,649	3,888,999	3,699,491
State and Federal Taxes	-				1,780,843	1,737,537	1,695,130	1,655,586	1,611,069	1,566,833	1,521,200	1,476,591	1,428,383	1,379,971	1,333,244	1,278,588	1,230,030	1,178,033	1,123,532	1,068,783
State and Federal Tax Rate	28.89%				28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-				4,383,375	4,276,782	4,172,401	4,075,067	3,965,494	3,856,612	3,744,291	3,634,488	3,515,829	3,396,670	3,281,655	3,147,124	3,027,601	2,899,616	2,765,467	2,630,708
Income After Taxes plus Interest	-				4,548,191	4,436,104	4,326,413	4,223,945	4,109,409	3,995,730	3,878,772	3,764,486	3,641,494	3,518,146	3,399,082	3,260,637	3,137,330	3,005,687	2,868,003	2,729,826
Earnings before Interest, Taxes, Depreciation, & Amortization	-				4,160,025	4,097,745	4,030,687	3,954,867	3,885,896	3,813,201	3,740,077	3,661,618	3,587,003	3,509,375	3,424,889	3,352,701	3,264,687	3,179,850	3,096,243	3,009,280
Income (loss) before State and Federal Taxes					6,164,218	6,014,319	5,867,531	5,730,653	5,576,563	5,423,445	5,265,491	5,111,079	4,944,212	4,776,641	4,614,899	4,425,712	4,257,631	4,077,649	3,888,999	3,699,491
Book Depreciation					(1,392,677)	(1,399,178)	(1,399,404)	(1,386,508)	(1,387,556)	(1,384,304)	(1,382,505)	(1,373,723)	(1,373,892)	(1,371,200)	(1,359,051)	(1,370,652)	(1,357,387)	(1,352,196)	(1,351,772)	(1,348,237)
Tax Depreciation					(937,521)	(982,336)	(1,027,770)	(1,035,477)	(1,043,243)	(1,051,067)	(1,058,950)	(1,066,893)	(1,074,894)	(1,082,956)	(1,091,076)	(1,099,260)	(1,107,507)	(1,115,812)	(1,124,182)	(1,132,612)
Difference Tax over Book Depreciation					455,156	416,841	371,634	351,031	344,312	333,237	323,556	306,830	298,998	288,244	267,975	271,393	249,881	236,384	227,590	215,625
Income Adjusted for Tax Depreciation					6,619,374	6,431,161	6,239,165	6,081,684	5,920,876	5,756,682	5,589,046	5,417,909	5,243,210	5,064,885	4,882,874	4,697,104	4,507,511	4,314,033	4,116,589	3,915,116
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					1,912,337	1,857,962	1,802,495	1,756,999	1,710,541	1,663,105	1,614,675	1,565,234	1,514,763	1,463,245	1,410,662	1,356,993	1,302,220	1,246,324	1,189,283	1,131,077
Income After Tax					4,707,037	4,573,199	4,436,670	4,324,685	4,210,335	4,093,577	3,974,371	3,852,675	3,728,447	3,601,640	3,472,212	3,340,131	3,205,291	3,067,709	2,927,306	2,784,039
Deferred Income Taxes					131,494	120,425	107,365	101,413	99,472	96,272	93,475	88,643	86,380	83,274	77,418	78,405	72,190	68,291	65,751	62,294
Accumulated Deferred Income Taxes					(5,879,795)	(5,759,370)	(5,652,005)	(5,550,592)	(5,451,120)	(5,354,848)	(5,261,373)	(5,172,730)	(5,086,350)	(5,003,076)	(4,925,658)	(4,847,253)	(4,775,063)	(4,706,772)	(4,641,021)	(4,578,727)
Income After Taxes (Book Depreciation)					4,383,375	4,276,782	4,172,401	4,075,067	3,965,494	3,856,612	3,744,291	3,634,488	3,515,829	3,396,670	3,281,655	3,147,124	3,027,601	2,899,616	2,765,467	2,630,708
Plus Deferred Taxes					131,494	120,425	107,365	101,413	99,472	96,272	93,475	88,643	86,380	83,274	77,418	78,405	72,190	68,291	65,751	62,294
Plus Interest					164,816	159,322	154,012	148,878	143,915	139,118	134,481	129,998	125,665	121,476	117,427	113,513	109,729	106,071	102,536	99,118
After Tax Income Debt Free					4,416,697	4,315,679	4,219,048	4,122,532	4,009,937	3,899,458	3,785,297	3,675,843	3,555,114	3,434,872	3,321,664	3,182,232	3,065,140	2,937,396	2,802,252	2,667,532
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	2,139,868				5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542
CA as % of Revenues	37.15%	37.15%	37.15%	37.15%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					106,573,062.00	107,276,202.00	107,984,618.00	108,698,348.00	109,417,430.00	110,141,903.00	110,871,810.00	111,607,192.00	112,348,089.00	113,094,542.00	113,846,595.00	114,604,287.00	115,367,660.00	116,136,762.00	116,911,633.00	117,692,316.00
Additions					937,521.00	944,554.00	951,639.00	958,775.00	965,966.00	973,210.00	980,509.00	987,864.00	995,272.00	1,002,737.00	1,010,256.00	1,017,833.00	1,025,469.00	1,033,159.00	1,040,909.00	1,048,715.00
Retirements					(234,381.00)	(236,138.00)	(237,909.00)	(239,693.00)	(241,493.00)	(243,303.00)	(245,127.00)	(246,967.00)	(248,819.00)	(250,684.00)	(252,564.00)	(254,460.00)	(256,367.00)	(258,288.00)	(260,226.00)	(262,178.00)
End Balance	81,302,701.00				107,276,202.00	107,984,618.00	108,698,348.00	109,417,430.00	110,141,903.00	110,871,810.00	111,607,192.00	112,348,089.00	113,094,542.00	113,846,595.00	114,604,287.00	115,367,660.00	116,136,762.00	116,911,633.00	117,692,316.00	118,478,853.00
End Balance Check					107,276,202.00	107,984,618.00	108,698,348.00	109,417,430.00	110,141,903.00	110,871,810.00	111,607,192.00	112,348,089.00	113,094,542.00	113,846,595.00	114,604,287.00	115,367,660.00	116,136,762.00	116,911,633.00	117,692,316.00	118,478,853.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Begin Balance					(73,141,842.13)	(74,300,137.95)	(75,463,177.51)	(76,624,672.79)	(77,771,487.50)	(78,917,550.21)	(80,058,550.91)	(81,195,929.21)	(82,322,685.10)	(83,447,757.97)	(84,568,274.40)	(85,674,761.42)	(86,790,953.83)	(87,891,974.16)	(88,985,881.80)	(90,077,427.99)
Depreciation					(1,392,676.82)	(1,399,177.56)	(1,399,404.28)	(1,386,507.71)	(1,387,555.71)	(1,384,303.70)	(1,382,505.30)	(1,373,722.89)	(1,373,891.87)	(1,371,200.43)	(1,359,051.02)	(1,370,652.41)	(1,357,387.33)	(1,352,195.64)	(1,351,772.19)	(1,348,237.16)
Retirements					234,381.00	236,138.00	237,909.00	239,693.00	241,493.00	243,303.00	245,127.00	246,967.00	248,819.00	250,684.00	252,564.00	254,460.00	256,367.00	258,288.00	260,226.00	262,178.00
End Balance					(74,300,137.95)	(75,463,177.51)	(76,624,672.79)	(77,771,487.50)	(78,917,550.21)	(80,058,550.91)	(81,195,929.21)	(82,322,685.10)	(83,447,757.97)	(84,568,274.40)	(85,674,761.42)	(86,790,953.83)	(87,891,974.16)	(88,985,881.80)	(90,077,427.99)	(91,163,487.15)
End Balance Check					(74,300,137.95)	(75,463,177.51)	(76,624,672.79)	(77,771,487.50)	(78,917,550.21)	(80,058,550.91)	(81,195,929.21)	(82,322,685.10)	(83,447,757.97)	(84,568,274.40)	(85,674,761.42)	(86,790,953.83)	(87,891,974.16)	(88,985,881.80)	(90,077,427.99)	(91,163,487.15)
Net Plant																				
Begin Balance					33,431,219.87	32,976,064.05	32,521,440.49	32,073,675.21	31,645,942.50	31,224,352.79	30,813,259.09	30,411,262.79	30,025,403.90	29,646,784.03	29,278,320.60	28,929,525.58	28,576,706.17	28,244,787.84	27,925,751.20	27,614,888.01
End Balance					32,976,064.05	32,521,440.49	32,073,675.21	31,645,942.50	31,224,352.79	30,813,259.09	30,411,262.79	30,025,403.90	29,646,784.03	29,278,320.60	28,929,525.58	28,576,706.17	28,244,787.84	27,925,751.20	27,614,888.01	27,315,365.85
Total Assest					38,610,606.05	38,155,982.49	37,708,217.21	37,280,484.50	36,858,894.79	36,447,801.09	36,045,804.79	35,659,945.90	35,281,326.03	34,912,862.60	34,564,067.58	34,211,248.17	33,879,329.84	33,560,293.20	33,249,430.01	32,949,907.85
Tax Depreciation of Property, Plant, & Equipment																				
Total MACRS Depreciation																				
Begin Balance					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation					(937,521.00)	(982,336.16)	(1,027,770.12)	(1,035,477.00)	(1,043,243.28)	(1,051,066.80)	(1,058,949.72)	(1,066,893.12)	(1,074,893.76)	(1,082,955.96)	(1,091,076.48)	(1,099,259.64)	(1,107,506.52)	(1,115,811.72)	(1,124,181.72)	(1,132,612.20)
Retirements					234,381.00	236,138.00	237,909.00	239,693.00	241,493.00	243,303.00	245,127.00	246,967.00	248,819.00	250,684.00	252,564.00	254,460.00	256,367.00	258,288.00	260,226.00	262,178.00
End Balance					(703,140.00)	(746,198.16)	(789,861.12)	(795,784.00)	(801,750.28)	(807,763.80)	(813,822.72)	(819,926.12)	(826,074.76)	(832,271.96)	(838,512.48)	(844,799.64)	(851,139.52)	(857,523.72)	(863,955.72)	(870,434.20)
End Balance Check					(703,140.00)	(746,198.16)	(789,861.12)	(795,784.00)	(801,750.28)	(807,763.80)	(813,822.72)	(819,926.12)	(826,074.76)	(832,271.96)	(838,512.48)	(844,799.64)	(851,139.52)	(857,523.72)	(863,955.72)	(870,434.20)
Net Plant																				
Begin Balance					106,573,062.00	107,276,202.00	107,984,618.00	108,698,348.00	109,417,430.00	110,141,903.00	110,871,810.00	111,607,192.00	112,348,089.00	113,094,542.00	113,846,595.00	114,604,287.00	115,367,660.00	116,136,762.00	116,911,633.00	117,692,316.00
End Balance					106,573,062.00	107,238,419.84	107,908,486.88	108,621,646.00	109,340,152.72	110,064,046.20	110,793,369.28	111,528,162.88	112,268,467.24	114,014,323.04	113,765,774.52	114,522,860.36	115,285,622.48	116,054,109.28	116,828,360.28	117,608,418.80
Tax					(937,521.00)	(982,336.16)	(1,027,770.12)	(1,035,477.00)	(1,043,243.28)	(1,051,066.80)	(1,058,949.72)	(1,066,893.12)	(1,074,893.76)	(1,082,955.96)	(1,091,076.48)	(1,099,259.64)	(1,107,506.52)	(1,115,811.72)	(1,124,181.72)	(1,132,612.20)
Book					(1,392,676.82)	(1,399,177.56)	(1,399,404.28)	(1,386,507.71)	(1,387,555.71)	(1,384,303.70)	(1,382,505.30)	(1,373,722.89)	(1,373,891.87)	(1,371,200.43)	(1,359,051.02)	(1,370,652.41)	(1,357,387.33)	(1,352,195.64)	(1,351,772.19)	(1,348,237.16)
					455,155.82	416,841.40	371,634.16	351,030.71	344,312.43	333,236.90	323,555.58	306,829.77	298,998.11	288,244.47	267,974.54	271,392.77	249,880.81	236,383.92	227,590.47	215,624.96
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	2,217,961				5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172
CL as % of Revenues	38.51%	38.51%	38.51%	38.51%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Beg	23,577,783.00				5,907,390.00	5,710,477.00	5,520,128.00	5,336,124.00	5,158,253.00	4,986,311.00	4,820,101.00	4,659,431.00	4,504,117.00	4,353,980.00	4,208,847.00	4,068,552.00	3,932,934.00	3,801,836.00	3,675,108.00	3,552,604.00
Additional Debt	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Repayment					(196,913)	(190,349)	(184,004)	(177,871)	(171,942)	(166,210)	(160,670)	(155,314)	(150,137)	(145,133)	(140,295)	(135,618)	(131,098)	(126,728)	(122,504)	(118,420)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					5,710,477.00	5,520,128.00	5,336,124.00	5,158,253.00	4,986,311.00	4,820,101.00	4,659,431.00	4,504,117.00	4,353,980.00	4,208,847.00	4,068,552.00	3,932,934.00	3,801,836.00	3,675,108.00	3,552,604.00	3,434,184.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					6,011,289	5,879,795	5,759,370	5,652,005	5,550,592	5,451,120	5,354,848	5,261,373	5,172,730	5,086,350	5,003,076	4,925,658	4,847,253	4,775,063	4,706,772	4,641,021
Additions to Deferred Asset					(131,494)	(120,425)	(107,365)	(101,413)	(99,472)	(96,272)	(93,475)	(88,643)	(86,380)	(83,274)	(77,418)	(78,405)	(72,190)	(68,291)	(65,751)	(62,294)
Total Deferred Tax Liability					5,879,795	5,759,370	5,652,005	5,550,592	5,451,120	5,354,848	5,261,373	5,172,730	5,086,350	5,003,076	4,925,658	4,847,253	4,775,063	4,706,772	4,641,021	4,578,727
Total Liabilities					17,430,444.00	17,119,670.00	16,828,301.00	16,549,017.00	16,277,603.00	16,015,121.00	15,760,976.00	15,517,019.00	15,280,502.00	15,052,095.00	14,834,382.00	14,620,359.00	14,417,071.00	14,222,052.00	14,033,797.00	13,853,083.00
Equity																				
Proportion of Capital	71%																			
Beginning Equity Capital	57,724,918				225,664,623	230,047,998	234,324,780	238,497,181	242,572,249	246,537,743	250,394,355	254,138,646	257,773,134	261,288,963	264,685,633	267,967,288	271,114,411	274,142,012	277,041,628	279,807,095
Additions to Equity (Retained Earnings)					4,383,375	4,276,782	4,172,401	4,075,067	3,965,494	3,856,612	3,744,291	3,634,488	3,515,829	3,396,670	3,281,655	3,147,124	3,027,601	2,899,616	2,765,467	2,630,708
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					230,047,998	234,324,780	238,497,181	242,572,249	246,537,743	250,394,355	254,138,646	257,773,134	261,288,963	264,685,633	267,967,288	271,114,411	274,142,012	277,041,628	279,807,095	282,437,803
Operating Income					6,329,034	6,173,641	6,021,543	5,879,531	5,720,478	5,562,563	5,399,972	5,241,077	5,069,877	4,898,117	4,732,326	4,539,225	4,367,360	4,183,720	3,991,535	3,798,609
Return On Equity					2.75%	2.63%	2.52%	2.42%	2.32%	2.22%	2.12%	2.03%	1.94%	1.85%	1.77%	1.67%	1.59%	1.51%	1.43%	1.34%
Total Liabilities & Stockholders Equity					247,478,442	251,444,450	255,325,482	259,121,266	262,815,346	266,409,476	269,899,622	273,290,153	276,569,465	279,737,728	282,801,670	285,734,770	288,559,083	291,263,680	293,840,892	296,290,886
Assets					38,610,606	38,155,982	37,708,217	37,280,485	36,858,895	36,447,801	36,045,805	35,659,946	35,281,326	34,912,863	34,564,068	34,211,248	33,879,330	33,560,293	33,249,430	32,949,908
Liabilities & Stockholders Equity less Assets					208,867,836	213,288,468	217,617,265	221,840,781	225,956,451	229,961,675	233,853,817	237,630,207	241,288,139	244,824,865	248,237,602	251,523,522	254,679,753	257,703,387	260,591,462	263,340,978
Dividend					208,867,836	213,288,468	217,617,265	221,840,781	225,956,451	229,961,675	233,853,817	237,630,207	241,288,139	244,824,865	248,237,602	251,523,522	254,679,753	257,703,387	260,591,462	263,340,978
Final Stockholder Equity					38,610,606	38,155,982	37,708,217	37,280,485	36,858,895	36,447,801	36,045,805	35,659,946	35,281,326	34,912,863	34,564,068	34,211,248	33,879,330	33,560,293	33,249,430	32,949,908
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					937,521.00	944,554.00	951,639.00	958,775.00	965,966.00	973,210.00	980,509.00	987,864.00	995,272.00	1,002,737.00	1,010,256.00	1,017,833.00	1,025,469.00	1,033,159.00	1,040,909.00	1,048,715.00
Changes to Working Capital																				
Current Assets	2,139,868				5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542	5,634,542
Current Liabilities	2,217,961				5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172	5,840,172
Working Capital	(78,093)				(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)	(205,630)
Changes to Working Capital					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CASH FLOW																				
Income from Operations					4,548,191	4,436,104	4,326,413	4,223,945	4,109,409	3,995,730	3,878,772	3,764,486	3,641,494	3,518,146	3,399,082	3,260,637	3,137,330	3,005,687	2,868,003	2,729,826
Non Cash Expense (depreciation)					1,392,677	1,399,178	1,399,404	1,386,508	1,387,556	1,384,304	1,382,505	1,373,723	1,373,892	1,371,200	1,359,051	1,370,652	1,357,387	1,352,196	1,351,772	1,348,237
Capital Expenditures					937,521	944,554	951,639	958,775	965,966	973,210	980,509	987,864	995,272	1,002,737	1,010,256	1,017,833	1,025,469	1,033,159	1,040,909	1,048,715
Change in Working Capital					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Cash Flows					5,003,347	4,890,728	4,774,178	4,651,678	4,530,999	4,406,824	4,280,768	4,150,345	4,020,114	3,886,609	3,747,877	3,613,456	3,469,248	3,324,724	3,178,866	3,029,348
Period					41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036
PW of Cashflow					0.044	0.041	0.038	0.035	0.033	0.03	0.028	0.026	0.024	0.023	0.021	0.019	0.018	0.017	0.015	0.014
Accumulated PW of Cashflows	56,426,092				3,750,429	3,416,056	3,090,650	2,773,610	2,547,273	2,252,240	2,041,961	1,838,337	1,643,680	1,522,882	1,340,825	1,169,618	1,063,838	962,880	812,327	722,512
					297,617,151	301,033,207	304,123,857	306,897,467	309,444,740	311,696,980	313,738,941	315,577,278	317,220,958	318,743,840	320,084,665	321,254,283	322,318,121	323,281,001	324,093,328	324,815,840
CASH FLOW																				
Income from Operations					4,707,037	4,573,199	4,436,670	4,324,685	4,210,335	4,093,577	3,974,371	3,852,675	3,728,447	3,601,640	3,472,212	3,340,111	3,205,291	3,067,709	2,927,306	2,784,039
Depreciation					(937,521)	(982,336)	(1,027,770)	(1,035,477)	(1,043,243)	(1,051,067)	(1,058,950)	(1,066,893)	(1,074,894)	(1,082,956)	(1,091,076)	(1,099,260)	(1,107,507)	(1,115,812)	(1,124,182)	(1,132,612)
Capital Expenditures					937,521	944,554	951,639	958,775	965,966	973,210	980,509	987,864	995,272	1,002,737	1,010,256	1,017,833	1,025,469	1,033,159	1,040,909	1,048,715
Change in Working Capital					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Cash Flows					4,707,037	4,610,981	4,512,801	4,401,387	4,287,612	4,171,434	4,052,812	3,931,704	3,808,069	3,681,859	3,553,032	3,421,538	3,287,329	3,150,362	3,010,579	2,867,936
Period					41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5
PW Factor																				
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Period Present Worth Factor (PW)					17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036	17.036
PW of Cashflow					0.044	0.041	0.038	0.035	0.033	0.03	0.028	0.026	0.024	0.023	0.021	0.019	0.018	0.017	0.015	0.014
Accumulated PW of Cashflows	54,267,994				3,528,320	3,220,660	2,921,443	2,624,371	2,410,444	2,131,936	1,933,224	1,741,493	1,556,982	1,442,655	1,271,119	1,107,497	1,008,053	912,383	769,323	684,014
					287,076,253	290,296,913	293,218,356	295,842,727	298,253,171	300,385,107	302,318,331	304,059,824	305,616,806	307,059,461	308,330,580	309,438,077	310,446,130	311,358,513	312,127,836	312,811,850

Rate Case Forecasts																				
Rate Base																				
Plant In Service					107,276,202.00	107,984,618.00	108,698,348.00	109,417,430.00	110,141,903.00	110,871,810.00	111,607,192.00	112,348,089.00	113,094,542.00	113,846,595.00	114,604,287.00	115,367,660.00	116,136,762.00	116,911,633.00	117,692,316.00	118,478,853.00
Accumulated Book Depreciation					(74,300,137.95)	(75,463,177.51)	(76,624,672.79)	(77,771,487.50)	(78,917,550.21)	(80,058,550.91)	(81,195,929.21)	(82,322,685.10)	(83,447,757.97)	(84,568,274.40)	(85,674,761.42)	(86,790,953.83)	(87,891,974.16)	(88,985,881.80)	(90,077,427.99)	(91,163,487.15)
Working Capital					(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)	(205,630.00)
Accumulated Deferred Income Tax					(5,879,795)	(5,759,370)	(5,652,005)	(5,550,592)	(5,451,120)	(5,354,848)	(5,261,373)	(5,172,730)	(5,086,350)	(5,003,076)	(4,926,658)	(4,847,253)	(4,775,063)	(4,706,772)	(4,641,021)	(4,578,727)
Rate Base					26,890,639.05	26,556,440.49	26,216,040.21	25,889,720.50	25,567,602.79	25,252,781.09	24,944,259.79	24,647,043.90	24,354,804.03	24,069,614.60	23,798,237.58	23,523,823.17	23,264,094.84	23,013,349.20	22,768,237.01	22,531,008.85
Authorized Return on Rate Base	7.21%				1,938,815.00	1,914,719.00	1,890,176.00	1,866,649.00	1,843,424.00	1,820,726.00	1,798,481.00	1,777,052.00	1,755,981.00	1,735,419.00	1,715,853.00	1,696,068.00	1,677,341.00	1,659,262.00	1,641,590.00	1,624,486.00
O&M Expenses					7,444,612.00	7,593,504.00	7,745,376.00	7,900,284.00	8,058,289.00	8,219,456.00	8,383,846.00	8,551,523.00	8,722,554.00	8,897,006.00	9,074,946.00	9,256,446.00	9,441,576.00	9,630,407.00	9,823,016.00	10,019,477.00
Book Depreciation					1,392,676.82	1,399,177.56	1,399,404.28	1,386,507.71	1,387,555.71	1,384,303.70	1,382,505.30	1,373,722.89	1,373,891.87	1,371,200.43	1,359,051.02	1,370,652.41	1,357,387.33	1,352,195.64	1,351,772.19	1,348,237.16
Ratemaking Interest Expense					164,816.00	159,322.00	154,012.00	148,878.00	143,915.00	139,118.00	134,481.00	129,998.00	125,665.00	121,476.00	117,427.00	113,513.00	109,729.00	106,071.00	102,536.00	99,118.00
Revenue Requirement					10,940,919.82	11,066,722.56	11,188,968.28	11,302,318.71	11,433,183.71	11,563,603.70	11,699,313.30	11,832,295.89	11,978,091.87	12,125,101.43	12,267,277.02	12,436,679.41	12,586,033.33	12,747,935.64	12,918,914.19	13,091,318.16
O&M Expenses					7,444,612.00	7,593,504.00	7,745,376.00	7,900,284.00	8,058,289.00	8,219,456.00	8,383,846.00	8,551,523.00	8,722,554.00	8,897,006.00	9,074,946.00	9,256,446.00	9,441,576.00	9,630,407.00	9,823,016.00	10,019,477.00
Depreciation Expense					1,392,676.82	1,399,177.56	1,399,404.28	1,386,507.71	1,387,555.71	1,384,303.70	1,382,505.30	1,373,722.89	1,373,891.87	1,371,200.43	1,359,051.02	1,370,652.41	1,357,387.33	1,352,195.64	1,351,772.19	1,348,237.16
Interest					164,816.00	159,322.00	154,012.00	148,878.00	143,915.00	139,118.00	134,481.00	129,998.00	125,665.00	121,476.00	117,427.00	113,513.00	109,729.00	106,071.00	102,536.00	99,118.00
Pretax Income					1,938,815.00	1,914,719.00	1,890,176.00	1,866,649.00	1,843,424.00	1,820,726.00	1,798,481.00	1,777,052.00	1,755,981.00	1,735,419.00	1,715,853.00	1,696,068.00	1,677,341.00	1,659,262.00	1,641,590.00	1,624,486.00
State & Federal Taxes @ 28.89%					560,124.00	553,162.00	546,072.00	539,275.00	532,565.00	526,008.00	519,581.00	513,390.00	507,303.00	501,363.00	495,710.00	489,994.00	484,584.00	479,361.00	474,255.00	469,314.00
After Tax Income					1,378,691.00	1,361,557.00	1,344,104.00	1,327,374.00	1,310,859.00	1,294,718.00	1,278,900.00	1,263,662.00	1,248,678.00	1,234,056.00	1,220,143.00	1,206,074.00	1,192,757.00	1,179,901.00	1,167,335.00	1,155,172.00
Current Revenue					15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00	15,166,323.00
Revenue Requirement					11,501,043.82	11,619,884.56	11,735,040.28	11,841,593.71	11,965,748.71	12,089,611.70	12,218,894.30	12,345,685.89	12,485,394.87	12,626,464.43	12,762,987.02	12,926,673.41	13,070,617.33	13,227,296.64	13,393,169.19	13,560,632.16
Required Revenue Increase					-24%	-23%	-23%	-22%	-21%	-20%	-19%	-19%	-18%	-17%	-16%	-15%	-14%	-13%	-12%	-11%
Income from Operations					4,548,191	4,436,104	4,326,413	4,223,945	4,109,409	3,995,730	3,878,772	3,764,486	3,641,494	3,518,146	3,399,082	3,260,637	3,137,330	3,005,687	2,868,003	2,729,826
Return on Rate Base					16.91%	16.70%	16.50%	16.32%	16.07%	15.82%	15.55%	15.27%	14.95%	14.62%	14.28%	13.86%	13.49%	13.06%	12.60%	12.12%
Required Return	7.21%				7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%	7.21%
Authorized Return					1,938,815	1,914,719	1,890,176	1,866,649	1,843,424	1,820,726	1,798,481	1,777,052	1,755,981	1,735,419	1,715,853	1,696,068	1,677,341	1,659,262	1,641,590	1,624,486
After-tax Net Income					4,383,375	4,276,782	4,172,401	4,075,067	3,965,494	3,856,612	3,744,291	3,634,488	3,515,829	3,396,670	3,281,655	3,147,124	3,027,601	2,899,616	2,765,467	2,630,708
Taxes					1,780,843	1,737,537	1,695,130	1,655,586	1,611,069	1,566,833	1,521,200	1,476,991	1,428,383	1,379,971	1,333,244	1,278,588	1,230,030	1,178,033	1,123,532	1,068,783
Pre-tax Net Income					6,164,218	6,014,319	5,867,531	5,730,653	5,576,563	5,423,445	5,265,491	5,111,079	4,944,212	4,776,641	4,614,899	4,425,712	4,257,631	4,077,649	3,888,999	3,699,491
Interest Expense					164,816	159,322	154,012	148,878	143,915	139,118	134,481	129,998	125,665	121,476	117,427	113,513	109,729	106,071	102,536	99,118
Operating Income					6,329,034	6,173,641	6,021,543	5,879,531	5,720,478	5,562,563	5,399,972	5,241,077	5,069,877	4,898,117	4,732,326	4,539,225	4,367,360	4,183,720	3,991,535	3,798,609
Operating Expenses					8,837,289	8,992,682	9,144,780	9,286,792	9,445,845	9,603,760	9,766,351	9,925,246	10,096,446	10,268,206	10,433,997	10,627,098	10,798,963	10,982,603	11,174,788	11,367,714
Revenue Requirement					15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323	15,166,323
Required Return					1,938,815	1,914,719	1,890,176	1,866,649	1,843,424	1,820,726	1,798,481	1,777,052	1,755,981	1,735,419	1,715,853	1,696,068	1,677,341	1,659,262	1,641,590	1,624,486
Operating Expenses					8,837,289	8,992,682	9,144,780	9,286,792	9,445,845	9,603,760	9,766,351	9,925,246	10,096,446	10,268,206	10,433,997	10,627,098	10,798,963	10,982,603	11,174,788	11,367,714
Revenue Requirement					10,776,104	10,907,401	11,034,956	11,153,441	11,289,269	11,424,486	11,564,832	11,702,298	11,852,427	12,003,625	12,149,850	12,323,166	12,476,304	12,641,865	12,816,378	12,992,200
Required Rate Increase					-24.17%	-23.38%	-22.62%	-21.92%	-21.10%	-20.29%	-19.43%	-18.60%	-17.68%	-16.75%	-15.85%	-14.77%	-13.82%	-12.79%	-11.69%	-10.59%
Proposed Rate Increase					42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Rate Increase Scenario	6				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0				42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
No increases (Input 2)	2				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	4				6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%
Modest Rate Increases: (Input 4)	5																			
Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Required Rate Increases: (Input 6)	7				263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%	263.3%
	4				6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%
Changes In Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plant & Equipment																				
Additions (Source negative / Use positive)					937,521	944,554	951,639	958,775	965,966	973,210	980,509	987,864	995,272	1,002,737	1,010,256	1,017,833	1,025,469	1,033,159	1,040,909	1,048,715
Liabilities																				

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods																
	1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Change in Current Liabilities (Source Positive / Use negative)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Debt																			
Additional Long Term Debt Source Positive / Use Negative				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Paid Long term Debt (Source positive / Use negative)				196,913	190,349	184,004	177,871	171,942	166,210	160,670	155,314	150,137	145,133	140,295	135,618	131,098	126,728	122,504	118,420
Equity																			
Additions to Equity (Source Positive / Use Negative)																			
Dividend (Source negative / Use Positive)																			
Funds Provided from Operations																			
Sources of Funds																			
Net Income (Use Negative / Source Positive)				4,383,375	4,276,782	4,172,401	4,075,067	3,965,494	3,856,612	3,744,291	3,634,488	3,515,829	3,396,670	3,281,635	3,147,124	4,027,601	2,899,816	2,765,467	2,630,708
Depreciation (Source positive /use negative)				1,392,677	1,399,178	1,399,404	1,386,508	1,387,556	1,384,304	1,382,505	1,373,723	1,373,892	1,371,200	1,359,051	1,370,652	1,357,387	1,352,196	1,351,772	1,348,237
Current Liabilities (Source Positive)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				5,776,052	5,675,960	5,571,805	5,461,575	5,353,050	5,240,916	5,126,796	5,008,211	4,889,721	4,767,870	4,640,706	4,517,776	4,384,988	4,251,812	4,117,239	3,978,945
Sources and Uses of Funds																			
Sources of Funds																			
Current Liabilities (Source Positive)																			
Uses of Funds																			
Current Assets. Increase/ (Use)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fixed Assets. Assets. Increase/ (Use)				937,521	944,554	951,639	958,775	965,966	973,210	980,509	987,864	995,272	1,002,737	1,010,256	1,017,833	1,025,469	1,033,159	1,040,909	1,048,715
Total Uses of Funds				937,521	944,554	951,639	958,775	965,966	973,210	980,509	987,864	995,272	1,002,737	1,010,256	1,017,833	1,025,469	1,033,159	1,040,909	1,048,715
Funds from Financing Activities																			
Changes in Debt																			
Increase in Long Term Debt				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repayment of Long Term Debt				(196,913)	(190,349)	(184,004)	(177,871)	(171,942)	(166,210)	(160,670)	(155,314)	(150,137)	(145,133)	(140,295)	(135,618)	(131,098)	(126,728)	(122,504)	(118,420)
Funds fom Equity																			
Dividends Paid (Use)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																			
Total Funds from Financing Activities				(196,913.00)	(190,349.00)	(184,004.00)	(177,871.00)	(171,942.00)	(166,210.00)	(160,670.00)	(155,314.00)	(150,137.00)	(145,133.00)	(140,295.00)	(135,618.00)	(131,098.00)	(126,728.00)	(122,504.00)	(118,420.00)
Total Funds Needed				4,641,618.00	4,541,057.00	4,436,162.00	4,324,929.00	4,215,142.00	4,101,496.00	3,985,617.00	3,865,033.00	3,744,312.00	3,620,000.00	3,490,155.00	3,364,325.00	3,228,421.00	3,091,925.00	2,953,826.00	2,811,810.00
Financing																			
Debt	29%			(1,346,089.00)	(1,316,907.00)	(1,286,487.00)	(1,254,229.00)	(1,222,391.00)	(1,189,434.00)	(1,155,829.00)	(1,120,860.00)	(1,085,850.00)	(1,049,800.00)	(1,012,145.00)	(975,654.00)	(936,242.00)	(896,658.00)	(856,610.00)	(815,425.00)
Equity	71%			(3,295,529.00)	(3,224,150.00)	(3,149,675.00)	(3,070,700.00)	(2,992,751.00)	(2,912,062.00)	(2,829,788.00)	(2,744,173.00)	(2,658,462.00)	(2,570,200.00)	(2,478,010.00)	(2,388,671.00)	(2,292,179.00)	(2,195,267.00)	(2,097,216.00)	(1,996,385.00)
Funds Provided by Financing				(4,641,618.00)	(4,541,057.00)	(4,436,162.00)	(4,324,929.00)	(4,215,142.00)	(4,101,496.00)	(3,985,617.00)	(3,865,033.00)	(3,744,312.00)	(3,620,000.00)	(3,490,155.00)	(3,364,325.00)	(3,228,421.00)	(3,091,925.00)	(2,953,826.00)	(2,811,810.00)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	58	59	60
Income Statement							
Revenues							
Annual Revenue Growth rate							
Subscriber Growth Rate (Annually)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth							
Growth	0.0%	0.0%	0.0%	0.0%			0.0%
Period for Periodic Growth	5						
Rate Case Activities							
Periodic Rate Case (years)	typically 3 years						
Required Rate Increase	Calculated in DCF				-9.46%	-8.31%	-7.03%
Proposed Rate Increase	Calculated in DCF				0.0%	0.0%	0.0%
Total Revenue Adjustments	Calculated				0.0%	0.0%	0.0%
Base and Forecast	5,759,816				15,166,323	15,166,323	15,166,323
Operating Expenses					39%	40%	41%
Expense Level 1: Sewer & Collection Fees	1,888,488				5,955,582	6,074,694	6,196,188
Expense Level 1: Sewer & Collection Fees Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	729,237				2,299,740	2,345,735	2,392,650
Expense Level 2: Wages & Benefits Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	250,824				791,005	806,825	822,962
Expense Level 3: Repair & Maintenance Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	43,650				137,652	140,405	143,213
Expense Level 4: Contracted Services Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097				271,525	276,956	282,495
Expense Level 5: Utilities Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376				764,363	779,650	795,243
Expense Level 6: Insurance & Other Rate of Change		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Property Taxes	81,302,701				-	-	-
Begin Plant					27,315,366	27,027,904	26,755,024
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				1,344,043	1,337,385	1,345,734
Total Operating Expenses					11,563,910	11,761,650	11,978,485
Cost of Operation as % of Revenues (Calculation)					76.2%	77.6%	79.0%
Operating Expenses less Depreciation					10,219,867	10,424,265	10,632,751
Operating Income					3,602,413	3,404,673	3,187,838
Nonoperating Revenues (Expenses)							
Interest Income							
Interest Expense					95,814	92,620	89,533
Interest Exp as % of Debt	2.79%				2.79%	2.79%	2.79%
Total nonoperating revenues (expenses)	-				95,814.00	92,620.00	89,533.00
Income (loss) before State and Federal Taxes	-				3,506,599	3,312,053	3,098,305
State and Federal Taxes	-				1,013,057	956,852	895,100
State and Federal Tax Rate	28.89%				28.89%	28.89%	28.89%
Income After Taxes	-				2,493,542	2,355,201	2,203,205
Income After Taxes plus Interest					2,589,356	2,447,821	2,292,738
Earnings before Interest, Taxes, Depreciation, & Amortization	-				2,920,342	2,828,354	2,743,372
Income (loss) before State and Federal Taxes					3,506,599	3,312,053	3,098,305
Book Depreciation					(1,344,043)	(1,337,385)	(1,345,734)
Tax Depreciation					(1,141,107)	(1,149,665)	(1,158,287)
Difference Tax over Book Depreciation					202,935	187,720	187,447
Income Adjusted for Tax Depreciation					3,709,535	3,499,773	3,285,752
Income Tax Rate	-				28.89%	28.89%	28.89%
Income Taxes					1,071,685	1,011,084	949,254
Income After Tax					2,637,850	2,488,689	2,336,498
Deferred Income Taxes					58,628	54,232	54,154
Accumulated Deferred Income Taxes					(4,520,099)	(4,465,867)	(4,411,713)
Income After Taxes (Book Depreciation)					2,493,542	2,355,201	2,203,205
Plus Deferred Taxes					58,628	54,232	54,154
Plus Interest					95,814	92,620	89,533
After Tax Income Debt Free					2,530,728	2,393,589	2,238,584
Balance Statement							
Assets							
Current Assets							
Current Asset Balance	2,139,868				5,634,542	5,634,542	5,634,542
CA as % of Revenues	37.15%	37.15%	37.15%	37.15%	37.2%	37.2%	37.2%
Balance Statement							
Property Plant & Equipment							
Total PP&E							
Begin Balance					118,478,853.00	119,271,290.00	120,069,670.00
Additions					1,056,581.00	1,064,505.00	1,072,488.00
Retirements					(264,144.00)	(266,125.00)	(268,122.00)
End Balance	81,302,701.00				119,271,290.00	120,069,670.00	120,874,036.00
End Balance Check					119,271,290.00	120,069,670.00	120,874,036.00
Book Depreciation of Property, Plant, & Equipment							
Total Book Depreciation							

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods: 1-5	6-15	16 - 19	58	59	60
Begin Balance					(91,163,487.15)	(92,243,385.93)	(93,314,646.11)
Depreciation					(1,344,042.78)	(1,337,385.18)	(1,345,734.26)
Retirements					264,144.00	266,125.00	268,122.00
End Balance					(92,243,385.93)	(93,314,646.11)	(94,392,258.37)
End Balance Check					(92,243,385.93)	(93,314,646.11)	(94,392,258.37)
Net Plant							
Begin Balance					27,315,365.85	27,027,904.07	26,755,023.89
End Balance					27,027,904.07	26,755,023.89	26,481,777.63
Total Assest					32,662,446.07	32,389,565.89	32,116,319.63
Tax Depreciation of Property, Plant, & Equipment							
Total MACRS Depreciation							
Begin Balance					-		
Depreciation					(1,141,107.48)	(1,149,665.40)	(1,158,287.04)
Retirements					264,144.00	266,125.00	268,122.00
End Balance					(876,963.48)	(883,540.40)	(890,165.04)
End Balance Check					(876,963.48)	(883,540.40)	(890,165.04)
Net Plant							
Begin Balance					118,478,853.00	119,271,290.00	120,069,670.00
End Balance					118,394,326.52	119,186,129.60	119,983,870.96
Tax					(1,141,107.48)	(1,149,665.40)	(1,158,287.04)
Book					(1,344,042.78)	(1,337,385.18)	(1,345,734.26)
					202,935.30	187,719.78	187,447.22

Balance Statement

Liabilities							
Current Liabilities							
Current Liabilities	2,217,961				5,840,172	5,840,172	5,840,172
CL as % of Revenues	38.51%	38.51%	38.51%	38.51%	38.5%	38.5%	38.5%
Noncurrent Liabilities							
Long Term Debt, Notes payable, net of current portion Beg	23,577,783.00				3,434,184.00	3,319,711.00	3,209,054.00
Additional Debt	-				-	-	-
Debt Repayment					(114,473)	(110,657)	(106,968)
Debt Repayment years	30.00				30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					3,319,711.00	3,209,054.00	3,102,086.00
Total noncurrent liabilities							
Deferred Tax Liabilities							
Begin Balance					4,578,727	4,520,099	4,465,867
Additions to Deferred Asset					(58,628)	(54,232)	(54,154)
Total Deferred Tax Liability					4,520,099	4,465,867	4,411,713
Total Liabilities					13,679,982.00	13,515,093.00	13,353,971.00
Equity							
Proportion of Capital	71%						
Beginning Equity Capital	57,724,918				282,437,803	284,931,345	287,286,546
Additions to Equity (Retained Earnings)					2,493,542	2,355,201	2,203,205
Deductions form Equity Dividends	0				0	0	0
Additional Paid In Capital					0	0	0
Ending Equity Capital					284,931,345	287,286,546	289,489,751
Operating Income					3,602,413	3,404,673	3,187,838
Return On Equity					1.26%	1.19%	1.10%
Total Liabilities & Stockholders Equity					298,611,327	300,801,639	302,843,722
Assets					32,662,446	32,389,566	32,116,320
Liabilities & Stockholders Equity less Assets					265,948,881	268,412,073	270,727,402
Dividend					265,948,881	268,412,073	270,727,402
Final Stockholder Equity					32,662,446	32,389,566	32,116,320
Capital Expenditures and Changes in Working Capital							
Capital Expenditures					1,056,581.00	1,064,505.00	1,072,488.00
Changes to Working Capital							
Current Assets	2,139,868				5,634,542	5,634,542	5,634,542
Current Liabilities	2,217,961				5,840,172	5,840,172	5,840,172
Working Capital	(78,093)				(205,630)	(205,630)	(205,630)
Changes to Working Capital					-	-	-
CASH FLOW							
Income from Operations					2,589,356	2,447,821	2,292,738
Non Cash Expense (depreciation)					1,344,043	1,337,385	1,345,734
Capital Expenditures					1,056,581	1,064,505	1,072,488
Change in Working Capital					-	-	-
Net Cash Flows					2,876,818	2,720,701	2,565,984
Period					57.5	58.5	59.5
PW Factor							
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
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As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	58	59	60
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%
					17.036	17.036	17.036
Period Present Worth Factor (PW)					0.013	0.012	0.011
PW of Cashflow					637,123	556,198	480,855
Accumulated PW of Cashflows	56,426,092				325,452,963	326,009,161	326,490,016
CASH FLOW							
Income from Operations					2,637,890	2,488,689	2,336,498
Depreciation					(1,141,107)	(1,149,665)	(1,158,287)
Capital Expenditures					1,056,581	1,064,505	1,072,488
Change in Working Capital					-	-	-
Net Cash Flows					2,722,376	2,573,849	2,422,297
Period					57.5	58.5	59.5
PW Factor							
Discount Rate with growth	7.80%				7.80%	7.80%	7.80%
Discount Rate without growth	5.87%				5.87%	5.87%	5.87%
					17.036	17.036	17.036
Period Present Worth Factor (PW)					0.013	0.012	0.011
PW of Cashflow					602,919	526,177	453,929
Accumulated PW of Cashflows	54,267,994				313,414,769	313,940,946	314,394,875
Rate Case Forecasts							
Rate Base							
Plant in Service					119,271,290.00	120,069,670.00	120,874,036.00
Accumulated Book Depreciation					(92,243,385.93)	(93,314,646.11)	(94,392,258.37)
Working Capital					(205,630.00)	(205,630.00)	(205,630.00)
Accumulated Deferred Income Tax					(4,520,099)	(4,465,867)	(4,411,713)
Rate Base					22,302,175.07	22,083,526.89	21,864,434.63
Authorized Return on Rate Base	7.21%				1,607,987.00	1,592,222.00	1,576,426.00
O&M Expenses					10,219,867.00	10,424,265.00	10,632,751.00
Book Depreciation					1,344,042.78	1,337,385.18	1,345,734.26
Ratemaking Interest Expense					95,814.00	92,620.00	89,533.00
Revenue Requirement					13,267,710.78	13,446,492.18	13,644,444.26
O&M Expenses					10,219,867.00	10,424,265.00	10,632,751.00
Depreciation Expense					1,344,042.78	1,337,385.18	1,345,734.26
Interest					95,814.00	92,620.00	89,533.00
Pretax Income					1,607,987.00	1,592,222.00	1,576,426.00
State & Federal Taxes @ 28.89%					464,547.00	459,993.00	455,429.00
After Tax Income					1,143,440.00	1,132,229.00	1,120,997.00
Current Revenue					15,156,323.00	15,166,323.00	15,166,323.00
Revenue Requirement					13,732,257.78	13,906,485.18	14,099,873.26
Required Revenue Increase					-9%	-8%	-7%
Income from Operations					2,589,356	2,447,821	2,292,738
Return on Rate Base					11.61%	11.08%	10.49%
Required Return	7.21%				7.21%	7.21%	7.21%
Authorized Return					1,607,987	1,592,222	1,576,426
After-tax Net Income					2,493,542	2,355,201	2,203,205
Taxes					1,013,057	956,852	895,100
Pre-tax Net Income					3,506,599	3,312,053	3,098,305
Interest Expense					95,814	92,620	89,533
Operating Income					3,602,413	3,404,673	3,187,838
Operating Expenses					11,563,910	11,761,650	11,978,485
Revenue Requirement					15,166,323	15,166,323	15,166,323
Required Return					1,607,987	1,592,222	1,576,426
Operating Expenses					11,563,910	11,761,650	11,978,485
Revenue Requirement					13,171,897	13,353,872	13,554,911
Required Rate Increase					-9.46%	-8.31%	-7.03%
					58	59	60
Proposed Rate Increase							
Rate Increase Scenario	b				0%	0%	0%
	0				58	59	60
No increases (Input 2)	2				0%	0%	0%
No Rate Increases (Input 2)	3						
Modest Rate Increases 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	0.0%	6.0%
Modest Rate Increases (Input 4)	5						
Required Rate Increases 30% period 4, 25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	b				0.0%	0.0%	0.0%
Required Rate Increases (Input 6)	7				264.3%	263.3%	263.3%
	4				0.0%	0.0%	0.0%
Changes in Balance Sheet Accounts							
Assets							
Change in Current Assets (Source negative / Use positive)					-		
Plant & Equipment							
Additions (Source negative / Use positive)					1,056,581	1,064,505	1,072,488
Liabilities							

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021

	Base	Periods 1-5	6-15	16 - 19	58	59	60
Change in Current Liabilities (Source Positive / Use negative)						-	-
Long Term Debt							
Additional Long Term Debt Source Positive / Use Negative							-
Principal Paid Long term Debt (Source positive / Use negative)					114,473	110,657	106,968
Equity							
Additions to Equity (Source Positive / Use Negative)							
Dividend (Source negative / Use Positive)							
Funds Provided from Operations							
Sources of Funds							
Net Income (Use Negative / Source Positive)					2,493,542	2,355,201	2,203,205
Depreciation (Source positive /use negative)					1,344,043	1,337,385	1,345,734
Current Liabilities (Source Positive)					-	-	-
					3,837,585	3,692,586	3,548,939
Sources and Uses of Funds							
Sources of Funds							
Current Liabilities (Source Positive)							
Uses of Funds							
Current Assets. Increase (Use)						-	-
Fixed Assets. Assets. Increase (Use)					1,056,581	1,064,505	1,072,488
Total Uses of Funds					1,056,581	1,064,505	1,072,488
Funds from Financing Activities							
Changes in Debt							
Increase in Long Term Debt							-
Repayment of Long Term Debt					(114,473)	(110,657)	(106,968)
Funds fom Equity							
Dividends Paid (Use)					0	0	0
Additional Paid in Capital (source)							
Total Funds from Financing Activities					(114,473.00)	(110,657.00)	(106,968.00)
Total Funds Needed					2,666,531.00	2,517,424.00	2,369,483.00
Financing							
Debt	29%				(773,294.00)	(730,053.00)	(687,150.00)
Equity	71%				(1,893,237.00)	(1,787,371.00)	(1,682,333.00)
Funds Provided by Financing					(2,666,531.00)	(2,517,424.00)	(2,369,483.00)

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Revenue Base											
Revenue Base	5,759,816	5,759,816									
Year over Year Growth											
Total Revenues	5,759,816	5,759,816									
								56,398,141			
2020 Revenues	5,759,816	5,759,816									
Increase in period 1											
Use	0%	AUS Input									
Revenue Forecast			1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Annual Subscriber Growth	Annual Subscriber Growth: All Periods 0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic Subscriber Growth	Periodic Customer Growth: All period 0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth	0%										
Period every 7 years	5										

Rate Adjustment		Periodic Customer Growth: All Periods5 0.0%																					
Rate Adjustment Periods	typically 3 years		1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Rate Adjustment based on Rate Case		Based on Authorized Return on Rate Base	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	6.0%
Rate Increase Scenario			3																					
	2 No Rate Increases	No increases (Input 2)	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Indicated Rate Increase		72.18%	71.32%	70.93%	31.20%	31.01%	4.67%	4.30%	4.07%	-5.58%	-5.74%	-5.95%	-11.48%	-11.58%	-11.72%	-16.92%	-17.01%	-17.10%	-21.85%	-22.00%	-22.04%	
		Indicated Rate Increase (saved)		19.85%	19.89%	20.55%	21.32%	21.94%	23.12%	24.23%	25.57%	27.28%	29.18%	31.47%	33.67%	36.59%	39.55%	43.11%	48.02%	53.52%	59.31%	65.71%	72.68%	
	4 Modest Rate Increases	Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	5	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%
		Indicated Rate Increase		72.18%	71.32%	70.93%	31.20%	31.01%	4.67%	4.30%	4.07%	-5.58%	-5.74%	-5.95%	-11.48%	-11.58%	-11.72%	-16.92%	-17.01%	-17.10%	-21.85%	-22.00%	-22.04%	
		Indicated Rate Increase (saved)		13.13%	13.17%	13.79%	14.52%	8.65%	9.70%	10.69%	11.88%	7.05%	8.65%	10.58%	12.42%	8.44%	10.79%	13.62%	17.51%	14.99%	19.32%	24.11%	29.34%	
	6 Required Rate Increases	Required Rate Increases: 30% period 4,25% period 6, 10% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6	0%	0%	0%	30%	0%	25%	0%	0%	10%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	
		Indicated Rate Increase		72.18%	71.32%	70.93%	31.20%	31.01%	4.67%	4.30%	4.07%	-5.58%	-5.74%	-5.95%	-11.48%	-11.58%	-11.72%	-16.92%	-17.01%	-17.10%	-21.85%	-22.00%	-22.04%	
		Indicated Rate Increase (saved)																						
Rate Increase Scenario Input	Rate Increase Scenario Input	6 Input																						

56,398,141 64,577,011

Operating Expenses

		Use	Expenses as % of Revenues	Investor Owned Deferred Tax Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Expense Level 1: Sewer & Collection Fees	1,888,488.00	1,888,488	32.79%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Sewer & Collection Expense Growth Rate: Periods 1-5 -2%; all remaining Periods 2.0%											
Expense Level 2: Wages & Benefits	729,237.00	729,237	12.66%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Wages & Benefits Expense Growth Rate: Periods 1-5 2.0%; all remaining Periods 0.0%											
Expense Level 7: Depreciation	822,045.00	822,045		Based on Plant and Depreciation Parameters								
	Book Depreciation Expense Based on CORLD, Plant Depreciation Parameters, and CORLD Aging; Tax Depreciation based on CORLD and MACRS											
Expense Level 3: Repair & Maintenance	250,824.00	250,824	4.35%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Repair & Maintenance Expense Growth Rate: All Periods 2.0%											
Expense Level 4: Contracted Services	43,650.00	43,650	0.76%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Contracted Services Expense Growth Rate: All Periods 2.0%											
Expense Level 5: Utilities	91,349.00	91,349	1.59%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Utilitiesr Expense Growth Rate: Periods 1-5 2.0%; all remaining Periods 2.0%											
Expense Level 6: Insurance & Other	257,161	257,161	4.46%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Insurance & Other Expense Growth Rate: Periods 1-5 2.0% all remaining Periods 2.0%											
Total Operating Expenses	4,082,754	4,082,754	70.88%									
Total Operating Expenses Check	4,082,754											
Difference	-											
OpEX less: Depreciation	3,260,709	3,260,709										
OpEX as % of Revenues	56.61%											
Total Operating Expenses												
Total Operating Expenses Check												
Operating Expenses less Depreciation												
Net Operating Income before Non-operating Revenue and Expenses	1,677,062	1,677,062										
Non-Operating Income (Expenses)												
Interest Income			2%	2%	2%							
Interest Rate on Investments												
Gain on the Sale of Assets												
Long term Debt Interest			-2.79%	-2.79%								
Interest Rate on Long term Debt			Calculated									
Total Non-Operating Income												

Depreciation		Calculated based on Plant			
Property Taxes	0.000%	of Assessed (Beginning Net Book Value) Value of Taxable Property		0.00%	
Taxes			Reference to Spreadsheet Location		
Federal	21.00%	of Pretax Income	='ValueLine Data'!AW30	21.00%	
State	9.99%	of Pretax Income	='ValueLine Data'!AW32	9.99%	
State & Federal Tax Rate	28.89%	of Pretax Income	='ValueLine Data'!AW33	28.89%	

Cost of Capital Required Return

Valuation Cost of Capital	Cost of Capital (Debt-free)	Cost of Capital	Return on Rate Base Cost of Capital

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Debt - Market		January 8, 2021	January 8, 2021	January 8, 2021							
Capital Structure Debt			29%	29.0%							
Cost of Debt			2.79%	2.79%							
Tax Rate			28.85%	Not Applicable	Not Applicable						
Wtd Cost of Debt			0.58%	0.81%	1.69%						
Equity - Market											
Capital Structure Equity			71%	71%	56%						
Cost of Equity			9.85%	9.85%	9.85%						
Wtd Cost of Equity			6.99%	6.99%	5.52%						
Required Return											
Capital Structure Total			100%	100%	100%						
Cost of Capital Total			7.57%	7.80%	7.21%						
Growth Rate (inflation)			1.82%	1.82%	0.00%						
Cost of Capital without growth			5.65%	5.87%	7.21%						

Working Capital — Investor Owned Deferred Tax

		Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Current Assets										
CA as % of Revenues	Input	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%
Current Liabilities										
CL as % of Revenues	Input	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%

Use OCLD (1), RCNLD (2), FMV (3)
Cost_Approach 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Property, Plant, and Equipment			Financials					Original Cost Study								Appraisal							Other Cost Allocation
Data Looked up from Cost Approach Summary Tab	MACRS Depreciation (Lives)	Plant OC	Depreciation OC	OC LD	OC	Iowa Curve	Life	Age	RL	TL	Depreciation	OCLD	RCN	Iowa Curve	Life	Age	RL	TL	Depreciation	RCNLD	EO %	FMV	RCNLD
353.20 Land & Land Rights - Original Basin	Non-Depr				668	ZNonDep	-	32.06	-	-	-	668	720,020	ZNonDep	-	31.62	-	-	-	720,020	-	720,020	720,020
353.30 Land & Land Rights - Pumping	Non-Depr				13	ZNonDep	-	20.77	-	-	-	13	13,468	ZNonDep	-	20.27	-	-	-	13,468	-	13,468	13,468
354.30 Stuctures & Improvements - Pumping	25				8,005,275	R4.0	45.00	10.35	35.02	45.37	1,800,950	6,204,325	12,142,235	R4.0	45.00	14.58	31.23	45.82	3,762,682	8,379,553	-	8,379,553	8,379,553
360.21 Collection Sewers - Force - Mains	25				2,304,355	R3.0	75.00	23.91	52.62	76.52	712,885	1,591,470	5,971,267	R3.0	75.00	29.95	47.21	77.16	2,301,406	3,669,861	-	3,669,861	3,669,861
361.21 Collection Sewers - Gravity - Mains	25				10,767,738	R2.5	80.00	25.14	57.61	82.74	3,226,805	7,540,933	30,582,161	R2.5	80.00	33.23	50.80	84.03	11,958,953	18,623,208	-	18,623,208	18,623,208
361.23 Collection Sewers - Gravity - Manholes	25				4,350,867	R2.5	80.00	24.70	57.94	82.64	1,283,915	3,066,952	10,108,723	R2.5	80.00	32.21	51.66	83.87	3,836,205	6,272,518	-	6,272,518	6,272,518
363.20 Service Laterals	25				6,619,976	R3.0	70.00	15.43	55.45	70.88	1,424,567	5,195,409	12,259,833	R3.0	70.00	22.75	48.95	71.70	3,831,046	8,428,787	-	8,428,787	8,428,787
365.20 Flow Measuring Installations Meter Pits	25				78,670	S2.0	30.00	44.50	4.50	49.00	66,870	11,800	389,338	S2.0	30.00	44.50	4.50	49.00	330,937	58,401	-	58,401	58,401
354.20 Stuctures & Improvements - Treatment	25				11,085,242	R4.0	55.00	6.72	48.18	54.89	1,357,375	9,727,867	13,511,701	R4.0	55.00	6.78	48.11	54.89	1,668,968	11,842,733	-	11,842,733	11,842,733
390.70 Office Furniture and Equipment	25				21,550	R3.0	12.00	12.50	2.20	14.70	18,318	3,232	25,084	R3.0	12.00	12.50	2.20	14.70	21,321	3,763	-	3,763	3,763
391.70 Transportation Equipment	25				212,956	R3.0	10.00	11.16	3.04	14.20	151,652	61,304	240,834	R3.0	10.00	11.45	2.91	14.35	174,807	66,027	-	66,027	66,027
400.00 Not Used	15				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
401.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
402.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
403.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
413.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
423.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
433.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
443.00 Not Used	25				-	R2.0	30.00	-	30.00	30.00	-	-	-	R2.0	30.00	-	30.00	30.00	-	-	-	-	-
Total Total Plant	Total	-	-	-	43,447,309						10,043,337	33,403,972	85,964,664						27,886,325	58,078,339		58,078,339	58,078,339
Column Reference Cost Approach Summary Tab	3	6	9	10	46	47	48	49	53	54		57	22	23	24	21	28	29		31	40	41	

Asset	Forecast Base	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Current Assets										
Cash & Cash Equivalents	% of Revenues	2%	2%	2%	2%	2%	2%	2%	2%	2%
Cash & Cash Equivalents as % of Revenues										
Account Receivables	% of Revenues									
Account Receivables as % of Revenues										
Others										
Total Current Assets										
Investments		Input								
Liabilities										
Current Liabilities										
Accounts Payable	Input	2%	2%	2%	2%	2%	2%	2%	2%	2%
Accounts Payable as % of Revenues	Input	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Accrued Payroll										
Current Portion of Debt	Input	2%	2%	2%	2%	2%	2%	2%	2%	2%
Total Current Liabilities										
Long Term Debt										
Proportion of Acquistion & CapX		29%								
Acquistion		81,302,701	23,577,783							
Current Portion Retired	Total of Fixed Assets	2%	2%	2%	2%	2%	2%	2%	2%	2%
Equity										
Proportion of Acquistion		71%								
Acquistion		81,302,701	57,724,918			0%				
		56,398,141.00	16,966,940			0	-			

						29,013,447
						29,015,055
						(1,608)

Use Financials (1), OCLD (2), RCNLD (3), FMV (4), Plant (RCN)and Reserve (RCN-Depr (5), o 6 Input Selection

Lookup	Basis	Plant Book	Reserve Book	Plant Tax
1	Financials	6	6	
2	OCLD	14	14	
3	RCNLD	22	22	
4	FMV	24	24	
5	RCN for Plant & RCN Dep for Reserve	15	21	
6	APA Allocated RCN for Plant & APA Allocated I	30	31	34
7	Defalt	27	27	

Plant Book 30 =VLOOKUP(C171,Plant Depr Basis,3,FALSE)
Reserve Book 31 =VLOOKUP(C171,Plant Depr Basis,4,FALSE)
Plant Tax 34

Plant	Life	1 to 6	7 to 15	16 to 20	21-26	27-33	34-40	41-46	47-53	54-60
353.2 - Land & Land Rights - Original Basin		353.20	Input Account for lookup on Cost Approach							

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DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Retirements											
Retirement Rate	Input Negative or Zero		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
End Balance - Calculated			680,989								
353.3 - Land & Land Rights - Pumping			353.30 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Retirements											
Retirement Rate	Input Negative or Zero		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
End Balance - Calculated			12,738								
354.3 - Stuctures & Improvements - Pumping			354.30 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			11,484,292								
360.21 - Collection Sewers - Force - Mains			360.21 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			5,647,450								
361.21 - Collection Sewers - Gravity - Mains			361.21 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			28,922,286								
361.23 - Collection Sewers - Gravity - Manholes			361.23 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			9,560,828								
363.2 - Service Laterals			363.20 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			11,595,455								
365.2 - Flow Measuring Installations Meter Pits			365.20 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			368,233								
354.2 - Stuctures & Improvements - Treatment			354.20 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			12,778,957								
390.7 - Office Furniture and Equipment			390.70 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			23,727								
391.7 - Transportation Equipment			391.70 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			227,746								
400 - Not Used			400.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			-								
401 - Not Used			401.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			-								
402 - Not Used			402.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%
End Balance - Calculated			-								
403 - Not Used			403.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Retirements											

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Wastewater Collection System and Purchased Treatment Capacity
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DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	
End Balance - Calculated			-								
413 - Not Used			413.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
Retirements			-								
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	
End Balance - Calculated			-								
423 - Not Used			423.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
Retirements			-								
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	
End Balance - Calculated			-								
433 - Not Used			433.00 Input Account for lookup on Cost Approach								
Begin Balance											
Additions											
Addition Rate	Input Positive or Zero		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
Retirements			-								
Retirement Rate	Input Negative or Zero		-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	-0.25%	
End Balance - Calculated			-								
Total - Total Plant		Total									
Begin Balance											
Additions											
Addition Rate	Calculated										
Retirements											
Retirement Rate	Calculated										
End Balance - lookup			81,302,701								
End Balance - Calculated			81,302,701								
End Balance Check			-								

			1 to 6	7 to 15	16 to 20	21-26	27-33	34-40	41-46	47-53	54-60
Depreciation - Book											
Use Depreciation Life Projection (1), Total (2) or Remaining (3)			27		1	2	3				
Use Depreciation Life Projection (1), Total (2) or Remaining (3)					17	20	19				
			3	3							
			19								
353.2 - Land & Land Rights - Original Basin	Book Depreciation Life 0 yrs		353.2 Referenced to Plant C157								
Begin Balance		0									
Depreciation - Book											
Survivor/Retirement Curve			ZNonDep								
Projection Life			0								
Average Age			31.62								
Remaining Life			0								
Depreciation Rate	Input Positive or Zero		0.00%	0.00%	0.00%						
Depreciation - Tax		Non-Depr									
Retirements Calculated in Plant											
End Balance - Calculated			-								
353.3 - Land & Land Rights - Pumping	Book Depreciation Life 0 yrs		353.3 Referenced to Plant C164								
Begin Balance		0									
Depreciation - Book											
Survivor/Retirement Curve			ZNonDep								
Projection Life			0								
Average Age			20.27								
Remaining Life			0								
Depreciation Rate	Input Positive or Zero		0.00%	0.00%	0.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
354.3 - Structures & Improvements - Pumping	Book Depreciation Life 31.23 yrs		354.3 Referenced to Plant C171								
Begin Balance		0.032									
Depreciation - Book											
Survivor/Retirement Curve			R4.0								
Projection Life			45								
Average Age			14.58								
Remaining Life			31.23								
Depreciation Rate	Input Positive or Zero		3.20%	3.20%	3.20%						
Retirements Calculated in Plant											
End Balance - Calculated			(3,558,982)								
360.21 - Collection Sewers - Force - Mains	Book Depreciation Life 47.21 yrs		360.21 Referenced to Plant C178								
Begin Balance		0.0212									
Depreciation - Book											
Survivor/Retirement Curve			R3.0								
Projection Life			75								
Average Age			29.95								
Remaining Life			47.21								
Depreciation Rate	Input Positive or Zero		2.12%	2.12%	2.12%						
Retirements Calculated in Plant											
End Balance - Calculated			(2,176,527)								
361.21 - Collection Sewers - Gravity - Mains	Book Depreciation Life 50.8 yrs		361.2 Referenced to Plant C185								
Begin Balance		0.0197									
Depreciation - Book											
Survivor/Retirement Curve			R2.5								
Projection Life			80								
Average Age			33.23								
Remaining Life			50.8								
Depreciation Rate	Input Positive or Zero		1.97%	1.97%	1.97%						
Retirements Calculated in Plant											
End Balance - Calculated			(11,308,614)								
361.23 - Collection Sewers - Gravity - Manhole	Book Depreciation Life 51.66 yrs		361.23 Referenced to Plant C192								
Begin Balance		0.0194									
Depreciation - Book											
Survivor/Retirement Curve			R2.5								
Projection Life			80								
Average Age			32.21								
Remaining Life			51.66								
Depreciation Rate	Input Positive or Zero		1.94%	1.94%	1.94%						

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
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DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use		Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Retirements Calculated in Plant												
End Balance - Calculated			(3,628,334)									
363.2 - Service Laterals	Book Depreciation Life 48.95 yrs		363.2	Referenced to Plant C199								
Begin Balance		0.0204										
Depreciation - Book												
Survivor/Retirement Curve			R3.0									
Projection Life			70									
Average Age			22.75									
Remaining Life			48.95									
Depreciation Rate	Input Positive or Zero		2.04%	2.04%	2.04%							
Retirements Calculated in Plant												
End Balance - Calculated			(3,623,580)									
365.2 - Flow Measuring Installations Meter Pit	Book Depreciation Life 4.5 yrs		365.2	Referenced to Plant C206								
Begin Balance		0.2222										
Depreciation - Book												
Survivor/Retirement Curve			S2.0									
Projection Life			30									
Average Age			44.5									
Remaining Life			4.5									
Depreciation Rate	Input Positive or Zero		22.22%	22.22%	22.22%							
Retirements Calculated in Plant												
End Balance - Calculated			(312,998)									
354.2 - Structures & Improvements - Treatmen	Book Depreciation Life 48.11 yrs		354.2	Referenced to Plant C171								
Begin Balance		0.0208										
Depreciation - Book												
Survivor/Retirement Curve			R4.0									
Projection Life			55									
Average Age			6.78									
Remaining Life			48.11									
Depreciation Rate	Input Positive or Zero		2.08%	2.08%	2.08%							
Retirements Calculated in Plant												
End Balance - Calculated			(1,578,201)									
390.7 - Office Furniture and Equipment	Book Depreciation Life 2.2 yrs		390.7	Referenced to Plant C220								
Begin Balance		0.4545										
Depreciation - Book												
Survivor/Retirement Curve			R3.0									
Projection Life			12									
Average Age			12.5									
Remaining Life			2.2									
Depreciation Rate	Input Positive or Zero		45.45%	45.45%	45.45%							
Retirements Calculated in Plant												
End Balance - Calculated			(20,168)									
391.7 - Transportation Equipment	Book Depreciation Life 2.91 yrs		391.7	Referenced to Plant C227								
Begin Balance		0.3436										
Depreciation - Book												
Survivor/Retirement Curve			R3.0									
Projection Life			10									
Average Age			11.45									
Remaining Life			2.91									
Depreciation Rate	Input Positive or Zero		34.36%	34.36%	34.36%							
Retirements Calculated in Plant												
End Balance - Calculated			(165,298)									
400 - Not Used	Book Depreciation Life 30 yrs		400	Referenced to Plant C234								
Begin Balance		0.0333										
Depreciation - Book												
Survivor/Retirement Curve			R2.0									
Projection Life			30									
Average Age			0									
Remaining Life			30									
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%							
Retirements Calculated in Plant												
End Balance - Calculated			-									
401 - Not Used	Book Depreciation Life 30 yrs		401	Referenced to Plant C241								
Begin Balance		0.0333										
Depreciation - Book												
Survivor/Retirement Curve			R2.0									
Projection Life			30									
Average Age			0									
Remaining Life			30									
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%							
Retirements Calculated in Plant												
End Balance - Calculated			-									
402 - Not Used	Book Depreciation Life 30 yrs		402	Referenced to Plant C248								
Begin Balance		0.0333										
Depreciation - Book												
Survivor/Retirement Curve			R2.0									
Projection Life			30									
Average Age			0									
Remaining Life			30									
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%							
Retirements Calculated in Plant												
End Balance - Calculated			-									
403 - Not Used	Book Depreciation Life 30 yrs		403	Referenced to Plant C255								
Begin Balance		0.0333										
Depreciation - Book												
Survivor/Retirement Curve			R2.0									
Projection Life			30									
Average Age			0									
Remaining Life			30									
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%							
Retirements Calculated in Plant												
End Balance - Calculated			-									
413 - Not Used	Book Depreciation Life 30 yrs		413	Referenced to Plant C262								
Begin Balance		0.0333										

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
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DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
Depreciation - Book											
Survivor/Retirement Curve			R2.0								
Projection Life			30								
Average Age			0								
Remaining Life			30								
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
423 - Not Used	Book Depreciation Life 30 yrs		423	Referenced to Plant C269							
Begin Balance		0.0333									
Depreciation - Book											
Survivor/Retirement Curve			R2.0								
Projection Life			30								
Average Age			0								
Remaining Life			30								
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
433 - Not Used	Book Depreciation Life 30 yrs		433	Referenced to Plant C276							
Begin Balance		0.0333									
Depreciation - Book											
Survivor/Retirement Curve			R2.0								
Projection Life			30								
Average Age			0								
Remaining Life			30								
Depreciation Rate	Input Positive or Zero		3.33%	3.33%	3.33%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
Total Balances - Calculted			(26,372,702)								
Balance Check			(26,372,702)								
Difference		-	-								

Depreciation - MACRS

			1 to 6	7 to 15	16 to 20	21-26	27-33	34-40	41-46	47-53	54-60
Use Depreciation Life: MACRS (1)			1								
			3								
353.2 - Land & Land Rights - Original Basin	Book Depreciation Life Non-Depr yrs		353.2	Referenced to Plant C157							
Begin Balance		0									
Depreciation											
Depreciation Rate	Input Positive or Zero		0.00%	0.00%	0.00%						
Retirements Calculated in Plant											
End Balance - Calculated			680,989								
353.3 - Land & Land Rights - Pumping	Book Depreciation Life Non-Depr yrs		353.3	Referenced to Plant C164							
Begin Balance		0									
Depreciation											
Depreciation Rate	Input Positive or Zero		0.00%	0.00%	0.00%						
Retirements Calculated in Plant											
End Balance - Calculated			12,738								
354.3 - Stuctures & Improvements - Pumping	Book Depreciation Life 25 yrs		354.3	Referenced to Plant C171							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			7,925,310								
360.21 - Collection Sewers - Force - Mains	Book Depreciation Life 25 yrs		360.21	Referenced to Plant C178							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			3,470,923								
361.21 - Collection Sewers - Gravity - Mains	Book Depreciation Life 25 yrs		361.21	Referenced to Plant C185							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			17,613,672								
361.23 - Collection Sewers - Gravity - Manhole	Book Depreciation Life 25 yrs		361.23	Referenced to Plant C192							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			5,932,494								
363.2 - Service Laterals	Book Depreciation Life 25 yrs		363.2	Referenced to Plant C199							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			7,971,875								
365.2 - Flow Measuring Installations Meter Pit	Book Depreciation Life 25 yrs		365.2	Referenced to Plant C206							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			55,235								
354.2 - Stuctures & Improvements - Treatmen	Book Depreciation Life 25 yrs		354.2	Referenced to Plant C213							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			11,200,756								
390.7 - Office Furniture and Equipment	Book Depreciation Life 25 yrs		390.7	Referenced to Plant C220							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			3,559								
391.7 - Transportation Equipment	Book Depreciation Life 25 yrs		391.7	Referenced to Plant C227							
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			62,448								

East Whiteland Township, Pennsylvania
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Investor-Owned Utility
January 8, 2021

DCF Calculated
57,229,706

DCF Forecast Parameters

	Forecast Base	use	Forecast Parameters for Periods 1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60
400 - Not Used	Book Depreciation Life 15 yrs		400 Referenced to Plant C234								
Begin Balance		0.0667									
Depreciation											
Depreciation Rate	Input Positive or Zero		6.67%	6.67%	6.67%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
401 - Not Used	Book Depreciation Life 25 yrs		401 Referenced to Plant C241								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
402 - Not Used	Book Depreciation Life 25 yrs		402 Referenced to Plant C248								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
403 - Not Used	Book Depreciation Life 25 yrs		403 Referenced to Plant C248								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
413 - Not Used	Book Depreciation Life 25 yrs		413 Referenced to Plant C262								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
423 - Not Used	Book Depreciation Life 25 yrs		423 Referenced to Plant C269								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
433 - Not Used	Book Depreciation Life 25 yrs		433 Referenced to Plant C276								
Begin Balance		0.04									
Depreciation											
Depreciation Rate	Input Positive or Zero		4.00%	4.00%	4.00%						
Retirements Calculated in Plant											
End Balance - Calculated			-								
Total Balance											
Begin Balance											
Depreciation											
Depreciation Rate											
Retirements Calculated in Plant											
End Balance - Calculated			54,929,999								
Difference			54,929,999								

DCF Forecast Parameters

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%

24	25	26	27	28	29	30	31	32
	Input Cost to Allocate below	Account	Description	Allocated RCN	Allocated Depreciation	Condition	%RCNLD	Allocated APA
%RCNLD	54,930,000							54,930,000
1.24%	680,967	353.2	Land & Land Rights - Orig	680,989	-	100.00%	1.24%	680,989
0.02%	12,744	353.3	Land & Land Rights - Pum	12,738	-	100.00%	0.02%	12,738
14.43%	7,925,300	354.3	Stuctures & Improvemen	11,484,292	3,558,982	69.01%	14.43%	7,925,310
6.32%	3,470,917	360.2	Collection Sewers - Force	5,647,450	2,176,527	61.46%	6.32%	3,470,923
32.07%	17,613,689	361.2	Collection Sewers - Gravit	28,922,286	11,308,614	60.90%	32.07%	17,613,672
10.80%	5,932,495	361.2	Collection Sewers - Gravit	9,560,828	3,628,334	62.05%	10.80%	5,932,494
14.51%	7,971,881	363.2	Service Laterals	11,595,455	3,623,580	68.75%	14.51%	7,971,875
0.10%	55,260	365.2	Flow Measuring Installati	368,233	312,998	15.00%	0.10%	55,235
20.39%	11,200,776	354.2	Stuctures & Improvemen	12,778,957	1,578,201	87.65%	20.39%	11,200,756
0.01%	3,570	390.7	Office Furniture and Equi	23,727	20,168	15.00%	0.01%	3,559
0.11%	62,455	391.7	Transportation Equipmen	227,746	165,298	27.42%	0.11%	62,448
0.00%	-	400.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	401.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	402.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	403.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	413.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	423.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	433.0	Not Used	-	-	0.00%	0.00%	-
0.00%	-	443.0	Not Used	-	-	0.00%	0.00%	-
100.00%	54,930,054			81,302,701	26,372,702			54,929,999

S:\water\industry\Kalt Wheelland Township\Kalt Wheelland Wastewater System Valuation\as of 1-8-2021

DCF Forecast Parameters

S:\water-industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

DCF Forecast Parameters

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

DCF Forecast Parameters

S:\Water Industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1 6 2021

DCF Forecast Parameters

S:\water\industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1 8 2021

DCF Forecast Parameters

East Whiteland Financials
Sewer Fund

	2016	2017	2018	2019	
Assets					
Current Assets					
Cash and Cash Equivalents	6,580,678	7,518,955	9,567,007	10,083,775	
		938,277	2,048,052	516,768	
		17.98%	**30.66%**	**9.52%**	**19.39%**
Account Receivables	1,161,871	683,599	848,468	1,151,871	
	24.04%	**13.10%**	**12.70%**	**21.22%**	**17.77%**
Due from other Fund		11,339	147,915		**37.15%**
Total Current Assets	**7,742,549**	**8,213,893**	**10,563,390**	**11,235,646**	
Noncurrent Assets					
Capital Assets	32,785,377	34,244,259	36,333,876	37,387,925	
Other Capital	11,538,573	11,085,242	11,417,162	11,285,015	
Accumulated Depreciation	(12,377,360)	(13,065,252)	(13,754,484)	(14,529,267)	
Total Noncurrent Assets	**31,946,590**	**32,264,249**	**33,996,554**	**34,143,673**	
Total Assets	**39,689,139**	**40,478,142**	**44,559,944**	**45,379,319**	
Deferred Outflows of Resources					
Deferred Amounts related to Pensions	70,666	109,842	183,740	113,838	
Deferred amount on Refunding	215,921	190,519	28,363	130,298	
Deferred amount on refunding				139,715	
Total Deferred Outflows of Resources	**286,587**	**300,361**	**165,117**	**383,851**	
Liabilities					
Current Liabilities					
Accounts Payable	123,100	138,497	82,760	417,065	
Accrued Liabilities	13,831	10,221	10,708	13,689	
Due to other funds	371	210,243	78	18,493	
			12,396		
Compensated absences	6,015	5,417	4,953	3,114	
Unearned Revenues	830,898	917,045	931,069	971,503	
Accrued Interest	188,258	197,363	191,523	185,646	
Bond Payable	725,000	745,000	715,000	735,000	
Totl Current Libilities	**1,887,473**	**2,223,786**	**1,948,487**	**2,344,510**	
	39.05%	**42.62%**	**29.17%**	**43.19%**	**38.51%**
Noncurrent Liabilities					
Compensated absences	34,085	30,694	28,065	17,649	
Bonds Payable	17,466,860	16,741,396	16,045,932	15,330,468	
Net Pension Liability	137,571	163,903	333,457	192,049	
Other post-employment benefits and obligatons	232,724	294,321	1,239,417	921,823	
Total Noncurrent Liabilities	**17,871,240**	**17,230,314**	**17,646,871**	**16,461,989**	
Total Liabilities	**19,758,713**	**19,454,100**	**19,595,358**	**18,806,499**	
Deferred inflow of Resource					
Deferred amount related to pensions	11,356	44,990	6,206	82,821	
Deferred amount related to OPEB			59,866	426,073	
Total Deferred inflow of Resource	**11,356**	**44,990**	**66,072**	**508,894**	
Net Position					
Net investment in Capital Assets	13,970,651	14,968,372	17,400,739	18,217,920	
Unrestricted	6,232,006	6,311,041	7,874,995	8,229,857	
Total Net Position	**20,202,657**	**21,279,413**	**25,275,734**	**26,447,777**	

Statement of Revenues. Expenses, and Change in Net Position

Operating Revenues					
Charge for Services					
Sewer Service	3,312,268	3,294,177	3,809,229	3,761,787	
Tapping fees	844,300	1,706,800	1,306,657	984,100	
Miscellaneous	677,340	216,471	1,563,159	682,780	
Total Operating Revenues	**4,833,908**	**5,217,448**	**6,679,045**	**5,428,667**	
		7.93%	28.01%	-18.72%	5.74%
Operating Expenses					
Sewer and collection fees	1,484,102	1,155,032	1,174,936	1,779,913	19.93%
Salaries. Wages and benefits	651,954	731,028	867,750	687,311	5.42%
Repair and Maintenance	140,341	643,587	57,793	236,403	68.45%
Contracted Services	85,418	57,917	96,819	41,140	-51.84%
Utilities	95,347	84,883	85,609	86,097	-9.70%
Insurance	38,276	35,780	37,641	40,288	5.26%
Depreciation	673,195	687,892	718,700	774,783	15.09%
Other	57,227	156,422	86,958	202,088	253.13%
Total Operating Expenses	**3,225,860**	**3,552,541**	**3,126,206**	**3,848,023**	19.29%
		10.13%	-12.00%	23.09%	7.07%
Operating Income	**1,608,048**	**1,664,907**	**3,552,839**	**1,580,644**	
NonOpertating Revenues (Expenses)					
Interest Income	15,300	19,510	27,696	137,057	
Interest expense	(605,904)	(607,118)	(578,450)	(561,324)	
Transfers Out	(30,000)	(3,543)	(166,320)	(166,165)	
Total NonOpertating Revenues (Expenses)	**(620,604)**	**(591,151)**	**(717,074)**	**(590,432)**	
Capital Contribution			2,057,746	181,831	
Change in Net Position	**987,444**	**1,073,756**	**4,893,511**	**1,172,043**	
Net Position at Beginning of Year	19,218,213	**20,205,657**	**20,382,223**	**25,275,734**	
Net Position at end of Year	**20,205,657**	**21,279,413**	**25,275,734**	**26,447,777**	

Projections

			Forecast Parameters for Periods									
			1-5	6-15	6-15	16-20	21-26	27-33	34-40	40-46	47-53	54-60
See Rate Increase Schedule on tab: DCF Investor Owned Cells: L263:BS263												
	Inflation since 3.0%											
Revenue Forecast	1.061		1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60	
Annual Subscriber Growth	Annual Subscriber Growth: All Periods (		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Periodic Subscriber Growth	Periodic Customer Growth: All period 0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Growth	0%											
Period every ? years	5											
	2019	2021										
Revenues	5,428,667	1.061 5,759,816	3.0%	3.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 1: Sewer & Collection Fees	1,779,913	1.061 1,888,488	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	687,311	1.061 729,237	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	236,403	1.061 250,824	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	41,140	1.061 43,650	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097	1.061 91,349	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376	1.061 257,161	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 7: Depreciation	774,783	1.061 822,045										
Total Expenses	3,848,023	4,082,754										
check												
Operating Income	1,580,644	1,677,062										
Working Capital		Use										
Current Assets	**37.15%**	28.0% 37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	
Current Liabilities	**38.51%**	22.6% 38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	

Account	Year	Begin Plant Balance	Increases	Decreases	End Balance	Begin Plant Balance	Increases	Decreases	End Balance	Net Plant	
Capacity Rights	2016	11,085,242	-	-	**11,085,242**	-	-	-	-	**11,085,242**	
Capacity Rights	2017	11,085,242	-	-	**11,085,242**	-	-	-	-	**11,085,242**	
Capacity Rights	2018	11,085,242	-	-	**11,085,242**	-	-	-	-	**11,085,242**	
Capacity Rights	2019	11,085,242	306,995	(439,142)	**10,953,095**	-	-	-	-	**10,953,095**	
Construction in Progress	2016	-	453,331	-	**453,331**	-	-	-	-	**453,331**	
Construction in Progress	2017	453,331	-	(453,331)	**-**	-	-	-	-	**-**	
Construction in Progress	2018	-	-	-	**-**	-	-	-	-	**-**	
Construction in Progress	2019	331,920	-	-	**331,920**	-	-	-	-	**331,920**	
Machinery & Equipment	2016	99,324	-	-	**99,324**	(68,275)	(6,481)	-	**(74,756)**	**24,568**	
Machinery & Equipment	2017	99,324	-	-	**99,324**	(74,756)	(6,481)	-	**(81,237)**	**18,087**	
Machinery & Equipment	2018	99,324	-	-	**99,324**	(81,237)	(6,481)	-	**(87,718)**	**11,606**	
Machinery & Equipment	2019	99,324	-	-	**99,324**	(87,718)	(4,493)	-	**(92,211)**	**7,113**	
Sewer Infrastructure	2016	31,749,001	734,844	-	**32,483,845**	(11,490,881)	(657,803)	-	**(12,148,684)**	**20,335,161**	**2.31%**
Sewer Infrastructure	2017	32,483,845	1,458,882	-	**33,942,727**	(12,148,684)	(672,500)	-	**(12,821,184)**	**21,121,543**	**4.49%**
Sewer Infrastructure	2018	33,942,727	2,111,820	-	**36,054,547**	(12,821,184)	(702,804)	-	**(13,523,988)**	**22,530,559**	**6.22%**
Sewer Infrastructure	2019	36,054,547	1,021,158	-	**37,075,705**	(13,523,988)	(758,947)	-	**(14,282,935)**	**22,792,770**	**2.83%**
											3.96%
Vehicles	2016	202,208	-	-	**202,208**	(145,009)	(8,911)	-	**(153,920)**	**48,288**	
Vehicles	2017	202,208	-	-	**202,208**	(153,920)	(8,911)	-	**(162,831)**	**39,377**	
Vehicles	2018	202,208	7,265	(29,468)	**180,005**	(162,831)	(9,415)	29,468	**(142,778)**	**37,227**	
Vehicles	2019	180,005	32,891	-	**212,896**	(142,778)	(11,343)	-	**(154,121)**	**58,775**	

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Market Approach

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East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

Central Tendancy and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted	
Mean	1.7594	1.8494	
Standard Deviation	0.5882	0.4204	
Median	1.49	1.4355	
Mode	1.4418	1.4418	
Conclusion		1.8494	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD		35,172,804	Cost Approach - OCLD
Market Value Indication		**65,048,584**	

Market Sales Analysis - PP/CORLD

	Simple	Weighted	
Mean	0.8087	0.9337	
Standard Deviation	0.1746	0.1695	
Median	0.8229	0.7558	
Mode	0.6918	0.6918	
Conclusion		0.9387	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity CORLD		59,847,171	Cost Approach - CORLD
Market Value Indication		**56,178,539**	

Market Sales Analysis - PP/Customer

	Simple	Weighted	
Water Tretment & Distribution			
Mean	6,123	10,962	
Standard Deviation		4,613	
Median	5,021	4,963	
Wastewater Collection & Treatment		16,785	
Mean	9,579		
Standard Deviation		-	AUS Input
Median	8,754		
Wastewater Collection			
Mean	6,507		
Standard Deviation			
Median	6,636		
Watewater Treatment Only			
Mean	3,072		
Standard Deviation			
Median	2,118		
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Customers		3,918	AUS Input
Wastewater Collection & Treatment PP/Customer		8,754	AUS Input
Collection and Treatement Customers Market Value Indic		**34,298,172**	
Treatement Only Market Value Indication			
Treatment Only PP/customer		2,118	AUS Input
Treatment Only Customers		-	AUS Input
Market Value Indication Treatment Only		-	
Total Market Value Indication		**34,298,172**	

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.40	
Market to Book (equity and debt)	2.11	
Use (equity and debt)	2.11	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD	33,403,972	Cost Approach - OCLD
Market Value Indication	**70,482,381**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted	
Mean	17.48	15.32	
Standard Deviation	5.71	5.10	
Median	17.41	18.13	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		18.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash Flows		2,396,686	Income Approach
Market Value Indication		**43,140,348**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted	
Mean	11.62	11.45	
Standard Deviation	2.67	2.14	
Median	11.65	12.07	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		12.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash		3,264,195	Income Approach
Market Value Indication		**39,170,336**	

Summary of Market Analyses

Indicators	
OCLD	65,048,584
CORLD	56,178,539
Customers	34,298,172
Cash Flows	
EBITDA Periods 1-5	43,140,348
EBITDA Periods 1-13	39,170,336
Value Line	70,482,381
Mean	51,386,393
Median	49,659,444
Conclusion	**56,178,539**

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/OCLD

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Depreciated Original Cost (OCLD) (AUS Consultants Determination	Purchase Price to (PP/OCLD)	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	159,000,000	19%	80,085,602	1.9854	0.226	0.136	0.0185
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29,500,000	3%	18,567,728	1.5888	-0.1706	-0.2606	0.0679
Limerick Township	Wastewater Collection and Treatment System	64,373,378	8%	46,153,867	1.3948	-0.3646	-0.4546	0.2067
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,000,000	1%	5,383,591	0.9287	-0.8307	-0.9207	0.8477
Mahoning	Water Distribution System	4,734,800	1%	3,507,138	1.3500	-0.4094	-0.4994	0.2494
Mahoning	Wastewater Collection	4,765,200	1%	3,234,859	1.4731	-0.2863	-0.3763	0.1416
Cheltenham	Wastewater Collection	50,250,000	6%	15,784,463	3.1835	1.4241	1.3341	1.7798
Steelton	Water Distribution and Treatment	21,750,000	3%	14,433,435	1.5069	-0.2525	-0.3425	0.1173
Sadsbury	Wastewater Collection	8,600,000	1%	6,128,876	1.4032	-0.3562	-0.4462	0.1991
Exeter	Wastewater Collection and Treatment	93,500,000	11%	40,057,634	2.3341	0.5747	0.4847	0.2349
East Norriton	Wastewater Collection	21,000,000	2%	8,407,007	2.4979	0.7385	0.6485	0.4206
Kane	Wastewater Collection and Treatment	17,560,000	2%	12,070,455	1.4548	-0.3046	-0.3946	0.1557
Royersford	Wastewater Collection and Treatment	13,000,000	2%	5,173,559	2.5128	0.7534	0.6634	0.4401
Valley	Water Treatment and Distribution System	7,325,000	1%	5,370,438	1.3639	-0.3955	-0.4855	0.2357
Valley	Wastewater Collection System	13,950,000	2%	9,214,738	1.5139	-0.2455	-0.3355	0.1126
Delaware County Regional Water Quality A	Wastewater Collection and Treatment	276,500,000	32%	191,774,486	1.4418	-0.3176	-0.4076	0.1661
Upper Pottsgrove	Wastewater Collection	13,750,000	2%	11,769,925	1.1682	-0.5912	-0.6812	0.464
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53,000,000	6%	20,644,920	2.5672	0.8078	0.7178	0.5152
		857,558,378	100%	497,762,721	1.7228			6.3729

Simple Mean				Square Root[(Variance to Wtd Mean)^2]/Count
			1.7594	
Standard Deviation			0.5882	2.52446
SimpleMedian			1.4900	18
Simple Mode		DELCOR	1.4418	0.140248
Weighted Mean			1.849	
Standard Deviation			0.4204	
Wtd Median			1.4355	
Wtd Mode		DELCOR	1.4418	

Property Acquired		Depreciated Original Cost (OCLD) (AUS Consultants Determination	Purchase Price to (PP/OCLD)	Accummulated OCLD
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,383,591	0.9287	5,383,591
Upper Pottsgrove	Wastewater Collection	11,769,925	1.1682	17,153,516
Mahoning	Water Distribution System	3,507,138	1.35	20,660,654
Valley	Water Treatment and Distribution System	5,370,438	1.3639	26,031,092
Limerick Township	Wastewater Collection and Treatment System	46,153,867	1.3948	72,184,959
Sadsbury	Wastewater Collection	6,128,876	1.4032	78,313,835
Delaware County Regional Water Quality A	Wastewater Collection and Treatment	191,774,486	1.4418	270,088,321
Kane	Wastewater Collection and Treatment	12,070,455	1.4548	282,158,776
Mahoning	Wastewater Collection	3,234,859	1.4731	285,393,635
Steelton	Water Distribution and Treatment	14,433,435	1.5069	299,827,070
Valley	Wastewater Collection System	9,214,738	1.5139	309,041,808
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	18,567,728	1.5888	327,609,536
City of McKeesport	Wastewater Collection and Treatment	80,085,602	1.9854	407,695,138
Exeter	Wastewater Collection and Treatment	40,057,634	2.3965	447,752,772
East Norriton	Wastewater Collection	8,407,007	2.4979	456,159,779
Royersford	Wastewater Collection and Treatment	5,173,559	2.5128	461,333,338
Cheltenham	Wastewater Collection	15,784,463	3.1835	477,117,801
		477,117,801	2.5672	

Middle OCLD		238,558,901
Bottomvalue of the range containng the Middle Value	1.4032	78,313,835
Top value of the range containing the Middle Value	1.4418	270,088,321
Range containng the middle value	0.0386	191,774,486
Range from bottom value to middle value	0.0323	160,245,066
Median Value	1.4355	

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/CORLD

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Replacement Cost New less Depreciation (CORLD)	Purchase Price to CORLD	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	159,000,000	19%	156,524,909	1.0158	0.2071	0.0821	0.0067
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29,500,000	3%	30,615,410	0.9636	0.1549	0.0299	0.0009
Limerick Township	Wastewater Collection and Treatment System	64,373,378	8%	73,068,377	0.881	0.0723	-0.0527	0.0028
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5,000,000	1%	9,236,581	0.5413	-0.2674	-0.3924	0.154
Mahoning	Water Distribution System	4,734,800	1%	8,899,336	0.532	-0.2767	-0.4017	0.1614
Mahoning	Wastewater Collection	4,765,200	1%	7,991,234	0.5963	-0.2124	-0.3374	0.1138
Cheltenham	Wastewater Collection	50,250,000	6%	49,940,486	1.0062	0.1975	0.0725	0.0053
Steelton	Water Distribution and Treatment	21,750,000	3%	23,921,473	0.9092	0.1005	-0.0245	0.0006
Sadsbury	Wastewater Collection	8,600,000	1%	8,517,587	1.0097	0.2010	0.076	0.0058
Exeter	Wastewater Collection and Treatment	93,500,000	11%	99,589,819	0.9389	0.1302	0.0052	0
East Norriton	Wastewater Collection	21,000,000	2%	27,461,356	0.7647	-0.0440	-0.169	0.0286
Kane	Wastewater Collection and Treatment	17,560,000	2%	29,015,055	0.6052	-0.2035	-0.3285	0.1079
Royersford	Wastewater Collection and Treatment	13,000,000	2%	13,376,109	0.9719	0.1632	0.0382	0.0015
Valley	Water Treatment and Distribution System	7,325,000	1%	11,664,026	0.628	-0.1807	-0.3057	0.0935
Valley	Wastewater Collection System	13,950,000	2%	19,252,333	0.7246	-0.0841	-0.2091	0.0437
Delaware County Regional Water Quality Authority	Wastewater Collection and Treatment	276,500,000	32%	399,664,111	0.6918	-0.1169	-0.2419	0.0585
Upper Pottsgrove	Wastewater Collection	13,750,000	2%	18,460,028	0.7449	-0.0638	-0.1888	0.0356
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53,000,000	6%	51,414,555	1.0308	0.2221	0.0971	0.0094
		857,558,378	100%	1,038,612,785	0.8257			

Simple Mean	0.8087
Standard Deviation	0.1746
SimpleMedian	0.8229
Simple Mode	0.6918
Weighted Mean	0.9337
Standard Deviation	0.1695
Wtd Median	0.7558
Wtd Mode	0.6918

Property Acquired	Type of System and Attributes	Purchase Price (PP)	Proportion of Purchase Price to Total	Replacement Cost New less Depreciation (CORLD)	Purchase Price to CORLD	Accummulated CORLD
Mahoning	Water Distribution System	4734800	1%	8,899,336	0.532	8,899,336
East Bradford Township	Wastewater Collection and paid for treatment Capacity	5000000	1%	9,236,581	0.5413	18,135,917
Mahoning	Wastewater Collection	4765200	1%	7,991,234	0.5963	26,127,151
Kane	Wastewater Collection and Treatment	17560000	2%	29,015,055	0.6052	55,142,206
Valley	Water Treatment and Distribution System	7325000	1%	11,664,026	0.628	66,806,232
Delaware County Regional Water Quality Authority	Wastewater Collection and Treatment	276500000	32%	399,664,111	0.6918	466,470,343
Valley	Wastewater Collection System	13950000	2%	19,252,333	0.7246	485,722,676
Upper Pottsgrove	Wastewater Collection	13750000	2%	18,460,028	0.7449	504,182,704
East Norriton	Wastewater Collection	21000000	2%	27,461,356	0.7647	531,644,060
Limerick Township	Wastewater Collection and Treatment System	64373378	7%	73,068,377	0.881	604,712,437
Steelton	Water Distribution and Treatment	21750000	3%	23,921,473	0.9092	628,633,910
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	29500000	3%	30,615,410	0.9636	659,249,320
Exeter	Wastewater Collection and Treatment	96000000	11%	99,589,819	0.964	758,839,139
Royersford	Wastewater Collection and Treatment	13000000	2%	13,376,109	0.9719	772,215,248
Cheltenham	Wastewater Collection	50250000	6%	49,940,486	1.0062	822,155,734
Sadsbury	Wastewater Collection	8600000	1%	8,517,587	1.0097	830,673,321
City of McKeesport	Wastewater Collection and Treatment	159000000	18%	156,524,909	1.0158	987,198,230
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	53000000	6%	51,414,555	1.0308	1,038,612,785
		860058378	1	1,038,612,785	0.8281	

Middle OCLD		519,306,393
Bottomvalue of the range containng the Middle Value	0.7449	504,182,704
Top value of the range containing the Middle Value	0.7647	531,644,060
Range containng the middle value	0.0198	27,461,356
Range from bottom value to middle value	0.0109	15,123,689
Median Value	0.7558	

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Analysis - PP/Customer

Property Acquired	Type of System and Attributes		Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Variance to Simple Mean	Variance to Wtd Mean	(Variance to Wtd Mean)^2
City of McKeesport	Wastewater Collection and Treatment	2	2016.67	159.000.000	19%	21.953	7.243	(720)	(3.719)	13.830.961
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2	2016.59	29.500.000	3%	2.106	14.008	6.045	3.046	9.278.116
Limerick Township	Wastewater Collection and Treatment System	2	2016.88	64.373.378	8%	5.434	11.846	3.883	884	781.456
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2	2017.94	5.000.000	1%	1.248	4.006	(3.957)	(6.956)	48.385.936
Mahoning	Water Distribution System	1	2018.30	4.734.800	1%	1.186	3.992	(3.971)	(6.970)	48.580.900
Mahoning	Wastewater Collection	3	2018.30	4.765.200	1%	1.451	3.284	(4.679)	(7.678)	58.951.684
Cheltenham	Wastewater Collection	3	2018.42	50.250.000	6%	10.500	4.786	(3.177)	(6.176)	38.142.976
Steelton	Water Distribution and Treatment	1	2018.87	21.750.000	3%	2.325	9.355	1.392	(1.607)	2.582.449
Sadsbury	Wastewater Collection	3	2017.00	8.600.000	1%	998	8.617	654	(2.345)	5.499.025
Exeter	Wastewater Collection and Treatment	2	2018.41	93.500.000	11%	9.000	10.389	2.426	(573)	328.329
East Norriton	Wastewater Collection	3	2018.83	21.000.000	2%	4.950	4.242	(3.721)	(6.720)	45.158.400
Kane	Wastewater Collection and Treatment	2	2018.75	17.560.000	2%	2.006	8.754	791	(2.208)	4.875.264
Royersford	Wastewater Collection and Treatment	2	2019.94	13.000.000	2%	1.596	8.145	182	(2.817)	7.935.489
Valley	Water Treatment and Distribution System	1	2019.96	7.325.000	1%	1.459	5.021	(2.942)	(5.941)	35.295.481
Valley	Wastewater Collection System	3	2019.96	13.950.000	2%	1.644	8.485	522	(2.477)	6.135.529
Delaware County Regional Water Quality A	Wastewater Collection and Treatment	2	2020.00	276.500.000	32%	16.473	16.785	8.822	5.823	33.907.329
Upper Pottsgrove	Wastewater Collection	3	2020.33	13.750.000	2%	1.428	9.629	1.666	(1.333)	1.776.889
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2	2020.71	53.000.000	6%	11.151	4.753	(3.210)	(6.209)	38.551.681
				857.558.378	100%	96.908	8.849			
Simple Mean							7963			
Standard Deviation							3637			
SimpleMedian							8.315			
Simple Mode							16.785			
Weighted Mean							10962			
Standard Deviation							4613			
Wtd Median							4.963			
Wtd Mode							16.785			
Forecast			2019 944064				7.600			
			2021				7.301			

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Accummulated Customers
Mahoning	Wastewater Collection	2018.30	4.765.200	1%	1.451	3.284	1.451
Mahoning	Water Distribution System	2018.30	4.734.800	1%	1.186	3.992	2.637
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5.000.000	1%	1.248	4.006	3.885
East Norriton	Wastewater Collection	2018.83	21.000.000	2%	4.950	4.242	8.835
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53.000.000	6%	11.151	4.753	19.986
Cheltenham	Wastewater Collection	2018.42	50.250.000	6%	10.500	4.786	30.486
Valley	Water Treatment and Distribution System	2019.96	7.325.000	1%	1.459	5.021	31.945
City of McKeesport	Wastewater Collection and Treatment	2016.67	159.000.000	18%	21.953	7.243	53.898
Royersford	Wastewater Collection and Treatment	2019.94	13.000.000	2%	1.596	8.145	55.494
Valley	Wastewater Collection System	2019.96	13.950.000	2%	1.644	8.485	57.138
Sadsbury	Wastewater Collection	2017.00	8.600.000	1%	998	8.617	58.136
Kane	Wastewater Collection and Treatment	2018.75	17.560.000	2%	2.006	8.754	60.142
Steelton	Water Distribution and Treatment	2018.87	21.750.000	3%	2.325	9.355	62.467
Upper Pottsgrove	Wastewater Collection	2020.33	13.750.000	2%	1.428	9.629	63.895
Exeter	Wastewater Collection and Treatment	2018.41	96.000.000	11%	9.000	10.667	72.895
Limerick Township	Wastewater Collection and Treatment System	2016.88	64.373.378	7%	5.434	11.846	78.329
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29.500.000	3%	2.106	14.008	80.435
Delaware County Regional Water Quality A	Wastewater Collection and Treatment	2020.00	276.500.000	32%	16.473	16.785	96.908
			860.058.378	100%	96.908	8.875	
Middle OCLD							48.454
Bottom value of the range containing the Middle Value						4.786	31.945
Top value of the range containing the Middle Value						5.021	53.898
Range containing the middle value						235	21.953
Range from bottom value to middle value						177	16.509
Median Value						4.963	

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Customers	Purchase Price to Customers	Accummulated Customers
Water Distribution and Treatment							
Mahoning	Water Distribution System	2018.304795	4,734,800	0.005505208	1186	3992	2637
Valley	Water Treatment and Distribution System	2019.963242	7,325,000	0.008516864	1459	5021	31945
Steelton	Water Distribution and Treatment	2018.871689	21,750,000	0.025288981	2325	9355	62467
Mean						6122.66667	
Median						5021	
Wastewater Collection and Treatment							
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.944064	5,000,000	0.005813559	1248	4006	3885
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.713242	53,000,000	0.061623724	11151	4753	19986
City of McKeesport	Wastewater Collection and Treatment	2016.669406	159,000,000	0.184871172	21953	7243	53898
Royersford	Wastewater Collection and Treatment	2019.944064	13,000,000	0.015115253	1596	8145	55494
Kane	Wastewater Collection and Treatment	2018.748858	17,560,000	0.020417219	2006	8754	60142
Exeter	Wastewater Collection and Treatment	2018.410046	96,000,000	0.11162033	9000	10667	72895
Limerick Township	Wastewater Collection and Treatment System	2016.877169	64,373,378	0.074847684	5434	11846	78329
New Garden Twp. SA	Wastewater Collection and Paid for and Owned	2016.586073	29,500,000	0.034299997	2106	14008	80435
Delaware County Regional Water Quality A	Wastewater Collection and Treatment	2020.001598	276,500,000	0.321489805	16473	16785	96908
Mean						9578.55556	
Median						8754	
Wastewater Collection Only							
Mahoning	Wastewater Collection	2018.304795	4,765,200	0.005540554	1451	3284	1451
East Norriton	Wastewater Collection	2018.829452	21,000,000	0.024416947	4950	4242	8835
Cheltenham	Wastewater Collection	2018.419406	50,250,000	0.058426267	10500	4786	30486
Valley	Wastewater Collection System	2019.963242	13,950,000	0.016219829	1644	8485	57138
Sadsbury	Wastewater Collection	2017.00274	8,600,000	0.009999321	998	8617	58136
Upper Pottsgrove	Wastewater Collection	2020.326712	13,750,000	0.015987287	1428	9629	63895
Mean						6507.16667	
Median						6635.5	

Description of Service	Purchase Price per Customer Mean	Median
Water Distribution and Treatment	6,123	5,021
Wastewater Collection and Treatment	9,579	8,754
Wastewater Collection	6,507	6,636
Wastewater Treatment Only	3,072	2,118

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Comparable Sales Approach

Market Sales Analysis - PP/Cash Flow (EBITDA Periods 1-5)

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-5)	Purchase Price to Cash Flow	Variance to Simple Mean	Variance to Wtd Mean	Variance Squared	Wtd Mean Cash Flow
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	19%	7,409,096	21.46	3.98	6.14	37.70	3.98
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	1,717,347	17.18	(0.30)	1.86	3.46	0.59
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	8%	3,542,124	18.17	0.69	2.85	8.12	1.36
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	283,367	17.64	0.16	2.32	5.38	0.10
Mahoning	Water Distribution System	2018.30	4,734,800	1%	233,922	20.24	2.76	4.92	24.21	0.11
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	233,922	20.37	2.89	5.05	25.50	0.11
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,754,020	10.57	(6.91)	(4.75)	22.56	0.62
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	2,278,514	9.55	(7.93)	(5.77)	33.29	0.24
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	714,645	12.03	(5.45)	(3.29)	10.82	0.12
Exeter	Wastewater Collection and Treatment	2018.41	93,500,000	11%	7,279,978	12.84	(4.64)	(2.48)	6.15	1.40
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	1,265,269	16.60	(0.88)	1.28	1.64	0.41
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,039,593	16.89	(0.59)	1.57	2.46	0.35
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	600,765	21.64	4.16	6.32	39.94	0.33
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	398,458	18.38	0.90	3.06	9.36	0.16
Valley	Wastewater Collection System	2019.96	13,950,000	2%	392,972	35.50	18.02	20.18	407.23	0.58
Delaware County Regional Wa	Wastewater Collection and Treatment	2020.00	276,500,000	32%	25,883,282	10.68	(6.80)	(4.64)	21.53	3.44
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	845,182	16.27	(1.21)	0.95	0.90	0.26
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	2,839,988	18.66	1.18	3.34	11.16	1.15
			857,558,378	100%	61,712,444					
Simple Mean						17.48				
Standard Deviation						5.71				
SimpleMedian						17.41				
Simple Mode						Not Applicable				
Weighted Mean						15.32				
Standard Deviation						5.10				
Wtd Median						18.13				
Wtd Mode						Not Applicable				

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-5)	Purchase Price to Cash Flow	Accummulated Cashflow (EBITDA Period 1-5)
Steelton	Water Distribution and Treatment	2018.871689	21750000	0.025288981	2278514	9.55	9.55
Cheltenham	Wastewater Collection	2018.419406	50250000	0.058426267	4754020	10.57	20.12
Delaware County Regional Wa	Wastewater Collection and Treatme	2020.001598	276500000	0.321489805	25883282	10.68	30.8
Sadsbury	Wastewater Collection	2017.00274	8600000	0.009999321	714645	12.03	42.83
Exeter	Wastewater Collection and Treatme	2018.410046	96000000	0.11162033	7279978	13.19	56.02
Upper Pottsgrove	Wastewater Collection	2020.326712	13750000	0.015987287	845182	16.27	72.29
East Norriton	Wastewater Collection	2018.829452	21000000	0.024416947	1265269	16.6	88.89
Kane	Wastewater Collection and Treatme	2018.748858	17560000	0.020417219	1039593	16.89	105.78
New Garden Twp. SA	Wastewater Collection and Paid for	2016.586073	29500000	0.034299997	1717347	17.18	122.96
East Bradford Township	Wastewater Collection and paid for	2017.944064	5000000	0.005813559	283367	17.64	140.6
Limerick Township	Wastewater Collection and Treatme	2016.877169	64373378	0.074847684	3542124.2	18.17	158.77
Valley	Water Treatment and Distribution S	2019.963242	7325000	0.008516864	398458	18.38	177.15
Lower Makefield	Wastewater Collection and Purchas	2020.713242	53000000	0.061623724	2839988	18.66	195.81
Mahoning	Water Distribution System	2018.304795	4734800	0.005505208	233922	20.24	216.05
Mahoning	Wastewater Collection	2018.304795	4765200	0.005540554	233922	20.37	236.42
City of McKeesport	Wastewater Collection and Treatme	2016.669406	159000000	0.184871172	7409096	21.46	257.88
Royersford	Wastewater Collection and Treatme	2019.944064	13000000	0.015115253	600765	21.64	279.52
Valley	Wastewater Collection System	2019.963242	13950000	0.016219829	392972	35.5	315.02
			860058378	1	61712444.2		
Middle Cash Flow							157.51
Bottomvalue of the range containg the Middle Value						17.64	140.60
Top value of the range containing the Middle Value						18.17	158.77
Range containg the middle value						0.53	18.17
Range from bottom value to middle value						0.49	16.91
Median Value						18.13	

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Comparable Sales Approach

Market Sales Analysis - PP/Cash Flow (EBITDA Periods 1-13)

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-13)	Purchase Price to Cash Flow	Variance to Simple Mean	Variance to Wtd Mean	Variance Squared	Wtd Mean Cash Flow
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	19%	11,958,224	13.30	1.68	1.85	3.42	2.47
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	2,625,115	11.24	(0.38)	(0.21)	0.04	0.39
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	8%	5,212,045	12.35	0.73	0.90	0.81	0.93
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	632,892	7.90	(3.72)	(3.55)	12.60	0.05
Mahoning	Water Distribution System	2018.30	4,734,800	1%	348,409	13.59	1.97	2.14	4.58	0.08
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	348,409	13.68	2.06	2.23	4.97	0.08
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,326,210	11.62	-	0.17	0.03	0.68
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	3,893,757	5.59	(6.03)	(5.86)	34.34	0.14
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	895,128	9.61	(2.01)	(1.84)	3.39	0.10
Exeter	Wastewater Collection and Treatment	2018.41	93,500,000	11%	8,011,315	11.67	0.05	0.22	0.05	1.27
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	2,011,465	10.44	(1.18)	(1.01)	1.02	0.26
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,446,948	12.14	0.52	0.69	0.48	0.25
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	1,209,765	10.75	(0.87)	(0.70)	0.49	0.16
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	817,993	8.95	(2.67)	(2.50)	6.25	0.08
Valley	Wastewater Collection System	2019.96	13,950,000	2%	844,046	16.53	4.91	5.08	25.81	0.27
Delaware County Regional Water Q	Wastewater Collection and Treatment	2020.00	276,500,000	32%	28,960,162	9.55	(2.07)	(1.90)	3.61	3.08
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	932,042	14.75	3.13	3.30	10.89	0.24
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	3,432,340	15.44	3.82	3.99	15.92	0.95
			857,558,378	100%	77,906,265					

Simple Mean	11.62
Standard Deviation	2.67
SimpleMedian	11.65
Simple Mode	Not Applicable
Weighted Mean	11.45
Standard Deviation	2.14
Wtd Median	12.07
Wtd Mode	Not Applicable

Property Acquired	Type of System and Attributes	Asset Purchase Agreement (APA) Date	Purchase Price (PP)	Proportion of Purchase Price to Total	Cash Flows (EBITDA Periods 1-13)	Purchase Price to Cash Flow	Accummulated Cashflow (EBITDA Period 1-13)
Steelton	Water Distribution and Treatment	2018.87	21,750,000	3%	3,893,757	5.59	5.59
East Bradford Township	Wastewater Collection and paid for treatment Capacity	2017.94	5,000,000	1%	632,892	7.90	13.49
Valley	Water Treatment and Distribution System	2019.96	7,325,000	1%	817,993	8.95	22.44
Delaware County Regional Water Q	Wastewater Collection and Treatment	2020.00	276,500,000	32%	28,960,162	9.55	31.99
Sadsbury	Wastewater Collection	2017.00	8,600,000	1%	895,128	9.61	41.60
East Norriton	Wastewater Collection	2018.83	21,000,000	2%	2,011,465	10.44	52.04
Royersford	Wastewater Collection and Treatment	2019.94	13,000,000	2%	1,209,765	10.75	62.79
New Garden Twp. SA	Wastewater Collection and Paid for and Owned Treatment	2016.59	29,500,000	3%	2,625,115	11.24	74.03
Cheltenham	Wastewater Collection	2018.42	50,250,000	6%	4,326,210	11.62	85.65
Exeter	Wastewater Collection and Treatment	2018.41	96,000,000	11%	8,011,315	11.98	97.63
Kane	Wastewater Collection and Treatment	2018.75	17,560,000	2%	1,446,948	12.14	109.77
Limerick Township	Wastewater Collection and Treatment System	2016.88	64,373,378	7%	5,212,045	12.35	122.12
City of McKeesport	Wastewater Collection and Treatment	2016.67	159,000,000	18%	11,958,224	13.30	135.42
Mahoning	Water Distribution System	2018.30	4,734,800	1%	348,409	13.59	149.01
Mahoning	Wastewater Collection	2018.30	4,765,200	1%	348,409	13.68	162.69
Upper Pottsgrove	Wastewater Collection	2020.33	13,750,000	2%	932,042	14.75	177.44
Lower Makefield	Wastewater Collection and Purchased Treatment Capacity	2020.71	53,000,000	6%	3,432,340	15.44	192.88
Valley	Wastewater Collection System	2019.96	13,950,000	2%	844,046	16.53	209.41
			860,058,378	100%	77,906,265		

Middle Cash Flow		104.71
Bottomvalue of the range containing the Middle Value	11.98	97.63
Top value of the range containing the Middle Value	12.14	109.77
Range containng the middle value	0.16	12.14
Range from bottom value to middle value	0.09	7.08
Median Value	12.07	

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Wastewater Collection System and Purchased Treatment Capacity
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Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Aqua America	California Water	Consol. Water Co.	Middlesex Water	SJW Corp	York	Totals
Price per Share			87.33	123.05	47.08	51.52	16.46	63.56	71.79	46.38	
Book value per share			16.1	34.4	18	15.85	10.95	15.7	31.2	10.4	
Market to Book Equity Ratio			5.42	3.58	2.62	3.25	1.5	4.05	2.3	4.46	
Minimum	1.5	2.62									
Mean	3.40	3.1		3.58	2.62						
Standard Deviation	1.18	0.480									
Weighted Market to Debt Ratio	3.41		20,013.22	112,367.28	34,710.24	11,207.07	371.03	5,481.74	5,874.18	3,135.10	193,159.86
Median	3.415	3.1									
Maximum	5.42	3.58									
Debt (Total) $s millions			475.3	9,143.0	3,086.4	967.9	-	294.0	511.1	100.7	
Outstanding Shares (millions)			36.84	180.78	215.84	48.15	15.03	16.67	28.46	12.98	
Debt per share			12.9	50.58	14.3	20.1	0	17.64	17.96	7.76	
Equity (Total) $s millions			3,217.18	22,244.51	10,161.78	2,480.43	247.35	1,059.52	2,042.89	602.24	
Total Capital (Debt + Equity)			3,692.48	31,387.51	13,248.18	3,448.33	247.35	1,353.52	2,553.99	702.94	56,634.30
			0.07	0.55	0.23	0.06	-	0.02	0.05	0.01	0.99
Market Value per Share (Equity+Debt)			100.23	173.63	61.38	71.62	16.46	81.2	89.75	54.14	
Book Value per Share (Equity+Debt)			29	84.98	32.3	35.95	10.95	33.34	49.16	18.16	
Market to Book (Total Capital) Ratio			3.46	2.04	1.9	1.99	1.5	2.44	1.83	2.98	
Minimum	1.5	1.9									
Mean	2.27	1.97		2.04	1.9						
Standard Deviation	0.61	0.070									
Weighted Market to Book (Debt&Equity) Ratio	2.11		12,775.97	64,030.52	25,171.55	6,862.18	371.03	3,302.58	4,673.80	2,094.75	119,282.38
Variance to Wtd Mean	0.1392		1.35	(0.07)	(0.21)	(0.12)	(0.61)	0.33	(0.28)	0.87	
Median	2.015	1.97									
Maximum	3.46	2.04									

1. Value Line Investment Survey January 10, 2020
2. Value Line dropped Connecticut Water in its January 10, 2020 publication

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East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional Wa	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

Water and Wastewater General Information

Appraisal Work Papers

Cost Indices

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Water and Wastewater General Information
Appraisal Work Papers

Cost Indices

Handy Whitman Index of Public System Construction Costs
Water Industry – Northeastern United States

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Bulletin No. 193

1912 to January 1, 2021

The Handy-Whitman Index® of Public Utility Construction Costs™

Trends of Construction Costs

COMPILED & PUBLISHED BY

Whitman, Requardt & Associates, LLP

Engineers, Architects and Planners

801 South Caroline Street

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TRENDS OF PUBLIC UTILITY CONSTRUCTION COSTS

GEOGRAPHIC REGIONS



Tradition of Quality

The Handy-Whitman Index of Public Utility Construction Costs has been published continuously since 1924. Formerly the Handy Index, Bulletin Nos. 1 through 15 were developed by William W. Handy of Baltimore who had wide valuation experience in public utilities. *He believed that valuation studies should not be confined to rate cases but should be kept alive to the benefit of the utility industry.* He began publishing index numbers for electric and gas construction cost trends. Carrying on with the *tradition of quality*, after Mr. Handy's death, we continued publication for his estate beginning with Bulletin 16. Then, January 1, 1950, Whitman, Requardt and Associates, LLP purchased rights to the publication and have since been the sole publishers.

The name Handy-Whitman Index was adopted for Bulletin No. 53 and succeeding issues to combine the names of Mr. Handy and Ezra B. Whitman, a well-known valuation engineer. In 1957 an index of water utility construction costs was added. Mr. Whitman was a consultant on the publication of the Index until his death in 1963.

Whitman, Requardt and Associates, LLP

Ezra B. Whitman, a well-known valuation engineer was one of the founders of our firm. Major Whitman, as he was known from his World War I service, had already made a name for himself. Prior to the founding of the firm in 1915, Major Whitman had been President and Chief Engineer of the Water Board of the City of Baltimore. He designed the first rapid sand filtration plant serving a major city while he was the Baltimore Water Engineer. He was also president of the American Society of Civil Engineers and of the American Institute of Consulting Engineers and a chairman of the Public Service Commission of Maryland.

The Handy-Whitman Index is prepared especially for electric, gas and water utilities and is the only known publication of its kind available to the public. The list of subscribers is international and includes operating utilities, regulatory bodies, valuation engineers, equipment industries, insurance companies and reference libraries.

Tradition of Quality Continued

Since 1915, Whitman, Requardt and Associates, LLP, has been an independent consulting engineering firm organized to serve government, industry and private enterprise.

The firm has steadily expanded its engineering capabilities, providing complete services for civil, sanitary, structural, mechanical and electrical engineering and architectural projects from job inception through construction management. Construction cost data from utility projects of all types are available from design and valuation assignments. The staff is composed of specialists in these and related disciplines who bring a diverse professional and academic expertise to each assignment. A full-time staff is maintained specifically for preparing the Handy-Whitman Index.

Methods of Preparation of Indexes

An index number is a percentage ratio between the cost of an item at any stated time and its cost at a base period, or:

$$\text{Index Number} = \frac{\text{cost at stated time}}{\text{cost at base period}} \times 100$$

Index numbers have been prepared for many items, including wage rates, cost-of-living, material and equipment costs, and financial transactions. In the Handy-Whitman Index, index numbers have been developed for Building Construction, Electric Utility Construction, Gas Utility Construction and Water Utility Construction. Prices of basic materials such as cement, sand, gravel, cast iron pipe, wire, etc., are obtained from publications such as Engineering News-Record and checked against prices actually being paid for such materials. Labor cost trends are computed from labor rates obtained from sources such as the Construction Labor Research Council. Prices and cost trends of equipment are obtained from nationally recognized manufacturers, and operating utilities.

Handy-Whitman Index numbers are developed from wage rates and prices prevailing on January 1 and July 1 each year. The index numbers are generally based on 1973 = 100, although those items of recent origin are based on a later year.

The proportions of basic materials, labor, equipment and other cost components used in the Handy-Whitman Index are based on analyses developed during valuation and design assignments and on data furnished by utilities and industrial sources willing to assist with the Index. These data are reviewed continuously, and weightings and components are revised as required. This review assures that the indexes published reflect current construction practice.

Geographic Regions

To reflect differing cost trends throughout the 48 contiguous states, the index has been divided into six geographical regions of similar characteristics. They are shown on the accompanying map.

Use of Index Numbers

Handy-Whitman Index numbers have been widely used to trend earlier valuations and original cost records to estimate reproduction cost at prices prevailing at a certain date. The use of indexes for an appropriate property item or group will provide a reliable guide to changes in cost. Cost trends are given for all the important items of property. The electric and gas groups are arranged by the Federal Energy Regulatory Commission Uniform System of Accounts. The water property accounts are arranged to follow the classification of the National Association of Regulatory Utility Commissioners and the American Water Works Association.

The Handy-Whitman Index will furnish a yardstick for the fluctuations in value of property which will be satisfactory for many purposes. In rate cases, when a more exact determination of value is desired, however, the Index must be used carefully. Average prices and cost trends are used to develop the Index, and any direct application of cost trends without checking with actual local experience may not be accepted without controversy. When local experience is compared with the index and the correlation between the two trends is determined, the result is satisfactory. Costs trended by such a method are used to assist in establishing a rate base.

Indexes in these bulletins are used to trend earlier valuations or original cost records for insurance purposes.

The Handy-Whitman Index has a general application in valuations of all types of property. The building construction cost trends may be used wherever similar items of property are to be compared. Many of the other trends may be used for related items in other industries because of their similarity.

State-of-the-art changes often affect costs independently of inflation. New regulatory and environmental requirements, changes in work rules and improved design standards, for instance, increase construction costs even though the price of wages, materials and equipment may be static. Trended construction costs will not reflect such changes. However, trended costs are a reasonably accurate measure of the cost of reproducing actual plant.

Although every effort is made to maintain accuracy, Whitman, Requardt and Associates, LLP disclaim any responsibility for the use of these indexes, because local conditions may vary.

No guarantee or warranty of any kind is made in the sale of the Handy-Whitman Index. Published numbers are occasionally subject to change based upon receipt of new or different information. These numbers will be bolded.

Further inquiries on electric, gas and water indexes should be addressed to Whitman, Requardt and Associates, LLP.

Total Electric Plant and Function

Three indexes are provided for total plant. The first is for all steam generation and the other two for weighted combinations of steam and nuclear, and steam and hydro generation. Indexes are also provided for each function.

Indexes are not maintained for plant accounts 323,324,325,341,345 and 346. We believe that indexes for comparable accounts in other functions are sufficiently accurate for these accounts.

The indexes for total nuclear production and total other production incorporate comparable indexes from the steam production function for the accounts not listed.

Value of Index Numbers

We believe that present-day reproduction cost of any property can be calculated more accurately using index numbers than by repricing a complete inventory.

Trending the controlling items of property in any utility by the index method saves time and effort in arriving at a valuation. Analyzing and determining cost trends for all of the great numbers of articles of plant that represent only a very small proportion of the value of the utility is not necessary. They may be assumed to follow in general the trend of the controlling items, and the fluctuations in value above or below the trends of the controlling items will tend to offset each other and have a very slight effect on the total value.

Comments on Bulletin No. 193

During the twelve-month period ending January 1, 2021, the average index of all geographical regions for Total Gas Plant increased 0.9%, and the comparable index for Electric Plant-All Steam Generation increased 4.5%.

May 2021
Whitman, Requardt and Associates, LLP

Cost Trends Of

Building Construction

COST TREND TABLES
1912 to January 1, 2021

B-1

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	8	8	8	8	12	18	19	19	20	15	14	17	17	17	17	16
3	Brick Building Construction	8	8	8	9	11	15	17	19	21	17	16	18	19	18	18	18
4	Structural Steel Erected	9	9	9	8	16	29	26	22	22	16	15	19	19	17	17	16
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7																	
8	**Building Material**																
9	Ready-Mix Concrete	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Lumber for Reinf. Concrete	7	7	7	7	9	13	19	19	20	14	13	15	19	19	15	15
11	Steel Bars for Reinf. Concrete	15	15	15	17	34	47	37	35	37	24	22	28	29	27	25	24
12	Common Brick	10	10	10	14	16	19	20	27	34	31	30	33	30	28	28	28
13	Concrete Block	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14																	
15	**Labor**																
16	Building Trades Labor	6	6	6	6	6	7	8	10	11	11	11	12	13	14	15	15
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	5	5	5	5	5	6	8	10	11	9	9	10	11	11	11	11
19	Common Labor	4	4	4	4	5	5	8	10	11	9	8	9	9	9	9	9
20	Electricians	5	5	5	6	6	6	8	9	10	11	11	11	12	13	14	14
21	Pipefitters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	Plumbers	6	6	6	6	6	7	8	9	9	11	11	12	12	13	14	14
23																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	16	16	15	14	12	13	15	15	15	16	16	16	17	18	20	20
3	Brick Building Construction	18	17	17	16	14	14	16	16	16	17	17	17	17	19	20	20
4	Structural Steel Erected	16	16	15	13	11	12	14	15	15	17	15	15	15	19	20	20
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Reinf. Concrete (Plant-Mix)	16	16	15	14	12	13	15	15	15	17	17	17	17	18	19	19
7																	
8	**Building Material**																
9	Ready-Mix Concrete	-	-	-	-	-	-	32	32	32	33	33	32	31	31	32	33
10	Lumber for Reinf. Concrete	15	15	14	12	10	12	16	13	13	15	15	15	16	19	21	22
11	Steel Bars for Reinf. Concrete	24	25	22	20	20	21	24	23	25	31	29	28	27	28	28	28
12	Common Brick	25	23	20	20	19	19	22	20	20	20	20	20	20	21	22	22
13	Concrete Block	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14																	
15	**Labor**																
16	Building Trades Labor	15	15	15	15	14	12	13	13	13	15	15	15	16	17	18	18
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	11	11	10	10	9	9	11	11	11	12	13	13	14	14	14	15
19	Common Labor	9	9	9	9	8	6	8	9	9	10	10	11	11	12	12	13
20	Electricians	14	15	15	16	16	14	14	14	15	16	16	17	17	18	19	19
21	Pipefitters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	Plumbers	14	15	15	15	13	13	14	14	14	15	16	16	17	17	18	18
23																	

B-1

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	20	20	24	28	32	34	35	37	38	40	42	44	48	52	53	55
3	Brick Building Construction	21	21	24	28	32	34	35	37	38	39	41	42	46	49	50	52
4	Structural Steel Erected	20	20	24	30	37	39	41	43	43	47	48	50	59	66	67	67
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	35	37	39	41	43	46	48	50
7																	
8	**Building Material**																
9	Ready-Mix Concrete	33	33	35	39	44	45	46	47	49	50	54	57	60	63	66	66
10	Lumber for Reinf. Concrete	23	23	29	33	38	34	37	37	38	36	39	42	44	45	44	47
11	Steel Bars for Reinf. Concrete	28	28	30	34	37	43	45	47	48	51	53	56	61	68	70	72
12	Common Brick	23	27	31	33	38	42	43	47	47	48	50	51	52	53	54	54
13	Concrete Block	-	-	-	-	-	56	58	62	63	63	62	67	69	70	69	73
14																	
15	**Labor**																
16	Building Trades Labor	18	19	21	23	26	27	28	31	31	33	34	36	37	39	41	43
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	15	16	18	22	24	25	26	27	29	30	32	33	35	37	39	41
19	Common Labor	13	14	17	19	21	23	24	25	27	28	30	31	33	35	37	40
20	Electricians	19	19	20	23	25	27	28	30	32	33	34	35	37	38	41	42
21	Pipefitters	-	-	-	-	-	26	27	28	29	31	32	33	35	35	39	41
22	Plumbers	18	18	19	22	25	27	28	29	30	32	34	35	37	38	40	41
23																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	55	54	55	55	57	58	59	62	65	70	75	84	91	100	121	134
3	Brick Building Construction	53	52	53	54	56	57	59	61	64	68	74	84	91	100	118	127
4	Structural Steel Erected	66	62	62	62	63	63	65	66	69	74	77	83	89	100	140	161
5	Reinf. Concrete (Ready-Mix)	51	52	53	54	55	57	59	61	64	69	77	88	94	100	111	119
6	Reinf. Concrete (Plant-Mix)	49	48	50	51	52	53	56	58	61	66	73	83	91	100	108	115
7																	
8	**Building Material**																
9	Ready-Mix Concrete	66	66	66	65	64	64	65	65	68	73	82	91	94	100	112	123
10	Lumber for Reinf. Concrete	47	39	41	40	39	38	41	42	46	53	53	63	75	100	93	91
11	Steel Bars for Reinf. Concrete	72	72	72	72	74	81	82	81	81	81	84	91	91	100	157	156
12	Common Brick	56	56	56	57	58	58	60	62	65	65	68	78	84	100	123	126
13	Concrete Block	68	70	70	70	70	67	70	72	75	77	81	90	98	100	109	113
14																	
15	**Labor**																
16	Building Trades Labor	45	46	48	50	52	54	56	59	62	68	76	87	96	100	108	115
17	Heavy Constr. Trades Labor	-	45	47	48	50	53	56	58	61	67	76	86	96	100	107	116
18	Labor for Reinf. Concrete	43	45	47	49	51	53	56	58	62	67	77	88	96	100	108	116
19	Common Labor	42	44	45	47	49	52	55	58	61	66	75	88	97	100	109	117
20	Electricians	43	45	48	49	51	53	55	57	60	64	72	82	91	100	108	117
21	Pipefitters	41	44	45	45	48	50	52	55	57	62	70	85	97	100	107	114
22	Plumbers	43	44	46	48	49	51	53	56	58	64	71	86	96	100	107	114
23																	

B-1

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	134	139	150	167	184	190	189	196	211	222	229	234	246	258	262	257
3	Brick Building Construction	130	136	148	164	183	192	197	206	217	225	233	239	252	265	271	272
4	Structural Steel Erected	153	154	170	193	225	227	202	202	225	240	249	255	272	286	286	261
5	Reinf. Concrete (Ready-Mix)	124	131	140	154	166	176	191	201	210	220	225	229	238	244	251	260
7																	
8	**Building Material**																
9	Ready-Mix Concrete	126	133	143	163	185	207	226	227	235	248	245	252	254	244	250	255
10	Lumber for Reinf. Concrete	106	118	130	148	139	138	135	143	144	140	140	146	143	148	147	145
11	Steel Bars for Reinf. Concrete	145	147	166	206	215	216	203	190	198	202	205	205	227	232	222	199
12	Common Brick	130	136	159	190	232	247	255	257	256	246	258	270	292	320	320	316
13	Concrete Block	116	120	139	185	210	228	260	260	262	278	285	287	285	301	288	288
14																	
15	**Labor**																
16	Building Trades Labor	122	129	135	143	152	164	184	199	212	221	229	234	245	256	268	285
17	Heavy Constr. Trades Labor	123	131	137	146	155	165	184	199	210	220	229	233	244	255	264	279
18	Labor for Reinf. Concrete	122	130	137	147	157	166	184	198	210	220	227	232	242	253	262	277
19	Common Labor	124	133	141	152	163	172	190	204	214	223	231	234	243	254	265	280
20	Electricians	124	129	135	143	150	164	186	207	224	234	239	244	261	271	280	298
21	Pipefitters	122	131	135	143	154	170	192	207	219	228	236	242	248	263	276	290
22	Plumbers	122	131	136	141	152	168	191	205	217	226	235	241	242	257	279	294
23																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 Jan. 1	2005 Jul. 1
1	**Building Construction**															
2	Reinf. Conc. Bldg. Construction	262	279	298	305	311	322	324	330	342	**354**	363	371	403	415	422
3	Brick Building Construction	278	290	304	310	315	328	337	345	359	**372**	383	391	414	425	431
4	Structural Steel Erected	260	278	305	317	325	334	336	344	360	**372**	375	385	433	443	452
5	Reinf. Concrete (Ready-Mix)	268	279	291	296	304	312	320	327	336	**350**	364	372	389	402	409
6	Reinf. Concrete (Plant-Mix)	247	265	281	279	286	298	296	299	304	**316**	324	328	351	364	373
7																
8	**Building Material**															
9	Ready-Mix Concrete	257	262	270	281	295	286	301	307	315	**332**	350	356	344	351	371
10	Lumber for Reinf. Concrete	150	193	227	196	206	218	186	182	168	**179**	164	153	182	182	215
11	Steel Bars for Reinf. Concrete	194	212	234	236	236	250	246	229	225	**224**	221	243	296	348	360
12	Common Brick	315	310	313	315	311	335	369	384	412	**426**	426	427	429	429	439
13	Concrete Block	288	263	262	258	258	285	306	332	354	**365**	381	384	394	406	406
14																
15	**Labor**															
16	Building Trades Labor	296	307	318	326	331	344	353	362	376	**392**	412	424	442	458	458
17	Heavy Constr. Trades Labor	291	300	311	319	325	337	348	358	372	**386**	402	411	430	446	446
18	Labor for Reinf. Concrete	289	297	308	314	320	333	343	354	366	**382**	400	407	426	439	439
19	Common Labor	293	303	315	315	327	338	349	359	376	**389**	400	407	421	428	428
20	Electricians	309	324	336	343	353	365	377	390	401	**416**	441	454	475	497	497
21	Pipefitters	305	317	323	335	342	352	361	374	388	**409**	423	435	470	488	488
22	Plumbers	305	320	330	339	348	355	363	368	385	**405**	425	438	455	469	469
23																

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		2006		2007		2008		2009		2010		2011		2012		2013	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	431	436	446	472	493	501	505	486	497	498	515	515	524	527	537	534
3	Brick Building Construction	441	443	457	472	492	497	506	494	506	507	521	518	530	532	542	539
4	Structural Steel Erected	462	471	480	534	550	563	555	509	511	511	531	532	538	542	558	553
5	Reinf. Concrete (Ready-Mix)	414	418	434	446	469	476	484	484	500	506	516	517	525	526	527	527
7																	
8	**Building Material**																
9	Ready-Mix Concrete	371	379	382	425	425	425	429	430	430	437	431	439	441	441	436	436
10	Lumber for Reinf. Concrete	195	195	150	164	157	162	162	159	158	149	147	152	150	165	170	168
11	Steel Bars for Reinf. Concrete	324	361	380	420	398	490	334	326	358	416	417	406	393	391	365	356
12	Common Brick	439	439	457	457	460	460	460	453	453	453	453	434	448	451	458	452
13	Concrete Block	428	450	460	386	390	390	390	390	443	432	430	432	428	428	445	445
14																	
15	**Labor**																
16	Building Trades Labor	478	478	499	499	527	527	550	550	572	572	590	590	607	607	619	619
17	Heavy Constr. Trades Labor	459	459	483	483	517	517	542	542	564	564	584	584	596	596	605	605
18	Labor for Reinf. Concrete	452	452	476	476	512	512	541	541	562	562	579	579	591	591	598	598
19	Common Labor	436	436	475	475	510	510	550	550	572	572	590	590	604	604	604	604
20	Electricians	512	512	543	543	564	564	582	582	615	615	632	632	665	665	674	674
21	Pipefitters	514	514	526	526	566	566	590	590	607	607	642	642	658	658	668	668
22	Plumbers	502	502	520	520	545	545	580	580	597	597	610	610	623	623	634	634
23																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	2014		2015		2016		2017		2018		2019		2020		2021	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	**Building Construction**																
2	Reinf. Conc. Bldg. Construction	546	549	557	549	552	558	569	576	589	611	611	605	617	613	653	
3	Brick Building Construction	550	552	585	580	586	589	604	608	633	647	647	643	664	662	692	
4	Structural Steel Erected	561	567	568	555	549	556	561	569	579	617	618	604	609	594	652	
5	Reinf. Concrete (Ready-Mix)	541	543	556	554	564	567	581	585	602	609	611	608	625	629	650	
6	Reinf. Concrete (Plant-Mix)	482	482	497	490	497	505	519	527	541	561	553	551	565	568	599	
7																	
8	**Building Material**																
9	Ready-Mix Concrete	441	452	455	461	471	471	481	485	488	488	489	488	492	514	521	
10	Lumber for Reinf. Concrete	174	170	188	182	178	204	222	240	244	309	255	249	243	259	330	
11	Steel Bars for Reinf. Concrete	363	373	368	326	288	307	316	349	342	393	413	381	333	325	342	
12	Common Brick	449	449	617	617	618	618	636	637	725	725	709	709	757	757	765	
13	Concrete Block	444	499	505	485	483	429	427	411	411	443	429	461	462	461	463	
14																	
15	**Labor**																
16	Building Trades Labor	636	636	646	646	660	660	678	678	696	696	707	707	732	732	755	
17	Heavy Constr. Trades Labor	620	620	640	640	659	659	673	673	696	696	705	705	732	732	754	
18	Labor for Reinf. Concrete	616	616	633	633	651	651	666	666	690	690	693	693	723	723	745	
19	Common Labor	620	620	644	644	661	661	674	674	705	705	712	712	750	750	777	
20	Electricians	691	691	702	702	724	724	731	731	753	753	775	775	787	787	815	
21	Pipefitters	694	694	704	704	717	717	738	738	755	755	768	768	780	780	796	
22	Plumbers	655	655	668	668	674	674	696	696	716	716	734	734	751	751	776	
23																	

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
1	Boilers	6	6	6	7	8	13	17	15	16	14	12	14	15	15
2	Coal & Ash Handling Equipment	12	12	12	12	19	31	29	20	28	24	21	23	23	21
3	Pumps	9	9	9	12	14	16	18	18	18	17	16	16	16	17
4	Steam Pipe	17	17	17	12	18	39	44	35	37	35	34	36	37	37
5	Cranes	6	6	6	7	7	7	7	8	8	9	9	9	9	10
6	Regulators	32	32	32	32	32	39	47	45	49	50	49	50	53	52
7	Switchboards	20	20	20	20	21	23	26	35	44	49	43	40	43	43
8	Power Transformers	23	23	23	23	23	32	41	41	49	48	42	43	46	46
9	Oil Switches	27	27	27	27	27	30	38	45	49	53	50	50	51	51
10	Motors	21	21	21	21	21	28	31	37	42	43	34	29	29	29
11	Line Transformers	48	48	48	48	48	51	69	72	77	79	69	67	69	68
12	Meters-Electrric	37	37	37	37	37	41	46	51	53	57	53	50	50	48
13	Treated Pine Poles	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Standard Cross Arms	7	7	7	7	7	9	10	12	12	11	12	12	12	13
15	Standard Galv. Steel Guy Wire	12	12	12	14	15	19	22	23	22	22	21	21	20	20
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Mercury Luminaires w/Standard	-	-	-	-	-	-	-	-	-	-	-	-	27	26
19	Power Wire & Control Cable	23	23	23	30	36	42	48	51	49	37	29	33	31	34
20	Overhead Conductor-Transmission	28	26	23	25	45	49	54	53	51	31	28	32	31	32
21	Underground Conductor-Transmission	15	13	12	12	19	22	25	27	26	21	21	26	23	23
22	Overhead Conductor-Distribution	25	23	20	23	40	43	48	47	45	28	25	28	28	29
23	Underground Conductor-Distribution	16	15	14	14	22	25	28	30	29	22	22	28	25	25
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Condensers & Tubes	7	7	7	7	11	13	20	21	21	20	17	17	18	18
26	Turbo-Generators	9	9	9	9	13	13	17	18	21	23	20	19	19	19
27															
28	Gas Compressors	18	18	18	18	18	19	25	25	27	26	25	25	25	25
29	Gas Transmission Line Pipe	23	24	23	24	34	44	44	45	44	43	40	41	43	43
30	Steel Distribution Pipe	15	16	16	17	24	36	40	36	34	32	28	30	31	31
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Meters-Gas	17	18	18	18	19	23	33	33	32	33	30	30	28	27
33	House Regulators	24	25	25	25	26	31	47	46	45	45	41	41	39	37
34															
35	Cast Iron Pipe	16	17	16	17	23	40	44	48	53	44	39	45	47	40
36	Cast Iron Fittings	10	10	10	13	13	24	27	25	34	29	25	25	25	27
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Chemical Feeders-Small	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Chemical Feeders-Large	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	Gate Valves	15	15	15	17	17	17	24	24	30	28	25	29	29	27
41	Meter Yokes	24	24	24	24	24	24	29	29	31	31	29	29	29	29
42	Corporation Stops	27	27	27	27	27	27	25	25	25	25	25	25	24	24
43	Curb Stops	20	20	20	20	20	20	22	22	22	22	22	22	21	21
44	Hydrants	23	23	23	23	23	23	23	24	27	27	23	26	27	26
45	Meters-Water	23	23	23	23	26	29	35	37	37	37	37	37	37	37
46															
47															
48															
49															
50	Construction Equipment	-	-	-	11	15	19	26	28	30	22	19	23	21	22
51															
52															
53															
54															
55															
56															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
1	Boilers	15	15	14	14	14	14	12	12	15	15	16	18	19	20
2	Coal & Ash Handling Equipment	21	20	20	20	19	17	16	17	20	20	20	21	20	20
3	Pumps	19	19	19	20	20	19	18	18	19	19	19	21	22	22
4	Steam Pipe	37	37	37	36	36	36	35	32	31	31	32	36	35	35
5	Cranes	10	10	11	11	11	11	10	10	10	10	10	10	10	11
6	Regulators	42	41	40	41	42	43	42	43	48	48	48	52	53	53
7	Switchboards	44	44	45	48	48	47	43	43	48	48	48	52	53	53
8	Power Transformers	46	43	41	42	40	40	39	40	46	47	47	50	52	52
9	Oil Switches	51	49	49	51	53	52	51	55	59	59	59	63	65	65
10	Motors	29	28	28	29	29	29	29	30	33	32	32	32	32	32
11	Line Transformers	63	59	58	62	61	59	57	59	61	62	62	66	67	67
12	Meters-Electrric	48	48	48	48	48	48	48	50	54	55	55	55	55	55
13	Treated Pine Poles	28	27	26	25	24	23	21	22	23	24	23	24	23	23
14	Standard Cross Arms	10	9	9	9	9	8	8	9	10	11	11	12	12	12
15	Standard Galv. Steel Guy Wire	18	17	16	16	15	14	14	15	17	17	17	18	19	18
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Mercury Luminaires w/Standard	26	23	26	27	28	29	29	29	30	30	30	30	30	30
19	Power Wire & Control Cable	33	30	27	29	26	21	19	23	26	27	29	35	29	26
20	Overhead Conductor-Transmission	29	27	32	38	26	22	19	23	28	27	29	32	27	27
21	Underground Conductor-Transmission	22	21	23	27	20	19	19	21	23	23	25	27	24	24
22	Overhead Conductor-Distribution	26	24	28	34	23	19	17	20	25	24	26	28	24	24
23	Underground Conductor-Distribution	24	22	25	29	22	21	20	22	25	25	27	29	26	26
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Condensers & Tubes	18	16	15	19	20	19	18	19	21	24	24	27	27	27
26	Turbo-Generators	19	19	20	21	22	22	21	22	25	25	26	29	30	30
27															
28	Gas Compressors	24	23	24	24	24	24	24	24	24	24	23	23	23	23
29	Gas Transmission Line Pipe	43	43	43	43	43	43	42	35	35	35	34	35	34	34
30	Steel Distribution Pipe	31	31	31	31	30	29	29	26	29	29	26	28	26	25
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Meters-Gas	27	27	27	27	27	26	25	25	25	25	25	26	26	26
33	House Regulators	37	38	38	38	37	36	34	34	34	34	34	35	37	40
34															
35	Cast Iron Pipe	40	34	29	30	30	28	25	30	34	35	36	39	39	38
36	Cast Iron Fittings	27	25	25	25	24	21	19	20	22	23	23	23	24	24
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Chemical Feeders-Small	18	19	22	22	20	15	17	17	17	17	17	17	17	17
39	Chemical Feeders-Large	-	-	-	-	-	-	-	-	-	12	12	13	13	13
40	Gate Valves	26	26	28	28	28	24	23	23	22	22	23	25	26	26
41	Meter Yokes	29	29	29	29	29	29	28	28	28	28	28	28	29	29
42	Corporation Stops	24	24	24	24	24	24	24	22	21	21	21	21	21	21
43	Curb Stops	21	21	21	21	21	21	21	21	21	21	21	21	21	21
44	Hydrants	24	24	25	25	25	23	23	23	20	22	22	24	25	25
45	Meters-Water	37	37	37	37	37	37	37	35	26	26	26	31	32	32
46															
47															
48															
49															
50	Construction Equipment	21	22	21	22	22	20	19	19	20	21	21	23	23	23
51															
52															
53															
54															
55															
56															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
1	Boilers	20	21	21	21	21	21	22	25	31	36	37	41	41	43
2	Coal & Ash Handling Equipment	20	23	25	25	24	24	29	35	42	44	47	50	51	55
3	Pumps	22	23	24	24	24	24	26	32	35	37	40	47	47	48
4	Steam Pipe	35	35	35	35	35	35	37	42	45	50	52	53	53	55
5	Cranes	11	11	11	11	12	17	20	23	26	29	31	33	35	38
6	Regulators	53	53	53	53	52	51	57	63	65	69	70	74	74	81
7	Switchboards	53	53	51	50	45	44	50	58	59	59	62	72	72	77
8	Power Transformers	52	52	51	49	46	45	50	60	62	67	70	78	78	83
9	Oil Switches	65	65	65	65	59	58	67	78	79	79	89	102	102	110
10	Motors	31	32	33	33	31	32	37	45	46	49	53	63	63	66
11	Line Transformers	67	69	68	64	64	64	72	90	93	96	100	113	113	121
12	Meters-Electrric	55	55	55	55	55	55	61	69	74	80	80	80	78	81
13	Treated Pine Poles	23	24	27	28	33	39	37	41	43	43	42	44	46	49
14	Standard Cross Arms	13	16	17	19	22	23	25	35	37	34	36	41	42	42
15	Standard Galv. Steel Guy Wire	17	17	17	18	18	18	19	29	35	38	40	42	43	51
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	179	170
18	Mercury Luminaires w/Standard	30	30	31	31	31	31	32	40	44	48	47	53	52	51
19	Power Wire & Control Cable	31	39	40	40	40	40	48	56	65	66	66	75	77	74
20	Overhead Conductor-Transmission	29	28	31	32	32	32	40	48	52	48	52	59	63	69
21	Underground Conductor-Transmission	25	29	30	29	28	28	34	41	50	56	56	59	61	59
22	Overhead Conductor-Distribution	26	25	27	28	28	28	35	43	46	43	46	52	56	61
23	Underground Conductor-Distribution	27	31	32	32	31	31	36	44	54	59	59	63	64	64
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Condensers & Tubes	27	27	27	27	26	27	30	32	33	36	37	40	40	43
26	Turbo-Generators	30	30	30	30	30	31	36	44	47	49	49	54	54	58
27															
28	Gas Compressors	24	25	27	27	26	28	31	31	35	40	40	41	42	43
29	Gas Transmission Line Pipe	34	34	34	34	34	34	36	41	44	48	50	51	52	54
30	Steel Distribution Pipe	25	25	25	25	25	25	28	33	37	41	43	46	47	52
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	175	175
32	Meters-Gas	26	26	26	26	26	26	33	41	42	45	48	55	55	55
33	House Regulators	48	48	48	48	48	48	53	63	64	68	69	74	74	74
34															
35	Cast Iron Pipe	39	39	40	39	39	40	45	58	69	68	67	73	73	73
36	Cast Iron Fittings	24	26	27	27	27	28	33	42	49	48	48	54	56	59
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Chemical Feeders-Small	17	17	17	17	17	18	22	26	31	34	38	40	40	40
39	Chemical Feeders-Large	13	14	15	15	16	19	20	24	29	35	40	42	42	42
40	Gate Valves	26	28	29	29	29	29	34	39	42	45	52	57	57	57
41	Meter Yokes	29	29	30	30	30	31	37	39	40	39	41	48	48	48
42	Corporation Stops	22	22	23	23	23	24	31	36	37	37	37	45	45	45
43	Curb Stops	22	23	23	23	23	25	31	36	38	37	38	45	45	45
44	Hydrants	25	27	27	27	27	27	32	36	39	43	50	55	55	55
45	Meters-Water	33	35	37	37	37	37	40	42	48	52	59	61	61	65
46															
47															
48															
49															
50	Construction Equipment	24	25	28	29	29	29	34	37	39	40	42	45	46	49
51															
52															
53															
54															
55															
56															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
1	Boilers	45	47	54	61	63	65	65	66	66	66	68	70	71	74
2	Coal & Ash Handling Equipment	56	58	68	76	77	79	77	72	72	72	73	73	74	76
3	Pumps	49	50	55	56	56	62	68	68	69	69	70	70	74	77
4	Steam Pipe	56	57	61	67	69	71	71	71	71	71	73	73	73	74
5	Cranes	40	43	45	47	49	52	54	55	55	55	56	56	58	64
6	Regulators	83	85	98	105	108	108	108	96	96	90	87	84	83	84
7	Switchboards	79	81	96	105	108	106	98	81	78	77	77	78	82	90
8	Power Transformers	85	87	100	103	107	103	95	88	84	76	81	84	87	91
9	Oil Switches	112	110	115	131	136	132	109	75	74	64	70	82	80	88
10	Motors	67	68	79	89	93	96	92	87	86	85	85	87	87	88
11	Line Transformers	123	123	127	135	130	125	122	118	107	100	100	101	101	105
12	Meters-Electrric	83	79	82	87	89	92	92	91	90	89	89	88	88	89
13	Treated Pine Poles	51	51	55	59	60	57	57	56	56	56	56	56	58	61
14	Standard Cross Arms	42	42	49	50	47	46	46	44	44	44	44	45	47	46
15	Standard Galv. Steel Guy Wire	54	55	58	62	63	63	63	63	63	63	63	63	63	63
16	Fibre Conduit	-	-	-	-	-	-	82	86	86	86	86	84	76	71
17	Plastic Conduit	170	157	159	159	154	154	154	150	146	146	143	139	141	136
18	Mercury Luminaires w/Standard	59	59	60	66	68	68	68	67	67	66	67	66	72	82
19	Power Wire & Control Cable	71	68	72	65	50	50	40	38	40	40	44	55	67	72
20	Overhead Conductor-Transmission	67	73	80	81	79	72	73	73	74	63	69	73	76	78
21	Underground Conductor-Transmission	60	65	72	65	63	65	66	64	63	63	69	77	77	79
22	Overhead Conductor-Distribution	59	67	72	63	58	63	64	62	62	62	64	71	75	78
23	Underground Conductor-Distribution	64	71	78	69	67	70	71	69	67	68	74	82	83	85
24	Service Cable	-	-	93	89	74	69	68	69	67	62	66	68	71	74
25	Condensers & Tubes	44	45	48	53	56	56	56	56	56	57	61	65	71	75
26	Turbo-Generators	59	61	72	80	84	84	78	72	70	70	70	71	72	73
27															
28	Gas Compressors	44	46	49	54	58	61	61	61	61	64	68	73	74	78
29	Gas Transmission Line Pipe	55	56	59	65	67	69	69	69	69	69	71	71	71	72
30	Steel Distribution Pipe	54	56	60	68	69	71	71	71	71	71	71	71	71	73
31	Plastic Pipe	154	147	146	142	140	139	137	133	132	132	128	123	126	126
32	Meters-Gas	55	56	63	66	71	71	71	73	79	79	79	79	86	88
33	House Regulators	74	74	74	76	80	80	80	81	82	82	82	80	80	80
34															
35	Cast Iron Pipe	79	80	86	91	95	95	95	95	95	95	95	95	95	95
36	Cast Iron Fittings	62	64	67	69	72	74	74	74	73	72	72	72	72	75
37	Ductile Iron Pipe	-	-	-	-	-	-	-	96	96	96	96	96	96	96
38	Chemical Feeders-Small	40	41	45	48	49	54	60	60	63	63	64	69	73	77
39	Chemical Feeders-Large	42	44	54	61	68	68	68	68	71	72	71	70	72	79
40	Gate Valves	55	51	57	59	58	58	58	59	62	63	62	62	68	72
41	Meter Yokes	51	57	64	61	59	59	62	63	65	65	66	70	75	77
42	Corporation Stops	46	54	59	59	59	60	62	62	65	65	66	71	79	81
43	Curb Stops	46	54	59	59	59	60	62	63	65	65	67	71	79	82
44	Hydrants	55	52	58	59	59	59	59	59	59	59	59	59	61	66
45	Meters-Water	67	70	77	78	78	78	78	78	84	87	87	93	101	101
46															
47															
48															
49															
50	Construction Equipment	49	51	55	59	62	64	65	67	67	68	70	71	73	76
51															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	Boilers	76	78	83	89	94	100	119	143	159	172	186	203	221	245
2	Coal & Ash Handling Equipment	79	84	88	93	95	100	124	150	154	162	175	192	213	225
3	Pumps	78	80	85	89	93	100	127	154	177	183	195	212	235	259
4	Steam Pipe	78	82	86	92	98	100	112	131	143	155	178	206	223	236
5	Cranes	68	72	78	82	88	100	122	139	147	171	186	215	237	267
6	Regulators	84	87	90	92	97	100	128	150	165	170	174	179	189	206
7	Switchboards	92	93	94	96	97	100	131	196	212	222	234	238	261	295
8	Power Transformers	93	95	97	95	93	100	129	157	162	172	182	193	210	223
9	Oil Switches	96	92	93	93	95	100	123	140	143	174	186	195	203	229
10	Motors	89	94	100	104	100	100	110	155	167	186	186	188	195	210
11	Line Transformers	109	106	105	104	100	100	110	133	136	147	158	166	165	194
12	Meters-Electrric	92	95	98	101	101	100	107	126	135	140	144	148	144	160
13	Treated Pine Poles	62	66	69	73	77	100	150	205	192	190	206	234	265	289
14	Standard Cross Arms	44	50	65	60	58	100	162	157	146	155	161	223	244	252
15	Standard Galv. Steel Guy Wire	63	64	72	86	97	100	133	153	151	162	178	205	214	244
16	Fibre Conduit	72	78	83	82	85	100	119	130	133	149	173	203	218	235
17	Plastic Conduit	116	105	100	98	100	100	118	133	129	144	161	187	199	190
18	Mercury Luminaires w/Standard	74	78	94	101	102	100	125	173	194	211	234	263	288	314
19	Power Wire & Control Cable	81	86	84	74	86	100	115	95	97	95	101	109	135	142
20	Overhead Conductor-Transmission	75	84	97	107	103	100	121	167	204	220	189	201	232	250
21	Underground Conductor-Transmission	76	82	86	83	89	100	149	142	142	154	148	188	238	259
22	Overhead Conductor-Distribution	75	84	97	107	102	100	121	166	203	220	192	210	246	257
23	Underground Conductor-Distribution	76	86	94	92	100	100	135	130	132	140	148	196	231	222
24	Service Cable	71	77	92	98	99	100	105	124	126	131	149	183	221	217
25	Condensers & Tubes	80	84	89	94	99	100	109	128	142	157	171	189	209	229
26	Turbo-Generators	72	75	81	89	96	100	111	131	144	158	170	188	206	230
27															
28	Gas Compressors	84	88	91	91	90	100	120	150	161	172	188	213	237	265
29	Gas Transmission Line Pipe	75	80	83	89	98	100	122	145	172	187	212	225	253	290
30	Steel Distribution Pipe	73	76	82	89	97	100	127	142	155	170	194	213	225	254
31	Plastic Pipe	123	111	98	96	100	100	112	116	120	125	129	142	152	142
32	Meters-Gas	88	89	94	100	100	100	111	128	131	136	139	143	149	158
33	House Regulators	81	83	92	98	100	100	106	125	132	136	144	171	201	210
34															
35	Cast Iron Pipe	95	95	96	100	100	100	153	178	180	183	195	201	217	235
36	Cast Iron Fittings	77	80	87	99	99	100	144	142	148	152	163	173	194	209
37	Ductile Iron Pipe	96	96	97	100	100	100	153	182	186	189	201	207	215	228
38	Chemical Feeders-Small	81	81	86	90	92	100	126	180	209	230	249	257	287	316
39	Chemical Feeders-Large	80	81	87	92	94	100	125	177	194	195	201	212	232	249
40	Gate Valves	74	74	79	91	96	100	127	160	191	197	220	252	270	289
41	Meter Yokes	79	87	93	95	95	100	132	139	160	227	246	262	296	320
42	Corporation Stops	85	90	96	99	99	100	126	133	133	136	139	154	168	178
43	Curb Stops	86	90	96	99	99	100	126	133	135	140	146	161	177	187
44	Hydrants	71	76	84	94	95	100	143	185	214	229	261	279	293	315
45	Meters-Water	101	107	108	108	106	100	93	93	98	101	105	108	122	127
46															
47															
48															
49															
50	Construction Equipment	80	84	88	93	95	100	117	141	153	164	178	197	222	246
51															
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53															
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M UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	Boilers	264	273	283	292	298	307	330	344	364	380	385	404	413	425
2	Coal & Ash Handling Equipment	224	229	240	246	250	255	270	289	296	300	302	308	318	325
3	Pumps	276	281	284	292	296	300	310	327	342	353	361	391	406	419
4	Steam Pipe	254	226	215	215	215	231	271	264	241	229	222	199	199	216
5	Cranes	302	328	344	384	411	423	442	458	474	482	490	537	598	615
6	Regulators	216	225	227	229	231	236	239	248	253	257	257	256	260	241
7	Switchboards	318	317	319	333	338	343	366	398	429	439	449	499	496	572
8	Power Transformers	231	226	229	237	242	253	264	291	327	337	343	360	371	388
9	Oil Switches	279	280	275	271	268	273	336	380	402	411	399	358	369	395
10	Motors	224	250	260	261	257	266	285	339	365	357	348	376	478	495
11	Line Transformers	208	210	211	212	213	211	212	221	224	222	223	226	230	225
12	Meters-Electrric	188	201	200	202	207	205	187	175	174	186	190	189	174	169
13	Treated Pine Poles	291	280	276	283	289	284	289	300	310	323	332	367	416	445
14	Standard Cross Arms	249	240	243	230	228	226	250	291	333	366	381	419	441	464
15	Standard Galv. Steel Guy Wire	254	236	227	233	233	235	249	253	252	252	251	253	254	255
16	Fibre Conduit	175	210	231	225	221	225	301	470	379	260	230	198	222	228
17	Plastic Conduit	158	183	197	189	188	199	280	409	366	316	289	237	251	260
18	Mercury Luminaires w/Standard	333	326	343	358	352	321	321	334	345	353	361	389	408	430
19	Power Wire & Control Cable	132	131	123	107	110	123	137	139	136	130	126	119	121	127
20	Overhead Conductor-Transmission	247	271	246	242	242	218	359	366	355	372	379	334	352	399
21	Underground Conductor-Transmission	270	268	256	242	277	281	298	328	405	461	469	477	477	485
22	Overhead Conductor-Distribution	252	266	259	249	244	229	349	366	354	363	366	322	341	386
23	Underground Conductor-Distribution	206	201	196	202	216	222	223	243	254	258	259	254	253	263
24	Service Cable	207	198	229	209	194	201	250	285	271	264	258	227	240	271
25	Condensers & Tubes	247	256	257	247	222	239	263	268	268	270	270	275	288	308
26	Turbo-Generators	242	256	266	270	270	274	292	302	306	312	315	325	333	343
27															
28	Gas Compressors	280	284	295	301	303	307	325	354	371	388	405	438	446	455
29	Gas Transmission Line Pipe	315	271	262	254	265	272	301	298	269	257	250	233	235	243
30	Steel Distribution Pipe	268	270	282	272	237	250	291	316	318	323	323	327	370	381
31	Plastic Pipe	132	149	157	146	146	159	218	283	285	290	275	230	235	244
32	Meters-Gas	158	146	147	158	166	165	170	177	185	190	190	191	189	190
33	House Regulators	217	221	230	237	236	243	247	253	269	280	283	297	303	302
34															
35	Cast Iron Pipe	234	254	247	265	244	244	266	282	278	275	275	275	278	266
36	Cast Iron Fittings	216	232	229	240	259	289	296	317	324	324	324	350	377	370
37	Ductile Iron Pipe	228	262	249	281	246	246	275	278	271	271	271	271	273	250
38	Chemical Feeders-Small	341	353	358	366	373	379	398	410	424	430	432	444	453	453
39	Chemical Feeders-Large	273	286	294	306	324	341	353	379	402	418	423	438	437	477
40	Gate Valves	321	358	375	395	417	441	468	517	530	540	548	561	524	540
41	Meter Yokes	336	389	389	383	394	399	445	470	478	507	516	551	566	603
42	Corporation Stops	189	200	207	212	220	220	240	254	257	273	279	303	308	318
43	Curb Stops	198	210	220	225	233	233	254	270	273	289	296	321	330	348
44	Hydrants	352	384	385	414	439	456	480	521	558	560	560	559	561	577
45	Meters-Water	128	141	148	135	135	137	140	143	152	160	173	195	175	200
46															
47															
48															
49															
50	Construction Equipment	263	269	273	276	280	286	295	281	298	320	316	324	331	333
51															
52															
53															
54															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS														
											2005		2006		2007	
		1996	1997	1998	1999	2000	2001	2002	2003	2004	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	433	443	452	460	467	474	481	489	517	535	550	565	578	590	604
2	Coal & Ash Handling Equipment	328	333	344	351	353	357	359	362	397	426	426	425.4	431	441	453
3	Pumps	440	476	496	510	528	524	525	544	557	567	575	592.3	602	620	640
4	Steam Pipe	215	204	190	183	178	170	167	160	194	270	286	292	299	307	304
5	Cranes	615	656	689	728	747	749	749	749	800	817	817	816.8	817	817	817
6	Regulators	234	232	234	237	242	240	243	255	261	271	276	290.3	343	360	375
7	Switchboards	620	656	662	689	749	813	892	983	1066	1111	1173	1227	1340	1447	1596
8	Power Transformers	370	371	400	400	400	400	383	375	486	540	545	583.7	591	648	671
9	Oil Switches	399	409	415	415	409	408	399	391	382	379	389	412	420	429	436
10	Motors	475	467	476	497	533	535	541	543	610	691	695	685.7	658	683	601
11	Line Transformers	219	206	210	210	209	217	223	225	237	250	258	298.8	345	397	405
12	Meters-Electrric	172	187	193	181	176	206	241	263	290	276	276	276	283	283	291
13	Treated Pine Poles	463	473	471	473	471	489	505	515	534	541	554	562.3	601	600	604
14	Standard Cross Arms	466	477	443	413	417	437	433	411	394	440	435	451.1	456	487	471
15	Standard Galv. Steel Guy Wire	261	280	314	313	318	249	220	227	271	302	302	300.7	280	323	323
16	Fibre Conduit	204	209	199	225	246	226	275	252	250	284	284	432.2	432	460	390
17	Plastic Conduit	252	256	251	266	281	291	319	311	323	354	354	447.3	447	527	495
18	Mercury Luminaires w/Standard	460	471	469	472	479	492	529	571	583	601	615	637.4	774	808	826
19	Power Wire & Control Cable	121	121	119	112	110	108	103	99.8	112	132	137	159.5	187	263	265
20	Overhead Conductor-Transmission	402	405	420	354	398	426	409	404	457	491	540	633.3	698	742	770
21	Underground Conductor-Transmission	487	487	487	493	485	468	461	462	519	536	559	614.6	615	615	615
22	Overhead Conductor-Distribution	386	387	399	345	381	403	388	387	437	467	515	600.3	648	692	715
23	Underground Conductor-Distribution	266	263	265	268	270	257	245	239	264	295	308	342.2	343	457	459
24	Service Cable	267	264	264	249	260	265	259	266	297	313	347	396	396	432	439
25	Condensers & Tubes	305	306	309	290	284	287	291	304	388	439	433	447.3	465	466	506
26	Turbo-Generators	348	364	369	371	387	372	380	395	397	411	400	401.8	424	440	452
27																
28	Gas Compressors	461	470	478	480	483	487	495	497	503	506	586	535.3	544	557	574
29	Gas Transmission Line Pipe	269	272	273	267	263	258	256	257	377	449	452	440.4	460	525	482
30	Steel Distribution Pipe	376	388	389	399	428	424	421	448	637	875	855	924.4	954	829	839
31	Plastic Pipe	249	251	252	255	265	295	304	308	325	351	351	393	393	509	509
32	Meters-Gas	192	196	196	191	202	209	202	193	183	185	184	187.6	197	205	231
33	House Regulators	303	303	307	306	305	312	319	318	323	336	339	343.8	356	377	377
34																
35	Cast Iron Pipe	268	279	281	285	291	297	299	301	306	341	341	345.9	346	402	402
36	Cast Iron Fittings	368	379	379	378	378	384	476	500	514	520	520	660.6	690	706	720
37	Ductile Iron Pipe	251	268	270	279	290	292	292	292	276	274	274	283.2	283	327	327
38	Chemical Feeders-Small	462	476	514	522	546	561	563	566	606	640	661	669.4	596	640	676
39	Chemical Feeders-Large	493	506	537	569	562	581	612	612	597	576	576	586.2	544	531	570
40	Gate Valves	553	592	611	630	651	685	691	691	704	718	718	718.4	720	720	720
41	Meter Yokes	670	673	677	679	699	708	713	737	762	769	794	793.6	1111	1111	1169
42	Corporation Stops	329	329	329	329	338	341	344	353	364	367	367	367.2	527	527	527
43	Curb Stops	361	361	361	361	371	374	377	387	399	403	403	402.7	577	577	577
44	Hydrants	625	795	840	874	909	961	970	970	980	989	989	989.2	1097	1097	1116
45	Meters-Water	207	197	197	198	205	206	207	207	207	207	207	234.7	248	260	262
46																
47																
48																
49																
50	Construction Equipment	336	351	380	385	389	391	396	402	414	427	443	448.3	461	463	470.6
51																
52																
53																
54																
55																
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		2008		2009		2010		2011		2012		2013		2014	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	596	616	620	599	608	620	624	634	649	649	669	653	661	665
2	Coal & Ash Handling Equipment	478	537	543	513	499	503	522	536	550	559	562	563	580	581
3	Pumps	643	663	673	675	703	704	706	756	781	787	799	846	859	922
4	Steam Pipe	324	400	454	413	376	417	419	448	438	455	439	425	429	431
5	Cranes	817	899	899	899	899	899	899	899	899	899	899	965	965	1007
6	Regulators	401	427	389	390	402	408	410	418	415	428	422	428	441	425
7	Switchboards	1791	1954	2077	2218	2373	2504	2616	2757	2879	3034	3173	3319	3471	3594
8	Power Transformers	694	725	746	745	780	788	804	814	818	826	815	814	813	816
9	Oil Switches	437	455	460	461	469	475	480	483	483	485	485	488	498	500
10	Motors	635	674	696	719	717	695	713	770	777	782	804	837	849	851
11	Line Transformers	615	505	534	560	588	617	630	650	673	690	737	756	799	819
12	Meters-Electric	292	293	295	295	307	307	295	294	288	291	295	298	303	305
13	Treated Pine Poles	611	643	653	665	672	686	664	678	687	697	700	700	675	675
14	Standard Cross Arms	464	486	518	501	482	465	446	446	452	453	464	466	440	434
15	Standard Galv. Steel Guy Wire	351	381	548	536	550	405	405	405	404	423	423	488	458	486
16	Fibre Conduit	411	420	468	468	380	380	390	390	419	419	417	417	497	497
17	Plastic Conduit	522	526	609	609	463	463	468	468	521	521	477	477	478	478
18	Mercury Luminaires w/Standard	839	899	1024	1053	1087	972	990	1034	1052	1079	1061	1077	990	993
19	Power Wire & Control Cable	242	250	228	234	213	220	245	251	268	270	271	270	267	254
20	Overhead Conductor-Transmission	860	985	985	553	700	714	675	782	650	659	701	729	729	740
21	Underground Conductor-Transmission	877	927	919	929	906	885	973	971	977	1016	1026	1052	1083	1093
22	Overhead Conductor-Distribution	793	898	898	539	661	682	672	772	647	656	686	710	716	735
23	Underground Conductor-Distribution	499	541	631	609	515	518	563	577	621	647	617	654	631	645
24	Service Cable	472	510	511	390	430	460	516	579	497	505	502	512	530	562
25	Condensers & Tubes	496	603	516	462	473	525	527	575	580	566	567	528	536	549
26	Turbo-Generators	457	538	468	417	439	488	474	501	498	487	564	480	478	483
27															
28	Gas Compressors	581	603	621	626	625	631	633	656	662	677	674	692	693	707
29	Gas Transmission Line Pipe	502	604	600	510	444	506	510	525	586	616	542	535	626	627
30	Steel Distribution Pipe	833	1122	1019	929	911	987	1081	1123	1350	1327	1305	1276	1253	1266
31	Plastic Pipe	541	541	644	644	464	464	470	470	535	535	464	464	403	403
32	Meters-Gas	241	250	261	252	257	252	252	256	261	271	271	272	341	342
33	House Regulators	387	392	412	400	406	414	425	430	432	438	443	443	454	454
34															
35	Cast Iron Pipe	421	468	541	541	563	563	550	550	565	676	688	697	770	779
36	Cast Iron Fittings	783	837	897	909	986	987	961	961	1091	1120	1148	1168	1230	1395
37	Ductile Iron Pipe	363	363	485	485	521	521	500	500	524	524	545	545	575	575
38	Chemical Feeders-Small	817	819	831	880	880	880	907	908	1068	1086	1092	1203	1249	1249
39	Chemical Feeders-Large	676	683	654	700	700	700	633	715	753	770	774	803	805	805
40	Gate Valves	736	736	759	759	736	778	762	762	755	755	770	790	803	824
41	Meter Yokes	1169	1169	1202	1202	1202	1241	1241	1241	1323	1594	1594	1594	1594	1594
42	Corporation Stops	527	527	527	527	527	542	542	542	542	723	723	723	723	723
43	Curb Stops	577	577	577	577	577	582	582	582	582	739	739	739	739	739
44	Hydrants	1133	1133	1155	1155	1150	1081	1089	1089	1132	1132	1166	1189	1221	1339
45	Meters-Water	373	373	373	373	374	376	379	379	379	379	380	381	381	381
46															
47															
48															
49															
50	Construction Equipment	474	483	499	502	502	501	505	516	527	539	547	552	554	562
51															
52															
53															
54															
55															
56															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		2015		2016		2017		2018		2019		2020		2021	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	669	691	697	698	700	681	683	707	710	739	738	743	745	
2	Coal & Ash Handling Equipment	584	583	582	584	589	595	596	608	620	630	640	664	638	
3	Pumps	958	963	1043	1076	1120	1244	1248	1345	1401	1492	1526	1639	1640	
4	Steam Pipe	417	416	404	411	421	415	407	462	483	468	481	469	492	
5	Cranes	1007	1007	1007	1007	1007	1007	1041	1083	1108	1108	1141	1175	1222	
6	Regulators	416	406	396	403	412	416	420	430	436	437	442	436	445	
7	Switchboards	3757	3760	3931	3930	4109	4300	4461	4629	4847	4852	5080	5367	5620	
8	Power Transformers	812	801	795	798	822	827	868	879	901	901	902	895	911	
9	Oil Switches	500	502	502	501	501	503	505	507	511	521	530	533	539	
10	Motors	859	857	869	869	893	883	910	917	937	1006	1023	1026	963	
11	Line Transformers	854	856	884	882	918	946	982	1008	1048	1048	1086	1129	1170	
12	Meters-Electrric	307	307	307	298	298	298	304	304	306	306	323	323	332	
13	Treated Pine Poles	670	658	676	678	670	730	665	668	687	693	799	798	706	
14	Standard Cross Arms	458	448	457	458	456	451	450	450	456	456	508	512	535	
15	Standard Galv. Steel Guy Wire	486	486	486	486	515	515	515	515	541	541	623	623	671	
16	Fibre Conduit	475	475	430	430	412	412	511	511	523	523	525	525	407	
17	Plastic Conduit	479	479	468	468	452	452	514	514	521	521	549	549	611	
18	Mercury Luminaires w/Standard	981	1018	986	981	998	942	964	1008	1130	1085	1188	1206	1046	
19	Power Wire & Control Cable	258	253	224	221	225	228	246	253	255	257	261	259	303	
20	Overhead Conductor-Transmission	743	743	777	777	740	740	838	838	885	885	919	919	483	
21	Underground Conductor-Transmission	1095	1103	1108	1108	1113	1180	1252	1271	1329	1329	1339	1385	1435	
22	Overhead Conductor-Distribution	747	750	768	768	741	745	785	801	818	834	868	868	539	
23	Underground Conductor-Distribution	622	637	589	589	539	562	561	572	605	605	622	650	702	
24	Service Cable	592	600	580	578	580	593	496	544	490	540	567	564	541	
25	Condensers & Tubes	547	551	520	535	536	510	516	569	583	574	509	566	604	
26	Turbo-Generators	485	551	538	561	579	506	507	537	560	548	462	562	607	
27															
28	Gas Compressors	713	720	722	727	728	735	747	759	779	783	787	795	793	
29	Gas Transmission Line Pipe	616	589	535	544	570	601	615	693	716	689	680	639	733	
30	Steel Distribution Pipe	1243	1189	1088	1116	1175	1247	1218	1382	1432	1394	1590	1555	1564	
31	Plastic Pipe	403	403	403	403	394	394	410	410	413	413	447	447	559	
32	Meters-Gas	372	372	388	388	442	442	475	477	511	511	489	490	469	
33	House Regulators	469	469	481	481	487	487	533	533	558	565	559	559	549	
34															
35	Cast Iron Pipe	758	748	731	731	809	808	867	868	878	881	912	877	885	
36	Cast Iron Fittings	1278	1322	1380	1418	1478	1478	1481	1565	1627	1736	1883	1955	2130	
37	Ductile Iron Pipe	579	579	600	600	622	622	715	715	721	721	768	768	781	
38	Chemical Feeders-Small	1316	1404	1471	1471	1496	1589	1618	1738	1792	1871	2019	2106	2176	
39	Chemical Feeders-Large	805	805	842	842	863	891	900	939	965	990	1080	1140	1145	
40	Gate Valves	814	814	868	868	825	825	771	789	812	832	863	863	1105	
41	Meter Yokes	1594	1594	1594	1594	1594	1706	1706	1706	1706	1768	1768	1821	1821	
42	Corporation Stops	723	723	723	723	723	723	723	723	773	861	861	887	887	
43	Curb Stops	780	780	780	780	780	780	780	780	835	929	929	957	957	
44	Hydrants	1418	1591	1694	1694	1681	1681	1735	1759	1803	1830	1886	1886	2086	
45	Meters-Water	400	400	403	403	404	418	434	434	443	443	459	459	485	
46															
47															
48															
49															
50	Construction Equipment	564	568	570	574	575	579	580	575	600	609	613	620	621	
51															
52															
53															
54															
55															
56															

Cost Trends Of

Water Utility Construction

COST TREND TABLES
1912 to January 1, 2021

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	7	7	7	7	9	13	15	15	17	16	16	16	16	16
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	8	8	8	9	11	16	17	18	20	18	18	18	19	18
9	Electric Pumping Equipment	311	-	-	15	15	17	20	22	24	24	23	21	22	23	23
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	8	8	8	9	11	16	17	18	20	18	18	18	19	18
16	Large Treatment Plant Equip.	320	9	9	9	9	11	14	16	17	20	19	18	18	20	20
17	Small Treatment Plant Equip.	320	10	10	10	10	13	17	19	19	22	20	20	20	21	20
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	4	4	4	12	15	17	19	20	15	13	12	13	13	13
24	Elevated Steel Tanks	330	4	4	4	11	14	16	18	19	16	13	11	12	11	10
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	9	10	8	9	11	16	19	20	22	22	20	21	22	21
35	Cast Iron Mains	331	9	10	9	9	12	18	20	22	25	24	22	23	24	23
36	Cement-Asbestos Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	Steel Mains	331	6	7	6	7	8	11	13	13	14	15	14	14	14	15
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	6	6	5	6	6	9	10	11	12	13	12	12	13	13
40	Meters	334	23	23	23	23	26	29	35	37	37	37	37	37	37	37
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		14	16	13	14	26	38	31	29	29	24	25	26	24	23
47	Clarifier Equipment-Installed		-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	Filter Gallery Piping-Installed		8	8	8	8	10	14	16	18	20	18	17	18	19	19
49																
50																
51																
52																
53																
54																
55																
56																

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	17	17	17	17	17	16	14	14	15	15	15	17	17	17
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	19	18	18	18	17	16	15	15	16	16	16	18	18	18
9	Electric Pumping Equipment	311	23	23	23	22	22	22	22	23	24	24	25	26	26	26
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	19	18	18	18	17	16	15	15	16	16	16	18	18	18
16	Large Treatment Plant Equip.	320	20	20	20	20	20	19	17	17	18	18	18	20	20	20
17	Small Treatment Plant Equip.	320	20	20	20	20	20	19	17	17	19	19	19	21	21	21
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	12	12	12	12	11	10	9	9	12	11	12	14	14	14
24	Elevated Steel Tanks	330	11	10	10	10	10	9	8	8	10	10	11	12	13	13
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	21	21	20	20	20	20	18	18	19	19	20	21	22	22
35	Cast Iron Mains	331	23	21	20	21	21	20	18	18	20	20	21	23	24	24
36	Cement-Asbestos Mains	331	-	-	-	-	-	-	-	-	-	-	31	32	32	33
37	Steel Mains	331	15	15	15	16	16	16	14	13	14	14	14	16	16	16
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	13	13	13	14	14	14	13	11	12	13	13	14	14	14
40	Meters	334	37	37	37	37	37	37	37	35	26	26	26	31	32	32
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		23	22	22	22	21	20	20	20	21	21	23	26	25	25
47	Clarifier Equipment-Installed		-	-	-	-	-	-	-	-	-	-	-	17	23	24
48	Filter Gallery Piping-Installed		19	18	18	18	18	18	15	16	18	18	18	19	20	20
49																
50																
51																
52																
53																
54																
55																
56																

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	17	18	20	20	20	21	23	27	31	32	33	35	36	38
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	18	19	20	21	21	22	24	28	32	35	36	38	38	39
9	Electric Pumping Equipment	311	26	27	27	27	27	27	31	39	43	45	49	55	55	55
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	18	19	20	21	21	22	24	28	32	35	36	38	38	39
16	Large Treatment Plant Equip.	320	21	22	23	24	24	25	28	32	35	36	38	40	41	42
17	Small Treatment Plant Equip.	320	21	22	24	24	24	25	28	33	37	39	41	43	43	44
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	14	16	16	13	14	16	20	26	29	27	28	30	31	32
24	Elevated Steel Tanks	330	12	15	15	14	15	14	17	23	26	25	26	28	29	31
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	42	43	45
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	40	40	43
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	44	45	47
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	23	23	24	25	25	26	29	35	41	42	43	45	47	48
35	Cast Iron Mains	331	24	25	27	27	28	28	32	39	46	46	48	50	51	53
36	Cement-Asbestos Mains	331	33	34	36	36	37	37	44	49	59	61	62	64	65	67
37	Steel Mains	331	16	17	18	18	18	19	21	24	28	29	31	32	34	36
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	14	15	16	16	17	17	19	22	25	27	28	29	31	33
40	Meters	334	33	35	37	37	37	37	40	42	48	52	59	61	61	65
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	29	31	34	35	36
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	35	37	41	41	43
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		25	27	28	28	28	30	33	38	44	45	45	49	49	50
47	Clarifier Equipment-Installed		25	26	27	27	27	29	32	37	43	43	44	46	46	49
48	Filter Gallery Piping-Installed		21	21	22	22	22	23	25	30	35	37	37	39	40	41
49																
50																
51																
52																
53																
54																
55																
56																

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	39	41	44	47	49	51	52	53	55	56	57	59	61	64
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	41	43	46	49	50	52	53	53	54	55	56	57	59	61
9	Electric Pumping Equipment	311	55	56	63	69	73	74	74	71	71	71	73	74	78	81
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	41	43	46	49	50	52	53	53	54	55	56	57	59	61
16	Large Treatment Plant Equip.	320	44	45	48	50	52	54	55	56	58	59	60	62	64	67
17	Small Treatment Plant Equip.	320	46	47	50	53	54	56	58	58	60	60	62	63	66	68
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	32	33	38	42	37	36	35	35	35	41	44	45	46	47
24	Elevated Steel Tanks	330	31	33	35	38	38	38	38	37	36	37	38	38	41	44
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	47	50	52	56	57	61	62	63	64	65	66	67	69	71
28	Steel Mains	331	44	46	49	52	55	57	57	58	59	60	61	63	65	67
29	Concrete Cylinder Mains	331	48	50	52	54	56	59	60	60	61	62	62	64	66	70
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	51	53	57	60	63	65	68	69	71	72	73	74	75	76
35	Cast Iron Mains	331	56	59	62	66	68	72	73	75	77	79	79	80	80	81
36	Cement-Asbestos Mains	331	68	70	75	78	81	84	86	86	87	89	88	81	82	82
37	Steel Mains	331	38	40	43	46	48	51	53	55	56	58	60	63	65	66
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	35	36	39	41	44	46	48	50	51	53	55	58	60	63
40	Meters	334	67	70	77	78	78	78	78	78	84	87	87	93	101	101
41	Meter Installations	334	38	40	44	45	46	48	51	52	54	55	57	59	62	65
42	Hydrants Installed	335	44	44	48	50	51	53	54	55	56	57	58	58	61	64
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		52	53	57	58	58	59	60	61	61	62	65	66	67	68
47	Clarifier Equipment-Installed		50	49	53	55	57	58	58	59	60	60	63	65	66	67
48	Filter Gallery Piping-Installed		44	46	48	50	53	54	56	57	58	59	60	61	63	65
49																
50																
51																
52																
53																
54																
55																
56																

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	67	72	78	86	94	100	115	127	133	139	148	164	179	189
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	64	69	75	84	92	100	117	127	130	137	148	163	181	191
9	Electric Pumping Equipment	311	81	84	89	93	96	100	122	155	174	184	192	205	222	245
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	64	69	75	84	92	100	117	127	130	137	148	163	181	191
16	Large Treatment Plant Equip.	320	69	73	79	89	96	100	118	134	144	152	162	175	191	208
17	Small Treatment Plant Equip.	320	70	74	80	90	96	100	120	139	150	160	172	186	204	223
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	49	53	75	82	85	100	140	159	171	172	173	178	191	208
24	Elevated Steel Tanks	330	48	55	71	80	86	100	152	183	182	183	195	206	228	250
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	74	78	84	91	96	100	129	137	142	150	158	166	180	196
28	Steel Mains	331	69	74	80	88	96	100	113	125	133	141	152	166	180	199
29	Concrete Cylinder Mains	331	72	78	80	88	95	100	113	134	138	140	148	162	176	189
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	77	80	84	94	98	100	110	146	154	162	173	185	202	219
35	Cast Iron Mains	331	82	83	88	97	99	100	143	158	163	167	178	185	202	218
36	Cement-Asbestos Mains	331	82	85	88	97	98	100	127	148	159	167	176	202	212	234
37	Steel Mains	331	68	72	78	88	97	100	115	128	139	151	164	179	197	212
38	PVC Mains	331	-	-	-	-	-	-	25	100	104	108	113	122	132	138
39	Services Installed	333	66	72	79	89	96	100	115	123	130	139	145	160	175	184
40	Meters	334	101	106	108	108	106	100	93	93	98	101	105	108	122	127
41	Meter Installations	334	68	73	79	89	97	100	113	120	131	147	152	162	177	189
42	Hydrants Installed	335	68	72	80	90	96	100	123	143	157	167	182	194	207	222
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		69	74	82	93	98	100	139	174	195	218	246	290	350	406
47	Clarifier Equipment-Installed		68	72	82	93	98	100	140	167	181	199	210	232	272	310
48	Filter Gallery Piping-Installed		68	72	78	90	97	100	119	130	136	144	151	158	171	185
49																
50																
51																
52																
53																
54																
55																
56																

W-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	197	206	217	227	234	238	248	255	258	262	270	282	295	302
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	198	206	218	225	233	239	251	265	271	274	281	294	308	316
9	Electric Pumping Equipment	311	260	271	277	282	284	299	311	330	349	355	368	386	428	442
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	198	206	218	225	233	239	251	265	271	274	281	294	308	316
16	Large Treatment Plant Equip.	320	227	242	251	262	269	276	286	301	313	322	332	342	348	357
17	Small Treatment Plant Equip.	320	243	259	268	279	286	293	303	317	328	334	343	354	360	366
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	210	182	184	181	184	196	220	216	229	253	261	248	246	250
24	Elevated Steel Tanks	330	244	197	200	198	207	219	260	268	278	285	277	249	242	252
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	208	222	225	236	235	242	253	266	273	279	284	295	305	305
28	Steel Mains	331	215	223	230	234	232	241	255	272	279	287	293	302	316	324
29	Concrete Cylinder Mains	331	203	213	218	232	239	243	258	269	277	288	295	303	311	317
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	231	239	244	254	255	263	280	295	301	307	311	321	327	332
35	Cast Iron Mains	331	223	245	253	264	263	269	282	296	304	313	320	329	339	341
36	Cement-Asbestos Mains	331	253	244	249	255	259	275	315	340	338	332	319	335	338	354
37	Steel Mains	331	233	228	231	237	242	248	265	277	281	288	295	302	304	311
38	PVC Mains	331	137	151	149	151	150	160	197	217	211	200	183	193	191	204
39	Services Installed	333	198	207	215	221	226	230	245	258	262	272	283	292	300	307
40	Meters	334	128	141	148	135	135	137	140	150	159	162	196	195	175	200
41	Meter Installations	334	207	230	239	247	255	259	269	282	294	310	320	337	347	358
42	Hydrants Installed	335	245	264	270	285	296	307	320	343	363	372	378	385	391	398
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		458	496	506	540	560	575	579	580	565	528	539	555	562	566
47	Clarifier Equipment-Installed		356	389	398	431	442	446	451	455	442	416	435	458	492	514
48	Filter Gallery Piping-Installed		201	217	223	234	237	243	251	266	279	289	297	309	319	321
49																
50																
51																
52																
53																
54																
55																
56																

W-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS									2005		2006		2007	
			1996	1997	1998	1999	2000	2001	2002	2003	2004	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	**Source of Supply Plant**																
2	Collecting & Impounding Res.	305	309	317	318	318	326	336	344	350	373	388	394	400	405	413	439
3																	
4																	
5																	
6																	
7	**Pumping Plant**																
8	Structures & Improvements	304	321	331	337	343	362	378	389	394	421	442	447	456	464	481	494
9	Electric Pumping Equipment	311	450	473	489	505	530	527	529	543	572	604	611	620	619	639	628
10																	
11																	
12																	
13																	
14	**Water Treatment Plant**																
15	Structures & Improvements	304	321	331	337	343	362	378	389	394	421	442	447	456	464	481	494
16	Large Treatment Plant Equip.	320	367	380	391	401	413	428	443	452	466	480	482	499	500	516	533
17	Small Treatment Plant Equip.	320	375	389	401	410	424	439	452	460	480	498	502	520	518	539	559
18																	
19																	
20																	
21																	
22	**Transmission Plant**																
23	Steel Reservoirs	330	251	255	268	268	270	274	275	276	308	329	338	348	375	494	537
24	Elevated Steel Tanks	330	268	273	283	288	299	341	429	431	481	524	524	524	596	657	657
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																	
27	Cast Iron Mains	331	311	320	323	328	348	363	383	385	393	411	415	442	451	480	484
28	Steel Mains	331	329	337	342	351	377	391	400	404	451	509	508	530	539	528	527
29	Concrete Cylinder Mains	331	324	331	338	345	372	404	415	415	425	436	440	454	459	460	462
30																	
31																	
32																	
33	**Distribution Plant**																
34	Mains-Average All Types	331	339	347	355	361	377	391	404	407	432	462	464	485	494	524	523
35	Cast Iron Mains	331	348	358	364	370	390	404	421	425	436	457	460	483	492	525	528
36	Cement-Asbestos Mains	331	364	372	375	382	405	423	444	446	460	480	483	538	546	599	597
37	Steel Mains	331	316	322	334	339	346	358	363	367	416	459	460	467	477	494	487
38	PVC Mains	331	211	216	216	219	231	242	253	254	263	277	278	321	321	365	361
39	Services Installed	333	321	323	330	334	348	354	360	368	388	404	407	421	459	478	481
40	Meters	334	207	197	197	198	205	206	207	207	207	207	207	235	248	260	262
41	Meter Installations	334	375	381	387	392	406	417	428	440	456	466	467	482	530	549	552
42	Hydrants Installed	335	418	475	493	508	526	551	565	570	585	597	597	613	647	663	669
43																	
44																	
45	**Miscellaneous Items**																
46	Flocculating Equipment-Installed		579	603	622	642	652	671	683	697	758	801	801	852	852	869	983
47	Clarifier Equipment-Installed		540	562	572	579	593	603	617	630	663	709	709	729	729	760	892
48	Filter Gallery Piping-Installed		328	337	344	349	363	378	398	408	421	438	438	468	470	500	501
49																	
50																	
51																	
52																	
53																	
54																	
55																	
56																	

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			2008		2009		2010		2011		2012		2013		2014	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	457	466	470	465	475	478	492	495	501	502	507	505	515	517
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	516	543	551	536	552	558	571	583	597	600	618	608	621	630
9	Electric Pumping Equipment	311	640	666	679	688	707	701	708	760	780	785	800	844	856	900
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	516	543	551	536	552	558	571	583	597	600	618	608	621	630
16	Large Treatment Plant Equip.	320	566	582	614	616	631	638	642	653	669	680	689	697	713	725
17	Small Treatment Plant Equip.	320	602	624	666	669	686	693	706	712	740	754	764	779	800	813
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	537	722	722	722	722	722	771	771	795	810	778	780	715	742
24	Elevated Steel Tanks	330	680	866	866	866	866	867	1079	1079	1059	1082	1089	1099	1131	1131
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	510	534	578	576	601	601	602	610	634	669	691	684	712	743
28	Steel Mains	331	543	606	605	585	593	609	644	658.5	711	708	724	704	694	708
29	Concrete Cylinder Mains	331	468	475	502	502	494	495	510	517	523	526	547	534	535	547
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	550	588	624	608	617	623	633	644	669	690	698	693	720	733
35	Cast Iron Mains	331	556	579	625	624	647	648	654	660	681	716	733	730	759	781
36	Cement-Asbestos Mains	331	621	632	691	678	638	649	658	683	716	721	712	707	704	721
37	Steel Mains	331	514	582	595	559	565	575	593	606	633	637	638	631	665	665
38	PVC Mains	331	372	374	419	408	353	363	369	389	412	412	391	392	383	383
39	Services Installed	333	501	511	534	534	545	554	568	574	589	600	602	602	603	605
40	Meters	334	373	373	373	373	374	376	379	379	379	379	380	381	381	381
41	Meter Installations	334	572	573	597	598	612	623	635	635	646	673	677	677	688	688
42	Hydrants Installed	335	693	699	732	731	740	721	730	731	757	758	774	784	807	849
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		1187	1373	1645	1645	1699	1744	1823	1848	1904	1973	1978	2015	2041	2078
47	Clarifier Equipment-Installed		920	944	997	997	991	1001	1056	1060	1077	1102	1105	1136	1154	1162
48	Filter Gallery Piping-Installed		530	543	589	590	613	614	620	620	641	666	677	680	713	728
49																
50																
51																
52																
53																
54																
55																
56																

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			2015		2016		2017		2018		2019		2020		2021	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	526	521	526	532	543	549	559	570	576	575	584	583	605	
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	642	646	655	659	672	671	687	706	717	713	719	730	762	
9	Electric Pumping Equipment	311	928	931	990	1013	1052	1135	1146	1216	1261	1346	1374	1454	1436	
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	642	646	655	659	672	671	687	706	717	713	719	730	762	
16	Large Treatment Plant Equip.	320	736	737	755	758	774	785	797	812	832	842	871	890	922	
17	Small Treatment Plant Equip.	320	832	840	861	864	881	897	911	934	960	975	1012	1035	1075	
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	742	742	742	774	784	784	801	820	832	832	836	836	836	
24	Elevated Steel Tanks	330	1131	1131	1131	1143	1161	1161	1181	1200	1244	1244	1244	1244	1244	
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	
26																
27	Cast Iron Mains	331	733	744	754	759	793	785	810	825	844	858	884	895	931	
28	Steel Mains	331	712	713	697	705	723	726	733	770	792	785	824	830	845	
29	Concrete Cylinder Mains	331	562	575	591	592	601	592	620	626	639	641	638	653	664	
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	736	738	747	750	774	772	790	801	819	826	847	850	883	
35	Cast Iron Mains	331	780	785	795	797	832	826	855	864	883	894	920	924	952	
36	Cement-Asbestos Mains	331	724	731	741	743	751	746	763	770	784	793	820	831	900	
37	Steel Mains	331	673	670	678	681	697	701	704	717	734	736	748	748	775	
38	PVC Mains	331	387	387	388	388	387	387	397	397	401	401	417	418	471	
39	Services Installed	333	617	616	622	617	638	651	661	667	677	684	706	701	712	
40	Meters	334	400	400	403	403	404	418	434	434	443	443	459	459	485	
41	Meter Installations	334	702	702	709	708.5	722	733	750	750	765	772	790	797	815	
42	Hydrants Installed	335	877	930	971	972	980	981	1012	1024	1049	1063	1101	1104	1184	
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		2167	2177	2192	2192	2198	2213	2223	2264	2360	2360	2470	2481	2567	
47	Clarifier Equipment-Installed		1184	1188	1229	1272	1311	1315	1369	1401	1462	1462	1523	1557	1662	
48	Filter Gallery Piping-Installed		727	728	735	738	772	772	801	808	825	834	868	866	900	
49																
50																
51																
52																
53																
54																
55																
56																

Water and Wastewater General Information
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Cost Indices

AUS Consultants Index of General Support Assets

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AUS Telephone Plant Index

Cost Trend Tables from 1946 to January 1, 2021

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FOREWORD

The AUS Telephone Plant Index, which follows this foreword was first introduced in 1977 by Associated Utility Services, Inc., and published as part of the Handy-Whitman Index of Public Utility Construction Costs through 1989. In 1990 AUS Consultants, the successor company to Associated Utility Services, Inc., decided to publish the Telephone Plant Index under the name C.A. Turner Utility Reports publication division. In 2005 the index changed its name from C.A. Turner Telephone Plant Index to AUS Telephone Plant Index.

The 1990 AUS Telephone Plant Index (TPI) was the first nationally available TPI based on the Federal Communication Commission (FCC) Uniform System of Accounts (USOA) Part 32. The prior published TPI, also prepared by AUS staff, was based on the earlier USOA Part 31 Standards.

Telephone Plant Index Description

The TPI consists of a separate cost index series for each of six geographic regions shown on the map at page iv. These regions are designated: North Atlantic, South Atlantic, North Central, South Central, Plateau, and Pacific Coast. The regional designation are the same as those used in the prior issues of the cost index and are based on similarity of characteristics among the contiguous 48 states.

Each cost index series within a region consists of one index labeled "Total Plant Account" and up to 31 individual cost index series for the individual plant account identified in the left hand columns.

The Base Year for each cost index is 1973=100. Some plant accounts will not show an index number of 100 at year 1973 due to a subsequent adjustment for FCC Part 31 to Part 32, changes explained later in this foreword. In a few accounts the item described in the account was not included in the index series until after 1973 and the base year is considered the first year of entry.

The index for most plant accounts begins with a single entry in year 1946 and continues with a single number for each year through 1973. Beginning in 1974 there are two index numbers for each year; one for January 1 and one for July 1. These numbers represent the prevailing wages and material prices and weightings at that point in time.

Index History

An index is a tool for identifying the relative price change of an item, or group of items over an identified period of time. Price indexes have been in use for many years for a variety of reasons. One example is an index developed in the eighteenth century by an Italian named Carli to determine the effect of the discovery of America upon the level of prices in Italy of three commodities between the years 1500 and 1750. In the current century, numerous organizations, including the United States Bureau of Statistic, have developed a variety of indexes ranging from the cost of basic commodities to manufactured goods and building construction cost.

Interest in telephone utility cost indexes has varied over time depending on the need to develop reproduction cost values for utility properties. Previous uses of cost indexes included such things as the determination trended original cost in fair value rate jurisdictions and current cost pricing for FASB-33 financial accounting disclosures. Due to changes in rate regulation proceedings and financial disclosure requirements, the need in these two specific areas has declined. Other areas in which reproduction cost indexes were utilized included insurance valuations, property tax valuations, retirement accounting and cost forecasting, etc.

Most recently, interest in cost indexes for the telecommunication industry has increased due to the possible implementation of price cap regulation. This form of regulation incorporates the use of changes in price levels by regulators to set rates. Under one proposal, customer tariff prices are adjusted to give consideration to productivity improvements, therefore, the development of the construction cost indexes will have an indirect bearing on the level of the company revenue requirements.

Index Design

The telephone plant index was designed as a product which could be utilized by any of the various telephone operating companies to develop the reproduction cost of the company's property at the selected test year date. Due to the variation of many design construction specifics from one company to another, it is impossible to produce an index which will exactly mirror the construction cost changes for each company. In circumstances where companies desire a more specific reproduction cost of their property, a custom index should be prepared or, alternately, the company's property should be inventoried and unit priced. Such unit cost work efforts, of course, will be significantly more expensive and time consuming to complete.

As indicated, the telephone plant index is a standard index which is published on a semi-annual basis. The yearly average index is calculated via a 1-2-1 weighting process which is the sum of 25% of the January index, 50 of the July index, and 25% of the succeeding year's January index.

In general terms, the telephone plant index was constructed around the FCC Part 32 system of accounts to aid companies in ease of application of the published index. Each embedded property account was reviewed to determine the components which comprise the large segment of the property investment in each account. In this manner, the resulting telephone plant index was a reasonable proxy for determining the reproduction cost of the embedded investment of the independent telephone industry.

With the exception of the General Support Asset Group, the FCC Part 32 based indexes were adjusted for all index years 1987 and prior to compensate for the change in overhead capitalization policies effective with the new regulations. That is, under FCC Part 31 regulation, a greater level of overheads were previously incorporated in the plant in service investments contained on the company's books and records. The adjusted indexes for the years 1946 through 1987, when applied to the company's original costs, will produce the applicable reproduction cost under FCC Part 32 accounting treatment. The index adjustment for Part 31 to Part 32 accounting results in the plant accounts not having an index number of 100 at the 1973 base year.

The AUS Telephone Plant Index was designed around thirty-six component indexes representing the basic components of material and labor which make up the construction of the various telephone plant accounts. The components include such items as Buildings, Switching Equipment, Circuit Equipment, Poles, Cable, Wire Vehicles, Tools, Furniture, Installer Labor and Lineman Labor, etc. The components were composited together into account level indexes based upon material and labor weights derived from a study of independent telephone construction cost experience.

Introduction of new technologies into a reproduction cost index required the review of composite weight included in development of the account level index to reflex the new mix of property.

The goal of the telephone plant index was to produce a product which when utilized together with each companies' books and records would produce a reproduction cost value.

The AUS Telephone Plant Index does not reflect replacement cost inasmuch as it was designed to produce the reproduction cost (the cost in today's dollars to reproduce the company's embedded plant in service).

Index Functions

The AUS Telephone Plant Index series was initially prepared to address a very specific function. That is, it was designed to enable companies to produce trended original cost values to the historical original cost of plant in service on the companies' books and records. This trended original cost is a general representation of the cost to reconstruct the property in question at the price level of the selected period. If a company desires a more specific estimate of reconstruction, the property specific indexes can be developed giving consideration to the actual history of the company's wages and material cost in comparison to the labor and material costs. For an even more specific cost estimated to rebuild the plant in serve, engineering estimated can be completed based upon the property inventory and the current unit costs for constructing the various plant categories.

In summary, the index was designed to be applied on a vintage and account level basis to determine the reproduction cost of local distribution companies' plant in service, as of the selected price level.

A tool can be utilized correctly only within the boundaries for which the product was originally designed. Uses above and beyond the scope of the original design may or may not produce reliable results. That is, the use of a generalized index to prepare a reproduction cost will provide general results within the range of reasonableness. If more specific or exact results are required, alternative methods or procedures (i.e., custom indexes or specific detail pricing) should be employed.

An effort has been made to carefully construct an index which produces a reasonable proxy of reproduction cost for the telephone plant or local distribution companies giving consideration to the fact that there are variances in material and labor costs, as well as, construction methods and practices from one company to another. Nevertheless, we believe that there is sufficient similarity in the cost trends to make the AUS Telephone Plant Index a useful tool when carefully applied to a company's historical cost base.

North Atlantic

SCHEDULE NO. T-1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBER																LINE NO
			1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	
1	Total Plant		85	89	91	91	92	95	96	96	94	94	97	97	96	96	97	96	1
2																			2
3																			3
4	Motor Vehicles	2112	57	57	63	67	67	70	74	74	74	77	81	84	87	89	88	87	4
5	Aircraft	2113	56	56	62	66	66	69	73	73	73	75	80	83	86	88	86	86	5
6	Special Purpose Vehicles	2114	30	34	38	41	42	46	47	48	49	51	56	60	62	65	66	67	6
7	Gargare Work Equipment	2115	36	38	42	44	46	51	51	52	53	56	61	65	67	69	70	70	7
8	Other Work Equipment	2116	50	50	52	54	55	59	59	61	62	64	67	70	71	74	75	77	9
9																			10
10																			11
11	Buildings	2121	24	28	32	34	35	37	38	39	41	42	46	49	50	52	53	52	12
12	Furniture	2122	43	43	46	47	50	56	56	57	57	60	64	68	70	70	71	71	12
13	Office Equipment	2123	67	67	69	69	70	75	74	76	77	79	82	85	87	88	88	89	13
14	General Purpose Computer	2124	67	67	69	69	70	75	74	76	77	79	82	85	87	88	88	89	14
15																			15
16																			16
17	Analog Electronic Switching	2211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
18	Ditgital Electronic Switching	2212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
19																			19
20																			20
21	Electro Mechanical Switching	2215	36	48	49	57	62	64	67	66	64	65	68	70	69	72	70	72	21
22																			22
23	Operator Systems	2220	37	50	51	59	64	67	69	68	66	67	70	72	71	73	71	74	23
24																			24
25																			25
26																			26
27	Radio System-Analog	22311	51	57	62	63	63	66	64	60	58	58	49	49	46	47	36	36	27
28	Radio System-Digital	22312	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
29	Circuit Equipment-Analog	22321	347	392	417	411	410	423	410	401	348	311	319	317	303	299	312	297	29
30	Circuit Equipment-Digital	22322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
31																			31
32	Public Telephone Term Eq	2351	148	151	145	145	148	154	143	144	146	158	159	164	164	164	165	165	32
33																			33
34																			34
35	Poles	2411	33	37	39	41	42	45	47	49	51	50	54	58	59	59	60	61	35
36	Aerial Cable-Metallic	24211	44	47	49	49	51	58	61	64	64	68	74	72	70	71	72	70	36
37	Aerial Cable-Fiber	24212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38	Underground Cable-Metallic	24221	48	52	54	53	55	64	67	71	69	75	82	78	75	76	78	75	38
39	Underground Cable-Fiber	24222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40	Buried Cable-Metallic	24231	50	54	56	55	57	66	70	74	72	78	85	81	77	78	80	76	40
41	Buried Cable-Fiber	24232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
42	Submarine Cable-Metallic	24241	43	45	48	48	50	56	59	62	61	65	71	69	68	69	71	70	42
43	Submarine Cable-Fiber	24241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
44	Intra Building Cable-Metallic	24261	43	47	49	48	50	58	61	64	63	68	74	71	69	70	72	70	44
45	Intra Building Cable-Fiber	24262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
46	Aerial Wire	2431	33	36	38	38	40	45	47	50	50	55	58	57	57	59	61	62	46
47	Conduit Systems	2441	54	55	57	59	60	63	64	64	65	65	67	69	71	72	73	74	47
48																			48
49	Aerial Cable-FTTP (Distribution)	24213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	Underground Cable-FTTP (Dist.)	24223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	Submarine Cable-FTTP (Dist.)	24243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	Intra Building Cable-FTTP (Dist.)	24263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
54																			54

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LINE NO	COST INDEX NUMBER																							LINE NO
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 Jan 1	1974 Jul 1	1975 Jan 1	1975 Jul 1	1976 Jan 1	1976 Jul 1	1977 Jan 1	1977 Jul 1	1978 Jan 1	1978 Jul 1	1979 Jan 1	1979 Jul 1	
1	95	94	94	94	95	96	96	97	101	101	102	105	108	113	116	116	117	120	122	123	125	128	131	135	1
2																									2
3																									3
4	87	86	86	85	85	86	88	89	92	97	99	100	102	105	116	116	123	124	131	132	140	143	149	155	4
5	85	85	84	84	84	84	86	88	91	96	99	100	102	109	119	123	128	131	136	140	146	151	157	163	5
6	67	68	70	72	74	77	81	85	89	93	96	100	103	114	130	141	147	151	158	162	171	177	187	195	6
7	71	71	72	73	76	79	82	85	90	94	96	100	114	118	134	139	143	147	153	159	165	172	180	189	7
8	78	79	79	79	81	85	88	93	98	100	100	100	100	111	118	122	119	122	124	130	131	137	141	147	8
9																									9
10																									10
11	53	54	56	57	59	61	64	68	74	84	91	100	107	119	125	128	126	131	132	136	140	148	154	163	11
12	71	71	72	72	73	77	80	83	89	91	93	100	103	114	130	128	129	135	136	144	149	155	160	171	12
13	89	90	90	90	91	92	93	93	96	97	99	100	101	105	109	111	110	112	111	113	114	118	119	123	13
14	89	90	90	90	91	92	93	93	96	97	99	100	100	100	102	103	100	100	98	90	90	90	90	90	14
15																									15
16																									16
17	0	0	0	0	0	0	0	0	0	0	0	104	103	106	110	111	111	113	113	113	115	119	122	125	17
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105	105	100	95	95	95	96	96	18
19																									19
20																									20
21	71	76	78	75	72	71	75	81	84	88	98	104	106	110	115	120	124	127	132	136	140	145	151	156	21
22																									22
23	73	77	79	76	72	71	76	81	85	89	98	104	106	108	111	114	117	119	121	122	125	128	132	136	23
24																									24
25																									25
26																									26
27	46	49	52	60	58	63	62	66	78	97	102	104	102	102	102	102	97	98	103	104	106	106	103	103	27
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
29	273	234	228	214	224	210	173	159	163	128	108	104	105	108	111	112	111	111	115	118	118	119	120	122	29
30	0	0	0	0	0	0	0	0	0	0	0	104	104	104	105	105	110	116	121	126	126	127	123	120	30
31																									31
32	165	165	166	130	122	123	120	118	108	107	108	107	106	107	110	109	109	111	112	114	116	119	123	127	32
33																									33
34																									34
35	62	63	65	66	68	71	76	79	83	88	97	107	119	131	144	157	158	160	164	169	176	183	196	208	35
36	70	70	70	73	77	81	84	88	96	97	100	107	114	125	129	126	130	135	140	144	148	152	158	170	36
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38	74	73	72	75	80	84	87	91	100	99	100	107	114	127	130	125	129	134	138	143	145	149	155	168	38
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40	76	74	73	77	81	85	88	91	101	99	100	107	114	128	131	124	128	133	138	142	144	147	153	167	40
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
42	70	70	71	73	77	81	84	88	95	96	101	107	113	123	128	126	131	136	141	145	150	154	160	171	42
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
44	70	70	70	73	77	81	84	88	96	96	100	107	114	125	129	126	130	136	140	145	148	152	158	170	44
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
46	63	65	66	70	73	75	78	84	91	93	100	107	114	125	130	131	134	139	142	146	145	150	158	172	46
47	74	77	78	79	82	84	84	87	89	94	102	107	111	117	127	130	135	139	144	150	159	163	169	180	47
48																									48
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
54																									54

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AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS																LINE NO
			1980		1981		1982		1983		1984		1985		1986		1987		
			Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	
1	Total Plant		140	146	146	149	150	152	156	159	156	154	156	158	156	154	154	155	1
2																			2
3																			3
4	Motor Vehicles	2112	162	167	178	186	195	195	201	199	203	204	206	210	215	215	227	220	4
5	Aircraft	2113	170	180	195	205	215	217	224	223	227	228	230	234	238	237	233	231	5
6	Special Purpose Vehicles	2114	206	220	231	245	254	263	266	270	271	274	274	277	278	281	283	287	6
7	Gargare Work Equipment	2115	200	213	223	234	241	248	250	251	253	257	260	263	264	267	268	270	7
8	Other Work Equipment	2116	153	165	170	181	183	189	189	189	189	190	192	197	199	202	204	205	8
9																			9
10																			10
11	Buildings	2121	176	183	188	193	192	198	200	206	210	218	223	224	228	234	234	239	11
12	Furniture	2122	174	182	187	199	210	213	215	222	224	229	232	238	242	245	248	252	12
13	Office Equipment	2123	125	130	132	136	137	140	140	143	142	142	140	142	143	143	143	146	13
14	General Purpose Computer	2124	90	90	90	90	87	83	76	69	59	48	48	48	48	47	47	47	14
15																			15
16																			16
17	Analog Electronic Switching	2211	130	140	149	163	168	175	183	188	193	199	202	204	205	208	210	210	17
18	Ditgital Electronic Switching	2212	96	96	97	97	94	90	84	77	67	57	57	57	57	56	56	56	18
19																			19
20																			20
21	Electro Mechanical Switching	2215	167	188	199	213	219	226	232	248	268	277	282	281	283	286	287	287	21
22																			22
23	Operator Systems	2220	146	157	166	176	180	185	191	197	204	211	213	215	216	218	219	219	23
24																			24
25																			25
26																			26
27	Radio System-Analog	22311	100	100	101	102	90	91	94	94	79	80	80	81	77	78	82	82	27
28	Radio System-Digital	22312	0	0	0	0	0	0	115	115	115	117	119	121	122	124	126	124	28
29	Circuit Equipment-Analog	22321	125	130	129	128	130	132	121	154	153	152	153	152	147	144	145	146	29
30	Circuit Equipment-Digital	22322	114	107	100	93	93	94	95	96	89	82	80	78	68	59	49	39	30
31																			31
32	Public Telephone Term Eq	2351	132	141	145	150	158	167	190	196	201	206	210	212	213	217	219	218	32
33																			33
34																			34
35	Poles	2411	220	232	240	249	254	259	263	268	272	273	280	283	287	292	295	297	35
36	Aerial Cable-Metallic	24211	182	193	191	197	202	204	208	213	211	209	219	231	227	223	225	228	36
37	Aerial Cable-Fiber	24212	0	0	0	0	0	0	136	138	132	127	119	111	108	105	108	110	37
38	Underground Cable-Metallic	24221	181	192	187	191	195	196	199	203	197	193	204	217	212	205	206	209	38
39	Underground Cable-Fiber	24222	0	0	0	0	0	0	130	131	125	119	110	101	98	94	97	100	39
40	Buried Cable-Metallic	24231	180	192	186	189	192	193	195	199	192	187	198	212	205	198	198	201	40
41	Buried Cable-Fiber	24232	0	0	0	0	0	0	129	131	124	118	109	100	97	93	96	98	41
42	Submarine Cable-Metallic	24241	181	192	193	199	205	209	214	219	219	218	227	238	237	235	238	240	42
43	Submarine Cable-Fiber	24241	0	0	0	0	0	0	147	149	145	141	134	128	126	124	127	130	43
44	Intra Building Cable-Metallic	24261	182	193	191	197	202	205	209	214	211	210	220	231	228	224	226	230	44
45	Intra Building Cable-Fiber	24262	0	0	0	0	0	0	136	138	132	127	119	111	108	105	108	111	45
46	Aerial Wire	2431	182	191	198	206	210	214	219	225	232	239	243	248	250	252	253	253	46
47	Conduit Systems	2441	188	196	203	211	219	220	228	240	246	253	257	262	267	271	276	278	47
48																			48
49	Aerial Cable-FTTP (Distribution)	24213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	Underground Cable-FTTP (Dist)	24223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	Submarine Cable-FTTP (Dist)	24243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	Intra Building Cable-FTTP (Dist)	24263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
54																			54

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NORTH ATLANTIC REGION 1973-100

LINE NO	COST INDEX NUMBERS																								LINE NO
	1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		
	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul 1	Jan. 1	Jul 1	Jan 1	Jul 1	Jan. 1	Jul 1	Jan. 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan. 1	Jul 1	Jan. 1	Jul 1	Jan 1	Jul 1	
1	150	153	158	165	164	165	167	165	165	165	167	168	169	170	174	178	182	182	184	185	186	184	184	181	1
2																									2
3																									3
4	221	222	231	229	236	232	244	241	254	251	258	261	267	271	275	270	279	276	277	271	270	263	273	266	4
5	234	234	234	240	246	254	261	271	274	284	285	291	297	300	304	312	318	322	326	328	327	328	329	330	5
6	289	293	298	309	312	319	325	328	333	337	343	348	348	351	353	360	362	368	370	374	377	382	383	388	6
7	273	279	286	294	298	305	309	316	318	322	324	328	332	336	338	345	349	354	356	359	361	364	366	368	7
8	206	210	215	218	221	228	230	234	235	240	240	243	244	250	250	254	254	258	258	260	260	262	263	265	8
9																									9
10																									10
11	242	254	257	268	268	272	272	274	270	279	283	290	295	306	310	310	311	312	323	329	331	338	341	343	11
12	255	263	269	274	278	284	287	290	291	294	296	299	302	309	309	315	320	322	326	328	330	330	330	333	12
13	147	149	151	153	154	154	152	153	153	156	154	155	155	155	154	156	155	156	155	157	156	157	156	157	13
14	45	43	37	31	30	29	26	24	23	21	21	21	21	21	21	20	17	15	14	14	14	14	13	13	14
15																									15
16																									16
17	204	207	210	212	214	211	212	214	213	213	213	216	215	216	213	212	211	204	204	200	196	194	193	192	17
18	52	50	45	40	39	38	36	33	32	31	31	31	32	32	32	31	28	27	26	26	26	26	25	25	18
19																									19
20																									20
21	278	284	289	291	291	292	296	302	303	304	309	317	316	324	329	327	334	333	336	339	331	336	338	342	21
22																									22
23	213	216	217	218	218	218	220	223	224	224	227	231	231	236	238	236	239	240	239	239	234	237	237	239	23
24																									24
25																									25
26																									26
27	80	80	81	81	81	82	81	82	84	85	86	87	87	87	89	89	91	91	91	93	94	95	95	96	27
28	117	117	117	118	118	118	116	116	117	118	119	120	119	120	120	121	121	122	123	125	125	123	123	124	28
29	140	141	142	144	145	144	145	146	147	147	147	149	150	150	152	149	149	146	146	145	143	143	142	143	29
30	36	35	35	35	35	34	34	34	37	38	39	39	39	39	37	37	37	38	35	36	36	36	36	35	30
31																									31
32	205	209	212	214	216	213	213	215	214	214	213	216	215	216	213	212	211	204	204	200	196	195	194	192	32
33																									33
34																									34
35	278	285	291	295	300	304	310	315	319	327	331	338	352	365	368	369	379	385	400	402	406	413	418	421	35
36	226	237	257	275	273	277	282	277	279	275	281	282	283	282	294	310	319	323	325	328	333	324	322	314	36
37	94	87	85	89	89	89	90	90	89	90	89	89	88	87	88	89	90	91	91	92	93	94	94	95	37
38	210	221	244	265	261	265	270	261	263	256	262	260	260	257	270	289	299	304	305	308	312	299	297	285	38
39	84	75	73	77	76	76	77	77	76	76	75	74	73	72	72	73	74	75	75	76	76	77	77	77	39
40	204	215	240	262	257	261	265	256	257	249	256	253	252	249	262	283	293	298	298	301	306	291	288	275	40
41	82	73	71	75	74	74	75	75	74	74	73	72	71	69	70	71	72	73	73	73	74	74	75	75	41
42	235	244	260	274	274	277	283	278	282	279	285	286	287	288	298	310	319	324	324	327	332	325	325	319	42
43	114	107	106	111	111	111	113	113	113	114	113	114	113	113	114	115	118	119	119	120	121	122	123	123	43
44	227	238	257	275	273	277	282	277	279	275	281	282	282	282	293	309	318	323	324	328	333	324	322	314	44
45	95	87	85	90	89	89	90	91	90	90	89	89	88	87	88	89	91	92	92	93	94	94	95	95	45
46	249	261	270	278	279	283	290	291	293	298	302	305	307	312	320	324	329	332	334	337	341	344	342	342	46
47	269	277	301	309	311	309	316	308	307	310	314	320	325	331	336	340	345	347	350	353	355	358	362	366	47
48																									48
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
54																									54

SCHEDULE NO. T-1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS																LINE NO
			2000		2001		2002		2003		2004		2005		2006		2007		
			Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	
1	Total Plant		182	185	188	190	191	193	194	197	201	206	210	213	227	244	244	249	1
2																			2
3																			3
4	Motor Vehicles	2112	275	269	276	266	270	263	264	257	268	266	272	261	262	258	264	257	4
5	Aircraft	2113	334	343	351	359	362	364	369	377	387	393	408	417	424	438	447	450	5
6	Special Purpose Vehicles	2114	388	392	392	392	392	398	400	404	404	413	428	445	449	462	465	472	6
7	Gargare Work Equipment	2115	369	372	373	377	376	376	377	378	379	387	393	403	408	416	422	430	7
8	Other Work Equipment	2116	266	267	268	273	271	272	271	273	273	275	276	278	278	275	278	279	8
9																			9
10																			10
11	Buildings	2121	353	359	364	374	377	384	385	385	407	412	425	431	441	443	457	472	11
12	Furniture	2122	335	337	338	341	341	341	344	346	346	350	360	368	372	376	380	386	12
13	Office Equipment	2123	156	157	157	158	159	158	158	157	159	160	158	162	161	161	160	161	13
14	General Purpose Computer	2124	12	11	9	9	7	7	6	4.8	3.4	3.4	3.3	3.3	3.0	2.8	2.6	2.7	14
15																			15
16																			16
17	Analog Electronic Switching	2211	193	193	193	190	189	190	189	190	189	190	190	189	187	193	196	186	17
18	Ditgital Electronic Switching	2212	25	24	22	23	23	23	21	22	22	22	22	22	22	22	23	23	18
19																			19
20																			20
21	Electro Mechanical Switching	2215	344	348	350	358	366	376	379	386	391	395	403	405	414	421	430	432	21
22																			22
23	Operator Systems	2220	241	242	243	247	251	257	258	261	264	266	271	272	276	282	287	287	23
24																			24
25																			25
26																			26
27	Radio System-Analog	22311	96	96	96	95	95	95	95	95	95	96	95	95	94	97	98	94	27
28	Radio System-Digital	22312	125	125	126	127	128	127	125	125	125	126	127	127	128	129	130	130	28
29	Circuit Equipment-Analog	22321	143	144	144	142	143	143	143	144	143	145	145	145	144	148	150	144	29
30	Circuit Equipment-Digital	22322	36	36	36	37	37	38	38	39	38	38	39	39	39	40	40	41	30
31																			31
32	Public Telephone Term Eq	2351	193	193	193	191	190	190	190	191	190	191	190	189	187	193	195	186	32
33																			33
34																			34
35	Poles	2411	421	429	434	446	451	459	463	472	477	490	495	503	502	521	526	529	35
36	Aerial Cable-Metallic	24211	313	322	328	333	335	338	340	349	357	371	379	386	430	486	477	492	36
37	Aerial Cable-Fiber	24212	96	98	100	102	104	105	105	108	110	112	114	116	118	119	121	122	37
38	Underground Cable-Metallic	24221	281	289	295	299	298	299	299	307	314	326	334	340	394	461	448	466	38
39	Underground Cable-Fiber	24222	78	80	82	83	84	86	85	87	89	91	92	94	95	96	98	98	39
40	Buried Cable-Metallic	24231	271	278	284	287	285	289	286	293	300	312	320	326	383	456	441	460	40
41	Buried Cable-Fiber	24232	76	77	79	80	81	83	82	84	85	87	89	90	91	92	93	94	41
42	Submarine Cable-Metallic	24241	320	327	334	338	341	343	346	353	362	372	379	384	417	459	454	466	42
43	Submarine Cable-Fiber	24241	125	127	130	132	134	136	136	138	141	144	146	148	149	150	153	154	43
44	Intra Building Cable-Metallic	24261	313	322	328	333	335	338	340	349	357	370	378	385	429	483	474	489	44
45	Intra Building Cable-Fiber	24262	97	99	101	103	104	106	106	108	110	113	115	117	118	120	121	122	45
46	Aerial Wire	2431	348	355	362	368	372	377	381	391	399	412	419	427	446	466	465	472	46
47	Conduit Systems	2441	375	380	391	395	403	412	418	422	432	442	453	458	474	478	495	493	47
48																			48
49	Aerial Cable-FTTP (Distribution)	24213	0	0	0	0	0	0	0	0	0	100	97	95	92	89	88	87	49
50	Underground Cable-FTTP (Dist.)	24223	0	0	0	0	0	0	0	0	0	100	99	98	98	97	96	96	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	100	102	105	104	103	103	102	51
52	Submarine Cable-FTTP (Dist.)	24243	0	0	0	0	0	0	0	0	0	100	99	98	98	97	96	96	52
53	Intra Building Cable-FTTP (Dist.)	24263	0	0	0	0	0	0	0	0	0	100	100	100	100	100	101	103	53
54																			54

SCHEDULE NO. T-1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	COST INDEX NUMBERS																					LINE NO
	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		
	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan. 1	Jul. 1	Jan. 1	Jul 1	Jan 1	Jul. 1	Jan. 1	Jul. 1	Jan 1	Jul 1	Jan 1	Jul. 1	
1	251	256	245	248	258	260	279	282	282	282	285	283	284	285	289	287	283	282	288	290	298	304	1
2																							2
3																							3
4	263	257	272	273	274	269	272	273	280	279	286	282	291	287	291	295	299	298	305	301	307	304	4
5	461	471	495	480	485	490	497	502	514	520	523	528	532	537	541	543	543	547	548	553	557	562	5
6	476	485	499	504	503	503	507	518	529	541	548	555	557	564	566	570	572	576	577	581	583	578	6
7	435	445	457	457	456	458	462	474	479	485	489	494	497	503	505	509	510	513	514	519	522	533	7
8	281	286	290	286	286	288	288	290	291	294	295	296	304	307	309	315	318	322	322	324	327	330	8
9																							9
10																							10
11	492	497	506	494	506	507	521	518	530	532	542	539	550	552	585	580	586	589	604	608	633	647	11
12	389	402	417	415	418	420	415	429	433	437	433	437	439	450	449	454	454	455	457	461	464	482	12
13	162	171	184	171	169	169	170	171	173	173	164	165	166	166	171	172	172	172	173	171	171	169	13
14	2.7	2.6	2.6	2.1	2.01	1.98	1.97	1.49	0.82	0.66	0.67	0.50	0.57	0.60	0.55	0.63	0.64	0.65	0.73	0.71	0.67	0.64	14
15																							15
16																							16
17	180	179	178	178	177	177	174	175	174	174	174	175	176	176	176	176	177	177	177	179	177	179	17
18	24	24	25	25	25	25	25	25	26	26	26	27	27	27	27	28	28	28	28	29	29	29	18
19																							19
20																							20
21	439	445	456	458	460	469	474	481	486	478	484	491	497	495	499	499	496	497	502	502	509	506	21
22																							22
23	288	292	297	299	300	305	307	311	313	309	312	317	320	319	322	322	320	321	324	325	328	327	23
24																							24
25																							25
26																							26
27	91	90	90	90	89	89	88	89	88	88	88	88	89	89	89	89	89	89	89	90	90	90	27
28	131	132	134	134	135	137	138	138	137	138	138	138	138	138	139	140	140	140	140	141	141	142	28
29	140	139	139	139	138	138	137	138	137	137	137	138	139	139	140	140	141	141	141	142	142	143	29
30	41	41	41	41	40	40	40	41	41	42	42	42	43	43	44	44	44	45	45	45	46	46	30
31																							31
32	180	179	177	178	177	177	174	175	173	174	173	174	175	175	176	176	177	177	177	179	177	179	32
33																							33
34																							34
35	537	547	554	563	570	578	576	587	594	600	603	607	605	616	620	621	629	633	634	652	643	652	35
36	494	507	461	473	506	509	573	582	577	576	582	572	573	573	578	570	555	551	566	568	590	604	36
37	123	124	126	127	128	130	131	133	135	136	137	138	140	142	143	144	146	148	149	151	153	155	37
38	465	481	421	435	475	476	555	562	554	552	556	544	542	540	544	533	513	506	523	524	548	563	38
39	100	100	102	103	103	105	106	108	109	110	111	112	113	114	116	116	118	119	120	122	123	125	39
40	459	475	410	425	467	467	553	560	550	547	552	538	536	533	537	524	501	493	511	511	537	552	40
41	95	96	97	98	99	100	101	103	104	105	106	107	108	109	111	111	113	114	115	116	118	120	41
42	468	479	447	458	484	486	535	541	539	540	545	539	541	542	547	544	534	532	546	548	566	578	42
43	155	157	159	161	163	164	166	168	170	172	173	174	177	179	181	183	185	187	189	191	194	196	43
44	491	504	459	471	504	507	570	578	573	573	578	569	569	570	575	567	553	549	564	566	588	602	44
45	124	125	127	128	129	131	132	134	135	137	138	139	141	142	144	145	147	148	150	152	154	156	45
46	475	488	469	478	496	501	519	528	525	527	531	530	533	538	543	543	540	541	551	556	569	580	46
47	502	507	525	530	516	521	526	532	545	550	549	552	559	565	571	577	581	586	591	596	611	618	47
48																							48
49	82	77	75	73	65	58	55	53	52	50	50	50	50	50	50	49	50	49	49	50	49	50	49
50	94	92	89	87	83	80	75	70	66	62	58	54	54	54	53	53	54	54	54	55	54.3	55.3	50
51	92	82	78	74	71	68	66	63	61	59	57	54	54	55	54	54	54	53	53	54	52.7	53.7	51
52	94	92	89	87	83	80	75	70	66	62	58	54	54	54	53	53	54	54	54	55	54.3	55.3	52
53	104	105	90	75	68	61	54	47	43	39	39	39	39	39	38	38	39	44	44	44	43.7	44.7	53
54																							54

SCHEDULE NO. T-1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS														LINE NO
			2019		2020		2021		2022		2023		2024		2025		
			Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	Jan 1	Jul 1	
1	Total Plant		304	305	308	310	318										1
2																	2
3																	3
4	Motor Vehicles	2112	309	305	308	304	310										4
5	Aircraft	2113	567	574	575	581	583										5
6	Special Purpose Vehicles	2114	602	612	616	622	623										6
7	Gargare Work Equipment	2115	541	550	550	555	556										7
8	Other Work Equipment	2116	333	335	336	340	343										8
9																	9
10																	10
11	Buildings	2121	647	643	664	662	662										11
12	Furniture	2122	491	497	503	512	513										12
13	Office Equipment	2123	170	172	171	170	169										13
14	General Purpose Computer	2124	0 60	0 60	0 51	0 51	0 34										14
15																	15
16																	16
17	Analog Electronic Switching	2211	179	179	181	180	180										17
18	Ditgital Electronic Switching	2212	29	29	30	30	30										18
19																	19
20																	20
21	Electro Mechanical Switching	2215	513	517	518	528	529										21
22																	22
23	Operator Systems	2220	331	334	335	340	341										23
24																	24
25																	25
26																	26
27	Radio System-Analog	22311	90	90	91	91	91										27
28	Radio System-Digital	22312	143	144	146	147	147										28
29	Circuit Equipment-Analog	22321	143	144	145	145	145										29
30	Circuit Equipment-Digital	22322	47	47	48	48	49										30
31																	31
32	Public Telephone Term Eq	2351	179	180	181	181	181										32
33																	33
34																	34
35	Poles	2411	661	671	699	710	715										35
36	Aerial Cable-Metallic	24211	601	603	605	608	634										36
37	Aerial Cable-Fiber	24212	157	158	160	162	164										37
38	Underground Cable-Metallic	24221	558	557	558	559	590										38
39	Underground Cable-Fiber	24222	126	128	129	130	132										39
40	Buried Cable-Metallic	24231	545	544	544	545	577										40
41	Buried Cable-Fiber	24232	121	122	123	125	126										41
42	Submarine Cable-Metallic	24241	578	580	583	587	608										42
43	Submarine Cable-Fiber	24241	199	200	203	205	207										43
44	Intra Building Cable-Metallic	24261	599	601	603	606	632										44
45	Intra Building Cable-Fiber	24262	158	159	161	163	165										45
46	Aerial Wire	2431	583	587	592	597	612										46
47	Conduit Systems	2441	626	631	642	648	655										47
48																	48
49	Aerial Cable-FTTP (Distribution)	24213	50 5	50	50	50	50										49
50	Underground Cable-FTTP (Dist)	24223	55 8	55 1	55 1	55 1	55 1										50
51	Buried Cable-FTTP (Distribution)	24233	54 2	53 7	53 7	53 7	53 7										51
52	Submarine Cable-FTTP (Dist)	24243	55 8	55 1	55 1	55 1	55 1										52
53	Intra Building Cable-FTTP (Dist)	24263	45 2	44 7	44 7	44 7	44 7										53
54																	54

Water and Wastewater General Information
Appraisal Work Papers

Cost Indices

United States Bureau of Labor Statistics – General Inf Cost Indexes

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AUS Consultants
Bureau of Labor Statistics Indexes

Index	Table	Region	Year	Begin Date	End Date	CPI	1	2 Communic Equipment pcu3342	3 Technical Labor ecu11122I linked CIU20154
Earliest Year							1913	1986	1985
Index	Table	Region					1	2	3
BLS	BLS	All	1913	1/1/1913	12/31/1913		10	7	6
BLS	BLS	All	1914	1/1/1914	12/31/1914		10	7	6
BLS	BLS	All	1915	1/1/1915	12/31/1915		10	7	6
BLS	BLS	All	1916	1/1/1916	12/31/1916		11	8	7
BLS	BLS	All	1917	1/1/1917	12/31/1917		13	10	8
BLS	BLS	All	1918	1/1/1918	12/31/1918		15	11	9
BLS	BLS	All	1919	1/1/1919	12/31/1919		17	12	10
BLS	BLS	All	1920	1/1/1920	12/31/1920		20	14	12
BLS	BLS	All	1921	1/1/1921	12/31/1921		18	13	11
BLS	BLS	All	1922	1/1/1922	12/31/1922		17	12	10
BLS	BLS	All	1923	1/1/1923	12/31/1923		17	12	10
BLS	BLS	All	1924	1/1/1924	12/31/1924		17	12	10
BLS	BLS	All	1925	1/1/1925	12/31/1925		18	13	11
BLS	BLS	All	1926	1/1/1926	12/31/1926		18	13	11
BLS	BLS	All	1927	1/1/1927	12/31/1927		17	12	10
BLS	BLS	All	1928	1/1/1928	12/31/1928		17	12	10
BLS	BLS	All	1929	1/1/1929	12/31/1929		17	12	10
BLS	BLS	All	1930	1/1/1930	12/31/1930		17	12	10
BLS	BLS	All	1931	1/1/1931	12/31/1931		15	11	9
BLS	BLS	All	1932	1/1/1932	12/31/1932		14	10	8
BLS	BLS	All	1933	1/1/1933	12/31/1933		13	9	7
BLS	BLS	All	1934	1/1/1934	12/31/1934		13	9	7
BLS	BLS	All	1935	1/1/1935	12/31/1935		14	10	7
BLS	BLS	All	1936	1/1/1936	12/31/1936		14	10	7
BLS	BLS	All	1937	1/1/1937	12/31/1937		14	10	7
BLS	BLS	All	1938	1/1/1938	12/31/1938		14	10	7
BLS	BLS	All	1939	1/1/1939	12/31/1939		14	10	7
BLS	BLS	All	1940	1/1/1940	12/31/1940		14	10	7
BLS	BLS	All	1941	1/1/1941	12/31/1941		15	11	8
BLS	BLS	All	1942	1/1/1942	12/31/1942		16	12	9
BLS	BLS	All	1943	1/1/1943	12/31/1943		17	13	10
BLS	BLS	All	1944	1/1/1944	12/31/1944		18	14	11
BLS	BLS	All	1945	1/1/1945	12/31/1945		18	14	11
BLS	BLS	All	1946	1/1/1946	12/31/1946		20	16	12
BLS	BLS	All	1947	1/1/1947	12/31/1947		22	18	13
BLS	BLS	All	1948	1/1/1948	12/31/1948		24	20	14
BLS	BLS	All	1949	1/1/1949	12/31/1949		24	20	14
BLS	BLS	All	1950	1/1/1950	12/31/1950		24	20	14
BLS	BLS	All	1951	1/1/1951	12/31/1951		26	22	15

AUS Consultants
Bureau of Labor Statistics Indexes

Index	Table	Region	Year	Begin Date	End Date	CPI	1	2 Communic Equipment pcu3342	3 Technical Labor ecu11122I linked CIU20154
Earliest Year							1913	1986	1985
Index	Table	Region					1	2	3
BLS	BLS	All	1952	1/1/1952	12/31/1952		27	23	16
BLS	BLS	All	1953	1/1/1953	12/31/1953		27	23	16
BLS	BLS	All	1954	1/1/1954	12/31/1954		27	23	16
BLS	BLS	All	1955	1/1/1955	12/31/1955		27	23	16
BLS	BLS	All	1956	1/1/1956	12/31/1956		27	23	16
BLS	BLS	All	1957	1/1/1957	12/31/1957		28	24	17
BLS	BLS	All	1958	1/1/1958	12/31/1958		29	25	18
BLS	BLS	All	1959	1/1/1959	12/31/1959		29	25	18
BLS	BLS	All	1960	1/1/1960	12/31/1960		30	26	19
BLS	BLS	All	1961	1/1/1961	12/31/1961		30	26	19
BLS	BLS	All	1962	1/1/1962	12/31/1962		30	26	19
BLS	BLS	All	1963	1/1/1963	12/31/1963		31	27	20
BLS	BLS	All	1964	1/1/1964	12/31/1964		31	27	20
BLS	BLS	All	1965	1/1/1965	12/31/1965		32	28	21
BLS	BLS	All	1966	1/1/1966	12/31/1966		32	28	21
BLS	BLS	All	1967	1/1/1967	12/31/1967		33	29	22
BLS	BLS	All	1968	1/1/1968	12/31/1968		35	31	23
BLS	BLS	All	1969	1/1/1969	12/31/1969		37	33	24
BLS	BLS	All	1970	1/1/1970	12/31/1970		39	35	25
BLS	BLS	All	1971	1/1/1971	12/31/1971		41	37	26
BLS	BLS	All	1972	1/1/1972	12/31/1972		42	38	27
BLS	BLS	All	1973	1/1/1973	12/31/1973		44	40	28
BLS	BLS	All	1974	1/1/1974	12/31/1974		49	44	31
BLS	BLS	All	1975	1/1/1975	12/31/1975		54	49	34
BLS	BLS	All	1976	1/1/1976	12/31/1976		57	52	36
BLS	BLS	All	1977	1/1/1977	12/31/1977		61	56	38
BLS	BLS	All	1978	1/1/1978	12/31/1978		65	60	40
BLS	BLS	All	1979	1/1/1979	12/31/1979		73	67	45
BLS	BLS	All	1980	1/1/1980	12/31/1980		82	75	50
BLS	BLS	All	1981	1/1/1981	12/31/1981		91	83	55
BLS	BLS	All	1982	1/1/1982	12/31/1982		97	89	59
BLS	BLS	All	1983	1/1/1983	12/31/1983		100	92	61
BLS	BLS	All	1984	1/1/1984	12/31/1984		104	96	63
BLS	BLS	All	1985	1/1/1985	12/31/1985		108	100	65
BLS	BLS	All	1986	1/1/1986	12/31/1986		110	102	66
BLS	BLS	All	1987	1/1/1987	12/31/1987		114	104	69
BLS	BLS	All	1988	1/1/1988	12/31/1988		118	104	72
BLS	BLS	All	1989	1/1/1989	12/31/1989		124	106	76
BLS	BLS	All	1990	1/1/1990	12/31/1990		131	108	80

AUS Consultants
Bureau of Labor Statistics Indexes

Index	Table	Region	Year	Begin Date	End Date	CPI	1	2 Communic Equipment pcu3342	3 Technical Labor ecu11122I linked CIU20154
Earliest Year							1913	1986	1985
Index	Table	Region					1	2	3
BLS	BLS	All	1991	1/1/1991	12/31/1991		136	109	84
BLS	BLS	All	1992	1/1/1992	12/31/1992		140	110	88
BLS	BLS	All	1993	1/1/1993	12/31/1993		145	112	92
BLS	BLS	All	1994	1/1/1994	12/31/1994		148	113	95
BLS	BLS	All	1995	1/1/1995	12/31/1995		152	114	97
BLS	BLS	All	1996	1/1/1996	12/31/1996		157	115	100
BLS	BLS	All	1997	1/1/1997	12/31/1997		161	116	102
BLS	BLS	All	1998	1/1/1998	12/31/1998		163	115	106
BLS	BLS	All	1999	1/1/1999	12/31/1999		167	113	109
BLS	BLS	All	2000	1/1/2000	12/31/2000		172	110	114
BLS	BLS	All	2001	1/1/2001	12/31/2001		177	109	119
BLS	BLS	All	2002	1/1/2002	12/31/2002		180	105	123
BLS	BLS	All	2003	1/1/2003	12/31/2003		184	102	127
BLS	BLS	All	2004	1/1/2004	12/31/2004		189	98	132
BLS	BLS	All	2005	1/1/2005	12/31/2005		195	97	135
BLS	BLS	All	2006	1/1/2006	12/31/2006		202	97	139
BLS	BLS	All	2007	1/1/2007	12/31/2007		207	96	146
BLS	BLS	All	2008	1/1/2008	12/31/2008		215	97	152
BLS	BLS	All	2009	1/1/2009	12/31/2009		215	97	155
BLS	BLS	All	2010	1/1/2010	12/31/2010		218	97	157
BLS	BLS	All	2011	1/1/2011	12/31/2011		225	96	161
BLS	BLS	All	2012	1/1/2012	12/31/2012		230	96	164
BLS	BLS	All	2013	1/1/2013	12/31/2013		233	95	167
BLS	BLS	All	2014	1/1/2014	12/31/2014		237	96	170
BLS	BLS	All	2015	1/1/2015	12/31/2015		237	96	173
BLS	BLS	All	2016	1/1/2016	12/31/2016		240	95	176
BLS	BLS	All	2017	1/1/2017	12/31/2017		245.1	94	179
BLS	BLS	All	2018	1/1/2018	12/31/2018		251.1	93	183
BLS	BLS	All	2019	1/1/2019	12/31/2019		255.7	93	187
BLS	BLS	All	2020	1/1/2020	12/31/2020		258.8	94	191
BLS	BLS	All	2021	1/1/2021	12/31/2021		261.6	94	192

Index	Table	Region	Year	Begin Date	End Date	1 Switch Gear PCU3353 13335313 30%	2 Relays PCU3353 14335314 30%	3 Battery Systems PCU3359 12335912 40%	4 Power Systems Calculation Composite	5 Alarm Systems PCU33429 03342901	6 Motors & Generators PCU33531 2335312	7 Emergency Generators Means Ref 26 32 13.13 2600
Earliest Year						1987	1987	1987	1987	1987	1987	1987
Index	Table	Region				1	2	3	4	5	6	7
POW	POW	All	1987	1/1/1987	12/31/1987	103.6	103.9	125.0	112.3	100.1	110.8	83.4
POW	POW	All	1988	1/1/1988	12/31/1988	106.7	106.6	126.7	114.7	101.6	116.4	83.7
POW	POW	All	1989	1/1/1989	12/31/1989	113.5	110.9	133.5	120.7	104.3	123.3	83.9
POW	POW	All	1990	1/1/1990	12/31/1990	118.5	115.4	137.6	125.2	103.4	127.5	84.1
POW	POW	All	1991	1/1/1991	12/31/1991	121.8	120.5	142.7	129.8	101.9	129.7	84.3
POW	POW	All	1992	1/1/1992	12/31/1992	123.6	123.3	146.1	132.5	102.2	131.5	84.8
POW	POW	All	1993	1/1/1993	12/31/1993	125.9	126.9	149.3	135.6	103.2	133.5	85.0
POW	POW	All	1994	1/1/1994	12/31/1994	128.7	128.3	151.2	137.6	104.2	134.2	90.6
POW	POW	All	1995	1/1/1995	12/31/1995	132.4	130.7	154.5	140.7	106.5	137.5	95.1
POW	POW	All	1996	1/1/1996	12/31/1996	133.6	133.6	157.5	143.2	108.3	139.1	95.3
POW	POW	All	1997	1/1/1997	12/31/1997	135.0	137.8	158.3	145.2	109.4	138.6	99.1
POW	POW	All	1998	1/1/1998	12/31/1998	138.2	140.4	164.2	149.3	111.3	139.8	99.6
POW	POW	All	1999	1/1/1999	12/31/1999	141.0	142.8	165.5	151.3	109.4	139.9	99.8
POW	POW	All	2000	1/1/2000	12/31/2000	143.3	144.4	169.9	154.3	108.4	140.4	100.0
POW	POW	All	2001	1/1/2001	12/31/2001	147.6	148.2	178.2	160.0	109.0	141.6	102.9
POW	POW	All	2002	1/1/2002	12/31/2002	149.8	150.0	179.4	161.7	110.4	142.0	103.4
POW	POW	All	2003	1/1/2003	12/31/2003	151.1	152.3	165.1	157.1	110.8	142.4	103.8
POW	POW	All	2004	1/1/2004	12/31/2004	153.7	155.2	165.1	158.7	109.8	145.8	104.3
POW	POW	All	2005	1/1/2005	12/31/2005	160.4	160.0	166.9	162.9	110.6	154.4	104.7
POW	POW	All	2006	1/1/2006	12/31/2006	167.5	167.6	175.6	170.8	113.1	161.8	104.9
POW	POW	All	2007	1/1/2007	12/31/2007	179.4	173.0	182.5	178.7	113.8	169.6	111.0
POW	POW	All	2008	1/1/2008	12/31/2008	187.5	179.3	189.4	185.8	116.0	177.7	123.0
POW	POW	All	2009	1/1/2009	12/31/2009	193.1	184.7	193.4	190.7	116.8	181.8	126.4
POW	POW	All	2010	1/1/2010	12/31/2010	195.1	190.3	191.8	192.3	117.8	185.4	130.9
POW	POW	All	2011	1/1/2011	12/31/2011	198.2	194.5	192.8	194.9	118.4	196.5	130.9
POW	POW	All	2012	1/1/2012	12/31/2012	199.0	196.4	197.1	197.5	119.9	201.1	139.8
POW	POW	All	2013	1/1/2013	12/31/2013	201.5	200.1	198.4	199.8	121.5	203.2	121.9
POW	POW	All	2014	1/1/2014	12/31/2014	200.3	202.7	198.9	200.5	122.2	206.1	106.5
POW	POW	All	2015	1/1/2015	12/31/2015	199.3	205.7	198.4	200.9	123.2	206.4	111.9
POW	POW	All	2016	1/1/2016	12/31/2016	199.6	206.9	196.6	200.6	123.9	204.6	111.9
POW	POW	All	2017	1/1/2017	12/31/2017	200.4	209.8	203.9	204.6	124.6	206.5	111.9
POW	POW	All	2018	1/1/2018	12/31/2018	204.7	211.8	215.5	211.2	123.9	211.9	119.7
POW	POW	All	2019	1/1/2019	12/31/2019	211.6	215.1	218.3	215.3	124.3	215.6	119.7
POW	POW	All	2020	1/1/2020	12/31/2020	219.1	218.5	218.8	218.8	125.5	216.2	119.7

DEPRECIATION AND FUNCTIONAL OBSOLESCENCE

An important step in the appraisal of property using the cost approach is the determination of the depreciation or condition of the property. Depreciation in this appraisal was segregated into normal (mostly physical) depreciation and functional obsolescence. The normal depreciation was determined based on the age of the property and its normal service life; while functional obsolescence was based on the impact on the property's remaining life caused by factors such as changing technology, service requirements, and competition.

Depreciation - The depreciation was determined based on the property's age and it normal service life using the following formula:

$$\text{Condition} = \frac{\text{Remaining Life}}{\text{Age + Remaining Life}}$$

or

$$\text{Depreciation} = \frac{\text{Age}}{\text{Age + Remaining Life}}$$

Where: Remaining Life = f(Age, Survival Characteristic, Normal Service life)

Functional Obsolescence - The obsolescence inherent in the property was determined using the above-described normal service life in comparison to the property's service life is adjusted for functional factors. The obsolescence was quantified base on the difference between the property's normal service life and its functional service life. The following formula was used to calculate the obsolescence:

$$\text{Obsolescence} = \frac{\text{Normal Service Life - Functional Service Life}}{\text{Normal Service Life}}$$

Service Lives - (normal versus functional) - The service life of property is that period of time in which it provides the service to which it was designed and placed into service. In most industrial properties there is a difference between a property's normal or physical life and its functional life. A piece of equipment may physically last for an extended

period; however, as that property ages changing technology, improvements or enhancement in similar equipment, functional and or service requirements change resulting in decreased utility of the existing equipment, and therefore decrease in value to it owner, this additional deterioration over that defined by the equipment's normal life is functional obsolescence.

Wastewater Depreciation Service Life Experience in Pennsylvania

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, AUS Consultants' experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with recent PAWC and Aqua America rate cases. With each of their rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. AUS Consultants has reviewed the studies which are summarized in the following table:

Summary of PAWC & Aqua Depreciation Studies Prepared for Rate Case

Account	Account Description	Iowa Curves			Service Life		
		PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018	PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018
					years	years	
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	R3	R3	S0.5	45	45	55
354.30	STRUCTURES AND IMPROVEMENTS - SPP	R2.5	S0	S1.0	50	55	60
354.40	STRUCTURES AND IMPROVEMENTS - TDP	R2	S0	R2.0	65	55	50
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	S1	S1	R3.0	35	35	50
355.00	POWER GENERATION EQUIPMENT	R2.5	S0.5		35	35	
360.10	COLLECTION SEWERS - FORCE MAINS	S2	R3	R2.5	70	75	75
361.10	COLLECTION SEWERS - GRAVITY MAINS	R2.5	R2.5	R2.5	70	80	75
361.20	MANHOLES	S1.5	S2.5		50	50	
363.00	SERVICES	R3	R3	R4.0	38	47	70
364.00	FLOW MEASURING DEVICES	L3	L2.5		20	15	
365.00	FLOW MEASURING INSTALLATIONS	S1.5	S2		30	25	
370.00	RECEIVING WELLS	R3	R3		50	50	
371.00	PUMPING EQUIPMENT	SO	S0.5	L0.5	40	30	25
380.00	TREATMENT EQUIPMENT	5-R2	S1.5	S0.0	45	35	40
381.00	PLANT SEWERS	R3	R3	R1.5	50	50	40
382.00	OUTFALL SEWER LINES	R3	R3	R2.5	50	50	40
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	52.5	S2.5		20	20	
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	SQ	SQ	L3.0	20	5	20
390.00	OFFICE FURNITURE AND EQUIPMENT	L4	SQ	SQ	15	20	20
391.00	TRANSPORTATION EQUIPMENT	SQ	L4		25	14	
392.00	STORES EQUIPMENT	SQ	SQ		20	25	
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	SQ	SQ	SQ	15	20	20
394.00	LABORATORY EQUIPMENT	L2.5	SQ	SQ	16	15	25
395.00	POWER OPERATED EQUIPMENT	SQ	R2		15	22	
396.00	COMMUNICATION EQUIPMENT	SQ	SQ		15	15	
397.00	MISCELLANEOUS EQUIPMENT		SQ			15	
398.00	OTHER TANGIBLE PLANT		SQ			25	

AUS Consultants believe this increase in service lives is attributable to the widespread use of relining older mains instead of replacing mains which are in need of repair. The practice of relining mains with a cured in place plastic liner not only repairs specific main but has the affect of extending the life of the original main by the length of time which the relining can be expected to last. Most relining vendors warranty their product and procedure for 50 years. Thus, in essence the original mains' service life will be extended by 50 plus years at the date the relining occurred. For those mains associated with relining their installation date was established at the date of their relining and their depreciation parameters were established the same as the depreciation parameters of the relining, i.e., R2.5 – 60 years.

The following table presents the depreciation parameters (Iowa-type survivor curve and service life) used in the cost approach in calculating the deprecation of the property:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

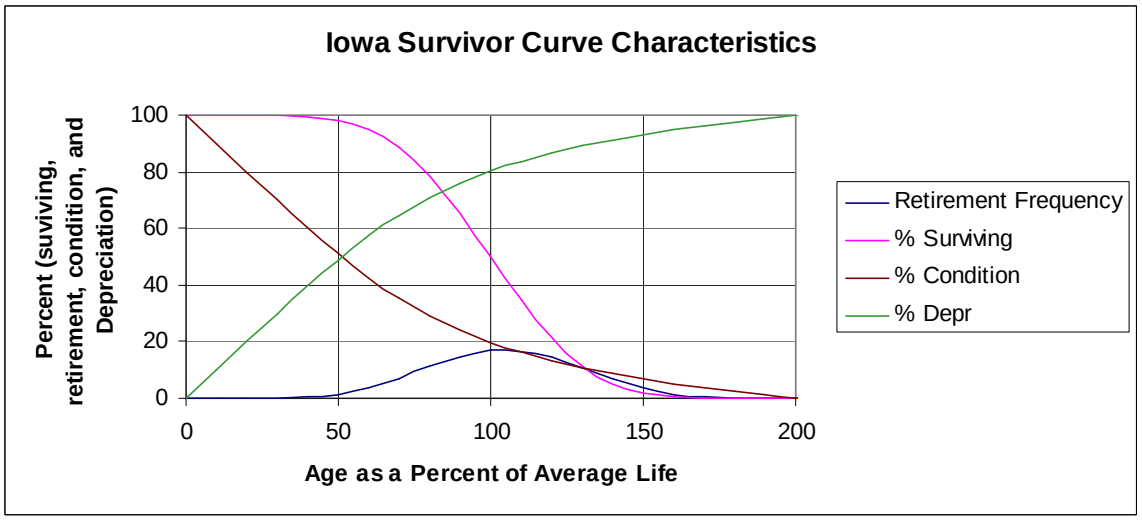
(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.20	Land & Land Rights - Original Basin	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.30	Land & Land Rights - Pumping	ZNonDep	0.00	0.00%	Non-Depr	0.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
360.21	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.21	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5	80.00	0.00%	MACRS	25.00
363.20	Service Laterals	R3.0	70.00	0.00%	MACRS	25.00
365.20	Flow Measuring Installations Meter Pits	S2.0	30.00	0.00%	MACRS	25.00
380.00	Treatment and Disposal Equipment	R2.0	45.00	0.00%	MACRS	25.00
390.70	Office Furniture and Equipment	R3.0	12.00	0.00%	MACRS	12.00
391.70	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00

As the above table demonstrates the depreciation lives selected for the AUS Consultants appraisal are consistent with the industry depreciation studies' finding for

wastewater plant. However due to the age of some of the property the extend of the depreciation was limited to 85% of the assets original cost and its replacement cost new.

Iowa Survivor Curves

The Iowa Survivor Curves recommended in the McKeesport appraisal are used to determine the remaining life of the property, and therefore its condition, recognizing the properties' service life and age. The Iowa Survivor Curves allows the appraiser to recognize the property being studied (mains, treatment and pumping plant equipment etc placed in a particular year, say1985) is part of a larger group of property, i.e., all the property i.e., mains, treatment and pumping plant equipment, etc. As such, the service lives which we refer to in our appraisal are an average service lives for the group, i.e., the average life of all mains, treatment and pumping plant equipment, etc. The Iowa Survivor curve allows the appraiser to calculate the remaining life, and therefore condition, of a subset of the group (the mains placed in 1985) based on the groups': (1) Iowa Survivor Curve, (2) Service Life and the (3) age of property at the appraisal date. An Iowa Survivor Curves depicts how property from a group survives and retires about that groups' average life.

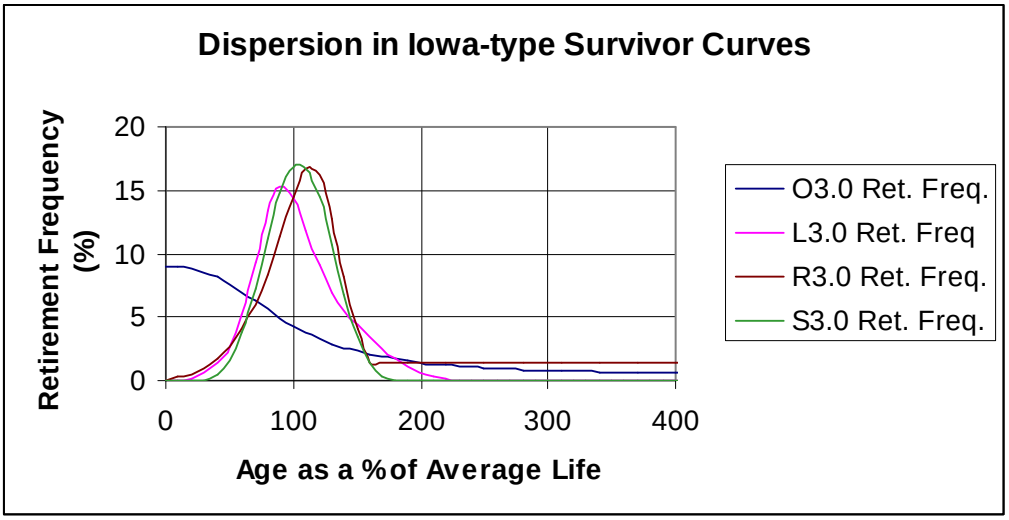


The above figure depicts a typical Iowa-type survivor curve, an S3.0 Iowa-type survivor curve. In this case the survivor curve has been generalized to a service life of 100% of the property's average life, in this generalized form the survivor curve statistics can be utilized with any individual service life in the age-life service life and depreciation calculations. There are four characteristics displayed in the above chart depicting the manner in which property survives and retires about the group's average life, those characteristics are: the retirement frequency (blue), the percent surviving (red), the percent condition (brown) and the percent depreciated (green). The retirement frequency represents the retirement of individual property items about the group's average service life. As can be seen the retirements are distributes about the group's average life with some items retiring before the average life and some items retiring at or after the group's service life. The group's survivor curve is developed from subtracting the retirements as they occur as the property ages. The depreciation curve depicts how much of the property group's life has been consumed; while the condition curve depict

how much of the property group's life remains. The condition and depreciation curves are complementary in that condition equals 100% minus depreciation and vice versa.

The theory of Iowa Survivor Curves was presented in the 1920s and 30s by Robley Winfrey based on research at Iowa State University (then the Iowa Engineering Experiment Station). Winfrey's research was first published in Bulletin 103 - Life Characteristics of Physical Property and Bulletin 125 - Statistical Analysis of Industrial Property Retirements. (Incidentally, both publications are out of print, I have a copy of Bulletin 125 but not Bulletin 103, I'm still trying to get a copy of that piece of depreciation literature.). Bulletin 125 was updated in 1967 by Professor Harold Cowles of Iowa State University's Department of Industrial Engineering. In conducting his research, Winfrey collected data on industrial property survival and retirement from various sources and analyzed that data as a function of property's age at retirement and ultimately the property groups' service life when all the property in the group was fully retired.

Winfrey discovered the industrial property's survival and retirement fits three basic patterns with relationship to the property's average life:



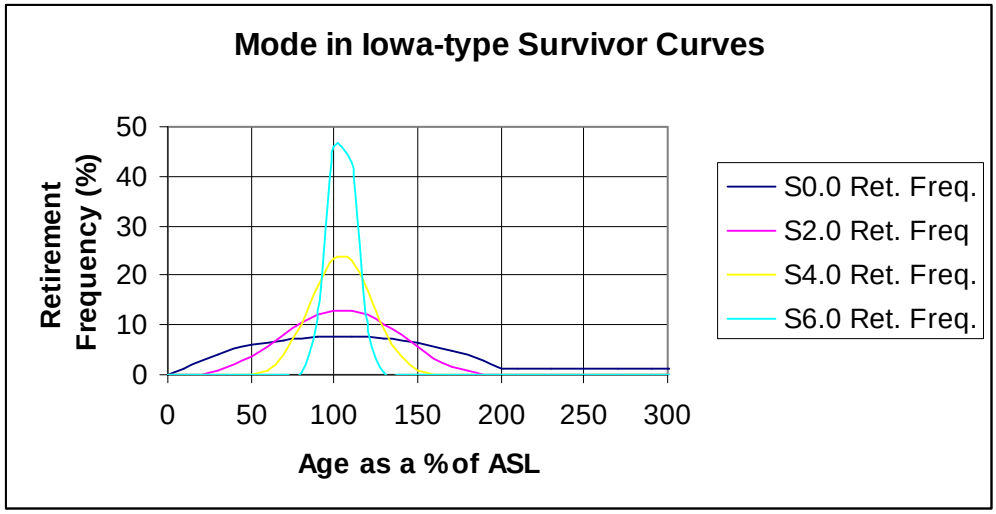
Symmetrically moded (S-type Iowa Survivor Curves) (green) – The S-type Iowa Survivor Curve is one wherein the property's retirements are symmetrically distributed about the mode. Mode in statistics is defined as the highest frequency, in this case retirement frequency. Thus an S-type Iowa curve is like a normal curve; however, its shape is not identical to a normal distribution function.

Right moded (R-type Iowa Curves) (brown) – the R-type Iowa curve has its mode skewed to the right of the property's average life; therefore, the retirements tend to be distributed later in the property's life and there are less retirements earlier in the property's life.

Left moded (L-type Iowa Curve) (red) – The L-type Iowa curve has its mode skewed to the left of the property's average life; therefore, the retirements tend to be distributed earlier in the property's life and there are less retirements later in the property's life.

In the utility industry, the plant, i.e., mains, treatment and pumping plant equipment tends to have a R-type survival/retirement dispersion as it is designed to provide service over extended periods, requiring little maintenance, and it designers have significant experience in designing and placing such property.

In conjunction with the above-described R-, S-, and L-type survival/retirement patterns, Winfrey determine that there were several patterns of the manner in which the retirements' peakedness occur around the average life. In this case, Winfrey described the peakedness of the property retirements with peakedness enumerations of 0, 1, 2, 3, 4, 5, and 6. The low peakedness numbers 0 and 1 represent low levels of retirements being distributed over the property entire life, while high peakedness numbers, 5 and 6 represent retirement patterns where the majority or all the retirement occur tightly grouped around the property's average life. Peakedness numbers 2, 3, and 4 are middle of the road, so to speak, in terms of peakedness.



Origin moded (O-type) survivor curve (blue) – Harold Cowles in his 1967 update of Bulletin 125 introduced the O-type survivor curve with the mode of the curve at the origin or at age equal to zero (0) years. This class of Iowa curves was over looked by Winfrey possibly because it made little intuitive sense that industrial retirement of property would have their maximum retirement frequency at age equal to zero. However, Cowles felt for completeness they should be included. O-type survivor curves do reflect the survival pattern of intangible assets.

Iowa-type survivor curves are parametric, as opposed to formalistic, in that they were derived from empirical survival/retirement data which Winfrey collected. There are Iowa curve equations are presented in Bulletin 125; however, in most cases users reference standardized Iowa Survivor Curve tables. The Iowa-type survivor curves used in this appraisal have been generalized to a service life of 100% of the property's average life. By generalizing the service life to 100% of average life these tables can be used to generate survival and retirement statistics for property of any service life.

It should be apparent that Iowa-types survivor curves are valid for any type property as the curves only depict how that property survives and retires about the average life of a group of similar property.

Generalized Iowa-type Survivor Curves

As was discussed earlier, most users of the Iowa-type survivor curves use standardized tables of Iowa curves. The most usable form of these standardized tables are tables which have been generalized to a standard life of 100% of the property's average life. Based on these generalized tables the user can determine the property's remaining life by knowing the Iowa-type survivor curve (mode and peakedness characteristics), the property's (group's) service life, and the specific property's (for which the remaining life is desired) age. The following table reflects how the remaining life, as well as its condition, is determined:

Year	Study Date	Age	Iowa Curve	Service Life	Age % of ASL	Iowa Lookup	Iowa Condition	Remaining Life	Total Life	Condition
				ASL						
		years		years	%			years	years	%
Input		Calc	Input	Input	Calc	Calc	lookup	Calc	Calc	Calc
1970	2006	35.5	R3.0	25	142	R3.0142	0.066388	1.7	37.2	4.47%
1980	2006	25.5	R3.0	25	102	R3.0102	0.192543	4.8	30.3	15.88%
1990	2006	15.5	R3.0	25	62	R3.0062	0.442050	11.1	26.6	41.62%
2000	2006	5.5	R3.0	25	22	R3.0022	0.787294	19.7	25.2	78.16%
2004	2006	1.5	R3.0	25	6	R3.0006	0.941117	23.5	25.0	94.01%
2005	2006	0.5	R3.0	25	2	R3.0002	0.980320	24.5	25.0	98.00%

The above table was developed with reference to the standardized Iowa Survivor curves contained and represent a R3.0 25 year Iowa curve and life table. The standardized Iowa Curves are located in tab database. In order to reference the proper line of the Iowa Curve data the user looks up that data by reference to the property's age as percent of the service life (age % of ASL column) and the Iowa Survivor curve (Iowa Curve column), combining these two criteria the Iowa Lookup column will get the user to the proper Iowa Curve data.

In the above calculation the Iowa-type survivor curve is R3, the service life of the group is 25 years, and its age is defined by property's accounting records which specifies the investment in property by account (A group in service life terms) and by the year of installation of that property. The age is dependent upon the appraisal year (study date) and the year of placement. It is customary to assume that the property placed in any particular placement year was placed continuously during that year and therefore its age is best represented as if that investment was placed in the middle of the year, i.e., July 1; hence, the adoption of the "mid-year" convention where all property is treated as if placed the mid-year.

Service Life and Survival/retirement pattern

The service life and survival/retirement pattern are determined by an analysis of historical survival and retirement experience of the company's property. This historical experience must be adjusted for factor which are known to be impacting the property's

service life but may not exhibited their effect on the property's retirement. Here it is important that a distinction is made between industrial property's physical service life and its functional service life. While physically a type of property may be deployed and remain in use for many years, over those years factors of changing technology, consumers demand and patterns, and even regulation, lessen the property functional life when compared to its physical life. In an industry such as the communications industry, function obsolescence is the primary driver of depreciation.

The following table details the impact of the above-described lives on the condition calculations:

Year	Study Date	Age	Iowa Curve	Service Life	Age % of ASL	Iowa Lookup	Iowa Condition	Remaining Life	Total Life	Condition
				ASL						
		years		years	%			years	years	%
Input		Calc	Input	Input	Calc	Calc	lookup	Calc	Calc	Calc
1970	2006	35.5	R3.0	30	118	R3.0118	0.131771	4.0	39.5	10.02%
1979	2006	26.5	R3.0	30	88	R3.0088	0.264919	7.9	34.4	23.07%
1981	2006	24.5	R3.0	25	98	R3.0098	0.211333	5.3	29.8	17.74%
1989	2006	16.5	R3.0	25	66	R3.0066	0.411848	10.3	26.8	38.42%
1990	2006	15.5	R3.0	20	78	R3.0078	0.327281	6.5	22.0	29.69%
2000	2006	5.5	R3.0	20	28	R3.0028	0.731331	14.6	20.1	72.67%
2004	2006	1.5	R3.0	20	8	R3.0008	0.921605	18.4	19.9	92.47%
2005	2006	0.5	R3.0	20	3	R3.0003	0.970499	19.4	19.9	97.49%

Statistical Analyses of Industrial Property Retirements

by

Robley Winfrey



BULLETIN 125
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ENGINEERING RESEARCH INSTITUTE
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IOWA CURVES

Iowa-type survivor curves are based on a set of empirical data collected (mainly in the 1930s) for the purpose of statistically predicting future service expectancy (remaining service) for physical properties.

The techniques used and methods applied are exactly analogous to those used by the insurance industry for the purpose of predicting human mortality (life expectancy) when determining appropriate insurance premium rates. The only distinction to be made is that the life insurance companies are investigating the life or longevity characteristics of human beings and the studies which developed the Iowa-type survivor curves were developed to predict the longevity or service life experience for physical, inanimate objects. The seminal statistical analyses for industrial property were conducted under the auspices of the Iowa Research Station now known as Iowa State University and were published in Statistical Analyses of Industrial Property Retirements, Bulletin 125, Engineering Research Institute, Iowa State University.

From the preface to the revised 1967 edition of Bulletin 125:

> "With the original publication of Bulletin 125 by the Iowa Engineering Experiment Station in 1935 (now known as the Engineering Research Institute), a significant contribution was made to the practice of industrial property life estimation. This was in the form, first, of a single volume, readily available, which presented in considerable detail the procedures for statistically analyzing historical property retirement data. Secondly, but no less significant, was the presentation of a set of 18 generalized density functions descriptive of industrial property retirement dispersion, mathematically described in terms of the Pearson frequency curve family, but with parameters established empirically from the analysis of a wide range of actual retirement experience.
>
> These curves, the cumulative form of which are commonly referred to as the Iowa-type Survivor Curves, have been used extensively since their introduction and, at the present time, the set is accepted as the standard of industrial property retirement dispersion. Because of the very simple mnemonic coding system which suggests the varying statistical characteristics involved, the Iowa Curves have also become widely used and recognized in the identification or classification of retirement dispersions, even for patterns derived in terms of analytical techniques not using the Curves."

The tables which follow this discussion are the ones used to estimate the remaining life of investment at particular age for an account with a particular service life.

Statistical Analyses of Industrial Property Retirements

by Robley Winfrey

(Revised April, 1967 by Harold A. Cowles, Professor, Department of Industrial Engineering)

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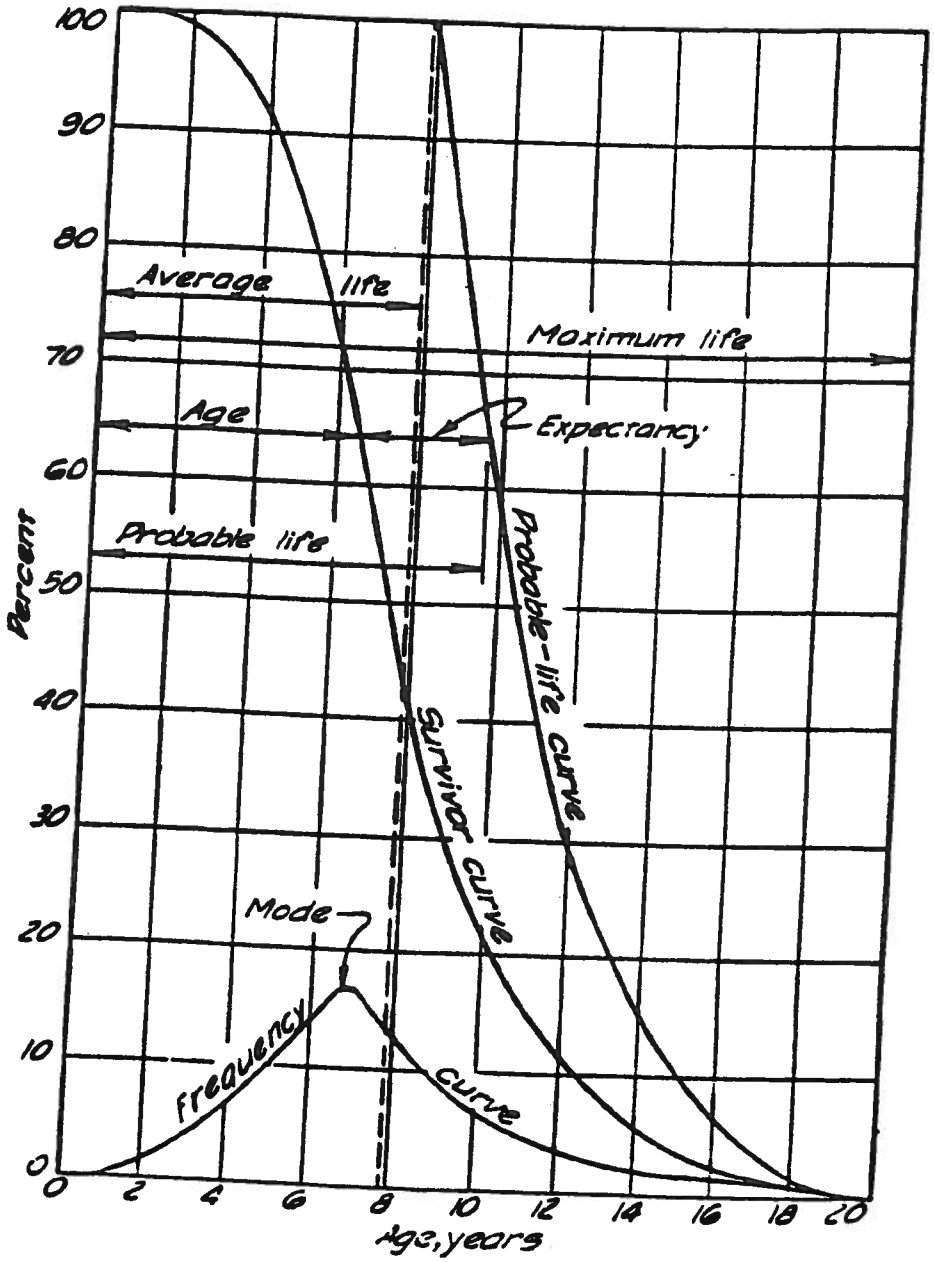


FIG. 1.—A typical survivor curve and its derived curves.

8. The *service life* of a unit is that period of time (or service) extending from the date of its installation to the date of its retirement from service. While the service life of physical property is usually expressed in years it may also be expressed in terms of units of production (screws, wheels, cars, pounds, miles, car-miles), time units of less than a year (months, hours, minutes), or combinations of physical units or services and time (lamp-hours, ton-years).

9. The *probable service life* of an individual unit is that period of time extending from its date of installation to the forecasted date when it probably will be retired from service.

10. The *expectancy* of life of an individual unit is that period of time extending from the observation age (usually the present) to the forecasted date when the unit probably will be retired from service. Age plus expectancy always equals probable life.

11. The *average service life of* a group of individual units is the quotient obtained by dividing the sum of the service lives of all the units by the number of units. The average service life (in years) is equal to the area under the survivor curve in percent-years (or unit-years) divided by 100 percent (or the total number of units).

12. The *probable average service life of* a group of individual units is the average of the probable service lives of the units of the group.

13. The *expectancy* of life of a group of individual units is that period of time extending from the observation age (usually the present) to the average of the forecasted dates when the units probably will be retired. The observation age plus the expectancy always equals the probable average service life.

> Note: Service life and average service life are always known quantities since they represent completed service life; probable service life and probable average service life always must be estimated since they are forecasts of uncompleted service.

14. *Maximum life* or *maximum age* is the age of the last unit of a given group to be retired from service; it is also the age at which the survivor curve has a zero ordinate, or zero percent surviving.

15. Property units which are taken out of service for any reason whatsoever are called *retirements*. Retirements may include original units (units of the initial installation) as well as "second-generation" units, that is, replacements (or renewals) which were installed to take the place of the original units as they were removed.

16. *Replacements* are the units put in service to replace retirements.

17. *Renewals* are replacements "in kind" which have exactly the same life characteristics as the retirements.

18. *Installations* are new units placed in service, not as replacement units, but as additions to the property.

19. All renewals, replacements, and installations are *placements*.

20. *Survivor curves* show the number of units of a given group

which are surviving in service at given ages. The ordinates to the curve give at any particular age the percentage (or the actual number) of the original number which are yet surviving in service. The abscissa is measured in years or other suitable service unit. The *original survivor curve* is the curve drawn through the points calculated from the original data without adjustment. Since this original survivor curve is generally irregular it is smoothed to produce a *smoothed survivor curve*, sometimes referred to as an *adjusted curve*.

Survivor curves have in some publications been referred to as *mortality curves*. However, the term *survivor curve* is used in this report because the curves referred to show the *percent surviving*, not the *percent retired*, and because the term *mortality* suggests human beings and not inanimate objects.

21. A *stub survivor curve* is an incomplete survivor curve; that is, one which does not extend to zero percent surviving because of a lack of retirement data on the longer-lived units.

22. A *probable-life curve* shows the probable average life of the survivors at any age from zero to maximum life.

23. If the percent surviving is read at the beginning of each successive age-interval and the differences in these successive readings plotted at ages corresponding to the midpoints of the intervals, the resulting points form a *frequency curve*, or *distribution curve*. Since the ordinates indicate the percentage of the units retired during each interval, the curve shows in what manner the retirements are distributed over the period from zero age to maximum life.

24. The point on the frequency curve having the highest ordinate is called the *mode*. The year in which the mode occurs is called the *modal year*.

25. A *maximum-life cycle* is a period of time corresponding in length to the maximum life of the units. An industrial property may continue to be operated through several maximum-life cycles of some of the units of which it is composed.

26. An *average-life cycle* is a period of time corresponding in length to the *average* life.

27. If a property is continued in service for a long time and maintained with a constant number of like units of substantially the same potential average life, it will reach a *normal condition* or *stabilized condition*, after which the average age of the units in service and the annual renewals will be constant year after year.

28. *Normal renewals* are the annual renewals after the property group has reached a stabilized condition. Normal renewals, in percent of the original number of units, are equal to 100 percent divided by the average life.

29. *Generalized curves* are those whose ordinates are expressed in percent of the total number of units and whose abscissas (age) are expressed in percent of average life.

30. *Type curves* are those theoretical curves derived by the methods described in this report from a study of actual retirements. They depict typical survivor and frequency curves for industrial property. Actual survivor curves are compared with type survivor curves in the process of determining probable average lives.

MORTALITY TABLES AND CURVES OF HUMAN BEINGS

By a study of population and deaths, life insurance companies have arrived at life tables for human beings of different nationalities. From these life tables the normal death rate and life expectancy for people at different ages can be determined as a basis for life insurance premiums and reserves. Life tables can be prepared from the vital statistics for any desired number of years in combination with census returns. By means of mathematical formulas a life table is adjusted to remove any slight irregularities that may exist in the original data.

Table 1 is the United States life table for white males, based upon deaths for the 10 years from 1901 to 1910. Unlike industrial property units whose average lives are continually being affected by many forces, the human average life and distribution of deaths according to age change very little over several generations. The life curve, however, varies considerably for different races as is illustrated in Fig. 2. The deaths at different ages are shown for the United States by the frequency curves in Fig. 3.

This reference to the United States life tables is made to show the similarity between the life characteristics of human beings and industrial properties. The essential differences are three. First, human beings experience a heavy infant mortality which results in a bi-modal frequency curve, one mode occurring between ages 0 and 1, and the other between ages 75 and 76. Second, the mode at the age-interval 75–76 occurs at a much greater percentage of average life than is usually found with physical property employed in industry. Third, the curves for industrial equipment vary in shape over wide limits while human mortality curves vary relatively little. The Makehamized curve in Fig. 3 is one that has been smoothed. (It does not represent the same group of lives as the lower curves of the figure.)

ANALYZING RETIREMENT DATA

The foregoing section discussed the life tables for humans and the accompanying curves. Similar analyses can be made of the behavior of the physical equipment employed in industry when sufficient information is available. The processes employed for analyzing the retirements of industrial property are not so easily handled as are those employed for mortality data of human beings, nor are the results usually as uniform because of the small number of units observed and the more numerous, less uniform causes of retirement of industrial

CHART NO. 9

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE RIGHT-MODAL IOWA TYPE CURVES

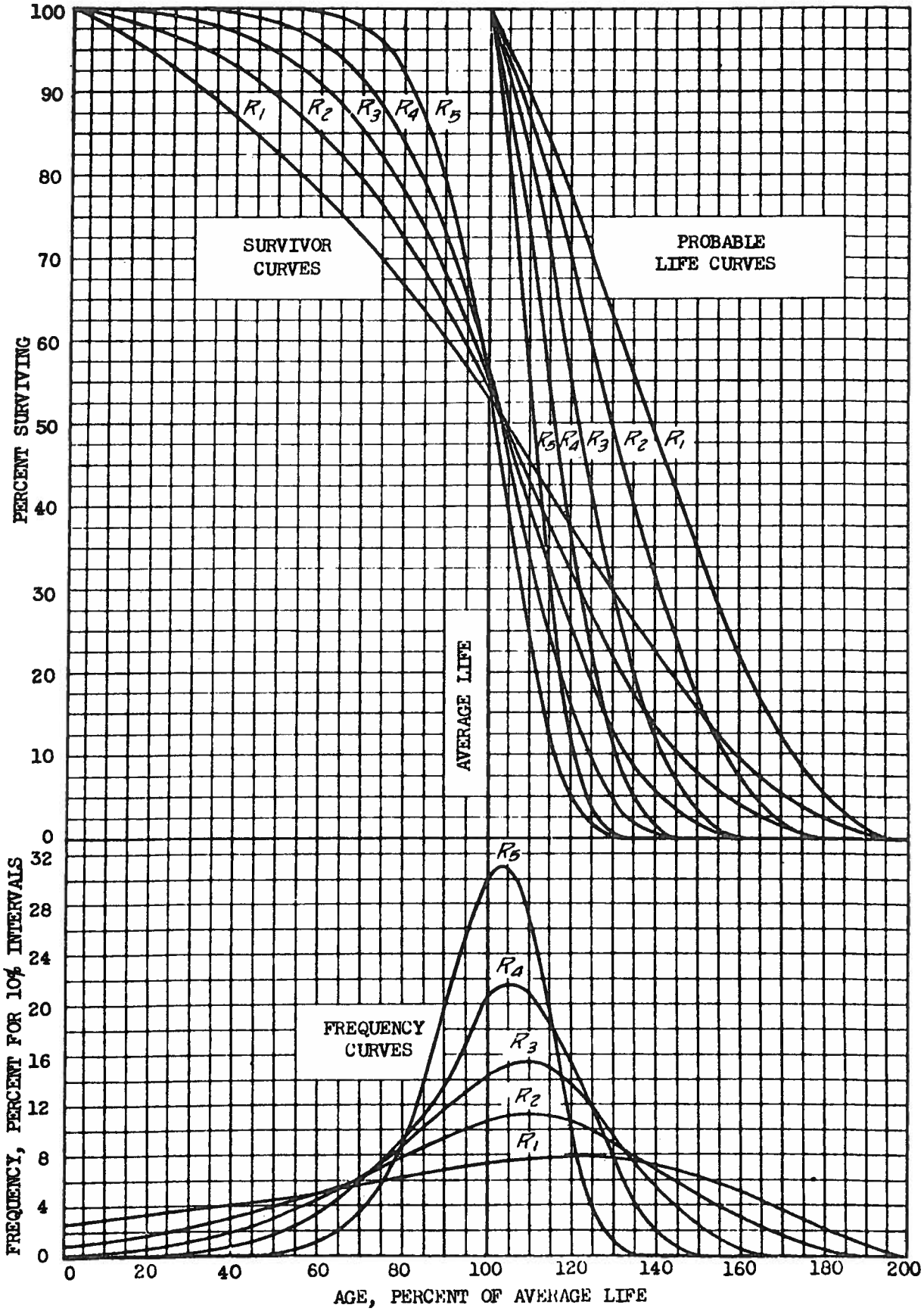


CHART NO. 8

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE SYMMETRICAL IOWA TYPE CURVES

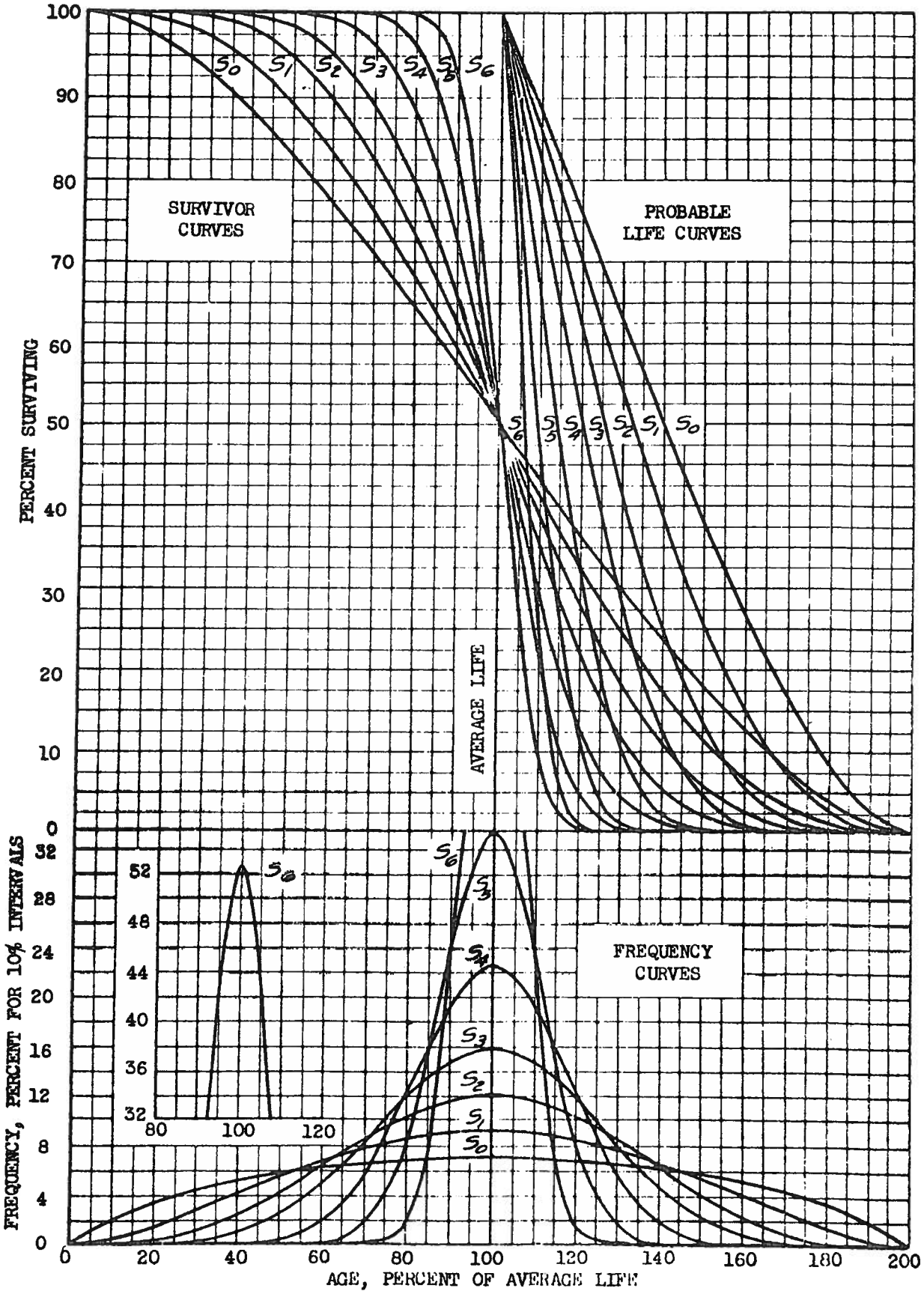


CHART NO. 7

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE LEFT-MODAL IOWA TYPE CURVES

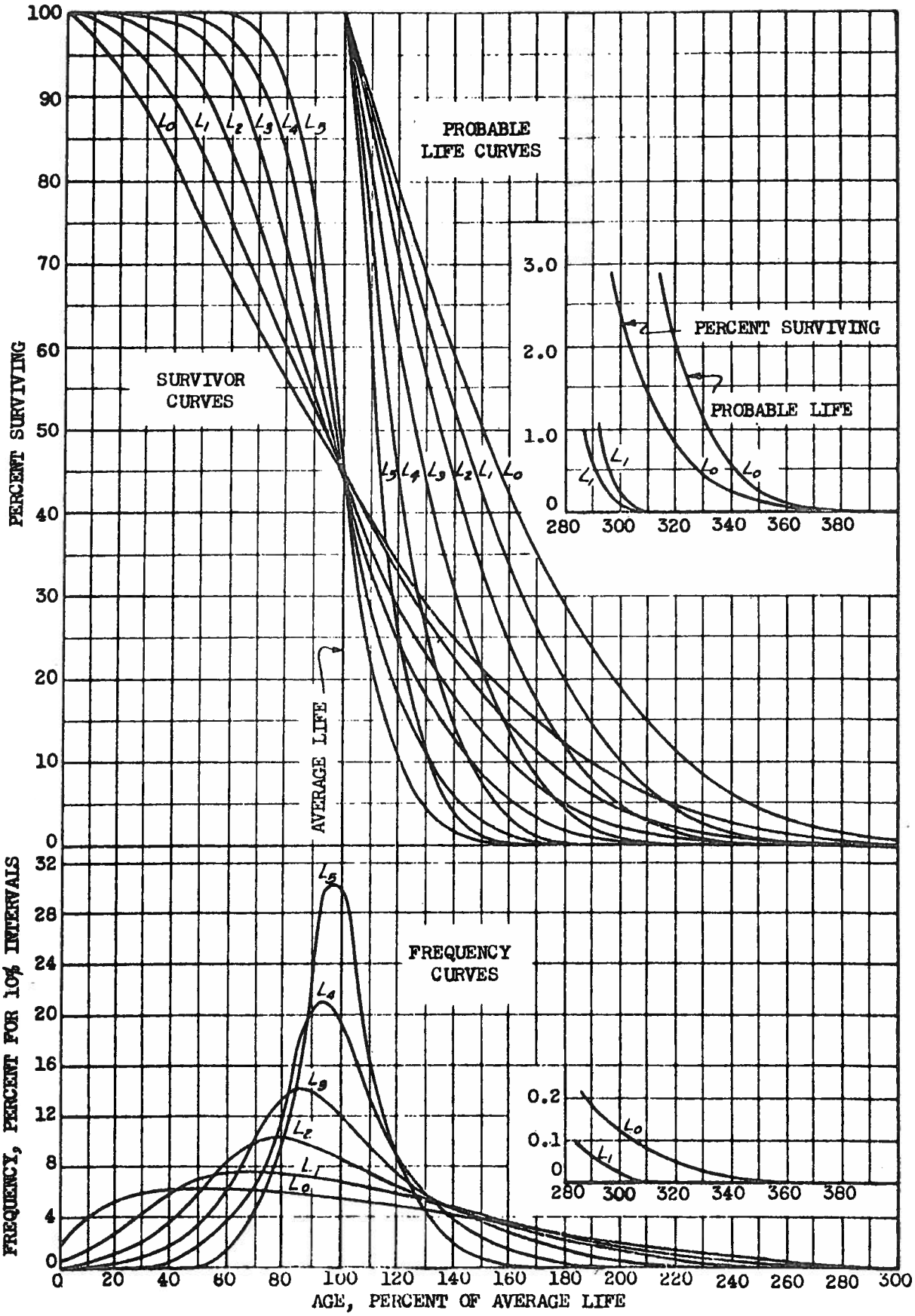
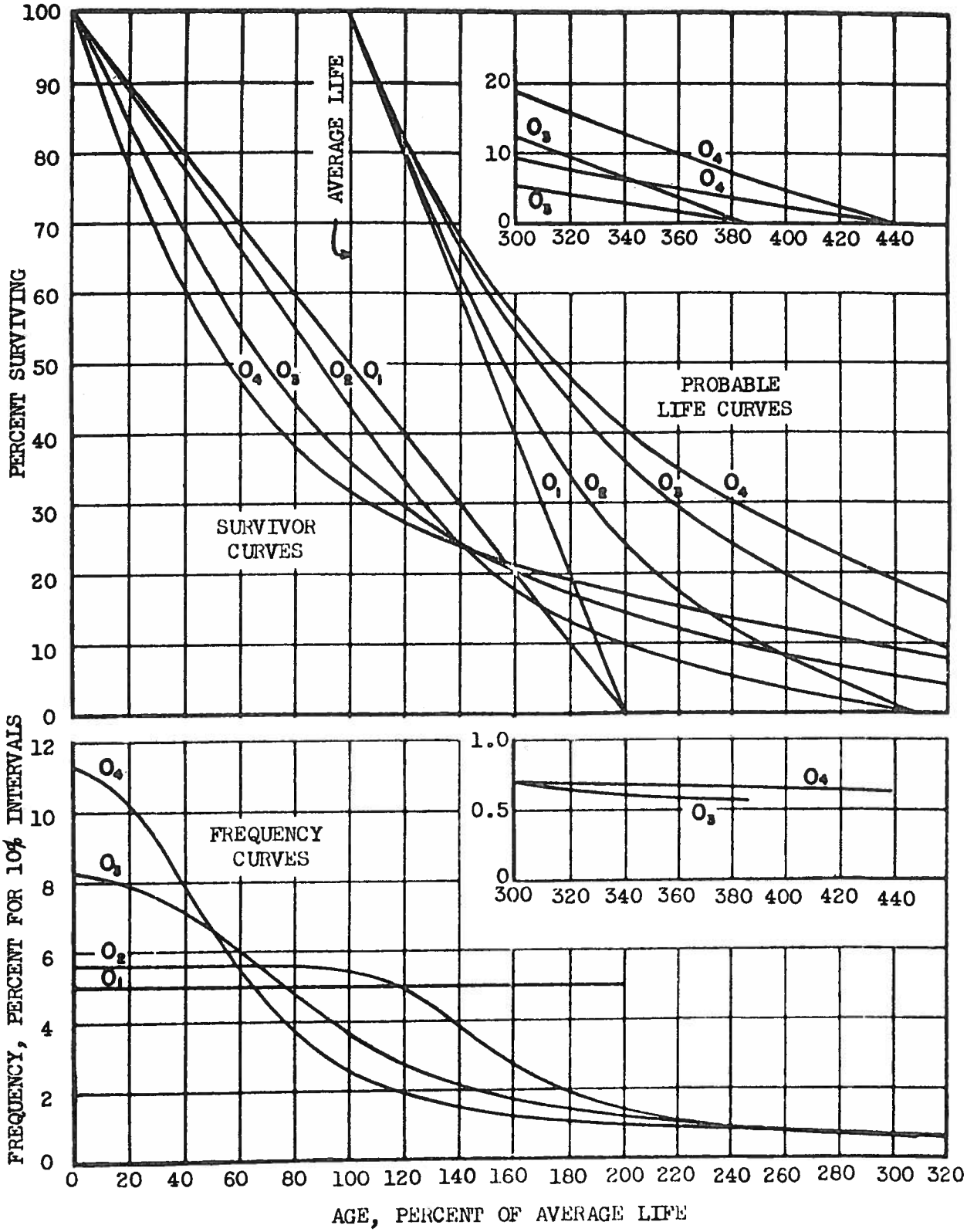


CHART NO. 10

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE ORIGIN-MODAL TYPE CURVES



Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0000	R2.0	0	0.0948315	100.0000000	100.0000000	0.0000000
R2.0001	R2.0	1	0.0981016	99.9051685	99.0944462	0.9055538
R2.0002	R2.0	2	0.1014623	99.8070669	98.1913567	1.8086433
R2.0003	R2.0	3	0.1049099	99.7056046	97.2907686	2.7092314
R2.0004	R2.0	4	0.1084509	99.6006947	96.3927202	3.6072798
R2.0005	R2.0	5	0.1120825	99.4922438	95.4972458	4.5027542
R2.0006	R2.0	6	0.1158104	99.3801613	94.6043863	5.3956137
R2.0007	R2.0	7	0.1196318	99.2643509	93.7141762	6.2858238
R2.0008	R2.0	8	0.1235532	99.1447191	92.8266525	7.1733475
R2.0009	R2.0	9	0.1275731	99.0211659	91.9418526	8.0581474
R2.0010	R2.0	10	0.1316938	98.8935928	91.0598126	8.9401874
R2.0011	R2.0	11	0.1359167	98.7618990	90.1805687	9.8194313
R2.0012	R2.0	12	0.1402454	98.6259823	89.3041592	10.6958408
R2.0013	R2.0	13	0.1446791	98.4857369	88.4306173	11.5693827
R2.0014	R2.0	14	0.1492214	98.3410578	87.5599813	12.4400187
R2.0015	R2.0	15	0.1538735	98.1918364	86.6922846	13.3077154
R2.0016	R2.0	16	0.1586370	98.0379629	85.8275662	14.1724338
R2.0017	R2.0	17	0.1635142	97.8793259	84.9658604	15.0341396
R2.0018	R2.0	18	0.1685056	97.7158117	84.1072016	15.8927984
R2.0019	R2.0	19	0.1736164	97.5473061	83.2516279	16.7483721
R2.0020	R2.0	20	0.1788426	97.3736897	82.3991718	17.6008282
R2.0021	R2.0	21	0.1841926	97.1948471	81.5498714	18.4501286
R2.0022	R2.0	22	0.1896649	97.0106545	80.7037592	19.2962408
R2.0023	R2.0	23	0.1952619	96.8209896	79.8608723	20.1391277
R2.0024	R2.0	24	0.2009860	96.6257277	79.0212450	20.9787550
R2.0025	R2.0	25	0.2068376	96.4247417	78.1849127	21.8150873
R2.0026	R2.0	26	0.2128210	96.2179041	77.3519096	22.6480904
R2.0027	R2.0	27	0.2189369	96.0050831	76.5222740	23.4777260
R2.0028	R2.0	28	0.2251892	95.7861462	75.6960373	24.3039627
R2.0029	R2.0	29	0.2315760	95.5609570	74.8732357	25.1267643
R2.0030	R2.0	30	0.2381039	95.3293810	74.0539045	25.9460955
R2.0031	R2.0	31	0.2447710	95.0912771	73.2380800	26.7619200
R2.0032	R2.0	32	0.2515831	94.8465061	72.4257956	27.5742044
R2.0033	R2.0	33	0.2585392	94.5949230	71.6170883	28.3829117
R2.0034	R2.0	34	0.2656450	94.3363838	70.8119927	29.1880073
R2.0035	R2.0	35	0.2728977	94.0707388	70.0105457	29.9894543
R2.0036	R2.0	36	0.2803049	93.7978411	69.2127819	30.7872181
R2.0037	R2.0	37	0.2878657	93.5175362	68.4187384	31.5812616
R2.0038	R2.0	38	0.2955808	93.2296705	67.6284504	32.3715496
R2.0039	R2.0	39	0.3034544	92.9340897	66.8419552	33.1580448
R2.0040	R2.0	40	0.3114920	92.6306353	66.0592899	33.9407101
R2.0041	R2.0	41	0.3196878	92.3191433	65.2808571	34.7191429
R2.0042	R2.0	42	0.3280507	91.9994555	64.5055971	35.4944029
R2.0043	R2.0	43	0.3365783	91.6714048	63.7346439	36.2653561
R2.0044	R2.0	44	0.3452769	91.3348265	62.9676700	37.0323300

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0045	R2.0	45	0.3541450	90.9895496	62.2047148	37.7952852
R2.0046	R2.0	46	0.3631840	90.6354046	61.4458170	38.5541830
R2.0047	R2.0	47	0.3723984	90.2722206	60.6910148	39.3089852
R2.0048	R2.0	48	0.3817892	89.8998222	59.9403491	40.0596509
R2.0049	R2.0	49	0.3913574	89.5180330	59.1938582	40.8061418
R2.0050	R2.0	50	0.4011030	89.1266756	58.4515839	41.5484161
R2.0051	R2.0	51	0.4110289	88.7255726	57.7135668	42.2864332
R2.0052	R2.0	52	0.4211368	88.3145437	56.9798470	43.0201530
R2.0053	R2.0	53	0.4314261	87.8934069	56.2504678	43.7495322
R2.0054	R2.0	54	0.4419002	87.4619808	55.5254688	44.4745312
R2.0055	R2.0	55	0.4525547	87.0200806	54.8048959	45.1951041
R2.0056	R2.0	56	0.4633961	86.5675259	54.0887899	45.9112101
R2.0057	R2.0	57	0.4744196	86.1041298	53.3771148	46.6228852
R2.0058	R2.0	58	0.4856272	85.6297102	52.6701531	47.3298469
R2.0059	R2.0	59	0.4970178	85.1440830	51.9677110	48.0322890
R2.0060	R2.0	60	0.5085907	84.6470652	51.2699108	48.7300892
R2.0061	R2.0	61	0.5203457	84.1384745	50.5767999	49.4232001
R2.0062	R2.0	62	0.5322781	83.6181288	49.8884211	50.1115789
R2.0063	R2.0	63	0.5443878	83.0858507	49.2042208	50.7957792
R2.0064	R2.0	64	0.5566711	82.5414629	48.5260449	51.4739551
R2.0065	R2.0	65	0.5691252	81.9847918	47.8521390	52.1478610
R2.0066	R2.0	66	0.5817490	81.4156666	47.1831479	52.8168521
R2.0067	R2.0	67	0.5945339	80.8339176	46.5191188	53.4808812
R2.0068	R2.0	68	0.6074762	80.2393837	45.8600979	54.1399021
R2.0069	R2.0	69	0.6205731	79.6319075	45.2061300	54.7938700
R2.0070	R2.0	70	0.6338167	79.0113344	44.5572619	55.4427381
R2.0071	R2.0	71	0.6471968	78.3775177	43.9135399	56.0864601
R2.0072	R2.0	72	0.6607103	77.7303209	43.2750101	56.7249899
R2.0073	R2.0	73	0.6743469	77.0696106	42.6417151	57.3582849
R2.0074	R2.0	74	0.6880913	76.3952637	42.0137038	57.9862962
R2.0075	R2.0	75	0.7019453	75.7071724	41.3910160	58.6089840
R2.0076	R2.0	76	0.7158861	75.0052271	40.7736988	59.2263012
R2.0077	R2.0	77	0.7299071	74.2893410	40.1617951	59.8382049
R2.0078	R2.0	78	0.7439918	73.5594339	39.5553460	60.4446540
R2.0079	R2.0	79	0.7581263	72.8154421	38.9543939	61.0456061
R2.0080	R2.0	80	0.7722978	72.0573158	38.3589792	61.6410208
R2.0081	R2.0	81	0.7864914	71.2850180	37.7691412	62.2308588
R2.0082	R2.0	82	0.8006802	70.4985266	37.1849198	62.8150802
R2.0083	R2.0	83	0.8148537	69.6978464	36.6063528	63.3936472
R2.0084	R2.0	84	0.8289880	68.8829927	36.0334740	63.9665260
R2.0085	R2.0	85	0.8430577	68.0540047	35.4663181	64.5336819
R2.0086	R2.0	86	0.8570489	67.2109470	34.9049168	65.0950832
R2.0087	R2.0	87	0.8709355	66.3538981	34.3493028	65.6506972
R2.0088	R2.0	88	0.8846855	65.4829626	33.7995038	66.2004962
R2.0089	R2.0	89	0.8982801	64.5982771	33.2555461	66.7444539

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0090	R2.0	90	0.9116889	63.6999970	32.7174568	67.2825432
R2.0091	R2.0	91	0.9248881	62.7883081	32.1852560	67.8147440
R2.0092	R2.0	92	0.9378390	61.8634200	31.6589661	68.3410339
R2.0093	R2.0	93	0.9505158	60.9255810	31.1386020	68.8613980
R2.0094	R2.0	94	0.9628930	59.9750652	30.6241779	69.3758221
R2.0095	R2.0	95	0.9749274	59.0121722	30.1157100	69.8842900
R2.0096	R2.0	96	0.9865956	58.0372448	29.6132040	70.3867960
R2.0097	R2.0	97	0.9978571	57.0506492	29.1166680	70.8833320
R2.0098	R2.0	98	1.0086742	56.0527921	28.6261051	71.3738949
R2.0099	R2.0	99	1.0190200	55.0441179	28.1415110	71.8584890
R2.0100	R2.0	100	1.0288558	54.0250979	27.6628840	72.3371160
R2.0101	R2.0	101	1.0381442	52.9962421	27.1902180	72.8097820
R2.0102	R2.0	102	1.0468449	51.9580979	26.7234991	73.2765009
R2.0103	R2.0	103	1.0549312	50.9112530	26.2627111	73.7372889
R2.0104	R2.0	104	1.0623607	49.8563218	25.8078351	74.1921649
R2.0105	R2.0	105	1.0691033	48.7939611	25.3588469	74.6411531
R2.0106	R2.0	106	1.0751200	47.7248578	24.9157200	75.0842800
R2.0107	R2.0	107	1.0803718	46.6497378	24.4784200	75.5215800
R2.0108	R2.0	108	1.0848422	45.5693660	24.0469079	75.9530921
R2.0109	R2.0	109	1.0884819	44.4845238	23.6211450	76.3788550
R2.0110	R2.0	110	1.0912700	43.3960419	23.2010810	76.7989190
R2.0111	R2.0	111	1.0931697	42.3047719	22.7866659	77.2133341
R2.0112	R2.0	112	1.0941701	41.2116022	22.3778369	77.6221631
R2.0113	R2.0	113	1.0942240	40.1174321	21.9745369	78.0254631
R2.0114	R2.0	114	1.0933342	39.0232081	21.5766909	78.4233091
R2.0115	R2.0	115	1.0914621	37.9298739	21.1842289	78.8157711
R2.0116	R2.0	116	1.0885978	36.8384118	20.7970691	79.2029309
R2.0117	R2.0	117	1.0847301	35.7498140	20.4151239	79.5848761
R2.0118	R2.0	118	1.0798369	34.6650839	20.0383019	79.9616981
R2.0119	R2.0	119	1.0739369	33.5852470	19.6665001	80.3334999
R2.0120	R2.0	120	1.0669980	32.5113101	19.2996221	80.7003779
R2.0121	R2.0	121	1.0590372	31.4443121	18.9375479	81.0624521
R2.0122	R2.0	122	1.0501070	30.3852749	18.5801630	81.4198370
R2.0123	R2.0	123	1.0400660	29.3351679	18.2273769	81.7726231
R2.0124	R2.0	124	1.0290709	28.2951019	17.8789959	82.1210041
R2.0125	R2.0	125	1.0170991	27.2660310	17.5349121	82.4650879
R2.0126	R2.0	126	1.0041568	26.2489319	17.1949849	82.8050151
R2.0127	R2.0	127	0.9902881	25.2447751	16.8590529	83.1409471
R2.0128	R2.0	128	0.9755079	24.2544870	16.5269830	83.4730170
R2.0129	R2.0	129	0.9598532	23.2789791	16.1985951	83.8014049
R2.0130	R2.0	130	0.9433670	22.3191259	15.8737270	84.1262730
R2.0131	R2.0	131	0.9260879	21.3757589	15.5522090	84.4477910
R2.0132	R2.0	132	0.9080550	20.4496710	15.2338660	84.7661340
R2.0133	R2.0	133	0.8893190	19.5416160	14.9185150	85.0814850
R2.0134	R2.0	134	0.8699369	18.6522970	14.6059730	85.3940270

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0135	R2.0	135	0.8499541	17.7823601	14.2960570	85.7039430
R2.0136	R2.0	136	0.8294290	16.9324060	13.9885750	86.0114250
R2.0137	R2.0	137	0.8084200	16.1029770	13.6833420	86.3166580
R2.0138	R2.0	138	0.7869870	15.2945570	13.3801709	86.6198291
R2.0139	R2.0	139	0.7651829	14.5075700	13.0788760	86.9211240
R2.0140	R2.0	140	0.7430681	13.7423871	12.7792740	87.2207260
R2.0141	R2.0	141	0.7207081	12.9993190	12.4811831	87.5188169
R2.0142	R2.0	142	0.6981599	12.2786109	12.1844341	87.8155659
R2.0143	R2.0	143	0.6754730	11.5804510	11.8888620	88.1111380
R2.0144	R2.0	144	0.6527110	10.9049780	11.5943070	88.4056930
R2.0145	R2.0	145	0.6299220	10.2522670	11.3006270	88.6993730
R2.0146	R2.0	146	0.6071579	9.6223450	11.0076849	88.9923151
R2.0147	R2.0	147	0.5844650	9.0151870	10.7153600	89.2846400
R2.0148	R2.0	148	0.5618890	8.4307220	10.4235460	89.5764540
R2.0149	R2.0	149	0.5394630	7.8688330	10.1321560	89.8678440
R2.0150	R2.0	150	0.5172310	7.3293700	9.8411110	90.1588891
R2.0151	R2.0	151	0.4952170	6.8121390	9.5503610	90.4496390
R2.0152	R2.0	152	0.4734520	6.3169220	9.2598670	90.7401331
R2.0153	R2.0	153	0.4519570	5.8434700	8.9696111	91.0303890
R2.0154	R2.0	154	0.4307510	5.3915130	8.6795980	91.3204020
R2.0155	R2.0	155	0.4098480	4.9607620	8.3898460	91.6101540
R2.0156	R2.0	156	0.3892590	4.5509140	8.1003940	91.8996060
R2.0157	R2.0	157	0.3689940	4.1616550	7.8112940	92.1887060
R2.0158	R2.0	158	0.3490550	3.7926610	7.5226200	92.4773800
R2.0159	R2.0	159	0.3294490	3.4436060	7.2344580	92.7655420
R2.0160	R2.0	160	0.3101780	3.1141570	6.9468990	93.0531010
R2.0161	R2.0	161	0.2912410	2.8039790	6.6600590	93.3399410
R2.0162	R2.0	162	0.2726440	2.5127380	6.3740460	93.6259540
R2.0163	R2.0	163	0.2543900	2.2400940	6.0889820	93.9110180
R2.0164	R2.0	164	0.2364840	1.9857040	5.8049920	94.1950080
R2.0165	R2.0	165	0.2189350	1.7492200	5.5221940	94.4778060
R2.0166	R2.0	166	0.2017570	1.5302850	5.2407130	94.7592870
R2.0167	R2.0	167	0.1849660	1.3285280	4.9606590	95.0393410
R2.0168	R2.0	168	0.1685830	1.1435620	4.6821490	95.3178510
R2.0169	R2.0	169	0.1526310	0.9749790	4.4052860	95.5947140
R2.0170	R2.0	170	0.1371620	0.8223480	4.1301220	95.8698780
R2.0171	R2.0	171	0.1221950	0.6851860	3.8568020	96.1431980
R2.0172	R2.0	172	0.1077830	0.5629910	3.5853840	96.4146160
R2.0173	R2.0	173	0.0939780	0.4552080	3.3159460	96.6840540
R2.0174	R2.0	174	0.0808330	0.3612300	3.0485230	96.9514770
R2.0175	R2.0	175	0.0684150	0.2803970	2.7832120	97.2167880
R2.0176	R2.0	176	0.0567860	0.2119820	2.5201260	97.4798740
R2.0177	R2.0	177	0.0460210	0.1551960	2.2592980	97.7407020
R2.0178	R2.0	178	0.0361913	0.1091750	2.0008840	97.9991160
R2.0179	R2.0	179	0.0273739	0.0729837	1.7451020	98.2548980

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5000	R2.5	0	0.0551548	100.0000000	100.0000000	0.0000000
R2.5001	R2.5	1	0.0574713	99.9448452	99.0549097	0.9450903
R2.5002	R2.5	2	0.0598783	99.8873739	98.1116142	1.8883858
R2.5003	R2.5	3	0.0623808	99.8274956	97.1701632	2.8298368
R2.5004	R2.5	4	0.0649805	99.7651148	96.2306089	3.7693911
R2.5005	R2.5	5	0.0676823	99.7001343	95.2930031	4.7069969
R2.5006	R2.5	6	0.0704880	99.6324520	94.3573971	5.6426029
R2.5007	R2.5	7	0.0734014	99.5619640	93.4238472	6.5761528
R2.5008	R2.5	8	0.0764256	99.4885626	92.4924040	7.5075960
R2.5009	R2.5	9	0.0795669	99.4121370	91.5631256	8.4368744
R2.5010	R2.5	10	0.0828257	99.3325701	90.6360693	9.3639307
R2.5011	R2.5	11	0.0862064	99.2497444	89.7112904	10.2887096
R2.5012	R2.5	12	0.0897122	99.1635380	88.7888441	11.2111559
R2.5013	R2.5	13	0.0933485	99.0738258	87.8687897	12.1312103
R2.5014	R2.5	14	0.0971183	98.9804773	86.9511881	13.0488119
R2.5015	R2.5	15	0.1010247	98.8833590	86.0360956	13.9639044
R2.5016	R2.5	16	0.1050710	98.7823343	85.1235743	14.8764257
R2.5017	R2.5	17	0.1092635	98.6772633	84.2136803	15.7863197
R2.5018	R2.5	18	0.1136026	98.5679998	83.3064766	16.6935234
R2.5019	R2.5	19	0.1180954	98.4543972	82.4020252	17.5979748
R2.5020	R2.5	20	0.1227426	98.3363018	81.5003834	18.4996166
R2.5021	R2.5	21	0.1275521	98.2135592	80.6016140	19.3983860
R2.5022	R2.5	22	0.1325226	98.0860071	79.7057791	20.2942209
R2.5023	R2.5	23	0.1376619	97.9534845	78.8129368	21.1870632
R2.5024	R2.5	24	0.1429729	97.8158226	77.9231520	22.0768480
R2.5025	R2.5	25	0.1484576	97.6728497	77.0364828	22.9635172
R2.5026	R2.5	26	0.1541233	97.5243921	76.1529923	23.8470077
R2.5027	R2.5	27	0.1599703	97.3702688	75.2727404	24.7272596
R2.5028	R2.5	28	0.1660032	97.2102985	74.3957863	25.6042137
R2.5029	R2.5	29	0.1722278	97.0442953	73.5221920	26.4778080
R2.5030	R2.5	30	0.1786452	96.8720675	72.6520176	27.3479824
R2.5031	R2.5	31	0.1852608	96.6934223	71.7853222	28.2146778
R2.5032	R2.5	32	0.1920747	96.5081615	70.9221630	29.0778370
R2.5033	R2.5	33	0.1990958	96.3160868	70.0626001	29.9373999
R2.5034	R2.5	34	0.2063245	96.1169910	69.2066917	30.7933083
R2.5035	R2.5	35	0.2137642	95.9106665	68.3544951	31.6455049
R2.5036	R2.5	36	0.2214194	95.6969023	67.5060663	32.4939337
R2.5037	R2.5	37	0.2292928	95.4754829	66.6614609	33.3385391
R2.5038	R2.5	38	0.2373877	95.2461901	65.8207359	34.1792641
R2.5039	R2.5	39	0.2457084	95.0088024	64.9839459	35.0160541
R2.5040	R2.5	40	0.2542592	94.7630940	64.1511440	35.8488560
R2.5041	R2.5	41	0.2630376	94.5088348	63.3223858	36.6776142
R2.5042	R2.5	42	0.2720566	94.2457972	62.4977222	37.5022778
R2.5043	R2.5	43	0.2813111	93.9737406	61.6772060	38.3227940
R2.5044	R2.5	44	0.2908077	93.6924295	60.8608909	39.1391091

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5045	R2.5	45	0.3005543	93.4016218	60.0488248	39.9511752
R2.5046	R2.5	46	0.3105459	93.1010675	59.2410641	40.7589359
R2.5047	R2.5	47	0.3207922	92.7905216	58.4376559	41.5623441
R2.5048	R2.5	48	0.3312959	92.4697294	57.6386509	42.3613491
R2.5049	R2.5	49	0.3420601	92.1384335	56.8441010	43.1558990
R2.5050	R2.5	50	0.3530903	91.7963734	56.0540552	43.9459448
R2.5051	R2.5	51	0.3643885	91.4432831	55.2685661	44.7314339
R2.5052	R2.5	52	0.3759584	91.0788946	54.4876838	45.5123162
R2.5053	R2.5	53	0.3878079	90.7029362	53.7114601	46.2885399
R2.5054	R2.5	54	0.3999405	90.3151283	52.9399471	47.0600529
R2.5055	R2.5	55	0.4123592	89.9151878	52.1731982	47.8268018
R2.5056	R2.5	56	0.4250708	89.5028286	51.4112682	48.5887318
R2.5057	R2.5	57	0.4380798	89.0777578	50.6542120	49.3457880
R2.5058	R2.5	58	0.4513912	88.6396780	49.9020872	50.0979128
R2.5059	R2.5	59	0.4650126	88.1882868	49.1549511	50.8450489
R2.5060	R2.5	60	0.4789476	87.7232742	48.4128661	51.5871339
R2.5061	R2.5	61	0.4932022	87.2443266	47.6758952	52.3241048
R2.5062	R2.5	62	0.5077830	86.7511244	46.9441018	53.0558982
R2.5063	R2.5	63	0.5226945	86.2433414	46.2175550	53.7824450
R2.5064	R2.5	64	0.5379439	85.7206469	45.4963250	54.5036750
R2.5065	R2.5	65	0.5535354	85.1827030	44.7804852	55.2195148
R2.5066	R2.5	66	0.5694743	84.6291676	44.0701108	55.9298892
R2.5067	R2.5	67	0.5857687	84.0596933	43.3652830	56.6347170
R2.5068	R2.5	68	0.6024160	83.4739246	42.6660848	57.3339152
R2.5069	R2.5	69	0.6194267	82.8715086	41.9726019	58.0273981
R2.5070	R2.5	70	0.6368008	82.2520819	41.2849250	58.7150750
R2.5071	R2.5	71	0.6545391	81.6152811	40.6031480	59.3968520
R2.5072	R2.5	72	0.6726418	80.9607420	39.9273682	60.0726318
R2.5073	R2.5	73	0.6911087	80.2881002	39.2576852	60.7423148
R2.5074	R2.5	74	0.7099390	79.5969915	38.5942020	61.4057980
R2.5075	R2.5	75	0.7291259	78.8870525	37.9370279	62.0629721
R2.5076	R2.5	76	0.7486620	78.1579266	37.2862740	62.7137260
R2.5077	R2.5	77	0.7685376	77.4092646	36.6420512	63.3579488
R2.5078	R2.5	78	0.7887430	76.6407270	36.0044770	63.9955230
R2.5079	R2.5	79	0.8092565	75.8519840	35.3736682	64.6263318
R2.5080	R2.5	80	0.8300667	75.0427275	34.7497439	65.2502561
R2.5081	R2.5	81	0.8511477	74.2126608	34.1328259	65.8671741
R2.5082	R2.5	82	0.8724718	73.3615131	33.5230379	66.4769621
R2.5083	R2.5	83	0.8940096	72.4890413	32.9204998	67.0795002
R2.5084	R2.5	84	0.9157238	71.5950317	32.3253360	67.6746640
R2.5085	R2.5	85	0.9375753	70.6793079	31.7376659	68.2623341
R2.5086	R2.5	86	0.9595194	69.7417326	31.1576109	68.8423891
R2.5087	R2.5	87	0.9815073	68.7822132	30.5852881	69.4147119
R2.5088	R2.5	88	1.0034790	67.8007059	30.0208130	69.9791870
R2.5089	R2.5	89	1.0253773	66.7972269	29.4642980	70.5357020

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5090	R2.5	90	1.0471344	65.7718496	28.9158480	71.0841520
R2.5091	R2.5	91	1.0686831	64.7247152	28.3755679	71.6244321
R2.5092	R2.5	92	1.0899420	63.6560321	27.8435540	72.1564460
R2.5093	R2.5	93	1.1108289	62.5660901	27.3198969	72.6801031
R2.5094	R2.5	94	1.1312651	61.4552612	26.8046770	73.1953230
R2.5095	R2.5	95	1.1511522	60.3239961	26.2979729	73.7020271
R2.5096	R2.5	96	1.1704039	59.1728439	25.7998481	74.2001519
R2.5097	R2.5	97	1.1889191	58.0024400	25.3103621	74.6896379
R2.5098	R2.5	98	1.2065949	56.8135209	24.8295610	75.1704390
R2.5099	R2.5	99	1.2233358	55.6069260	24.3574791	75.6425209
R2.5100	R2.5	100	1.2390403	54.3835902	23.8941431	76.1058569
R2.5101	R2.5	101	1.2536021	53.1445499	23.4395671	76.5604329
R2.5102	R2.5	102	1.2669158	51.8909478	22.9937501	77.0062499
R2.5103	R2.5	103	1.2788939	50.6240320	22.5566781	77.4433219
R2.5104	R2.5	104	1.2894273	49.3451381	22.1283281	77.8716719
R2.5105	R2.5	105	1.2984328	48.0557108	21.7086580	78.2913420
R2.5106	R2.5	106	1.3058210	46.7572780	21.2976141	78.7023859
R2.5107	R2.5	107	1.3115058	45.4514570	20.8951299	79.1048701
R2.5108	R2.5	108	1.3154220	44.1399512	20.5011189	79.4988811
R2.5109	R2.5	109	1.3175020	42.8245292	20.1154850	79.8845150
R2.5110	R2.5	110	1.3176890	41.5070272	19.7381129	80.2618871
R2.5111	R2.5	111	1.3159404	40.1893382	19.3688741	80.6311259
R2.5112	R2.5	112	1.3122248	38.8733978	19.0076220	80.9923780
R2.5113	R2.5	113	1.3065191	37.5611730	18.6541979	81.3458021
R2.5114	R2.5	114	1.2988228	36.2546539	18.3084259	81.6915741
R2.5115	R2.5	115	1.2891360	34.9558311	17.9701180	82.0298820
R2.5116	R2.5	116	1.2774830	33.6666951	17.6390679	82.3609321
R2.5117	R2.5	117	1.2638931	32.3892121	17.3150611	82.6849389
R2.5118	R2.5	118	1.2484150	31.1253190	16.9978631	83.0021369
R2.5119	R2.5	119	1.2311139	29.8769040	16.6872311	83.3127689
R2.5120	R2.5	120	1.2120590	28.6457901	16.3829119	83.6170881
R2.5121	R2.5	121	1.1913381	27.4337311	16.0846400	83.9153600
R2.5122	R2.5	122	1.1690731	26.2423930	15.7921439	84.2078561
R2.5123	R2.5	123	1.1452968	25.0733199	15.5051580	84.4948420
R2.5124	R2.5	124	1.1201971	23.9280231	15.2233681	84.7766319
R2.5125	R2.5	125	1.0938761	22.8078260	14.9465010	85.0534990
R2.5126	R2.5	126	1.0664589	21.7139499	14.6742671	85.3257329
R2.5127	R2.5	127	1.0380819	20.6474910	14.4063790	85.5936210
R2.5128	R2.5	128	1.0088780	19.6094091	14.1425540	85.8574460
R2.5129	R2.5	129	0.9789822	18.6005311	13.8825150	86.1174850
R2.5130	R2.5	130	0.9485328	17.6215489	13.6259940	86.3740060
R2.5131	R2.5	131	0.9176611	16.6730161	13.3727360	86.6272640
R2.5132	R2.5	132	0.8864870	15.7553550	13.1224999	86.8775001
R2.5133	R2.5	133	0.8551400	14.8688680	12.8750581	87.1249419
R2.5134	R2.5	134	0.8237340	14.0137280	12.6302040	87.3697960

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5135	R2.5	135	0.7923711	13.1899940	12.3877521	87.6122479
R2.5136	R2.5	136	0.7611500	12.3976229	12.1475360	87.8524640
R2.5137	R2.5	137	0.7301579	11.6364729	11.9094091	88.0905909
R2.5138	R2.5	138	0.6994760	10.9063150	11.6732490	88.3267510
R2.5139	R2.5	139	0.6691670	10.2068390	11.4389530	88.5610470
R2.5140	R2.5	140	0.6392890	9.5376720	11.2064340	88.7935660
R2.5141	R2.5	141	0.6098980	8.8983830	10.9756200	89.0243800
R2.5142	R2.5	142	0.5810320	8.2884851	10.7464550	89.2535450
R2.5143	R2.5	143	0.5527210	7.7074530	10.5188921	89.4811079
R2.5144	R2.5	144	0.5249980	7.1547320	10.2928760	89.7071240
R2.5145	R2.5	145	0.4978830	6.6297340	10.0683579	89.9316421
R2.5146	R2.5	146	0.4713970	6.1318510	9.8452730	90.1547270
R2.5147	R2.5	147	0.4455530	5.6604540	9.6235380	90.3764620
R2.5148	R2.5	148	0.4203759	5.2149010	9.4030380	90.5969620
R2.5149	R2.5	149	0.3958700	4.7945250	9.1836420	90.8163580
R2.5150	R2.5	150	0.3720580	4.3986550	8.9651520	91.0348480
R2.5151	R2.5	151	0.3489550	4.0265970	8.7473331	91.2526670
R2.5152	R2.5	152	0.3265810	3.6776420	8.5298860	91.4701140
R2.5153	R2.5	153	0.3049580	3.3510610	8.3124470	91.6875531
R2.5154	R2.5	154	0.2841100	3.0461030	8.0945830	91.9054170
R2.5155	R2.5	155	0.2640620	2.7619930	7.8757930	92.1242070
R2.5156	R2.5	156	0.2448380	2.4979310	7.6555050	92.3444950
R2.5157	R2.5	157	0.2264680	2.2530930	7.4330760	92.5669240
R2.5158	R2.5	158	0.2089740	2.0266250	7.2078220	92.7921780
R2.5159	R2.5	159	0.1923820	1.8176510	6.9790150	93.0209850
R2.5160	R2.5	160	0.1767130	1.6252690	6.7459320	93.2540680
R2.5161	R2.5	161	0.1619790	1.4485560	6.5078890	93.4921110
R2.5162	R2.5	162	0.1481900	1.2865770	6.2642780	93.7357220
R2.5163	R2.5	163	0.1353470	1.1383870	6.0146450	93.9853550
R2.5164	R2.5	164	0.1234370	1.0030400	5.7587730	94.2412270
R2.5165	R2.5	165	0.1124400	0.8796030	5.4967510	94.5032490
R2.5166	R2.5	166	0.1023100	0.7671630	5.2291050	94.7708950
R2.5167	R2.5	167	0.0929890	0.6648530	4.9568360	95.0431640
R2.5168	R2.5	168	0.0843740	0.5718640	4.6815480	95.3184520
R2.5169	R2.5	169	0.0763160	0.4874900	4.4052840	95.5947160
R2.5170	R2.5	170	0.0685810	0.4111740	4.1301250	95.8698750
R2.5171	R2.5	171	0.0610970	0.3425930	3.8568110	96.1431890
R2.5172	R2.5	172	0.0538920	0.2814960	3.5853870	96.4146130
R2.5173	R2.5	173	0.0469890	0.2276040	3.3159430	96.6840570
R2.5174	R2.5	174	0.0404160	0.1806150	3.0485420	96.9514580
R2.5175	R2.5	175	0.0342080	0.1401990	2.7832260	97.2167740
R2.5176	R2.5	176	0.0283930	0.1059910	2.5201240	97.4798760
R2.5177	R2.5	177	0.0230100	0.0775980	2.2592850	97.7407150
R2.5178	R2.5	178	0.0181160	0.0545880	2.0008610	97.9991390
R2.5179	R2.5	179	0.0136670	0.0364720	1.7451220	98.2548780

database

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5180	R2.5	180	0.0098240	0.0228050	1.4924140	98.5075860
R2.5181	R2.5	181	0.0065460	0.0129810	1.2434710	98.7565290
R2.5182	R2.5	182	0.0038930	0.0064350	0.9997670	99.0002330
R2.5183	R2.5	183	0.0019010	0.0025420	0.7651460	99.2348540
R2.5184	R2.5	184	0.0006080	0.0006410	0.5514820	99.4485180
R2.5185	R2.5	185	0.0000330	0.0000330	0.5000000	99.5000000
R2.5186	R2.5	186	0.0000000	0.0000000	0.0000000	100.0000000

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % Depr Resv
R3.0000	R3.0	0	0.0154791	100.0000000	100.0000000	0.0000000
R3.0001	R3.0	1	0.0168400	99.9845209	99.0154038	0.9845962
R3.0002	R3.0	2	0.0182953	99.9676809	98.0319996	1.9680004
R3.0003	R3.0	3	0.0198507	99.9493856	97.0498524	2.9501476
R3.0004	R3.0	4	0.0215111	99.9295349	96.0690317	3.9309683
R3.0005	R3.0	5	0.0232811	99.9080238	95.0896082	4.9103918
R3.0006	R3.0	6	0.0251655	99.8847427	94.1116552	5.8883448
R3.0007	R3.0	7	0.0271702	99.8595772	93.1352463	6.8647537
R3.0008	R3.0	8	0.0292997	99.8324070	92.1604576	7.8395424
R3.0009	R3.0	9	0.0315600	99.8031073	91.1873674	8.8126326
R3.0010	R3.0	10	0.0339584	99.7715473	90.2160540	9.7839460
R3.0011	R3.0	11	0.0364952	99.7375889	89.2465992	10.7534008
R3.0012	R3.0	12	0.0391798	99.7010937	88.2790852	11.7209148
R3.0013	R3.0	13	0.0420189	99.6619139	87.3135939	12.6864061
R3.0014	R3.0	14	0.0450144	99.6198950	86.3502102	13.6497898
R3.0015	R3.0	15	0.0481758	99.5748806	85.3890209	14.6109791
R3.0016	R3.0	16	0.0515060	99.5267048	84.4301109	15.5698891
R3.0017	R3.0	17	0.0550118	99.4751988	83.4735680	16.5264320
R3.0018	R3.0	18	0.0586996	99.4201870	82.5194798	17.4805202
R3.0019	R3.0	19	0.0625744	99.3614874	81.5679340	18.4320660
R3.0020	R3.0	20	0.0666428	99.2989130	80.6190205	19.3809795
R3.0021	R3.0	21	0.0709104	99.2322702	79.6728268	20.3271732
R3.0022	R3.0	22	0.0753794	99.1613598	78.7294426	21.2705574
R3.0023	R3.0	23	0.0800638	99.0859804	77.7889566	22.2110434
R3.0024	R3.0	24	0.0849600	99.0059166	76.8514566	23.1485434
R3.0025	R3.0	25	0.0900774	98.9209566	75.9170332	24.0829668
R3.0026	R3.0	26	0.0954256	98.8308792	74.9857712	25.0142288
R3.0027	R3.0	27	0.1010027	98.7354536	74.0577602	25.9422398
R3.0028	R3.0	28	0.1068191	98.6344509	73.1330843	26.8669157
R3.0029	R3.0	29	0.1128788	98.5276318	72.2118292	27.7881708
R3.0030	R3.0	30	0.1191874	98.4147530	71.2940807	28.7059193
R3.0031	R3.0	31	0.1257477	98.2955656	70.3799210	29.6200790
R3.0032	R3.0	32	0.1325683	98.1698179	69.4694319	30.5305681
R3.0033	R3.0	33	0.1396523	98.0372496	68.5626936	31.4373064
R3.0034	R3.0	34	0.1470041	97.8975973	67.6597862	32.3402138
R3.0035	R3.0	35	0.1546307	97.7505932	66.7607861	33.2392139
R3.0036	R3.0	36	0.1625337	97.5959625	65.8657694	34.1342306
R3.0037	R3.0	37	0.1707211	97.4334288	64.9748087	35.0251913
R3.0038	R3.0	38	0.1791944	97.2627077	64.0879793	35.9120207
R3.0039	R3.0	39	0.1879616	97.0835133	63.2053480	36.7946520
R3.0040	R3.0	40	0.1970244	96.8955517	62.3269858	37.6730142
R3.0041	R3.0	41	0.2063894	96.6985273	61.4529600	38.5470400
R3.0042	R3.0	42	0.2160606	96.4921379	60.5833340	39.4166660
R3.0043	R3.0	43	0.2260437	96.2760773	59.7181711	40.2818289
R3.0044	R3.0	44	0.2363405	96.0500336	58.8575339	41.1424661

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % Depr Resv
R3.0045	R3.0	45	0.2469616	95.8136931	58.0014839	41.9985161
R3.0046	R3.0	46	0.2579089	95.5667315	57.1500778	42.8499222
R3.0047	R3.0	47	0.2691869	95.3088226	56.3033738	43.6966262
R3.0048	R3.0	48	0.2808028	95.0396357	55.4614301	44.5385699
R3.0049	R3.0	49	0.2927637	94.7588329	54.6243000	45.3757000
R3.0050	R3.0	50	0.3050775	94.4660692	53.7920389	46.2079611
R3.0051	R3.0	51	0.3177452	94.1609917	52.9647021	47.0352979
R3.0052	R3.0	52	0.3307829	93.8432465	52.1423440	47.8576560
R3.0053	R3.0	53	0.3441897	93.5124636	51.3250179	48.6749821
R3.0054	R3.0	54	0.3579797	93.1682739	50.5127802	49.4872198
R3.0055	R3.0	55	0.3721629	92.8102942	49.7056861	50.2943139
R3.0056	R3.0	56	0.3867464	92.4381313	48.9037910	51.0962090
R3.0057	R3.0	57	0.4017400	92.0513849	48.1071558	51.8928442
R3.0058	R3.0	58	0.4171553	91.6496449	47.3158379	52.6841621
R3.0059	R3.0	59	0.4330063	91.2324896	46.5299010	53.4700990
R3.0060	R3.0	60	0.4493046	90.7994833	45.7494102	54.2505898
R3.0061	R3.0	61	0.4660597	90.3501787	44.9744310	55.0255690
R3.0062	R3.0	62	0.4832878	89.8841190	44.2050362	55.7949638
R3.0063	R3.0	63	0.5010013	89.4008312	43.4412990	56.5587010
R3.0064	R3.0	64	0.5192156	88.8998299	42.6832981	57.3167019
R3.0065	R3.0	65	0.5379458	88.3806143	41.9311161	58.0688839
R3.0066	R3.0	66	0.5572013	87.8426685	41.1848378	58.8151622
R3.0067	R3.0	67	0.5770016	87.2854672	40.4445572	59.5554428
R3.0068	R3.0	68	0.5973559	86.7084656	39.7103682	60.2896318
R3.0069	R3.0	69	0.6182804	86.1111097	38.9823709	61.0176291
R3.0070	R3.0	70	0.6397857	85.4928293	38.2606740	61.7393260
R3.0071	R3.0	71	0.6618805	84.8530436	37.5453868	62.4546132
R3.0072	R3.0	72	0.6845751	84.1911631	36.8366242	63.1633758
R3.0073	R3.0	73	0.7078676	83.5065880	36.1345072	63.8654928
R3.0074	R3.0	74	0.7317868	82.7987204	35.4391561	64.5608439
R3.0075	R3.0	75	0.7563066	82.0669336	34.7507062	65.2492938
R3.0076	R3.0	76	0.7814388	81.3106270	34.0692878	65.9307122
R3.0077	R3.0	77	0.8071690	80.5291882	33.3950372	66.6049628
R3.0078	R3.0	78	0.8334932	79.7220192	32.7280932	67.2719068
R3.0079	R3.0	79	0.8603878	78.8885260	32.0685968	67.9314032
R3.0080	R3.0	80	0.8878355	78.0281382	31.4166920	68.5833080
R3.0081	R3.0	81	0.9158049	77.1403027	30.7725229	69.2274771
R3.0082	R3.0	82	0.9442616	76.2244978	30.1362350	69.8637650
R3.0083	R3.0	83	0.9731655	75.2802362	29.5079711	70.4920289
R3.0084	R3.0	84	1.0024595	74.3070707	28.8878751	71.1121249
R3.0085	R3.0	85	1.0320921	73.3046112	28.2760870	71.7239130
R3.0086	R3.0	86	1.0619917	72.2725191	27.6727450	72.3272550
R3.0087	R3.0	87	1.0920782	71.2105274	27.0779829	72.9220171
R3.0088	R3.0	88	1.1222725	70.1184492	26.4919291	73.5080709
R3.0089	R3.0	89	1.1524744	68.9961767	25.9147060	74.0852940

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % Depr Resv
R3.0090	R3.0	90	1.1825809	67.8437023	25.3464310	74.6535690
R3.0091	R3.0	91	1.2124787	66.6611214	24.7872109	75.2127891
R3.0092	R3.0	92	1.2420444	65.4486427	24.2371471	75.7628529
R3.0093	R3.0	93	1.2711425	64.2065983	23.6963310	76.3036690
R3.0094	R3.0	94	1.2996359	62.9354558	23.1648400	76.8351600
R3.0095	R3.0	95	1.3273778	61.6358199	22.6427441	77.3572559
R3.0096	R3.0	96	1.3542113	60.3084421	22.1301019	77.8698981
R3.0097	R3.0	97	1.3799820	58.9542308	21.6269579	78.3730421
R3.0098	R3.0	98	1.4045148	57.5742488	21.1333439	78.8666561
R3.0099	R3.0	99	1.4276528	56.1697340	20.6492770	79.3507230
R3.0100	R3.0	100	1.4492231	54.7420812	20.1747630	79.8252370
R3.0101	R3.0	101	1.4690599	53.2928581	19.7097900	80.2902100
R3.0102	R3.0	102	1.4869881	51.8237982	19.2543340	80.7456660
R3.0103	R3.0	103	1.5028572	50.3368101	18.8083510	81.1916490
R3.0104	R3.0	104	1.5164928	48.8339529	18.3717880	81.6282120
R3.0105	R3.0	105	1.5277629	47.3174601	17.9445670	82.0554330
R3.0106	R3.0	106	1.5365224	45.7896972	17.5266011	82.4733989
R3.0107	R3.0	107	1.5426388	44.2531748	17.1177840	82.8822160
R3.0108	R3.0	108	1.5460029	42.7105360	16.7179930	83.2820070
R3.0109	R3.0	109	1.5465211	41.1645331	16.3270869	83.6729131
R3.0110	R3.0	110	1.5441080	39.6180120	15.9449101	84.0550899
R3.0111	R3.0	111	1.5387101	38.0739040	15.5712870	84.4287130
R3.0112	R3.0	112	1.5302810	36.5351939	15.2060260	84.7939740
R3.0113	R3.0	113	1.5188141	35.0049129	14.8489180	85.1510820
R3.0114	R3.0	114	1.5043109	33.4860988	14.4997360	85.5002640
R3.0115	R3.0	115	1.4868099	31.9817879	14.1582340	85.8417660
R3.0116	R3.0	116	1.4663680	30.4949780	13.8241530	86.1758470
R3.0117	R3.0	117	1.4430571	29.0286100	13.4972171	86.5027829
R3.0118	R3.0	118	1.4169929	27.5855529	13.1771280	86.8228720
R3.0119	R3.0	119	1.3882911	26.1685600	12.8635780	87.1364220
R3.0120	R3.0	120	1.3571188	24.7802689	12.5562360	87.4437640
R3.0121	R3.0	121	1.3236401	23.4231501	12.2547650	87.7452350
R3.0122	R3.0	122	1.2880390	22.0995100	11.9588110	88.0411890
R3.0123	R3.0	123	1.2505269	20.8114710	11.6680059	88.3319941
R3.0124	R3.0	124	1.2113230	19.5609441	11.3819740	88.6180260
R3.0125	R3.0	125	1.1706541	18.3496211	11.1003320	88.8996680
R3.0126	R3.0	126	1.1287601	17.1789670	10.8226880	89.1773120
R3.0127	R3.0	127	1.0858769	16.0502069	10.5486490	89.4513510
R3.0128	R3.0	128	1.0422470	14.9643300	10.2778220	89.7221780
R3.0129	R3.0	129	0.9981119	13.9220830	10.0098190	89.9901810
R3.0130	R3.0	130	0.9536992	12.9239711	9.7442570	90.2557430
R3.0131	R3.0	131	0.9092329	11.9702719	9.4807680	90.5192320
R3.0132	R3.0	132	0.8649200	11.0610390	9.2190000	90.7810000
R3.0133	R3.0	133	0.8209611	10.1961190	8.9586190	91.0413810
R3.0134	R3.0	134	0.7775309	9.3751580	8.6993200	91.3006800

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R3.0135	R3.0	135	0.7347881	8.5976270	8.4408310	91.5591691
R3.0136	R3.0	136	0.6928700	7.8628390	8.1829081	91.8170919
R3.0137	R3.0	137	0.6518970	7.1699690	7.9253460	92.0746540
R3.0138	R3.0	138	0.6119650	6.5180720	7.6679810	92.3320190
R3.0139	R3.0	139	0.5731500	5.9061070	7.4106960	92.5893040
R3.0140	R3.0	140	0.5355110	5.3329570	7.1534120	92.8465880
R3.0141	R3.0	141	0.4990880	4.7974460	6.8960930	93.1039070
R3.0142	R3.0	142	0.4639030	4.2983580	6.6387510	93.3612490
R3.0143	R3.0	143	0.4299690	3.8344550	6.3814340	93.6185660
R3.0144	R3.0	144	0.3972850	3.4044860	6.1242290	93.8757710
R3.0145	R3.0	145	0.3658450	3.0072010	5.8672540	94.1327460
R3.0146	R3.0	146	0.3356360	2.6413560	5.6106530	94.3893470
R3.0147	R3.0	147	0.3066410	2.3057200	5.3545910	94.6454090
R3.0148	R3.0	148	0.2788620	1.9990790	5.0992460	94.9007540
R3.0149	R3.0	149	0.2522770	1.7202170	4.8448220	95.1551780
R3.0150	R3.0	150	0.2268850	1.4679400	4.5915160	95.4084840
R3.0151	R3.0	151	0.2026930	1.2410550	4.3395140	95.6604860
R3.0152	R3.0	152	0.1797100	1.0383620	4.0890000	95.9110000
R3.0153	R3.0	153	0.1579600	0.8586520	3.8401530	96.1598470
R3.0154	R3.0	154	0.1374690	0.7006920	3.5931400	96.4068600
R3.0155	R3.0	155	0.1182750	0.5632230	3.3480970	96.6519030
R3.0156	R3.0	156	0.1004170	0.4449480	3.1051630	96.8948370
R3.0157	R3.0	157	0.0839420	0.3445310	2.8644800	97.1355200
R3.0158	R3.0	158	0.0688930	0.2605890	2.6261500	97.3738500
R3.0159	R3.0	159	0.0553160	0.1916960	2.3902580	97.6097420
R3.0160	R3.0	160	0.0432485	0.1363800	2.1569580	97.8430420
R3.0161	R3.0	161	0.0327163	0.0931315	1.9263620	98.0736380
R3.0162	R3.0	162	0.0237359	0.0604152	1.6987790	98.3012210
R3.0163	R3.0	163	0.0163033	0.0366793	1.4745100	98.5254900
R3.0164	R3.0	164	0.0103913	0.0203760	1.2542690	98.7457310
R3.0165	R3.0	165	0.0059434	0.0099847	1.0392430	98.9607570
R3.0166	R3.0	166	0.0028646	0.0040413	0.8322900	99.1677100
R3.0167	R3.0	167	0.0010104	0.0011767	0.6413070	99.3586930
R3.0168	R3.0	168	0.0001662	0.0001662	0.4999820	99.5000180
R3.0169	R3.0	169	0.0000000	0.0000000	0.0000000	100.0000000

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0000	R4.0	0	0.0008278	100.0000000	100.0000000	0.0000000
R4.0001	R4.0	1	0.0009632	99.9991722	99.0013161	0.9986839
R4.0002	R4.0	2	0.0011139	99.9982090	98.0022631	1.9977369
R4.0003	R4.0	3	0.0012894	99.9970951	97.0033197	2.9966803
R4.0004	R4.0	4	0.0014858	99.9958057	96.0045939	3.9954061
R4.0005	R4.0	5	0.0017109	99.9943199	95.0060129	4.9939871
R4.0006	R4.0	6	0.0019645	99.9926090	94.0076304	5.9923696
R4.0007	R4.0	7	0.0022536	99.9906445	93.0094681	6.9905319
R4.0008	R4.0	8	0.0025768	99.9883909	92.0115519	7.9884481
R4.0009	R4.0	9	0.0029430	99.9858141	91.0139113	8.9860887
R4.0010	R4.0	10	0.0033541	99.9828711	90.0165749	9.9834251
R4.0011	R4.0	11	0.0038157	99.9795170	89.0195789	10.9804211
R4.0012	R4.0	12	0.0043325	99.9757013	88.0229569	11.9770431
R4.0013	R4.0	13	0.0049095	99.9713688	87.0267496	12.9732504
R4.0014	R4.0	14	0.0055561	99.9664593	86.0310001	13.9689999
R4.0015	R4.0	15	0.0062743	99.9609032	85.0357533	14.9642467
R4.0016	R4.0	16	0.0070753	99.9546289	84.0410605	15.9589395
R4.0017	R4.0	17	0.0079612	99.9475536	83.0469732	16.9530268
R4.0018	R4.0	18	0.0089484	99.9395924	82.0535498	17.9464502
R4.0019	R4.0	19	0.0100383	99.9306440	81.0608521	18.9391479
R4.0020	R4.0	20	0.0112429	99.9206057	80.0689449	19.9310551
R4.0021	R4.0	21	0.0125732	99.9093628	79.0778990	20.9221010
R4.0022	R4.0	22	0.0140372	99.8967896	78.0877886	21.9122114
R4.0023	R4.0	23	0.0156517	99.8827524	77.0986939	22.9013061
R4.0024	R4.0	24	0.0174217	99.8671007	76.1106977	23.8893023
R4.0025	R4.0	25	0.0193634	99.8496790	75.1238899	24.8761101
R4.0026	R4.0	26	0.0214911	99.8303156	74.1383648	25.8616352
R4.0027	R4.0	27	0.0238161	99.8088245	73.1542206	26.8457794
R4.0028	R4.0	28	0.0263576	99.7850084	72.1715622	27.8284378
R4.0029	R4.0	29	0.0291262	99.7586508	71.1904984	28.8095016
R4.0030	R4.0	30	0.0321426	99.7295246	70.2111445	29.7888555
R4.0031	R4.0	31	0.0354223	99.6973820	69.2336187	30.7663813
R4.0032	R4.0	32	0.0389815	99.6619597	68.2580481	31.7419519
R4.0033	R4.0	33	0.0428438	99.6229782	67.2845621	32.7154379
R4.0034	R4.0	34	0.0470247	99.5801344	66.3132954	33.6867046
R4.0035	R4.0	35	0.0515423	99.5331097	65.3443880	34.6556120
R4.0036	R4.0	36	0.0564251	99.4815674	64.3779860	35.6220140
R4.0037	R4.0	37	0.0616894	99.4251423	63.4142370	36.5857630
R4.0038	R4.0	38	0.0673580	99.3634529	62.4532971	37.5467029
R4.0039	R4.0	39	0.0734539	99.2960949	61.4953232	38.5046768
R4.0040	R4.0	40	0.0800018	99.2226410	60.5404782	39.4595218
R4.0041	R4.0	41	0.0870266	99.1426392	59.5889268	40.4110732
R4.0042	R4.0	42	0.0945492	99.0556126	58.6408401	41.3591599
R4.0043	R4.0	43	0.1025982	98.9610634	57.6963892	42.3036108
R4.0044	R4.0	44	0.1111975	98.8584652	56.7557492	43.2442508

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0045	R4.0	45	0.1203727	98.7472677	55.8190970	44.1809030
R4.0046	R4.0	46	0.1301480	98.6268950	54.8866129	45.1133871
R4.0047	R4.0	47	0.1405506	98.4967470	53.9584770	46.0415230
R4.0048	R4.0	48	0.1516085	98.3561964	53.0348692	46.9651308
R4.0049	R4.0	49	0.1633424	98.2045879	52.1159720	47.8840280
R4.0050	R4.0	50	0.1757803	98.0412455	51.2019682	48.7980318
R4.0051	R4.0	51	0.1889468	97.8654652	50.2930360	49.7069640
R4.0052	R4.0	52	0.2028656	97.6765184	49.3893561	50.6106439
R4.0053	R4.0	53	0.2175588	97.4736528	48.4911060	51.5088940
R4.0054	R4.0	54	0.2326536	97.2560940	47.5984602	52.4015398
R4.0055	R4.0	55	0.2497578	97.0234404	46.7115922	53.2884078
R4.0056	R4.0	56	0.2665119	96.7736826	45.8306670	54.1693330
R4.0057	R4.0	57	0.2845173	96.5071707	44.9558511	55.0441489
R4.0058	R4.0	58	0.3034000	96.2226534	44.0873008	55.9126992
R4.0059	R4.0	59	0.3231707	95.9192534	43.2251711	56.7748289
R4.0060	R4.0	60	0.3438416	95.5960827	42.3696070	57.6303930
R4.0061	R4.0	61	0.3654260	95.2522411	41.5207481	58.4792519
R4.0062	R4.0	62	0.3879290	94.8868151	40.6787262	59.3212738
R4.0063	R4.0	63	0.4113550	94.4988861	39.8436651	60.1563349
R4.0064	R4.0	64	0.4357090	94.0875311	39.0156770	60.9843230
R4.0065	R4.0	65	0.4609852	93.6518221	38.1948690	61.8051310
R4.0066	R4.0	66	0.4871807	93.1908369	37.3813329	62.6186671
R4.0067	R4.0	67	0.5142860	92.7036562	36.5751538	63.4248462
R4.0068	R4.0	68	0.5422850	92.1893702	35.7764020	64.2235980
R4.0069	R4.0	69	0.5711651	91.6470852	34.9851360	65.0148640
R4.0070	R4.0	70	0.6009006	91.0759201	34.2014031	65.7985969
R4.0071	R4.0	71	0.6314631	90.4750195	33.4252348	66.5747652
R4.0072	R4.0	72	0.6628237	89.8435564	32.6566491	67.3433509
R4.0073	R4.0	73	0.6949434	89.1807327	31.8956490	68.1043510
R4.0074	R4.0	74	0.7277765	88.4857893	31.1422219	68.8577781
R4.0075	R4.0	75	0.7612782	87.7580128	30.3963370	69.6036630
R4.0076	R4.0	76	0.7953930	86.9967346	29.6579499	70.3420501
R4.0077	R4.0	77	0.8300562	86.2013416	28.9269941	71.0730059
R4.0078	R4.0	78	0.8652038	85.3712854	28.2033880	71.7966120
R4.0079	R4.0	79	0.9007626	84.5060816	27.4870250	72.5129750
R4.0080	R4.0	80	0.9366550	83.6053190	26.7777820	73.2222180
R4.0081	R4.0	81	0.9727898	82.6686640	26.0755160	73.9244840
R4.0082	R4.0	82	1.0092020	81.6958742	25.3800550	74.6199450
R4.0083	R4.0	83	1.0464849	80.6866722	24.6912470	75.3087530
R4.0084	R4.0	84	1.0855894	79.6401873	24.0091240	75.9908760
R4.0085	R4.0	85	1.1274805	78.5545979	23.3340089	76.6659911
R4.0086	R4.0	86	1.1729546	77.4271174	22.6665139	77.3334861
R4.0087	R4.0	87	1.2225552	76.2541628	22.0074830	77.9925170
R4.0088	R4.0	88	1.2765531	75.0316076	21.3579230	78.6420770
R4.0089	R4.0	89	1.3349047	73.7550545	20.7189319	79.2810681

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0090	R4.0	90	1.3973417	72.4201498	20.0916240	79.9083760
R4.0091	R4.0	91	1.4632540	71.0228081	19.4770801	80.5229199
R4.0092	R4.0	92	1.5318708	69.5595541	18.8762820	81.1237180
R4.0093	R4.0	93	1.6022349	68.0276833	18.2900851	81.7099149
R4.0094	R4.0	94	1.6732702	66.4254484	17.7191961	82.2808039
R4.0095	R4.0	95	1.7437983	64.7521782	17.1641600	82.8358400
R4.0096	R4.0	96	1.8126111	63.0083799	16.6253510	83.3746490
R4.0097	R4.0	97	1.8785019	61.1957688	16.1029799	83.8970201
R4.0098	R4.0	98	1.9403057	59.3172669	15.5971090	84.4028910
R4.0099	R4.0	99	1.9969244	57.3769612	15.1076440	84.8923560
R4.0100	R4.0	100	2.0473556	55.3800368	14.6343750	85.3656250
R4.0101	R4.0	101	2.0907240	53.3326812	14.1769710	85.8230290
R4.0102	R4.0	102	2.1262794	51.2419572	13.7350060	86.2649940
R4.0103	R4.0	103	2.1534547	49.1156778	13.3079650	86.6920350
R4.0104	R4.0	104	2.1718040	46.9622231	12.8952750	87.1047250
R4.0105	R4.0	105	2.1810722	44.7904191	12.4962990	87.5037010
R4.0106	R4.0	106	2.1811419	42.6093469	12.1103610	87.8896390
R4.0107	R4.0	107	2.1720638	40.4282050	11.7367520	88.2632480
R4.0108	R4.0	108	2.1540241	38.2561412	11.3747400	88.6252600
R4.0109	R4.0	109	2.1273389	36.1021171	11.0235781	88.9764219
R4.0110	R4.0	110	2.0924511	33.9747782	10.6825140	89.3174860
R4.0111	R4.0	111	2.0498882	31.8823271	10.3507971	89.6492029
R4.0112	R4.0	112	2.0002858	29.8324389	10.0276790	89.9723210
R4.0113	R4.0	113	1.9443300	27.8321531	9.7124300	90.2875700
R4.0114	R4.0	114	1.8827472	25.8878231	9.4043380	90.5956620
R4.0115	R4.0	115	1.8162958	24.0050759	9.1027160	90.8972840
R4.0116	R4.0	116	1.7457612	22.1887801	8.8069040	91.1930960
R4.0117	R4.0	117	1.6718969	20.4430189	8.5162840	91.4837160
R4.0118	R4.0	118	1.5954540	18.7711220	8.2302750	91.7697250
R4.0119	R4.0	119	1.5171400	17.1756680	7.9483430	92.0516570
R4.0120	R4.0	120	1.4376240	15.6585280	7.6700060	92.3299940
R4.0121	R4.0	121	1.3575180	14.2209040	7.3948390	92.6051610
R4.0122	R4.0	122	1.2773730	12.8633860	7.1224760	92.8775240
R4.0123	R4.0	123	1.1976880	11.5860130	6.8526120	93.1473880
R4.0124	R4.0	124	1.1188790	10.3883250	6.5850130	93.4149870
R4.0125	R4.0	125	1.0413181	9.2694460	6.3195140	93.6804860
R4.0126	R4.0	126	0.9653040	8.2281280	6.0560060	93.9439940
R4.0127	R4.0	127	0.8910890	7.2628240	5.7944580	94.2055420
R4.0128	R4.0	128	0.8188760	6.3717350	5.5348880	94.4651120
R4.0129	R4.0	129	0.7488360	5.5528590	5.2773810	94.7226190
R4.0130	R4.0	130	0.6811100	4.8040230	5.0220640	94.9779360
R4.0131	R4.0	131	0.6158200	4.1229130	4.7691140	95.2308860
R4.0132	R4.0	132	0.5530780	3.5070930	4.5187400	95.4812600
R4.0133	R4.0	133	0.4930080	2.9540150	4.2715210	95.7284790
R4.0134	R4.0	134	0.4357350	2.4610070	4.0273490	95.9726510

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0135	R4.0	135	0.3814000	2.0252720	3.7864600	96.2135400
R4.0136	R4.0	136	0.3301680	1.6438720	3.5490210	96.4509790
R4.0137	R4.0	137	0.2822160	1.3137040	3.3315155	66.6848450
R4.0138	R4.0	138	0.2377380	1.0314880	3.0849780	96.9150220
R4.0139	R4.0	139	0.1969280	0.7937500	2.8585810	97.1414190
R4.0140	R4.0	140	0.1599700	0.5968220	2.6360510	97.3639490
R4.0141	R4.0	141	0.1270220	0.4368520	2.4174760	97.5825240
R4.0142	R4.0	142	0.0981870	0.3098300	2.2029340	97.7970660
R4.0143	R4.0	143	0.0734960	0.2116430	1.9925030	98.0074970
R4.0144	R4.0	144	0.0529003	0.1381470	1.7862840	98.2137160
R4.0145	R4.0	145	0.0362607	0.0852467	1.5844010	98.4155990
R4.0146	R4.0	146	0.0233463	0.0489860	1.3870900	98.6129100
R4.0147	R4.0	147	0.0138307	0.0256397	1.1948260	98.8051740
R4.0148	R4.0	148	0.0072948	0.0118090	1.0086400	98.9913600
R4.0149	R4.0	149	0.0032339	0.0045142	0.8306070	99.1693930
R4.0150	R4.0	150	0.0010741	0.0012803	0.6657290	99.3342710
R4.0151	R4.0	151	0.0002001	0.0002061	0.5292780	99.4707220
R4.0152	R4.0	152	0.0000060	0.0000060	0.5000830	99.4999170
R4.0153	R4.0	153	0.0000000	0.0000000	0.0000000	100.0000000

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0000	S3.0	0	0.0000000	100.0000000	100.0000000	0.0000000
S3.0001	S3.0	1	0.0000000	100.0000000	99.0000000	1.0000000
S3.0002	S3.0	2	0.0000000	100.0000000	98.0000000	2.0000000
S3.0003	S3.0	3	0.0000000	100.0000000	97.0000000	3.0000000
S3.0004	S3.0	4	0.0000000	100.0000000	96.0000000	4.0000000
S3.0005	S3.0	5	0.0000000	100.0000000	95.0000000	5.0000000
S3.0006	S3.0	6	0.0000009	100.0000000	94.0000000	6.0000000
S3.0007	S3.0	7	0.0000029	99.9999991	93.0000010	6.9999990
S3.0008	S3.0	8	0.0000057	99.9999962	92.0000038	7.9999962
S3.0009	S3.0	9	0.0000124	99.9999905	91.0000086	8.9999914
S3.0010	S3.0	10	0.0000229	99.9999781	90.0000200	9.9999800
S3.0011	S3.0	11	0.0000410	99.9999552	89.0000401	10.9999599
S3.0012	S3.0	12	0.0000706	99.9999142	88.0000773	11.9999227
S3.0013	S3.0	13	0.0001154	99.9998436	87.0001392	12.9998608
S3.0014	S3.0	14	0.0001821	99.9997282	86.0002394	13.9997606
S3.0015	S3.0	15	0.0002785	99.9995461	85.0003939	14.9996061
S3.0016	S3.0	16	0.0004120	99.9992676	84.0006294	15.9993706
S3.0017	S3.0	17	0.0005932	99.9988556	83.0009728	16.9990272
S3.0018	S3.0	18	0.0008402	99.9982624	82.0014629	17.9985371
S3.0019	S3.0	19	0.0011616	99.9974222	81.0021467	18.9978533
S3.0020	S3.0	20	0.0015783	99.9962606	80.0030832	19.9969168
S3.0021	S3.0	21	0.0021086	99.9946823	79.0043373	20.9956627
S3.0022	S3.0	22	0.0027761	99.9925737	78.0059929	21.9940071
S3.0023	S3.0	23	0.0036030	99.9897976	77.0081453	22.9918547
S3.0024	S3.0	24	0.0046177	99.9861946	76.0109024	23.9890976
S3.0025	S3.0	25	0.0058498	99.9815769	75.0143890	24.9856110
S3.0026	S3.0	26	0.0073300	99.9757271	74.0187492	25.9812508
S3.0027	S3.0	27	0.0090951	99.9683971	73.0241404	26.9758596
S3.0028	S3.0	28	0.0111771	99.9593020	72.0307388	27.9692612
S3.0029	S3.0	29	0.0136185	99.9481249	71.0387383	28.9612617
S3.0030	S3.0	30	0.0164585	99.9345064	70.0483513	29.9516487
S3.0031	S3.0	31	0.0197382	99.9180479	69.0598068	30.9401932
S3.0032	S3.0	32	0.0235014	99.8983097	68.0733528	31.9266472
S3.0033	S3.0	33	0.0277939	99.8748083	67.0892544	32.9107456
S3.0034	S3.0	34	0.0326624	99.8470144	66.1077900	33.8922100
S3.0035	S3.0	35	0.0381479	99.8143520	65.1292582	34.8707418
S3.0036	S3.0	36	0.0443048	99.7762041	64.1539688	35.8460312
S3.0037	S3.0	37	0.0511732	99.7318993	63.1822462	36.8177538
S3.0038	S3.0	38	0.0588046	99.6807261	62.2144260	37.7855740
S3.0039	S3.0	39	0.0672397	99.6219215	61.2508540	38.7491460
S3.0040	S3.0	40	0.0765267	99.5546818	60.2918859	39.7081141
S3.0041	S3.0	41	0.0867071	99.4781551	59.3378830	40.6621170
S3.0042	S3.0	42	0.0978231	99.3914480	58.3892121	41.6107879
S3.0043	S3.0	43	0.1099110	99.2936249	57.4462428	42.5537572
S3.0044	S3.0	44	0.1230097	99.1837139	56.5093489	43.4906511

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0045	S3.0	45	0.1371507	99.0607042	55.5788989	44.4211011
S3.0046	S3.0	46	0.1523667	98.9235535	54.6552620	45.3447380
S3.0047	S3.0	47	0.1686792	98.7711868	53.7388029	46.2611971
S3.0048	S3.0	48	0.1861134	98.6025076	52.8298788	47.1701212
S3.0049	S3.0	49	0.2046880	98.4163942	51.9288392	48.0711608
S3.0050	S3.0	50	0.2244149	98.2117062	51.0360251	48.9639749
S3.0051	S3.0	51	0.2453012	97.9872913	50.1517639	49.8482361
S3.0052	S3.0	52	0.2673512	97.7419901	49.2763739	50.7236261
S3.0053	S3.0	53	0.2905626	97.4746389	48.4101572	51.5898428
S3.0054	S3.0	54	0.3149290	97.1840763	47.5534000	52.4466000
S3.0055	S3.0	55	0.3404341	96.8691473	46.7063732	53.2936268
S3.0056	S3.0	56	0.3670616	96.5287132	45.8693328	54.1306672
S3.0057	S3.0	57	0.3947830	96.1616516	45.0425129	54.9574871
S3.0058	S3.0	58	0.4235687	95.7668686	44.2261319	55.7738681
S3.0059	S3.0	59	0.4533825	95.3432999	43.4203882	56.5796118
S3.0060	S3.0	60	0.4841824	94.8899174	42.6254621	57.3745379
S3.0061	S3.0	61	0.5159149	94.4057350	41.8415122	58.1584878
S3.0062	S3.0	62	0.5485287	93.8898201	41.0686789	58.9313211
S3.0063	S3.0	63	0.5819635	93.3412914	40.3070850	59.6929150
S3.0064	S3.0	64	0.6161499	92.7593279	39.5568309	60.4431691
S3.0065	S3.0	65	0.6510201	92.1431780	38.8179989	61.1820011
S3.0066	S3.0	66	0.6864967	91.4921579	38.0906539	61.9093461
S3.0067	S3.0	67	0.7224970	90.8056612	37.3748412	62.6251588
S3.0068	S3.0	68	0.7589350	90.0831642	36.6705899	63.3294101
S3.0069	S3.0	69	0.7957239	89.3242292	35.9779110	64.0220890
S3.0070	S3.0	70	0.8327675	88.5285053	35.2967982	64.7032018
S3.0071	S3.0	71	0.8699665	87.6957378	34.6272311	65.3727689
S3.0072	S3.0	72	0.9072227	86.8257713	33.9691749	66.0308251
S3.0073	S3.0	73	0.9444323	85.9185486	33.3225799	66.6774201
S3.0074	S3.0	74	0.9814892	84.9741163	32.6873822	67.3126178
S3.0075	S3.0	75	1.0182848	83.9926271	32.0635042	67.9364958
S3.0076	S3.0	76	1.0547151	82.9743423	31.4508619	68.5491381
S3.0077	S3.0	77	1.0906649	81.9196272	30.8493540	69.1506460
S3.0078	S3.0	78	1.1260299	80.8289623	30.2588730	69.7411270
S3.0079	S3.0	79	1.1606951	79.7029324	29.6793010	70.3206990
S3.0080	S3.0	80	1.1945553	78.5422373	29.1105120	70.8894880
S3.0081	S3.0	81	1.2275000	77.3476820	28.5523710	71.4476290
S3.0082	S3.0	82	1.2594261	76.1201820	28.0047390	71.9952610
S3.0083	S3.0	83	1.2902269	74.8607559	27.4674680	72.5325320
S3.0084	S3.0	84	1.3198013	73.5705290	26.9404030	73.0595970
S3.0085	S3.0	85	1.3480530	72.2507277	26.4233890	73.5766110
S3.0086	S3.0	86	1.3748846	70.9026747	25.9162619	74.0837381
S3.0087	S3.0	87	1.4002104	69.5277901	25.4188600	74.5811400
S3.0088	S3.0	88	1.4239378	68.1275797	24.9310110	75.0689890
S3.0089	S3.0	89	1.4459896	66.7036419	24.4525449	75.5474551

S:\Depreciation\Iowacurves.xls

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0090	S3.0	90	1.4662924	65.2576523	23.9832900	76.0167100
S3.0091	S3.0	91	1.4847698	63.7913599	23.5230711	76.4769289
S3.0092	S3.0	92	1.5013619	62.3065901	23.0717111	76.9282889
S3.0093	S3.0	93	1.5160102	60.8052282	22.6290381	77.3709619
S3.0094	S3.0	94	1.5286632	59.2892180	22.1948710	77.8051290
S3.0095	S3.0	95	1.5392757	57.7605548	21.7690370	78.2309630
S3.0096	S3.0	96	1.5478119	56.2212791	21.3513601	78.6486399
S3.0097	S3.0	97	1.5542393	54.6734672	20.9416640	79.0583360
S3.0098	S3.0	98	1.5585370	53.1192279	20.5397761	79.4602239
S3.0099	S3.0	99	1.5606909	51.5606909	20.1455231	79.8544769
S3.0100	S3.0	100	1.5606909	50.0000000	19.7587349	80.2412651
S3.0101	S3.0	101	1.5585370	48.4393091	19.3792419	80.6207581
S3.0102	S3.0	102	1.5542393	46.8807721	19.0068769	80.9931231
S3.0103	S3.0	103	1.5478119	45.3265328	18.6414750	81.3585250
S3.0104	S3.0	104	1.5392757	43.7787209	18.2828729	81.7171271
S3.0105	S3.0	105	1.5286631	42.2394452	17.9309101	82.0690899
S3.0106	S3.0	106	1.5160103	40.7107821	17.5854299	82.4145701
S3.0107	S3.0	107	1.5013619	39.1947718	17.2462750	82.7537250
S3.0108	S3.0	108	1.4847698	37.6934099	16.9132950	83.0867050
S3.0109	S3.0	109	1.4662919	36.2086401	16.5863359	83.4136641
S3.0110	S3.0	110	1.4459901	34.7423482	16.2652550	83.7347450
S3.0111	S3.0	111	1.4239380	33.2963581	15.9499090	84.0500910
S3.0112	S3.0	112	1.4002102	31.8724201	15.6401500	84.3598500
S3.0113	S3.0	113	1.3748848	30.4722099	15.3358450	84.6641550
S3.0114	S3.0	114	1.3480530	29.0973251	15.0368600	84.9631400
S3.0115	S3.0	115	1.3198011	27.7492721	14.7430561	85.2569439
S3.0116	S3.0	116	1.2902269	26.4294710	14.4543080	85.5456920
S3.0117	S3.0	117	1.2594261	25.1392441	14.1704850	85.8295150
S3.0118	S3.0	118	1.2275000	23.8798180	13.8914710	86.1085290
S3.0119	S3.0	119	1.1945550	22.6523180	13.6171401	86.3828599
S3.0120	S3.0	120	1.1606951	21.4577630	13.3473700	86.6526300
S3.0121	S3.0	121	1.1260300	20.2970679	13.0820510	86.9179490
S3.0122	S3.0	122	1.0906648	19.1710379	12.8210681	87.1789319
S3.0123	S3.0	123	1.0547152	18.0803731	12.5643160	87.4356840
S3.0124	S3.0	124	1.0182848	17.0256579	12.3116800	87.6883200
S3.0125	S3.0	125	0.9814891	16.0073731	12.0630680	87.9369320
S3.0126	S3.0	126	0.9444329	15.0258840	11.8183630	88.1816370
S3.0127	S3.0	127	0.9072221	14.0814511	11.5774790	88.4225210
S3.0128	S3.0	128	0.8699670	13.1742290	11.3403140	88.6596860
S3.0129	S3.0	129	0.8327670	12.3042620	11.1067700	88.8932300
S3.0130	S3.0	130	0.7957240	11.4714950	10.8767610	89.1232390
S3.0131	S3.0	131	0.7589350	10.6757710	10.6501980	89.3498020
S3.0132	S3.0	132	0.7224970	9.9168360	10.4270001	89.5729999
S3.0133	S3.0	133	0.6864971	9.1943390	10.2070690	89.7929310
S3.0134	S3.0	134	0.6510199	8.5078420	9.9903250	90.0096750

database

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0135	S3.0	135	0.6161500	7.8568220	9.7766990	90.2233011
S3.0136	S3.0	136	0.5819630	7.2406720	9.5661089	90.4338911
S3.0137	S3.0	137	0.5485290	6.6587090	9.3584729	90.6415271
S3.0138	S3.0	138	0.5159150	6.1101800	9.1537210	90.8462790
S3.0139	S3.0	139	0.4841820	5.5942650	8.9517880	91.0482121
S3.0140	S3.0	140	0.4533830	5.1100830	8.7525981	91.2474020
S3.0141	S3.0	141	0.4235690	4.6567000	8.5560840	91.4439160
S3.0142	S3.0	142	0.3947830	4.2331310	8.3621800	91.6378200
S3.0143	S3.0	143	0.3670610	3.8383480	8.1708230	91.8291770
S3.0144	S3.0	144	0.3404340	3.4712870	7.9819520	92.0180480
S3.0145	S3.0	145	0.3149290	3.1308530	7.7955040	92.2044960
S3.0146	S3.0	146	0.2905630	2.8159240	7.6114220	92.3885780
S3.0147	S3.0	147	0.2673510	2.5253610	7.4296480	92.5703520
S3.0148	S3.0	148	0.2453010	2.2580100	7.2501270	92.7498730
S3.0149	S3.0	149	0.2244150	2.0127090	7.0728060	92.9271940
S3.0150	S3.0	150	0.2046880	1.7882940	6.8976320	93.1023680
S3.0151	S3.0	151	0.1861140	1.5836060	6.7245530	93.2754470
S3.0152	S3.0	152	0.1686790	1.3974920	6.5535220	93.4464780
S3.0153	S3.0	153	0.1523660	1.2288130	6.3844900	93.6155100
S3.0154	S3.0	154	0.1371510	1.0764470	6.2174110	93.7825890
S3.0155	S3.0	155	0.1230100	0.9392960	6.0522380	93.9477620
S3.0156	S3.0	156	0.1099110	0.8162860	5.8889290	94.1110710
S3.0157	S3.0	157	0.0978230	0.7063750	5.7274410	94.2725590
S3.0158	S3.0	158	0.0867070	0.6085520	5.5677320	94.4322680
S3.0159	S3.0	159	0.0765270	0.5218450	5.4097620	94.5902380
S3.0160	S3.0	160	0.0672400	0.4453180	5.2534920	94.7465080
S3.0161	S3.0	161	0.0588040	0.3780780	5.0988860	94.9011140
S3.0162	S3.0	162	0.0511730	0.3192740	4.9459060	95.0540940
S3.0163	S3.0	163	0.0443050	0.2681010	4.7945200	95.2054800
S3.0164	S3.0	164	0.0381480	0.2237960	4.6446910	95.3553090
S3.0165	S3.0	165	0.0326620	0.1856480	4.4963870	95.5036130
S3.0166	S3.0	166	0.0277940	0.1529860	4.3495800	95.6504200
S3.0167	S3.0	167	0.0235020	0.1251920	4.2042330	95.7957670
S3.0168	S3.0	168	0.0197375	0.1016900	4.0603190	95.9396810
S3.0169	S3.0	169	0.0164582	0.0819525	3.9178100	96.0821900
S3.0170	S3.0	170	0.0136189	0.0654943	3.7766790	96.2233210
S3.0171	S3.0	171	0.0111777	0.0518754	3.6369070	96.3630930
S3.0172	S3.0	172	0.0090944	0.0406977	3.4984640	96.5015360
S3.0173	S3.0	173	0.0073307	0.0316033	3.3613300	96.6386700
S3.0174	S3.0	174	0.0058498	0.0242726	3.2254840	96.7745160
S3.0175	S3.0	175	0.0046178	0.0184228	3.0909090	96.9090910
S3.0176	S3.0	176	0.0036030	0.0138050	2.9575850	97.0424150
S3.0177	S3.0	177	0.0027755	0.0102020	2.8255000	97.1745000
S3.0178	S3.0	178	0.0021089	0.0074265	2.6946400	97.3053600
S3.0179	S3.0	179	0.0015783	0.0053176	2.5649990	97.4350010

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0180	S3.0	180	0.0011617	0.0037393	2.4365660	97.5634340
S3.0181	S3.0	181	0.0008396	0.0025776	2.3093440	97.6906560
S3.0182	S3.0	182	0.0005946	0.0017381	2.1833410	97.8166590
S3.0183	S3.0	183	0.0004116	0.0011435	2.0585660	97.9414340
S3.0184	S3.0	184	0.0002778	0.0007319	1.9350420	98.0649580
S3.0185	S3.0	185	0.0001821	0.0004541	1.8128020	98.1871980
S3.0186	S3.0	186	0.0001156	0.0002720	1.6918880	98.3081120
S3.0187	S3.0	187	0.0000706	0.0001564	1.5723710	98.4276290
S3.0188	S3.0	188	0.0000413	0.0000858	1.4543500	98.5456500
S3.0189	S3.0	189	0.0000229	0.0000446	1.3379620	98.6620380
S3.0190	S3.0	190	0.0000119	0.0000217	1.2234140	98.7765860
S3.0191	S3.0	191	0.0000058	0.0000097	1.1110030	98.8889970
S3.0192	S3.0	192	0.0000025	0.0000040	1.0011880	98.9988120
S3.0193	S3.0	193	0.0000010	0.0000014	0.8946340	99.1053660
S3.0194	S3.0	194	0.0000003	0.0000004	0.7925260	99.2074740
S3.0195	S3.0	195	0.0000001	0.0000001	0.6968450	99.3031550
S3.0196	S3.0	196	0.0000000	0.0000000	0.6112800	99.3887200
S3.0197	S3.0	197	0.0000000	0.0000000	0.5431250	99.4568750
S3.0198	S3.0	198	0.0000000	0.0000000	0.5056800	99.4943200
S3.0199	S3.0	199	0.0000000	0.0000000	0.5000000	99.5000000
S3.0200	S3.0	200	0.0000000	0.0000000	0.0000000	100.0000000

VOLUME 11

PENNSYLVANIA-AMERICAN WATER COMPANY

2020 GENERAL BASE RATE CASE
R-2020-3019369 (WATER)
R-2020-3019371 (WASTEWATER)

EXHIBIT NO. 11-C, 11-D
DEPRECIATION STUDY

WATER OPERATIONS EXCLUDING STEELTON
AS OF DECEMBER 31, 2021, 2022

EXHIBIT NO. 11-C - DEPRECIATION STUDY

WATER OPERATIONS EXCLUDING STEELTON

AS OF DECEMBER 31, 2021

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WATER OPERATIONS EXCLUDING STEELTON

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WATER PLANT

AS OF DECEMBER 31, 2021

Prepared by:

Gannett Fleming

Excellence Delivered ***As Promised***

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WATER OPERATIONS EXCLUDING STEELTON

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2021

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

Gannett Fleming

Excellence Delivered ***As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates and Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to water plant as of December 31, 2021. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Water Plant as of December 31, 2020". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

John J. Spanos

JOHN J. SPANOS
President

JJS:mle

066548.100

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WATER OPERATIONS EXCLUDING STEELTON

DEPRECIATION STUDY

RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages 3 through 13 summarize the results of the depreciation study as of December 31, 2021. Table 1 sets forth the development of the net original cost by account as of December 31, 2021. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2021, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2021. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2021. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2017 through 2021.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-8. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2017 through 2021, beginning on pages III-2 through III-6.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

	DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2021		CUSTOMER ADVANCES		CONTRIBUTIONS IN AID OF CONSTRUCTION		EXCLUDED PROPERTY		NET ORIGINAL COST AS OF DECMEBER 31, 2021
	(1)	(2)	-	(3)	-	(4)	-	(5)	=	(6)
INTANGIBLE PLANT										
301.00	ORGANIZATION	766,405.12								766,405.12
302.00	FRANCHISES AND CONSENTS	2,404,599.20								2,404,599.20
303.00	MISCELLANEOUS INTANGIBLE PLANT	1,453,020.77								1,453,020.77
	TOTAL INTANGIBLE PLANT	**4,624,025.09**		**0.00**		**0.00**		**0.00**		**4,624,025.09**
NONDEPRECIABLE PLANT										
303.20	POWER AND PUMPING LAND	4,315,318.23								4,315,318.23
303.30	PURIFICATION LAND	15,412.25								15,412.25
303.40	TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	3,724,070.21				215,927.20				3,508,143.01
303.50	DISTRIBUTION RESERVOIRS AND STANDPIPE LAND	2,001,789.51								2,001,789.51
303.51	TRANSMISSION AND DISTRIBUTION - LAND	1,762,423.06								1,762,423.06
303.52	TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	5,288,947.81								5,288,947.81
303.61	OFFICE LAND	5,260,832.58								5,260,832.58
	TOTAL NONDEPRECIABLE PLANT	**22,368,793.65**		**0.00**		**215,927.20**		**0.00**		**22,152,866.45**
DEPRECIABLE PLANT										
303.14	WATER RIGHTS - HIBERNIA	1,942,822.51								1,942,822.51
303.35	WASTE HANDLING AND TREATMENT LAND	155,025.17								155,025.17
303.99	COMPREHENSIVE PLANNING STUDIES	9,710,061.35								9,710,061.35
304.15	OTHER WATER SOURCE STRUCTURES	44,248,707.65								44,248,707.65
304.20	POWER AND PUMPING STRUCTURES	121,818,280.30				1,289,607.60		41,310.00		120,487,362.70
304.30	PURIFICATION BUILDINGS	289,983,841.49				169,605.01		230,375.00		289,583,861.48
304.36	WASTE HANDLING AND TREATMENT STRUCTURES	11,668,886.83								11,668,886.83
304.38	WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	65,958.42								65,958.42
304.39	PURIFICATION BUILDINGS - TANK PAINTING	119,362.95								119,362.95
304.61	OFFICE BUILDINGS	44,005,306.44				60,000.00		12,834.00		43,932,472.44
304.62	STORES, SHOP AND GARAGE BUILDINGS	55,111,889.86				576.00				55,111,313.86
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	4,132,815.74								4,132,815.74
305.00	COLLECTING AND IMPOUNDING RESERVOIRS	135,672,663.72				3,575.00				135,669,088.72
306.00	LAKE, RIVER AND OTHER INTAKES	18,257,338.08				41,551.00				18,215,787.08
307.00	WELLS AND SPRINGS	10,694,793.00				71,610.27				10,623,182.73
310.00	POWER GENERATION EQUIPMENT	19,954,396.50				118,273.00		26,561.00		19,809,562.50
311.20	PUMPING EQUIPMENT - ELECTRIC PUMPING EQUIPMENT	25,829,705.97				1,954,569.05		116,716.00		23,758,420.92
311.50	PUMPING EQUIPMENT - OTHER	2,389,457.83								2,389,457.83
311.52	PUMPING EQUIPMENT - SOURCE OF SUPPLY	14,212,241.21								14,212,241.21
311.53	PUMPING EQUIPMENT - WATER TREATMENT	46,865,937.19								46,865,937.19
311.54	PUMPING EQUIPMENT - TRANSMISSION AND DISTRIBUTION	6,787,710.63								6,787,710.63
320.10	PURIFICATION SYSTEM - LARGE STRUCTURES	278,019,906.37				27,162.27		627,852.00		277,364,892.10
320.18	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	103,245.73								103,245.73
320.19	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	3,522,542.77								3,522,542.77
320.20	PURIFICATION SYSTEM - CHEMICAL TREATMENT	84,745,690.42				42,367.00				84,703,323.42
320.29	PURIFICATION SYSTEM - CHEM. TREATMENT PAINT	8,167.87								8,167.87
320.30	GRANULAR ACTIVATED CARBON	8,601,165.21								8,601,165.21
320.37	WASTE HANDLING AND TREATMENT - EQUIPMENT	14,969,798.93								14,969,798.93
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	117,655,216.74				2,905,114.51				114,750,102.23

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

	DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2021	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2021
	(1)	(2)	(3)	(4)	(5)	(6)
330.10	ELEVATED TANKS AND STANDPIPES	14,100,477.17				14,100,477.17
330.20	GROUND LEVEL FACILITIES	18,929,725.89				18,929,725.89
330.30	BELOW GRADE FACILITIES	818,672.56				818,672.56
330.40	CLEARWELL	12,806,094.73				12,806,094.73
330.58	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	2,211,111.35				2,211,111.35
330.59	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	34,570,376.62				34,570,376.62
331.00	MAINS AND ACCESSORIES	3,064,685,925.46	63,514,361.86	200,747,868.78	502,366.00	2,799,921,328.82
333.00	SERVICES	649,550,756.85	5,782,801.70	11,851,183.63		631,916,771.52
334.00	METERS AND METER INSTALLATIONS	207,962,808.09		1,707,754.19		206,255,053.90
335.00	FIRE HYDRANTS	127,625,861.91	71,848.81	4,768,402.44		122,785,610.66
340.10	OFFICE FURNITURE AND EQUIPMENT - FURNITURE	7,475,864.68				7,475,864.68
340.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTERS AND PERIPHERAL EQUIPMENT	24,511,435.46				24,511,435.46
340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE	45,994,769.94				45,994,769.94
340.31	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE - BUSINESS TRANSFORMATION	62,990,459.09				62,990,459.09
340.50	OFFICE FURNITURE AND EQUIPMENT - OTHER OFFICE EQUIPMENT	7,644.67		354.00		7,290.67
341.00	TRANSPORTATION EQUIPMENT - NOT CLASSIFIED	349.00				349.00
341.10	TRANSPORTATION EQUIPMENT - LIGHT DUTY TRUCKS	28,802,310.96				28,802,310.96
341.20	TRANSPORTATION EQUIPMENT - EQUIPMENT	23,205,811.64				23,205,811.64
341.30	TRANSPORTATION EQUIPMENT - AUTOS	3,874,730.49				3,874,730.49
341.40	TRANSPORTATION EQUIPMENT - OTHER	10,439,225.68				10,439,225.68
342.00	STORES EQUIPMENT	448,033.65				448,033.65
343.00	TOOLS AND WORK EQUIPMENT	32,097,198.82		61.00		32,097,137.82
344.00	LABORATORY EQUIPMENT	2,606,821.35				2,606,821.35
345.00	POWER OPERATED EQUIPMENT	2,405,805.64				2,405,805.64
346.00	COMMUNICATOIN EQUIPMENT - EQUIPMENT	3,459,420.00				3,459,420.00
346.10	COMMUNICATOIN EQUIPMENT - NON-TELEPHONE	6,770,729.39				6,770,729.39
346.19	COMMUNICATOIN EQUIPMENT - REMOTE CONTROL AND INSTRUMENTATION	2,790,901.75				2,790,901.75
346.20	COMMUNICATOIN EQUIPMENT - TELEPHONE	188,390.60				188,390.60
347.00	MISCELLANEOUS EQUIPMENT	11,608,430.21		4,085.00		11,604,345.21
348.00	OTHER TANGIBLE EQUIPMENT	793,796.73				793,796.73
	TOTAL DEPRECIABLE PLANT	**5,774,986,877.26**	**69,369,012.37**	**225,763,719.75**	**1,558,014.00**	**5,478,296,131.14**
	TOTAL UTILITY PLANT IN SERVICE	**5,801,979,696.00**	**69,369,012.37**	**225,979,646.95**	**1,558,014.00**	**5,505,073,022.68**

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

	DEPRECIABLE GROUP	SURVIVOR CURVE		NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)
INTANGIBLE PLANT									
301.00	ORGANIZATION	NONDEPR.		766,405.12					
302.00	FRANCHISES AND CONSENTS	NONDEPR.		2,404,599.20					
303.00	MISCELLANEOUS INTANGIBLE PLANT	NONDEPR.		1,453,020.77					
	TOTAL INTANGIBLE PLANT			**4,624,025.09**					
NONDEPRECIABLE PLANT									
303.20	POWER AND PUMPING LAND	NONDEPR.		4,315,318.23					
303.30	PURIFICATION LAND	NONDEPR.		15,412.25					
303.40	TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	NONDEPR.		3,508,143.01					
303.50	DISTRIBUTION RESERVOIRS AND STANDPIPES LAND	NONDEPR.		2,001,789.51					
303.51	TRANSMISSION AND DISTRIBUTION - LAND	NONDEPR.		1,762,423.06					
303.52	TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	NONDEPR.		5,288,947.81					
303.61	OFFICE LAND	NONDEPR.		5,260,832.58					
	TOTAL NONDEPRECIABLE PLANT			**22,152,866.45**					
DEPRECIABLE PLANT									
303.14	WATER RIGHTS - HIBERNIA	25-SQ		1,942,822.51	1,942,823	0	0	-	-
303.35	WASTE HANDLING AND TREATMENT LAND	100-R2	*	155,025.17	150,407	4,618	4,618	2.98	1.0
303.99	COMPREHENSIVE PLANNING STUDIES	5-SQ		9,710,061.35	7,494,569	2,215,492	751,049	7.73	2.9
304.15	OTHER WATER SOURCE STRUCTURES	60-R1.5		44,248,707.65	8,283,077	35,965,631	970,351	2.19	37.1
304.20	POWER AND PUMING STRUCTURES								
	LARGE STRUCTURES	70-R2.5	*	69,567,251.92	9,280,689	60,286,563	1,787,063	2.57	33.7
	OTHER STRUCTURES	55-R3		50,920,110.78	9,270,044	41,650,067	1,298,796	2.55	32.1
	TOTAL ACCOUNT 304.2			120,487,362.70	18,550,733	101,936,630	3,085,859	2.56	33.0
304.30	PURIFICATION BUILDINGS								
	LARGE STRUCTURES	60-R2.5	*	248,267,049.87	78,898,085	169,368,965	5,619,625	2.26	30.1
	OTHER STRUCTURES	60-R3		41,316,811.61	12,978,751	28,338,061	730,378	1.77	38.8
	TOTAL ACCOUNT 304.3			289,583,861.48	91,876,836	197,707,026	6,350,003	2.19	31.1
304.36	WASTE HANDLING AND TREATMENT STRUCTURES	60-S2.5	*	11,668,886.83	6,315,009	5,353,878	309,282	2.65	17.3
304.38	WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	10-SQ		65,958.42	57,775	8,183	2,338	3.54	3.5
304.39	PURIFICATION BUILDINGS - TANK PAINTING	10-SQ		119,362.95	107,705	11,658	3,331	2.79	3.5
304.61	OFFICE BUILDINGS								
	LARGE STRUCTURES	50-R1.5	*	31,024,747.89	5,523,525	25,501,224	970,539	3.13	26.3
	OTHER STRUCTURES	50-R3		12,907,724.55	3,482,369	9,425,356	295,081	2.29	31.9
	TOTAL ACCOUNT 304.61			43,932,472.44	9,005,894	34,926,580	1,265,620	2.88	27.6

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

	DEPRECIABLE GROUP	SURVIVOR CURVE		NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)
304.62	STORES, SHOP AND GARAGE BUILDINGS								
	LARGE STRUCTURES	55-S0.5	*	48,973,108.70	11,428,586	37,544,523	1,323,667	2.70	28.4
	OTHER STRUCTURES	45-R3		6,138,205.16	3,952,462	2,185,743	82,351	1.34	26.5
	TOTAL ACCOUNT 304.62			55,111,313.86	15,381,048	39,730,266	1,406,018	2.55	28.3
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	35-S0.5		4,132,815.74	2,198,599	1,934,217	86,804	2.10	22.3
	TOTAL ACCOUNT 304			569,350,742.07	151,776,676	417,574,069	13,479,606	2.37	31.0
305.00	COLLECTING AND IMPOUNDING RESERVOIRS								
	LARGE RESERVOIRS	125-R2	*	128,044,777.60	18,481,585	109,563,192	1,809,335	1.41	60.6
	OTHER RESERVOIRS	75-R3		7,624,311.12	2,729,327	4,894,984	215,147	2.82	22.8
	TOTAL ACCOUNT 305			135,669,088.72	21,210,912	114,458,176	2,024,482	1.49	56.5
306.00	LAKE, RIVER AND OTHER INTAKES								
	LARGE INTAKES	55-S1	*	14,029,064.70	4,448,923	9,580,142	336,818	2.40	28.4
	OTHER INTAKES	50-S0.5		4,186,722.38	1,524,770	2,661,952	110,315	2.63	24.1
	TOTAL ACCOUNT 306			18,215,787.08	5,973,693	12,242,094	447,133	2.45	27.4
307.00	WELLS AND SPRINGS	55-S0		10,623,182.73	3,343,133	7,280,050	246,499	2.32	29.5
310.00	POWER GENERATION EQUIPMENT	43-S1		19,809,562.50	5,157,558	14,652,004	541,291	2.73	27.1
	PUMPING EQUIPMENT								
311.20	ELECTRIC	42-S0		23,758,420.92	4,483,984	19,274,437	769,961	3.24	25.0
311.50	OTHER	42-S0		2,389,457.83	559,308	1,830,150	74,670	3.12	24.5
311.52	SOURCE OF SUPPLY	42-S0		14,212,241.21	2,191,102	12,021,139	477,564	3.36	25.2
311.53	WATER TREATMENT	42-S0		46,865,937.19	18,885,547	27,980,390	1,331,345	2.84	21.0
311.54	TRANSMISSION AND DISTRIBUTION	42-S0		6,787,710.63	2,125,816	4,661,895	197,458	2.91	23.6
	TOTAL ACCOUNT 311			94,013,767.78	28,245,757	65,768,011	2,850,998	3.03	23.1
	PURIFICATION SYSTEM								
320.10	LARGE STRUCTURES								
	LARGE STRUCTURES	60-S0.5	*	255,675,564.06	73,452,571	182,222,993	7,332,914	2.87	24.9
	OTHER STRUCTURES	55-R3		21,689,328.04	3,259,936	18,429,392	451,433	2.08	40.8
	TOTAL ACCOUNT 320.1			277,364,892.10	76,712,507	200,652,385	7,784,347	2.81	25.8
320.18	LARGE STRUCTURES PAINT	10-SQ		103,245.73	103,246	0	0	-	-
320.19	LARGE STRUCTURES PAINT	10-SQ		3,522,542.77	3,513,661	8,882	2,537	0.07	3.5
320.20	CHEMICAL TREATMENT	36-R0.5		84,703,323.42	32,767,124	51,936,199	2,724,881	3.22	19.1
320.29	CHEMICAL TREATMENT PAINT	FULLY ACCRUED		8,167.87	8,168	0	0	-	-
320.30	GRANULAR ACTIVATED CARBON	7-L2		8,601,165.21	6,864,049	1,737,116	577,102	6.71	3.0
320.37	WASTE HANDLING AND TREATMENT - EQUIPMENT	30-R3		14,969,798.93	10,336,097	4,633,702	255,895	1.71	18.1
	TOTAL ACCOUNT 320			389,273,136.03	130,304,852	258,968,284	11,344,762	2.91	22.8

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

	DEPRECIABLE GROUP	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	65-S0.5	114,750,102.23	37,604,850	77,145,252	2,040,752	1.78	37.8
330.10	ELEVATED TANKS AND STANDPIPES	65-S0.5	14,100,477.17	1,396,944	12,703,533	302,304	2.14	42.0
330.20	GROUND LEVEL FACILITIES	65-S0.5	18,929,725.89	1,478,786	17,450,940	411,613	2.17	42.4
330.30	BELOW GRADE FACILITIES	65-S0.5	818,672.56	134,722	683,951	16,514	2.02	41.4
330.40	CLEARWELL	65-S0.5	12,806,094.73	2,241,101	10,564,994	256,016	2.00	41.3
330.58	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	2,211,111.35	2,124,822	86,289	24,654	1.12	3.5
330.59	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	34,570,376.62	22,983,972	11,586,405	2,403,686	6.95	4.8
	TOTAL ACCOUNT 330		198,186,560.55	67,965,197	130,221,364	5,455,539	2.75	23.9
331.00	MAINS AND ACCESSORIES	110-R2	2,799,921,328.82	327,632,397	2,472,288,932	33,559,667	1.20	73.7
333.00	SERVICES	70-R2.5	631,916,771.52	153,302,150	478,614,622	10,466,170	1.66	45.7
334.00	METERS AND METER INSTALLATIONS	21-L1	206,255,053.90	85,792,067	120,462,987	10,770,670	5.22	11.2
335.00	FIRE HYDRANTS	75-R2.5	122,785,610.66	21,454,868	101,330,743	1,959,904	1.60	51.7
340.00	OFFICE FURNITURE AND EQUIPMENT							
	FURNITURE	20-SQ	7,475,864.68	1,347,541	6,128,324	386,093	5.16	15.9
	COMPUTERS AND PERIPHERAL EQUIPMENT	5-SQ	24,511,435.46	5,940,437	18,570,998	5,214,238	21.27	3.6
	COMPUTER SOFTWARE	5-SQ	45,994,769.94	21,924,860	24,069,910	8,444,686	18.36	2.9
	COMPUTER SOFTWARE - BUSINESS TRANSFORMATION	10-SQ	62,990,459.09	52,072,253	10,918,206	8,099,503	12.86	1.3
	OTHER OFFICE EQUIPMENT	10-SQ	7,290.67	1,744	5,547	740	10.15	7.5
	TOTAL ACCOUNT 340		140,979,819.84	81,286,835	59,692,985	22,145,260	15.71	2.7
341.00	TRANSPORATION EQUIPMENT							
	NOT CLASSIFIED	7-L3	349.00	349	0	0	-	-
	LIGHT DUTY TRUCKS	7-L3	28,802,310.96	17,540,380	11,261,931	2,978,791	10.34	3.8
	EQUIPMENT	7-L3	23,205,811.64	13,407,514	9,798,298	2,686,946	11.58	3.6
	AUTOS	7-L3	3,874,730.49	2,379,267	1,495,463	347,892	8.98	4.3
	OTHER	7-L3	10,439,225.68	5,565,457	4,873,769	1,261,319	12.08	3.9
	TOTAL ACCOUNT 341		66,322,427.77	38,892,967	27,429,461	7,274,948	10.97	3.8
342.00	STORES EQUIPMENT	20-SQ	448,033.65	97,064	350,970	26,762	5.97	13.1
343.00	TOOLS AND WORK EQUIPMENT	20-SQ	32,097,137.82	7,101,221	24,995,917	1,893,452	5.90	13.2
344.00	LABORATORY EQUIPMENT	20-L0.5	2,606,821.35	1,152,886	1,453,935	152,376	5.85	9.5
345.00	POWER OPERATED EQUIPMENT	19-S0.5	2,405,805.64	1,655,168	750,638	98,401	4.09	7.6
346.00	COMUNICATION EQUIPMENT							
	EQUIPMENT	15-SQ	3,459,420.00	476,123	2,983,297	226,521	6.55	13.2
	NON-TELEPHONE	15-SQ	6,770,729.39	1,148,483	5,622,246	452,423	6.68	12.4
	REMOTE CONTROL AND INSTRUMENTATION	10-SQ	2,790,901.75	1,618,957	1,171,945	256,489	9.19	4.6
	TELEPHONE	10-SQ	188,390.60	121,502	66,889	17,853	9.48	3.7
	TOTAL ACCOUNT 346		13,209,441.74	3,365,065	9,844,377	953,286	7.22	10.3

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

	DEPRECIABLE GROUP	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
347.00	MISCELLANEOUS EQUIPMENT	25-SQ	11,604,345.21	2,121,851	9,482,494	803,731	6.93	11.8
348.00	OTHER TANGIBLE EQUIPMENT	25-SQ	793,796.73	433,683	360,114	31,961	4.03	11.3
	TOTAL DEPRECIABLE PLANT		**5,478,296,131.14**	**1,147,853,799**	**4,330,442,337**	**127,282,565**	**2.32**	
	AMORTIZATION OF NET SALVAGE					**18,150,547**		
	TOTAL UTILITY PLANT IN SERVICE		**5,505,073,022.68**	**1,147,853,799**	**4,330,442,337**	**145,433,112**		

* Life Span Procedure was used. Curve shown is Interim Survivor Curve.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

Account	BOOK RESERVE BALANCE AS OF 12/31/2020	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(8)
303.14	1,942,823		0										1,942,823
303.35	141,137		9,270										150,407
303.99	6,351,030		1,204,524		60,985								7,494,569
304.15	7,899,182		1,048,120		390,721		285,226		11,722				8,283,077
304.20	16,349,816		2,976,022		674,004		121,321		20,220				18,550,733
304.30	88,458,520		6,134,387		2,425,064		315,258		24,251				91,876,836
304.36	5,992,818		322,191										6,315,009
304.38	55,437		2,338										57,775
304.39	104,374		3,331										107,705
304.61	7,849,697		1,216,908		55,698		5,013						9,005,894
304.62	13,999,901		1,402,722		23,709		3,319		5,453				15,381,048
304.63	2,130,689		84,121		14,220		2,844		853				2,198,599
305.00	18,943,519		2,267,393										21,210,912
306.00	5,508,799		464,894										5,973,693
307.00	3,088,287		259,686		4,840								3,343,133
310.00	4,866,142		517,290		179,265		46,609						5,157,558
311.20	3,771,805		1,021,432		264,319		44,934						4,483,984
311.50	481,982		77,326										559,308
311.52	1,945,471		445,658		170,963		29,064						2,191,102
311.53	18,177,110		1,212,264		430,621		73,206						18,885,547
311.54	1,921,773		204,043										2,125,816
320.10	76,059,881		6,303,140		5,000,455		650,059						76,712,507
320.18	103,246		0										103,246
320.19	3,511,123		2,538										3,513,661
320.20	30,554,763		2,678,001		412,071		53,569						32,767,124
320.29	8,168		0										8,168
320.30	5,943,551		920,498										6,864,049
320.37	10,000,742		335,355										10,336,097
330.00	35,124,500		3,507,933		642,239		385,344						37,604,850
330.10	1,540,919		243,438		242,133		145,280						1,396,944
330.20	1,787,324		345,686		408,890		245,334						1,478,786
330.30	117,944		16,778										134,722

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

Account	BOOK RESERVE BALANCE AS OF 12/31/2020	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(8)
330.40	1,980,284		260,817										2,241,101
330.58	2,100,168		24,654										2,124,822
330.59	20,863,908		2,449,147		329,083								22,983,972
331.00	302,790,062		45,553,978		10,787,314		9,924,329						327,632,397
333.00	144,244,631		11,456,303		1,654,334		744,450						153,302,150
334.00	74,409,987		12,124,741		663,090		86,202		6,631				85,792,067
335.00	20,020,642		2,278,774		620,991		223,557						21,454,868
340.10	971,125		376,416										1,347,541
340.20	7,343,075		4,532,973		5,935,611								5,940,437
340.30	17,701,446		10,353,824		6,130,410								21,924,860
340.31	41,731,922		10,340,331										52,072,253
340.40	1,004		740										1,744
341.00	349		0										349
341.10	14,623,372		3,145,900		238,429		4,769		14,306				17,540,380
341.20	11,191,984		2,532,823		330,514		6,610		19,831				13,407,514
341.30	2,126,610		307,184		56,799		1,136		3,408				2,379,267
341.40	4,729,807		1,013,708		185,477		3,710		11,129				5,565,457
342.00	68,032		29,032										97,064
343.00	5,263,107		1,838,114										7,101,221
344.00	978,341		174,545										1,152,886
345.00	1,541,860		113,308										1,655,168
346.00	407,979		212,013		143,869								476,123
346.10	797,215		351,268										1,148,483
346.19	1,556,269		283,385		220,697								1,618,957
346.20	608,614		39,337		526,449								121,502
347.00	1,328,449		848,537		55,135								2,121,851
348.00	401,551		32,132										433,683
TOTAL	**1,054,514,266**		**145,901,271**		**39,278,399**		**13,401,143**		**117,804**		**0**		**1,147,853,799**

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT (1)	NET ORIGINALCOST AS OF 12/31/2020 (2)	NET ORIGINALCOST AS OF 12/31/2021 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
303.14	1,942,822.51	1,942,822.51	0.00	(487)	487	0
303.35	155,025.17	155,025.17	5.98	9,270		9,270
303.99	8,413,546.31	9,710,061.35	13.83	1,203,911	613	1,204,524
304.15	40,603,116.18	44,248,707.65	2.14	906,382	141,738	1,048,120
304.20	110,059,548.11	120,487,362.70	2.56	2,930,331	45,691	2,976,022
304.30	266,957,000.42	289,583,861.48	2.15	5,850,996	283,391	6,134,387
304.36	11,668,886.83	11,668,886.83	2.69	313,454	8,737	322,191
304.38	65,958.42	65,958.42	3.54	2,338		2,338
304.39	119,362.95	119,362.95	2.79	3,331		3,331
304.61	43,412,787.39	43,932,472.44	2.97	1,298,373	(81,465)	1,216,908
304.62	54,890,101.85	55,111,313.86	2.58	1,418,230	(15,508)	1,402,722
304.63	4,000,139.23	4,132,815.74	2.06	83,448	673	84,121
305.00	135,669,088.72	135,669,088.72	1.47	1,996,136	271,257	2,267,393
306.00	18,215,787.08	18,215,787.08	2.51	456,818	8,076	464,894
307.00	9,898,022.81	10,623,182.73	2.34	235,405	24,281	259,686
310.00	18,136,948.65	19,809,562.50	2.71	495,783	21,507	517,290
311.20	21,292,217.56	23,758,420.92	3.28	725,917	295,515	1,021,432
311.50	2,389,457.83	2,389,457.83	3.24	77,326		77,326
311.52	12,617,080.84	14,212,241.21	3.35	445,658		445,658
311.53	42,848,060.38	46,865,937.19	2.80	1,212,264		1,212,264
311.54	6,787,710.63	6,787,710.63	3.01	204,043		204,043
320.10	225,716,944.63	277,364,892.10	2.44	5,905,753	397,387	6,303,140
320.18	103,245.73	103,245.73	0.00	0		0
320.19	3,522,542.77	3,522,542.77	0.07	2,538		2,538
320.20	80,858,527.99	84,703,323.42	3.26	2,678,001		2,678,001
320.29	8,167.87	8,167.87	0.00	0		0
320.30	8,601,165.21	8,601,165.21	9.68	832,282	88,216	920,498
320.37	14,969,798.93	14,969,798.93	1.81	271,256	64,099	335,355
330.00	106,929,232.38	114,750,102.23	1.80	1,970,376	1,537,557	3,507,933
330.10	10,930,110.10	14,100,477.17	2.06	243,438		243,438
330.20	15,192,040.47	18,929,725.89	2.09	345,686		345,686
330.30	818,672.56	818,672.56	2.05	16,778		16,778

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT	NET ORIGINALCOST AS OF 12/31/2020	NET ORIGINALCOST AS OF 12/31/2021	ACCRUAL RATE	AVERAGE ACCRUALS	AMORTIZATION OF NET SALVAGE	PROJECTED DEPRECIATION ACCRUALS
(1)	(2)	(3)	(4)	(5)*	(6)	(7)=(5)+(6)
330.40	12,806,094.73	12,806,094.73	2.04	260,817		260,817
330.58	2,211,111.35	2,211,111.35	1.12	24,654		24,654
330.59	29,919,635.20	34,570,376.62	7.86	2,449,147		2,449,147
331.00	2,675,857,649.51	2,799,921,328.82	1.21	32,758,152	12,795,826	45,553,978
333.00	604,695,086.73	631,916,771.52	1.66	10,245,705	1,210,598	11,456,303
334.00	196,137,446.01	206,255,053.90	5.51	11,091,554	1,033,187	12,124,741
335.00	115,429,813.60	122,785,610.66	1.60	1,894,800	383,974	2,278,774
340.10	5,339,828.99	7,475,864.68	5.31	340,079	36,337	376,416
340.20	19,364,761.45	24,511,435.46	21.66	4,532,973		4,532,973
340.30	42,907,597.73	45,994,769.94	21.25	10,353,824		10,353,824
340.31	62,990,459.09	62,990,459.09	16.42	10,340,331		10,340,331
340.50	7,290.67	7,290.67	10.15	740		740
341.00	349.00	349.00	0.00	0		0
341.10	26,577,670.21	28,802,310.96	11.00	3,063,529	82,371	3,145,900
341.20	20,121,976.99	23,205,811.64	11.93	2,532,823		2,532,823
341.30	3,344,774.93	3,874,730.49	8.40	307,184		307,184
341.40	8,708,645.51	10,439,225.68	11.54	1,013,708		1,013,708
342.00	448,033.65	448,033.65	6.04	27,046	1,986	29,032
343.00	29,078,050.31	32,097,137.82	5.99	1,829,220	8,894	1,838,114
344.00	2,606,821.35	2,606,821.35	6.50	169,353	5,192	174,545
345.00	2,405,805.64	2,405,805.64	4.67	112,304	1,004	113,308
346.00	2,539,854.88	3,459,420.00	6.19	188,316	23,697	212,013
346.10	4,581,387.28	6,770,729.39	6.62	351,268		351,268
346.19	3,011,599.18	2,790,901.75	9.44	283,385		283,385
346.20	714,839.66	188,390.60	5.68	39,337		39,337
347.00	11,260,526.60	11,604,345.21	7.24	827,967	20,570	848,537
348.00	793,796.73	793,796.73	4.03	31,976	156	32,132
TOTAL	**5,161,654,025.49**	**5,478,296,131.14**		**127,205,227**	**18,696,044**	**145,901,271**

* Annual Accrual developed based on monthly averages.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

	2017		2018		2019		PROJECTED 2020		PROJECTED 2021			
ACCOUNT	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	NET SALVAGE	SALVAGE ACCRUAL
(1)	(2)	- (3) +	(4)	- (5) +	(6)	- (7) +	(8)	- (9) +	(10)	- (11) =	(12)*	(13)=(12)/5
303.14				2,459.00							(2,459.00)	(492)
303.20		2,459.00		(2,459.00)							0.00	0
303.99						3,062.78					(3,062.78)	(613)
304.15		68,090.61	1,582.30	180,812.86	27,560.73	387,837.75	1,329.00	32,333.00	11,722.00	285,226.00	(912,106.19)	(182,421)
304.20		38,831.70	13,853.00	39,684.28	31,830.10	147,277.43	4,421.00	26,528.00	20,220.00	121,321.00	(303,318.31)	(60,664)
304.30		36,848.82	14,493.83	1,091,908.37	66,260.61	148,391.82	2,461.00	31,989.00	24,251.00	315,258.00	(1,516,929.57)	(303,386)
304.36				43,138.55		546.00					(43,684.55)	(8,737)
304.61		71,906.49			1,864,549.94	1,304,656.48		9,724.00		5,013.00	473,249.97	94,650
304.62		10,015.90	729.22	6,567.28	192,159.79	54,481.40	9,550.00	5,813.00	5,453.00	3,319.00	127,695.43	25,539
304.63		2,051.43		3,068.49	25,209.50	8,030.27	1,607.00	5,357.00	853.00	2,844.00	6,318.31	1,264
305.00		5,620.91				1,266,548.34					(1,272,169.25)	(254,434)
306.00		16,836.83				17,003.99					(33,840.82)	(6,768)
307.00		618.42		1,391.04		118,341.25					(120,350.71)	(24,070)
310.00		2,903.30		11,634.03		42,462.99		4,760.00		46,609.00	(108,369.32)	(21,674)
311.00	880.05	72,179.55		191,399.40	13,739.63	1,092,490.18		33,004.00		147,204.00	(1,521,657.45)	(304,331)
320.00	3.44	115,579.33	512.50	619,426.48	229.83	924,729.91		225,992.00		703,628.00	(2,588,609.95)	(517,722)
320.30		1,622.00				423,003.27					(424,625.27)	(84,925)
320.37		7,150.00		29,963.00	23.00	90,807.00					(127,897.00)	(25,579)
330.00		645,827.57	162.78	2,820,506.21		2,686,207.69		165,227.00		775,958.00	(7,093,563.69)	(1,418,713)
331.00	107,310.05	7,290,999.85	25,598.82	11,746,655.36	13,124.96	21,381,790.52		12,141,393.00		9,924,329.00	(62,339,133.90)	(12,467,827)
333.00	2,339.38	1,164,164.90	(214.01)	1,300,493.65	9,792.38	1,897,743.49		714,893.00		744,450.00	(5,809,827.29)	(1,161,965)
334.00	98,185.09	960,401.22	115,629.32	913,142.15	93,029.52	2,727,391.38	8,480.00	110,240.00	6,631.00	86,202.00	(4,475,421.82)	(895,084)
335.00	248.83	227,143.79	2,311.49	309,652.61	4,063.03	908,970.88		204,109.00		223,557.00	(1,866,809.93)	(373,362)
340.00		6,364.74	8,779.58	30,861.14	10,745.87	122,477.36					(140,177.79)	(28,036)
341.00		1,430.78	205,163.90	148,702.02	261,902.01	761,298.60	50,503.00	16,835.00	48,674.00	16,225.00	(378,248.49)	(75,650)
342.00				245.80		9,682.12					(9,927.92)	(1,986)
343.00		8,345.37		7,924.48	48,579.17	57,836.24					(25,526.92)	(5,105)
344.00		1,202.11		4,823.99		14,919.23					(20,945.33)	(4,189)
345.00		98.42		860.13	12,288.18	15,876.66					(4,547.03)	(909)
346.00		646.24	132.58	30,002.27		87,193.50					(117,709.43)	(23,542)
347.00		12,915.37		20,027.66	8,306.50	73,665.55					(98,302.08)	(19,660)
348.00				(29.21)		808.08					(778.87)	(156)
TOTAL	208,966.84	10,772,254.65	388,735.31	19,552,862.04	2,683,394.75	36,775,532.16	78,351.00	13,728,197.00	117,804.00	13,401,143.00	(90,752,736.95)	(18,150,547)

ımmation of Columns (2) through (11).

Exhibit No. 11-L
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2022

Prepared by:

Gannett Fleming

Excellence Delivered ***As Promised***

Exhibit No. 11-L
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2022

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

Gannett Fleming

Excellence Delivered ***As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2022. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

John J. Spanos

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC
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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

SUMMARY OF RESULTS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2022. Table 1 sets forth the development of the net original cost by account as of December 31, 2022. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2022, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2022. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2022. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2018 through 2022.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-7. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2018 through 2022, beginning on pages III-2 through III-4.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2022

DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2022	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2022
(1)	(2)	(3)	(4)	(5)	(6)
DEPRECIABLE PLANT					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	1,372,711.27				1,372,711.27
354.30 STRUCTURES AND IMPROVEMENTS - SPP	17,988,212.97		2,734,528.70		15,253,684.27
354.40 STRUCTURES AND IMPROVEMENTS - TDP	55,042,602.26		1,853,012.73		53,189,589.53
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	3,153,826.87				3,153,826.87
355.00 POWER GENERATION EQUIPMENT	4,180,589.06		144,517.16		4,036,071.90
360.10 COLLECTION SEWERS - FORCE MAINS	50,575,251.29	157,753.14	11,251,126.61		39,166,371.54
361.10 COLLECTION SEWERS - GRAVITY MAINS	120,095,333.20	133,423.53	13,295,536.11		106,666,373.56
361.20 MANHOLES	17,657,269.96		4,387,312.76		13,269,957.20
363.00 SERVICES	24,656,795.81	70,197.45	3,753,803.46		20,832,794.90
364.00 FLOW MEASURING DEVICES	371,151.65		14,726.81		356,424.84
365.00 FLOW MEASURING INSTALLATIONS	14,938.00				14,938.00
370.00 RECEIVING WELLS	143,419.77				143,419.77
371.00 PUMPING EQUIPMENT	13,374,027.20		66,626.22		13,307,400.98
380.00 TREATMENT EQUIPMENT	67,907,787.21		2,200,080.47		65,707,706.74
381.00 PLANT SEWERS	6,212,540.44		30,192.33		6,182,348.11
382.00 OUTFALL SEWER LINES	604,388.91				604,388.91
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	582,205.16				582,205.16
389.60 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	1,707,500.00				1,707,500.00
390.00 OFFICE FURNITURE AND EQUIPMENT	168,706.08				168,706.08
391.00 TRANSPORTATION EQUIPMENT	3,034,840.81				3,034,840.81
392.00 STORES EQUIPMENT	107,351.44				107,351.44
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	1,505,097.79				1,505,097.79
394.00 LABORATORY EQUIPMENT	729,305.71				729,305.71
395.00 POWER OPERATED EQUIPMENT	917,645.43		10,000.00		907,645.43
396.00 COMMUNICATION EQUIPMENT	1,744,213.66				1,744,213.66
397.00 MISCELLANEOUS EQUIPMENT	661,593.59		29,000.00		632,593.59
398.00 OTHER TANGIBLE PLANT	14,231.50				14,231.50
TOTAL DEPRECIABLE PLANT	**394,523,537.04**	**361,374.12**	**39,770,463.36**	**0.00**	**354,391,699.56**
NONDEPRECIABLE PLANT					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,717,020.09		125,000.00		1,592,020.09
TOTAL NONDEPRECIABLE PLANT	**3,117,203.14**	**0.00**	**125,000.00**	**0.00**	**2,992,203.14**
TOTAL UTILITY PLANT	**397,640,740.18**	**361,374.12**	**39,895,463.36**	**0.00**	**357,383,902.70**

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2022

	DEPRECIABLE GROUP	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2022	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
	DEPRECIABLE PLANT							
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	1,372,711.27	97,323	1,275,388	38,320	2.79	33.3
354.30	STRUCTURES AND IMPROVEMENTS - SPP	55-S0	15,253,684.27	5,449,788	9,803,896	300,957	1.97	32.6
354.40	STRUCTURES AND IMPROVEMENTS - TDP	55-S0	53,189,589.53	13,447,768	39,741,821	1,254,377	2.36	31.7
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	3,153,826.87	1,687,584	1,466,242	63,310	2.01	23.2
355.00	POWER GENERATION EQUIPMENT	35-S0.5	4,036,071.90	2,807,978	1,228,094	63,471	1.57	19.3
360.10	COLLECTION SEWERS - FORCE MAINS	75-R3	39,166,371.54	3,526,886	35,639,485	678,631	1.73	52.5
361.10	COLLECTION SEWERS - GRAVITY MAINS	80-R2.5	106,666,373.56	13,972,547	92,693,827	1,691,826	1.59	54.8
361.20	MANHOLES	50-S2.5	13,269,957.20	2,036,681	11,233,276	348,535	2.63	32.2
363.00	SERVICES	47-R3	20,832,794.90	4,780,861	16,051,934	531,451	2.55	30.2
364.00	FLOW MEASURING DEVICES	15-L2.5	356,424.84	170,648	185,777	36,426	10.22	5.1
365.00	FLOW MEASURING INSTALLATIONS	25-S2	14,938.00	2,513	12,425	1,154	7.73	10.8
370.00	RECEIVING WELLS	50-R3	143,419.77	34,923	108,497	3,219	2.24	33.7
371.00	PUMPING EQUIPMENT	30-S0.5	13,307,400.98	2,331,656	10,975,745	602,548	4.53	18.2
380.00	TREATMENT EQUIPMENT	35-S1.5	65,707,706.74	18,480,154	47,227,552	2,355,132	3.58	20.1
381.00	PLANT SEWERS	50-R3	6,182,348.11	1,591,522	4,590,827	140,418	2.27	32.7
382.00	OUTFALL SEWER LINES	50-R3	604,388.91	244,690	359,698	12,727	2.11	28.3
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	20-S2.5	582,205.16	231,563	350,642	31,102	5.34	11.3
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	5-SQ	1,707,500.00	457,989	1,249,511	357,607	20.94	3.5
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	168,706.08	37,591	131,115	13,043	7.73	10.1
391.00	TRANSPORTATION EQUIPMENT	14-L4	3,034,840.81	718,213	2,316,627	235,403	7.76	9.8
392.00	STORES EQUIPMENT	25-SQ	107,351.44	33,748	73,604	4,273	3.98	17.2
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	1,505,097.79	299,112	1,205,986	78,428	5.21	15.4
394.00	LABORATORY EQUIPMENT	15-SQ	729,305.71	275,058	454,248	43,556	5.97	10.4
395.00	POWER OPERATED EQUIPMENT	22-R2	907,645.43	389,500	518,146	39,364	4.34	13.2
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,744,213.66	998,400	745,814	107,830	6.18	6.9
397.00	MISCELLANEOUS EQUIPMENT	15-SQ	632,593.59	205,091	427,503	33,372	5.28	12.8
398.00	OTHER TANGIBLE PLANT	25-SQ	14,231.50	2,461	11,771	547	3.84	21.5
	TOTAL DEPRECIABLE PLANT		**354,391,699.56**	**74,312,248**	**280,079,451**	**9,067,027**	**2.56**	**30.9**
	NONDEPRECIABLE PLANT							
352.10	FRANCHISES		221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION		1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP		85,560.07					
353.40	LAND AND LAND RIGHTS - TDP		1,592,020.09					
	TOTAL NONDEPRECIABLE PLANT		**2,992,203.14**					
	AMORTIZATION OF NET SALVAGE					**897,190**		
	TOTAL UTILITY PLANT		**357,383,902.70**	**74,312,248**	**280,079,451**	**9,964,217**		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2022, OF BOOK RESERVE AS OF DECEMBER 31, 2021

ACCOUNT	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021		PROJECTED DEPRECIATION ACCRUALS		PROJECTED RETIREMENTS		PROJECTED COST OF REMOVAL		PROJECTED SALVAGE		ACQUISITIONS		PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2022
(1)	(2)	+	(3)	-	(4)	-	(5)	+	(6)	+	(7)	=	(8)
354.20	49,219		63,092		1,401		13,587						97,323
354.30	5,144,884		325,647		18,356		2,386						5,449,788
354.40	12,232,042		1,272,456		56,167		562						13,447,768
354.70	1,613,097		88,037		3,218		10,331						1,687,584
355.00	2,739,150		68,828										2,807,978
360.10	2,894,314		759,287		62,421		64,294						3,526,886
361.10	12,678,919		1,999,555		480,223		225,705						13,972,547
361.20	1,778,786		417,490		22,832		137,220		457				2,036,681
363.00	4,422,337		604,967		122,608		123,835						4,780,861
364.00	127,900		42,748										170,648
365.00	1,315		1,198										2,513
370.00	31,682		3,241										34,923
371.00	1,690,669		652,922		9,472		2,463						2,331,656
380.00	16,084,154		2,433,983		33,913		4,070						18,480,154
381.00	1,449,946		141,576										1,591,522
382.00	231,500		13,190										244,690
389.10	199,257		32,306										231,563
389.60	106,944		351,045										457,989
390.00	24,328		13,263										37,591
391.00	533,900		218,897		29,813		4,770						718,213
392.00	29,475		4,273										33,748
393.00	227,278		71,834										299,112
394.00	233,029		42,973		859		86						275,058
395.00	361,954		35,148		7,453		149						389,500
396.00	887,391		113,680		2,450		221						998,400
397.00	176,585		28,506										205,090
398.00	1,652		809										2,461
TOTAL	**65,951,706**		**9,800,949**		**851,187**		**589,676**		**457**		**0**		**74,312,248**

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

ACCOUNT	NET ORIGINAL COST AS OF 12/31/2021	NET ORIGINAL COST AS OF 12/31/2022	ACCRUAL RATE	DEPRECIATION ACCRUALS	AMORTIZATION OF NET SALVAGE	PROJECTED DEPRECIATION ACCRUALS
(1)	(2)	(3)	(4)	(5)*	(6)	(7)=(5)+(6)
354.20	1,350,155.77	1,372,711.27	2.84	38,574	24,518	63,092
354.30	14,958,113.65	15,253,684.27	2.01	302,788	22,859	325,647
354.40	52,285,165.25	53,189,589.53	2.41	1,267,886	4,570	1,272,456
354.70	3,102,005.24	3,153,826.87	2.01	62,724	25,313	88,037
355.00	4,036,071.90	4,036,071.90	1.63	65,788	3,040	68,828
360.10	38,161,242.14	39,166,371.54	1.75	673,706	85,581	759,287
361.10	99,296,640.99	106,666,373.56	1.60	1,633,382	366,173	1,999,555
361.20	12,812,001.40	13,269,957.20	2.63	342,146	75,344	417,490
363.00	18,663,546.11	20,832,794.90	2.55	500,757	104,210	604,967
364.00	356,424.84	356,424.84	11.98	42,700	48	42,748
365.00	14,938.00	14,938.00	8.02	1,198		1,198
370.00	143,419.77	143,419.77	2.26	3,241		3,241
371.00	13,154,873.34	13,307,400.98	4.71	619,894	33,028	652,922
380.00	64,581,620.12	65,707,706.74	3.67	2,371,867	62,116	2,433,983
381.00	6,182,348.11	6,182,348.11	2.29	141,576		141,576
382.00	604,388.91	604,388.91	2.13	12,873	317	13,190
389.10	582,205.16	582,205.16	5.48	31,905	401	32,306
389.60	1,655,000.00	1,707,500.00	20.97	351,045		351,045
390.00	168,706.08	168,706.08	7.76	13,092	171	13,263
391.00	2,554,774.18	3,034,840.81	7.83	213,813	5,084	218,897
392.00	107,351.44	107,351.44	3.98	4,273		4,273
393.00	1,199,614.28	1,505,097.79	5.29	71,382	452	71,834
394.00	628,336.51	729,305.71	6.14	41,616	1,357	42,973
395.00	787,628.77	907,645.43	4.17	34,678	470	35,148
396.00	1,669,700.06	1,744,213.66	6.33	107,931	5,749	113,680
397.00	496,492.71	632,593.59	4.84	26,200	2,306	28,506
398.00	14,231.50	14,231.50	3.93	559	250	809
TOTAL	**339,566,996.23**	**354,391,699.56**		**8,977,592**	**823,357**	**9,800,949**

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

	2018		2019		PROJECTED 2020		PROJECTED 2021		PROJECTED 2022			
ACCOUNT	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	GROSS SALVAGE	COST OF REMOVAL	NET SALVAGE	SALVAGE ACCRUAL
(1)	(2)	- (3) +	(4)	- (5) +	(6)	- (7) +	(8)	- (9) +	(10)	- (11) =	(12)*	(13)=(12)/5
354.20		2,367		27,531		29,175		63,211		13,587	(135,871)	(27,174)
354.30		87		61,135		5,124		11,101		2,386	(79,833)	(15,967)
354.40		(18,539)		1,986		1,206		2,613		562	12,172	2,434
354.70		36,100		18,075		22,182		48,060		10,331	(134,747)	(26,949)
355.00		4,539		9,730							(14,269)	(2,854)
360.10		85,350		245,202		41,420		54,123		64,294	(490,390)	(98,078)
361.10		345,943		1,038,559		170,104		222,272		225,705	(2,002,583)	(400,517)
361.20				109,567	440	132,346	452	135,702	457	137,220	(513,485)	(102,697)
363.00		48,455		150,830		130,023		122,465		123,835	(575,608)	(115,122)
364.00				240							(240)	(48)
371.00		(18,885)		141,438		37,534				2,463	(162,550)	(32,510)
380.00		12,304		214,843		11,073		65,469		4,070	(307,759)	(61,552)
382.00		981									(981)	(196)
389.10		(3,678)		5,682							(2,003)	(401)
390.00		94									(94)	(19)
391.00		9,708		6,029		5,013		4,669		4,770	(30,189)	(6,038)
393.00				1,931							(1,931)	(386)
394.00		118		5,593		1,012				86	(6,809)	(1,362)
395.00				2,048		157		146		149	(2,500)	(500)
396.00				1,898		21,079		293		221	(23,491)	(4,698)
397.00		6,019		5,513							(11,532)	(2,306)
398.00				1,251							(1,251)	(250)
TOTAL	**0**	**510,964**	**0**	**2,049,082**	**440**	**607,449**	**452**	**730,122**	**457**	**589,676**	**(4,485,944)**	**(897,190)**

* Column (12) equals the summation of Columns (2) through (11).

Pennsylvania American Water Company

Valley Township, Chester County, Pennsylvania

Water System
Appraisal Work Papers
As of December 17, 2019

PAWC General Rate Cases Depreciation Studies
Water and Wastewater 2017

AUS Consultants
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8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
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J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

VOLUME 11

PENNSYLVANIA-AMERICAN WATER COMPANY

2017 GENERAL BASE RATE CASE

R-2017-2595853

EXHIBIT NO. 11-C - DEPRECIATION STUDY

WATER OPERATIONS AS OF

DECEMBER 31, 2018

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

HERSHEY, PENNSYLVANIA

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2018

Prepared by:



Gannett Fleming

Excellence Delivered As Promised

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Hershey, Pennsylvania

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2018

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

Gannett Fleming

*Excellence Delivered **As Promised***

April 21, 2017

Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033

Attention: Mr. John R. Cox
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to water plant as of December 31, 2018. The results of our study at December 31, 2013 are presented in our report titled "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Water Plant as of December 31, 2017". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

John J. Spanos

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

DEPRECIATION STUDY

RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages 3 through 10 summarize the results of the depreciation study as of December 31, 2018. Table 1 sets forth the development of the net original cost by account as of December 31, 2018. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2018, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2018. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2018. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2014 through 2018.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2014 through 2018, beginning on pages III-2 through III-5.

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

	DEPRCIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2018 (2)	- CUSTOMER ADVANCES (3)	- CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	- EXCLUDED PROPERTY (5)	= NET ORIGINAL COST AS OF DECMEBER 31, 2018 (6)
INTANGIBLE PLANT						
301.00	ORGANIZATION	774,398.06				774,398.06
302.00	FRANCHISES AND CONSENTS	2,404,599.20				2,404,599.20
303.00	MISCELLANEOUS INTANGIBLE PLANT	15,569.16				15,569.16
	TOTAL INTANGIBLE PLANT	**3,194,566.42**	**0.00**	**0.00**	**0.00**	**3,194,566.42**
NONDEPRECIABLE PLANT						
303.20	POWER AND PUMPING LAND	3,576,428.03				3,576,428.03
303.30	PURIFICATION LAND	15,412.25				15,412.25
303.40	TRANS. AND DISTR. LAND AND RIGHTS OF WAY	4,578,480.03		215,927.20		4,362,552.83
303.50	DISTRIBUTION RESERVOIRS AND STANDPIPE LAND	2,389,882.77				2,389,882.77
303.51	TRANSMISSION AND DISTRIBUTION - LAND	1,762,423.06				1,762,423.06
303.52	TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	5,288,947.81				5,288,947.81
303.61	OFFICE LAND	3,918,022.99				3,918,022.99
	TOTAL NONDEPRECIABLE PLANT	**21,529,596.94**	**0.00**	**215,927.20**	**0.00**	**21,313,669.74**
DEPRECIABLE PLANT						
303.14	WATER RIGHTS - HIBERNIA	1,942,822.51				1,942,822.51
303.35	WASTE HANDLING AND TREATMENT LAND	155,025.17				155,025.17
303.99	COMPREHENSIVE PLANNING STUDIES	9,920,726.11				9,920,726.11
304.15	OTHER WATER SOURCE STRUCTURES	34,442,969.90				34,442,969.90
304.20	POWER AND PUMPING STRUCTURES	107,320,207.30		1,289,607.60	41,310.00	105,989,289.70
304.30	PURIFICATION BUILDINGS	274,724,337.33		169,605.01	230,375.00	274,324,357.32
304.36	WASTE HANDLING AND TREATMENT STRUCTURE	11,733,221.74				11,733,221.74
304.38	WASTE HANDLING & TREATMENT STRUCTURE PAINTING	65,958.42				65,958.42
304.39	PURIFICATION BUILDINGS - TANK PAINTING	134,806.79				134,806.79
304.61	OFFICE BUILDINGS	40,019,986.62		60,000.00	12,834.00	39,947,152.62
304.62	STORES, SHOP AND GARAGE BUILDINGS	55,222,287.14		576.00		55,221,711.14
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	4,933,374.39				4,933,374.39
305.00	COLLECTING AND IMPOUNDING RESERVOIRS	134,357,766.90		3,575.00		134,354,191.90
306.00	LAKE, RIVER AND OTHER INTAKES	20,005,870.35		41,551.00		19,964,319.35
307.00	WELLS AND SPRINGS	11,241,893.43		71,610.27		11,170,283.16
310.00	OTHER POWER PRODUCTION EQUIPMENT	18,152,052.81		118,273.00	26,561.00	18,007,218.81
311.20	ELECTRIC PUMPING EQUIPMENT	21,282,287.19		1,954,569.05	116,716.00	19,211,002.14
311.50	OTHER	1,634,152.00				1,634,152.00
311.52	SOURCE OF SUPPLY	8,509,617.14				8,509,617.14
311.53	WATER TREATMENT	47,732,222.90				47,732,222.90
311.54	TRANSMISSION AND DISTRIBUTION	8,693,988.14				8,693,988.14

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

	DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2018	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2018
	(1)	(2)	(3)	(4)	(5)	(6)
320.10	PURIFICATION SYSTEM - LARGE STRUCTURES	203,017,958.78		27,162.27	627,852.00	202,362,944.51
320.18	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	103,245.73				103,245.73
320.19	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	3,770,702.48				3,770,702.48
320.20	PURIFICATION SYSTEM - CHEMICAL TREATMENT	83,453,443.30		42,367.00		83,411,076.30
320.29	PURIFICATION SYSTEM - CHEM. TREATMENT PAINT	8,167.87				8,167.87
320.30	GRANULAR ACTIVATED CARBON	8,693,834.87				8,693,834.87
320.37	WASTE HANDLING & TREATMENT - EQUIPMENT	16,075,077.23				16,075,077.23
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	101,037,841.09		2,905,114.51		98,132,726.58
330.10	ELEVATED TANKS AND STANDPIPES	17,636,401.77				17,636,401.77
330.20	GROUND LEVEL FACILITIES	22,144,158.48				22,144,158.48
330.30	BELOW GRADE FACILITIES	818,744.06				818,744.06
330.40	CLEARWELL	14,179,641.14				14,179,641.14
330.58	DISTR. RESERVOIRS AND STANDPIPES - PAINTING	2,375,281.44				2,375,281.44
330.59	DISTR. RESERVOIRS AND STANDPIPES - PAINTING	36,418,707.41				36,418,707.41
331.00	MAINS AND ACCESSORIES	2,676,234,771.44	81,810,993.14	178,351,203.78	502,366.00	2,415,570,208.52
333.00	SERVICES	578,601,077.41	1,753,981.88	9,002,408.46		567,844,687.07
334.00	METERS	203,441,435.13	305,369.35	1,653,080.42		201,482,985.36
335.00	FIRE HYDRANTS	107,503,420.52		4,275,268.25		103,228,152.27
340.10	OFFICE FURNITURE	19,179,166.67				19,179,166.67
340.20	COMPUTERS AND PERIPHERAL EQUIPMENT	18,458,835.00		354.00		18,458,481.00
340.30	COMPUTER SOFTWARE - 5 YEAR	36,694,738.71				36,694,738.71
340.31	COMPUTER SOFTWARE - 10 YEAR	62,548,894.51				62,548,894.51
341.00	NOT CLASSIFIED	16,002.14				16,002.14
341.10	LIGHT DUTY TRUCKS	18,911,227.50				18,911,227.50
341.20	EQUIPMENT	14,430,392.96				14,430,392.96
341.30	AUTOS	4,883,332.68				4,883,332.68
341.40	OTHER	5,895,986.16				5,895,986.16
342.00	STORES EQUIPMENT	400,072.70				400,072.70
343.00	TOOLS AND WORK EQUIPMENT	26,095,362.58		61.00		26,095,301.58
344.00	LABORATORY EQUIPMENT	3,323,028.15				3,323,028.15
345.00	POWER OPERATED EQUIPMENT	2,571,357.61				2,571,357.61
346.00	EQUIPMENT	2,585,584.40				2,585,584.40
346.10	NON-TELEPHONE	918,926.11				918,926.11
346.19	REMOTE CONTROL AND INSTRUMENTATION	6,460,864.86				6,460,864.86
346.20	TELEPHONE	831,870.50				831,870.50
347.00	MISCELLANEOUS EQUIPMENT	17,035,118.69		4,085.00		17,031,033.69
348.00	OTHER TANGIBLE EQUIPMENT	735,410.29				735,410.29
	TOTAL DEPRECIABLE PLANT	**5,129,715,656.65**	**83,870,344.37**	**199,970,471.62**	**1,558,014.00**	**4,844,316,826.66**
	TOTAL WATER PLANT IN SERVICE	**5,154,439,820.01**	**83,870,344.37**	**200,186,398.82**	**1,558,014.00**	**4,868,825,062.82**

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)		NET ORIGINAL COST AS OF DECEMBER 31, 2018 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCRUAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
INTANGIBLE PLANT									
301.00	ORGANIZATION	NONDEPR.		774,398.06					
302.00	FRANCHISES AND CONSENTS	NONDEPR.		2,404,599.20					
303.00	MISCELLANEOUS INTANGIBLE PLANT	NONDEPR.		15,569.16					
	TOTAL INTANGIBLE PLANT			**3,194,566.42**					
NONDEPRECIABLE PLANT									
303.20	POWER AND PUMPING LAND	NONDEPR.		3,576,428.03					
303.30	PURIFICATION LAND	NONDEPR.		15,412.25					
303.40	TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	NONDEPR.		4,362,552.83					
303.50	DISTRIBUTION RESERVOIRS AND STANDPIPES LAND	NONDEPR.		2,389,882.77					
303.51	TRANSMISSION AND DISTRIBUTION - LAND	NONDEPR.		1,762,423.06					
303.52	TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	NONDEPR.		5,288,947.81					
303.61	OFFICE LAND	NONDEPR		3,918,022.99					
	TOTAL NONDEPRECIABLE PLANT			**21,313,669.74**					
DEPRECIABLE PLANT									
303.14	WATER RIGHTS - HIBERNIA	25-SQ		1,942,822.51	1,763,172	179,651	119,767	6.16	1.5
303.35	WASTE HANDLING AND TREATMENT LAND	100-R2	*	155,025.17	155,025	0	0	-	-
303.99	COMPREHENSIVE PLANNING STUDIES	5-SQ		9,920,726.11	6,716,899	3,203,827	1,251,002	12.61	2.6
304.15	OTHER WATER SOURCE STRUCTURES	60-R3		34,442,969.90	7,573,274	26,869,696	624,862	1.81	43.0
304.20	POWER AND PUMING STRUCTURES								
	LARGE STRUCTURES	70-R2.5	*	64,671,856.38	7,894,471	56,777,385	1,515,893	2.34	37.5
	OTHER STRUCTURES	55-R3		41,317,433.32	9,408,085	31,909,348	1,013,195	2.45	31.5
	TOTAL ACCOUNT 304.2			105,989,289.70	17,302,556	88,686,733	2,529,088	2.39	35.1
304.30	PURIFICATION BUILDINGS								
	LARGE STRUCTURES	60-R2.5	*	221,661,139.93	71,976,298	149,684,840	4,739,588	2.14	31.6
	OTHER STRUCTURES	55-R3		52,663,217.39	17,798,107	34,865,110	965,350	1.83	36.1
	TOTAL ACCOUNT 304.3			274,324,357.32	89,774,405	184,549,950	5,704,938	2.08	32.3
304.36	WASTE HANDLING AND TREATMENT STRUCTURES	60-R2.5	*	11,733,221.74	5,437,209	6,296,013	317,692	2.71	19.8
304.38	WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	10-SQ		65,958.42	53,322	12,636	1,944	2.95	6.5
304.39	PURIFICATION BUILDINGS - TANK PAINTING	10-SQ		134,806.79	118,388	16,419	2,526	1.87	6.5
304.61	OFFICE BUILDINGS								
	LARGE STRUCTURES	50-R1.5	*	33,043,308.29	2,227,308	30,816,000	1,588,814	4.81	19.4
	OTHER OTHER STRUCTURES	45-R3		6,903,844.33	1,760,585	5,143,259	252,918	3.66	20.3
	TOTAL ACCOUNT 304.61			39,947,152.62	3,987,893	35,959,259	1,841,732	4.61	19.5
304.62	STORES, SHOP AND GARAGE BUILDINGS								
	LARGE STRUCTURES	75-R2	*	46,534,320.53	5,760,761	40,773,559	1,216,856	2.61	33.5
	OTHER OTHER STRUCTURES	45-R3		8,687,390.61	2,972,865	5,714,526	197,657	2.28	28.9
	TOTAL ACCOUNT 304.62			55,221,711.14	8,733,626	46,488,085	1,414,513	2.56	32.9

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

	DEPRECIABLE GROUP	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	50-R2.5	4,933,374.39	688,106	4,245,268	118,887	2.41	35.7
	TOTAL ACCOUNT 304		526,792,842.02	133,668,779	393,124,059	12,556,182	2.38	31.3
305.00	COLLECTING AND IMPOUNDING RESERVOIRS							
	LARGE RESERVOIRS	125-R2.5 *	127,795,628.42	12,895,938	114,899,691	1,855,378	1.45	61.9
	OTHER RESERVOIRS	75-R3	6,558,563.48	1,994,257	4,564,306	211,899	3.23	21.5
	TOTAL ACCOUNT 305		134,354,191.90	14,890,195	119,463,997	2,067,277	1.54	57.8
306.00	LAKE, RIVER AND OTHER INTAKES							
	LARGE RESERVOIRS	65-S1.5 *	14,550,654.76	4,232,561	10,318,093	281,627	1.94	36.6
	OTHER RESERVOIRS	60-S1	5,413,664.59	1,518,542	3,895,123	114,947	2.12	33.9
	TOTAL ACCOUNT 306		19,964,319.35	5,751,103	14,213,216	396,574	1.99	35.8
307.00	WELLS AND SPRINGS	55-R2	11,170,283.16	4,335,267	6,835,016	214,258	1.92	31.9
310.00	POWER GENERATION EQUIPMENT	40-R2.5	18,007,218.81	4,138,472	13,868,747	507,133	2.82	27.3
	PUMPING EQUIPMENT							
311.20	ELECTRIC PUMPING EQUIPMENT	50-R1	19,211,002.14	2,866,110	16,344,892	607,142	3.16	26.9
311.50	OTHER	50-R1	1,634,152.00	442,578	1,191,574	38,877	2.38	30.6
311.52	SOURCE OF SUPPLY	50-R1	8,509,617.14	1,490,308	7,019,309	230,180	2.70	30.5
311.53	WATER TREATMENT	50-R1	47,732,222.90	24,443,262	23,288,961	844,364	1.77	27.6
311.54	TRANSMISSION AND DISTRIBUTION	50-R1	8,693,988.14	2,116,640	6,577,348	228,997	2.63	28.7
	TOTAL ACCOUNT 311		85,780,982.32	31,358,898	54,422,084	1,949,560	2.27	27.9
	PURIFICATION SYSTEM							
320.10	PURIFICATION STRUCTURES							
	LARGE STRUCTURES	70-R2 *	184,705,299.72	68,522,614	116,182,684	3,855,315	2.09	30.1
	OTHER OTHER STRUCTURES	55-R3	17,657,644.79	6,494,933	11,162,712	326,633	1.85	34.2
	TOTAL ACCOUNT 320.1		202,362,944.51	75,017,547	127,345,396	4,181,948	2.07	30.5
320.18	LARGE STRUCTURES PAINT	10-SQ	103,245.73	103,246	0	0	-	-
320.19	LARGE STRUCTURES PAINT	10-SQ	3,770,702.48	3,730,550	40,152	6,177	0.16	6.5
320.20	CHEMICAL TREATMENT	32-R1	83,411,076.30	32,322,374	51,088,702	3,007,085	3.61	17.0
320.29	CHEMICAL TREATMENT PAINT	FULLY ACCRUED	8,167.87	8,168	0	0	-	-
	TOTAL PURIFICATION SYSTEM		289,656,136.89	111,181,885	178,474,250	7,195,210	2.48	24.8
320.30	GRANULAR ACTIVATED CARBON	6-L2.5	8,693,834.87	7,889,111	804,724	352,710	4.06	2.3
320.37	WASTE HANDLING AND TREATMENT - EQUIPMENT	25-R3	16,075,077.23	10,177,065	5,898,012	454,920	2.83	13.0
	TOTAL ACCOUNT 320		314,425,048.99	129,248,061	185,176,986	8,002,840	2.55	23.1
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	65-R2	98,132,726.58	33,734,636	64,398,091	1,654,187	1.69	38.9
330.10	ELEVATED TANKS AND STANDPIPES	65-R2	17,636,401.77	1,995,151	15,641,251	351,909	2.00	44.4
330.20	GROUND LEVEL FACILITIES	65-R2	22,144,158.48	1,625,703	20,518,455	461,150	2.08	44.5
330.30	BELOW GRADE FACILITIES	65-R2	818,744.06	94,397	724,347	15,980	1.95	45.3
330.40	CLEARWELL	65-R2	14,179,641.14	1,641,824	12,537,817	277,639	1.96	45.2
330.58	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	2,375,281.44	2,271,962	103,319	15,895	0.67	6.5
330.59	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	36,418,707.41	23,152,151	13,266,556	1,947,156	5.35	6.8
	TOTAL ACCOUNT 330		191,705,660.88	64,515,824	127,189,836	4,723,916	2.46	26.9

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

	DEPRECIABLE GROUP	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
331.00	MAINS AND ACCESSORIES	110-R2	2,415,570,208.52	334,433,465	2,081,136,744	28,333,986	1.17	73.5
333.00	SERVICES	70-R2	567,844,687.07	138,762,554	429,082,133	9,665,934	1.70	44.4
334.00	METERS AND METER INSTALLATIONS	19-L1.5	201,482,985.36	86,722,828	114,760,157	11,361,534	5.64	10.1
335.00	FIRE HYDRANTS	72-R2	103,228,152.27	21,864,870	81,363,282	1,738,263	1.68	46.8
340.00	OFFICE FURNITURE AND EQUIPMENT							
	FURNITURE	20-SQ	19,179,166.67	10,246,557	8,932,610	1,167,381	6.09	7.7
	COMPUTERS AND PERIPHERAL EQUIPMENT	5-SQ	18,458,481.00	10,236,065	8,222,416	4,056,320	21.98	2.0
	COMPUTER SOFTWARE - 5 YEAR	5-SQ	36,694,738.71	11,923,801	24,770,938	7,550,771	20.58	3.3
	COMPUTER SOFTWARE - 10 YEAR	10-SQ	62,548,894.51	33,663,138	28,885,757	7,051,454	11.27	4.1
	TOTAL ACCOUNT 340		136,881,280.89	66,069,561	70,811,721	19,825,926	14.48	3.6
341.00	TRANSPORATION EQUIPMENT							
	NOT CLASSIFIED	6-L3	16,002.14	16,002	0	0	-	-
	LIGHT DUTY TRUCKS	6-L3	18,911,227.50	11,779,314	7,131,914	2,386,794	12.62	3.0
	EQUIPMENT	6-L3	14,430,392.96	8,523,832	5,906,561	1,912,723	13.25	3.1
	AUTOS	6-L3	4,883,332.68	3,523,998	1,359,335	437,513	8.96	3.1
	OTHER	6-L3	5,895,986.16	3,635,257	2,260,729	740,427	12.56	3.1
	TOTAL ACCOUNT 341		44,136,941.44	27,478,403	16,658,539	5,477,457	12.41	3.0
342.00	STORES EQUIPMENT	20-SQ	400,072.70	175,368	224,705	25,808	6.45	8.7
343.00	TOOLS AND WORK EQUIPMENT	20-SQ	26,095,301.58	6,924,992	19,170,310	1,386,538	5.31	13.8
344.00	LABORATORY EQUIPMENT	20-R0.5	3,323,028.15	1,953,912	1,369,116	149,806	4.51	9.1
345.00	POWER OPERATED EQUIPMENT	10-S2	2,571,357.61	2,356,661	214,697	54,619	2.12	3.9
346.00	COMUNICATION EQUIPMENT							
	EQUIPMENT	15-SQ	2,585,584.40	1,596,948	988,636	191,330	7.40	5.2
	NON-TELEPHONE	15-SQ	918,926.11	337,227	581,699	62,431	6.79	9.3
	REMOTE CONTROL AND INSTRUMENTATION	10-SQ	6,460,864.86	2,304,114	4,156,751	639,314	9.90	6.5
	TELEPHONE	10-SQ	831,870.50	576,271	255,600	90,692	10.90	2.8
	TOTAL ACCOUNT 346		10,797,245.87	4,814,560	5,982,686	983,767	9.11	6.1
347.00	MISCELLANEOUS EQUIPMENT	25-SQ	17,031,033.69	7,190,728	9,840,306	740,716	4.35	13.3
348.00	OTHER TANGIBLE EQUIPMENT	25-SQ	735,410.29	336,044	399,366	29,846	4.06	13.4
	TOTAL DEPRECIABLE PLANT		**4,844,316,826.66**	**1,095,625,641**	**3,748,691,181**	**111,562,709**	**2.30**	
	AMORTIZATION OF NET SALVAGE					**10,118,367**		
	TOTAL WATER PLANT IN SERVICE		**4,868,825,062.82**	**1,095,625,641**	**3,748,691,181**	**121,681,076**		

* Life Span Procedure was used. Curve shown is Interim Survivor Curve.

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2018, OF BOOK RESERVE AS OF DECEMBER 31, 2017

Account	BOOK RESERVE BALANCE AS OF 12/31/2017	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS AND ADJUSTMENTS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2018
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(8)
303.14	1,643,499		119,673										1,763,172
303.35	155,025		1								(1)		155,025
303.99	5,352,539		1,364,360										6,716,899
304.15	6,909,235		664,039										7,573,274
304.20	15,033,851		2,322,205		50,000		3,500						17,302,556
304.30	85,330,298		5,335,142		625,500		125,100		31,275				89,946,115
304.36	5,115,719		321,490										5,437,209
304.61	8,272,646		492,346		4,118,189		658,910						3,987,893
304.62	8,353,831		863,511		420,623		63,093						8,733,626
304.63	587,392		100,714										688,106
305.00	13,760,888		1,974,307		676,000		169,000						14,890,195
306.00	5,387,209		363,894										5,751,103
307.00	4,108,224		227,043										4,335,267
310.00	3,660,377		478,095										4,138,472
311.00	29,682,739		1,686,559		10,000		400						31,358,898
320.00	105,563,784		6,709,898		983,601		108,196						111,181,885
320.30	7,281,524		618,087		10,000		500						7,889,111
320.37	9,643,694		533,371										10,177,065
330.00	59,927,838		5,281,086		415,030		278,070						64,515,824
331.00	307,251,055		33,308,236		2,001,904		4,143,941		20,019				334,433,465
333.00	130,484,389		10,279,715		758,163		1,288,877		45,490				138,762,554
334.00	82,002,013		12,137,416		5,794,220		1,796,208		173,827				86,722,828
335.00	20,413,015		1,835,503		132,750		253,553		2,655				21,864,870
340.00	54,302,838		19,960,056		8,193,333								66,069,561
341.00	23,491,852		5,385,886		1,385,480		13,855						27,478,403
342.00	148,957		26,411										175,368
343.00	5,794,792		1,403,657		273,457								6,924,992
344.00	1,785,651		168,261										1,953,912
345.00	2,212,806		143,855										2,356,661
346.00	4,832,669		939,756		957,865								4,814,560
347.00	7,210,908		780,531		800,711								7,190,728
348.00	306,186		29,858										336,044
TOTAL	**1,016,007,443**		**115,854,962**		**27,606,826**		**8,903,203**		**273,266**		**(1)**		**1,095,625,641**

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2018

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2017 (2)	NET ORIGINAL COST AS OF 12/31/2018 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5) **	AMORTIZATION OF NET SALVAGE (6) **	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
303.14	1,942,822.51	1,942,822.51	6.16	119,678	(5)	119,673
303.35	155,025.17	155,025.17	0.00	0	1	1
303.99	9,576,726.11	9,920,726.11	13.49	1,364,360	0	1,364,360
304.15	34,442,969.90	34,442,969.90	1.83	630,306	33,733	664,039
304.20	93,905,163.70	105,989,289.70	2.43	2,294,131	28,074	2,322,205
304.30	243,136,140.53	274,525,122.53	2.04	5,060,596	274,546	5,335,142
304.36	11,733,221.74	11,733,221.74	2.74	321,490	0	321,490
304.61	17,094,819.62	39,947,152.62	2.57	463,808	28,538	492,346
304.62	32,773,506.14	55,221,711.14	2.43	827,212	36,299	863,511
304.63	3,533,821.39	4,933,374.39	2.36	84,774	15,940	100,714
305.00	104,994,473.90	134,354,191.90	1.59	1,841,311	132,996	1,974,307
306.00	17,500,498.35	19,964,319.35	2.01	362,121	1,773	363,894
307.00	11,170,283.16	11,170,283.16	1.96	218,938	8,105	227,043
310.00	16,166,661.81	18,007,218.81	2.80	459,831	18,264	478,095
311.00	75,163,955.32	85,780,982.32	2.09	1,580,172	106,387	1,686,559
320.00	249,747,732.89	289,656,136.89	2.42	6,175,354	534,544	6,709,898
320.30	8,392,061.87	8,693,834.87	6.87	577,398	40,689	618,087
320.37	16,075,077.23	16,075,077.23	3.07	493,505	39,866	533,371
330.00	175,036,176.88	191,705,660.88	2.38	4,247,686	1,033,400	5,281,086
331.00	2,266,777,896.52	2,415,570,208.52	1.18	27,309,171	5,999,065	33,308,236
333.00	544,561,188.07	567,844,687.07	1.71	9,499,159	780,556	10,279,715
334.00	190,951,156.36	201,482,985.36	5.65	11,052,527	1,084,889	12,137,416
335.00	97,220,732.27	103,228,152.27	1.69	1,691,756	143,747	1,835,503
340.00	128,187,365.27	136,881,280.89	14.81	19,947,271	12,785	19,960,056
341.00	38,595,020.44	44,136,941.44	13.47	5,380,407	5,479	5,385,886
342.00	400,072.70	400,072.70	6.57	26,285	126	26,411
343.00	24,418,459.37	26,095,301.58	5.47	1,390,131	13,526	1,403,657
344.00	3,323,028.15	3,323,028.15	4.99	165,819	2,442	168,261
345.00	2,571,357.61	2,571,357.61	5.56	142,967	888	143,855
346.00	9,582,111.31	10,797,245.87	9.36	935,813	3,943	939,756
347.00	16,642,716.36	17,031,033.69	4.55	773,172	7,359	780,531
348.00	735,410.29	735,410.29	4.06	29,858	0	29,858
TOTAL	**4,446,507,652.94**	**4,844,316,826.66**		**105,467,007**	**10,387,955**	**115,854,962**

** developed in monthly bringforward schedule

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

Account	EXPERIENCED AND ESTIMATED NET SALVAGE					5 - YEAR AMORT.
	2014	2015	2016	2017	2018	
(1)	(2)	(3)	(4)	(5)	(5)	(7)
	0	0	26	0	0	(5)
303.35	(4)	0	0	0	0	1
304.15	(46,636)	(46,243)	(70,089)	0	0	32,594
304.20	(53,488)	(56,757)	(26,237)	0	(3,500)	27,996
304.30	319,920	(476,945)	(191,035)	(19,080)	(93,825)	92,193
304.61	(65,824)	0	(70,936)	0	(658,910)	159,134
304.62	(80,107)	(3,615)	(48,019)	(14,400)	(63,093)	41,847
304.63	0	(59,776)	(11,676)	(8,250)	0	15,940
305.00	(317,805)	(46,348)	(84,116)	(59,314)	(169,000)	135,316
306.00	(2,002)	(324)	(6,542)	0	0	1,773
307.00	(13,938)	(16,118)	(1,054)	0	0	6,222
310.00	0	(8,915)	(45,776)	0	0	10,938
311.00	(162,341)	(159,509)	(103,119)	0	(400)	85,074
320.00	(93,583)	(182,337)	(101,953)	(91,944)	(108,196)	115,603
320.30	(27,730)	(78,144)	(16,457)	0	(500)	24,566
320.37	(6,734)	0	(192,597)	0	0	39,866
330.00	(631,746)	(1,024,942)	(1,370,181)	(475,306)	(278,070)	756,049
331.00	(3,496,437)	(7,578,550)	(11,564,326)	(4,703,868)	(4,123,922)	6,293,421
333.00	(446,624)	(606,667)	(987,614)	(1,239,963)	(1,243,387)	904,851
334.00	(764,036)	(1,258,131)	(770,084)	(1,414,519)	(1,622,381)	1,165,830
335.00	(146,091)	81,394	(276,615)	(244,260)	(250,898)	167,294
340.00	1,941	(20,871)	(41,508)	0	0	12,088
341.00	(1,555)	(13,623)	(1,158)	(11,060)	(13,855)	8,250
342.00	0	(630)	0	0	0	126
343.00	(9,640)	(19,321)	(18,941)	0	0	9,580
344.00	(983)	(3,939)	(5,015)	0	0	1,987
345.00	(201)	(3,680)	(472)	0	0	871
346.00	(1,029)	(7,472)	(777)	0	0	1,856
347.00	(9,534)	(21,448)	(4,547)	0	0	7,106
TOTAL	(6,056,209)	(11,612,910)	(16,010,818)	(8,281,964)	(8,629,937)	10,118,367

PART II. DETAILED DEPRECIATION CALCULATIONS

VOLUME 12

PENNSYLVANIA-AMERICAN WATER COMPANY

2017 GENERAL BASE RATE CASE

R-2017-2595853

EXHIBITS NO. 11-D, 11-E, 11-F

DEPRECIATION STUDY

WASTEWATER OPERATIONS

(EXCLUDING SCRANTON WASTEWATER)

AS OF DECEMBER 31, 2016, 2017, 2018

Exhibit No. 11-D
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

HERSHEY, PENNSYLVANIA

WASTEWATER OPERATIONS

(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2016

Prepared by:



Excellence Delivered As Promised

Exhibit No. 11-D
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Hershey, Pennsylvania

WASTEWATER OPERATIONS

(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2016

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

Gannett Fleming

Excellence Delivered ***As Promised***

April 21, 2017

Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033

Attention Mr. John R. Cox
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2016. Summaries of the original cost, annual accruals and the book depreciation reserve are presented in Tables 1 through 3, beginning on page I-3 of the attached report.

A description of the methods and procedures upon which the study was based, as well as support for the service life estimates, is set forth in a companion report "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2017".

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

John J. Spanos

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER OPERATIONS
(Excluding Scranton Wastewater)

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

SUMMARY OF RESULTS

Table 1 presents the development of net original cost used in the study. The net original cost is the original cost of wastewater plant less advances and contributions. The results of the depreciation study are summarized in Table 2, which sets forth the book reserve and the calculated annual depreciation related to net original cost as of December 31, 2016, and the annual amortization of net negative salvage. Table 3 presents the calculation of the amortization of experienced net salvage, by account, based on the five-year period, 2012-2016.

DETAILED TABULATIONS OF DEPRECIATION CALCULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage, and cost of removal are set forth by account for the years 2012 through 2016, on pages III-2 through III-6.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2016

DEPRCIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2016 (2)	- CUSTOMER ADVANCES (3)	- CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	- EXCLUDED PROPERTY (5)	= NET ORIGINAL COST AS OF DECMEBER 31, 2016 (6)
DEPRECIABLE PLANT					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	479,296.86				479,296.86
354.30 STRUCTURES AND IMPROVEMENTS - SPP	18,169,291.90		2,734,528.70		15,434,763.20
354.40 STRUCTURES AND IMPROVEMENTS - TDP	50,958,423.67		1,853,012.73		49,105,410.94
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	2,130,769.53				2,130,769.53
355.00 POWER GENERATING EQUIPMENT	4,881,040.73		144,517.16		4,736,523.57
360.10 COLLECTION SEWERS - FORCE MAINS	30,666,434.21	157,753.14	11,251,126.61		19,257,554.46
361.10 COLLECTION SEWERS - GRAVITY MAINS	73,305,655.63	143,423.53	9,166,636.12		63,995,595.98
361.20 MANHOLES	13,045,669.35		4,387,312.76		8,658,356.59
363.00 SERVICES	15,575,965.95	70,197.45	3,737,893.58		11,767,874.92
364.00 FLOW MEASURING DEVICES	533,521.59		14,726.81		518,794.78
365.00 FLOW MEASURING INSTALLATIONS	20,918.30				20,918.30
370.00 RECEIVING WELLS	103,531.95				103,531.95
371.00 PUMPING EQUIPMENT	7,114,659.39		66,626.22		7,048,033.17
380.00 TREATMENT EQUIPMENT	52,675,840.17		2,200,080.47		50,475,759.70
381.00 PLANT SEWERS	6,450,916.81		30,192.33		6,420,724.48
382.00 OUTFALL SEWER LINES	674,274.67				674,274.67
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	273,149.74				273,149.74
390.00 OFFICE FURNITURE AND EQUIPMENT	199,675.37				199,675.37
391.00 TRANSPORTATION EQUIPMENT	440,469.70				440,469.70
392.00 STORES EQUIPMENT	64,249.97				64,249.97
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	536,841.71				536,841.71
394.00 LABORATORY EQUIPMENT	342,757.97				342,757.97
395.00 POWER OPERATED EQUIPMENT	532,736.59		10,000.00		522,736.59
396.00 COMMUNICATION EQUIPMENT	1,522,349.38				1,522,349.38
397.00 MISCELLANEOUS EQUIPMENT	3,256,051.56		29,000.00		3,227,051.56
TOTAL DEPRECIABLE PLANT	**283,954,492.70**	**371,374.12**	**35,625,653.49**	**0.00**	**247,957,465.09**
NONDEPRECIABLE PLANT					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,677,525.60		125,000.00		1,552,525.60
TOTAL NONDEPRECIABLE PLANT	**3,077,708.65**	**0.00**	**125,000.00**	**0.00**	**2,952,708.65**
TOTAL WASTEWATER PLANT IN SERVICE	**287,032,201.35**	**371,374.12**	**35,750,653.49**	**0.00**	**250,910,173.74**

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2016

	DEPRECIABLE GROUP	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
	DEPRECIABLE PLANT							
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	479,296.86	49,350	429,947	11,001	2.30	39.1
354.30	STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5	15,434,763.20	4,146,488	11,288,276	249,925	1.62	45.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	65-R2	49,105,410.94	9,948,199	39,157,212	691,430	1.41	56.6
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	2,130,769.53	1,306,466	824,304	24,748	1.16	33.3
355.00	POWER GENERATING EQUIPMENT	35-R2.5	4,736,523.57	2,652,039	2,084,484	70,197	1.48	29.7
360.10	COLLECTION SEWERS - FORCE MAINS	70-S2	19,257,554.46	175,918	19,081,636	359,040	1.86	53.1
361.10	COLLECTION SEWERS - GRAVITY MAINS	70-R2.5	63,995,595.98	11,371,594	52,624,002	925,253	1.45	56.9
361.20	MANHOLES	50-S1.5	8,658,356.59	1,103,203	7,555,154	183,051	2.11	41.3
363.00	SERVICES	38-R3	11,767,874.92	3,048,755	8,719,120	380,797	3.24	22.9
364.00	FLOW MEASURING DEVICES	20-L3	518,794.78	(3,852)	522,647	39,167	7.55	13.3
365.00	FLOW MEASURING INSTALLATIONS	30-S1.5	20,918.30	4,022	16,896	733	3.50	23.1
370.00	RECEIVING WELLS	50-R3	103,531.95	16,346	87,186	2,042	1.97	42.7
371.00	PUMPING EQUIPMENT	40-S0	7,048,033.17	1,267,841	5,780,192	162,743	2.31	35.5
380.00	TREATMENT EQUIPMENT	45-R2	50,475,759.70	10,681,481	39,794,279	1,072,308	2.12	37.1
381.00	PLANT SEWERS	50-R3	6,420,724.48	831,789	5,588,936	129,614	2.02	43.1
382.00	OUTFALL SEWER LINES	50-R3	674,274.67	157,760	516,515	13,676	2.03	37.8
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5	273,149.74	72,881	200,268	14,747	5.40	13.6
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	199,675.37	53,384	146,291	11,861	5.94	12.3
391.00	TRANSPORTATION EQUIPMENT	15-L4	440,469.70	245,469	195,000	20,435	4.64	9.5
392.00	STORES EQUIPMENT	25-SQ	64,249.97	18,187	46,063	2,310	3.60	19.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	536,841.71	241,652	295,190	18,017	3.36	16.4
394.00	LABORATORY EQUIPMENT	15-SQ	342,757.97	193,677	149,081	13,157	3.84	11.3
395.00	POWER OPERATED EQUIPMENT	16-L2.5	522,736.59	242,424	280,312	32,263	6.17	8.7
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,522,349.38	854,060	668,289	65,055	4.27	10.3
397.00	MISCELLANEOUS EQUIPMENT	15-SQ	3,227,051.56	467,686	2,759,366	288,902	8.95	9.6
	TOTAL DEPRECIABLE PLANT		**247,957,465.09**	**49,146,818**	**198,810,646**	**4,782,472**	**1.93**	
	AMORTIZATION OF NET SALVAGE					**65,222**		
	NONDEPRECIABLE PLANT							
352.10	FRANCHISES		221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION		1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP		85,560.07					
353.40	LAND AND LAND RIGHTS - TDP		1,552,525.60					
	TOTAL NONDEPRECIABLE PLANT		**2,952,708.65**					
	TOTAL WASTEWATER PLANT IN SERVICE		**250,910,173.74**	**49,146,818**	**198,810,646**	**4,847,694**		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 3. AMORTIZATION OF EXPERIENCED NET SALVAGE

Account (1)	EXPERIENCED NET SALVAGE 2012 (2)	2013 (3)	2014 (4)	2015 (5)	2016 (5)	5 - YEAR AMORT. (7)
354.20	0	0	(17,282)	(1,398)	(42)	3,744
354.30	(3,707)	(1,424)	(0)	(4,141)	0	1,854
354.40	(159,227)	(27,581)	(10,305)	(1,027)	(4,581)	40,544
354.70	0	0	0	(480)	0	96
355.00	(3,170)	(963)	(510)	(1,666)	(4,934)	2,248
360.10	(461)	(8,182)	(1,577)	(3,256)	(12,703)	5,236
361.10	(14,158)	(34,624)	(16,027)	(65,334)	(6,970)	27,423
361.20	0	0	0	(7,497)	(53,000)	12,099
363.00	(2,580)	(15,735)	(26,515)	(27,377)	(11,694)	16,780
364.00	0	0	(816)	0	0	163
371.00	(2,645)	(2,291)	(4,325)	(4,902)	(11,515)	5,136
380.00	(120,523)	(6,028)	(21,655)	(1,623)	(23,917)	34,749
381.00	0	0	0	0	(2,110)	422
382.00	(1)	0	0	0	0	0
390.00	0	0	0	0	(276)	55
393.00	0	(240)	(240)	0	171,552	(34,214)
394.00	0	(6)	0	0	(566)	115
395.00	0	0	0	0	44,960	(8,992)
396.00	(1,192)	(2,027)	0	(4,190)	131,476	(24,813)
397.00	0	0	0	0	87,116	(17,423)
TOTAL	(307,663)	(99,101)	(99,252)	(122,889)	302,795	65,222

PART II. DETAILED DEPRECIATION CALCULATIONS

AQUA PENNSYLVANIA, INC.

WASTEWATER ASSETS

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED

ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF MARCH 31, 2018

DEPRECIABLE GROUP	SURVIVOR CURVE	ORIGINAL COST AS OF MARCH 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	COMPOSITE REMAINING LIFE	ANNUAL ACCRUAL RATE, PERCENT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
COLLECTION	55-S0.5	1,277,000.00	409,543	867,457	24,595	35.3	1.93
PUMPING	60-S1	1,084,876.22	122,337	962,539	21,574	44.6	1.99
TREATMENT AND DISPOSAL	50-R2	6,537,155.71	1,836,991	4,700,165	162,774	28.9	2.49
GENERAL	50-R3	14,636.81	8,523	6,114	354	17.3	2.42
TOTAL ACCOUNT 354		8,913,668.74	2,377,394	6,536,275	209,297		
360.00 COLLECTION MAINS - FORCE	75-R2.5	9,872,459.72	1,286,248	8,586,212	165,153	52.0	1.67
361.00 COLLECTION MAINS - GRAVITY	75-R2.5	4,083,815.05	769,857	3,313,958	65,836	50.3	1.61
363.00 SERVICES	70-R4	1,488,413.86	517,616	970,798	17,881	54.3	1.20
371.30 PUMPING EQUIPMENT-PUMPING	25-L0.5	464,547.60	35,266	429,282	32,552	13.2	7.01
380.00 TREATMENT AND DISPOSAL EQUIPMENT	40-SO	1,553,793.25	762,551	791,242	36,744	21.5	2.36
381.40 PLANT SEWERS - TREATMENT AND DISPOSAL	40-R1.5	1,536.55	1,220	317	32	9.9	2.08
382.00 OUTFALL LINES	40-R2.5	1,536.55	1,220	317	45	7.0	2.93
389.20 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - COLLECTION	20-L3	13,030.75	4,882	8,149	721	11.3	5.53
390.10 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	20-SQ	274.98	260	15	0	-	-
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	4,449.14	4,504	(55)	0		
394.00 LABORATORY EQUIPMENT	25-SQ	1,362.82	1,383	(20)	0		
TOTAL DEPRECIABLE PLANT		26,398,889.01	5,762,401	20,636,490	528,261		
TOTAL CONTRIBUTIONS IN AID OF CONSTRUCTION		26,398,889.01	5,762,401	20,636,490	528,261		
AMORTIZATION OF NET SALVAGE					5,718		
TOTAL WASTEWATER PLANT		118,682,738.17	32,776,275	83,039,273	3,017,474		

Water and Wastewater Industry

Cost of Capital / Required Return
Water and Wastewater Industry
As of 1-1-2021

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

Cost of Capital / Required Return

The net cashflows described in the income approach section of this report were discounted to present value using a cost of capital reflective of the investor-owned water industry with particular emphasis on investor-owned water and wastewater in the Commonwealth of Pennsylvania capital costs for both debt and equity summarized as follows:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	100.0%						7.57%
Growth (g)							1.82%
Rate without Growth: [(1+r)/(1+g)]-1							5.65%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	29%	Market	2.79%	Market	Not Applicable	Not Applicable	0.81%
Equity	71%	Market	9.85%	Market	Not Applicable	Not Applicable	6.99%
Total Capital r	100.0%						7.80%
Growth (g)							1.82%
Rate without Growth: [(1+r)/(1+g)]-1							5.87%

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	100.0%						7.21%
Growth (g)						Not Applicable	0.00%
Rate without Growth: [(1+r)/(1+g)]-1							7.21%

The cost of capital and required return was based on the weighted cost of capital (WACC) method; wherein the market capital cost of debt and equity at the second quarter (January 1, 2021) closest to the appraisal date are weighted based on the market capital structure typical of the industry. The inputs to the WACC required return determination are described summarized below.

Debt Cost – The market cost of debt at the study data was determined based on review of financial information published by Value Line Investment Surveys in their Selected Yield weekly publication. These sources were helpful in determining the typical debt rating for investments in water industry to be A Standard and Poor's corporate debt rating. The above sources were also useful in determining that the market cost of debt at A rating to be 2.76% on January 1, 2021. Issuance cost of 0.90% was determined based on analysis annual Public Utility Financing Tracker reports over the period 2008 through 2019 published by PUFT, Inc. The final market cost of debt of 2.79% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

1	2	3	4	5
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**	S&P Debt Rating	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)
		Input Value Line	Input Value Line	(4) / (3)
American States Water		440.3	25.0	5.68%
American Water	Baa1	9,580.0	354.0	3.70%
California Water		785.1	40.0	5.09%
Consolidated Water Company		0.1	-	
Essential Utilities, Inc.	Baa2	5,191.0	196.0	3.78%
Middlesex Water		234.5	7.2	3.07%
SJW Corporation		1,307.6	50.0	3.82%
York Water		116.8	5.5	4.71%
		17,655.4	677.7	3.84%
Minimum				3.07%
wtd Mean				3.84%
Mean				4.26%
Median				3.82%
Maximum				5.68%

Debt Rating and Cost of Debt

Embedded	3.84%	wtd mean col 5
Rating (S&P)	A	Input
Market Cost of Debt @Bond Rating Value Line Selected Yields	2.76%	Input
Use	2.76%	AUS Input
Issuance Cost PUFT Data 2018-2019	0.90%	Input
Final Cost of Debt	2.79%	

$K_d = K_u / (100\% - f)$

where:

K_d =Cost of Debt recognizing issuance costs

K_u is the market cost of debt without consideration of issuance costs

f is the cost of issuance as a percentage of the debt's par value

$K_d = 2.76\% / (100\% - 0.90\%)$

$K_d = 2.79\%$

Equity Cost – The cost of equity was evaluated using the Capital Asset Pricing Model (CAPM) and the dividend growth model (DGM) which looks to market returns to quantify the cost equity capital.

1	2	3	4	5	6	7		8	9		10	11		12	13		14	15		16	17
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**								Revenues			Cash Flows			Earnings			Dividends			Book Value	
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Beta	Divided			Past 3 Years to Future 3 Years			Past 3 Years to Future 3 Years			Past 3 Years to Future 3 Years			Past 3 Years to Future 3 Years			Past 3 Years to Future 3 Years
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Input Value Line
American States Water	NYSE	AWR	1789	1/08/2021	0.65	1.8%	3.0%	0.0%	5.0%	6.0%	3.0%	7.0%	9.5%	5.0%	6.5%	8.0%	7.5%	9.5%	5.5%	4.0%	5.5%
American Water	NYSE	AWK	1790	1/08/2021	0.85	1.6%	3.0%	3.0%	4.5%	13.0%	6.0%	6.5%	45.5%	6.5%	8.5%	16.0%	10.5%	8.5%	2.5%	4.0%	5.0%
California Water	NYSE	CWT	1791	1/08/2021	0.65	1.6%	4.0%	2.5%	2.0%	5.5%	5.5%	3.0%	4.5%	4.5%	8.0%	2.5%	3.5%	5.5%	4.5%	4.5%	4.0%
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021	0.85	2.8%	5.0%	0.5%	13.5%	2.0%	0.5%	10.0%	-3.0%	-4.5%	17.0%	5.0%	0.0%	14.5%	5.0%	2.0%	2.5%
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	0.95	2.3%	1.5%	0.5%	11.5%	5.0%	2.0%	5.5%	7.0%	1.5%	7.0%	7.5%	8.0%	7.5%	8.0%	9.0%	7.0%
Middlesex Water	NDQ	MSEX	1794	1/08/2021	0.75	1.5%	2.0%	2.5%	2.0%	6.0%	9.5%	5.5%	8.0%	12.0%	7.0%	2.5%	4.0%	5.5%	4.5%	6.0%	1.5%
SJW Corporation	NYSE	SJW	1795	1/08/2021	0.85	1.9%	3.0%	2.0%	5.5%	6.0%	3.5%	4.5%	7.5%	4.5%	10.5%	6.0%	9.0%	7.0%	7.5%	12.0%	5.5%
York Water	NDQ	YORW	1796	1/08/2021	0.8	1.6%	3.0%	2.5%	5.0%	6.0%	5.5%	7.0%	6.0%	6.0%	7.0%	3.0%	4.0%	6.0%	4.5%	4.0%	4.0%
Minimum					0.65	1.50%	1.50%	0.00%	2.00%	2.00%	0.50%	3.00%	-3.00%	-4.50%	6.50%	2.50%	0.00%	5.50%	2.50%	2.00%	1.50%
wtd Mean					0.79	1.89%	3.06%	1.69%	6.13%	6.19%	4.44%	6.13%	10.63%	4.44%	8.94%	6.31%	5.81%	8.00%	5.25%	5.69%	4.38%
Mean					0.83	1.70%	3.00%	2.25%	5.00%	6.00%	4.50%	6.00%	7.25%	4.75%	7.50%	5.50%	5.75%	7.25%	4.75%	4.25%	4.50%
Median					0.95	2.80%	5.00%	3.00%	13.50%	13.00%	9.50%	10.00%	45.50%	12.00%	17.00%	16.00%	10.50%	14.50%	8.00%	12.00%	7.00%
Maximum																					

Capital Assets Pricing Model (CAPM) - The CAPM method estimates the cost of equity capital by quantifying the premium, or additional return required to entice investors to purchase equities, over an investment in which the investors would receive riskless return like that from a long-term U.S. government security.

The mathematical form of this model is:

Capital Asset Pricing Model:

$$r_e = r_f + B_c(r_p) + r_s + r_i$$

where:

B_c is an estimation of the subject Company's risk premium relative to the risk premium of the entire market. In these equity cost estimating methods the risk premium of the entire market is defined as unity or $B_m = 1.0$.

The inputs to this model are developed from an analysis of the financial markets. The risk-free government securities rate (rf) is readily available from financial sources; we have used the risk-free rate at the study date of 5.21% as determined from the average long-term income returns of government bonds over the period 1926 through 2020 as detailed on table A-7 in Ibbotson Associates' 2020 Yearbooks of Stocks, Bonds, Bills, and Inflation (SBBI).

The risk premiums (r_p) and size premiums (r_s) were established based on analysis of the data presented by Ibbotson Associates and published in Ibbotson Associates' 2010 through 2020 Yearbooks of Stocks, Bonds, Bills, and Inflation (SBBI), detailing the financial market returns of stocks, bonds, U.S. Treasury Bills, and Inflation for the period 1926 through 2020.

The total market risk premium (r_p) required to entice an investor to invest in equity securities over risk-free government securities was established at 6.60% based on the Ibbotson Associates research, while the size premiums (r_s) were established at:

1.99% for mid-capitalization companies with market equity capitalization between $2,444.7 and $13,177.8 million.

3.46% for low-capitalization companies with market equity capitalization between $451.8 and $2,444.7 million.

5.72% for micro-capitalization companies with market equity capitalization under $451.8 million.

There is no size premium (0.0%) for companies with market equity capitalization above $13,177.8 million.

Dividend Yield and Growth Model (DGM)

The dividend yield and growth model was also review in estimating the cost of equity. Two models were considered, those of:

re = Dividend Yield + Dividend Growth

re = Dividend Yield + Earnings Growth

Cost of Equity Conclusion - Based on these procedures the cost of equity using previous described cost of equity estimating techniques the cost of equity was determined as follows:

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Cost of Equity Dividend Growth Model

Dividend 1.89% mean Col 7

Growth	Past 10 yrs	Past 5 yrs	Est'd 16-18 to 22-24	Beta
Revenues	3.06%	1.69%	6.13%	
Cash Flow	6.00%	4.44%	6.13%	
Earnings	10.63%	4.44%	8.94%	
Dividends	5.50%	5.81%	8.00%	
Book Value	4.75%	5.69%	4.38%	Input 0.79
Mean	5.99%	4.41%	6.71%	Min-Max 0.65-0.95

Growth 6.71% AUS Input

Cost of Equity Dividend Growth Model

Dividend	1.89%
Growth	6.71%
Cost of Equity	8.60%

Cost of Equity Capital Asset Pricing Model (CAPM)

Risk Free Rate			5.21% Input	Long term Government Bonds Income Return SBBI (Mean)
Risk Premium				
Beta			0.79	
Risk Premia	6.60%	Input SBBI	6.60% Input	$r_p=r_m-r_f$ per PA PUC
Size Premia			$ Millions	$ Millions
Micro	5.72%	Input SBBI	-	451.8
Small	3.46%	Input SBBI	451.8	2,444.7
Mid	1.99%	Input SBBI	2,444.7	13,177.8
Large	0.00%	Input SBBI	13,177.8	
Size Premia			0.00% Input	
Cost of Equity			10.45%	

Cost of Equity		
Dividend Growth Model	8.60%	
Capital Asset Pricing Model (CAPM)	10.45%	
Mean	9.53%	
Issuance Cost PUFT 2008-2019	3.60%	
Final Cost of Equity	9.88%	

Pennsylvania PUC
Bureau of Technical Utility Services
Report on the Quarterly Earnings
of Jurisdictional Utilities
31-Dec-20

9.85%

Cost of Equity	9.85% AUS Input Jurisdictional Exception
Growth	6.71% Input from Growth Above
Inflation	1.82% SBBI Last 5-years

Equity issuance cost (f) of 3.60% was determined based on analysis annual Public Utility Financing Tracker reports over the period 2008 through 2019 published by PUFT, Inc. The final market cost of equity of 9.88% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

$K_e = K_{e'} / (100\% - f)$

where:

K_e =Cost of equity recognizing issuance costs

$K_{e'}$ is the market cost of equity without consideration of issuance costs (9.85%)

f is the cost of issuance as a percentage of the equity par value (3.60%)

$K_e = 9.53\% / (100\% - 3.60\%)$

$K_e = 9.88\%$

An equity cost of 9.85% was used in the determination of the cost of capital based on the determination of Pennsylvania PUC's Bureau of Technical Utility Services (TUS) Report on Quarterly Earnings of Jurisdictional Utilities for year-ending December 31, 2020.

Tax Rate

The tax rate was determined at 28.89% (State and Federal) based on the Value Line Investment Survey as follows:

1	2	3	4	5				

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Company	Exchange	Ticker	Valueline No.	Valueline Issue	Tax Rate			
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	2019 Input Value Line	2020 Input Value Line	2021 Input Value Line	Future 3 Years Input Value Line
American States Water	NYSE	AWR	1789	1/08/2021	22.6%	25.0%	23.0%	23.0%
American Water	NYSE	AWK	1790	1/08/2021	25.5%	21.5%	21.5%	21.0%
California Water	NYSE	CWT	1791	1/08/2021	19.1%	21.0%	21.0%	21.0%
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021				
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	6.6%	1.5%	3.5%	8.0%
Middlesex Water	NDQ	MSEX	1794	1/08/2021	2.8%	21.0%	21.0%	21.0%
SJW Corporation	NYSE	SJW	1795	1/08/2021	25.3%	21.0%	21.0%	21.0%
York Water	NDQ	YORW	1796	1/08/2021	13.5%	18.5%	21.0%	21.0%
Minimum					2.80%	1.50%	3.50%	8.00%
wtd Mean								
Mean					16.49%	18.50%	18.86%	19.43%
Median					19.10%	21.00%	21.00%	21.00%
Maximum					25.50%	25.00%	23.00%	23.00%

	Historical		Current	
Embedded Tax Rate	16.49%	Mean 2019	18.50%	Mean 2020
Federal Tax Rate (Marginal)	35.00%	AUS Input	21.00%	AUS Input
US 50-state average	4.91%	AUS Input	4.91%	AUS Input
Pennsylvania	9.99%	AUS Input	9.99%	AUS Input
Composite Federal and State Tax Rate	41.49%	Calculated =Federal Tax * (1-State Tax)+State Tax	28.89%	Calculated =Federal Tax * (1-State Tax)+State Tax

Capital Structure

The capital structure was determined based on the water industry market indictors published by Value Line Investment Survey published April 1, 2021, as detailed as follows:

2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**																				
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Total Debt	Market Debt	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)	Proportion of Debt	Book Debt	Book Equity	Preferred Stock	% Preferred	Shares Outstanding	Price per Share	Market Equity	Portion Market Equity	Capitalization	Total Market Capital
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(6) / (21)	Input Value Line	Input Value Line	(9) / (8)	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(14) / (21)	Input Value Line	Input Value Line	Input Value Line	(18) / (21)	Input Value Line	(6)+(14)+(18)
					$s Million	%	$s Million	$s Million	%	%	%	%	$s Million	%	Shares Million	$s per Share	$s Million	%		$s Million
American States Water	NYSE	AWR	1789	1/08/2021	440.7	13.11%	440.3	25.0	5.68%	41.0%	41.0%	59.0%	0	0.00%	36.8890610	79.2	2,919.8	86.89%	Mid Cap	3,360.5
American Water	NYSE	AWK	1790	1/08/2021	10,691.0	28.27%	9,580.0	354.0	3.70%	60.0%	59.5%	40.5%	4	0.01%	181.2719950	149.7	27,127.4	71.72%	Large Cap	37,822.4
California Water	NYSE	CWT	1791	1/08/2021	1,182.1	30.44%	785.1	40.0	5.09%	50.0%	45.5%	54.5%	0	0.00%	49.8400000	54.2	2,701.8	69.56%	Mid Cap	3,883.9
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021	0.1	0.07%	0.1	-		0.0%	0.0%	100.0%	0	0.00%	11.1129750	12.3	137.0	99.93%	Small Cap	137.1
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	5,444.0	32.51%	5,191.0	196.0	3.78%	53.0%	53.0%	47.0%	0	0.00%	245.2717270	46.1	11,302.1	67.49%	Large Cap	16,746.1
Middlesex Water	NDQ	MSEX	1794	1/08/2021	278.2	18.01%	234.5	7.2	3.07%	42.0%	44.5%	55.5%	2.4	0.16%	17.4694100	72.4	1,264.4	81.84%	Mid Cap	1,545.0
SJW Corporation	NYSE	SJW	1795	1/08/2021	1,379.5	41.17%	1,307.6	50.0	3.82%	60.0%	58.0%	42.0%	0	0.00%	28.5521770	69.0	1,971.2	58.83%	Mid Cap	1,545.0
York Water	NDQ	YORW	1796	1/08/2021	116.8	15.95%	116.8	5.5	4.71%	45.0%	44.0%	56.0%	0	0.00%	13.0492370	47.2	615.4	84.05%	Small Cap	732.2
Total					19,532.4	28.90%	17,655.4	677.7	3.84%				6.4	0.01%			48,039.2	71.09%		67,578.0
Minimum						0.07%			3.07%	0.00%	0.00%	40.50%		0.00%				58.83%		
wtd Mean						28.90%			3.84%					0.01%				71.09%		
Mean						22.44%			4.26%	43.88%	43.19%	56.81%		0.02%				77.54%		
Median						23.14%			3.82%	47.50%	45.00%	55.00%		0.00%				76.78%		
Maximum						41.17%			5.68%	60.00%	59.50%	100.00%		0.16%				99.93%		

In arriving at the capital structure, the market capital structure was used in developing the market cost of capital while an embedded capital structure was used in developing the required return on rate base as follows:

Water Industry Capital Structure

Capital Structure	Market Proportion	Market Reference	Embedded Proportion	Embedded Reference
Debt	28.90%	wtd mean col 7	43.88%	mean col 11
Preferred	0.01%	wtd mean col 15	0.02%	mean col 15
Equity	71.09%	wtd mean col 19	56.81%	mean col 13
Total	100.00%		100.71%	
Use				
Debt	29%	AUS Input	44%	AUS Input Jurisdictional Execption
Equity	71%	AUS Input	56%	AUS Input Jurisdictional Execption
Total	100%		100%	

Market Cost of Capital and Required Return on Rate Base

Using the above-described cost of debt and equity, the rate of returned required for an investment in property similar to the Company's was determined to be 7.57% as follows:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	100.0%						7.57%
Growth (g)							1.82%
Rate without Growth: [(1+r)/(1+g)]-1							5.65%

While the require return on rate base was determined to be 7.16 follows:

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	**100.0%**						**7.21%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.21%**

The statistics supporting these findings can be found in the Cost of Capital section of this report.

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	**100.0%**						**7.57%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.65%**

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	29%	Market	2.79%	Market	Not Applicable	Not Applicable	0.81%
Equity	71%	Market	9.85%	Market	Not Applicable	Not Applicable	6.99%
Total Capital r	**100.0%**						**7.80%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.87%**

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	44%	Embedded	3.84%	Embedded	Not Applicable	Not Applicable	1.69%
Equity	56%	Embedded	9.85%	Market	Not Applicable	Not Applicable	5.52%
Total Capital r	**100.0%**						**7.21%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**7.21%**

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

1	2	3	4	5
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**	S&P Debt Rating	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)
		Input Value Line	Input Value Line	(4) / (3)
American States Water		440.3	25.0	5.68%
American Water	Baa1	9,580.0	354.0	3.70%
California Water		785.1	40.0	5.09%
Consolidated Water Company		0.1	-	
Essential Utilities, Inc.	Baa2	5,191.0	196.0	3.78%
Middlesex Water		234.5	7.2	3.07%
SJW Corporation		1,307.6	50.0	3.82%
York Water		116.8	5.5	4.71%
		17,655.4	677.7	3.84%
Minimum				3.07%
wtd Mean				3.84%
Mean				4.26%
Median				3.82%
Maximum				5.68%

Debt Rating and Cost of Debt

Embedded	3.84%	wtd mean col 5
Rating (S&P)	A	Input
Market Cost of Debt @Bond Rating		
Value Line Selected Yields	2.76%	Input
Use	2.76%	AUS Input
Issuance Cost PUFT Data 2018-2019	0.90%	Input
Final Cost of Debt	2.79%	

Value Line Analysis

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

1	2	3	4	5	6	7	8		9		10		11	12		13		14		15		16	17
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**								Revenues			Cash Flows				Earnings			Dividends			Book Value		
Company Input Value Line	Exchange Input Value Line	Ticker Input Value Line	Valueline No. Input Value Line	Valueline Issue Input Value Line	Beta Input Value Line	Divided Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Past 3 Years to Future 3 Years Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Past 3 Years to Future 3 Years Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Past 3 Years to Future 3 Years Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Past 3 Years to Future 3 Years Input Value Line	Past 10 yrs Input Value Line	Past 5 yrs Input Value Line	Past 3 Years to Future 3 Years Input Value Line
American States Water	NYSE	AWR	1789	1/08/2021	0.65	1.8%	3.0%	0.0%	5.0%	6.0%	3.0%	7.0%	9.5%	5.0%	6.5%	8.0%	7.5%	9.5%	5.5%	4.0%	5.5%
American Water	NYSE	AWK	1790	1/08/2021	0.85	1.6%	3.0%	3.0%	4.5%	13.0%	6.0%	6.5%	45.5%	6.5%	8.5%	16.0%	10.5%	8.5%	2.5%	4.0%	5.0%
California Water	NYSE	CWT	1791	1/08/2021	0.65	1.6%	4.0%	2.5%	2.0%	5.5%	5.5%	3.0%	4.5%	4.5%	8.0%	2.5%	3.5%	5.5%	4.5%	4.5%	4.0%
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021	0.85	2.8%	5.0%	0.5%	13.5%	2.0%	0.5%	10.0%	-3.0%	-4.5%	17.0%	5.0%	0.0%	14.5%	5.0%	2.0%	2.5%
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	0.95	2.3%	1.5%	0.5%	11.5%	5.0%	2.0%	5.5%	7.0%	1.5%	7.0%	7.5%	8.0%	7.5%	8.0%	9.0%	7.0%
Middlesex Water	NDQ	MSEX	1794	1/08/2021	0.75	1.5%	2.0%	2.5%	2.0%	6.0%	9.5%	5.5%	8.0%	12.0%	7.0%	2.5%	4.0%	5.5%	4.5%	6.0%	1.5%
SJW Corporation	NYSE	SJW	1795	1/08/2021	0.85	1.9%	3.0%	2.0%	5.5%	6.0%	3.5%	4.5%	7.5%	4.5%	10.5%	6.0%	9.0%	7.0%	7.5%	12.0%	5.5%
York Water	NDQ	YORW	1796	1/08/2021	0.8	1.6%	3.0%	2.5%	5.0%	6.0%	5.5%	7.0%	6.0%	6.0%	7.0%	3.0%	4.0%	6.0%	4.5%	4.0%	4.0%
Minimum					0.65	1.50%	1.50%	0.00%	2.00%	2.00%	0.50%	3.00%	-3.00%	-4.50%	6.50%	2.50%	0.00%	5.50%	2.50%	2.00%	1.50%
wtd Mean					0.79	1.89%	3.06%	1.69%	6.13%	6.19%	4.44%	6.13%	10.63%	4.44%	8.94%	6.31%	5.81%	8.00%	5.25%	5.69%	4.38%
Mean					0.83	1.70%	3.00%	2.25%	5.00%	6.00%	4.50%	6.00%	7.25%	4.75%	7.50%	5.50%	5.75%	7.25%	4.75%	4.25%	4.50%
Median					0.95	2.80%	5.00%	3.00%	13.50%	13.00%	9.50%	10.00%	45.50%	12.00%	17.00%	16.00%	10.50%	14.50%	8.00%	12.00%	7.00%
Maximum																					

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Cost of Equity Dividend Growth Model

Dividend **1.89%** mean Col 7

Cost of Equity Capital Asset Pricing Model (CAPM)

Growth	Past 10 yrs	Past 5 yrs	Est'd 16-18 to 22-24	Beta	
Revenues	3.06%	1.69%	6.13%		
Cash Flow	6.00%	4.44%	6.13%		
Earnings	10.63%	4.44%	8.94%		
Dividends	5.50%	5.81%	8.00%		
Book Value	4.75%	5.69%	4.38%	Input	Min-Max
Mean	5.99%	4.41%	6.71%	0.79	0.65-0.95

Growth **6.71%** AUS Input

Cost of Equity Dividend Growth Model

Cost of Equity Capital Asset Pricing Model (CAPM)

Dividend	1.89%				
Growth	6.71%				
Cost of Equity	8.60%				
		Risk Free Rate		5.21% Input	Long term Government Bonds Income Return SBBI (Mean)
		Risk Premium			
		Beta		0.79	
		Risk Premia	6.60% Input SBBI	6.60% Input	$r_o=r_m-r_f$ per PA PUC
		Size Premia		$ Millions	$ Millions
		Micro	5.72% Input SBBI	-	451.8
		Small	3.46% Input SBBI	451.8	2,444.7
		Mid	1.99% Input SBBI	2,444.7	13,177.8
		Large	0.00% Input SBBI	13,177.8	
		Size Premia		0.00% Input	
		Cost of Equity		10.45%	

Cost of Equity		
Dividend Growth Model	8.60%	
Capital Asset Pricing Model (CAPM)	10.45%	
Mean	9.53%	
Issuance Cost PUFT 2008-2019	3.60%	
Final Cost of Equity	9.88%	
		9.85%

Pennsylvania PUC
Bureau of Technical Utility Services
Report on the Quarterly Earnings
of Jurisdictional Utilities
31-Dec-20

Cost of Equity	9.85%	AUS Input Jurisdictional Exception
Growth	6.71%	Input from Growth Above
Inflation	1.82%	SBBI Last 5-years

Value Line Analysis

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

1	2	3	4	5	6	7	8	9	10
Value Line Investment Surveys **Water Industry** **As of First Quarter 2021 (1-1-2021)**									
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Total Return				
					1 year	3 Years	3 years annualized	5 Years	5 years annualized
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Calculation	Input Value Line	Calculation
							=((1+3 year Total Return)^(1/3))-1		=((1+5 year Total Return)^(1/5))-1
American States Water	NYSE	AWR	1789	1/08/2021	-12.4%	34.0%	10.2%	92.8%	14.0%
American Water	NYSE	AWK	1790	1/08/2021	28.2%	76.2%	20.8%	190.9%	23.8%
California Water	NYSE	CWT	1791	1/08/2021	-2.4%	13.8%	4.4%	140.5%	19.2%
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021	-32.7%	-10.2%	-3.5%	2.0%	0.4%
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	4.0%	27.1%	8.3%	72.5%	11.5%
Middlesex Water	NDQ	MSEX	1794	1/08/2021	10.3%	56.1%	16.0%	194.1%	24.1%
SJW Corporation	NYSE	SJW	1795	1/08/2021	-6.0%	1.5%	0.5%	136.5%	18.8%
York Water	NDQ	YORW	1796	1/08/2021	3.2%	28.3%	8.7%	107.7%	15.7%
Total					-1.0%		8.2%		15.9%
Minimum					-32.70%		-3.52%		0.40%
wtd Mean									
Mean					-0.98%		8.17%		15.94%
Median					0.40%		8.49%		17.26%
Maximum					28.20%		20.78%		24.08%

Value Line Analysis

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

1	2	3	4	5				
Value Line Investment Surveys								
Water Industry								
As of First Quarter 2021 (1-1-2021)								
					Tax Rate			
Company	Exchange	Ticker	Valueline No.	Valueline Issue	2019	2020	2021	Future 3 Years
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line
American States Water	NYSE	AWR	1789	1/08/2021	22.6%	25.0%	23.0%	23.0%
American Water	NYSE	AWK	1790	1/08/2021	25.5%	21.5%	21.5%	21.0%
California Water	NYSE	CWT	1791	1/08/2021	19.1%	21.0%	21.0%	21.0%
Consolidated Water Company	NDQ	CWCO	1792	1/08/2021				
Essential Utilities, Inc.	NYSE	WTRG	1793	1/08/2021	6.6%	1.5%	3.5%	8.0%
Middlesex Water	NDQ	MSEX	1794	1/08/2021	2.8%	21.0%	21.0%	21.0%
SJW Corporation	NYSE	SJW	1795	1/08/2021	25.3%	21.0%	21.0%	21.0%
York Water	NDQ	YORW	1796	1/08/2021	13.5%	18.5%	21.0%	21.0%
Minimum					2.80%	1.50%	3.50%	8.00%
wtd Mean								
Mean					16.49%	18.50%	18.86%	19.43%
Median					19.10%	21.00%	21.00%	21.00%
Maximum					25.50%	25.00%	23.00%	23.00%
	Historical		Current					
Embedded Tax Rate	16.49%	Mean 2019	18.50%	Mean 2020				
Federal Tax Rate (Marginal)	35.00%	AUS Input	21.00%	AUS Input				
US 50-state average	4.91%	AUS Input	4.91%	AUS Input				
Pennsylvania	9.99%	AUS Input	9.99%	AUS Input				
Composite Federal and State Tax Rate	41.49%	Calculated =Federal Tax * (1-State Tax)+State Tax	28.89%	Calculated =Federal Tax * (1-State Tax)+State Tax				

Value Line Analysis

S:\water industry\East Whiteland Township\East Whiteland Wastewater System Valuation as of 1-8-2021

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Company		Exchange	Ticker	Valueline No.	Valueline Issue	Total Debt	Market Debt	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)	Proportion of Debt	Book Debt	Book Equity	Preferred Stock	% Preferred	Shares Outstanding	Price per Share	Market Equity	Portion Market Equity	Capitalization	Total Market Capital
	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(6) / (21)	Input Value Line	Input Value Line	(9) / (8)	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(14) / (21)	Input Value Line	Input Value Line	Input Value Line	(18) / (21)	Input Value Line	(6)+(14)+(18)
						$s Million	%	$s Million	$s Million	%	%	%	%	$s Million	%	Shares Million	$s per Share	$s Million	%		$s Million
American States Water		NYSE	AWR	1789	1/08/2021	440.7	13.11%	440.3	25.0	5.68%	41.0%	41.0%	59.0%	0	0.00%	36.8890610	79.2	2,919.8	86.89%	Mid Cap	3,360.5
American Water		NYSE	AWK	1790	1/08/2021	10,691.0	28.27%	9,580.0	354.0	3.70%	60.0%	59.5%	40.5%	4	0.01%	181.2719950	149.7	27,127.4	71.72%	Large Cap	37,822.4
California Water		NYSE	CWT	1791	1/08/2021	1,182.1	30.44%	785.1	40.0	5.09%	50.0%	45.5%	54.5%	0	0.00%	49.8400000	54.2	2,701.8	69.56%	Mid Cap	3,883.9
Consolidated Water Company		NDQ	CWCO	1792	1/08/2021	0.1	0.07%	0.1	-		0.0%	0.0%	100.0%	0	0.00%	11.1129750	12.3	137.0	99.93%	Small Cap	137.1
Essential Utilities, Inc.		NYSE	WTRG	1793	1/08/2021	5,444.0	32.51%	5,191.0	196.0	3.78%	53.0%	53.0%	47.0%	0	0.00%	245.2717270	46.1	11,302.1	67.49%	Large Cap	16,746.1
Middlesex Water		NDQ	MSEX	1794	1/08/2021	278.2	18.01%	234.5	7.2	3.07%	42.0%	44.5%	55.5%	2.4	0.16%	17.4694100	72.4	1,264.4	81.84%	Mid Cap	1,545.0
SJW Corporation		NYSE	SJW	1795	1/08/2021	1,379.5	41.17%	1,307.6	50.0	3.82%	60.0%	58.0%	42.0%	0	0.00%	28.5521770	69.0	1,971.2	58.83%	Mid Cap	3,350.7
York Water		NDQ	YORW	1796	1/08/2021	116.8	15.95%	116.8	5.5	4.71%	45.0%	44.0%	56.0%	0	0.00%	13.0492370	47.2	615.4	84.05%	Small Cap	732.2
Total						19,532.4	28.90%	17,655.4	677.7	3.84%				6.4	0.01%			48,039.2	71.09%		67,578.0
Minimum							0.07%			3.07%	0.00%	0.00%	40.50%		0.00%				58.83%		
wtd Mean							28.90%			3.84%					0.01%				71.09%		
Mean							22.44%			4.26%	43.88%	43.19%	56.81%		0.02%				77.54%		
Median							23.14%			3.82%	47.50%	45.00%	55.00%		0.00%				76.78%		
Maximum							41.17%			5.68%	60.00%	59.50%	100.00%		0.16%				99.93%		

Water Industry Capital Structure

Capital Structure	Market Proportion	Market Reference	Embedded Proportion	Embedded Reference
Debt	28.90%	wtd mean col 7	43.88%	mean col 11
Preferred	0.01%	wtd mean col 15	0.02%	mean col 15
Equity	71.09%	wtd mean col 19	56.81%	mean col 13
Total	100.00%		100.71%	

Use		
Debt	29%	AUS Input
Equity	71%	AUS Input
Total	100%	

44%	AUS Input Jurisdictional Execption	
56%	AUS Input Jurisdictional Execption	
100%		

Decile	Recent Number of Companies	Min Size $1,000s	Max Size $1,000s	Arithmetic Mean (%)	Beta	Size Premium S&P 500	Risk Premium Beta Adjusted	Size Premium
1	191	29,025,803,000	1,966,078,882,000	11.06%	0.92	-0.75%	6.60%	-0.75%
2	186	13,178,743,000	28,808,073,000	12.82%	1.04	1.01%	6.60%	1.01%
3	210	6,743,361,000	13,177,828,000	13.66%	1.11	1.85%	6.60%	1.85%
4	218	3,861,858,000	6,710,676,000	13.67%	1.13	1.86%	6.60%	1.86%
5	255	2,445,693,000	3,836,536,000	14.19%	1.17	2.68%	6.60%	2.68%
6	246	1,591,865,000	2,444,745,000	14.82%	1.18	3.01%	6.60%	3.01%
7	306	911,586,000	1,591,765,000	15.63%	1.26	3.82%	6.60%	3.82%
8	365	451,955,000	911,103,000	15.91%	1.31	4.10%	6.60%	4.10%
9	412	190,019,000	451,800,000	16.69%	1.34	4.88%	6.60%	4.88%
10 - Smallest	569	2,194,000	189,831,000	19.64%	1.40	7.86%	6.60%	7.86%
Total	2,958							
Large-Cap 1-2	385	13,178,743,000	1,966,078,882,000	11.32%	0.94	-0.48%	6.60%	-0.74%
Mid-Cap 3-5	683	2,445,693,000	13,177,828,000	13.80%	1.13	1.99%	6.60%	1.99%
Low Cap 6-8	917	451,955,000	2,444,745,000	15.27%	1.23	3.46%	6.60%	3.46%
Micro-Cap 9-10	981	2,194,000	451,800,000	17.53%	1.35	5.72%	6.60%	5.72%
	2,966		1,982,153,255,000					
1-5	1,068	2,445,693,000	1,966,078,882,000	11.64%	0.96	-0.17%	6.60%	-0.17%
6-10	1,898	2,194,000	2,444,745,000	15.49%	1.24	3.68%	6.60%	3.68%

2021 Business Valuation Resources, LLC

Historiacl Return 1928-2020	11.81%
10-Year T Bond Average Annual Return	5.21%
Risk Premium	6.60%

BVR
What It's Worth

Cost of Capital Professional

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User Input Download User References

Specify search criteria

Company Name
AUS Consultants

Valuation Date
12/31/2020

Returns Reference – Start Year
EARLIEST YEAR YYYY

Returns Reference – End Year
2020

Returns Calculation - Mean
(•) Arithmetic
( ) Geometric

RFR ERP Size Premium IRP CoE WACC Summary

Decile	Firms			Portfolio		Size Premium	
	Count	Min size ('000)	Max Size ('000)	Annual Return	Beta	S&P 500	Beta Adjusted
1 - Largest	199	$29,025,803	$1,966,078,882	11.06%	0.92	(0.75%)	

2	186	$13,178,743	$28,808,073	12.82%	1.04	1.01%
3	210	$6,743,361	$13,177,828	13.66%	1.11	1.85%
4	218	$3,861,858	$6,710,676	13.67%	1.13	1.86%
5	255	$2,445,693	$3,836,536	14.49%	1.17	2.68%
6	246	$1,591,865	$2,444,745	14.82%	1.18	3.01%
7	306	$911,586	$1,591,765	15.63%	1.26	3.82%
8	365	$451,955	$911,103	15.91%	1.31	4.10%
9	412	$190,019	$451,800	16.69%	1.34	4.88%
10 - Smallest	569	$2,194	$189,831	19.64%	1.40	7.83%
1 through 2	385	$13,178,743	$1,966,078,882	11.32%	0.94	(0.48%)
3 through 5	683	$2,445,693	$13,177,828	13.80%	1.13	1.99%
6 through 8	917	$451,955	$2,444,745	15.27%	1.23	3.46%
9 through 10	981	$2,194	$451,800	17.53%	1.35	5.72%
1 through 5	1,068	$2,445,693	$1,966,078,882	11.64%	0.96	(0.17%)
6 through 10	1,898	$2,194	$2,444,745	15.49%	1.24	3.68%

S&P 500 Annual Return for Period 1928 - 2020 : 11.81%

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Company Name

AUS Consultants

Valuation Date

12/31/2020

Returns Reference – Start Year

EARLIEST YEAR YYYY

Returns Reference – End Year

2020

Returns Calculation - Mean

- (•) Arithmetic
- ( ) Geometric

RFR ERP Size Premium IRP CoE WACC Summary

CRSP Equity Risk Premium

6.60%	Historical ERP (10Y T-Bond) – For Period:	1928-2020
	S&P 500 Average Annual Return:	11.81%
	10-Year T-Bond Average Annual Return:	5.21%
	(Damodaran)	

5.90%	Historical ERP (20Y T-Bond) – For Period:	1928-2020
	S&P 500 Average Annual Return:	11.81%
	20-Year T-Bond Average Annual Return (Reconstructed):	5.91%

Dr. Damodaran Equity Risk Premium

6.50%	Implied ERP - As of:	2020
6.72%	Implied ERP With Sustainable Payout - As of:	2020
6.43%	Historical ERP -- For Period:	1928-2020
	S&P 500 Average Annual Return:	11.64%
	10-Year T-Bond Average Annual Return:	5.21%

Custom Equity Risk Premium

0.00%	Add Notes Here

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Company Name

AUS Consultants

Valuation Date

12/31/2020

Returns Reference – Start Year

EARLIEST YEAR YYYY

Returns Reference – End Year

2020

Returns Calculation - Mean

- (•) Arithmetic
- ( ) Geometric

RFR ERP Size Premium IRP CoE WACC Summary

Treasury Constant Maturity Rate

0.93%	10-Year Maturity - As of:	12/31/2020
1.45%	20-Year Maturity - As of:	12/31/2020

Custom Risk Free Rate

0.00% Add Notes Here

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PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held May 6, 2021

Docket Number: M-2021-3025288

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

December 31, 2020

Gladys Brown Dutrieuille, Chairman
David W. Sweet, Vice Chairman
John F. Coleman, Jr., Commissioner
Ralph V. Yanora, Commissioner

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Introduction:

On September 20, 1991, the Commission initiated a rulemaking at L-00910061 pertaining to earnings disclosures by the public utilities subject to its jurisdiction. At that docket, the Commission stated that the submission of accurate, reliable and complete earnings disclosure reports, at regular intervals, is essential to the fulfillment of the broad regulatory oversight responsibilities entrusted to the Commission by the Legislature in the Public Utility Code. The earnings disclosure regulations promulgated by the Commission were adopted October 1, 1992, and published January 23, 1993, at 23 Pa.B. 463. Based upon those regulations, codified at 52 Pa. Code, Chapter 71, a reporting format was developed and distributed to the jurisdictional fixed utilities of Pennsylvania.

All fixed utilities having jurisdictional revenues of $1,000,000 or more, for a calendar year, are required to file the report by March 31 of each year. Such reports are to be based upon the results of operations for the 12-month period ending December 31 of the prior year. Utilities having more than $10,000,000 in jurisdictional revenues are also required to file reports for the 12 months ending on March 31, June 30, and September 30 of each year. On November 30, 2004, however, the Pennsylvania General Assembly signed into law Act 183 concerning alternative telecommunications regulation and broadband deployment. As a result of Act 183, the reporting requirements for the PUC jurisdictional telecommunications companies of Pennsylvania have been streamlined at section 3015(e) of the Public Utility Code. A quarterly earnings report is not listed among those reports now required of PUC jurisdictional telecommunications utilities in Pennsylvania and, therefore, this report does not address telephone company earnings.

The reports have been filed for the period ended December 31, 2020.[1] The Finance Staff of the Bureau of Technical Utility Services has reviewed the reports and has prepared this summary report for public release. This report sets forth the achieved return on equity for each company, the last allowed return for that utility, a market return as determined through the analysis of the barometer group data and the most recent returns allowed, per industry, by the Pennsylvania Public Utility Commission and by other regulatory bodies. Where a utility has not filed a report, the reasons for not filing are indicated.

Questions pertaining to the preparation and contents of this Report should be directed to Ms. Erin Laudenslager, Manager - Finance, Bureau of Technical Utility Services, at (717) 705-4364.

[1] UGI Utilities, Inc. – Electric Division, PECO Energy Company – Gas Operations, Columbia Gas of Pennsylvania, Inc., and UGI Utilities, Inc. – Gas Division have rate filings at Docket Nos. R-2021-3023618, R-2020-3018929, R-2020-3018835, and R-2019-3015162 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

The equity return summaries that follow in Attachment A are, for each quarter;

ACTUAL

1. Based on actual results of operations

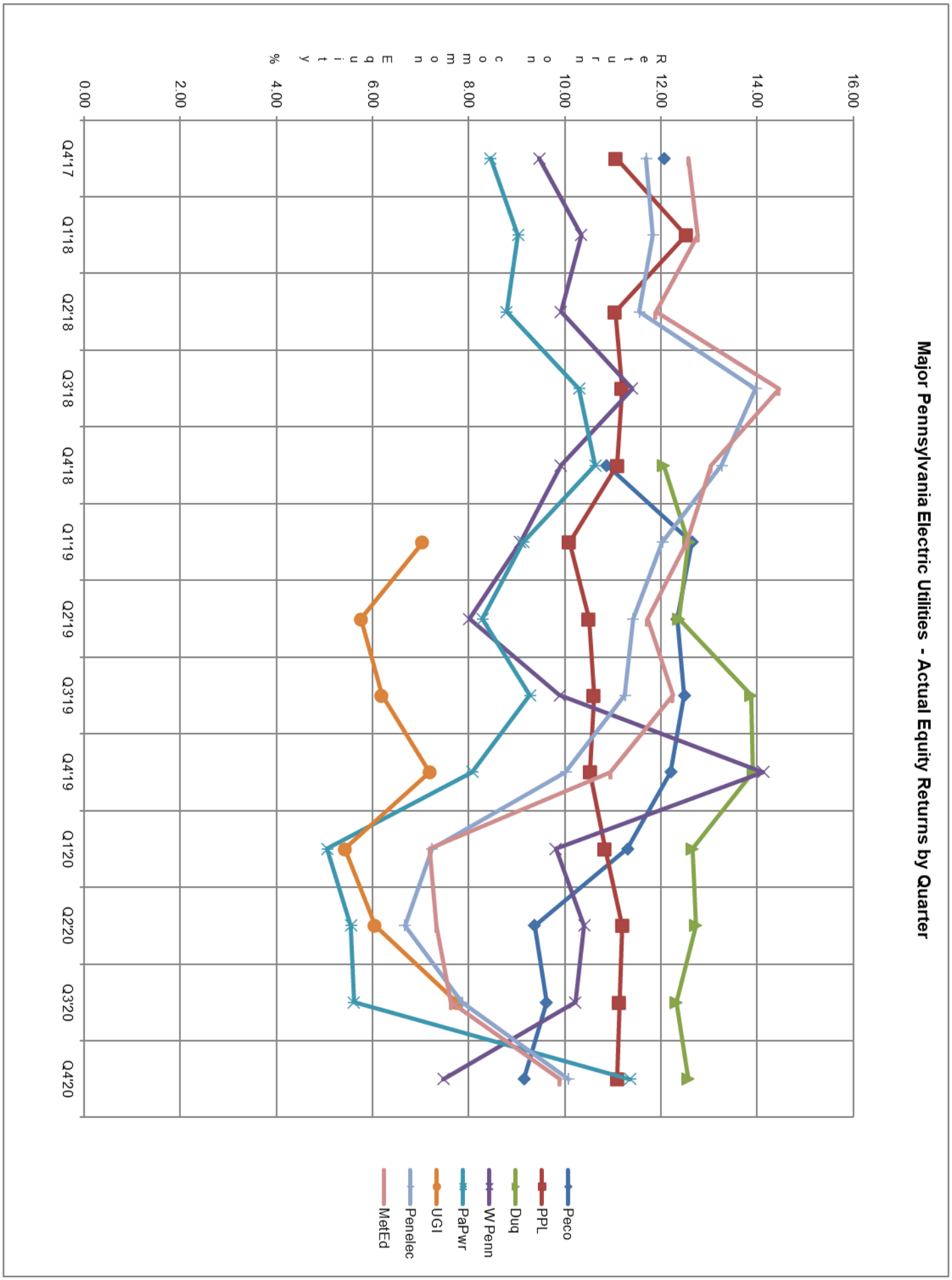
and

ADJUSTED

2. Based on company proposed pro forma and ratemaking adjustments

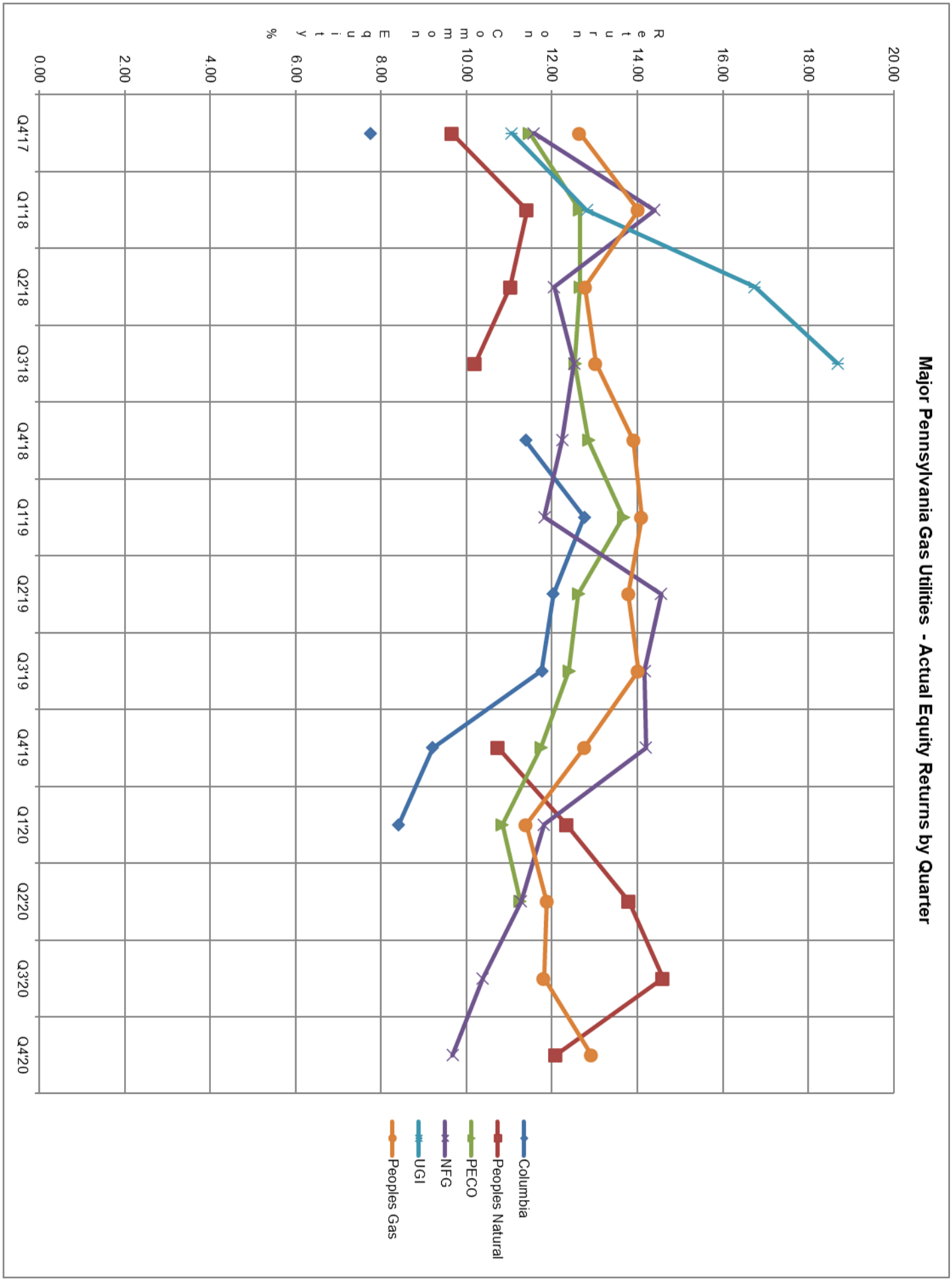
ELECTRIC UTILITIES
EQUITY RETURNS BY QUARTER

QTR END		PECO		PPL		Duq		W Penn		PaPwr		UGI		Penelec		MetEd	
		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2015	1					10.08	9.65					10.88	10.39				
	2					9.80	9.42					13.57	9.49				
	3					10.11	9.73	6.45	6.45	5.77	5.77	15.93	7.57	2.94	2.94	3.69	3.69
	4	10.74	8.84	8.89	8.48	9.73	9.36	8.09	8.09	5.13	5.13	9.74	9.21	5.45	5.45	7.04	7.04
2016	1	10.86	9.74	7.75	6.94	9.87	9.89					10.41	8.69				
	2	11.46	10.15	9.15	8.51	9.57	9.47					8.29	8.10				
	3	13.42	11.44	10.15	9.59	10.12	9.46					19.18	6.99				
	4	12.52	10.65	10.45	10.29	9.71	9.01					26.07	7.30				
2017	1	13.01	11.40	9.76	8.49	9.53	8.99					22.86	6.81				
	2	12.98	11.40	10.71	9.70	9.86	9.24	8.23	7.38	7.32	7.97	21.96	6.74	9.23	9.20	9.74	9.35
	3	12.84	10.52	10.15	9.30	9.53	9.23	7.63	7.24	8.32	9.08	16.13	5.22	9.61	9.50	11.37	10.97
	4	12.07	9.11	11.07	10.63			9.47	9.12	8.46	8.19			11.70	10.93	12.58	11.67
2018	1			12.53	11.36			10.35	9.08	9.03	8.08			11.84	9.93	12.77	11.38
	2			11.05	9.49			9.92	8.52	8.79	7.57			11.56	9.39	11.90	10.26
	3			11.19	9.83			11.41	6.74	10.30	5.80			13.97	8.44	14.46	9.62
	4	10.88	7.61	11.10	10.15	12.06	9.39	9.92	6.78	10.64	7.43			13.27	9.31	13.05	7.40
2019	1	12.65	7.93	10.10	8.96	12.58	9.73	9.08	6.62	9.14	7.61	7.05	5.22	12.03	8.07	12.54	7.66
	2	12.34	7.94	10.51	8.95	12.38	9.34	8.02	5.99	8.29	7.10	5.77	3.22	11.42	8.16	11.72	7.21
	3	12.49	7.96	10.61	8.99	13.88	9.33	9.90	7.87	9.28	7.76	6.20	2.04	11.26	8.78	12.25	7.77
	4	12.21	8.50	10.53	10.40	13.92	9.08	14.13	7.07	8.08	6.90	7.20	2.38	10.02	8.54	10.96	9.27
2020	1	11.31	8.35	10.84	11.20	12.66	8.31	9.82	5.54	5.06	6.71	5.43	2.26	7.24	8.74	7.20	8.31
	2	9.38	8.17	11.20	10.81	12.73	8.56	10.41	5.53	5.56	6.55	6.06	2.01	6.68	7.94	7.34	8.04
	3	9.62	8.56	11.14	11.20	12.32	8.08	10.22	5.42	5.62	6.74	7.76	0.41	7.87	8.75	7.64	8.37
	4	9.16	7.64	11.10	11.48	12.57	8.15	7.48	5.65	11.36	7.34			10.08	8.62	9.91	8.64


Major Pennsylvania Electric Utilities - Actual Equity Returns by Quarter
Return on common equity %
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Q4'17
Q1'18
Q2'18
Q3'18
Q4'18
Q1'19
Q2'19
Q3'19
Q4'19
Q1'20
Q2'20
Q3'20
Q4'20
Peco
PPL
Duq
W Penn
PaPwr
UGI
Penelec
MetEd

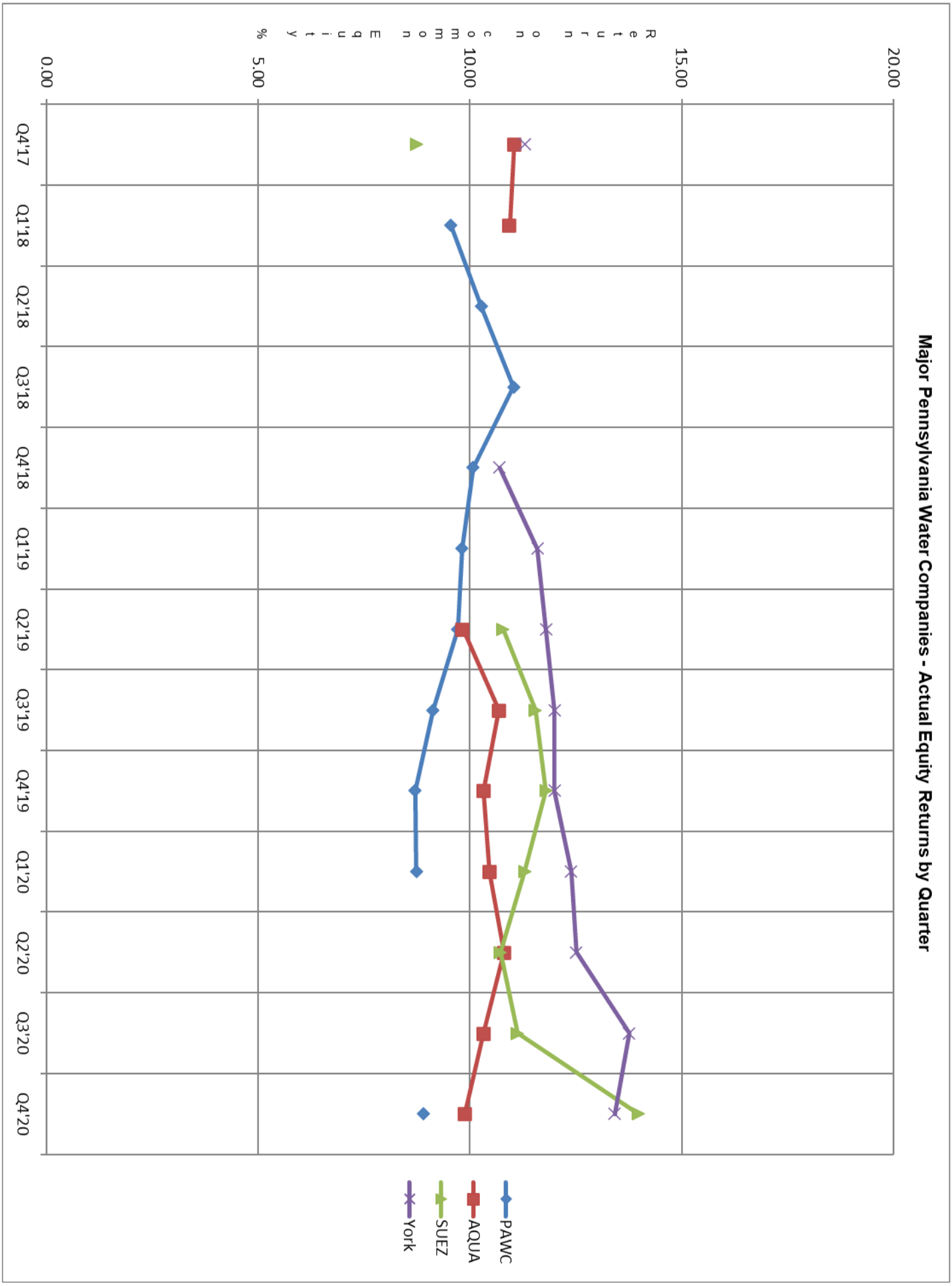
GAS UTILITIES
EQUITY RETURNS BY QUARTER

QTR		Columbia		Peoples Natural		PECO		NFG		UGI		Peoples Gas	
END		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2015	1			14.22	7.90	14.60	13.01	20.17	10.31	15.76	7.87	16.36	11.23
	2			14.37	8.88	13.89	12.32	18.82	10.39	14.07	7.62	16.15	12.90
	3			13.55	8.14	13.29	11.77	16.41	10.27	15.67	6.51	15.69	12.58
	4	9.75	9.73	8.80	9.83	12.50	12.70	15.01	10.59			12.71	12.14
2016	1			7.01	10.02	10.73	13.58	12.60	10.97			8.54	10.48
	2			6.24	9.99	11.55	13.85	12.31	11.08			9.20	10.43
	3			6.93	9.34	12.09	14.40	13.00	10.34			9.07	12.02
	4	8.90	9.26	10.11	11.03	11.39	12.37	14.18	9.58			12.47	11.87
2017	1	10.52	10.17	9.96	9.27	11.45	12.55	12.84	9.26	21.08	10.09	11.82	12.34
	2	9.15	9.81	9.41	9.71	10.87	12.17	13.33	10.53	19.16	9.44	11.89	13.47
	3	8.15	8.77	6.69	6.40	11.26	10.92	10.92	10.00	13.34	9.03	12.04	13.36
	4	7.76	8.48	9.66	7.27	11.48	9.83	11.58	10.56	11.06	8.62	12.65	11.79
2018	1			11.42	7.00	12.65	9.77	14.40	10.20	12.82	7.90	14.02	10.17
	2			11.03	6.80	12.66	9.05	12.06	9.89	16.75	6.80	12.78	10.15
	3			10.21	7.43	12.54	8.36	12.52	10.12	18.69	8.04	13.03	10.20
	4	11.39	9.81			12.86	8.68	12.24	10.21			13.92	11.13
2019	1	12.76	10.22			13.68	9.06	11.83	10.93			14.10	10.71
	2	12.04	9.92			12.62	8.41	14.56	9.99			13.80	11.66
	3	11.77	9.85			12.40	8.31	14.17	9.75			14.02	11.63
	4	9.21	9.09	10.74	12.26	11.75	6.99	14.20	9.77			12.76	11.20
2020	1	8.42	9.11	12.34	12.34	10.84	7.68	11.82	9.92			11.40	11.07
	2			13.81	12.38	11.26	7.25	11.28	9.05			11.89	11.10
	3			14.60	12.77			10.39	8.25			11.82	11.50
	4			12.09	10.37			9.68	8.12			12.93	12.11


Major Pennsylvania Gas Utilities - Actual Equity Returns by Quarter
Return on Common Equity %
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Q4'17
Q1'18
Q2'18
Q3'18
Q4'18
Q1'19
Q2'19
Q3'19
Q4'19
Q1'20
Q2'20
Q3'20
Q4'20
Columbia
Peoples Natural
PECO
NFG
UGI
Peoples Gas

WATER UTILITIES
EQUITY RETURNS BY QUARTER

QTR		PAWC		AQUA		SUEZ		York	
END		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2015	1	10.33	9.14	12.46	11.11	9.11	9.83	12.7	12.7
	2	10.51	9.31	12.66	11.62	8.36	9.25	12.7	12.7
	3	10.06	8.81	12.41	11.95	8.39	9.37	13.6	13.6
	4	9.80	8.48	12.61	12.16	8.54	8.77	12.50	11.10
2016	1	10.12	8.68	12.31	11.71	9.27	10.19	12.40	10.90
	2	9.99	8.47	11.71	11.21	11.00	12.37	12.20	10.80
	3	9.82	8.47	11.55	10.32	8.23	9.99	12.20	11.00
	4	9.37	8.51	11.70	10.57	9.13	9.90	11.50	10.40
2017	1			11.34	10.04	9.22	9.60	11.61	9.50
	2			10.99	9.22	9.03	9.07	11.60	9.10
	3			10.99	9.23	8.57	8.57	11.60	8.70
	4			11.05	8.63	8.75	8.73	11.30	8.40
2018	1	9.55	8.97	10.94	8.41				
	2	10.27	9.65						
	3	11.03	9.48						
	4	10.08	9.03					10.70	10.30
2019	1	9.82	8.87					11.60	11.60
	2	9.72	8.90	9.84	9.04	10.78	10.36	11.80	11.80
	3	9.13	8.41	10.69	8.84	11.55	11.75	12.00	12.00
	4	8.71	8.09	10.33	8.24	11.80	12.15	12.00	9.80
2020	1	8.74	7.56	10.47	8.31	11.30	11.30	12.39	12.39
	2			10.81	8.57	10.72	10.69	12.51	12.51
	3			10.33	8.55	11.13	10.69	13.76	13.76
	4	8.90	8.15	9.89	8.30	13.98	10.17	13.42	9.94


Major Pennsylvania Water Companies - Actual Equity Returns by Quarter
Return on common Equity %
0.00
5.00
10.00
15.00
20.00
Q4'17
Q1'18
Q2'18
Q3'18
Q4'18
Q1'19
Q2'19
Q3'19
Q4'19
Q1'20
Q2'20
Q3'20
Q4'20
PAWC
AQUA
SUEZ
York

Attachment B includes:

A. Overall Returns on rate base
1. Actual
2. Company proposed pro forma and ratemaking adjustments

and

B. Equity Returns
1. Actual
2. Company proposed pro forma and ratemaking adjustments

Summary of Returns
For the Year Ended December 31, 2020

COMPANY NAME	OVERALL RETURN ACTUAL	OVERALL RETURN ADJ	EQUITY RETURN ACTUAL	EQUITY RETURN ADJ	ROE AUTH	YEAR AUTH
ELECTRIC						
$10,000,000 Revenues						
PECO Energy - Electric Operations	6.74	5.84	9.16	7.64	Settled	2018
PPL Electric Utilities Corp.	7.89	8.10	11.10	11.48	Settled	2015
Duquesne Light Company	8.74	6.37	12.57	8.15	Settled	2018
West Penn Power Company	5.83	4.87	7.48	5.65	Settled	2017
Pennsylvania Power Company	8.40	6.32	11.36	7.34	Settled	2017
UGI Utilities, Inc. - Electric Division*					9.85	2018
Pennsylvania Electric Company	7.27	6.46	10.08	8.62	Settled	2017
Metropolitan Edison Company	7.05	6.35	9.91	8.64	Settled	2017
Over $1,000,000 Revenues						
Citizens Electric Company	4.80	6.40	4.94	6.74	9.54	2020
Pike County Light & Power Co.	3.66	2.84	3.26	1.81	Settled	2014
Wellsboro Electric Company	8.45	8.45	22.88	22.88	9.31	2020
GAS						
$10,000,000 Revenues						
Columbia Gas of PA, Inc.*					9.86	2021
Peoples Natural Gas Company LLC	8.24	7.34	12.09	10.37	Settled	2019
PECO Energy - Gas Operations*					Settled	2010
National Fuel Gas Distribution Co.	7.11	6.45	9.68	8.12	Settled	2006
UGI Utilities, Inc. – Gas Division*					Settled	2020
Peoples Gas Company, LLC	7.95	7.47	12.93	12.11	Settled	2013
$1,000,000 to $10,000,000 Revenues						
North East Heat & Light Co.	10.31	10.31	10.47	10.47	11.00	2008
Valley Energy	2.46	2.57	1.51	1.67	9.73	2020
Pike County Light & Power Co.	4.62	3.85	5.74	4.25	Settled	2014
WATER						
$10,000,000 Revenues						
PA American Water Company	6.90	6.49	8.90	8.15	Settled	2021
Aqua Pennsylvania	7.05	6.18	9.89	8.30	Settled	2018
York Water Company	9.24	7.25	13.42	9.94	Settled	2019
SUEZ Water Pennsylvania, Inc.	9.56	7.48	13.98	10.17	Settled	2018
$1,000,000 to $10,000,000 Revenues						
Newtown Artesian Water Co.	12.03	10.13	16.04	12.92	Settled	2019
Columbia Water Company	4.13	4.13	3.79	3.70	Settled	2015

UGI Utilities, Inc. – Electric Division, PECO Energy Company – Gas Operations, Columbia Gas of Pennsylvania, Inc., and UGI Utilities, Inc. – Gas Division have rate filings at Docket Nos. R-2021-3023618, R-2020-3018929, R-2020-3018835, and R-2019-3015162 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

ALLOWED RATES OF RETURN ON COMMON EQUITY

This is a historical chart that shows the most recent rate cases for select companies in electric, gas, and water. A docket number followed by their final return on equity and year is also given.

ELECTRIC	**Docket Number**	**ROE (%)**	**Year**
Recent PA PUC Allowed			
Duquesne Light Company	R-2018-3000124	Settled	2018
PECO Energy Company	R-2018-3000164	Settled	2018
UGI - Electric	R-2017-2640058	9.85	2018
Pennsylvania Electric Company	R-2016-2537352	Settled	2017
Metropolitan Edison Company	R-2016-2537349	Settled	2017
Pennsylvania Power Company	R-2016-2537355	Settled	2017
West Penn Power Company	R-2016-2537359	Settled	2017
Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services.			**7.10-10.08**

GAS			
Recent PA PUC Allowed			
Columbia Gas of Pa.	R-2020-3018835	9.86	2021
UGI Utilities, Inc. – Gas Division	R-2019-3015162	Settled	2020
Peoples Natural Gas Company	R-2018-3006818	Settled	2019
PECO Energy	R-2010-2161592	Settled	2010
Peoples Gas Company	R-2013-2355886	Settled	2013
Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services.			**8.24-9.84**

WATER			
Recent PA PUC Allowed			
Aqua Pennsylvania	R-2018-3003558	Settled	2018
PA American Water	R-2020-3019369	Settled	2021
Columbia Water	R-2017-2598203	Settled	2017
York Water	R-2018-3000019	Settled	2019
SUEZ Water	R-2018-3000834	Settled	2018
Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services.			**6.55-11.16**

Distribution System Improvement Charge (DSIC) Eligible Utilities
Return on Equity (ROE) Summary

	Utility Adjusted ROE[2] (%)	Commission Approved ROE[3] (%)
ELECTRIC		
PECO Energy – Electric Operations	7.64	9.45
PPL Electric Utilities Corp.	11.48	9.45
Duquesne Light Company	8.15	9.45
West Penn Power Company	5.65	9.45
Pennsylvania Power Company	7.34	9.45
Pennsylvania Electric Company	8.62	9.45
Metropolitan Edison Company	8.64	9.45
UGI Utilities, Inc.- Electric Division*		9.45
GAS		
Columbia Gas of PA, Inc.*		9.86
Peoples Natural Gas Company LLC	10.37	10.20
PECO Energy – Gas Operations*		10.20
Peoples Gas Company, LLC	12.11	10.20
UGI Utilities, Inc. – Gas Division*		10.20
WATER		
PA American Water Company	8.15	9.85
PA American – Wastewater	8.15	9.85
AQUA Pennsylvania	8.30	9.85
AQUA Pennsylvania – Wastewater	8.30	9.85
York Water Company	9.94	9.85
SUEZ Water Pennsylvania Inc.	10.17	9.85
Columbia Water Company	3.70	9.85
Newtown Artesian Water	12.92	9.85

* UGI Utilities, Inc. – Electric Division, PECO Energy Company – Gas Operations, Columbia Gas of Pennsylvania, Inc., and UGI Utilities, Inc. – Gas Division have rate filings at Docket Nos. R-2021-3023618, R-2020-3018929, R-2020-3018835, and R-2019-3015162 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

2 Each utility lists adjustments on Schedule B of their quarterly financial report.

3 The ROE is approved in a utility's most recent fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years have elapsed between the entry of a final order and the DSIC effective date, the ROE is from this report. If the base rate proceeding is settled, without a stipulated ROE, the ROE is from this report.

Explanation of Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM)

Barometer Group Criteria

The criteria used for determining the industry barometer groups used to calculate ROEs in this report are as follows:

- 50% or more of the company's assets must be related to the jurisdictional utility industry;
- The company's stock must be publicly traded;
- Companies involved in merger & acquisition activity will be excluded;
- Investment information for the company must be available to the Commission from more than one source; and
- Geographic Regions:
  EDCs: *Value Line* East, Central, and West Group Electric Utility companies;
  NGDCs: *Value Line* Investment Survey's Natural Gas Utility industry group companies;
  Water/Wastewater: *Value Line* Investment Survey's Water Utility industry group companies.

The barometer group companies are reviewed by staff on a quarterly basis and make any changes to these companies based upon the criteria above.

ROE Calculations

The Commission consistently uses the DCF model to determine the appropriate cost of equity for utilities. In this report, the DSIC ROE is calculated using two DCF models.

TUS uses the following formula to calculate the current dividend DCF: $K = D_1/P_0 + G$

TUS uses the following formula to calculate the 52-week average dividend DCF: $K = D_0/P_a + G$

Definitions:

K	=	Cost of equity
D_1	=	Dividend expected during the year
	=	$D_0 + ½g$
D_0	=	Latest indicated dividend, obtained from Yahoo! Finance
g	=	Expected 5-year dividend growth rate of barometer group obtained from Value Line Investment Survey.
P_0	=	Current price of the stock, obtained from Yahoo! Finance
P_a	=	Average of high and low stock price over the latest 52-week period, obtained from Yahoo! Finance
G	=	Average of 5-year expected earnings growth rate forecasts obtained from Value Line, Zacks Investment Survey, Yahoo! Finance, and Morningstar.

The CAPM uses the yield of a risk-free interest-bearing obligation plus a rate of return premium that is proportional to the systematic risk of an investment.

TUS uses the following formula to calculate CAPM: $K = \beta(R_m - R_f)$

Three components are necessary to calculate the CAPM cost of equity:

β	=	Beta, a measure of systematic risk for each stock
R_f	=	The risk-free rate of return, 10-year U.S. Treasury yields are used for R_f. Yields are taken from the previous two quarters and forecasted next four quarters.
R_m	=	Total return of the equity market as determined by the SBBI Yearbook

The Commission determines the ROE used for DSIC purposes based on the range of reasonableness from the DCF barometer group data, CAPM data, recent ROEs adjudicated by the Commission, and informed judgment.

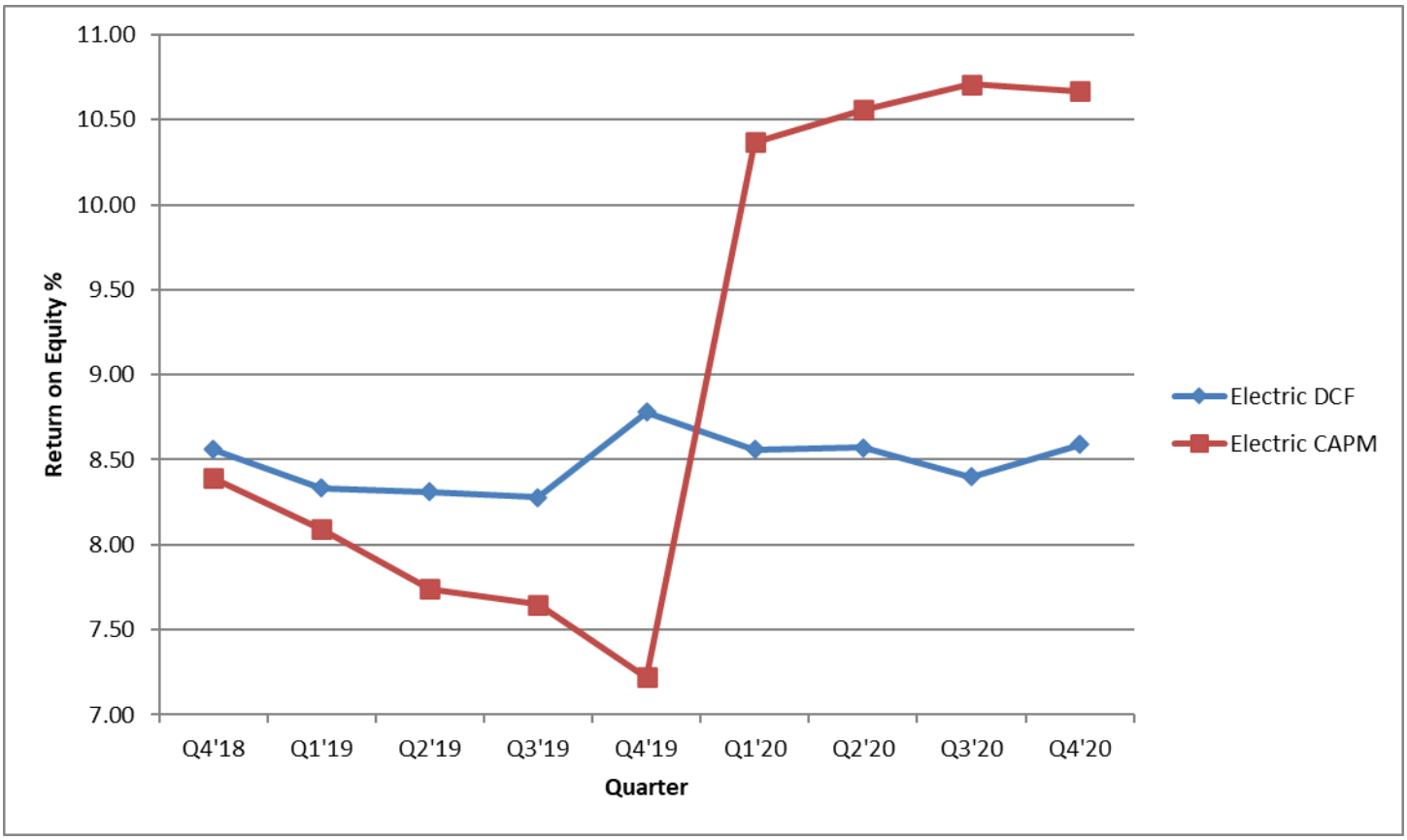
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity[1]	
April 15, 2021	
Electric Company Barometer Group	
	Cost Rates
	%
(1) Current DCF:	8.47
(2) 52-Week Average DCF:	8.72
(3) Overall DCF ((1) + (2)) / 2 :	8.59
(4) Market Indicated Common Equity Cost Rate Range:	7.10-10.08
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness:	10.67
(6) Recent Commission Approved ROEs[3]:	*
*None within last two years	
(7) Distribution System Improvement Charge (DSIC) Return[4]:	**9.45%**
[1] As calculated by the Bureau of Technical Utility Services	
[2] Standard Deviation of 56 DCF observations	
[3] Base rate case ROEs within last two years, fully litigated or stipulated for DSIC purposes	
[4] Commission authorized Return on Equity (ROE) for DSIC purposes	
Any questions concerning DSIC should be directed to Marc Hoffer	
of the Bureau of Technical Utility Services at (717) 787-1869.	

Historic Electric Industry Barometer Group DCF and CAPM Average ROEs

Electric		
	DCF	CAPM
Q4'18	8.56	8.39
Q1'19	8.33	8.09
Q2'19	8.31	7.74
Q3'19	8.28	7.65
Q4'19	8.78	7.22
Q1'20	8.56	10.37
Q2'20	8.57	10.56
Q3'20	8.40	10.71
Q4'20	8.59	10.67

Chart of Historic Electric Industry DCF and CAPM Average ROEs



Barometer electric companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Electric Company Barometer Group

Calculation of a Current Dividend Yield

	Closing Market Price (Po) 4/15/2021 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	DCF (%)
Allete, Inc.	70.01	2.52	2.56	3.66	10.16
Alliant Energy Corp	55.68	1.61	1.67	2.99	8.87
Ameren Corp	85.38	2.20	2.28	2.67	9.72
American Electric Power	87.81	2.96	3.04	3.46	9.50
AVANGRID, Inc.	52.58	1.76	1.77	3.37	9.77
Avista Corp	47.70	1.69	1.72	3.61	8.55
CMS Energy Corp	63.40	1.74	1.80	2.84	10.02
Consolidated Edison	77.19	3.10	3.15	4.08	6.66
DTE Energy Company	139.48	4.34	4.48	3.21	7.08
Duke Energy Company	99.75	3.86	3.91	3.92	8.69
Edison International	61.44	2.65	2.70	4.40	6.43
Entergy Corp.	105.59	3.80	3.89	3.68	8.10
Eversource Energy	88.79	2.41	2.48	2.80	9.78
Exelon Corp	45.77	1.53	1.57	3.43	5.05
Fortis Inc.	43.66	1.59	1.64	3.75	8.85
IDACORP, Inc..	100.49	2.84	2.93	2.92	6.42
MGE Energy, Inc.	73.83	1.48	1.52	2.06	6.69
NextEra Energy, Inc.	80.18	1.54	1.62	2.02	10.99
NorthWestern Corp	68.18	2.48	2.53	3.71	7.54
OGE Energy Corp	33.40	1.61	1.65	4.93	8.83
Otter Tail Corp	47.22	1.56	1.60	3.39	11.39
Pinnacle West Capital Corp	84.47	3.32	3.42	4.05	7.80
Portland General Electric Co.	50.14	1.63	1.68	3.35	7.30
PPL Corporation	28.99	1.66	1.67	5.77	8.32
Public Service Enterprise Group	62.40	2.04	2.08	3.33	7.05
Southern Company	64.49	2.56	2.60	4.03	9.23
WEC Energy Group, Inc.	95.94	2.71	2.80	2.92	9.24
Xcel Energy Inc.	69.96	1.83	1.88	2.69	8.87
Group Average	70.85	2.32	2.38	3.47	8.46
Group Average G				5.00	
DCF				**8.47**	

Electric Company Barometer Group 52-week Average Dividend Yield Calculation						
	High	Low	Average (Pa)	Latest Indicated Dividend (Do)	Average Dividend Yield (Do/Pa)	DCF
	($)	($)	($)	($)	(%)	(%)
Allete, Inc.	72.60	48.22	60.41	2.52	4.17	10.67
Alliant Energy Corp	58.10	44.36	51.23	1.61	3.14	9.02
Ameren Corp	86.90	66.33	76.62	2.20	2.87	9.92
American Electric Power	94.21	74.80	84.51	2.96	3.50	9.54
AVANGRID, Inc.	56.20	38.78	47.49	1.76	3.71	10.11
Avista Corp	49.14	32.26	40.70	1.69	4.15	9.09
CMS Energy Corp	67.98	52.35	60.17	1.74	2.89	10.07
Consolidated Edison	90.00	65.56	77.78	3.10	3.99	6.57
DTE Energy Company	140.79	92.39	116.59	4.34	3.72	7.58
Duke Energy Company	100.90	77.58	89.24	3.86	4.33	9.10
Edison International	66.68	48.47	57.58	2.65	4.60	6.64
Entergy Corp.	113.36	85.78	99.57	3.80	3.82	8.24
Eversource Energy	96.66	73.61	85.14	2.41	2.83	9.82
Exelon Corp	46.15	33.97	40.06	1.53	3.82	5.43
Fortis Inc.	44.25	35.53	39.89	1.59	3.99	9.09
IDACORP, Inc..	102.96	78.91	90.94	2.84	3.12	6.62
MGE Energy, Inc.	74.53	56.25	65.39	1.48	2.26	6.90
NextEra Energy, Inc.	87.69	55.65	71.67	1.54	2.15	11.12
NorthWestern Corp	69.81	47.43	58.62	2.48	4.23	8.06
OGE Energy Corp	35.24	27.96	31.60	1.61	5.09	8.99
Otter Tail Corp	47.80	35.36	41.58	1.56	3.75	11.75
Pinnacle West Capital Corp	91.88	69.29	80.59	3.32	4.12	7.87
Portland General Electric Co.	51.14	31.96	41.55	1.63	3.92	7.87
PPL Corporation	30.94	23.71	27.33	1.66	6.08	8.63
Public Service Enterprise Group	63.38	43.87	53.63	2.04	3.80	7.52
Southern Company	65.05	50.40	57.73	2.56	4.43	9.63
WEC Energy Group, Inc.	106.85	80.55	93.70	2.71	2.89	9.22
Xcel Energy Inc.	76.44	56.07	66.26	1.83	2.76	8.94
Group Average	74.56	54.55	64.55	2.32	3.72	8.71
Group Average G					5.00	
DCF					**8.72**	
		Average of Current and 52-Week			**8.59**	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate
for the Barometer Group of Electric Companies

		5 Year Forecast					
						Avgerage	
	Value Line	Value Line	Zack's	Yahoo	Morningstar	Earnings	Growth
	DPS	EPS	EPS	EPS	EPS	Growth	Estimate
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Allete, Inc.	3.50	6.00	NA	7.00	NA	6.50	6.50
Alliant Energy Corp	7.00	5.50	5.80	5.50	6.70	5.88	5.88
Ameren Corp	7.00	6.00	7.30	7.50	7.40	7.05	7.05
American Electric Power	5.50	6.50	5.70	6.15	5.80	6.04	6.04
AVANGRID, Inc.	1.50	6.00	5.50	5.00	9.10	6.40	6.40
Avista Corp	4.00	1.00	6.90	6.90	NA	4.93	4.93
CMS Energy Corp	7.00	7.50	6.90	7.20	7.10	7.18	7.18
Consolidated Edison	3.00	2.50	2.00	2.95	2.90	2.59	2.59
DTE Energy Company	6.50	6.00	5.70	4.65	-0.90	3.86	3.86
Duke Energy Company	2.50	5.00	5.20	5.00	3.90	4.78	4.78
Edison International	4.00	12.00	4.30	-0.50	2.30	4.53	2.03
Entergy Corp.	4.50	3.00	5.10	5.50	4.10	4.43	4.43
Eversource Energy	6.00	6.50	6.80	7.05	7.60	6.99	6.99
Exelon Corp	5.50	4.00	2.30	-0.34	0.50	1.62	1.62
Fortis Inc.	6.00	4.00	6.20	NA	NA	5.10	5.10
IDACORP, Inc..	6.50	4.50	3.00	3.00	NA	3.50	3.50
MGE Energy, Inc.	5.50	4.50	4.70	4.70	NA	4.63	4.63
NextEra Energy, Inc.	10.50	10.50	7.80	8.49	9.10	8.97	8.97
NorthWestern Corp	4.00	2.50	4.40	4.58	NA	3.83	3.83
OGE Energy Corp	4.50	4.00	4.40	3.80	3.40	3.90	3.90
Otter Tail Corp	5.50	7.00	NA	9.00	NA	8.00	8.00
Pinnacle West Capital Corp	6.00	4.50	3.40	3.50	3.60	3.75	3.75
Portland General Electric Co.	6.00	4.00	13.40	13.40	3.90	8.68	3.95
PPL Corporation	1.50	2.50	NA	-16.20	2.60	-3.70	2.55
Public Service Enterprise Group	4.00	5.00	3.80	2.45	3.60	3.71	3.71
Southern Company	3.00	3.50	5.00	6.49	5.80	5.20	5.20
WEC Energy Group, Inc.	6.50	6.50	6.10	6.10	6.60	6.33	6.33
Xcel Energy Inc.	6.00	6.00	6.20	6.30	6.20	6.18	6.18
Group Average	5.11	5.23	5.52	4.64	4.82	5.03	4.99
USE							5.00

Sources: Value Line Investment Survey, April 15, 2021
Zacks, April 16, 2021 (www.zacks.com)
Yahoo!, April 16, 2021 (http://finance.yahoo.com/)
Morningstar, April 16, 2021 (http://financials.morningstar.com)
* NA signifies that a forecast was not available

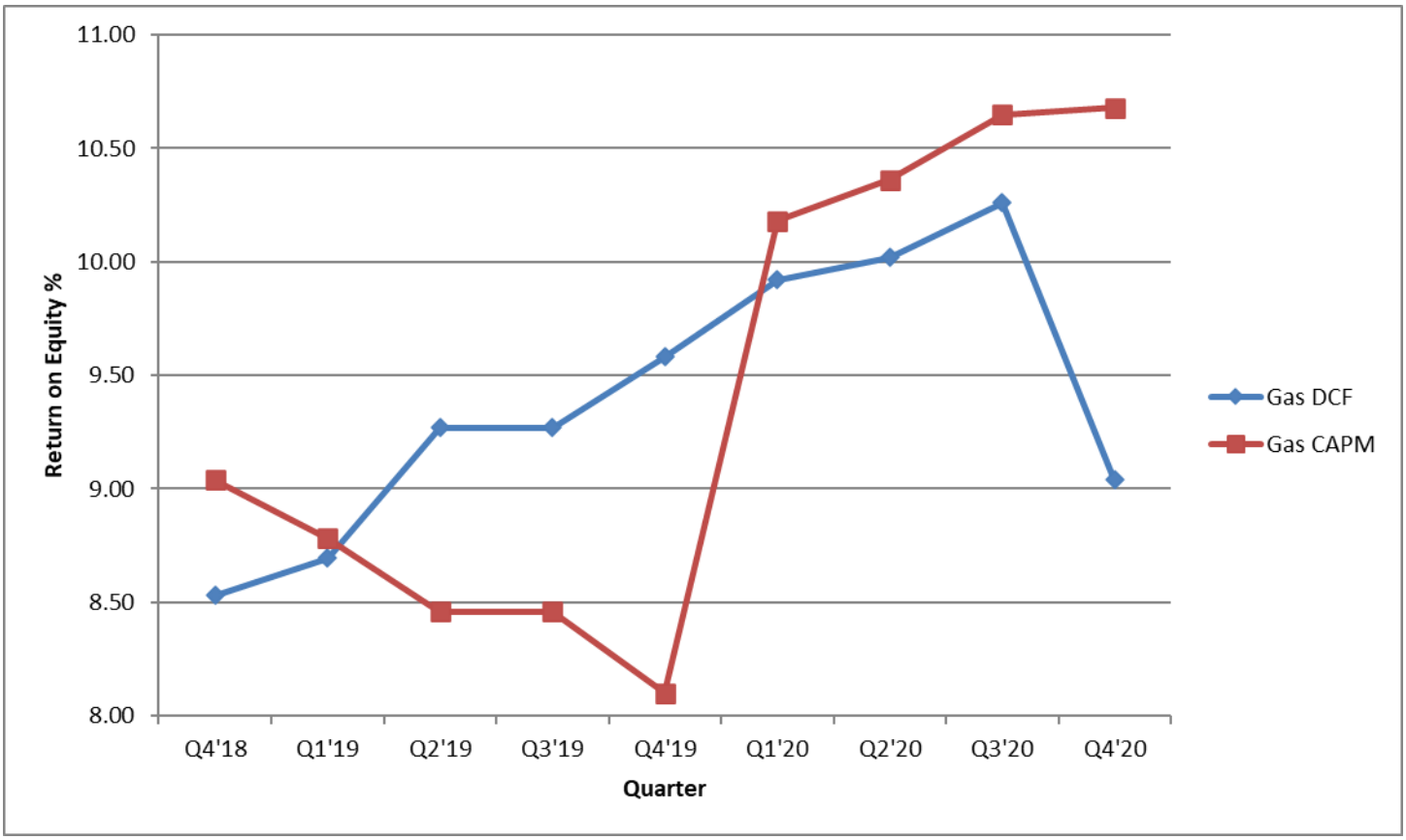
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity[1]	
April 15, 2021	
Gas Distribution Company Barometer Group	
	Cost Rates
	%
(1) Current DCF:	8.95
(2) 52-Week Average DCF:	9.13
(3) Overall DCF ((1) + (2)) / 2 :	9.04
(4) Market Indicated Common Equity Cost Rate Range:	8.24-9.84
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness:	10.68
(6) Recent Commission Approved ROEs[3]:	9.86*
*Columbia Gas of Pennsylvania, Inc.	
R-2020-3018835	
(7) Distribution System Improvement Charge (DSIC) Return[4]:	**10.20%**
[1] As calculated by the Bureau of Technical Utility Services	
[2] Standard Deviation of 18 DCF observations	
[3] Base rate case ROEs within last two years, fully litigated or stipulated for DSIC purposes	
[4] Commission authorized Return on Equity (ROE) for DSIC purposes	
Any questions concerning DSIC should be directed to Marc Hoffer	
of the Bureau of Technical Utility Services at (717) 787-1869.	

Historic Gas Industry DCF and CAPM Average ROEs

Gas		
	DCF	CAPM
Q4'18	8.53	9.04
Q1'19	8.69	8.78
Q2'19	9.27	8.46
Q3'19	9.27	8.46
Q4'19	9.58	8.10
Q1'20	9.92	10.18
Q2'20	10.02	10.36
Q3'20	10.26	10.65
Q4'20	9.04	10.68

Graph of Historic Gas Industry DCF and CAPM Average ROEs



Barometer gas companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Gas Company Barometer Group
Calculation of a Current Dividend Yield

	Closing Market Price (Po) 4/15/2021 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	DCF (%)
Atmos Energy	101.32	2.50	2.59	2.56	9.70
Chesapeake Utilities Corporation	119.37	1.76	1.83	1.53	8.15
New Jersey Resources	41.68	1.33	1.37	3.28	8.90
NiSource Inc.	25.58	0.88	0.90	3.52	9.51
Northwest Natural Gas	55.34	1.92	1.92	3.48	7.38
ONE Gas, Inc.	79.85	2.32	2.40	3.01	8.51
South Jersey Industries	24.52	1.21	1.23	5.03	9.43
Southwest Gas Holdings, Inc.	72.32	2.38	2.43	3.36	9.03
Spire Inc.	77.40	2.60	2.66	3.43	9.63
Group Average	66.38	1.88	1.93	3.25	8.92
Group Average G				5.70	
DCF				**8.95**	

Gas Company Barometer Group
52-week Average Dividend Yield Calculation

	High ($)	Low ($)	Average (Pa) ($)	Latest Indicated Dividend (Do) ($)	Average Dividend Yield (Do/Pa) (%)	DCF (%)
Atmos Energy	111.34	84.59	97.97	2.50	2.55	9.69
Chesapeake Utilities Corporation	121.04	72.89	96.97	1.76	1.82	8.44
New Jersey Resources	42.57	25.87	34.22	1.33	3.89	9.51
NiSource Inc.	27.24	21.09	24.17	0.88	3.64	9.63
Northwest Natural Gas	67.24	41.71	54.48	1.92	3.52	7.42
ONE Gas, Inc.	90.24	65.51	77.88	2.32	2.98	8.48
South Jersey Industries	30.25	18.24	24.25	1.21	4.99	9.39
Southwest Gas Holdings, Inc.	81.62	57.00	69.31	2.38	3.43	9.10
Spire Inc.	77.99	50.58	64.29	2.60	4.04	10.24
Group Average	72.17	48.61	60.39	1.88	3.43	9.10
Group Average G					5.70	
DCF					**9.13**	
		Average of Current and 52-Week			**9.04**	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate
for the Barometer Group of Gas Companies
5 Yr Forecast

	Value Line DPS (%)	Value Line EPS (%)	Zack's EPS (%)	Yahoo EPS (%)	Morningstar EPS (%)	Avgerage Earnings Growth (%)	Growth Estimate (%)
Atmos Energy	7.50	7.00	7.30	7.17	7.10	7.14	7.14
Chesapeake Utilities Corporation	8.00	8.50	NA	4.74	0.00	4.41	6.62
New Jersey Resources	5.50	1.50	6.00	6.00	9.00	5.63	5.63
NiSource Inc.	4.50	10.00	5.00	4.37	4.60	5.99	5.99
Northwest Natural Gas	0.50	5.50	NA	3.10	3.10	3.90	3.90
ONE Gas, Inc.	7.00	6.50	5.00	5.00	NA	5.50	5.50
South Jersey Industries	4.00	10.50	4.40	4.40	NA	6.43	4.40
Southwest Gas Holdings, Inc.	4.50	8.00	5.00	4.00	NA	5.67	5.67
Spire Inc.	4.50	9.00	5.00	5.70	5.10	6.20	6.20
Group Average	5.11	7.39	5.39	4.94	4.82	5.65	5.67
USE							5.70

Sources: Value Line Investment Survey, April 15, 2021
Zacks, April 16, 2021 (www.zacks.com)
Yahoo!, April 16, 2021 (http://finance.yahoo.com/)
Morningstar, April 16, 2021 (http://financials.morningstar.com)
* NA signifies that a forecast was not available

The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity [1]	
April 15, 2021	
Water Company Barometer Group	
	Cost Rates
	%
(1) Current DCF	8.79
(2) 52-Week Average DCF	8.91
(3) Average DCF	8.85
(4) Market Indicated Common Equity Cost Rate Range	6.55-11.16
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness	9.64
(6) Recent Commission Approved ROEs[3]:	*
*None within last two years	
(7) Distribution System Improvement Charge (DSIC) Return[4]:	**9.85%**

[1] As calculated by the Bureau of Technical Utility Services

[2] Standard Deviation of 14 DCF observations

[3] ROEs from base rate cases within last two years, fully litigated or stipulated for DSIC purposes

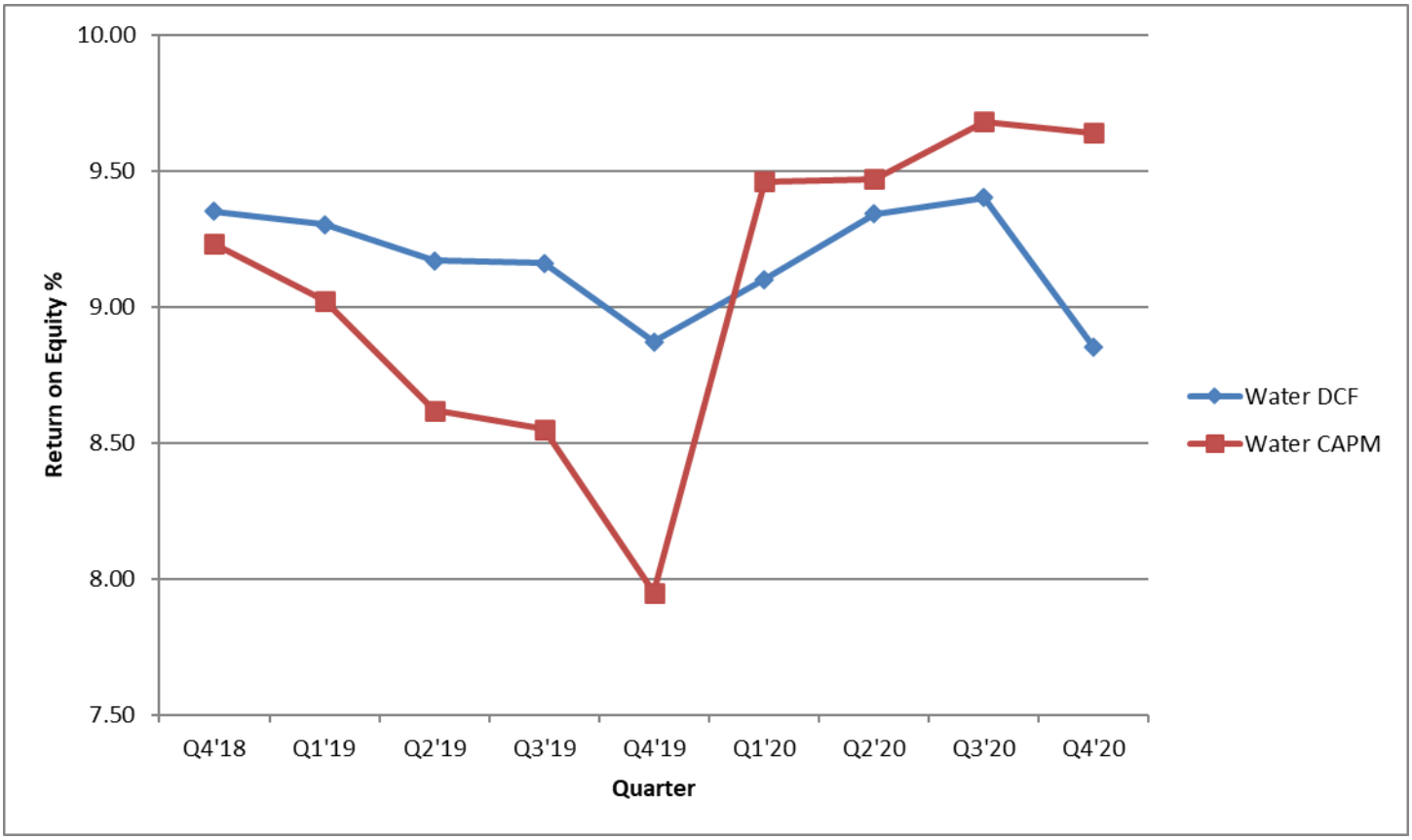
[4] Commission authorized Return on Equity (ROE) for DSIC purposes

Any questions concerning DSIC should be directed to Marc Hoffer
of the Bureau of Technical Utility Services at (717) 787-1869.

Historic Water Industry DCF and CAPM Average ROEs

Water		
	DCF	CAPM
Q4'18	9.35	9.23
Q1'19	9.30	9.02
Q2'19	9.17	8.62
Q3'19	9.16	8.55
Q4'19	8.87	7.95
Q1'20	9.10	9.46
Q2'20	9.34	9.47
Q3'20	9.40	9.68
Q4'20	8.85	9.64

Chart of Historic Water Industry DCF and CAPM Average ROEs



Barometer water companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Water Company Barometer Group
Calculation of a Current Dividend Yield

	Closing Market Price (Po) 4/15/2021 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	Growth (%)	DCF (%)
American States Water Company	80.59	1.34	1.40	1.74	5.43	7.18
American Water Works Co., Inc.	159.16	2.20	2.29	1.44	8.50	9.94
California Water Service Group	60.55	0.92	0.95	1.57	9.58	11.15
Essential Utilities, Inc.	47.12	1.00	1.04	2.20	7.40	9.60
Middlesex Water Company	82.18	1.06	1.09	1.33	3.60	4.93
SJW Group	67.70	1.36	1.40	2.07	9.25	11.32
The York Water Company	51.48	0.75	0.77	1.50	5.70	7.20
Group Average	78.40	1.23	1.28	1.69	7.07	8.76
Group Average G				7.10		
DCF				**8.79**		

52-week High-Low Dividend Yield Calculation

	High ($)	Low ($)	Average (Pa) ($)	Latest Indicated Dividend (Do) ($)	Average Dividend Yield (Do/Pa) (%)	Growth (%)	DCF (%)
American States Water Company	89.96	69.25	79.61	1.34	1.68	5.43	7.12
American Water Works Co., Inc.	172.56	112.50	142.53	2.20	1.54	8.50	10.04
California Water Service Group	60.88	41.19	51.04	0.92	1.80	9.58	11.39
Essential Utilities, Inc.	48.89	37.37	43.13	1.00	2.32	7.40	9.72
Middlesex Water Company	85.92	56.44	71.18	1.06	1.49	3.60	5.09
SJW Group	71.69	50.85	61.27	1.36	2.22	9.25	11.47
The York Water Company	51.90	39.50	45.70	0.75	1.64	5.70	7.34
Group Average	83.11	58.16	70.64	1.23	1.81	7.07	8.88
Group Average G					7.10		
DCF					**8.91**		
		Average of Current and 52-Week			**8.85**		

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate
for the Barometer Group of Water Companies

	5 Yr Forecast						
	Value Line DPS (%)	Value Line EPS (%)	Zacks EPS (%)	Yahoo EPS (%)	Morningstar EPS (%)	Avgerage Earnings Growth (%)	Growth Estimate (%)
American States Water Company	9.50	6.50	NA	4.60	5.20	5.43	5.43
American Water Works Co., Inc.	8.50	8.50	8.10	8.60	8.80	8.50	8.50
California Water Service Group	6.50	6.50	NA	10.75	11.50	9.58	9.58
Essential Utilities, Inc.	7.50	10.00	6.20	6.40	7.00	7.40	7.40
Middlesex Water Company	5.50	4.50	NA	2.70	NA	3.60	3.60
SJW Group	6.00	13.00	NA	5.50	47.10	21.87	9.25
The York Water Company	6.00	6.50	NA	4.90	NA	5.70	5.70
Group Average	7.07	7.93	7.15	6.21	15.92	8.87	7.07
USE							7.10

Sources: Value Line Investment Survey April 15, 2020
Zacks, April 16, 2021 (www.zacks.com)
Yahoo!, April 16, 2021 (http://finance.yahoo.com/)
Morningstar, April 16, 2021 (http://financials.morningstar.com)
* NA signifies that a forecast was not available

East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

Market Approach
Value Line Investment Surveys and Selected Yields
Water Industry
Market and Financial Ratios

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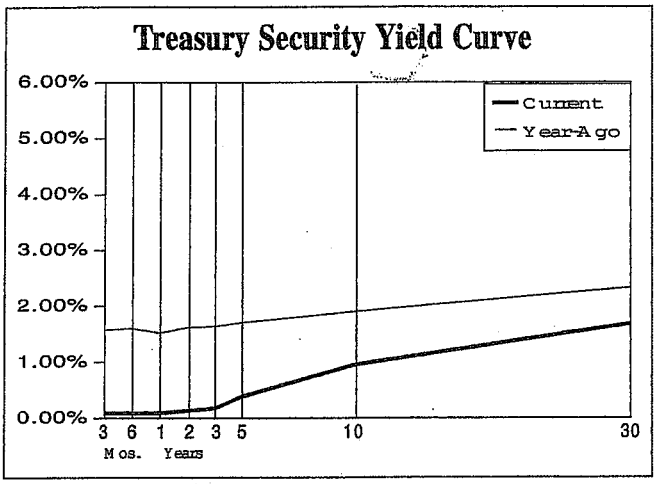
Selected Yields

TAXABLE	Recent (12/21/20)	3 Months Ago (9/21/20)	Year Ago (12/24/19)
Market Rates			
Discount Rate	0.25	0.25	2.25
Federal Funds	0.00-0.25	0.00-0.25	1.50-1.75
Prime Rate	3.25	3.25	4.75
30-day CP (A1/P1)	0.10	0.13	1.87
3-month LIBOR	0.24	0.22	1.96
U.S. Treasury Securities			
3-month	0.09	0.10	1.57
6-month	0.09	0.11	1.60
1-year	0.09	0.12	1.52
5-year	0.39	0.27	1.71
10-year	0.95	0.68	1.90
10-year (inflation-protected)	-1.00	-0.94	0.22
30-year	1.68	1.43	2.33
30-year Zero	N/A	N/A	2.35
Common Stocks			
VL Stocks (Median)	2.00	2.40	2.10
DJ Industrials (12-mo. est.)	2.00	2.20	2.40
VL Utilities	3.80	4.00	3.20



TAXABLE	Recent (12/21/20)	3 Months Ago (9/21/20)	Year Ago (12/24/19)
Corporate Bonds			
Financial (10-year) A	1.75	1.76	2.71
Industrial (25/30-year) A	2.60	2.67	3.35
Utility (25/30-year) A	2.76	2.79	3.43
Utility (25/30-year) Baa/BBB	3.08	3.06	3.80
S&P 500 High Yield Corp. Bond Index	3.60	4.24	3.95
Foreign Bonds (10-Year)			
Canada	0.73	0.54	1.61
Germany	-0.58	-0.53	-0.24
Japan	0.02	0.01	-0.02
United Kingdom	0.21	0.15	0.77
Mortgage-Backed Securities			
GNMA 5.5%	2.23	2.72	3.58
FHLMC 5.5% (Gold)	2.14	2.35	3.70
FNMA 5.5%	2.56	2.72	3.64
Preferred Stock			
Utility A	6.09	6.23	5.99
Financial BBB	5.26	5.46	5.34
Financial Adjustable A	N/A	N/A	5.46
TAX-EXEMPT			
Bond Buyer Indexes			
20-Bond Index (GOs)	2.12	2.22	2.74
25-Bond Index (Revs)	2.57	2.72	3.21
General Obligation Bonds (GOs)			
1-year AAA	0.11	0.11	1.04
1-year A	0.49	0.44	1.14
5-year AAA	0.19	0.26	1.12
5-year A	0.60	0.69	1.29
10-year AAA	0.67	0.80	1.47
10-year A	1.10	1.27	1.81
25/30-year AAA	1.35	1.51	2.03
25/30-year A	1.90	2.02	2.48
Revenue Bonds (Revs) (15 Years)			
Education AA	1.22	1.53	1.98
Electric AA	1.09	1.33	1.92
Water/Sewer AA	1.06	1.34	1.93
Hospital AA	1.27	1.63	2.02
Toll Road AA	1.38	1.81	1.96

Source: Bloomberg Finance L.P.

Federal Reserve Data

BANK RESERVES *(One-Month Period; in Billions, Not Seasonally Adjusted)*

	Recent Levels			Average Level Over the Last...		
	11/20	10/20	Change	3 Mos.	6 Mos.	12 Mos.
Total Reserves	3034.7	2876.6	158.1	2921.4	2887.7	2561.4
Borrowed Reserves	66.6	74.1	-7.5	73.0	82.1	64.1
Non-Borrowed Reserves	2968.1	2802.5	165.6	2848.4	2805.5	2497.3

MONEY SUPPLY *(One-Week Period; in Billions, Seasonally Adjusted)*

	Recent Levels			Annual Growth Rates Over the Last...		
	12/7/20	11/30/20	Change	3 Mos.	6 Mos.	12 Mos.
M1 (Currency+demand deposits)	6272.9	6060.7	212.2	85.4%	54.0%	58.7%
M2 (M1+savings+small time deposits)	19226.1	18998.0	228.1	15.0%	13.3%	26.0%

Source: United States Federal Reserve Bank

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Part 3 Ratings & Reports

ISSUE 9

Pages 1700-1850

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January 8, 2021

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★★ Rank 1 (Highest) for Timeliness.
★ Rank 2 (Above Average).

ESPECIALLY NOTEWORTHY:

On December 20th, ***Aerojet Rocketdyne Holdings*** *inked a definitive agreement with Lockheed Martin under which the latter would acquire the outstanding shares of AJRD. Turn to page 1746 for the terms of the deal, which has been unanimously approved by each company's Board of Directors.*

Financial services titan ***Morgan Stanley*** *is looking to further bolster its wealth management business. Just months off its industry-altering acquisition of E*TRADE, the company announced that it has agreed to purchase industry mate Eaton Vance. See our take on this development on page 1811.*

Slack Technologies *has continued to see breakneck top-line growth, and this has not gone unnoticed. Indeed, the business technology software operator recently agreed to be acquired by customer relationship management leader* ***salesforce.com****. Specifics of the deal are on pages 1834 and 1832, respectively.*

Meanwhile, commerce company ***Shopify*** *also continues to gain significant traction with consumers, benefiting from favorable demand trends as well as growth initiatives that should remain catalysts for the foreseeable future. Turn to page 1833 to learn more.*

In three parts: Part 1 is the Summary & Index. Part 2 is Selection & Opinion. This is Part 3, Ratings & Reports. Volume LXXVI, No. 22

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See back cover for important disclosures.

The Water Utility Industry consists of companies that provide water services mostly to residential customers. The group continues to be highly ranked among the 96 industries that are followed by *Value Line*.

Over the past three months since our last report, these stocks have had a wider range of returns than is typical for this industry. Even though theses equities are sought out by investors for their well-defined earnings and good dividend growth prospects, they have performed well, despite the recent strong market showing. We attribute this partially to investors willing to pay a steep premium to own these relatively scarce stocks.

The fundamentals of the Water Industry have not changed much in the past 10 years. Previously, in order to keep customers' bills low, water companies did not invest the funds required to keep their pipelines and wastewater facilities in top condition. As a result, over the past decade, they have been pouring large amounts of money into upgrading their assets. Despite the progress made, much of the nation's water infrastructure is in less than ideal shape, with some systems having pipes that were installed 50 to 75 years ago.

Most water districts in the United States are run by municipalities and states. Indeed, when the smallest districts are included, there are over 100,000 separate domestic entities that provide water services. Consolidation has been ongoing in this sector, as the smaller less-efficient operators are being absorbed, by larger players.

External debt is used frequently to fund these major construction projects that are in progress.

As regulated companies, the members of this group are allowed to act as monopolies. However, to offset the lack of competition, water utilities permit state regulators to determine the rates they can charge. Unlike other regulated industries, water stands out for its generally constructive relationship with its overseers. This is a major reason why the equities of these companies have been so successful.

Strong Demand, Few Stocks

One of the trademarks of the Water Utility Industry is that there are only eight publicly traded equities that we follow. Moreover, of this group only two fall under the definition of being Large Cap stocks (having a market capitalization of over $10 billion (*American Water Works* and *Essential Utilities*.) Four are classified as Mid Cap ($1 billion to under $5 billion). Included in this group, are *American States Water*, *California Water*, *Middlesex Water*, and *SJW Group*. The Small Cap stocks (under $1 billion) are *Consolidated Water* and *York Water*. Combined, the total market cap of the entire industry is under $50 billion. Thus, there is a limited pool of shares for investors wanting to have a presence in the space. It's also one of the reasons why water stocks trade with such high Price Earnings ratios, as people are willing to pay a steep premium to own them.

Industry Fundamentals

As we mentioned, the average age of water pipelines in the United States is estimated to be more than 50 years old, with it not being unusual for some pipes to having been laid 75 to 100 years ago. Thus, capital budgets are usually burdensome, as miles and miles of new pipe are installed annually. Also, because of the size of the outlays, not all of the expenditures can be financed with internally generated funds. Many in the industry have to rely upon debt. Thus, while the normal Financial Strength rating in the group is a B+ to a B++, *California Water* is the only one that rates a grade as high as A.

Consolidation remains ongoing, as many of the smaller water companies are inefficient and undercapitalized. The large caps often absorb many water districts each year. Regulators are usually not bothered by this because the results can be better service for the customers and sometimes even lower bills. *American Water Works* uses the growth by acquisition strategy more than its peers, and we don't think that the situation will change anytime soon.

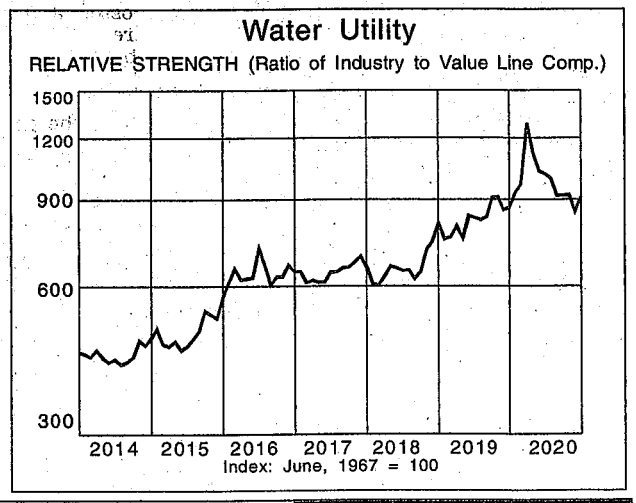
Another of the industry's attractive attributes is its regulatory climate, or basically the relationship between the water companies and authorities. Regulated businesses and utilities are often involved in disagreements and lawsuits. An example of this would be electric and gas companies and the states they operate in. Since authorities establish the rate of return that utilities can earn, a constructive relationship between the parties cannot be underestimated.

INDUSTRY TIMELINESS: 9 (of 96)

Conclusion

As noted, there are a handful of opportunities here that momentum accounts may find attractive. However, due to the strong showing of many of the stocks, long-term total return potential here is often not just underwhelming, but well below that of the average stock covered by *Value Line*. Unfortunately, this seems to be the case even on a risk-adjusted basis. Indeed, many of these equities are already trading within their 2023-2025 projected Target Price Range. Thus, despite all of its positives, investors with a long-term horizon may want to look elsewhere, as a lot of good news is already factored into share prices. As always, we advise subscribers to read each individual report before investing to better understand the level of risk being assumed.

James A. Flood



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AMER. STATES WATER NYSE-AWR

RECENT PRICE 79.15 | P/E RATIO 34.0 (Trailing: 35.3 / Median: 22.0) | RELATIVE P/E RATIO 1.60 | DIV'D YLD 1.8% | VALUE LINE 1789

TIMELINESS 4 Lowered 12/11/20
SAFETY 2 Raised 7/20/12
TECHNICAL 4 Lowered 12/25/20
BETA .65 (1.00 = Market)

18-Month Target Price Range

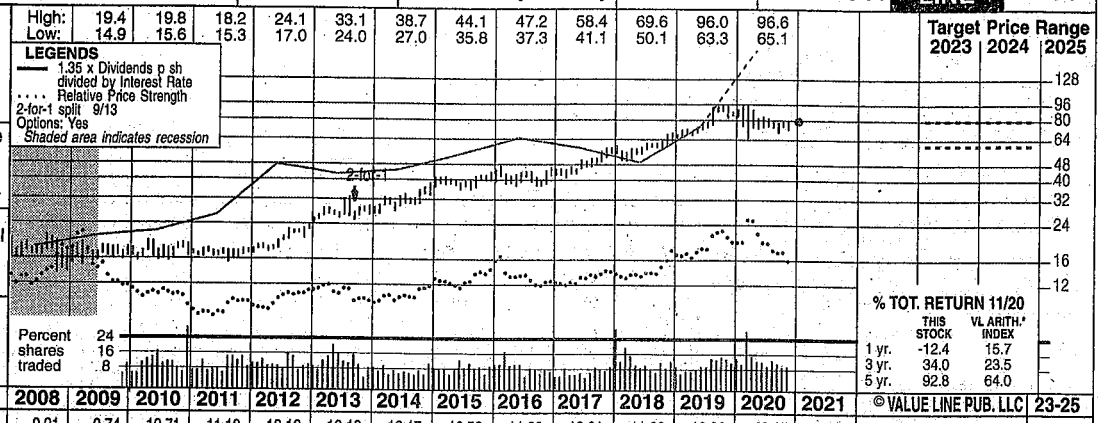
Low-High	Midpoint (% to Mid)
$65-$124	$95 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(NIL)	3%
Low	60	(-25%)	-4%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	125	135	121
to Sell	166	129	135
Hld's(000)	26162	25635	25731



2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	*12.95*	*13.40*	Revenues per sh	*16.40*
1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	*3.25*	*3.50*	"Cash Flow" per sh	*4.50*
.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	*2.25*	*2.40*	Earnings per sh A	*2.90*
.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	*1.28*	*1.40*	Div'd Decl'd per sh B■	*1.85*
2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	*3.40*	*3.60*	Cap'l Spending per sh	*3.75*
7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	*17.30*	*18.50*	Book Value per sh D	*21.35*
33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	*37.00*	*37.25*	Common Shs Outst'g C	*37.50*
23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	*35.5*		Avg Ann'l P/E Ratio	*23.5*
1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.87	*1.79*		Relative P/E Ratio	*1.30*
3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	*1.6%*		Avg Ann'l Div'd Yield	*2.6%*
398.9	419.3	466.9	472.1	465.8	458.6	436.1	440.6	486.8	473.9	*480*	*500*	Revenues ($mill)	*615*
41.4	42.0	54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	*83.0*	*89.0*	Net Profit ($mill)	*110*
43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	*25.0%*	*23.0%*	Income Tax Rate	*23.0%*
5.8%	2.0%	2.5%	--	--	--	--	--	2.5%	--	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	*41.0%*	*41.5%*	Long-Term Debt Ratio	*49.5%*
55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	*49.0%*	*48.5%*	Common Equity Ratio	*51.5%*
677.4	749.1	787.0	818.4	832.6	791.5	815.3	854.9	938.4	1082.5	*1085*	*1180*	Total Capital ($mill)	*1565*
855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	*1495*	*1575*	Net Plant ($mill)	*1780*
7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	*9.0%*	*8.5%*	Return on Total Cap'l	*8.5%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Shr. Equity	*14.0%*
11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	*13.0%*	*13.0%*	Return on Com Equity	*14.0%*
5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	*6.0%*	*5.5%*	Retained to Com Eq	*5.0%*
47%	49%	45%	47%	53%	54%	56%	52%	61%	51%	*57%*	*58%*	All Div'ds to Net Prof	*64%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $440.7 mill. **Due in 5 Yrs** $6.9 mill.
LT Debt $440.3 mill. **LT Interest** $25.0 mill.
(41% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.7 mill.
Pension Assets-12/19 $192.5 mill.
Oblig. $231.9 mill.

Pfd Stock None

Common Stock 36,889,061 shs.
as of 10/30/20

MARKET CAP: $2.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	7.1	1.3	8.1
Accts Receivable	23.4	20.9	33.7
Other	101.0	100.3	97.6
Current Assets	131.5	122.5	139.4
Accts Payable	59.5	55.6	53.6
Debt Due	40.3	5.3	.4
Other	46.8	55.1	59.5
Current Liab.	146.6	116.0	113.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	--	*5.0%*
"Cash Flow"	6.0%	3.0%	*7.0%*
Earnings	9.5%	5.0%	*6.5%*
Dividends	8.0%	7.5%	*9.5%*
Book Value	5.5%	4.0%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	98.8	113.2	124.4	104.2	440.6
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.7	134.5	113.0	473.9
2020	109.1	121.3	133.7	*115.9*	*480*
2021	*110*	*125*	*145*	*120*	*500*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.34	.62	.57	.35	1.88
2018	.29	.44	.62	.37	1.72
2019	.35	.72	.76	.45	2.28
2020	.38	.69	.72	*.46*	*2.25*
2021	*.43*	*.72*	*.75*	*.50*	*2.40*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.242	.242	.255	.255	.99
2018	.255	.255	.275	.275	1.06
2019	.275	.275	.305	.305	1.16
2020	.305	.305	.335	.335	
2021					

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 260,708 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,420 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 841. BlackRock, Inc. owns 15.9% of out. shares; Vanguard, 11.9%; off. & dir. 1.0%. (4/20 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

American States Water probably turned in flattish results in 2020. In the key water segment, higher rates implemented retroactively in 2019 caused a reduction in administrative costs that wasn't replicated last year. A higher effective tax rate and an increase in other operating expenses also contributed to a weaker showing. Nonregulated operations also likely posted a negative comparison due to a decrease in construction activity on military bases. An improved performance from the electric business was not enough to offset these negatives. All told, for the full year, the company's share net likely declined about $0.03, to $2.25.

We look for earnings to get back on track this year, however. This is based on our expectations that the company's expense ratios revert to normal levels. The nonregulated businesses should also do much better, as more military bases in the United States are privatized (more below). In sum, share earnings could well advance a healthy 7%, to $2.40.

A new application for rates should not be ruled upon for some time. As per California procedure, Golden States Water filed a general rate case last year seeking higher tariffs for the years 2022-2024. A final decision by state authorities is not expected until very late this year. The outcome will have a major impact on the utility's profits for this three-year period. We are assuming a reasonable decision in our projections, as relations with the state regulators have generally been constructive.

Nonregulated business should provide an earnings boost. American States' contract service operations ought to make inroads in this market as, more domestic military installations conduct bidding processes to have outside companies provide water to these bases. Returns in this sector are higher than the regulated businesses. The company has already proven itself in this area, as it has won a number of these 50-year contracts.

These shares do not stand out at this time. AWR is ranked to underperform the market averages in the year ahead. Furthermore, long-term prospects are not bright either, as the equity is currently trading near the high end of our 2023-2025 Target Price Range.

James A. Flood *January 8, 2021*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 9/30/20; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	85

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AMERICAN WATER NYSE-AWK

RECENT PRICE 149.65 | P/E RATIO 37.1 (Trailing: 41.0 Median: 22.0) | RELATIVE P/E RATIO 1.74 | DIV'D YLD 1.6% | VALUE LINE 1790

TIMELINESS 2 Lowered 11/13/20
SAFETY 3 New 7/25/08
TECHNICAL 2 Lowered 1/8/21
BETA .85 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$109-$244	$177 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	140	(-5%)	Nil
Low	90	(-40%)	-9%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	333	363	401
to Sell	415	371	337
Hld's(000)	151948	151102	150689

High:	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6
Low:	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2023 | 2024 | 2025

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.2	15.7
3 yr.	76.2	23.5
5 yr.	190.9	64.0

Percent shares traded: 21 / 14 / 7

2004	2005	2006E	2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.95	22.00	Revenues per sh	24.75
--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.25	7.90	"Cash Flow" per sh	8.75
--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	3.90	4.25	Earnings per sh A	4.90
--	--	--	--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.35	Div'd Decl'd per sh B■	2.90
--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.50	9.20	Cap'l Spending per sh	9.00
--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	36.10	37.90	Book Value per sh D	42.50
--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.50	182.00	Common Shs Outst'g C	189.00
--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3		Avg Ann'l P/E Ratio	23.5
--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.79	1.78		Relative P/E Ratio	1.30
--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%		Avg Ann'l Div'd Yield	2.5%
						2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3800	4000	Revenues ($mill)	4675
						267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	567.0	621.0	708	775	Net Profit ($mill)	925
						40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	21.5%	21.5%	Income Tax Rate	21.0%
						--	--	6.2%	5.1%	--	--	--	--	5.1%	4.0%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
						56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.5%	60.0%	Long-Term Debt Ratio	59.0%
						43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.5%	40.0%	Common Equity Ratio	41.0%
						9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11875	13433	14760	16150	17200	Total Capital ($mill)	20000
						11059	11021	11739	12391	12900	13933	14992	16246	17409	18232	19250	20250	Net Plant ($mill)	22200
						4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	6.5%	5.5%	Return on Total Cap'l	6.0%
						6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	11.0%	Return on Shr. Equity	11.5%
						6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	11.5%	Return on Com Equity	11.5%
						2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	4.5%	Retained to Com Eq	4.5%
						56%	52%	57%	40%	50%	50%	56%	68%	56%	57%	55%	55%	All Div'ds to Net Prof	59%

CAPITAL STRUCTURE as of 9/30/20
Total Debt $10691 mil. **Due in 5 Yrs** $2500 mil.
LT Debt $9580 mil. **LT Interest** $354 mil. (60% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets12/19 $1747.0 mill **Oblig.** $2161.0 mill.
Pfd Stock $4.0 mill. **Pfd Div'd** $.3 mill

Common Stock 181,271,995 shares as of 10/28/20

MARKET CAP: $27.1 billion (Large Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	158	91	599
Accts Receivable	301	294	358
Other	322	900	1010
Current Assets	781	1285	1967
Accts Payable	175	203	162
Debt Due	1035	814	1111
Other	884	1028	987
Current Liab.	2094	2045	2260

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	3.0%	4.5%
"Cash Flow"	13.0%	6.0%	6.5%
Earnings	45.5%	6.5%	8.5%
Dividends	16.0%	10.5%	8.5%
Book Value	2.5%	4.0%	5.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	756	844	936	821	3357
2018	761	853	976	850	3440
2019	813	882	1013	902	3610
2020	844	931	1079	*946*	*3800*
2021	*885*	*970*	*1145*	*1000*	*4000*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.52	.73	1.12	.01	2.38
2018	.59	.91	1.03	.62	3.15
2019	.62	.94	1.33	.54	3.43
2020	.68	.97	1.46	*.79*	*3.90*
2021	*.73*	*1.05*	*1.60*	*.87*	*4.25*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.375	.415	.415	.415	1.62
2018	.415	.455	.455	.455	1.78
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	
2021					

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 15 million people in 46 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2019 revenues. New Jersey is its largest market accounting for 24.6% of regulated revenues; Pennsylvania, 22.3%; Missouri, 10.5%. Has 6,800 employees. The Vanguard Grp, owns 12.4% of outstanding shares; BlackRock, Inc., 8.7%; officers & directors, less than 1.0%. (3/20 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works probably completed another strong year. In 2020, we think the water utility posted solid earnings growth for the third consecutive year. Indeed, we estimate that its share net rose nearly 14% to $3.90. Much of this can be attributed to the demand for water by residential customers not being impacted much by the state of the economy.

The positive profit trend should continue this year. Through the bottom-line gain will likely not match last year's rate, American Water should still see a solid 9% increase in earnings per share.

Acquisitions should remain a key part of the growth strategy. The utility has been purchasing many smaller municipally run water districts for years. Many of these entities are extremely inefficient and lack the financial wherewithal to replace their aging pipelines. American Water has a proven track record of absorbing new assets and streamlining costs, all while improving service. It's likely because of these two factors that regulators have treated the company so constructively.

The construction budget is enormous, but manageable. Management targeted $1.9 billion to refurbish and expand its existing water infrastructure in 2019. What's more, the cost of continuing the program should average about $2 billion annually over the next decade. Internally generated funds should cover a good deal of the funds needed, but the company has been issuing bonds to finance the difference. Indeed, its long-term debt-to-total capital ratio has reached the 60% mark. New equity issuance has been very restrained, and shares outstanding have increased only around 4% over the past 11 years. As the equity has performed well over that time span, management may want to consider selling new stock as a way of improving its finances.

The dividend ought to be hiked later this year. At the next meeting in February, we expect the quarterly payout to be raised 9.3%, or $0.05 per share, to $0.60. Moreover, this healthy rate of growth is probably sustainable through mid-decade.

These shares remain timely. However, like most in the water utility group, total return prospects through 2023-2025 are well below the *Value Line* median.

James A. Flood *January 8, 2021*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-February
(B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available.
(C) In millions. (D) Includes intangibles. On 9/30/20: $1.562 billion, $8.62/share.
(E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	80
Earnings Predictability	85

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE 54.21 | P/E RATIO 19.1 (Trailing: 29.0) (Median: 23.0) | RELATIVE P/E RATIO 0.90 | DIV'D YLD 1.6% | VALUE LINE 1791

TIMELINESS 2 Raised 11/20/20
SAFETY 3 Lowered 7/27/07
TECHNICAL 4 Lowered 1/8/21
BETA .65 (1.00 = Market)

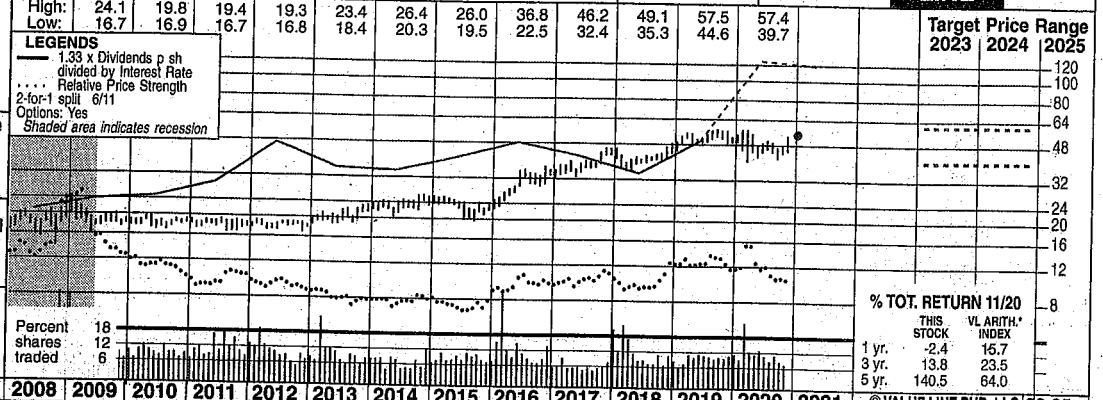
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$42-$79 $61 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+10%)	5%
Low	40	(-25%)	-5%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	104	109	101
to Sell	118	107	106
Hld's(000)	35792	35580	36492



2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	*16.00*	*16.00*	Revenues per sh	*16.05*
1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	*3.60*	*3.45*	"Cash Flow" per sh	*3.65*
.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	*2.00*	*1.90*	Earnings per sh A	*2.15*
.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	*.85*	*.89*	Div'd Decl'd per sh B ■	*1.05*
1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	*4.85*	*4.75*	Cap'l Spending per sh	*4.25*
7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	*18.00*	*18.15*	Book Value per sh C	*19.35*
36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	*50.00*	*51.00*	Common Shs Outst'g D	*53.00*
20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	*24.5*		Avg Ann'l P/E Ratio	*23.0*
1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.13	*1.24*		Relative P/E Ratio	*1.30*
3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	*1.7%*		Avg Ann'l Div'd Yield	*2.1%*
460.4	501.8	560.0	584.1	597.5	588.4	609.4	666.9	698.2	714.6	*800*	*815*	Revenues ($mill) E	*850*
37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	65.6	63.1	*100*	*97.0*	Net Profit ($mill)	*115*
39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	*45.5%*	*44.0%*	Long-Term Debt Ratio	*39.0%*
47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	*54.5%*	*56.0%*	Common Equity Ratio	*61.0%*
914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	*1650*	*1650*	Total Capital ($mill)	*1675*
1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	*2550*	*2575*	Net Plant ($mill)	*2700*
5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	*7.0%*	*6.5%*	Return on Total Cap'l	*7.5%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Shr. Equity	*11.0%*
8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	*11.0%*	*10.5%*	Return on Com Equity	*11.0%*
3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	*6.5%*	*5.5%*	Retained to Com Eq	*5.5%*
66%	71%	62%	56%	55%	71%	68%	51%	55%	60%	*43%*	*47%*	All Div'ds to Net Prof	*49%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1182.1 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $785.1 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 11.2x) (50% of Cap'l)

Pension Assets-12/19 $573.6 mill.
Oblig. $812.0 mill.

Pfd Stock None

Common Stock 49,840,000 shs.

MARKET CAP: $2.7 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	47.2	42.7	113.3
Other	141.5	142.0	192.5
Current Assets	188.7	184.7	305.8
Accts Payable	95.6	108.5	127.2
Debt Due	170.0	197.0	397.0
Other	55.6	53.2	79.6
Current Liab.	321.2	358.7	603.8

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	4.0%	2.5%	*2.0%*
"Cash Flow"	5.5%	5.5%	*3.0%*
Earnings	4.5%	4.5%	*8.0%*
Dividends	2.5%	3.5%	*5.5%*
Book Value	4.5%	4.5%	*4.0%*

Calendar	QUARTERLY REVENUES ($ mill.) E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	122.1	171.1	211.7	162.0	666.9
2018	134.6	174.9	221.3	167.4	698.2
2019	126.1	179.0	232.6	176.9	714.6
2020	125.6	175.5	304.1	*194.8*	*800*
2021	*155*	*205*	*255*	*200*	*815*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.02	.39	.70	.29	1.40
2018	d.02	.31	.75	.32	1.36
2019	d.16	.35	.88	.24	1.31
2020	d.42	.11	1.94	*.37*	*2.00*
2021	*.08*	*.45*	*.95*	*.42*	*1.90*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.18	.18	.18	.18	.72
2018	.1875	.1875	.1875	.1875	.75
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	
2021					

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 489,600 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '19: residential, 67%; business, 20%; industrial, 5%; public authorities, 5%; other 3%. Off. and dir. own 1% of common stock (4/20 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group's 2018 general rate case has officially been approved. The California Public Utilities Commission (CPUC) has fully adopted the proposal. Specifically, the subsequent to CPUC giving California Water the nod, the company is now authorized to invest more than $825 million through 2021 for various infrastructure upgrades, such as improvements to its water distribution system, treatment facilities, and piping systems. Because of this development, California Water's third-quarter financial results reflect the application and recording of certain assets and revenues recovered under the new rate decision. Moreover, the company has been approved to boost revenues by increasing customer rates beginning this year through 2022.

All things considered, our financial projections are being raised across the board. For 2020, the company likely generated share profits of $2.00 (up from our previous call of $0.85) from revenues of $800 million (up from $730 million). Modest top-line growth is probably in the cards this year, given the favorable rate case decision mentioned above, coupled with the likelihood for sustainable water consumption, though the bottom line may contract by a dime, largely due to the tough year-over-year comparison.

California Water's subsidiary, Hawaii Water, announced it will acquire wastewater system assets from Keauhou Community Services. The deal, which would add roughly 1,500 customers to Hawaii Water's roster, is pending approval by local regulators. Financial details were not disclosed. Finally, the asset purchase comes off the heels of its recent acquisition of Rainier Water Company in Washington State. On top of expanding populations, we think bolt-on asset agreements will be par for the course.

Short-term investors are best suited here. The issue has been upgraded one notch for Timeliness, to 2 (Above Average). Notably, the stock price has risen more than 15% since our October review. That said, we think it would be prudent for patient accounts to remain on the sidelines, for now, as total return potential out to 2023-2025 does not stand out at recent levels.

Nicholas P. Patrikis *January 8, 2021*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4¢. Next earnings report due early Feb.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '19 : $24.9 mill., $0.51/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	65

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CONSOL. WATER CO. NDQ-CWCO

RECENT PRICE 12.33 | P/E RATIO 27.4 (Trailing: 37.4 Median: 24.0) | RELATIVE P/E RATIO 1.29 | DIV'D YLD 2.8% | VALUE LINE 1792

TIMELINESS 4 Lowered 1/8/21
SAFETY 3 New 1/17/14
TECHNICAL 5 Lowered 1/8/21
BETA .85 (1.00 = Market)

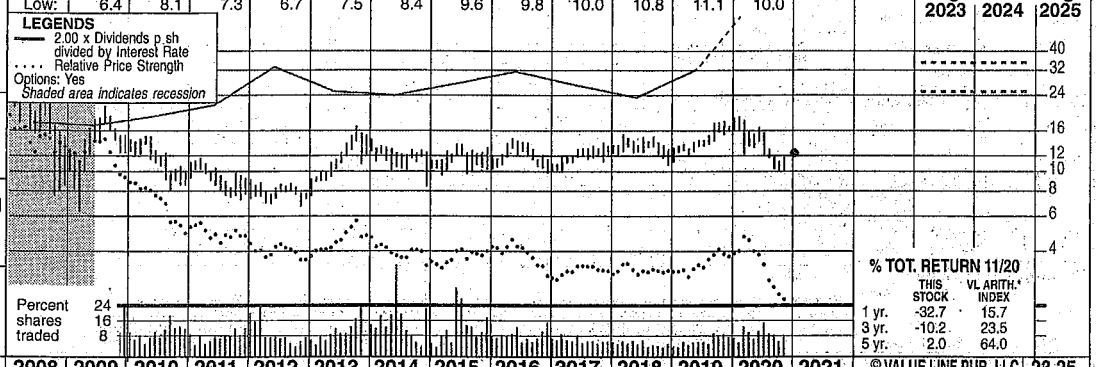
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$8-$20 $14 (15%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+185%)	33%
Low	25	(+105%)	23%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	47	48	28
to Sell	42	45	57
Hld's(000)	8750	8027	7661



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-32.7	15.7
3 yr.	-10.2	23.5
5 yr.	2.0	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.02	1.12	2.71	3.41	4.52	3.99	3.49	3.79	4.49	4.35	4.46	3.86	3.89	4.18	4.39	4.57	*4.80*	*4.20*	Revenues per sh	*9.40*
.77	.37	.87	1.20	.95	1.18	.86	.83	1.17	.96	.80	.89	.95	1.12	1.15	1.05	*.85*	*.95*	"Cash Flow" per sh	*1.95*
.49	.23	.59	.79	.50	.74	.43	.42	.64	.58	.42	.51	.27	.41	.68	.56	*.35*	*.30*	Earnings per sh A	*1.40*
.23	.12	.24	.20	.33	.28	.30	.30	.30	.30	.30	.30	.30	.31	.34	.34	*.34*	*.34*	Div'd Decl'd per sh B■	*.75*
.24	.77	1.83	.54	.46	.18	.09	.96	.31	.29	.32	.21	.23	.31	1.08	.23	*.15*	*.25*	Cap'l Spending per sh	*.50*
4.20	2.54	7.49	8.21	8.36	8.53	8.69	8.83	9.20	9.44	9.58	9.81	9.79	9.91	10.34	10.88	*10.65*	*10.80*	Book Value per sh D	*12.20*
11.51	23.46	14.13	14.40	14.53	14.54	14.55	14.57	14.59	14.69	14.72	14.78	14.87	14.92	14.98	15.05	*15.20*	*15.40*	Common Shs Outst'g C	*16.00*
23.1	80.0	43.0	35.4	37.8	19.0	26.9	22.4	12.4	20.0	28.3	22.7	44.8	29.0	19.4	25.7	*39.3*		Avg Ann'l P/E Ratio	*22.0*
1.22	4.26	2.32	1.88	2.27	1.27	1.71	1.41	.79	1.12	1.49	1.14	2.35	1.46	1.05	1.39	*1.98*		Relative P/E Ratio	*1.20*
2.0%	.7%	.9%	.7%	1.7%	2.0%	2.6%	3.2%	3.8%	2.6%	2.5%	2.6%	2.5%	2.6%	2.6%	2.4%	*2.5%*		Avg Ann'l Div'd Yield	*2.5%*
						50.7	55.2	65.5	63.8	65.6	57.1	57.9	62.3	65.7	68.8	*73.0*	*65.0*	Revenues ($mill)	*150*
						6.3	6.1	9.3	8.6	6.3	7.5	4.0	6.1	10.2	8.6	*5.5*	*4.5*	Net Profit ($mill)	*22.0*
						--	--	--	--	--	--	--	--	--	1.0%	*NMF*	*NMF*	Income Tax Rate	*NMF*
						--	4.0%	--	--	--	--	--	--	--	--	*NMF*	*NMF*	AFUDC % to Net Profit	*NMF*
						11.8%	5.1%	3.7%	--	--	--	--	--	--	--	*Nil*	*Nil*	Long-Term Debt Ratio	*Nil*
						88.2%	94.9%	96.3%	99.8%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	*100%*	*100%*	Common Equity Ratio	*100%*
						143.3	135.6	139.4	138.9	141.2	145.0	145.6	147.9	155.0	163.8	*162*	*166*	Total Capital ($mill)	*200*
						56.2	64.3	61.6	58.6	56.4	53.7	53.1	50.5	64.9	61.2	*60.0*	*60.0*	Net Plant ($mill)	*85.0*
						4.9%	5.0%	7.0%	6.2%	4.4%	5.2%	2.7%	4.2%	6.6%	5.2%	*3.5%*	*2.5%*	Return on Total Cap'l	*11.0%*
						5.0%	4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.2%	6.6%	5.2%	*3.5%*	*2.5%*	Return on Shr. Equity	*11.0%*
						5.0%	4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.1%	6.6%	5.2%	*3.5%*	*2.5%*	Return on Com Equity	*11.0%*
						1.5%	1.0%	3.6%	3.0%	1.2%	2.1%	NMF	1.1%	3.3%	2.1%	*NMF*	*NMF*	Retained to Com Eq	*5.0%*
						69%	79%	48%	51%	73%	59%	112%	73%	50%	60%	*97%*	*113%*	All Div'ds to Net Prof	*54%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $0.1 Due in 5 Yrs $0.1
LT Debt $0.1 LT Interest NMF (0% of Total Cap'l)
Leases, Uncapitalized: Annual rentals $.9 mill.

No Defined Benefit Pension Plan

Pfd Stock NMF (33,059 shares out.) Div'd NMF

Common Stock 15,112,975 shs. as of 11/10/20

MARKET CAP: $175 million (Small Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	31.3	42.9	38.2
Accts Receivable	24.2	23.2	24.4
Other	6.9	7.3	9.0
Current Assets	62.4	73.4	71.6
Accts Payable	4.6	3.7	3.1
Debt Due	--	--	--
Other	3.3	4.5	4.6
Current Liab.	7.9	8.2	7.7

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	5.0%	.5%	*13.5%*
"Cash Flow"	2.0%	.5%	*10.0%*
Earnings	-3.0%	-4.5%	*17.0%*
Dividends	5.0%	--	*14.5%*
Book Value	5.0%	2.0%	*2.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	15.6	15.3	16.6	14.8	62.3
2018	14.3	15.9	18.8	16.7	65.7
2019	17.0	18.3	15.9	17.6	68.8
2020	20.8	19.1	17.7	*15.4*	*73.0*
2021	*17.0*	*17.0*	*15.0*	*16.0*	*65.0*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.18	.11	.08	.04	.41
2018	.14	.14	.30	.10	.68
2019	.17	.16	.11	.12	.56
2020	.19	d.04	.09	*.11*	*.35*
2021	*.15*	*.10*	*.10*	*.15*	*.50*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.075	.075	.075	.075	.30
2018	.085	.085	.085	.085	.34
2019	.085	.085	.085	.085	.34
2020	.085	.085	.085	.085	
2021					

BUSINESS: Consolidated Water Co. Ltd. develops and operates desalination plants and water distribution systems in areas where naturally occurring supplies of water are scarce. It provides water in the Cayman Islands, the Bahamas, and the British Virgin Islands. At 12/31/19, it operated 12 plants with a capacity of 25.6 million gallons per day. Sold Bali operations and divested Belize assets in '19. Also manufactures products for the industry through Aerex sub. Inc.: Cayman Is. Employs 105. Pres./CEO: F. McTaggart. Based on 4/19 proxy Offs./ Dirs. own 4.8% of stock; Amundi Asset; 7.7%; BlackRock, 5.6%. (No proxy filed in 2020). Addr.: Regatta Off. Pk. Windward-Three, West Bay Rd., P.O. Box 1114 Grand Cayman, KYI-1102, Cayman Is. Tel.: (345) 945-4277. Int.: www.cwco.com.

Consolidated Water is different from all other companies in the Water Utility Industry. The builder and operator of desalination plants does the majority of its business outside of the United States. Thus, it is subject to the laws and regulations of foreign countries, which have not been beneficial to the company over the past several years.

The long-planned Mexican desalination plant has been shelved. Consolidated began planning for the proposed plant almost a decade ago. The Rosarito project was to initially supply 50 million gallons per day of potable water to the city of Tijuana. In time, the facility's capacity was to double to provide 100 million gallons per day. The company placed significant importance on this project and spent a considerable amount of funds going through a rigorous planning process. Legal issues arose in the latter part of 2019, and Consolidated's management seems to believe that it will no longer be built. The company has filed a lawsuit, but judging the outcome is difficult.

Earnings have been reclassified. In the third-quarter report, the Rosarito project is now considered a discontinued operation, and earnings statements for the entire year seem to have been restated.

The Rosarito project is the second-straight much-ballyhooed plant to fail. Several years ago, the company built a desalination plant in Bali, Indonesia to much fanfare due to the island's urgent need for fresh water. The facility was built on speculation, however. Problems with the government arose causing Consolidated to exit the business.

Finances are not as strong as they appear. Despite having just about no debt whatsoever, the possibility of Rosarito-related writeoffs could put a dent in the balance sheet.

These shares are ranked to underperform the market in the year ahead. Moreover, the company's prospects remain undefined following the problems in Mexico. While the world continues to be in great need of potable water, Consolidated is having a difficult time capitalizing on it. Much of this has to do with the fact that these arid regions often aren't easy places to conduct business.

James A. Flood *January 8, 2021*

(A) Fully diluted earnings. Excludes gains from discontinued operations: '17, $0.07 a share; '18, $0.07 a share; '19, $0.24 a share; losses in 2020 of $0.30 a share. Next earnings report due mid-February.
(B) Dividends historically paid in late January, April, July, and October. ■ Dividend reinvestment plan available.
(C) In millions, adjusted for stock split.
(D) Includes intangibles. As of 9/30/20, $17.7 million/$1.17 a share.

Company's Financial Strength	B+
Stock's Price Stability	70
Price Growth Persistence	45
Earnings Predictability	45

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ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE 46.08 | P/E RATIO 41.5 (Trailing: 46.5 / Median: 23.0) | RELATIVE P/E RATIO 1.95 | DIV'D YLD 2.3% | VALUE LINE 1793

TIMELINESS 3 Lowered 1/8/21
SAFETY 3 Lowered 1/8/21
TECHNICAL 2 Raised 1/1/21
BETA .95 (1.00 = Market)

18-Month Target Price Range

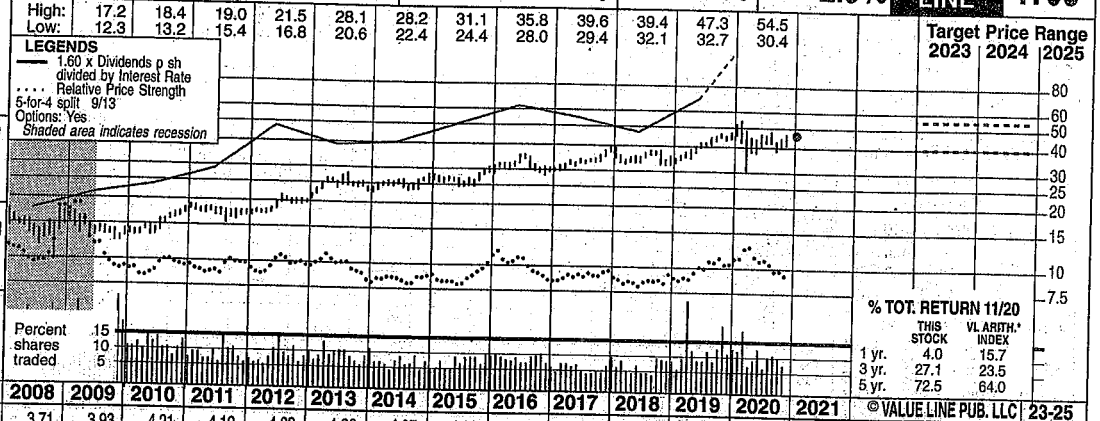
Low-High	Midpoint (% to Mid)
$35-$93	$64 (40%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+20%)	7%
Low	40	(-15%)	Nil

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	252	250	237
to Sell	292	235	227
Hld's(000)	161407	161504	167838



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.0	15.7
3 yr.	27.1	23.5
5 yr.	72.5	64.0

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.71	4.03	*6.15*	*8.15*	Revenues per sh	*8.45*
	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	1.90	1.73	*2.05*	*2.30*	"Cash Flow" per sh	*2.65*
	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	*1.05*	*1.20*	Earnings per sh A	*1.75*
	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	*.97*	*1.04*	Div'd Decl'd per sh B■	*1.30*
	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	2.49	*2.75*	*4.00*	Cap'l Spending per sh	*4.75*
	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.28	17.58	*18.55*	*18.75*	Book Value per sh	*20.00*
	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	*251.25*	*252.00*	Common Shs Outst'g C	*260.00*
	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	32.6	39.1	*42.2*		Avg Ann'l P/E Ratio	*27.0*
	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24	1.76	2.12	*2.13*		Relative P/E Ratio	*1.50*
	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.2%	*2.2%*		Avg Ann'l Div'd Yield	*2.7%*
							726.1	712.0	757.8	768.6	779.9	814.2	819.9	809.5	838.1	889.7	*1550*	*2050*	Revenues ($mill)	*2200*
							124.0	144.8	153.1	205.0	213.9	201.8	234.2	239.7	192.0	224.5	*265*	*300*	Net Profit ($mill)	*455*
							39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	6.6%	6.6%	*1.5%*	*3.5%*	Income Tax Rate	*8.0%*
							--	--	--	1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	*4.5%*	*7.0%*	AFUDC % to Net Profit	*7.0%*
							56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	*53.0%*	*57.0%*	Long-Term Debt Ratio	*40.5%*
							43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	*47.0%*	*43.0%*	Common Equity Ratio	*59.5%*
							2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	*9880*	*10370*	Total Capital ($mill)	*12800*
							3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	*9525*	*10160*	Net Plant ($mill)	*12000*
							5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	*3.5%*	*4.0%*	Return on Total Cap'l	*4.5%*
							10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Shr. Equity	*9.0%*
							10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	*5.5%*	*6.5%*	Return on Com Equity	*9.0%*
							3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	.9%	*NMF*	*1.0%*	Retained to Com Eq	*2.5%*
							65%	60%	61%	50%	52%	60%	56%	59%	79%	84%	*92%*	*87%*	All Div'ds to Net Prof	*74%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $5444.0 mill. Due in 5 Yrs $496.0 mill.
LT Debt $5191.0 mill. LT Interest $196.0 mill. (53% of Cap'l)

Pension Assets-12/19 $266.4 mill. Oblig. $310.5 mill.

Pfd Stock None
Common Stock 245,271,727 shares as of 10/23/20

MARKET CAP: $11.3 billion (Large Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.6	1868.9	8.5
Receivables	101.2	67.1	126.8
Inventory (AvgCst)	15.8	18.4	66.6
Other	26.6	58.3	109.3
Current Assets	147.2	2012.7	311.2
Accts Payable	77.3	74.9	158.2
Debt Due	160.0	130.8	253.0
Other	161.7	113.1	255.8
Current Liab.	399.0	318.8	667.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	1.5%	.5%	*11.5%*
"Cash Flow"	5.0%	2.0%	*5.5%*
Earnings	7.0%	1.5%	*7.0%*
Dividends	7.5%	8.0%	*7.5%*
Book Value	8.0%	9.0%	*7.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	187.8	203.4	215.0	203.3	809.5
2018	194.3	211.9	226.2	205.7	838.1
2019	201.1	218.9	243.6	226.1	889.7
2020	255.6	384.5	348.6	*561.3*	*1550*
2021	*550*	*450*	*450*	*600*	*2050*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.28	.34	.43	.30	1.35
2018	.29	.37	.44	d.02	1.08
2019	.09	.25	.38	.28	1.04
2020	.20	.29	.22	*.34*	*1.05*
2021	*.22*	*.33*	*.33*	*.32*	*1.20*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047	.219	.219	.85
2019	.219	.219	.2343	.2343	.91
2020	.2343	.2343	.2507	.2507	
2021					

BUSINESS: Essential Utilities, Inc. became the new name for Aqua America on Feb. 3, 2020, to reflect the acquisition of Peoples, a natural gas utility, which occurred in 3/20. In 2019, Aqua Amer. provided water and wastewater services to about three million people in PA, OH, TX, IL, NC, NJ, IN, and VA. Employed 1,583. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues 2019: residential, 58%; commercial, 16%; industrial, wastewater & other, 26%. Off. & dir. own less than 1% of the common stock; BlackRock, 10.5%; Vanguard, 10.4%; (4/20 proxy). Canadian Pension Plan about 8.8%. Pres. & CEO: Christopher Franklin. Inc.: PA Addr.: 762 West Lancaster Ave., Bryn Mawr, PA 19010. Tel.: 610-525-1400. Int.: www.essential.co.

Essential Utilities' prospects should be better defined going forward. The basic makeup of the company was greatly altered last March when the water company (formerly know as Aqua America), paid $4.3 billion, and assumed over $1 billion in debt, to acquire Peoples, a large natural gas concern. Due to the transaction, Essential had to absorb a number of one-time charges related to the acquisition. Following this year's first quarter, year-over-year comparisons will become more meaningful. All told, eliminating some of the costs incurred in 2020, we estimate that Essential's share net can climb 14%, to $1.20, in 2021. *(Please note: Management was scheduled to hold a conference call providing guidance for 2021 shortly after this report was made public.)*

Dividend growth prospects are good. Following the merger, the board raised the quarterly payout 7%. We expect this rate to be maintained over the next three- to five-year period.

The company has an ambitious capital spending program. On the water side of the business, like almost all of its peers, Essential is in the midst of spending heavily to replace aging pipelines. It's also making outlays to modernize the natural gas infrastructure. Overall, the construction budget should total close to $3.0 billion over the 2020-2022 period.

Finances have weakened. Despite the large acquisition and assumption of debt, the balance sheet is in decent shape with long-term debt accounting for slightly over half of total capital. Nevertheless, we are lowering its Financial Strength two notches to B+, which is an average rating.

Regulation will continue to have a huge impact on operations. In the water utility sector, state authorities treat companies under their domain relatively constructively. In the gas business, the same cannot be said, as regulators and gas utilities seem to clash more often regarding rate hikes and allowed returns.

Shares of Essential have done well since our October report. They are ranked to only perform in line with the market averages in the coming year, though. Moreover, as is the case with most members of this group, CWCO's total return prospects to 2023-2025 are subpar.

James A. Flood *January 8, 2021*

(A) Diluted eqs. Excl. nonrec. gains: '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. Quarterly EPS do not add in '19 due to a large change in the number of shares outstanding in the Dec. period. Next earnings report mid-February. (B) Dividends historically paid in early March, June, Sept., & Dec. ■ Div'd. reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits. (D) Includes intangibles: 9/30/20, $2,342.5 bill./$9.55 a share.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	60

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 72.38 | P/E RATIO 32.8 (Trailing: 33.4) (Median: 21.0) | RELATIVE P/E RATIO 1.54 | DIV'D YLD 1.5% | VALUE LINE 1794

TIMELINESS 1 Raised 11/13/20
SAFETY 2 New 10/21/11
TECHNICAL 2 Raised 1/1/21
BETA .75 (1.00 = Market)

18-Month Target Price Range

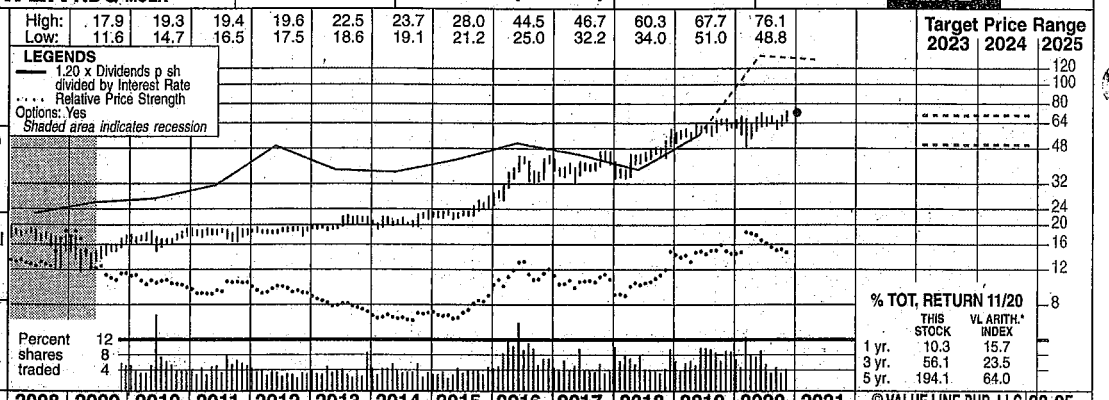
Low-High	Midpoint (% to Mid)
$57-$102	$80 (10%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(-5%)	1%
Low	50	(-30%)	-6%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	55	68	52
to Sell	70	55	69
Hld's(000)	10280	10359	10357



% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.3	15.7
3 yr.	56.1	23.5
5 yr.	194.1	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	*8.05*	*8.45*	Revenues per sh	*9.15*
1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	*3.05*	*3.15*	"Cash Flow" per sh	*3.65*
.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	*2.20*	*2.25*	Earnings per sh [A]	*2.65*
.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	*1.04*	*1.10*	Div'd Decl'd per sh [B■]	*1.25*
2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	*3.95*	*4.50*	Cap'l Spending per sh	*5.00*
8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	*16.15*	*16.50*	Book Value per sh	*17.50*
11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	*17.65*	*17.75*	Common Shs Outst'g [C]	*18.00*
26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	*29.8*		Avg Ann'l P/E Ratio	*23.0*
1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.61	*1.50*		Relative P/E Ratio	*1.30*
3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	*1.6%*		Avg Ann'l Div'd Yield	*2.1%*
						102.7	102.1	110.4	114.8	117.1	126.0	132.9	130.8	138.1	134.6	*142*	*150*	Revenues ($mill)	*165*
						14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	32.5	33.9	*34.0*	*40.0*	Net Profit ($mill)	*48.0*
						32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	2.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.5%*
						43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	*44.5%*	*42.5%*	Long-Term Debt Ratio	*38.5%*
						55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	*55.5%*	*57.0%*	Common Equity Ratio	*61.0%*
						310.5	312.5	316.5	321.4	335.8	345.4	355.4	370.7	404.1	556.7	*515*	*515*	Total Capital ($mill)	*520*
						405.9	422.2	435.2	446.5	465.4	481.9	517.8	557.2	618.5	705.7	*720*	*735*	Net Plant ($mill)	*775*
						5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	*8.0%*	*8.5%*	Return on Total Cap'l	*9.5%*
						8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	*13.5%*	*13.5%*	Return on Shr. Equity	*15.0%*
						8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	*13.5%*	*13.5%*	Return on Com Equity	*15.0%*
						2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	*7.0%*	*7.0%*	Retained to Com Eq	*8.0%*
						75%	87%	83%	73%	67%	63%	58%	62%	46%	48%	*47%*	*49%*	All Div'ds to Net Prof	*47%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $278.2 mill. **Due in 5 Yrs** $43.7 mill.
LT Debt $234.5 mill. **LT Interest** $7.2 mill.
(Total interest coverage: 8.5x)
(42% of Cap'l)

Pension Assets-12/19 $80.4 mill.
Oblig. $100.9 mill.
Pfd Stock $2.4 mill. **Pfd Div'd:** $.1 mill.

Common Stock 17,469,410 shs.
as of 10/29/20

MARKET CAP: $1.3 billion (Mid-Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	3.7	2.2	5.3
Other	27.1	26.9	32.6
Current Assets	30.8	29.1	37.9
Accts Payable	19.3	23.3	24.9
Debt Due	55.8	27.2	43.7
Other	19.3	14.5	16.8
Current Liab.	94.4	65.0	85.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	2.0%	2.5%	*2.0%*
"Cash Flow"	6.0%	9.5%	*5.5%*
Earnings	8.0%	12.0%	*7.0%*
Dividends	2.5%	4.0%	*5.5%*
Book Value	4.5%	6.0%	*1.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	34.9	38.7	33.3	138.1
2019	30.7	33.4	37.8	32.7	134.6
2020	31.8	35.3	39.9	*35.0*	*142*
2021	*33.0*	*37.0*	*44.0*	*36.0*	*150*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.27	.33	.46	.32	1.38
2018	.27	.52	.74	.43	1.96
2019	.39	.49	.66	.46	2.01
2020	.44	.55	.72	*.49*	*2.20*
2021	*.45*	*.55*	*.73*	*.52*	*2.25*

Calendar	QUARTERLY DIVIDENDS PAID [B■] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375	.22375	.24	.91
2019	.24	.24	.24	.2562	.98
2020	.2562	.2562	.2562	.2725	
2021					

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2019, the Middlesex System accounted for 60% of operating revenues. At 12/31/19, the company had 352 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.1% of the com. stock; BlackRock Inst. Trust Co., 7.7% (4/20 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tel.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water reported better-than-expected bottom-line results in the third quarter. Notably, the company earned $0.72 a share, or 9% above the previous-year tally. The strong performance stemmed largely from lower taxes due to regulatory accounting changes, as well as higher operating income. Meanwhile, despite slightly missing our $42 million mark, revenues of nearly $40 million (up 6% year over year) were aided by increased residential and wholesale water consumption, along with a wider customer base in its Delaware system.

All in all, we now expect Middlesex Water to close out 2020 with revenues of $142 million (down from our previous call of $145 million) and share net of $2.20 (up from $2.15). For this year, modest top- and bottom-line growth is probably in the cards. Water consumption should stay elevated as personal hygiene remains a top priority. Assuming the economy gets back on track in the near term, we expect the reopening of businesses and resumed construction and industrial projects to boost wholesale consumption.

Infrastructure spending is apt to be robust through mid-decade. Specifically, Middlesex's Water For Tomorrow initiative has earmarked investment funds of $300 million that will be used to improve watermains, pipe systems, wastewater treatment facilities, and other vital infrastructure upgrades. To supplement its spending, we suspect management can pass along some of these costs to consumers via periodic regulator-approved rate hikes.

The stock etched a fresh high-water mark during the December interim. Based on our Timeliness Ranking System, Middlesex shares are slated as a top selection (1) for relative year-ahead price performance and, thus, ought to appeal to momentum accounts. On the other hand, we continue to recommend that subscribers with a long-term bent remain on the sidelines, as most of the growth we envision over the coming three to five years appears to already be factored into the current quotation. Moreover, even after recently increasing the quarterly payout by 6%, the dividend yield is subpar.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in mid-Feb., May, Aug., and November. ■ Div'd reinvestment plan available.
(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	65
Earnings Predictability	80

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SJW GROUP NYSE-SJW

RECENT PRICE 69.04 | P/E RATIO 30.3 (Trailing: 34.2) (Median: 21.0) | RELATIVE P/E RATIO 1.42 | DIV'D YLD 1.9% | VALUE LINE 1795

TIMELINESS — Suspended 5/4/18
SAFETY 3 New 4/22/11
TECHNICAL — Suspended 5/4/18
BETA .85 (1.00 = Market)

18-Month Target Price Range

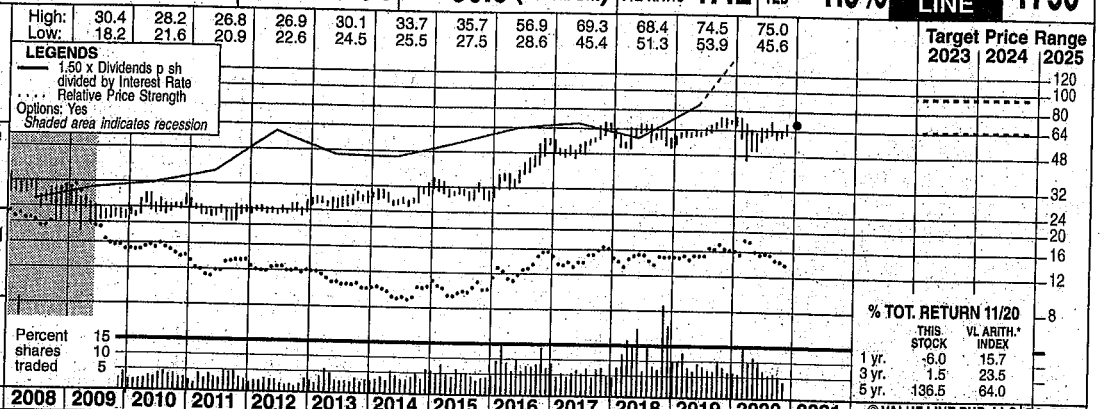
Low-High	Midpoint (% to Mid)
$51-$120	$86 (25%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+40%)	10%
Low	65	(-5%)	1%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	72	78	62
to Sell	95	75	77
Hld's(000)	19448	19939	19827



High:	30.4	28.2	26.8	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0
Low:	18.2	21.6	20.9	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6

% TOT. RETURN 11/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	6.0	15.7
3 yr.	1.5	23.5
5 yr.	136.5	64.0

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	*19.30*	*20.00*	Revenues per sh	*21.65*
1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.67	*3.85*	*4.25*	"Cash Flow" per sh	*5.30*
.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	1.35	*2.10*	*2.55*	Earnings per sh A	*3.65*
.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	*1.28*	*1.36*	Div'd Decl'd per sh B■	*1.66*
2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	*5.25*	*5.75*	Cap'l Spending per sh	*6.50*
10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	*32.25*	*35.60*	Book Value per sh	*39.15*
18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	*29.00*	*29.50*	Common Shs Outst'g C	*30.00*
19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	47.8	*30.6*		Avg Ann'l P/E Ratio	*22.0*
1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	2.58	*1.54*		Relative P/E Ratio	*1.20*
3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	*2.0%*		Avg Ann'l Div'd Yield	*2.1%*
215.6	239.0	261.5	276.9	319.7	305.1	339.7	389.2	397.7	420.5	*560*	*590*	Revenues ($mill)	*650*
15.8	20.9	22.3	23.5	51.8	37.9	52.8	59.2	38.8	38.7	*61.0*	*75.0*	Net Profit ($mill)	*110*
38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	25.3%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
--	--	--	--	--	--	--	--	2.0%	1.5%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	*58.0%*	*53.5%*	Long-Term Debt Ratio	*39.0%*
46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	*42.0%*	*46.5%*	Common Equity Ratio	*61.0%*
550.7	607.9	610.2	656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	*2235*	*2250*	Total Capital ($mill)	*1925*
785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	1328.8	2206.5	*2300*	*2450*	Net Plant ($mill)	*2775*
4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	2.5%	*3.5%*	*4.0%*	Return on Total Cap'l	*6.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Shr. Equity	*9.5%*
6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	4.3%	*6.5%*	*7.0%*	Return on Com Equity	*9.5%*
1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	.5%	*2.5%*	*3.5%*	Retained to Com Eq	*5.0%*
80%	61%	59%	62%	29%	42%	31%	36%	60%	88%	*61%*	*53%*	All Div'ds to Net Prof	*45%*

CAPITAL STRUCTURE as of 9/30/20
Total Debt $1379.5 mill. **Due in 5 Yrs** $22.4 mill.
LT Debt $1307.6 mill. **LT Interest** $50.0 mill.
(LT Interest Coverage: 4.9x)
(60% of Cap'l)

Pension Assets-12/19 $243.5 mill.
Oblig. $338.2 mill.
Pfd Stock None.
Common Stock 28,552,177 shs.

MARKET CAP: $2.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	420.7	17.9	20.2
Accts Receivable	19.2	36.3	51.4
Other	62.8	67.8	83.3
Current Assets	502.7	122.0	154.9
Accts Payable	24.9	34.9	33.8
Debt Due	--	22.3	71.9
Other	139.1	177.4	199.7
Current Liab.	164.0	234.6	305.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.0%	*5.5%*
"Cash Flow"	6.0%	3.5%	*4.5%*
Earnings	7.5%	4.5%	*10.5%*
Dividends	6.0%	9.0%	*7.0%*
Book Value	7.5%	12.0%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	69.0	102.1	124.6	93.5	389.2
2018	75.0	99.1	124.9	98.7	397.7
2019	77.7	103.0	114.0	126.0	420.5
2020	115.8	147.2	165.9	*131.1*	*560*
2021	*120*	*150*	*175*	*145*	*590*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.18	.90	.94	.84	2.86
2018	.06	.62	.76	.38	1.82
2019	.21	.47	.33	.34	1.35
2020	.08	.69	.91	*.42*	*2.10*
2021	*.20*	*.75*	*.95*	*.65*	*2.55*

Calendar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28	.28	.28	1.12
2019	.30	.30	.30	.30	1.20
2020	.32	.32	.32	.32	
2021					

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 361 employees. Officers and directors own 8.3% of outstanding shares (3/20 proxy). Chairman & CEO: Richard Roth. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

SJW Group reported solid third-quarter financial results. The regulated water utility posted revenues of $166 million, a jump of 46% year over year, and earnings of $0.91 per share, nearly triple the year-earlier tally in the September interim. Underpinning the impressive advance was approximately $37 million in new revenues associated with the CTWS merger, roughly $5 million linked to water rate increases and higher customer usage, and about $10 million in reserve revenues recognized from previous years. Moreover, COVID-19-related disruptions that hampered results in previous periods have largely subsided, and merger-related expenses have notably waned.

Our 2020 share-profit forecast sits a nickel above management's upper guidance range. Our slightly-more-optimistic call for earnings of $2.10 per share stems from the recent outperformance, as well as improving post-merger operating metrics. Meanwhile, we are adding $5 million to our top-line estimate, to $560 million. For 2021, we currently look for revenues and earnings to expand 5% and 21%, respectively.

SJW Group is well positioned for long-term growth, in our view. For one, its recently bolstered geographic footprint now spans four states, which augurs well for an expanding customer base and increased operational synergies. Too, the top line ought to get a boost from the implementation of periodic rate hikes. Meanwhile, we think aggressive capital investment to replace and upgrade aging infrastructure, such as watermains, pipe systems, and treatment facilities is likely on tap. Lastly, an improving economic backdrop and a renewed focus on personal hygiene from the general public should support higher consumer water consumption in the coming years.

Strong business prospects aside, we are hesitant to recommend the stock at recent levels. Unranked SJW shares have risen about 10% in value since our October review, and are currently trading inside our 3- to 5-year Target Price Range. The dividend yield is merely average, as well. Thus, we suggest interested subscribers remain on the sidelines until a better entry point is available.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Excludes nonrecurring losses: '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early Feb.
Quarterly egs. may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions.
(D) Paid special dividend of $0.17 per share on 11/17.
(E) Suspended due to recent CTWS merger.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	70
Earnings Predictability	45

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YORK WATER NDQ-YORW

RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE
47.16	36.3 (Trailing: 37.7 Median: 26.0)	1.70	1.6%	1796

TIMELINESS 2 Raised 5/29/20
SAFETY 3 Lowered 7/17/15
TECHNICAL 2 Raised 1/1/21
BETA .80 (1.00 = Market)

18-Month Target Price Range

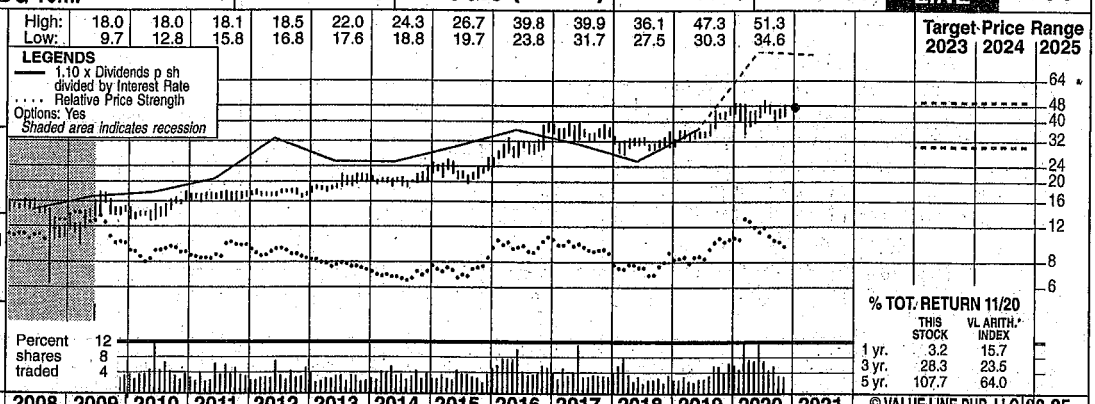
Low-High	Midpoint (% to Mid)
$37-$78	$58 (20%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+5%)	3%
Low	30	(-35%)	-8%

Institutional Decisions

	1Q2020	2Q2020	3Q2020
to Buy	61	59	46
to Sell	52	48	53
Hld's(000)	5387	5479	5302



2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	3.74	3.96	4.10	4.20	Revenues per sh	5.10
.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	1.58	1.70	1.90	1.95	"Cash Flow" per sh	2.40
.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	1.04	1.11	1.30	1.35	Earnings per sh [A]	1.60
.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	.67	.70	.73	.78	Div'd Decl'd per sh [B]	.95
2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	1.95	.16	.85	1.35	Cap'l Spending per sh	1.85
4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	9.75	10.31	11.15	11.60	Book Value per sh	12.50
10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	12.94	13.02	13.00	12.95	Common Shs Outst'g [C]	12.80
25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	30.3	33.8	34.9		Avg Ann'l P/E Ratio	25.0
1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.74	1.64	1.83	1.76		Relative P/E Ratio	1.40
3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%	2.1%	1.9%	1.6%		Avg Ann'l Div'd Yield	2.4%
						39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.6	48.4	51.6	53.5	54.5	Revenues ($mill)	65.0
						8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	13.4	14.4	17.0	17.5	Net Profit ($mill)	20.5
						38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	15.7%	13.5%	18.5%	21.0%	Income Tax Rate	21.0%
						1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	1.7%	2.5%	1.5%	1.5%	AFUDC % to Net Profit	1.5%
						48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	42.5%	41.3%	44.0%	40.0%	Long-Term Debt Ratio	36.0%
						51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	57.5%	58.7%	56.0%	60.0%	Common Equity Ratio	64.0%
						176.4	180.2	184.8	188.4	189.4	196.3	198.7	209.5	219.5	228.7	260	250	Total Capital ($mill)	250
						228.4	233.0	240.3	244.2	253.2	261.4	270.9	288.8	299.2	313.2	315	320	Net Plant ($mill)	335
						6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	7.3%	7.4%	7.5%	8.0%	Return on Total Cap'l	9.0%
						9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.5%	11.5%	Return on Shr. Equity	13.0%
						9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	10.6%	10.7%	11.5%	11.5%	Return on Com Equity	13.0%
						2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	3.8%	4.0%	5.0%	5.0%	Retained to Com Eq	5.0%
						72%	73%	74%	74%	64%	62%	67%	63%	64%	62%	56%	58%	All Div'ds to Net Prof	59%

CAPITAL STRUCTURE as of 9/30/20
Total Debt $116.8 mill. **Due in 5 Yrs** $42.5 mill.
LT Debt $116.8 mill. **LT Interest** $5.5 mill.

(45% of Cap'l)

Pension Assets12/19 $49.3 mill.
Oblig. $47.3 mill.

Pfd Stock None

Common Stock 13,049,237 shs.

MARKET CAP: $625 million (Small Cap)

CURRENT POSITION ($MILL.)	2018	2019	9/30/20
Cash Assets	--	--	10.9
Accounts Receivable	4.8	4.4	5.2
Inventory (Avg. Cost)	.9	1.0	1.2
Other	3.3	4.0	4.5
Current Assets	9.0	9.4	21.8
Accts Payable	3.0	3.4	6.8
Debt Due	1.0	6.5	--
Other	6.8	5.3	5.1
Current Liab.	10.8	15.2	11.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	3.0%	2.5%	5.0%
"Cash Flow"	6.0%	5.5%	7.0%
Earnings	6.0%	6.0%	7.0%
Dividends	3.0%	4.0%	6.0%
Book Value	4.5%	4.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	11.3	12.3	12.7	12.3	48.6
2018	11.6	12.0	12.7	12.1	48.4
2019	11.8	13.0	13.7	13.1	51.6
2020	12.9	13.3	14.3	13.0	53.5
2021	13.0	13.5	14.5	13.5	54.5

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2017	.20	.23	.31	.27	1.01
2018	.20	.26	.29	.29	1.04
2019	.22	.28	.35	.26	1.11
2020	.31	.32	.36	.31	1.30
2021	.28	.35	.37	.35	1.35

Calendar	QUARTERLY DIVIDENDS PAID [B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666	.1666	.1733	.673
2019	.1733	.1733	.1733	.1802	.70
2020	.1802	.1802	.1802	.1874	
2021					

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2019, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 201,000. Has more than 71,400 customers. Residential customers accounted for 65% of 2019 revenues; commercial and industrial (28%); other (7%). It also provides sewer billing services. Incorporated: PA. York had 106 full-time employees at 12/31/19. President/Chief Executive Officer: J.T. Hand. Officers/directors own 1.2% of the common stock (3/20 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water raised its quarterly dividend payment for the 24th-consecutive year. The distribution was increased 4%, to $0.1874 per share, equating to an annual return of about 1.6%. Though the water utility has historically been a consistent income generator, given several years of share-price advances, conservative yield-seeking investors might be better suited elsewhere at this juncture.

We think York delivered strong top- and bottom-line growth in 2020, which will likely be followed up by moderate expansion in 2021. The company posted revenues of $14.3 million and earnings of $0.36 a share in the September period, improving decently on a year-over-year basis and falling relatively in line with expectations. Fourth-quarter results were probably solid, too, driven by higher household water consumption and an expanding customer base. For this year, we are reiterating our calls for low single-digit revenue and earnings growth, to $54.5 million and $1.35 per share, respectively.

Long-term business prospects are bright, and should be accompanied by aggressive spending on infrastructure upgrades. Since our previous review, management invested nearly $7 million on a standpipe and other construction projects, with an estimated $12 million allocation likely tapped in the December period. Over the coming years, as the company's water delivery infrastructure ages and its customer base expands, York ought to spend heavily on pipe replacements, wastewater treatment facilities, service lines, and pumping stations. Overall, York should be able to recoup most of these investments via increased customer rates through its Distribution Systems Improvement Charge program, which requires approval from Pennsylvania regulators.

The stock price is hovering around recently etched all-time highs. Over the coming six to 12 months, YORW shares are pegged to outpace the broader market averages, thus ought to appeal to subscribers with a short-term horizon. On the other hand, 3- to 5-year total return potential is unenticing at recent levels. In fact, long-time investors might want to consider booking some profits at these elevated valuations.

Nicholas P. Patrikis *January 8, 2021*

(A) Diluted earnings. Next earnings report due early February.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	65
Earnings Predictability	100

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East Whiteland Township's Wastewater System

Appraisal Work Papers
As of January 8, 2021

East Whiteland Township
Financials 2016 through 2019
Budgets 2019 & 2021
Rates and Customers

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

East Whiteland Financials
Sewer Fund

	2016	2017	2018	2019	
Assets					
Current Assets					
Cash and Cash Equivalents	6,580,678	7,518,955	9,567,007	10,083,775	
		938,277	2,048,052	516,768	
		17.98%	**30.66%**	**9.52%**	**19.39%**
Account Receivables	1,161,871	683,599	848,468	1,151,871	
	24.04%	**13.10%**	**12.70%**	**21.22%**	**17.77%**
Due from other Fund		11,339	147,915		**37.15%**
Total Current Assets	**7,742,549**	**8,213,893**	**10,563,390**	**11,235,646**	
Noncurrent Assets					
Capital Assets	32,785,377	34,244,259	36,333,876	37,387,925	
Other Capital	11,538,573	11,085,242	11,417,162	11,285,015	
Accumulated Depreciation	(12,377,360)	(13,065,252)	(13,754,484)	(14,529,267)	
Total Noncurrent Assets	**31,946,590**	**32,264,249**	**33,996,554**	**34,143,673**	
Total Assets	**39,689,139**	**40,478,142**	**44,559,944**	**45,379,319**	
Deferred Outflows of Resources					
Deferred Amounts related to Pensions	70,666	109,842	183,740	113,838	
Deferred amount on Refunding	215,921	190,519	28,363	130,298	
Deferred amount on refunding				139,715	
Total Deferred Outflows of Resources	**286,587**	**300,361**	**165,117**	**383,851**	
Liabilities					
Current Liabilities					
Accounts Payable	123,100	138,497	82,760	417,065	
Accrued Liabilities	13,831	10,221	10,708	13,689	
Due to other funds	371	210,243	78	18,493	
			12,396		
Compensated absences	6,015	5,417	4,953	3,114	
Unearned Revenues	830,898	917,045	931,069	971,503	
Accrued Interest	188,258	197,363	191,523	185,646	
Bond Payable	725,000	745,000	715,000	735,000	
Totl Current Libilities	**1,887,473**	**2,223,786**	**1,948,487**	**2,344,510**	
	39.05%	**42.62%**	**29.17%**	**43.19%**	**38.51%**
Noncurrent Liabilities					
Compensated absences	34,085	30,694	28,065	17,649	
Bonds Payable	17,466,860	16,741,396	16,045,932	15,330,468	
Net Pension Liability	137,571	163,903	333,457	192,049	
Other post-employment benefits and obligatons	232,724	294,321	1,239,417	921,823	
Total Noncurrent Liabilities	**17,871,240**	**17,230,314**	**17,646,871**	**16,461,989**	
Total Liabilities	**19,758,713**	**19,454,100**	**19,595,358**	**18,806,499**	
Deferred inflow of Resource					
Deferred amount related to pensions	11,356	44,990	6,206	82,821	
Deferred amount related to OPEB			59,866	426,073	
Total Deferred Inflow of Resource	**11,356**	**44,990**	**66,072**	**508,894**	
Net Position					
Net investment in Capital Assets	13,970,651	14,968,372	17,400,739	18,217,920	
Unrestricted	6,232,006	6,311,041	7,874,995	8,229,857	
Total Net Position	**20,202,657**	**21,279,413**	**25,275,734**	**26,447,777**	

Statement of Revenues, Expenses, and Change in Net Position

Operating Revenues					
Charge for Services					
Sewer Service	3,312,268	3,294,177	3,809,229	3,761,787	
Tapping fees	844,300	1,706,800	1,306,657	984,100	
Miscellaneous	677,340	216,471	1,563,159	682,780	
Total Operating Revenues	**4,833,908**	**5,217,448**	**6,679,045**	**5,428,667**	
		7.93%	28.01%	-18.72%	5.74%
Operating Expenses					
Sewer and collection fees	1,484,102	1,155,032	1,174,936	1,779,913	19.93%
Salaries. Wages and benefits	651,954	731,028	867,750	687,311	5.42%
Repair and Maintenance	140,341	643,587	57,793	236,403	68.45%
Contracted Services	85,418	57,917	96,819	41,140	-51.84%
Utilities	95,347	84,883	85,609	86,097	-9.70%
Insurance	38,276	35,780	37,641	40,288	5.26%
Depreciation	673,195	687,892	718,700	774,783	15.09%
Other	57,227	156,422	86,958	202,088	253.13%
Total Operating Expenses	**3,225,860**	**3,552,541**	**3,126,206**	**3,848,023**	19.29%
		10.13%	-12.00%	23.09%	7.07%
Operating income	**1,608,048**	**1,664,907**	**3,552,839**	**1,580,644**	
NonOpertating Revenues (Expenses)					
Interest Income	15,300	19,510	27,696	137,057	
Interest expense	(605,904)	(607,118)	(578,450)	(561,324)	
Transfers Out	(30,000)	(3,543)	(166,320)	(166,165)	
Total NonOpertating Revenues (Expenses)	**(620,604)**	**(591,151)**	**(717,074)**	**(590,432)**	
Capital Contribution			2,057,746	181,831	
Change in Net Position	**987,444**	**1,073,756**	**4,893,511**	**1,172,043**	
Net Position at Beginning of Year	19,218,213	**20,205,657**	**20,382,223**	**25,275,734**	
Net Position at end of Year	**20,205,657**	**21,279,413**	**25,275,734**	**26,447,777**	

Projections

Forecast Parameters for Periods

			1-5	6-15	6-15	16-20	21-26	27-33	34-40	40-46	47-53	54-60
See Rate Increase Schedule on tab: DCF Investor Owned Cells: L263:BS263												
	Inflation since 3.0%											
	1.061		1-5	6-15	16-19	20-26	27-33	34-40	40-46	47-53	54-60	
Revenue Forecast												
Annual Subscriber Growth	Annual Subscriber Growth: All Periods (		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Periodic Subscriber Growth	Periodic Customer Growth: All period 0		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Growth	0%											
Period every ? years	5											
	2019	2021										
Revenues	5,428,667	1.061 5,759,816	3.0%	3.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 1: Sewer & Collection Fees	1,779,913	1.061 1,888,488	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 2: Wages & Benefits	687,311	1.061 729,237	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 3: Repair & Maintenance	236,403	1.061 250,824	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 4: Contracted Services	41,140	1.061 43,650	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 5: Utilities	86,097	1.061 91,349	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 6: Insurance & Other	242,376	1.061 257,161	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Expense Level 7: Depreciation	774,783	1.061 822,045										
Total Expenses	3,848,023	4,082,754										
check												
Operating Income	1,580,644	1,677,062										
Working Capital		Use										
Current Assets	**37.15%**	28.0% 37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	37.2%	
Current Liabilities	**38.51%**	22.6% 38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	38.5%	

FINANCIALS 2016-2019

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2016
East Whiteland Township Finance Department

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Certified Public Accountants and Business Consultants

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2016

East Whiteland Township Finance Department
John B. Nagel, Township Manager

EAST WHITELAND TOWNSHIP

Statement of Net Position
Proprietary Funds
December 31, 2016

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 6,580,678
Accounts receivable	1,161,871
TOTAL CURRENT ASSETS	7,742,549
NONCURRENT ASSETS	
Capital assets	32,785,377
Other capital assets	11,538,573
Accumulated depreciation	(12,377,360)
TOTAL NONCURRENT ASSETS	31,946,590
TOTAL ASSETS	39,689,139
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	70,666
Deferred amount on refunding	215,921
TOTAL DEFERRED OUTFLOWS OF RESOURCES	286,587
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	123,100
Accrued liabilities	13,831
Due to other funds	371
Compensated absences	6,015
Unearned revenue	830,898
Accrued interest	188,258
Bonds payable	725,000
TOTAL CURRENT LIABILITIES	1,887,473
NONCURRENT LIABILITIES	
Compensated absences	34,085
Bonds payable	17,466,860
Net pension liability	137,571
Other post-employment benefits and obligations	232,724
TOTAL NONCURRENT LIABILITIES	17,871,240
TOTAL LIABILITIES	19,758,713
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	11,356
NET POSITION	
Net investment in capital assets	13,970,651
Unrestricted	6,235,006
TOTAL NET POSITION	$ 20,205,657

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

Statement of Revenues, Expenses and
Changes in Net Position
Proprietary Funds
Year Ended December 31, 2016

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,312,268
Tapping fees	844,300
Miscellaneous	677,340
TOTAL OPERATING REVENUES	4,833,908
OPERATING EXPENSES	
Sewer and collection fees	1,484,102
Salaries, wages and benefits	651,954
Repairs and maintenance	140,341
Contracted services	85,418
Utilities	95,347
Insurance	38,276
Depreciation	673,195
Other	57,227
TOTAL OPERATING EXPENSES	3,225,860
OPERATING INCOME	1,608,048
NONOPERATING REVENUES (EXPENSES)	
Interest income	15,300
Interest expense	(605,904)
Transfers out	(30,000)
TOTAL NONOPERATING REVENUES (EXPENSES)	(620,604)
CHANGE IN NET POSITION	987,444
NET POSITION AT BEGINNING OF YEAR	19,218,213
NET POSITION AT END OF YEAR	$ 20,205,657

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

Statement of Cash Flows
Proprietary Funds
Year Ended December 31, 2016

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 4,058,022
Cash payments to suppliers for goods and services	(1,823,910)
Cash payments to employees for services	(579,944)
NET CASH PROVIDED BY OPERATING ACTIVITIES	1,654,168
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(30,000)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(1,188,175)
Principal paid on capital debt	(720,000)
Interest paid on capital debt	(564,911)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(2,473,086)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	15,300
NET DECREASE IN CASH AND CASH EQUIVALENTS	(833,618)
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	7,414,296
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 6,580,678

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

Statement of Cash Flows
Proprietary Funds
Year Ended December 31, 2016

	Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	$ 1,608,048
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	673,195
Pension expense	(7,223)
Increase in	
Receivables	(854,661)
Increase (decrease) in	
Accounts payable	85,824
Accrued liabilities	(12,619)
Due to other funds	(9,023)
Compensated absences	17,849
Unearned revenue	78,775
Other post-employment benefits and obligations	74,003
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 1,654,168

See accompanying notes to the basic financial statements.

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General Government	$ 49,852
Public Safety	137,236
Public works, highways and streets	1,865,306
Parks and recreation	37,769
	$ 2,090,163

	Balance January 1, 2016	Increases	Decreases	Balance December 31, 2016
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ -	$ 453,331	$ -	$ 453,331
Capacity rights	11,085,242	-	-	11,085,242
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,085,242	453,331	-	11,538,573
Capital assets being depreciated				
Sewer Infrasture	31,749,001	734,844	-	32,483,845
Machinery and equipment	99,324	-	-	99,324
Vehicles	202,208	-	-	202,208
TOTAL CAPITAL ASSETS BEING DEPRECIATED	32,050,533	734,844	-	32,785,377
Accumulated depreciation				
Sewer Infrasture	(11,490,881)	(657,803)	-	(12,148,684)
Machinery and equipment	(68,275)	(6,481)	-	(74,756)
Vehicles	(145,009)	(8,911)	-	(153,920)
TOTAL ACCUMULATED DEPRECIATION	(11,704,165)	(673,195)	-	(12,377,360)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	20,346,368	61,649	-	20,408,017
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 31,431,610	$ 514,980	$ -	$ 31,946,590

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2017
East Whiteland Township Finance Department

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EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2017

East Whiteland Township Finance Department
John B. Nagel, Township Manager

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2017

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 7,518,955
Accounts receivable	683,599
Due from other funds	11,339
TOTAL CURRENT ASSETS	8,213,893
NONCURRENT ASSETS	
Capital assets	34,244,259
Other capital assets	11,085,242
Accumulated depreciation	(13,065,252)
TOTAL NONCURRENT ASSETS	32,264,249
TOTAL ASSETS	40,478,142
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	109,842
Deferred amount on refunding	190,519
TOTAL DEFERRED OUTFLOWS OF RESOURCES	300,361
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	138,497
Accrued liabilities	10,221
Due to other funds	210,243
Compensated absences	5,417
Unearned revenue	917,045
Accrued interest	197,363
Bonds payable	745,000
TOTAL CURRENT LIABILITIES	2,223,786
NONCURRENT LIABILITIES	
Compensated absences	30,694
Bonds payable	16,741,396
Net pension liability	163,903
Other post-employment benefits and obligations	294,321
TOTAL NONCURRENT LIABILITIES	17,230,314
TOTAL LIABILITIES	19,454,100
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	44,990
NET POSITION	
Net investment in capital assets	14,968,372
Unrestricted	6,311,041
TOTAL NET POSITION	$ 21,279,413

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,294,177
Tapping fees	1,706,800
Miscellaneous	216,471
TOTAL OPERATING REVENUES	5,217,448
OPERATING EXPENSES	
Sewer and collection fees	1,155,032
Salaries, wages and benefits	731,028
Repairs and maintenance	643,587
Contracted services	57,917
Utilities	84,883
Insurance	35,780
Depreciation	687,892
Other	156,422
TOTAL OPERATING EXPENSES	3,552,541
OPERATING INCOME	1,664,907
NONOPERATING REVENUES (EXPENSES)	
Interest income	19,510
Interest expense	(607,118)
TOTAL NONOPERATING REVENUES (EXPENSES)	(587,608)
INCOME BEFORE TRANSFERS	1,077,299
TRANSFERS OUT	(3,543)
CHANGE IN NET POSITION	1,073,756
NET POSITION AT BEGINNING OF YEAR	20,205,657
NET POSITION AT END OF YEAR	$ 21,279,413

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,781,867
Cash payments to suppliers for goods and services	(1,919,691)
Cash payments to employees for services	(656,240)
NET CASH PROVIDED BY OPERATING ACTIVITIES	3,205,936
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(3,543)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(1,005,551)
Principal paid on capital debt	(725,000)
Interest paid on capital debt	(553,075)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(2,283,626)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	19,510
NET INCREASE IN CASH AND CASH EQUIVALENTS	938,277
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	6,580,678
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 7,518,955

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	$ 1,664,907
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	687,892
Pension expense	20,790
(Increase) Decrease in	
Receivables	478,272
Due from other funds	(11,339)
Increase (decrease) in	
Accounts payable	15,397
Accrued liabilities	(3,610)
Due to other funds	209,872
Compensated absences	(3,989)
Unearned revenue	86,147
Other post-employment benefits and obligations	61,597
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 3,205,936

See accompanying notes to the basic financial statements.

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General government	$ 45,955
Public safety	121,307
Public works, highways and streets	1,910,264
Parks and recreation	47,694
	$ 2,125,220

	Balance January 1, 2017	Increases	Decreases	Balance December 31, 2017
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ 453,331	$ -	$ (453,331)	$ -
Capacity rights	11,085,242	-	-	11,085,242
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,538,573	-	(453,331)	11,085,242
Capital assets being depreciated				
Sewer Infrasture	32,483,845	1,458,882	-	33,942,727
Machinery and equipment	99,324	-	-	99,324
Vehicles	202,208	-	-	202,208
TOTAL CAPITAL ASSETS BEING DEPRECIATED	32,785,377	1,458,882	-	34,244,259
Accumulated depreciation				
Sewer Infrasture	(12,148,684)	(672,500)	-	(12,821,184)
Machinery and equipment	(74,756)	(6,481)	-	(81,237)
Vehicles	(153,920)	(8,911)	-	(162,831)
TOTAL ACCUMULATED DEPRECIATION	(12,377,360)	(687,892)	-	(13,065,252)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	20,408,017	770,990	-	21,179,007
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 31,946,590	$ 770,990	$ (453,331)	$ 32,264,249

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2018
East Whiteland Township Finance Department

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2018

East Whiteland Township Finance Department
John B. Nagel, Township Manager

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2018

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 9,567,007
Accounts receivable	848,468
Due from other funds	147,915
TOTAL CURRENT ASSETS	10,563,390
NONCURRENT ASSETS	
Capital assets	36,333,876
Other capital assets	11,417,162
Accumulated depreciation	(13,754,484)
TOTAL NONCURRENT ASSETS	33,996,554
TOTAL ASSETS	44,559,944
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	183,740
Deferred amount related to OPEB	28,363
Deferred amount on refunding	165,117
TOTAL DEFERRED OUTFLOWS OF RESOURCES	377,220
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	82,760
Accrued liabilities	10,708
Due to other funds	78
Due to Fiduciary Funds	12,396
Compensated absences	4,953
Unearned revenue	931,069
Accrued interest	191,523
Bonds payable	715,000
TOTAL CURRENT LIABILITIES	1,948,487
NONCURRENT LIABILITIES	
Compensated absences	28,065
Bonds payable	16,045,932
Net pension liability	333,457
Other post-employment benefits and obligations	1,239,417
TOTAL NONCURRENT LIABILITIES	17,646,871
TOTAL LIABILITIES	19,595,358
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	6,206
Deferred amount related to OPEB	59,866
TOTAL DEFERRED INFLOWS OF RESOURCES	66,072
NET POSITION	
Net investment in capital assets	17,400,739
Unrestricted	7,874,995
TOTAL NET POSITION	$ 25,275,734

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES

YEAR ENDED DECEMBER 31, 2018

NET CHANGE IN FUND BALANCES - TOTAL GOVERNMENTAL FUNDS	$	3,237,452
Capital outlays are reported in Governmental Funds as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which depreciation exceeds (2,026,819) capital outlays ($1,444,679) in the current period.		(582,140)
Because some property taxes will not be collected for several months after the Township's fiscal year ends, they are not considered as "available" revenues in the Governmental Funds. Deferred tax revenues increased by this amount this year.		(999)
The issuance of long-term debt (e.g., bonds, leases) provides current financial resources to Governmental Funds, while the repayment of the principal of long-term debt consumes the current financial resources of Governmental Funds. Neither transaction, however, has any effect on net position. Also, Governmental Funds report the effect of issuance costs, premiums, discounts and similar items when debt is first issued, whereas these amounts are deferred and amortized in the statement of activities. This amount is the net effect of these differences in the treatment of long-term debt and related items.		
Repayment of bond principal		285,000
Amortization of bond discount and premium		1,801
Amortization of deferred amount on refunding		(15,444)
Repayment of capital lease		2,913
Some expenses reported in the statement of activities do not require the use of current financial resources and, therefore, are not reported as expenditures in the Governmental Funds.		(1,713,590)
In the statement of activities, compensated absences (vacations and sick leave) are measured by the amounts earned during the year. In the Governmental Funds, however, expenditures for these items are measured by the amount of financial resources used (essentially, the amounts paid).		25,802
Interest on long-term debt in the statement of activities differs from the amount reported in the Governmental Funds because interest is recognized as an expenditure in the funds when it is due and thus requires the use of current financial resources. In the statement of activities, however, interest expense is recognized as the interest accrues, regardless of when it is due.		17,604
CHANGE IN NET POSITION OF GOVERNMENTAL ACTIVITIES	$	1,258,399

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,809,229
Tapping fees	1,306,657
Miscellaneous	1,563,159
TOTAL OPERATING REVENUES	6,679,045
OPERATING EXPENSES	
Sewer and collection fees	1,174,936
Salaries, wages and benefits	867,750
Repairs and maintenance	57,793
Contracted services	96,819
Utilities	85,609
Insurance	37,641
Depreciation	718,700
Other	86,958
TOTAL OPERATING EXPENSES	3,126,206
OPERATING INCOME	3,552,839
NONOPERATING REVENUES (EXPENSES)	
Interest income	27,696
Interest expense	(578,450)
TOTAL NONOPERATING REVENUES (EXPENSES)	(550,754)
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	3,002,085
CAPITAL CONTRIBUTIONS	2,057,746
TRANSFERS OUT	(166,320)
CHANGE IN NET POSITION	4,893,511
NET POSITION AT BEGINNING OF YEAR, restated	20,382,223
NET POSITION AT END OF YEAR	$ 25,275,734

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 6,528,200
Cash payments to suppliers for goods and services	(1,942,234)
Cash payments to employees for services	(721,681)
NET CASH PROVIDED BY OPERATING ACTIVITIES	3,864,285
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(166,320)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(393,256)
Principal paid on capital debt	(745,000)
Interest paid on capital debt	(539,353)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,677,609)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	27,696
NET INCREASE IN CASH AND CASH EQUIVALENTS	2,048,052
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	7,518,955
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 9,567,007

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	$ 3,552,839
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	718,700
Pension and OPEB expense	136,279
(Increase) decrease in	
Receivables	(164,869)
Due from other funds	(136,576)
Increase (decrease) in	
Accounts payable	(55,737)
Accrued liabilities	487
Due to other funds	(210,165)
Due to fiduciary funds	12,396
Compensated absences	(3,093)
Unearned revenue	14,024
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 3,864,285

See accompanying notes to the basic financial statements.

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General government	$ 45,497
Public safety	108,179
Public works, highways and streets	1,817,729
Parks and recreation	55,414
	$ 2,026,819

	Balance January 1, 2018	Increases	Decreases	Balance December 31, 2018
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ -	$ 331,920	$ -	$ 331,920
Capacity rights	11,085,242	-	-	11,085,242
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,085,242	331,920	-	11,417,162
Capital assets being depreciated				
Sewer Infrasture	33,942,727	2,111,820	-	36,054,547
Machinery and equipment	99,324	-	-	99,324
Vehicles	202,208	7,265	(29,468)	180,005
TOTAL CAPITAL ASSETS BEING DEPRECIATED	34,244,259	2,119,085	(29,468)	36,333,876
Accumulated depreciation				
Sewer Infrasture	(12,821,184)	(702,804)	-	(13,523,988)
Machinery and equipment	(81,237)	(6,481)	-	(87,718)
Vehicles	(162,831)	(9,415)	29,468	(142,778)
TOTAL ACCUMULATED DEPRECIATION	(13,065,252)	(718,700)	29,468	(13,754,484)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	21,179,007	1,400,385	-	22,579,392
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 32,264,249	$ 1,732,305	$ -	$ 33,996,554

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

For the Year Ended December 31, 2019
East Whiteland Township Finance Department

Maillie
Expertise Beyond The Numbers®
Certified Public Accountants and Business Consultants

EAST WHITELAND TOWNSHIP
CHESTER COUNTY
PENNSYLVANIA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2019

East Whiteland Township Finance Department
John B. Nagel, Township Manager

EAST WHITELAND TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2019

	Sewer Fund
ASSETS	
CURRENT ASSETS	
Cash and cash equivalents	$ 10,083,775
Accounts receivable	1,151,871
TOTAL CURRENT ASSETS	11,235,646
NONCURRENT ASSETS	
Capital assets	37,387,925
Other capital assets	11,285,015
Accumulated depreciation	(14,529,267)
TOTAL NONCURRENT ASSETS	34,143,673
TOTAL ASSETS	45,379,319
DEFERRED OUTFLOWS OF RESOURCES	
Deferred amount related to pensions	113,838
Deferred amount related to OPEB	130,298
Deferred amount on refunding	139,715
TOTAL DEFERRED OUTFLOWS OF RESOURCES	383,851
LIABILITIES	
CURRENT LIABILITIES	
Accounts payable	417,065
Accrued liabilities	13,689
Due to other funds	18,493
Compensated absences	3,114
Unearned revenue	971,503
Accrued interest	185,646
Bonds payable	735,000
TOTAL CURRENT LIABILITIES	2,344,510
NONCURRENT LIABILITIES	
Compensated absences	17,649
Bonds payable	15,330,468
Net pension liability	192,049
Net OPEB liability	921,823
TOTAL NONCURRENT LIABILITIES	16,461,989
TOTAL LIABILITIES	18,806,499
DEFERRED INFLOWS OF RESOURCES	
Deferred amount related to pensions	82,821
Deferred amount related to OPEB	426,073
TOTAL DEFERRED INFLOWS OF RESOURCES	508,894
NET POSITION	
Net investment in capital assets	18,217,920
Unrestricted	8,229,857
TOTAL NET POSITION	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP

STATEMENT OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
OPERATING REVENUES	
Charges for services	
Sewer service	$ 3,761,787
Tapping fees	984,100
Miscellaneous	682,780
TOTAL OPERATING REVENUES	5,428,667
OPERATING EXPENSES	
Sewer and collection fees	1,779,913
Salaries, wages and benefits	687,311
Repairs and maintenance	236,403
Contracted services	41,140
Utilities	86,097
Insurance	40,288
Depreciation	774,783
Other	202,088
TOTAL OPERATING EXPENSES	3,848,023
OPERATING INCOME	1,580,644
NONOPERATING REVENUES (EXPENSES)	
Interest income	137,057
Interest expense	(561,324)
TOTAL NONOPERATING REVENUES (EXPENSES)	(424,267)
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	1,156,377
CAPITAL CONTRIBUTIONS	181,831
TRANSFERS OUT	(166,165)
CHANGE IN NET POSITION	1,172,043
NET POSITION AT BEGINNING OF YEAR	25,275,734
NET POSITION AT END OF YEAR	$ 26,447,777

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	$ 5,165,698
Cash payments to suppliers for goods and services	(1,885,294)
Cash payments to employees for services	(757,194)
NET CASH PROVIDED BY OPERATING ACTIVITIES	2,523,210
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES	
Transfers to other funds	(166,165)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of capital assets	(740,070)
Principal paid on capital debt	(715,000)
Interest paid on capital debt	(522,264)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(1,977,334)
CASH FLOWS FROM INVESTING ACTIVITIES	
Earnings on investments	137,057
NET INCREASE IN CASH AND CASH EQUIVALENTS	516,768
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	9,567,007
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 10,083,775

See accompanying notes to the basic financial statements.

EAST WHITELAND TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	Sewer Fund
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	$ 1,580,644
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	774,783
Pension and OPEB expense	(48,213)
(Increase) decrease in	
Receivables	(303,403)
Due from other funds	147,915
Increase (decrease) in	
Accounts payable	334,305
Accrued liabilities	2,981
Due to other funds	18,415
Due to fiduciary funds	(12,396)
Compensated absences	(12,255)
Unearned revenue	40,434
NET CASH PROVIDED BY OPERATING ACTIVITIES	$ 2,523,210
SCHEDULE OF NON-CASH CAPITAL AND RELATED FINANCING ACTIVITIES	
Contributions of capital assets	$ 181,831

See accompanying notes to the basic financial statements.

NOTE C - CAPITAL ASSETS (Continued)

Depreciation expense was charged to governmental functions as follows:

GOVERNMENTAL ACTIVITIES	
General government	$ 55,557
Public safety	130,524
Public works, highways and streets	1,723,851
Parks and recreation	58,965
	$ 1,968,897

	Balance January 1, 2019	Increases	Decreases	Balance December 31, 2019
BUSINESS-TYPE ACTIVITIES				
Capital assets, not being depreciated				
Construction in progress	$ 331,920	$ -	$ -	$ 331,920
Capacity rights	11,085,242	306,995	(439,142)	10,953,095
TOTAL CAPITAL ASSETS NOT BEING DEPRECIATED	11,417,162	306,995	(439,142)	11,285,015
Capital assets being depreciated				
Sewer Infrasture	36,054,547	1,021,158	-	37,075,705
Machinery and equipment	99,324	-	-	99,324
Vehicles	180,005	32,891	-	212,896
TOTAL CAPITAL ASSETS BEING DEPRECIATED	36,333,876	1,054,049	-	37,387,925
Accumulated depreciation				
Sewer Infrasture	(13,523,988)	(758,947)	-	(14,282,935)
Machinery and equipment	(87,718)	(4,493)	-	(92,211)
Vehicles	(142,778)	(11,343)	-	(154,121)
TOTAL ACCUMULATED DEPRECIATION	(13,754,484)	(774,783)	-	(14,529,267)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, net	22,579,392	279,266	-	22,858,658
BUSINESS-TYPE ACTIVITIES CAPITAL ASSETS, net	$ 33,996,554	$ 586,261	$ (439,142)	$ 34,143,673

Budget FY 2019



2019 Final Budget

Adopted December 12, 2018

PROJECTION: 20191 2019 Budget

FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08341	Interest								
08341	34101	Interest E	-3,447.39	-6,000.00	-6,000.00	-4,211.16	-4,600.00	-4,500.00	-25.0%
TOTAL Interest			-3,447.39	-6,000.00	-6,000.00	-4,211.16	-4,600.00	-4,500.00	-25.0%
08364	Sewer Dept. Earning								
08364	36400	Sewer Rent	-173,711.00	-180,000.00	-180,000.00	-238,376.00	-195,000.00	-195,376.00	8.5%
	Charlestown Twp - VFSA $70,000 Malvern Borough - Based on usage $125,000								
08364	36411	Sewer Conn	-71,800.00	-52,500.00	-52,500.00	-78,050.00	-82,000.00	-52,500.00	.0%
	Estimated 150 new connections at $350 each.								
08364	36412	Sewer Rent	-3,117,050.85	-3,303,048.00	-3,303,048.00	-4,257,141.34	-3,500,000.00	-3,760,000.00	13.8%
	Existing residential & business sewer EDU billings (District A&B) - $2,709,976 Existing high volume commercial sewer billings - $538,752 plus 10% rate increase $55,000 Existing Malvern Hunt sewer billings (District D) $279*150 per Qtr - $167,400 Lochwood Chase sewer billings (District C) East Goshen $135.50*28 per Qtr - $15,176 Atwater (District E) $120 per Qtr - $273,600								
TOTAL Sewer Dept. Earning			-3,362,561.85	-3,535,548.00	-3,535,548.00	-4,573,567.34	-3,777,000.00	-4,007,876.00	13.4%
08380	Miscellaneous Revenue								
08380	36244	Sewer Cert	-3,415.00	-3,000.00	-3,000.00	-6,100.00	-6,000.00	-5,000.00	66.7%
08380	38002	Other Non-	.00	.00	.00	-314.45	.00	.00	.0%

PROJECTION: 20191 2019 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08380	38003	Refund fro	-124,904.00	-124,750.00	-124,750.00	.00	.00	-100,000.00	-19.8%
	2018 Refund ($119,000) retained by VFSA for settlement								
08380	38004	Refund	-91,567.00	.00	.00	.00	.00	.00	.0%
TOTAL Miscellaneous Revenue			-219,886.00	-127,750.00	-127,750.00	-6,414.45	-6,000.00	-105,000.00	-17.8%
08429	Sewer Dept. Expenses								
08429	12000	Salary - D	118,533.33	125,567.00	125,567.00	117,492.85	125,567.00	129,000.00	2.7%
08429	13000	Wages - Se	173,299.46	225,268.00	225,268.00	132,266.86	155,000.00	215,750.00	-4.2%
	1 Crew Leader and 3 Sewer Maintenance Workers.								
08429	13200	Mechanic	6,278.91	6,346.00	6,346.00	5,838.11	6,346.00	6,346.00	.0%
08429	13500	Wages - Ot	9,078.99	.00	.00	6,211.36	8,000.00	.00	.0%
	Represents PWs EEs working in Sewer; For 2018 & 2019 EEs are budgeted in their respective departments.								
08429	14000	Wages/Sala	82,904.41	144,584.00	144,584.00	134,483.23	144,584.00	176,107.00	21.8%
	Utility Billing Coordinator and allocated Administration and Finance positions. Includes new PT office assistant for park permits and accounts receivable.								
08429	15300	Disability	1,803.38	2,016.00	2,016.00	2,383.12	2,400.00	3,100.00	53.8%
08429	15400	MedPrem	-146.25	.00	.00	-67.50	.00	.00	.0%
08429	15600	Medical In	139,953.48	220,941.00	220,941.00	168,351.09	220,941.00	230,050.00	4.1%
	2018 and 2019 also includes allocated positions.								

PROJECTION: 20191 2019 Budget

ACCOUNTS FOR: FOR PERIOD 99

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08429	15650	OPEB	91,216.23	33,265.00	33,265.00	20,869.27	33,265.00	24,000.00	-27.9%
	Employer Contribution to OPEB Trust Fund: 1 Retiree - $19,000. Fund Trust - $5,000								
08429	15700	Drug & Alc	.00	525.00	525.00	.00	525.00	525.00	.0%
	NTA Random Drug Testing Program - 25% of Annual Program Maintenance Fee plus cost per tests.								
08429	15800	Life Insur	1,403.20	1,698.00	1,698.00	1,882.40	1,900.00	2,325.00	36.9%
08429	16000	Pension/Re	60,807.00	38,144.00	38,144.00	38,350.00	38,144.00	76,140.00	99.6%
08429	16100	FICA (Soc.	30,210.86	38,385.00	38,385.00	33,216.26	38,385.00	41,950.00	9.3%
08429	17000	Vacat Pay	4,696.42	2,900.00	2,900.00	.00	2,900.00	2,900.00	.0%
	2018 based on 2017 actuals.								
08429	17700	Sick Payou	-3,989.00	.00	.00	.00	.00	.00	.0%
08429	18200	Longevity	8,203.00	8,372.00	8,372.00	9,503.00	9,503.00	6,110.00	-27.0%
	Per CBA								
08429	18300	Overtime	6,776.53	12,000.00	12,000.00	13,052.94	14,000.00	12,000.00	.0%
	Based on 4 year average.								
08429	20000	Material &	2,998.70	4,000.00	4,000.00	1,395.45	4,000.00	4,000.00	.0%
	Office and cleaning supplies								

PROJECTION: 20191 2019 Budget

ACCOUNTS FOR: FOR PERIOD 99

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08429	21300	Small Item	.00	8,735.00	8,735.00	462.97	8,735.00	8,735.00	.0%
	Moved from account #75000-Capital purchases. Megohmmeter, jetter nozzle, cable locator, safety harness, air monitor								
08429	23000	Utilities	84,883.49	91,200.00	91,200.00	79,297.59	91,200.00	91,200.00	.0%
	Electric - approx. $7,000/mo - $84,000 Water - approx. $600/mo - $7,200								
08429	23100	Vehicle Fu	7,611.22	10,000.00	10,000.00	6,812.71	10,000.00	10,000.00	.0%
08429	23800	Uniforms	3,124.74	3,800.00	3,800.00	2,047.20	3,800.00	3,800.00	.0%
	Shoe Allowance per CBA (5 @ $300) - $1,500 Uniform cleaning ($150/mo) - $1,800 Shirts and coats - $500								
08429	31100	Financial	8,500.00	9,000.00	9,000.00	7,500.00	9,000.00	9,000.00	.0%
	Annual Audit/CAFR - 25% allocated to Sewer								
08429	31300	Twp. Engin	36,344.11	75,000.00	75,000.00	53,566.21	75,000.00	55,000.00	-26.7%
	Based on 4 year average. Estimated sewer related general engineering services - approx. $54,000 PA One Call System (approx. $150/mo split between GF & SF) - $900 2018 includes a rate study ($20,000).								
08429	31400	Legal Serv	13,073.00	15,000.00	15,000.00	15,627.50	15,000.00	15,000.00	.0%
	Solicitor - liens, easements								
08429	31900	Compu Serv	11,956.74	12,000.00	12,000.00	9,232.14	12,000.00	25,000.00	108.3%
	Allocated and direct software, data processing, network and computer support.								
08429	32100	Telephone	12,411.72	15,570.00	15,570.00	12,710.82	15,500.00	15,500.00	-.4%
	Verizon - Pump stations - approx. $1,065/mo - $12,780 Verizon - mobile phones - approx. $160/mo - $1,920 Sensaphone - Annual Contract - $300 Broadview - desk phones - $480								

PROJECTION: 20191 2019 Budget FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08429	32500	Postage &	3,000.00	7,475.00	7,475.00	4,600.00	7,475.00	7,475.00	.0%
	Postage for sewer bills (4,000 bills/qtr and 50% of annual permit fee - Southeastern post office Copier Lease - Rothwell (50% sewer and 50% PW)								
08429	33100	Training,	2,461.00	2,500.00	2,500.00	340.00	2,500.00	2,500.00	.0%
	Training for office staff & sewer maintenance workers.								
08429	34000	Advertisin	3,645.60	3,400.00	3,400.00	3,194.84	3,400.00	4,000.00	17.6%
	Based on 4 year average. Forms - sewer bills, etc. Advertising - Legal ads & notices Water consumption reports								
08429	35200	Insurance	28,427.57	28,436.00	28,436.00	30,350.03	30,350.03	31,900.00	12.2%
08429	35400	Worker's C	7,352.41	4,086.00	4,086.00	7,290.56	7,290.56	7,460.00	82.6%
08429	37000	Office Equ	1,928.00	1,200.00	1,200.00	760.00	1,200.00	1,200.00	.0%
	Maintenance agreement w. Bantec for folding/sealing machine - $700 Misc other equipment repair and service (i.e. plotter) - $500								
08429	37100	Sewer Syst	80,755.76	116,580.00	116,580.00	95,888.85	116,580.00	118,320.00	1.5%
	Contracted services for Malvern Hunt (ARRO) $3,750/mo plus $1,200 misc exp - $46,200 Materials - Sodium Chloride for Malvern Hunt Sewer System - $12,000 Estimated repairs (service and materials) to maintain sewer system - $60,000 Nitrogen gas / Cylinder Rent for shoring operations ($10/mo) - $120								
08429	37200	Road Maint	.00	3,000.00	3,000.00	.00	3,000.00	3,000.00	.0%
	Sewer sinkhole repairs, etc.								
08429	37300	Pump Stati	77,443.04	76,000.00	76,000.00	65,696.59	76,000.00	76,000.00	.0%
	Estimated emergency repairs to pump stations - $60,000 Annual service contracts for pumps - $7,000 Annual service contracts for generators - $5,000 Estimated other R&M - parts, inspections, calibrations, weed control, etc. - $3,800 Monthly Cylinder Rent - $200								

PROJECTION: 20191 2019 Budget

FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08429	37400	Equipment	1,214.90	700.00	700.00	38.75	700.00	700.00	.0%
	Batteries, cameras, tools, gloves, etc. - based on average history.								
08429	37500	Vehicle -	4,094.99	6,000.00	6,000.00	6,780.74	7,000.00	6,000.00	.0%
	Estimated vehicle repairs, services, parts, inspections, cleaning, etc.								
08429	38500	Sewer Rent	1,155,031.93	1,200,000.00	1,200,000.00	1,151,663.03	1,200,000.00	1,313,690.00	9.5%
	Valley Forge Sewer Authority estimate per rate study (awaiting draft from VFSA) - $1,012,690 Tredyffrin/Valley Creek Trunk - $205,000 (this can vary depending on plan) Tredyffrin/Atwater Drive - $80,000 East Goshen Twp. / Lochwood Chase - $16,000								
08429	70000	Computers	3,543.00	.00	.00	.00	.00	.00	.0%
	Current year technology operating expenses are budgeted in account #31900.								
08429	74000	Vehicles	6,904.50	38,000.00	38,000.00	33,010.00	38,000.00	38,000.00	.0%
	2018: Truck 406 replacement - $38,000								
	2019: Truck 407 replacement - $38,000								
08429	80000	Deprec	687,892.00	.00	.00	.00	.00	.00	.0%
	TOTAL Sewer Dept. Expenses		2,975,628.37	2,591,693.00	2,591,693.00	2,272,098.97	2,539,190.59	2,773,783.00	7.0%
08470	Debt - Sewer Dept.								
08470	25522	GOB 2013	.00	25,000.00	25,000.00	25,000.00	25,000.00	50,000.00	100.0%
08470	25523	GOB 12 A	.00	720,000.00	720,000.00	720,000.00	720,000.00	665,000.00	-7.6%

PROJECTION: 20191 2019 Budget

FOR PERIOD 99

ACCOUNTS FOR:

Sewer Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
08470	47000	Debt Servi	593,625.38	552,000.00	552,000.00	551,051.08	552,000.00	534,041.00	-3.3%
	GOB Series 2012A, 2012B & 2013A								
TOTAL Debt - Sewer Dept.			593,625.38	1,297,000.00	1,297,000.00	1,296,051.08	1,297,000.00	1,249,041.00	-3.7%
08475	Fiscal Agent Fees								
08475	47600	Fiscal Age	3,616.25	3,150.00	3,150.00	3,116.25	3,150.00	3,150.00	.0%
	For 2012A, 2012B & 2013A (2017 includes 1 $500 pmt related to prior year). FFA fees - $500 per Series - $1,500 US Bank Fees - $1,650								
TOTAL Fiscal Agent Fees			3,616.25	3,150.00	3,150.00	3,116.25	3,150.00	3,150.00	.0%
08492	Interfund Operating Transfers								
08492	49201	Transfer t	.00	166,320.00	166,320.00	332,640.00	166,320.00	166,165.00	-.1%
	Rent - Sewer Dept share of bldg debt service ($503,530) based on authorized FTEs (5 or6/15ths) Range 33% - 40% = $166,165 - $201,412								
TOTAL Interfund Operating Tr			.00	166,320.00	166,320.00	332,640.00	166,320.00	166,165.00	-.1%
TOTAL Sewer Fund			-13,025.24	388,865.00	388,865.00	-680,286.65	218,060.59	74,763.00	-80.8%
		TOTAL REVENUE	-3,585,895.24	-3,669,298.00	-3,669,298.00	-4,584,192.95	-3,787,600.00	-4,117,376.00	12.2%
		TOTAL EXPENSE	3,572,870.00	4,058,163.00	4,058,163.00	3,903,906.30	4,005,660.59	4,192,139.00	3.3%
		GRAND TOTAL	-13,025.24	388,865.00	388,865.00	-680,286.65	218,060.59	74,763.00	-80.8%

** END OF REPORT - Generated by Cathy Kleponis **

PROJECTION: 20191 2019 Budget

FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
09341	Interest								
09341	34101	Interest E	-16,062.95	-8,000.00	-8,000.00	-18,801.55	-20,000.00	-20,000.00	150.0%
TOTAL Interest			-16,062.95	-8,000.00	-8,000.00	-18,801.55	-20,000.00	-20,000.00	150.0%
09364	Sewer Reserve - Earnings								
09364	36411	Sewer Tapp	-1,635,000.00	-980,000.00	-980,000.00	-1,154,857.19	-1,200,000.00	-1,572,000.00	60.4%

2019:
Uptown Worthington - 75 EDUs - $300,000
Atwater - estimate 75 connections @ $4,000 each - $300,000
Celia Tract - 10 EDUs - $40,000
99 Church Rd. - 32 EDUs - $128,000
Swedesford 66 - 33 EDUs - $$132,000
GMH Apartments - $460,000
Ivy Prep - $92,000
Loch Aerie - $68,000
Misc EDU's - $52,000

2018 Projection includes:
Uptown Worthington - 75 EDUs - $300,000
Atwater - estimate 100 connections @ $4,000 each - $400,000
Celia Tract - 60 EDUs - $240,000
99 Church Rd. - 10 EDUs - $40,000

TOTAL Sewer Reserve - Earnin			-1,635,000.00	-980,000.00	-980,000.00	-1,154,857.19	-1,200,000.00	-1,572,000.00	60.4%
09429	Sewer Expenses								
09429	60000	Capital Co	471,245.34	2,050,000.00	2,050,000.00	11,037.94	100,000.00	2,500,000.00	22.0%

Per Capital Project Schedule:
Sidley/Moores Road Gravity Sewer (CIPP) Lining - $500,000
401 Corridor Extension (Act 537 Plan Area 1) - $200,000
Planebrook Road Sewer Extension (Act 537 Plan Area 3) - $1,000,000
Bacton Hill Road Sewer Extension (Act 537 Plan Area 2) - $300,000
Church Road Sewer Extension (Act 537 Plan Area 4) - $500,000

PROJECTION: 20191 2019 Budget

FOR PERIOD 99

ACCOUNTS FOR:

Sewer Reserve Fund			2017 ACTUAL	2018 ORIG BUD	2018 REVISED BUD	2018 ACTUAL	2018 PROJECTION	2019 Final	PCT CHANGE
09429	60100	ValleyCr	93,896.00	533,986.00	533,986.00	30,847.00	533,986.00	150,000.00	-71.9%
	2019 Capital Projects VFSA Treatment Plant - $136,000 Misc Professional Services VCTS - $14,000								
09429	60200	Capital Co	-.23	500,000.00	500,000.00	513,262.93	500,000.00	.00	-100.0%
	2019: $0 2018: Planebrook Road Sewer Extension (Act 537 Plan - Area 3) Pump Station - $500,000								
	TOTAL Sewer Expenses		565,141.11	3,083,986.00	3,083,986.00	555,147.87	1,133,986.00	2,650,000.00	-14.1%
09470	Bond Interest Exp								
09470	47000	Debt Serv	13,493.00	.00	.00	.00	.00	.00	.0%
	TOTAL Bond Interest Exp		13,493.00	.00	.00	.00	.00	.00	.0%
09472	Bond Amortization								
09472	47270	Amortiz	11,699.00	.00	.00	.00	.00	.00	.0%
	TOTAL Bond Amortization		11,699.00	.00	.00	.00	.00	.00	.0%
	TOTAL Sewer Reserve Fund		-1,060,729.84	2,095,986.00	2,095,986.00	-618,510.87	-86,014.00	1,058,000.00	-49.5%
		TOTAL REVENUE	-1,651,062.95	-988,000.00	-988,000.00	-1,173,658.74	-1,220,000.00	-1,592,000.00	61.1%
		TOTAL EXPENSE	590,333.11	3,083,986.00	3,083,986.00	555,147.87	1,133,986.00	2,650,000.00	-14.1%
		GRAND TOTAL	-1,060,729.84	2,095,986.00	2,095,986.00	-618,510.87	-86,014.00	1,058,000.00	-49.5%

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Budget FY 2021

7. OPERATING EXPENSES

FOR 2021 03

	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
GRAND TOTAL	205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.6

** END OF REPORT - Generated by Usha Hogan **

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FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
TOTAL Sewer Fund	205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.[illegible]
TOTAL REVENUES	-4,340,000	0	-4,340,000	-990,878.98	.00	-3,349,121.02	
TOTAL EXPENSES	4,545,182	0	4,545,182	582,369.73	22,894.32	3,939,917.95	

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08429 25000	Utilities - Pump St	91,200	0	91,200	19,724.36	.00	71,475.64	21.6
08429 25100	Vehicle Fuel	10,000	0	10,000	1,078.36	.00	8,921.64	10.8
08429 25800	Uniforms	3,800	0	3,800	273.06	.00	3,526.94	7.2
08429 31100	Financial Services	9,000	0	9,000	662.50	.00	8,337.50	7.4
08429 31300	Twp. Engineering Se	55,000	0	55,000	2,864.33	.00	52,135.67	5.2
08429 31400	Legal Services	15,000	0	15,000	1,102.50	.00	13,897.50	7.4
08429 31900	Computer Serv. / Da	27,250	0	27,250	92.99	.00	27,157.01	.3
08429 32100	Telephone (incl. Mo	15,500	0	15,500	2,562.11	.00	12,937.89	16.5
08429 32500	Postage & Courier	7,500	0	7,500	.00	.00	7,500.00	.0
08429 33100	Training, Conferenc	2,500	0	2,500	.00	.00	2,500.00	.0
08429 34000	Advertising, Printi	4,000	0	4,000	75.00	.00	3,925.00	1.9
08429 35100	Insurance - Liabili	34,000	0	34,000	8,341.30	.00	25,658.70	24.5
08429 35400	Worker's Comp Insur	8,000	0	8,000	1,715.40	.00	6,284.60	21.4
08429 37000	Office Equipment Ma	1,200	0	1,200	.00	.00	1,200.00	.0
08429 37100	Sewer System - Main	121,920	0	121,920	17,795.24	7,894.39	96,230.37	21.1
08429 37200	Road Maintenance &	1,000	0	1,000	.00	.00	1,000.00	.0
08429 37300	Pump Stations - Mai	76,000	0	76,000	6,795.17	14,999.93	54,204.90	28.7
08429 37400	Equipment - Maint.	700	0	700	.00	.00	700.00	.0
08429 37500	Vehicle - Maint. &	6,000	0	6,000	1,555.71	.00	4,444.29	25.9
08429 38500	Sewer Rentals - Oth	1,760,000	0	1,760,000	441,744.07	.00	1,318,255.93	25.1
TOTAL Sewer Dept. Expenses		3,122,278	0	3,122,278	582,369.79	22,894.32	2,517,013.89	19.4
08470 Debt - Sewer Dept.								
08470 25522	SE 2013 Bond - Pri	50,000	0	50,000	.00	.00	50,000.00	.0
08470 25523	SE 2013 A Bond - P	350,000	0	350,000	.00	.00	350,000.00	.0
08470 25524	SE 2013B Bond - Pri	335,000	0	335,000	.00	.00	335,000.00	.0
08470 47000	Interest Exp. - Deb	516,409	0	516,409	.00	.00	516,409.00	.0
TOTAL Debt - Sewer Dept.		1,251,409	0	1,251,409	.00	.00	1,251,409.00	.0
08475 Fiscal Agent Fees								
08475 47600	Fiscal Agent Fees	3,150	0	3,150	.00	.00	3,150.00	.0
TOTAL Fiscal Agent Fees		3,150	0	3,150	.00	.00	3,150.00	.0
08492 Interfund Operating Transfers								
08492 49201	Transfer to General	168,345	0	168,345	.00	.00	168,345.00	.0
TOTAL Interfund Operating Transfers		168,345	0	168,345	.00	.00	168,345.00	.0

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08341 Interest							
08341 34101 Interest Earnings	-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6
Total Interest	-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6
08364 Sewer Dept. Earning							
08364 36400 Sewer Rents - Other	-210,000	0	-210,000	-57,646.00	.00	-152,354.00	27.5
08364 36411 Sewer Connection Fe	-35,000	0	-35,000	-5,400.00	.00	-29,600.00	15.4
08364 36411 Sewer Rents	-3,703,000	0	-3,703,000	-926,440.40	.00	-2,776,559.60	25.0
Total Sewer Dept. Earning	-3,948,000	0	-3,948,000	-989,492.40	.00	-2,958,507.60	25.1
08380 Miscellaneous Revenue							
08380 38244 Sewer Certification	-5,000	0	-5,000	-1,075.00	.00	-3,925.00	21.5
08380 38801 Refund from VPSA	-375,000	0	-375,000	.00	.00	-375,000.00	.0
Total Miscellaneous Revenue	-380,000	0	-380,000	-1,075.00	.00	-378,925.00	.3
08429 Sewer Dept. Expenses							
08429 10000 Wages - Sewer Maint	500,000	0	500,000	90,796.13	.00	409,203.87	18.2
08429 15300 Disability Insurance	3,000	0	3,000	778.35	.00	2,221.65	25.9
08429 15400 Medical Insurance	119,000	0	119,000	37,746.82	.00	81,253.18	31.7
08429 15450 Retiree Benefit (O	17,000	0	17,000	4,843.43	.00	12,156.57	28.5
08429 15500 Drug & Alcohol and	525	0	525	.00	.00	525.00	.0
08429 15600 Life Insurance	2,325	0	2,325	466.98	.00	1,858.02	20.1
08429 16000 Pension Retirement	158,000	0	158,000	.00	.00	158,000.00	.0
08429 16100 FICA (Soc. Sec.) &	89,000	0	89,000	2,955.92	.00	86,044.08	3.3
08429 17000 Vacation Payout	2,500	0	2,500	.00	.00	2,500.00	.0
08429 18200 Longevity Pay	7,358	0	7,358	.00	.00	7,358.00	.0
08429 18300 Overtime	15,000	0	15,000	.00	.00	15,000.00	.0
08429 20000 Material & Supplies	4,000	0	4,000	.00	.00	4,000.00	.0
08429 21300 Small Items of Equi	5,000	0	5,000	.00	.00	5,000.00	.0

Rates & Customers

EAST WHITELAND TOWNSHIP

District A/B $100.00 Qtr or $400.00 per year (Majority of billing, residential and business – approximately 3,050 accounts)

District C- $135.50 Qtr or $542.00 per year (Lochwood Chase 28 homes)

District D - $150.00 Qtr or $600.00 per year (Malvern Hunt-This billing is based off a spray irrigation system. Does not go to VFSA Treatment Plant.) – 279 homes

District E- $120.00 Qtr or $480.00 per year (Atwater, residential and business 545 accounts @ 2/2021)

High Volume- Water Use customers based on water meter reading (about 15 customers) $6.20 per thousand gallons. It averages about $90,000.00 Qtr or $360,000.00 per year.

Two Intermunicipal Agreements with Charlestown Township & Malvern Borough based off an annual formula. Charlestown Twp- $20,071.00 Qtr or $80,068. 00 per year. Malvern Boro- $37,575.00 Qtr or $150,300.00 per year.

Approximate # of Accounts – 3,900

HIGH VOLUME CUSTOMERS FOR 2019 AND 2020

COMPANY NAME	1QTR GALLONS	BILLED	2QTR GALLONS	BILLED	3QTR GALLONS	BILLED	4QTR GALLONS	BILLED	ANNUAL BILL
WEGMANS-2019	11,431	$7,087.22	11,372	$7,050.64	10,076	$6,247.12	10,340	$6,406.46	$26,791.44
WEGMANS-2020	10,776	$6,681.12	6,366	$3,946.92	7,579	$4,699	$7,427	$4,604.74	$19,931.78
GENERAL WARREN INN-2019	1,649	$1,022.38	1,670	$1,035.40	1,760	$1,091.20	1,874	$1,161.88	$4,310.86
GENERAL WARREN INN-2020	1,471	$912.02	441	$273.42	1,088	$674.56	1,136	$704.32	$2,564.32
CHESTER VALLEY CC-2019	2,240	1,388.80	3,770	$2,337.40	3,860	$2,393.20	2,990	$1,853.80	$7,973.20
CHESTER VALLEY CC-2020	1,900	$1,178.00	1,570	$973.40	2,900	$1,798.00	2,030	$1,258.60	$5,208.00
CERTAIN TEED-2019	9,455	$5,862.10	13,593	$8,427.66	24,691	$15,308.42	10,941	$6,783.42	$36,381.60
CERTAIN TEED- 2020	7,796	$4,833.52	4,297	$2,664.14	14,783	$9,165.46	5,779	$3,582.98	$20,246.10
STEDI INC-2019	1,085	$672.70	1,125	$697.50	995	$616.90	1,140	$706.80	$2,693.90
STEDI INC-2020	835	$517.70	30	$186.00	165	$102.30	515	$319.30	$1,125.30
MALVERN INSTITUTE-2019	3,780	$2,343.60	6,010	$3,726.20	4,515	$2,799.30	4,015	$2,489.30	$11,358.40
MALVERN INSTITUTE-2020	4,020	$2,492.40	3,580	$2,219.60	4,090	$2,535.80	2,830	$1,754.60	$9,002.40
J & J -90 GVP-2019	106,568	$66,072.16	98,128	$60,839.36	93,666	$58,072.92	39,076	$24,227.12	$209,211.56
J & J-90 GVP-2020	23,256	$14,542	109,183	$67,693.46	126,356	$78,340.72	110,255	$68,355.00	$228,931.18
J & J 256- GVP-2019	4,255	$2,638.10	5,670	$3,515.40	5,460	$3,385.20	5,865	$3,636.30	$13,175.00
J & J-256 GVP-2020	6,090	$3,775.80	4,805	$2,979.10	5,065	$3,140.30	5,540	$3,434.80	$13,330.00

HIGH VOLUME CUSTOMERS FOR 2019 AND 2020

COMPANY NAME	1QTR GALLONS	BILLED	2QTR GALLONS	BILLED	3QTR GALLONS	BILLED	4QTR GALLONS	BILLED	ANNUAL BILL
J & J-40 GVP -2019	5,835	$3,617.70	4,260	$2,641.20	4,820	$2,988.40	4,525	$2,805.50	$12,052.80
J & J-40 GVP- 2020	3,330	$2,064.60	2,305	$1,429.10	2,285	$1,416.70	2,170	$1,345.40	$6,255.80
J & J- 84 GVP-2019	490	$303.80	500	$310.00	440	$272.80	490	$303.80	$1,190.40
J & J-84 GVP- 2020	440	$272.80	160	$99.20	160	$99.20	330	$204.60	$675.80
CERTAIN TEED # 2 - 2019	10,955	$6,792.10	10,550	$6,541.00	13,825	$8,571.50	12,600	$7,812.00	$29,716.60
CERTAIN TEED #2-2020	11,265	$6,984.30	12,630	$7,830.60	11,685	$7,244.70	10,180	$6,311.60	$28,371.20
MICRON TECH - 2019	2,825	$1,751.50	1,558	$965.96	2,576	$1,597.12	2,079	$1,288.98	$5,603.56
MICRON TECH - 2020	1,612	$999.44	2,537	$1,572.94	4,489	$2,783.18	3,229	$2,001.98	$7,357.54
DFKS MGMT LLC-2019	1330	$824.60	890	$551.80	650	$403.00	1520	$942.40	$2,721.80
DFKS MGMT LLC-2020	1630	$1,010.60	1600	$992.00	1795	$1,112.90	1899	$1,177.38	$4,292.88

Jerry Weinert

From: Garrett Moore <mooreg@pfm.com>
Sent: Thursday, June 10, 2021 8:34 AM
To: Jerry Weinert
Cc: Scott Shearer
Subject: FW: [EXTERNAL] RE: East Whiteland - Weekly Call

Hi Jerry,

See below.

Thanks,

Garrett F. Moore
Senior Analyst

PFM Financial Advisors LLC | Public Financial Management, Inc.
mooreg@pfm.com | 717.232.2723 **OFFICE** | 717.232.8610 **FAX**
213 Market Street | Harrisburg, PA 17101

From: John Neild <jneild@eastwhiteland.org>
Sent: Thursday, June 10, 2021 9:25 AM
To: Stahl, Alexander R <astahl@aquaamerica.com>; CHARLES FAULKNER <CFaulkner@Pennoni.com>; Garrett Moore <mooreg@pfm.com>; John Nagel <jnagel@eastwhiteland.org>; jmcgrory <jmcgrory@hrmml.com>; kimberley.farmer <kimberley.farmer@obermayer.com>; Thomas.Wyatt <Thomas.Wyatt@obermayer.com>; Scott Shearer <SHEARERS@pfm.com>; Rafferty, Thomas F <tfrafferty@aquaamerica.com>; Joyce, Kimberly A <KAJoyce@essential.co>
Subject: RE: [EXTERNAL] RE: East Whiteland - Weekly Call

EXTERNAL EMAIL: Use care with links and attachments.

Alex,
The total number of accounts billed for the last quarter of 2020 was:

District A/B – 3053
District C - 28
District D - 279
District E - 522
High Volume – 13

Total accounts – 3,895

District E (Atwater) has been built out since the last bill of 2020 for a total of 545 accounts.

Thank you,

John Neild
Director of Public Works
East Whiteland Township

Jerry Weinert

From: Garrett Moore <mooreg@pfm.com>
Sent: Wednesday, June 9, 2021 1:43 PM
To: Jerry Weinert; Scott Shearer
Subject: RE: East Whiteland Customers
Attachments: High Volume Sewer Customers 2019 - 2020.pdf; Sewer Rates per District-2021.docx

Hi Jerry,

Please see attached. Does this help?

Thanks,

Garrett F. Moore
Senior Analyst

PFM Financial Advisors LLC | Public Financial Management, Inc.
mooreg@pfm.com | 717.232.2723 **OFFICE** | 717.232.8610 **FAX**
213 Market Street | Harrisburg, PA 17101

From: Jerry Weinert <weinertj@auswest.net>
Sent: Wednesday, June 9, 2021 1:34 PM
To: Scott Shearer <SHEARERS@pfm.com>; Garrett Moore <mooreg@pfm.com>
Subject: East Whiteland Customers

EXTERNAL EMAIL: Use care with links and attachments.

Gentlemen,

I could use a customer count for East Whiteland.

Jerry

EAST WHITELAND TOWNSHIP
SEWERAGE FACILITIES
ENGINEERING ASSESSMENT AND ORIGINAL COST

East Whiteland Township
Chester County, PA

Prepared for:

East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

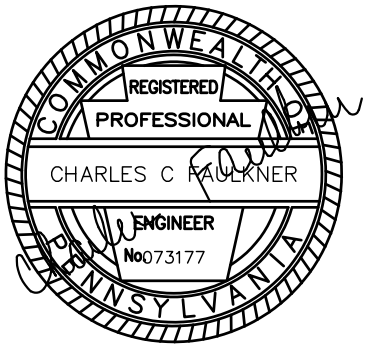
Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

Submitted By:

Pennoni Associates Inc.
1900 Market St, Suite 300
Philadelphia, PA 19103



Frank A. Ciufo, PE
Pennoni Associates Inc.



Charles Faulkner, PE
Pennoni Associates Inc.

EWTPX17000.03

May 20, 2021,
revised June 17, 2021

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APPENDICES

APPENDIX A – SYSTEM MAPS

- A1 – East Whiteland Township Sanitary Sewer Collection System

APPENDIX B

- Uniform System of Accounts - Section 300
- PA ACT 12 of 2016

APPENDIX C – OWNED PROPERTY & EASEMENTS OF VALUE

- (TO BE PROVIDED)

APPENDIX D – SUPPORTING DOCUMENTS

- Exhibit No. 3
- Exhibit No. 4
- Exhibit No. 5
- Pricing Structure

1. EXECUTIVE SUMMARY

As required by PA Act 12 of 2016 and following the guidelines of the "Uniform System of Accounts for Class A Wastewater Utilities", an assessment of the tangible assets of facilities and equipment of the East Whiteland Township wastewater utility has been prepared as part of the asset purchase agreement with Aqua Pennsylvania Wastewater, Inc. (Aqua). Each facility and class of equipment was coded based on Section 300 of the "Wastewater Utility Plant Accounts" of the Guidelines. The Asset Survey included the 12 Township owned pump stations and associated force mains, and approximately 60 miles of gravity sewers. Asset cost information was derived from various sources. Site visits to each of the facilities were conducted to inventory the equipment and assess conditions.

Site inventories and facility conditions were documented on facility information sheets and summarized in the facility description summaries.

Conditions of the Pump Stations varies from fair to very good based on the age and/or completion of recent improvements.

Gravity sewer and force main conditions were not determined. The piping installation period ranges from approximately the late 1970s to 2019.

A complete list of the assets and available original costs is provided in Section 8 of this report.

2. PURPOSE OF REPORT

The purpose of this report is to "conduct an assessment of the tangible assets of the selling utility" per the requirements of PA Act 12 of 2016.

This engineering assessment will be used by the Utility Value Experts (UVEs) retained by both the seller (East Whiteland Township) and buyer (AQUA). The engineering assessment followed the practices and procedures of the Public Utility Commission (PUC) and National Association of Regulatory Utility Commissioners (NARUC) Systems of Accounts. The engineering assessment report documents the conditions and original costs of East Whiteland Township's assets that will be used as the common list for the UVEs to develop their appraisal of the system.

The report preparation process included meeting with key Township and Aqua representatives to identify and confirm specific information needed to support the assessment and to prepare the report, providing a mutually agreed upon scope of work with East Whiteland Township and Aqua. The inventory is a compilation of data gathered by the Township and Pennoni, developed from institutional knowledge, available records, maps, work orders, payment records from construction projects, GIS, site evaluations, and other sources to provide an inventory and listing.

This report contains the following:

- An inventory of the used and useful assets to be transferred, compiled by year and account (codes).
- A list of non-depreciable property such as land and rights-of-way.
- A review of system components, plans, and reports of key facilities. This includes:
  - Permitted discharges, including regulatory requirements
  - Pumping Stations (12 each), including force mains
  - Gravity collection system
  - Metering stations
- Summary of the operation and maintenance expenses based upon review of Township operating records.
- An assessment of the identified assets.
- Determination and/or establishment of an original cost of construction for each asset.

Assets were identified through various sources. Force main sizes and quantities were taken from GIS and project drawings. Pump Stations were field inventoried and evaluated; and, supplemented with information obtained from drawings, where available. Asset costs are based on Construction Escrow Releases/Estimates where available or estimated current cost and back calculated to the year of installation using the ENR Construction Cost Index.

A coding system as described in Section 300 of the Uniform System of Accounts for Class A Wastewater Utilities was used for classifying various assets. Section 300 as well as the listing of codes can be found in Appendix B. The entire Uniform System of Accounts can be found in the Digital Files.

3. SYSTEM DESCRIPTION

System Summary

East Whiteland Township is responsible for the safe collection and transmission of an average over 1.062 million gallons per day (MGD) of wastewater generated in southeastern Pennsylvania (A map of the service areas is located in Appendix A, Figure A1). East Whiteland Township's facilities serve residential, commercial, institutional, and industrial customers all within Chester County. The Township owns and operates a system consisting of 12 pump stations and associated force mains, and approximately 60 miles of gravity collection system mains and interceptor sewers for the conveyance of wastewater to the Valley Forge Sewer Authority Wastewater Treatment Plant via the Valley Creek Trunk Sewer. The Township does not have any property held for future use.

In addition to customers within the Township, East Whiteland Township also collects/conveys sewage to/from municipalities that border the Township including Malvern Borough, Tredyffrin Township Charlestown Township and Willistown Township. Agreements with these municipalities, (or entities operating their respective system) outline the responsibilities regarding this relationship.

PUMP STATION LIST

East Whiteland Township

PUMP STATION	PUMP STATION NO.	Address
Deer Run	P.S. 1	15 Deer Run Ln
Mill Lane	P.S. 2	202 Conestoga Rd
Wilburdale	P.S. 3	101 Flat Rd.
Lee Boulevard	P.S. 4	13 Lee Blvd
Meadowview	P.S. 5	317 Swedesford Rd
Flat Road	P.S. 6	601 Flat Rd
Lapp Road	P.S. 7	510 Lapp Rd
Westgate	P.S. 8	331 Lancaster Ave
Hillbrook Circle	P.S. 11	379 Conestoga Rd
King Road	P.S. 12	340 King Rd
Malvern Hunt	P.S. 13	30 Corbin Dr
Planebrook Road	P.S. 14	170 Cricket Dr

4. INVENTORY OF ASSETS

4.1. PUMP STATIONS

P.S. 1 - AKA Deer Run PS

Facility Description (see attached Information Sheet)

P.S. 1 is located at 15 Deer Run Lane and is equipped with (2) 90-GPM dry pit submersible pumps. Wastewater is discharged through an 830 foot, 4-inch ACP force main that ties into the existing sewage collection system at Manhole 826 located on Conestoga Road near Deer Run Ln. The pump station was installed in 1976.

The pump wet well is (5-ft diameter, 12-ft deep) with 24-inch MH cover hatchway. The control panel is custom manufactured.

The Building (10-ft x 12-ft) is constructed of concrete with brick facade and asphalt shingle roof in good condition. The building contains florescent lighting and 1 steel door.

The Generator is a Generac SD00353G163, 35 KW unit with 132-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Cummins Power Command.

The property is surrounded by a 136 LF 6-ft chain link with barbed wire fence.

Property Condition

The building is in good condition, the roof is in good condition and all HVAC systems appear to be in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Control Panel and ATS



Figure 3 – Dry Pit Pump



Figure 4 – Generator

PUMP STATION #		P.S. 1		**Scheduled Visit Date:**		
Station Name		Deer Run				
Location		15 Deer Run Ln				
Start Up Date		1976				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Good			
		No. of Pumps	2			
		Type	Dry Pit Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CT3127			
		Year Installed	1976			
		Pump GPM	90			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	7.5			
		Motor Voltage	230			
371.3		Pump Control (VFD?)				
370.3		**WET WELL**				
		Condition	good			
		Size	5' diam x 12 deep			
		Material				
		Lined				
		Hatch	24' MH cover			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	custom			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material	ACP			
		Diameter	8"			
371		**GRINDER**				
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type				
		Manufacturer				
		Size				
		#				
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Generac SD00353G163			
		Generator KW	35			
		Generator KVA	44			
		Fuel Tank (Gals)	132			
355		ATS (manf/model #)	Cummins Power Command			
		Year Installed	2018			
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	ACP			
		Length in Feet	830			
		Year Installed	1976			
		Discharge Point	MH 826			
		Discharge Point Location	Conestoga Road near Deer Run Ln			

354.2		**BUILDING**				
		Condition	good			
		Size	10' x 12			
		Main Structure Material	concrete with brick facade			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	florescent			
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp panel			
396		Alarm System (manf/ model)	Ademco - auto dial			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	good	good		
		Type	In-line pipe exhaust	electric unit heater		
		Manufacturer		Q-Mark		
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	136'			
		Fence Type	6' chain link w/ barb wire			
		Year Installed				
354.3		Paving and Walkways	asphalt drive			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable	Yes			
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
Pumps and controls are original and in fair condition. Building and other facilities are in good condition. Generator is was replaced in 2018 and is in very good condition.						

P.S. 2 - AKA Mill Lane PS

Facility Description (see attached Information Sheet)

P.S. 2 is located at 202 Conestoga Rd and is equipped with (3) 1600-GPM dry pit submersible pumps. Wastewater is discharged through a 3400 LF, 14-inch DIP force main that ties into the existing sewage collection system at Manhole 826 located on Conestoga Road near Deer Run Lane. The pump station was installed in 1976 and reconstructed 2013.

The pump wet well is Concrete (9-ft x 30-inch x 31-ft deep) with 42-inch x 42-inch and 36-inch x 36-inch hatchways. The control panel is manufactured by Healy-Ruff. There are (6) 12-inch gate valves and (3) 12-inch check valves installed in 2013. The influent line to the wet well contains a bar screen.

The Building (32-ft x 22-ft) is constructed of masonry block and asphalt shingle roof in good condition. The building contains 2 steel doors.

The Generator is an Onan DFEK-1207638, 500 KW unit with 850-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is surrounded by a 600 LF 6-ft cyclone with barbed wire fence.

Property Condition

The building is in very good condition, the roof is in good condition and all HVAC systems are in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Building - Front



Figure 3 – Dry Pit Pumps



Figure 4 – Dry Pit Pumps



Figure 5 -Dry Pit Pump



Figure 6 - MCC



Figure 7 - Pump Control Panel



Figure 8- Pump Control Interface



Figure 9 -Crane



Figure 10 - Generator



Figure 11 -Scada System



Figure 12 -Bar Screen



Figure 13 -VFDs



Figure 14 – Old Pump Building



Figure 15 – Old Pump Bldg. Upper Floor



Figure 16- Old Pump Bldg. Pump Dry Pit

PUMP STATION #		P.S. 2		**Scheduled Visit Date:**		2/10/2021
Station Name		Mill Lane				
Location		202 Conestoga Rd				
Start Up Date		1976, Reconstructed 2014				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	3			
		Type	Dry Pit Submersible			
		Pump Manufacturer	Fairbanks Morse			
		Pump Model Number	C5446			
		Year Installed	2013			
		Pump GPM	1600			
		Pump TDH Ft.	200			
		Outlet Size	5"			
		Motor HP	150			
		Motor Voltage	460			
371.3		Pump Control (VFD)	VFD Eaton EPX9000			
370.3		**WET WELL**				
		Condition	Very Good			
		Size	9'x30'x31'Deep			
		Material	Concrete			
		Lined				
		Hatch	42"x42", 36"x36"			
		Vent				
		Rails				
		Cable				
		Piping	Ductile Iron			
371.3		**CONTROL PANEL**				
		Manufacturer	Healy-Ruff			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	Bar Screen			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Shaw-Box			
		Model/Serial number	2-Ton			
		Year Installed	2013			
360		**VALVES (DISCHARGE)**				
		Type	Gate	Check		
		Manufacturer	Milliken	Milliken		
		Size	12"	12"		
		#	6	3		
		Year Installed	2013	2013		
355		**GENERATOR**				
		Manufacturer	Onan DFEK-1207638			
		Generator KW	500			
		Generator KVA	625			
		Fuel Tank (Gals)	850			
355		ATS (manf/model #)	ASCO 7000			
		Year Installed	2013			
360		**FORCE MAIN**				
		Force Main Size	14"			
		Force Main Mat.	DIP			
		Length in Feet	3400			
		Year Installed	1976			
		Discharge Point	MH 826			
		Discharge Point Location	Conestoga Road near Deer Run Ln			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	32' x 22'			
		Main Structure Material	Masonary Block			
		Roof Type	Asphalt Shingle			
		Roof Condition	Good			
		Doors (number /material)	2 - Steel			
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	Allen Bradley 800 Amp	225 Amp &125 Amp service panels		
396		Alarm System (manf/ model)	Sensaphone Scada			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	Very Good			
		Type	2 Wall and 2 Roof units			
		Manufacturer	Greenheck			
		Year Installed	2013			
364		Flow Meter	Rosemont Magmeter			
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	600'			
		Fence Type	6' cyclone w/ barbed wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer	N/A			
		Type				
		MISCELLANEOUS				
		Other Buildings	Old Pump Bldg. - 20' x 20' Brick			
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The pump station was built in 2013 and is in excellent condition. The property is shared with the Police Department which includes their impoundment lot. The former pump station is used for storage, pumps and related equipment have been removed.						

P.S. 3 - AKA Wilburdale PS

Facility Description (see attached Information Sheet)

P.S. 3 is located at 101 Flat Rd. and is equipped with (2) 930-GPM submersible pumps. Wastewater is discharged through a 1935 LF, 10-inch PVC force main that ties into the existing sewage collection system at Manhole 1202 located on Flat Road by Sidley Road. The pump station was installed in 1979 and reconstructed 2017.

The pump wet well is precast concrete (12-ft dia. x appr. 18-ft deep) with 6-ft x 4.5-ft hatchway. There are (3) 4-inch gate valves, (2) 4-inch check valves within a (12.5-ft x 10-ft x 5-ft deep) valve box installed in 2017. The control panel is manufactured by Stacon.

The Building (15-ft x 13-ft) is constructed of concrete block and asphalt shingle roof in very good condition. The building contains outdoor walpacks lighting and 1 steel door.

The Generator is an MTU 4R0113DS50 50 KW unit with 185-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is not fenced.

Property Condition

The building is in very good condition, the roof is in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station



Figure 3 – Pump Control Panel



Figure 4 – Generator

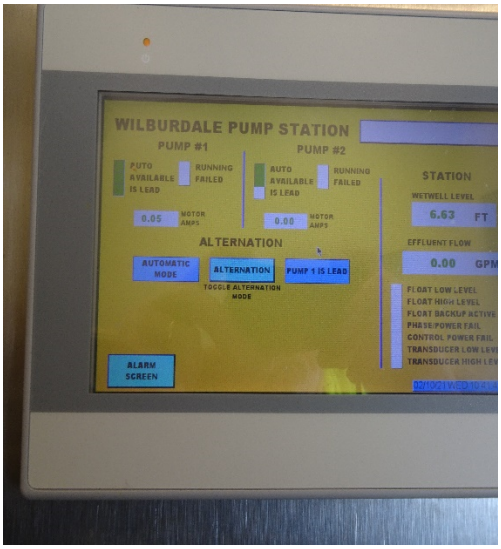

Figure 5 – Pump Control Interface



Figure 6 – Valve Chamber



Figure 7 – Automatic Transfer Switch



Figure 8 – Valve Chamber

PUMP STATION #		P.S. 3		**Scheduled Visit Date:**		2/10/2021
Station Name		Wilburdale				
Location		101 Flat Rd.				
Start Up Date		1979, Reconstructed 2017				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP3153HT			
		Year Installed	2017			
		Pump GPM	930			
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	15			
		Motor Voltage	230			
371.3		Pump Control (VFD?)				
370.3		**WET WELL**				
		Condition				
		Size	2 dia. X appr. 18' Deep			
		Material	precast concrete			
		Lined				
		Hatch	6' x 4.5 '			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Stacon			
		Year Installed	2017			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Davit Crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Gate	Check	valve box	
		Manufacturer	Valmatic	Valmatic		
		Size	4"	4"	12.5' x 10' x 5' D	
		#	3	2		includes hook up for portable pump
		Year Installed	2017			
355		**GENERATOR**				
		Manufacturer	MTU 4R0113DS50			4' x 4' exhaust lovers
		Generator KW	50			
		Generator KVA	620			
		Fuel Tank (Gals)	185			
355		ATS (manf/model #)	ASCO 7000			incl. Total Protection Service surge protector
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	10"			
		Force Main Mat.	PVC			
		Length in Feet	1935			
		Year Installed	2016			
		Discharge Point	MH 1202			
		Discharge Point Location	Flat Road by Sidley Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	15' x 13'			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - Steel			
		Lighting (Type)	outdoor walpacks			
		Year Installed				
		ELECTRICAL				
371.3		MCC	Amp Panel, 200 Amp Main			
396		Alarm System (manf/ model)	Sensaphone Sentinal			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	4' x 4' motorize louvers	Electric unit heaters	2' x 2' exhaut fan	
		Manufacturer		Q-Mark		
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility was installed in 2017 and is in excellent condition.						

P.S. 4 - AKA Lee Boulevard PS

Facility Description (see attached Information Sheet)

P.S. 4 is located at 13 Lee Blvd and is equipped with (2) 470-GPM Submersible pumps. Wastewater is discharged through a 3310 LF, 8-inch DIP force main that ties into the existing sewage collection system at Manhole 1582 located on Yellow Spring Road at Lee Boulevard. The pump station was installed in 1987 and reconstructed 2007.

The pump wet well is precast concrete (9-ft diam. X 15-ft deep (est)) with 4.5-ft x 4.5-ft aluminum hatchway. There are (2) 6-inch check valves and (2) 6-inch gate valves. The control panel is manufactured by Flygt.

The Building (11.5-ft x 15.5-ft) is constructed of prefabricated masonry and asphalt shingle roof in good condition. The building contains Halogen wall pack lighting and 1 steel door.

The Generator is an Katolight D50FJJ4T2 50 KW unit with 140-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by ASCO.

The property is surrounded by a 115 LF 6-ft cyclone with barbed wire fence.

Property Condition

The building is in very good condition, the roof is in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station



Figure 3 – Pump Control Panel

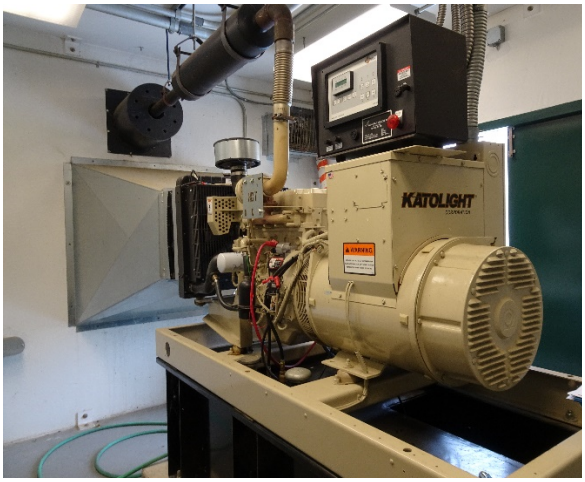

Figure 4 – Generator



Figure 5 – Pump Control Interface



Figure 6 – Valve Chamber



Figure 7 – Scada System Interface

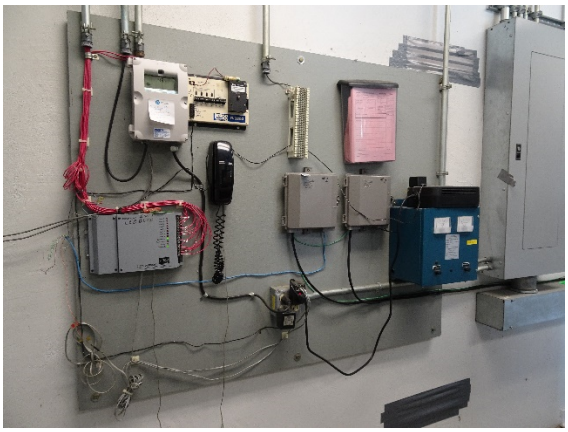

Figure 8 –Auto Dialer, flow readout and electrical panel

PUMP STATION #		P.S. 4		**Scheduled Visit Date:**		2/10/2021
Station Name		Lee Boulevard				
Location		13 Lee Blvd				
Start Up Date		1987, Reconstructed 2007				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3126			
		Year Installed	2007			
		Pump GPM	470			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	11			
		Motor Voltage	230			
371.3		Pump Control	Multitrode MT2PC			
370.3		**WET WELL**				
		Condition				
		Size	9' diam. X 15' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	4.5' x 4.5' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	N/A			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		Meter pit - 7' diam, 6' deep
		Manufacturer	Mueller	Mueller		4' x 4' hatch
		Size	6"	6"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Katolight D50FJJ4T2			
		Generator KW	50			80 HP
		Generator KVA	63			4' x 4' exhaust vent
		Fuel Tank (Gals)	140			
355		ATS (manf/model #)	ASCO			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	DIP			
		Length in Feet	3310			
		Year Installed	1987			
		Discharge Point	MH 1582			
		Discharge Point Location	Yellow Spring Road at Lee Boulevard			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	11.5 x 15.5			
		Main Structure Material	Pre-Fab Masonary			
		Roof Type	Asphalt Shingle			
		Roof Condition	Good			
		Doors (number /material)	1 - Steel			
		Lighting (Type)	Halogen wall packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 Amp panel			
396		Alarm System (manf/ model)	ACS Scadapack, Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	5' x 4' Motorized louvers	18" x 18" exhaust fan		
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	115'			
		Fence Type	cyclone w/ Barbed Wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				
		Manufacturer	N/A			
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The pump equipment, building and generator are all in very good condition.						

P.S. 5 - AKA Meadowview PS

Facility Description (see attached Information Sheet)

P.S. 5 is located at 317 Swedesford Rd and is equipped with (2) 80-GPM submersible pumps. Wastewater is discharged through a 1245 LF, 4-inch ACP force main that ties into the existing sewage collection system at Manhole 822 located on Manor View Circle by Valley Creek Road. The pump station was installed in 1980.

The pump wet well is precast concrete (6-ft dia. x 12-ft deep) with 3-ft x 6-ft hatchway. There are (2) 4-inch check valves and (2) 4-inch plug valves. The control panel is custom manufactured.

The property is surrounded by a 112 LF chain link and wood stockade fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station and Valve Chamber

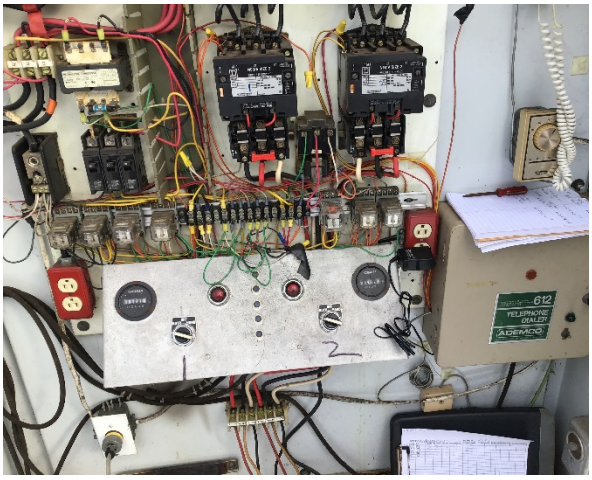

Figure 3 – Pump Control Panel



Figure 4 –Pump Wetwell

PUMP STATION #		P.S. 5		**Scheduled Visit Date:**		
Station Name		Meadowview				
Location		317 Swedesford Rd				
Start Up Date		1980				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Fair			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	1980			
		Pump GPM	80			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	6.5			
		Motor Voltage	230			
371.3		Pump Control	floats			
370.3		**WET WELL**				
		Condition	good			
		Size	6' dia. X 12' deep			
		Material	precast concrete			
		Lined				
		Hatch	3' x 6'			steel double door
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	custom			
		Year Installed	1980			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	Plug		pre-cast valve chamber
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	ACP			
		Length in Feet	1245			
		Year Installed	1980			
		Discharge Point	MH 822			
		Discharge Point Location	Manor View Circle by Valley Creek Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp feed			In control panel
396		Alarm System (manf/ model)				
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	112'			
		Fence Type	chain link and wood stockade			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable	yes			
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
Overall condition of the facilites is fair.						

P.S. 6 - AKA Flat Road PS

Facility Description (see attached Information Sheet)

P.S. 6 is located at 601 Flat Rd and is equipped with (2) 275-GPM submersible pumps. Wastewater is discharged through a 1655 LF, 6-inch ACP force main that ties into the existing sewage collection system at Manhole 1323 located on Great Valley Parkway parallel to Flat Road. The original pump station was installed in 1979. In January of 2019 a sinkhole developed at the station. This required the station to be reconstructed at a new location. The new station went online in 2019. Components, such as the control panel and pumps (2002), were incorporated from the decommissioned Frame Avenue Pump Station.

The pump wet well is precast concrete (8-ft diam. x 16.85-ft deep) with a 3-ft x 4-ft hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt. The facility has no generator.

The property is not fenced in.

Property Condition

The facility is in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel

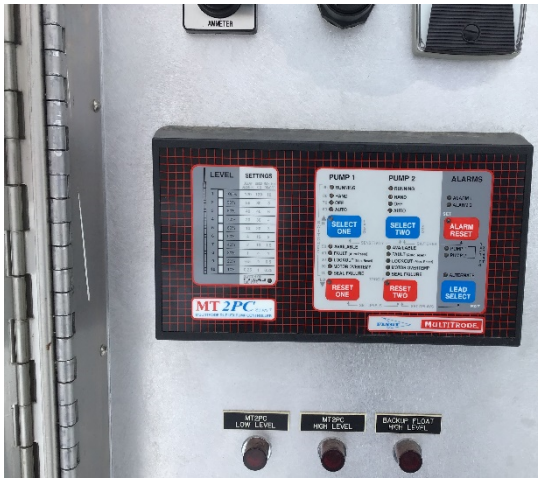

Figure 4 – Pump Control Interface



Figure 5 – MCC and Disconnects



Figure 6 – Valve Chamber



Figure 7 – Electrical Panel



Figure 8 –Auto Dialer

PUMP STATION #		P.S. 6		**Scheduled Visit Date:**		
Station Name		Flat Road				
Location		601 Flat Rd				
Start Up Date		Original construction in 1979, Reconstructed 2019				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP 3153			
		Year Installed	2002			
		Pump GPM	275			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	18			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Flygt Multitrode			
370.3		**WET WELL**				
		Condition	Very good			
		Size	8-ft diam. x 16.85-ft deep			
		Material	precast concrete			
		Lined				
		Hatch	3-ft x 4-ft			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2002			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		4' x 4' concrete valve chamber
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**	N/A			
		Manufacturer				
		Generator KW				
		Generator KVA				
		Fuel Tank (Gals)				
355		ATS (manf/model #)				
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	ACP			
		Length in Feet	1655			
		Year Installed	1979			
		Discharge Point	MH 1323			
		Discharge Point Location	Manor View Circle by Valley Creek Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	200 Amp Panel	150 Amp sub		
396		Alarm System (manf/ model)	Sensaphone			
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	asphalt paving			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
In January of 2019 a sinkhole developed at the station. This required the station to be reconstructed at a new location. The new station went online in 2019. Components, such as the control panel and pumps (2002), were incorporated from the decommissioned Frame Avenue Pump Station. All in very good condition.						

P.S. 7 - AKA Lapp Road PS

Facility Description (see attached Information Sheet)

P.S. 7 is located at 510 Lapp Rd and is equipped with (2) 315-GPM submersible pumps. Wastewater is discharged through a 3715 LF, 6-inch PVC force main that ties into the existing sewage collection system at Manhole 746 located on Valley Stream Parkway near Morehall Road. The pump station was installed in 1995 and upgraded in 2000.

The pump wet well is precast concrete (6-ft dia x 20-ft deep (est)) with 4-ft x 4-ft aluminum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Generator is an Onan DGDA-3384553 80 KW unit. The Automatic Transfer Switch (ATS) is an ASCO 300 series. The wet well is oversized to accommodate excess volume to compensate for the lack of a generator.

The property is surrounded by a 150 LF 60-ft chain link with barbed wire fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel and ATS

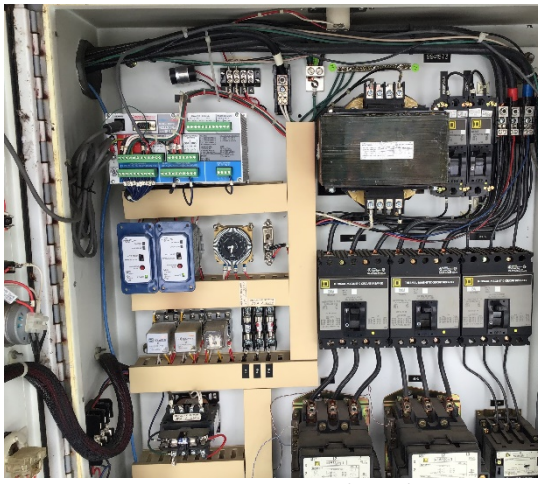

Figure 4 – Pump Control Panel



Figure 5 – Automatic Transfer Switch



Figure 6 – Valve Chamber



Figure 7 – Generator

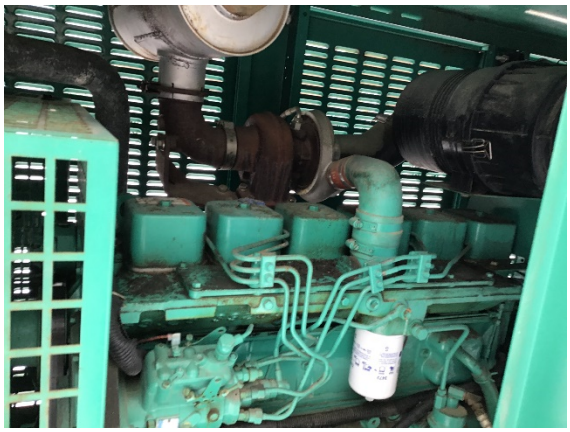

Figure 8 –Generator

PUMP STATION #		P.S. 7		**Scheduled Visit Date:**		
Station Name		Lapp Road				
Location		510 Lapp Rd				
Start Up Date		1987, upgraded in 2006				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3152			
		Year Installed	2000			
		Pump GPM	315			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	23			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Flygt Multitrode			
370.3		**WET WELL**				
		Condition	fair			
		Size	6' dia x 20' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	4' x 4' alum			double door
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2006			upgraded
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**	N/A			
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGDA-3384553			
		Generator KW	80			
		Generator KVA	100			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	ASCO 300			
		Year Installed	2000			
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	PVC			
		Length in Feet	3715			
		Year Installed	1987			
		Discharge Point	MH 746			
		Discharge Point Location	Valley Stream Parkway near Morehall Road			

354.2		**BUILDING**	N/A			
		Condition				
		Size				
		Main Structure Material				
		Roof Type				
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	100 amp Panel			
396		Alarm System (manf/ model)	Sensaphone 2000			
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	150'			
		Fence Type	6' - chain link with barb wire			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility condition is fair. Pump control panel was upgraded in 2006. Generator enclosure is rusting, generator is in good condition.						

P.S. 8 - AKA Westgate PS

Facility Description (see attached Information Sheet)

P.S. 8 is located at 331 Lancaster Ave and is equipped with (2) 700-GPM pumps. Wastewater is discharged through a 1620 LF, 8-in PVC force main that ties into the existing sewage collection system at Manhole 530 located on Lancaster Avenue near Maple Linden Lane. The pump station was installed in 1988 and upgraded in 2001.

The pump wet well is precast concrete (9-ft dia. x 12-ft deep) with aluminum 3-ft x 6-ft hatchway. There are (2) 6-inch check valves and (2) 6-inch gate valves. The control panel is manufactured by Flygt.

The Generator is an Onan DGEA 125 KW unit with integral fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Onan.

The property is surrounded by a 150 LF 6-ft chain link with barbed wire fence.

Property Condition

The facility is in fair condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Pane, Elec. Panel and ATS

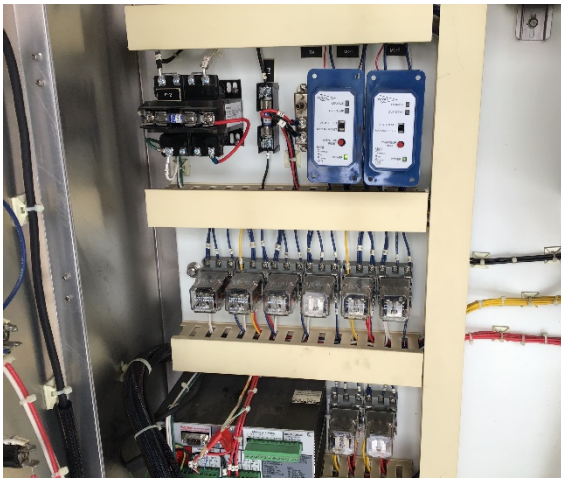

Figure 4 – Pump Control Panel



Figure 5 – Automatic Transfer Switch



Figure 6 – Valve Chamber



Figure 7 – Generator

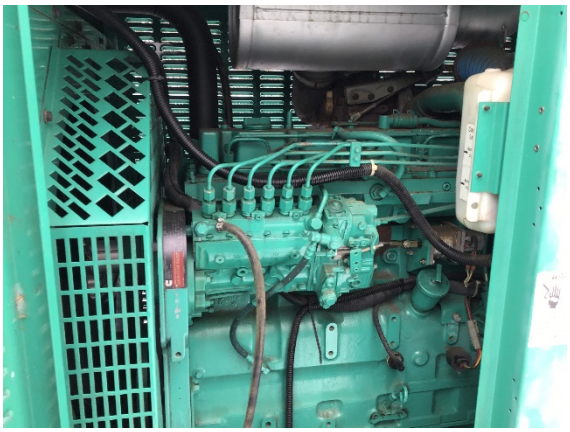

Figure 8 –Generator

PUMP STATION #		P.S. 8		**Scheduled Visit Date:**		
Station Name		Westgate				
Location		331 Lancaster Ave				
Start Up Date		1988, Upgraded 2001				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition				
		No. of Pumps	2			
		Type				
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3201, NP3171			
		Year Installed	2001			
		Pump GPM	700			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	30			
		Motor Voltage	230			
371.3		Pump Control	Multitrode			
370.3		**WET WELL**				
		Condition	fair			
		Size	9' dia. X 12' deep			
		Material	precast concrete			
		Lined				
		Hatch	aluminum 3' x 6'			double doors
		Vent				
		Rails				
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2000			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material	PVC			
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		8' diam concrete chamber
		Manufacturer				
		Size	6"	6"		
		#	2	2		
		Year Installed	2000	2000		
355		**GENERATOR**				
		Manufacturer	Onan DGEA			
		Generator KW	125			
		Generator KVA	156			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	Onan			
		Year Installed	2000			
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	PVC			
		Length in Feet	1620			
		Year Installed	1988			
		Discharge Point	MH 530			
		Discharge Point Location	Lancaster Avenue near Maple Linden Lane			

354.2		**BUILDING**				
		Condition	good			3-sided shed
		Size				
		Main Structure Material	wood			
		Roof Type	asphalt shingle			
		Roof Condition				
		Doors (number /material)				
		Lighting (Type)				
		Year Installed				
		ELECTRICAL				
371.3		MCC	250 Amp Panel			
396		Alarm System (manf/ model)				
		Year Installed				
354.3		**HVAC**	N/A			
		Condition				
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	150'			
		Fence Type	chain link with barb wire			
		Year Installed				
354.3		Paving and Walkways	asphalt drive, stone			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility is in fair condition.						

P.S. 11 - AKA Hillbrook Circle PS

Facility Description (see attached Information Sheet)

P.S. 11 is located at 379 Conestoga Rd and is equipped with (2) 295-GPM submersible pumps. Wastewater is discharged through a 785 LF, 4-inch PVC force main that ties into the existing sewage collection system at Manhole 985 located on Clover Mill Lane near Craig Lane. The pump station was installed in 2000.

The pump wet well is precast concrete (8-ft diam x 25-ft deep) with 3-ft x 5-ft alum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Building (12-ft x 15-ft) is constructed of concrete block and asphalt shingle roof in good condition. The building contains florescent lighting and 1 steel door.

The Generator is an Onan DGCA-5007330GS 50 KW unit. The Automatic Transfer Switch (ATS) is manufactured by Cummins.

The property is not fenced.

Property Condition

The overall facility is in good condition. The building is in very good condition and the roof is in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Pump Control Panel Interface



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber

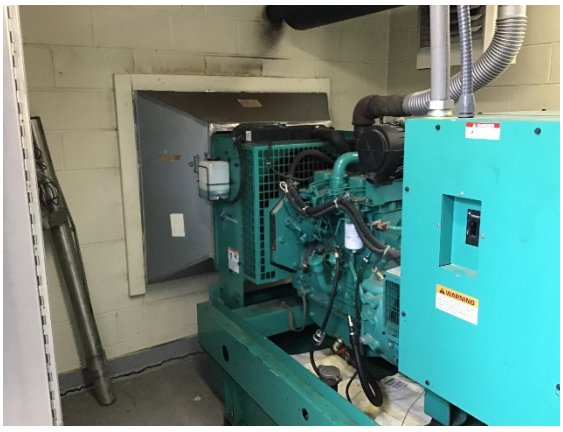

Figure 7 – Generator



Figure 8 –Automatic Transfer Switch

PUMP STATION #		P.S. 11		**Scheduled Visit Date:**		
Station Name		Hillbrook Circle				
Location		379 Conestoga Rd				
Start Up Date		2000				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	good			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	2000			
		Pump GPM	295			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	10			
		Motor Voltage	230			
371.3		Pump Control	Multitrode			
370.3		**WET WELL**				
		Condition	good			
		Size	8' diam x 25' deep			
		Material	precast concrete			
		Lined				
		Hatch	3' x 5' alum			
		Vent				
		Rails				
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed	2000			
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**	N/A			
		Manufacturer				
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		6' dia concrete chamber
		Manufacturer	Clow	Clow		
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGCA-5007330GS			
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)				
355		ATS (manf/model #)	Cummins			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	PVC			
		Length in Feet	785			
		Year Installed	2000			
		Discharge Point	MH 985			
		Discharge Point Location	Clover Mill Lane near Craig Lane			

354.2		**BUILDING**				
		Condition	very good			
		Size	12' x 15			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	florescent			
		Year Installed				
		ELECTRICAL				
371.3		MCC	250 amp panel			
396		Alarm System (manf/ model)				**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	4' x 4' louver			
		Type				
		Manufacturer				
		Year Installed				
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	stone			
371.3		**ODOR CONTROL**	N/A			
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility is in good condition. The building is in very good condition and the roof is in good condition.						

P.S. 12 - AKA King Road PS

Facility Description (see attached Information Sheet)

P.S. 12 is located at 340 King Rd within an easement in Williston Township and is equipped with (2) 258-GPM Submersible pumps. Wastewater is discharged through a 2400 LF, 4-inch PVC force main that ties into the existing sewage collection system at Manhole 338 located on Amy Lane near W. King Road. The pump station was installed in 2004.

The pump wet well is precast concrete (7-ft diam. x 15-ft est) with 4-ft x 4.5-ft aluminum hatchway. There are (2) 4-inch check valves and (2) 4-inch gate valves. The control panel is manufactured by Flygt.

The Building (13-ft x 10-ft) is constructed of concrete block and asphalt shingle roof in good condition. The building contains halogen wall pack lighting and 1 steel door.

The Generator is an Onan DGHE-5636689B 50 KW unit with 145-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Cummin Power Command.

The property is not fenced.

Property Condition

The building is in very good condition, the roof is in good condition and all HVAC systems are in good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Pump Control Panel Interface



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber



Figure 7 – Generator



Figure 8 –Automatic Transfer Switch

PUMP STATION #		P.S. 12		**Scheduled Visit Date:**		2/10/2021
Station Name		King Road				
Location		340 King Rd				
Start Up Date		2004				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition				
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP3102			
		Year Installed	2004			
		Pump GPM	258			
		Pump TDH Ft.				
		Outlet Size	4"			
		Motor HP	6.5			
		Motor Voltage	230			
371.3		Pump Control (VFD?)	Multitrode MT2PC			
370.3		**WET WELL**				
		Condition	good			
		Size	7' diam. X 15' est			
		Material	precast concrete			
		Lined				
		Hatch	4' x 4.5 ' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	N/A			
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	N/A			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	check	gate		Crispen air release valve
		Manufacturer				
		Size	4"	4"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Onan DGHE-5636689B			30" x 30" exhaust louvers
		Generator KW	50			
		Generator KVA	63			
		Fuel Tank (Gals)	145			
355		ATS (manf/model #)	Cummin Power Command			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	4"			
		Force Main Mat.	PVC			
		Length in Feet	2400			
		Year Installed	2004			
		Discharge Point	MH 338			
		Discharge Point Location	Amy Lane near W. King Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	13' x 10'			
		Main Structure Material	concrete block			
		Roof Type	asphalt shingle			
		Roof Condition	good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	halogen wall pack	LED on stanchion		
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 Amp Panel			
396		Alarm System (manf/ model)	Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	good			
		Type	5.5' x 3' motorized louver			
		Manufacturer				
		Year Installed	2004			
364		Flow Meter				
364		Chart Recorder				
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length				
		Fence Type				
		Year Installed				
354.3		Paving and Walkways	asphalt driveway			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The overall facility was in very good condition. The roof was in good condition.						

P.S. 13 - AKA Malvern Hunt PS

Facility Description (see attached Information Sheet)

P.S. 13 is located at 30 Corbin Dr and is equipped with (2) 300-GPM submersible pumps. Wastewater is discharged through a 2860 LF, 6-inch DIP force main that ties into the existing sewage collection system at Manhole 101 located on Chester Valley Trail near Swedesford Road. The pump station was installed in 2000.

The pump wet well is precast concrete (9-ft dia. x 15-ft deep (est)) with 7.5-ft x 6-ft aluminum hatchway. The control panel is manufactured by Flygt. There are (2) 6-inch check valves and (2) 6-inch gate valves. The influent line to the wet well contains a 3 HP Muffin Monster.

The Building (14-ft x 16-ft) is constructed of concrete block with stucco and asphalt shingle roof in very good condition. The building contains halogen wall pack lighting and 1 steel door.

The Generator is an Katolight D50FJJ4 50 KW unit with 150-gallon fuel tank. The Automatic Transfer Switch (ATS) is manufactured by Katolight.

The property is surrounded by a 200 LF 6-ft cyclone fence. This facility also has a chemical dosing system, which contains 100-gallon fuel tank and LMI Dosing pump. The system is not currently in use.

Property Condition

The building is in fair condition, the roof is in very good condition and all HVAC systems are in very good condition.



Figure 1 – Facility Site



Figure 2 – Pump Station Wetwell



Figure 3 – Pump Control Panel



Figure 4 – Grinder Control Panel



Figure 5 – Electrical Panel



Figure 6 – Valve Chamber



Figure 7 – Generator

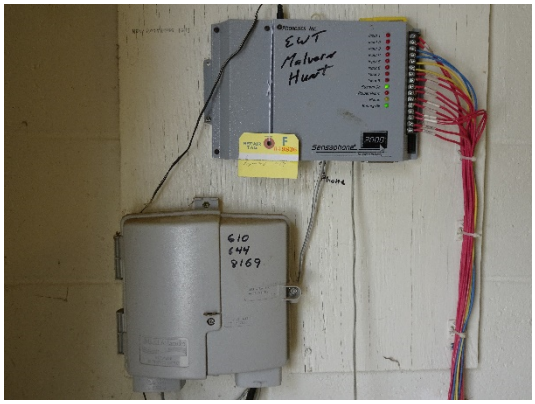

Figure 8 –Auto Dialer



Figure 9 – Flowmeter readout



Figure 10 – Flow Meter



Figure 11 – Chemical Dosing System (abandoned)



Figure 12 –Old Grinder (to be replaced)

PUMP STATION #		P.S. 13		**Scheduled Visit Date:**		2/10/2021
Station Name		Malvern Hunt				
Location		30 Corbin Dr				
Start Up Date		2000				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Fair			
		No. of Pumps	2			
		Type	submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	CP3127			
		Year Installed	2000?			
		Pump GPM	300			
		Pump TDH Ft.				
		Outlet Size				
		Motor HP	7.5			
		Motor Voltage	230			
371.3		Pump Control	level probe			
370.3		**WET WELL**				
		Condition	Good			
		Size	9' dia. X 15' deep (est)			
		Material	precast concrete			
		Lined				
		Hatch	7.5' x 6' aluminum			
		Vent				
		Rails	galv. Steel			showing rust
		Cable				
		Piping	DIP			
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer	Muffin Monster			new grinder on order
		Model/Serial number				
		HP	3			
		Year Installed	2021			
371		**CRAIN/HOIST**				
		Manufacturer	Davit Crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		chamber - 7' x 7' x 6' deep
		Manufacturer	Clow	Clow		4' x 4' aluminum hatch
		Size	6"	6"		
		#	2	2		
		Year Installed				
355		**GENERATOR**				
		Manufacturer	Katolight D50FJJ4			4' x 4' exhaust louvers
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)	150			
355		ATS (manf/model #)	Katolight			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	6"			
		Force Main Mat.	DIP			
		Length in Feet	2860			
		Year Installed	2000			
		Discharge Point	MH 101			
		Discharge Point Location	Chester Valley Trail near Swedesford Road			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	14' x 16'			
		Main Structure Material	Conc. Block w/ stucco			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	halogen wall packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	225 amp panel			
396		Alarm System (manf/ model)	Sensaphone 2000			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition	Very Good	good		
		Type	5' x 5' grav. Louvers	elec. unit heater		
		Manufacturer				
		Year Installed				
364		Flow Meter	Rosemount Magmeter			
364		Chart Recorder	rosemount totalizer			
354.3		Hydrants				
		GROUNDS				
354.3		Fence Length	200'			
		Fence Type	6' cyclone			
		Year Installed				
354.3		Paving and Walkways				
371.3		**ODOR CONTROL**				System abandoned
		Manufacturer		LMI		
		Type	100 gallon tank	dosing pump		
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The building, generator and control panels are all in fair condition. The pump station guide rails and some support bracket have begun to rust.						

P.S. 14 - AKA Planebrook Road PS

Facility Description (see attached Information Sheet)

P.S. 14 is located at 170 Cricket Drive and is equipped with (2) 390-GPM submersible pumps. Wastewater is discharged through a 2545 LF, 8-inch PVC force main that ties into the existing sewage collection system at Manhole 113 located on Phoenixville Pike at Chester Valley Trail. The pump station was installed in 2018.

The pump wet well is precast concrete (9-ft dia. x 18-ft Deep) with 6-ft x 6-ft aluminum hatchway. There are (2) 4-inch check valves and (6) 4-inch gate valves. The control panel is manufactured by Flygt/Stacon.

The Building (12.5-ft x 15.5-ft) is constructed of Concrete Block and asphalt shingle roof in very good condition. The building contains LED wall pack lighting and 1 steel door.

The Generator is an MTU4R0113 DS50 50 KW unit with 185-gallon fuel tank. The Automatic Transfer Switch (ATS) is an ASCO 7000 series.

The property is surrounded by a 225 LF 6-ft cyclone fence.

Property Condition

The building is in very good condition, the roof is in very good condition and all HVAC systems are in good condition.



Figure 1 – Facility Site



Figure 2 – Facility Site



Figure 3 – Pump Station



Figure 4 – Pump Station Wetwell



Figure 5 – Pump Control Panel



Figure 6 – Valve Chamber



Figure 7 – Valve Chamber

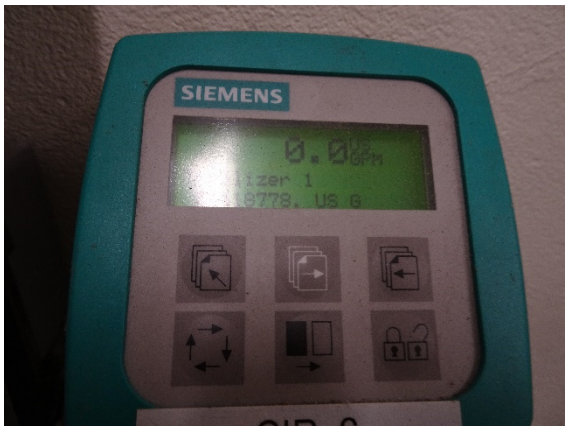

Figure 8 –Flow Meter Totalizer



Figure 9 - Generator



Figure 10 – Automatic Transfer Switch



Figure 11 – MCC and Disconnects



Figure 12 –Auto Dialer System)

PUMP STATION #		P.S. 14		**Scheduled Visit Date:**		2/10/2021
Station Name		Planebrook	Phone #			
Location		170 Cricket Drive				
Start Up Date		2018				
CODE	**SUBCODE**	**PUMP STATION**				**COMMENTS**
371.3		**PUMP(S)**				
371.3		Condition	Very Good			
		No. of Pumps	2			
		Type	Submersible			
		Pump Manufacturer	Flygt			
		Pump Model Number	NP 3127			
		Year Installed	2018			
		Pump GPM	390			
		Pump TDH Ft.	45			
		Outlet Size	4"			
		Motor HP	10			
		Motor Voltage	230			
371.3		Pump Control	Flygt Multitrode MT2PC			
370.3		**WET WELL**				
		Condition	Very Good			
		Size	9' dia. X 18' Deep			
		Material	Precast Concrete			
		Lined				
		Hatch	6' x 6' aluminum			
		Vent				
		Rails				
		Cable				
		Piping				
371.3		**CONTROL PANEL**				
		Manufacturer	Flygt/Stacon			
		Year Installed				
		Model/Serial number				
361		**INFLUENT PIPING (IF KNOWN)**				
		Material				
		Diameter				
371		**GRINDER**				
		Manufacturer				
		Model/Serial number				
		HP				
		Year Installed				
371		**CRAIN/HOIST**				
		Manufacturer	Thern Davit crane			
		Model/Serial number				
		Year Installed				
360		**VALVES (DISCHARGE)**				
		Type	Check	Gate		Valve chamber - 7' x 17' x 6' deep
		Manufacturer	APCO	APCO		Hatches - 3' x 3', 4' x 4'
		Size	4"	4"		
		#	2	6		Includes emergency connection
		Year Installed				for portable pump
355		**GENERATOR**				
		Manufacturer	MTU4R0113 DS50			4' x 4' exhaust hood
		Generator KW	50			
		Generator KVA	62			
		Fuel Tank (Gals)	185			
355		ATS (manf/model #)	ASCO 7000			
		Year Installed				
360		**FORCE MAIN**				
		Force Main Size	8"			
		Force Main Mat.	PVC			
		Length in Feet	2545			
		Year Installed	2018			
		Discharge Point	MH 113			
		Discharge Point Location	Phoenixville Pike at Chester Valley Trail			

354.2		**BUILDING**				
		Condition	Very Good			
		Size	12.5' x 15.5'			
		Main Structure Material	Concrete Block			
		Roof Type	asphalt shingle			
		Roof Condition	Very Good			
		Doors (number /material)	1 - steel			
		Lighting (Type)	LED wall Packs			
		Year Installed				
		ELECTRICAL				
371.3		MCC	?????	50 amp panel		
396		Alarm System (manf/ model)	Sensaphone Sentinal			**COMMENTS**
		Year Installed				
354.3		**HVAC**				
		Condition				
		Type	4' x 4' Motorize louvers	Electric unit heater	12" x 12" exhaust fan	
		Manufacturer			Qmark	
		Year Installed				
364		Flow Meter	E&H magmeter			
364		Chart Recorder	Seimens Totalizer			
354.3		Hydrants	1 - yard			
		GROUNDS				
354.3		Fence Length	225'			
		Fence Type	6' cyclone			
		Year Installed				
354.3		Paving and Walkways	asphalt drive			
371.3		**ODOR CONTROL**				
		Manufacturer				
		Type				
		MISCELLANEOUS				
		Other Buildings				
		Spare Parts	**DESCRIPTION OF FACILITY**			
		Vac Truck Suitable				
		Spare Parts				
		Vac Truck Suitable				
OVERALL BUILDING AND FACILITY ASSESSMENT						
The facility was built in 2018, all components are in very good condition.						

4.2. COLLECTION SYSTEM

East Whiteland Township owns the collection system identified within this report. There are also privately owned systems within the Township that connect to the Township system. collection system generally consists of 8-inch to 36-inch gravity piping and laterals within the right of way. A map of the collection system can be found in Appendix A, Figure A1. Related cost data for the collection system can be found in Section 8 under account codes 361.21, 361.23, and 360.21.

4.3. METER PITS

A total of eleven (11) meter pits measure flow to/from the Township. However, East Whiteland Township only owns the following three (3):

- Erin Glen Meter located within the vicinity of Kerry lane and Iris way adjacent to Malvern Borough.
- Woodview Apartments Meter located within the East Whiteland Township portion of the apartment complex at the southeast corner of the Township.
- Mathews Road meter located on the border with Tredyffrin Township at the southeast corner of the Township.

All other meters are owned and operated by other municipalities or the Valley Forge Sewer Authority.



Figure 1 – Erin Glen Meter Pit



Figure 2 – Erin Glen Meter Pit

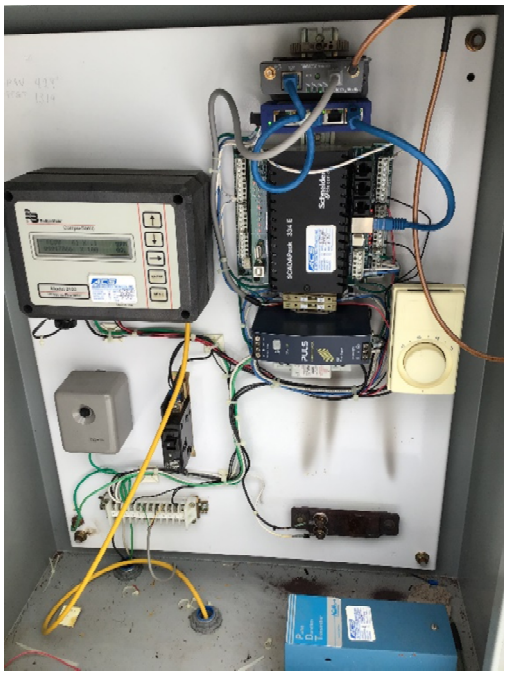

Figure 3 – Erin Glen Meter Pit



Figure 4 –Matthews Road Meter Pit



Figure 5 –Matthews Road Meter Pit



Figure 6 – Woodview Apartment Facility Site



Figure 7 – Woodview Apartment Flow Totalizer and SCADA Unit



Figure 8 – Woodview Apartment Meter Chamber

5. OWNED PROPERTY & EASEMENTS OF VALUE

Property that was directly purchased by the Township and easements acquired are listed in Section 8 – "List of Assets and Costs". The value of said easements are listed with a purchase price of $1 and included in the original purchase price of the facilities listed in Section 8 – "List of Assets and Costs".

6. REGULATORY REQUIREMENTS

3800-PM-WSFR0015 1/2011
Permit

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 1599418

AMENDMENT NO. _____

APS ID. 916602

AUTH. ID. 1139890

A. PERMITTEE (Name and Address): CLIENT ID#: **78789** **East Whiteland Township** **209 Conestoga Road** **Frazer, PA 19355**	B. PROJECT/FACILITY (Name): **Malvern Hunt WWTP**
C. LOCATION (Municipality, County): **East Whiteland Township, Chester County**	SITE ID#: **527339**

D. THIS PERMIT APPROVES THE OPERATION OF SEWAGE FACILITIES CONSISTING OF:

The Malvern Hunt Pump Station with comminutor, an influent bar screen, a two sell aerated treatment lagoon, a storage lagoon, a chlorine disinfection system, and spray fields.

Pump Stations: _____	Manure Storage:	Sewage Treatment Facility:		
Design Capacity: _____ GPM	Volume: _____ MG	Annual Average Flow:	**0.105**	MGD
	Freeboard: _____ inches	Design Hydraulic Capacity:	**0.128**	MGD
		Design Organic Capacity:	**222**	lb/day

E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING:

1. **Permit Renewal:** All operations and procedures shall be in accordance with the Water Quality Management Permit application dated **5/23/2016**, its supporting documentation and addendums dated _____, which are hereby made a part of this permit.

   Amendments: All construction, operations and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation and addendums dated _____, which are hereby made a part of this amendment.

   Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.

   Transfers: Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer.

2. Permit Conditions Relating to Sewerage are attached and made part of this permit.
3. Special Conditions **1 through XVII** are attached and made part of this permit.

F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS:

1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply.
2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit.
3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 *et seq.* Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

PERMIT ISSUED: November 21, 2016

BY: _____

TITLE: **Jenifer L. Fields, P.E.**
Clean Water Program Manager
Southeast Regional Office

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

SPECIAL CONDITIONS

Water Quality Management Permit No. 1599418

Malvern Hunt WWTP

East Whiteland Township, Chester County

I. Discharge Limitations and Monitoring Requirements

Effluent from the sewage treatment plant shall be sampled at a point after chlorination and shall be limited at all times as follows:

	Discharge Limitations (mg/l)			Monitoring Requirements	
Parameter	Average Monthly	Average Weekly	Instantaneous Maximum	Measurement Frequency	Sample Type
Influent Flow (mgd)	0.105			Continuous	Recorded
$CBOD_5$	25		50	1/Month	Grab
Suspended Solids	30		60	1/Month	Grab
Fecal Coliform	200/100 ml as geometric average			1/Month	Grab
pH	Within limits of 6.0 to 9.0 standard units at all times			1/Month	Grab

Additional treatment requirements include the satisfactory disposal of sludge and the reduction of quantities of oils, greases, acids, alkalis, toxic, taste and odor producing substances, inimical to the public interest to levels which will not pollute the receiving waters.

Monitoring results shall be reported monthly on the Discharge Monitoring Report (DMR). The term "grab" sample means an individual sample collected in less than 15 minutes. Samples and measurements taken as required, herein, shall be representative of the volume and nature of the monitored discharge.

II. Copies of monthly Discharge Monitoring Reports must be submitted within 28 days of the end of the monitoring period to:

Department of Environmental Protection
Southeast Regional Office
Water Management
2 East Main Street
Norristown, PA 19401

III. Groundwater Monitoring Requirements

The permittee shall effectively monitor the quality of the groundwater. The parameters to be tested, and frequency of analysis and other monitoring requirements shall be as follows:

A. Quarterly analysis of groundwater sampled at groundwater monitoring wells **MW-L1, MW-L2, MW-L3, MW-S1, MW-S2, MW-S3, MW-S6, MW-S7, and MW-S8,** shall consist of: static water level, sampling depth, turbidity, pH, chloride, total phosphorus, ammonia nitrogen, nitrate nitrogen, nitrite nitrogen, total dissolved solids, fecal coliform, and alkalinity.

B. Groundwater elevations must be measured prior to purging the groundwater monitoring well.

C. Before collection of the groundwater sample, a groundwater monitoring well shall be properly purged and allowed to recover to at least 90 percent of the well volume that was present prior to purging.

D. All groundwater samples shall be collected from within the top five feet of the water elevation within the well column.

IV. Groundwater Monitoring Data Reporting Requirements

All groundwater data shall be submitted to DEP **annually** and be in **report form.** The report shall be due to DEP within 28 days of the end of the month of permit issuance. For example, if your permit was issued on March 4th, then your annual report is due by April 28th. The annual report shall be mailed under separate cover and addressed to:

Department of Environmental Protection
Southeast Regional Office
Water Management Program
2 East Main Street
Norristown, PA 19401

Attention: Hydrogeologist
Planning Section

V. The annual groundwater monitoring report shall include the following information:

A. General Information

i. Facility name
ii. Facility permit number
iii. Facility location (including municipality and county)
iv. Facility contact information:

a. permittee name, address, and telephone number
b. contact name and title
c. facility operator name, address, and telephone number
d. facility consultant name, address, and telephone number

B. Site Data

i. A brief narrative that provides the date and description of any facility event which may have impacted any part of the groundwater monitoring program. (e.g., collapse of groundwater monitoring well, etc.).

ii. Average effluent flow for the year covered by this report.

iii. In tabular form, the following information needs to be provided for at least the last 5 years of system operation:

a. Date of sampling
b. Groundwater elevations
c. Sampling depth
d. Identification of upgradient and downgradient wells
e. The results of the analysis of the samples

iii. Background groundwater data generated prior to system start-up. **This information is absolutely needed and needs to be included in the data tabulation.**

C. Comprehensive Groundwater Evaluation (CGE)

As part of the facility's 5-year permit renewal application, the permittee shall submit a report that is a result of a comprehensive evaluation of the systems impact on groundwater. A Registered P.G. must identify any trends which may pose a threat to human health or certify that none are present. Should adverse impacts to groundwater be identified, the permittee needs to recommend actions to address the potential threat.

D. **Groundwater Background Report**

Within 60 days of system start up, or upon issuance of permit renewal a Groundwater Background Report shall be submitted to DEP. The report shall include the follow information:

i. Site Information

a. Brief narrative, including site limitations.
b. Soil type and bedrock lithology beneath the absorption areas.
c. Site drawings showing general location of absorption fields and monitoring wells. Drawings must show site topography.

ii. Construction details of each groundwater monitoring well shall include:

a. Well depth.
b. Casing depth.
c. Static water levels.
d. Surface elevation.
e. Well log.
f. Water bearing zones.
g. Top of casing elevation.
h. Ground surface elevation.

VI. Unless, otherwise, specified in this permit, the test procedures for analysis of pollutants shall be those contained in 40 C.F.R. Part 136, or alternative test procedures approved pursuant to that Part. For the analysis of CBOD5, consult Section 507 of Standard Methods.

VII. Effective disinfection to control disease producing organisms shall be the production of an effluent which will contain a concentration neither greater than 200/100 ml of Fecal Coliform organisms, as a geometric average value nor greater than 1000/100 ml of these organisms in a more than 10 percent of the samples tested.

VIII. If the permittee monitors any pollutant more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

IX. The authorization to discharge contained in Section D of this permit shall expire in five years from the date of issuance, or reissuance. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date). In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal. The application for renewal shall be submitted on the appropriate Water Quality Management Part II Application forms and shall include a tabulated summary of all groundwater monitoring data for the previous five years, including a discussion of groundwater quality trends resulting from this discharge.

X. Sprayfield Weekly Maximum Hydraulic Loadings

A. Effluent flows to each sprayfield must be consistent with the maximum hydraulic loading requirements of the following tables, which provide the weekly maximum gallons for each irrigation zone.

MAXIMUM WEEKLY SPRAYFIELD HYDRAULIC LOADINGS IN GALLONS

Spray Zone 1 6.16 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,671
February	0.50	83,671
March	1.27	212,539
April	1.50	251,020
May	2.00	334,691
June	2.50	418,369
July	2.50	418,369
August	2.50	418,369
September	2.50	418,369
October	1.55	259,410
November	1.16	194,126
December	0.50	83,671

Spray Zone 2 6.19 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	84,079
February	0.50	84,079
March	1.27	213,574
April	1.50	252,243
May	2.00	336,321
June	2.50	420,406
July	2.50	420,406
August	2.50	420,406
September	2.50	420,406
October	1.55	260,673
November	1.16	195,072
December	0.50	84,079

Spray Zone 3 6.15 Acres Woods		
Month	Inches/Acre/Week	Maximum/Week Gallons
January	0.50	83,536
February	0.50	83,536
March	1.27	212,194
April	1.50	250,613
May	2.00	334,148
June	2.50	417,690
July	2.50	417,690
August	2.50	417,690
September	2.50	417,690
October	1.55	258,989
November	1.16	193,811
December	0.50	83,536

B. The permittee shall include with the monthly Discharge Monitoring Report a Supplemental Land Application System Form 3800-FM-BPNPSM0449 that indicates the gallons per day discharged to the spray irrigation zones.

C. Spray irrigation events shall consist of simultaneous operation of two zones with one zone left off for a week-long resting period. All zones shall be rested each month.

D. Application of the effluent shall be managed to prevent runoff from the permitted spray fields and ponding of effluent.

E. No irrigation is to occur on frozen soils.

F. No irrigation is to occur if more than 0.5 inches of rainfall has fallen during the previous 24 hours.

G. The operator is to assess soil moisture content and soil/vegetation conditions frequently. It is the operator's responsibility to inspect the fields on a routine basis to prevent and/or address damage to the irrigation fields.

H. The spray fields shall be maintained to ensure that vegetation does not interfere with or impair proper operation of the spray heads.

I. Fallen trees in wooded spray fields are required to be removed. All work must be conducted during dry or frozen soil conditions to prevent damage to the soil.

XI. At all times, the wastewater level in the storage lagoon shall be managed within the low and high water level parameters as designed. The water level shall be controlled so that a freeboard of at least 24 inches is maintained at all times. The Department must be notified if the water level is anticipated to enter freeboard.

XII. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

A. The exact place, date, and time of sampling or measurement.
B. The person(s) who performed the sampling or measurement.
C. The dates the analyses were performed.
D. The person(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The results of such analyses.

XIII. Recordkeeping and Retention

The permittee shall keep records of operation and efficiency of the wastewater treatment facilities. All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three-year period shall be extended as requested by the Department.

XIV. The facility shall be operated under the charge of a responsible operator(s) certified under the Pennsylvania Water and Wastewater Systems Operations Certification Act (Act 11). The operator(s) shall comply with the continuing education requirements required under the regulations and guidelines related to Act 11.

XV. Laboratory Certification

Facilities that test or analyze environmental samples used to demonstrate compliance with this permit shall be in compliance with laboratory accreditation requirements of act 90 of 2002 (27 Pa. Code C.S. §§ 4101-4113) and 25 Pa. Code Chapter 252, relating to environmental laboratory accreditation. An environmental laboratory is any facility engaged in the testing or analysis of environmental samples required by a statute administered by the Department relating to the protection of the environment or of public health, safety, and welfare.

XVI. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Stream Law, the permittee shall allow authorized representatives of Department of Environmental Protection upon the presentation of credentials and other documents as may be required by law:

A. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.

B. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

C. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.

D. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or The Clean Streams Law, any substances or parameters at any location.

XVII. If there is a change in ownership of this facility or in permittee name, an application for transfer of permit must be submitted to the Department.

7. OPERATING EXPENSES

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08341 Interest								
08341 34101	Interest Earnings	-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6%
TOTAL Interest		-12,000	0	-12,000	-311.58	.00	-11,688.42	2.6%
08364 Sewer Dept. Earning								
08364 36400	Sewer Rents - Other	-210,000	0	-210,000	-57,646.00	.00	-152,354.00	27.5%
08364 36411	Sewer Connection Fe	-35,000	0	-35,000	-5,400.00	.00	-29,600.00	15.4%
08364 36412	Sewer Rents	-3,703,000	0	-3,703,000	-926,446.40	.00	-2,776,553.60	25.0%
TOTAL Sewer Dept. Earning		-3,948,000	0	-3,948,000	-989,492.40	.00	-2,958,507.60	25.1%
08380 Miscellaneous Revenue								
08380 36244	Sewer Certification	-5,000	0	-5,000	-1,075.00	.00	-3,925.00	21.5%
08380 38003	Refund from VFSA	-375,000	0	-375,000	.00	.00	-375,000.00	.0%
TOTAL Miscellaneous Revenue		-380,000	0	-380,000	-1,075.00	.00	-378,925.00	.3%
08429 Sewer Dept. Expenses								
08429 13000	Wages - Sewer Maint	500,000	0	500,000	30,796.13	.00	469,203.87	6.2%
08429 15300	Disability Insuranc	3,000	0	3,000	778.35	.00	2,221.65	25.9%
08429 15600	Medical Insurance	119,000	0	119,000	37,746.82	.00	81,253.18	31.7%
08429 15650	Retiree Benefits (O	17,000	0	17,000	4,343.43	.00	12,656.57	25.5%
08429 15700	Drug & Alcohol and	525	0	525	.00	.00	525.00	.0%
08429 15800	Life Insurance	2,325	0	2,325	466.98	.00	1,858.02	20.1%
08429 16000	Pension/Retirement	158,000	0	158,000	.00	.00	158,000.00	.0%
08429 16100	FICA (Soc. Sec.) &	39,000	0	39,000	2,355.92	.00	36,644.08	6.0%
08429 17000	Vacation Payout	2,500	0	2,500	.00	.00	2,500.00	.0%
08429 18200	Longevity Pay	7,358	0	7,358	.00	.00	7,358.00	.0%
08429 18300	Overtime	15,000	0	15,000	.00	.00	15,000.00	.0%
08429 20000	Material & Supplies	4,000	0	4,000	.00	.00	4,000.00	.0%
08429 21300	Small Items of Equi	5,000	0	5,000	.00	.00	5,000.00	.0%

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
08429 23000	Utilities - Pump St	91,200	0	91,200	19,724.36	.00	71,475.64	21.6%
08429 23100	Vehicle Fuel	10,000	0	10,000	1,078.36	.00	8,921.64	10.8%
08429 23800	Uniforms	3,800	0	3,800	273.06	.00	3,526.94	7.2%
08429 31100	Financial Services	9,000	0	9,000	662.50	.00	8,337.50	7.4%
08429 31300	Twp. Engineering Se	55,000	0	55,000	2,364.33	.00	52,635.67	4.3%
08429 31400	Legal Services	15,000	0	15,000	1,102.50	.00	13,897.50	7.4%
08429 31900	Computer Serv. / Da	27,250	0	27,250	92.99	.00	27,157.01	.3%
08429 32100	Telephone (incl. Mo	15,500	0	15,500	2,562.11	.00	12,937.89	16.5%
08429 32500	Postage & Courier	7,500	0	7,500	.00	.00	7,500.00	.0%
08429 33100	Training, Conferenc	2,500	0	2,500	.00	.00	2,500.00	.0%
08429 34000	Advertising, Printi	4,000	0	4,000	75.00	.00	3,925.00	1.9%
08429 35200	Insurance - Liabili	34,000	0	34,000	8,341.30	.00	25,658.70	24.5%
08429 35400	Worker's Comp Insur	8,000	0	8,000	1,715.40	.00	6,284.60	21.4%
08429 37000	Office Equipment Ma	1,200	0	1,200	.00	.00	1,200.00	.0%
08429 37100	Sewer System - Main	121,920	0	121,920	17,795.24	7,894.39	96,230.37	21.1%
08429 37200	Road Maintenance &	1,000	0	1,000	.00	.00	1,000.00	.0%
08429 37300	Pump Stations - Mai	76,000	0	76,000	6,795.17	14,999.93	54,204.90	28.7%
08429 37400	Equipment - Maint.	700	0	700	.00	.00	700.00	.0%
08429 37500	Vehicle - Maint. &	6,000	0	6,000	1,555.71	.00	4,444.29	25.9%
08429 38500	Sewer Rentals - Oth	1,760,000	0	1,760,000	441,744.07	.00	1,318,255.93	25.1%
TOTAL Sewer Dept. Expenses		3,122,278	0	3,122,278	582,369.73	22,894.32	2,517,013.95	19.4%
08470 Debt - Sewer Dept.								
08470 25522	GOB 2013 Bond - Pri	50,000	0	50,000	.00	.00	50,000.00	.0%
08470 25523	GOB 2012 A Bond - P	350,000	0	350,000	.00	.00	350,000.00	.0%
08470 25524	GOB 2012B Bond - Pr	335,000	0	335,000	.00	.00	335,000.00	.0%
08470 47000	Interest Exp. - Deb	516,409	0	516,409	.00	.00	516,409.00	.0%
TOTAL Debt - Sewer Dept.		1,251,409	0	1,251,409	.00	.00	1,251,409.00	.0%
08475 Fiscal Agent Fees								
08475 47600	Fiscal Agent Fees	3,150	0	3,150	.00	.00	3,150.00	.0%
TOTAL Fiscal Agent Fees		3,150	0	3,150	.00	.00	3,150.00	.0%
08492 Interfund Operating Transfers								
08492 49201	Transfer to General	168,345	0	168,345	.00	.00	168,345.00	.0%
TOTAL Interfund Operating Transfers		168,345	0	168,345	.00	.00	168,345.00	.0%

FOR 2021 03

ACCOUNTS FOR: 08 Sewer Fund		ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
TOTAL Sewer Fund		205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.9%
	TOTAL REVENUES	-4,340,000	0	-4,340,000	-990,878.98	.00	-3,349,121.02	
	TOTAL EXPENSES	4,545,182	0	4,545,182	582,369.73	22,894.32	3,939,917.95	

FOR 2021 03

	ORIGINAL APPROP	TRANFRS/ ADJSTMTS	REVISED BUDGET	YTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	PCT USED
GRAND TOTAL	205,182	0	205,182	-408,509.25	22,894.32	590,796.93	-187.9%

** END OF REPORT - Generated by Usha Hogan **

8. LIST OF ASSETS AND COSTS

EAST WHITELAND TOWNSHIP WASTEWATER SYSTEM
SUMMARY OF ANALYSIS OF ORIGINAL COST OF WASTEWATER SYSTEM
AS OF JUNE 17, 2021

ACCOUNT	DESCRIPTION		ORIGINAL COST ($)
353.2	LAND AND LAND RIGHTS - COLLECTION	$	668.00
353.3	LAND AND LAND RIGHTS - PUMPING	$	13.00
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT	$	11,085,241.50
354.3	STRUCTURES AND IMPROVEMENTS - PUMPING	$	8,005,275.38
360.21	COLLECTION SEWERS - FORCE - MAINS	$	2,304,354.55
361.21	COLLECTION SEWERS - GRAVITY - MAINS	$	10,767,737.96
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES	$	4,350,867.01
363.2	SERVICES TO CUSTOMERS	$	6,619,976.03
365.2	FLOW MEASURING INSTALLATIONS	$	78,670.00
390.7	COMPUTER AND SOFTWARE	$	21,550.00
391.7	TRANSPORTATION EQUIPMENT	$	212,955.81
	SYSTEM TOTAL	$	43,447,309.24

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
353.20	LAND AND LAND RIGHTS - COLLECTION						
	DEER RUN DRAINAGE AREA (DR)	(DR 2) UPI: 42-4K-57 - Gravity Line & Force Main, MB: 197/260			Easement - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	(DR 3) UPI: 42-4K-60 - Gravity Line & Force Main, MB: 199/67			Easement - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Deer Run Lane - Gravity Line & Force Main, DB: P40/251			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Fawn Circle - Gravity Line & Force Main, DB: P40/251			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Doe Lane - Gravity Line, DB: P40/246 DB: W31/40			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Buck Run Lane - Gravity Line, DB: W31/40			ROW - Yes		$ 1.00
	DEER RUN DRAINAGE AREA (DR)	Conestoga Road - Force Main,			ROW - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 3) UPI: 42-4-15.10 - Gravity Line & Force Main, MB: 574/402 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 4) UPI: 42-4-15.10A - Gravity Line & Force Main, MB: 574/402 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	(FR 5) UPI: 42-4-15.7 - Force Main, Plan No. 16670 PB: 69/1			Easement - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	Flat Road - , DB: U28/28			ROW - Yes		$ 1.00
	FLAT ROAD DRAINAGE AREA (FR)	Great Valley Parkway - , DB: D62/327 MB: 634/200			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 1) UPI: 35-3-102 - Gravity Line, DB: 7037/1110			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 2) UPI: 42-3-32.2 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 3) UPI: 42-3-32.1 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 4) UPI: 42-3-32 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 5) UPI: 42-3-33 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 6) UPI: 42-3-33.1 - Gravity Line,			Easement - No		$ -
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 7) UPI: 42-3-107.3P - Gravity Line & Force Main, DB: 6267/2370			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Willing Way - Gravity Line, DB: 9377/1312			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Hillbrook Circle - Gravity Line, DB: K34/292			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Hillbrook Court - Gravity Line, DB: K34/292			ROW - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	Conestoga Road - Gravity Line & Force Main, MB: 964/552 DB: G52/532			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 2) UPI: 42-7-53 - Force Main, Plan No. 7631			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	KING ROAD DRAINAGE AREA (KR)	(KR 3) UPI: 42-7B-101 - Gravity Line & Force Main, DB: 689/549			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 4) UPI: 42-7B-102 - Gravity Line & Force Main, DB: 9549/1435			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 5) UPI: 42-7B-133 - Gravity Line & Force Main, DB: 10200/763			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 6) UPI: 42-7B-132 - Gravity Line & Force Main, DB: 3587/954			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 7) UPI: 42-7B-119 - Gravity Line & Force Main, DB: F53/118			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 8) UPI: 42-7B-120 - Gravity Line & Force Main, DB: 3827/1452			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 9) UPI: 42-7B-118 - Gravity Line & Force Main, DB: 10117/2299			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 10) UPI: 42-7B-85 - Gravity Line & Force Main, DB: 6737/2373			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 11) UPI: 42-7B-86 - Gravity Line & Force Main, DB: 8800/2081			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 12) UPI: 42-7B-84 - Gravity Line & Force Main, DB: 3532/2014			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 13) UPI: 42-7B-83 - Gravity Line & Force Main, DB: 9636/2118			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 14) UPI: 42-7B-82 - Gravity Line & Force Main, DB: 9839/713			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 15) UPI: 42-7B-81 - Gravity Line & Force Main, DB: 9179/23			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 16) UPI: 42-7B-80 - Gravity Line & Force Main, DB: 3584/1943			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 17) UPI: 42-7B-52 - Gravity Line, PB: 16/45 DB: 5686/920			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 18) UPI: 42-7-52.2 - Gravity Line, PB: 16/45			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 19) UPI: 42-7-52.3 - Gravity Line, PB: 16/45 DB: 5648/601			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 20) UPI: 42-7-52.1A - Gravity Line, PB: 16/45 Plan No. 1193			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 21) UPI: 42-7-50.1 - Gravity Line, Plan No. 17279			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 22) UPI: 42-7-50 - Gravity Line, Plan No. 17279			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Kings Circle - Gravity Line, DB: N29/595			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Madeline Drive - Gravity Line, DB: V28/663			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Kevin Way - Gravity Line, DB: V28/663			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	Queen Anne Lane - Gravity Line , DB: V28/671			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	KING ROAD DRAINAGE AREA (KR)	Carol Lane - Gravity Line, DB: V28/671			ROW - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	King Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 1) UPI: 42-4-29.2 - Gravity Line, Plan No. 16792			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 2) UPI: 42-4-29.1 - Force Main, Plan No. 18373			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 4) UPI: 42-4-29 - Gravity Line & Force Main, Plan No. 15770 DB: 9846/637			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 5) UPI: 42-4-28.2 - Force Main, DB: 6765/1762			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 6) UPI: 42-4-42 - Gravity Line & Force Main, DB: 6765/1780			Easement - GL: No FM: Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 7) UPI: 42-4-25 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 8) UPI: 42-4-25.3 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 10) UPI: 42-4-26.2 - Force Main, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 12) UPI: 42-2-12.2 - Gravity Line, Plan No. 4520			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 13) UPI: 42-2-12.1 - Gravity Line, Plan No. 4520			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 14) UPI: 42-2-12.3 - Gravity Line, Plan No. 4521			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 15) UPI: 42-2-12 - Gravity Line, Plan No. 4521			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 16) UPI: 42-4-52 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 17) UPI: 42-4-52.5 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 18) UPI: 42-4-52.6 - Gravity Line, Plan No. 5010			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 19) UPI: 42-4-15.15 - Gravity Line, DB: 6773/273 MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 20) UPI: 42-4-15.12 - Gravity Line, MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 21) UPI: 42-4-15.16 - Gravity Line, DB: 6773/273 MB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 22) UPI: 42-4-15.17A - Gravity Line, DB: 6773/273 DB: 581/59			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 23) UPI: 42-4-15.17 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 24) UPI: 42-4-15.18A - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 25) UPI: 42-4-15.20 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	LAPP ROAD DRAINAGE AREA (LR)	(LR 26) UPI: 42-4-17 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 27) UPI: 42-4-16 - Gravity Line, DB: 6765/1789			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 28) UPI: 42-4-15.18 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 29) UPI: 42-4-15.27 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 30) UPI: 42-4-16.1 - Gravity Line, DB: 6773/273			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Technology Drive - Gravity Line, DB: 6773/251			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Lapp Road - Gravity Line , DB: 6773/251 DB: A36/1025 MB: 173/277			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Valley Stream Parkway - Force Main, DB: 6773/219 DB: 6773/235			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Old Morehall Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	Morehall Road - Force Main,			ROW - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 3) UPI: 42-2-10.5A - Gravity Line, PB: 64/30			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 4) UPI: 42-2-10.1 - Gravity Line & Force Main, Plan No. 10751			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 5) UPI: 42-2-10.3A - Gravity Line, Plan No. 5369			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 6) UPI: 42-2-10.3 - Gravity Line, Plan No. 5349			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 7) UPI: 42-2-10.2B - Gravity Line, PB: 59/18			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	Lee Boulevard - Gravity Line & Force Main, DB: S51/92			ROW - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 2) UPI: 42-3-350 - Gravity Line, Plan No. 15562			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 3) UPI: 42-3-351 - Gravity Line, Plan No. 15562			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 4) UPI: 42-3-497 - Gravity Line, Plan No. 16381			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 5) UPI: 42-3-498 - Gravity Line, Plan No. 16381			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 6) UPI: 42-3-336 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 7) UPI: 42-3-337 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 8) UPI: 42-3-375 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 9) UPI: 42-3-376 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 10) UPI: 42-3-378 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 11) UPI: 42-3-64.22 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 12) UPI: 42-3-64.23 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 13) UPI: 42-3-64.89 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 14) UPI: 42-3-64.90 - Gravity Line, DB: 7234/1961			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 15) UPI: 42-3-127 - Gravity Line & Lagoon, DB: 7234/1972			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 16) UPI: 42-3-47 - Gravity Line & Spray Field, DB: 7234/1978			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	All Internal Roads - Gravity Line & Force Main, DB: 6986/1454			ROW - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	Swedesford Road - Force Main, Plan No. 15562			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Doe Lane - Gravity Line, DB: P40/246 DB: W31/40			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Buck Run Lane - Gravity Line, DB: W31/40			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 1) UPI: 42-5-1.1 - Gravity Line, MB: 197/878			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 2) UPI: 42-4-266 - Gravity Line, DB: 8443/1099 Plan No. 18668			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 3) UPI: 42-4-260.2 - Gravity Line, Plan No. 20382 Plan No. 15178			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 4) UPI: 42-4-260.2A - Gravity Line, Plan No. 15178			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 6) UPI: 42-4-257.2 - Gravity Line, Plan No. 4470			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 7) UPI: 42-4-255-E - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 8) UPI: 42-4-268.1 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 9) UPI: 42-4-269 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 10) UPI: 42-4-270 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 11) UPI: 42-4-272 - Gravity Line, DB: 3559/1973			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 13) UPI: 42-4-339 - Gravity Line, DB: 4373/191			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 14) UPI: 42-5-16.1 - Gravity Line, DB: 4373/180			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 15) UPI: 42-4-132 - Gravity Line, Plan No. 10214 Plan No. 9327			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 16) UPI: 42-4-132.2 - Gravity Line, MB: 199/73 1972-00522			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 17) UPI: 42-4-332 - Gravity Line, MB: 199/54 MB: 284/241			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 18) UPI: 42-4-331 - Gravity Line, MB: 284/237 1975-00649			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 19) UPI: 42-4-330 - Gravity Line, MB: 284/233 1975-00648			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 20) UPI: 42-4-329 - Gravity Line, MB: 284/229 1975-00647			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 21) UPI: 42-4-328 - Gravity Line, MB: 287/5 1975-00684			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 22) UPI: 42-4-327 - Gravity Line, MB: 284/224 1975-00646			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 23) UPI: 42-4-326 - Gravity Line, MB: 284/221 1975-00645			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 24) UPI: 42-4-325 - Gravity Line, MB: 284/217 1975-00644			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 25) UPI: 42-4-324 - Gravity Line, MB: 284/213 1975-00643			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 26) UPI: 42-4-323 - Gravity Line, MB: 284/209 1975-00642			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 27) UPI: 42-4-322 - Gravity Line, MB: 284/205 1975-00641			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 28) UPI: 42-4-322.9 - Gravity Line, MB: 284/205 1975-00641			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 29) UPI: 42-4-322.8 - Gravity Line, MB: 284/201 1975-00640			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 30) UPI: 42-4-322.7 - Gravity Line, MB: 284/197 1975-00639			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 31) UPI: 42-4-322.6 - Gravity Line, MB: 287/13 1975-00686			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 32) UPI: 42-4-322.5 - Gravity Line, MB: 390/33 MB: 284/193			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 33) UPI: 42-4-322.4 - Gravity Line, MB: 287/189 1975-00637			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 34) UPI: 42-4-322.2 - Gravity Line, MB: 287/185 1975-00636			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 35) UPI: 42-4-322.1 - Gravity Line, MB: 284/181 1975-00635			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 36) UPI: 42-4-318 - Gravity Line, MB: 284/177 1975-00634			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 37) UPI: 42-4-317.2 - Gravity Line, MB: 284/169 MB: 287/17			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 38) UPI: 42-4-317.1 - Gravity Line, MB: 284/173 1975-00633			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 39) UPI: 42-4-317 - Gravity Line , MB: 284/169 MB: 287/17			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 40) UPI: 42-4-316 - Gravity Line, MB: 284/165 1975-00631			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 41) UPI: 42-4-315 - Gravity Line, MB: 284/161 MB: 287/157			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 42) UPI: 42-4-313 - Gravity Line, MB: 284/153 MB: 287/157			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 43) UPI: 42-4-132.1 - Gravity Line, MB: 199/27 MB: 284/245			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 44) UPI: 42-4-139 - Gravity Line, MB: 287/1 1975-00683			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 45) UPI: 42-4-140 - Gravity Line, MB: 287/9 1975-00685			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 46) UPI: 42-4-141 - Gravity Line, MB: 284/249 1975-00652			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 47) UPI: 42-4-130 - Gravity Line, DB: 6523/952			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 48) UPI: 42-4-127 - Gravity Line, MB: 284/261 1975-00655			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 49) UPI: 42-4-129 - Gravity Line, MB: 284/257 MB: 284/265			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 50) UPI: 42-4-125.2 - Gravity Line, MB: 284/257 MB: 284/265			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 51) UPI: 42-4-125.3 - Gravity Line, MB: 284/269 1975-00657			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 52) UPI: 42-4-125.3A - Gravity Line, MB: 284/269 1975-00657			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 53) UPI: 42-4-125.8 - Gravity Line, MB: 287/273 1975-00658			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 54) UPI: 42-4-125 - Gravity Line, MB: 345/130 MB: 284/273			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 55) UPI: 42-4-102.2 - Gravity Line, MB: 401/378 MB: 284/277			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 56) UPI: 42-4-102.4 - Gravity Line, MB: 401/378 MB: 284/277			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 57) UPI: 42-4-103 - Gravity Line, MB: 284/281 1975-00660			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 58) UPI: 42-4-104 - Gravity Line, MB: 399/399 MB: 284/285			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 59) UPI: 42-4-106.1 - Gravity Line, MB: 284/253 1975-00653			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 60) UPI: 42-4-97.1 - Gravity Line, MB: 284/289 MB: 284/293			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 61) UPI: 42-4-98.1 - Gravity Line, MB: 284/289 1975-00664			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 62) UPI: 42-4-98.4 - Gravity Line, MB: 284/302 1975-00665			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 63) UPI: 42-4-98 - Gravity Line , MB: 286/336 MB: 284/302			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 64) UPI: 42-4-100 - Gravity Line, MB: 983/401 MB: 284/306			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 65) UPI: 42-4-89.1B - Gravity Line, MB: 286/336 1975-00679			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 66) UPI: 42-4-89.1A - Gravity Line, MB: 546/424			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 67) UPI: 42-4-101.1 - Gravity Line, MB: 983/337 1987-0872			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 68) UPI: 42-4-87.2 - Gravity Line & Force Main, MB: 983/349 1987-08872			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 69) UPI: 42-4-333 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 70) UPI: 42-4-334-E - Gravity Line,			Easement - No (2 Crossings)		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 71) UPI: 42-4-335 - Gravity Line, MB: 206/582 MB: 199/30			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 72) UPI: 42-4-338 - Gravity Line, MB: 197/274			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 73) UPI: 42-4-350 - Gravity Line, MB: 197/274			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 74) UPI: 42-4-352 - Gravity Line & Meter, MB: 199/61 1972-00518			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 75) UPI: 42-4-351 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 76) UPI: 42-4-352.1 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 77) UPI: 42-4-352.2 - Gravity Line, Plan No. 7654			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 78) UPI: 42-4-352.3 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 79) UPI: 42-4-343 - Gravity Line, MB: 199/79 1972-00524			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 80) UPI: 42-4R-26 - Gravity Line, MB: 345/56 MB: 284/347			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 81) UPI: 42-4R-34 - Gravity Line, MB: 402/164 MB: 285/1			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 82) UPI: 42-4R-33 - Gravity Line, MB: 345/56			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 83) UPI: 42-4R-32 - Gravity Line, MB: 285/5 1975-00675			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 84) UPI: 42-4R-25 - Gravity Line, MB: 345/56			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 85) UPI: 42-4R-21 - Gravity Line, MB: 286/344 1975-00681			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 86) UPI: 42-4R-19 - Gravity Line, MB: 284/339 1975-00671			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 87) UPI: 42-4R-20 - Gravity Line, MB: 284/343 1975-00672			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 88) UPI: 42-4-321.2 - Gravity Line, MB: 197/888			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 89) UPI: 42-4-278.20 - Gravity Line, DB: 3877/431			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 90) UPI: 42-4-281.47 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 91) UPI: 42-4-281 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 92) UPI: 42-4-281.28 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 93) UPI: 42-4-281.29 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 94) UPI: 42-4-281.30 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 95) UPI: 42-4-281.31 - Gravity Line, DB: 6267/2378 DB: 4643/95			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 96) UPI: 42-4-294-E - Gravity Line,			Easement - No (4 Crossings)		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 97) UPI: 42-7C-5 - Gravity Line, DB: 5648/615			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 98) UPI: 42-4Q-169 - Gravity Line, DB: 5648/607			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 99) UPI: 42-4Q-157 - Gravity Line, MB: 427/203			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 100) UPI: 42-4Q-156 - Gravity Line, MB: 427/203			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 101) UPI: 42-4Q-155 - Gravity Line, MB: 419/341			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 102) UPI: 42-4Q-179 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 103) UPI: 42-4Q-180 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 104) UPI: 42-4Q-172 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 105) UPI: 42-4Q-171 - Gravity Line, PB: 43/4			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 106) UPI: 42-7B-138.10 - Gravity Line, DB: 2603/389			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 107) UPI: 42-7B-138.11 - Gravity Line, DB: 2603/389			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 108) UPI: 42-7-64.4 - Gravity Line, MB: 960/194			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 109) UPI: 42-7-64.2 - Gravity Line, MB: 960/190			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 110) UPI: 42-4P-28-E - Gravity Line, DB: H49/87			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 111) UPI: 42-4-295.1 - Gravity Line, MB: 284/327 1975-00668			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 112) UPI: 42-4-321 - Gravity Line, MB: 284/340 1975-00680			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 113) UPI: 42-4-321.1 - Gravity Line, MB: 286/323 1975-00667			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 114) UPI: 42-4K-143 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 115) UPI: 42-4K-142 - Gravity Line,			Easement - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 116) UPI: 42-4K-28 - Gravity Line, MB: 197/271			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 117) UPI: 42-4K-27 - Gravity Line, MB: 196/996			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 118) UPI: 42-4K-7 - Gravity Line, MB: 196/1002			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 119) UPI: 42-4K-6 - Gravity Line, MB: 197/1021			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 120) UPI: 42-4K-30 - Gravity Line, MB: 197/262 MB: 347/323			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 121) UPI: 42-4K-17 - Gravity Line, MB: 196/999 MB: 347/323			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 122) UPI: 42-4-109 - Gravity Line, MB: 377/134			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 123) UPI: 42-4-110 - Gravity Line, MB: 345/134			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 124) UPI: 42-4-143 - Gravity Line, Plan No. 5498 MB: 197/268			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 125) UPI: 42-4-144 - Gravity Line, MB: 336/282			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 126) UPI: 42-4-240.3 - Gravity Line, MB: 199/51 PB: 49/27			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 127) UPI: 42-4-240.1 - Gravity Line, MB: 202/41 MB: 199/48			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 128) UPI: 42-4-142 - Gravity Line, MB: 197/268			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 129) UPI: 42-4-252 - Gravity Line, MB: 197/883			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 130) UPI: 42-4-249 - Gravity Line, MB: 345/52			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 131) UPI: 42-4-253-E - Gravity Line, DB: O31/211			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 132) UPI: 42-4-257.1 - Gravity Line, MB: 199/57			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 133) UPI: 42-4-254 - Gravity Line, MB: 347/326 MB: 199/57			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 134) UPI: 42-4-260.6-E - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 135) UPI: 42-4-53.14 - Gravity Line, DB: 2603/325 Plan No. 9429			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 136) UPI: 42-4-53.15 - Gravity Line, DB: 2603/380 Plan No. 8837			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 137) UPI: 42-4-53.16 - Gravity Line, DB: 554/536 Plan No. 7496			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 138) UPI: 42-4-53.6 - Gravity Line & Force Main, Plan No. 5076 DB: 6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 139) UPI: 42-4-53.10 - Gravity Line & Force Main, Plan No. 5434 DB: 6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 140) UPI: 42-4-53.7 - Gravity Line & Force Main, Plan No. 5434 DB:6765/1748			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 141) UPI: 42-4-53.12 - Gravity Line, Plan No. 6432 DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 143) UPI: 42-4-53.5 - Gravity Line, Plan No. 4799			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 144) UPI: 42-4-53.3 - Gravity Line, DB: 6773/235			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 145) UPI: 42-4-53.11 - Gravity Line, Plan No. 19299 DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 146) UPI: 42-4-53 - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 147) UPI: 42-4-53.8 - Gravity Line, DB: 554/536			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	(MR 148) UPI: 42-2-8.1 - Gravity Line, Plan No. 19233 Plan No. 15830			Easement - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Oak Hill Circle - Gravity Line, DB: H49/60 DB: S54/414			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Forest Way - Gravity Line, DB: H49/60 DB: S54/414			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Amy Lane - Gravity Line & Force Main , DB: 2603/308			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Birch Road - Gravity Line, DB: Q35/224 DB: Q35/243 DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Locust Road - Gravity Line, DB: Q35/224			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Pine Road - Gravity Line, DB: Q35/239			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Willow Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Sycamore Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Beth Circle - Gravity Line, DB: T49/241			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Village Way - Gravity Line, DB: N27/627 DB: Q24/523 DB: W24/133			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Spring Road - Gravity Line, DB: S36/52 DB: W31/64			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Woodview Road - Gravity Line, DB: W31/64			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	Fahnestock Road - Gravity Line, DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Longview Road - Gravity Line , DB: A28/493 DB: V28/667 DB: Q24/521 DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lantern Lane - Gravity Line, DB: X24/35			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Old Lincoln Highway/ Old Lancaster Road - Gravity Line, DB: 2603/365			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Roberts Road - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Elbow Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Winding Way - Gravity Line, DB: N29/192 DB: O31/215			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Wood Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Beth Lane - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Hillside Drive - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Kane Drive - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Swedesford Road - Gravity Line, DB: N29/192 DB: O31/215 DB: O31/222			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Valley Stream Parkway - Gravity Line & Force Main, DB: 6773/219 DB: 6773/235			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Malin Road - Gravity Line, DB: Q35/224			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	South Malin Road - Gravity Line , DB: 2603/336			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	South Malin Road Railroad Crossing - ,			ROW - No		$ -
	MATTHEWS ROAD DRAINAGE AREA (MR)	Summit Road - Gravity Line, DB: H49/60			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	U.S. Route 202 - Gravity Line, MB: 554/536			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lancaster Avenue - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	East Lancaster Avenue - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Conestoga Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Morehall Road - Gravity Line & Force Main,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	East Swedesford Road - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Matthews Road - Gravity Line,			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MATTHEWS ROAD DRAINAGE AREA (MR)	Warren Avenue - Gravity Line,			ROW - Yes		$ 1.00
	MATTHEWS ROAD DRAINAGE AREA (MR)	Lindenwood Drive - Gravity Line,			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	Willow Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	Sycamore Drive - Gravity Line, DB: P40/443			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	East Swedesford Road - Gravity Line,			ROW - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 1) UPI: 42-4-88 - Gravity Line, MB: 546/434			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 2) UPI: 42-4-89.5 - Gravity Line, MB: 546/404			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 3) UPI: 42-4-89 - Gravity Line, MB: 546/444			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 4) UPI: 42-4-89.2 - Gravity Line, MB: 546/424			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 6) UPI: 42-4-71.2 - Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 7) UPI: 42-4-71.13 - Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 9) UPI: 42-4-71.8 - Force Main,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	Buttonwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Beechwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 2) UPI: 42-4-2.2-E - Gravity Line & Force Main, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 3) UPI: 42-4-18-E - Gravity Line & Force Main, DB: 5959/435			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 4) UPI: 42-4-41, 56 & 66 - Gravity Line & Force Main,			Easement - GL: No FM: Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 5) UPI: 42-4-39 - Force Main, DB: H64/430			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 6) UPI: 42-4-38 - Force Main, DB: 4588/1426			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 7) UPI: 42-4-71.23 - Force Main, DB: 6761/259			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 8) UPI: 42-4-71.3 - Force Main, DB: 4632/136			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 9) UPI: 42-4K-119 - Force Main, DB: 2538/22			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 10) UPI: 42-4K-120 - Force Main, DB: 85/579			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 11) UPI: 42-4K-121 - Force Main, DB: 1816/457			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 12) UPI: 42-4K-122 - Force Main, DB: S52/265			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 13) UPI: 42-4K-123 - Force Main, DB: 7799/1042			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 14) UPI: 42-4K-124 - Force Main, DB: 4193/2383			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 15) UPI: 42-4-70 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 16) UPI: 42-4-71.26 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 17) UPI: 42-4-71.19 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 18) UPI: 42-4-71.18 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 19) UPI: 42-4-71.27 - Gravity Line, DB: H49/68			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 22) UPI: 42-4-60.3 - Gravity Line , PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 23) UPI: 42-4-60.4 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 24) UPI: 42-4-60.5 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 25) UPI: 42-4-60.6 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 26) UPI: 42-4-60.7 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 27) UPI: 42-4-60.8 - Gravity Line, PB: 61/10			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 28) UPI: 42-4-60.9 - Gravity Line, MB: 420/341			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 29) UPI: 42-4-61.1 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 30) UPI: 42-4-61.2 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 31) UPI: 42-4-61.3 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 32) UPI: 42-4-61.4 - Gravity Line, Plan No. 6557			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 33) UPI: 42-4-65.1 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 34) UPI: 42-4-65.2 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 35) UPI: 42-4-65.3 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 36) UPI: 42-4-65.4 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 37) UPI: 42-4-65.5 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 38) UPI: 42-4-65.6 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 39) UPI: 42-4-65.7 - Gravity Line, PB: 63/14			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 40) UPI: 42-4J-31 - Gravity Line, PB: 1088			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 41) UPI: 42-4J-9 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 42) UPI: 42-4J-10 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 43) UPI: 42-4J-11 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 44) UPI: 42-4J-13 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 45) UPI: 42-4J-12 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 46) UPI: 42-4J-15 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 47) UPI: 42-4J-16 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 48) UPI: 42-4J-17 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 49) UPI: 42-4J-18 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 50) UPI: 42-4J-19 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 51) UPI: 42-4J-20 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 52) UPI: 42-4J-21 - Gravity Line, MB: 964/533			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 53) UPI: 42-4-85.12 - Gravity Line, DB: 6482/1996			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 55) UPI: 42-4-2.5-E - Gravity Line, DB: 8918/1465			Township Owned Property		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 56) UPI: 42-4-2.1-E - Gravity Line, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 57) UPI: 42-4-365-E - Gravity Line, DB: 3127/39			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 58) UPI: 42-4-59-E - Gravity Line, DB: 3520/2315			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 59) UPI: 42-4-58-E - Gravity Line, DB: 3520/2315			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 60) UPI: 42-4-58.1-E - Gravity Line, DB: A47/48			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 61) UPI: 42-3-124-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 62) UPI: 42-3-123.25 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 63) UPI: 42-3-123.15 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 64) UPI: 42-3-123.14 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 65) UPI: 42-3-117.1 - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 66) UPI: 42-3-117.1A - Gravity Line, DB: 9598/2270			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 67) UPI: 42-4-55-E - Gravity Line, Plan No. 14830			Easement - Partial Gap		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 71) UPI: 42-4-62.1 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 72) UPI: 42-4-62.2 - Gravity Line, DB: 5151/2261 2001-10487			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 73) UPI: 42-4-62 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 76) UPI: 42-4-83.1-E & 42-4-83-E - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 78) UPI: 42-3-119.1 - Gravity Line, DB: 7743/170			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 79) UPI: 42-3-118-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 80) UPI: 42-3-115 - Gravity Line, Plan No. 20653			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 81) UPI: 42-3-115.1 - Gravity Line, DB: 3837/1431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 82) UPI: 42-3-83-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 83) UPI: 42-3-71-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 84) UPI: 42-3-76-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 85) UPI: 42-3-129-E - Gravity Line, DB: 9750/2155			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 86) UPI: 42-3-119 - Gravity Line, DB: 7819/2124			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 87) UPI: 42-3-199 - Gravity Line, DB: 7819/2124			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 88) UPI: 42-4-77 - Gravity Line, DB: 1357/492 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 89) UPI: 42-4-80.1 - Gravity Line, DB: 1357/496 1988—08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 90) UPI: 42-4-80 - Gravity Line, DB: 1357 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 92) UPI: 42-3-227 - Gravity Line, DB: 1357/479 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 93) UPI: 42-3-226.1 - Gravity Line, DB: 1357/4475 1988-08895			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 94) UPI: 42-3-226 - Gravity Line, DB: 1357/467 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 95) UPI: 42-3-223 - Gravity Line, DB: 1357/471 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 96) UPI: 42-3-222 - Gravity Line, DB: 1357/508 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 97) UPI: 42-3-222.1 - Gravity Line, DB: 1357/512 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 98) UPI: 42-3-221 - Gravity Line, DB: 1357/520 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 99) UPI: 42-4-220 - Gravity Line, DB: 1357/516 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 100) UPI: 42-4-218 - Gravity Line, DB: 1357/524 & 531 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 101) UPI: 42-3-217 - Gravity Line, DB: 1357/528 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 102) UPI: 42-3R-5 - Gravity Line, DB: 1678/210 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 103) UPI: 42-3R-2 - Gravity Line, DB: 1678/200 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 104) UPI: 42-3R-16 - Gravity Line, DB: 1357/540 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 105) UPI: 42-3R-6 - Gravity Line, DB: 1357/544 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 106) UPI: 42-3R-7 - Gravity Line, DB: 1357/548 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 107) UPI: 42-3R-8 - Gravity Line, DB: 1357/548 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 108) UPI: 42-3R-9 - Gravity Line, DB: 1357/556 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 109) UPI: 42-3R-10 - Gravity Line & Force Main, DB: 1357/556 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 110) UPI: 42-4-302-E - Gravity Line, DB: 1358/38 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 111) UPI: 42-4-302.1-E - Gravity Line, DB: 1358/42 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 112) UPI: 42-4-300 - Gravity Line, DB: 1358/46 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 113) UPI: 42-4-299 - Gravity Line, DB: 1358/50 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 114) UPI: 42-4-298.1 - Gravity Line, DB: 1357/422 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 115) UPI: 42-4-298 - Gravity Line, DB: 1357/418 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 116) UPI: 42-4-275 - Gravity Line, DB: 1357/426 DB: 1379/271			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 117) UPI: 42-3-239 - Gravity Line, DB: 1357/430 DB: 1357/434			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 118) UPI: 42-3-237.2 - Gravity Line, DB: 1357/438 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 119) UPI: 42-3-237.1 - Gravity Line, DB: 1357/442 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 120) UPI: 42-3-236 - Gravity Line, DB: 1357/418 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 121) UPI: 42-3-234 - Gravity Line, DB: 1357/450 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 122) UPI: 42-3-233.1 - Gravity Line, DB: 1357/458 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 123) UPI: 42-3R-40 - Gravity Line, DB: 1358/62 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 124) UPI: 42-3R-37 - Gravity Line, DB: 1358/58 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 125) UPI: 42-3R-39 - Gravity Line, DB: 1358/66 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 126) UPI: 42-3R-38 - Gravity Line, DB: 1357/462 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 127) UPI: 42-3-232 - Gravity Line, DB: 1358/70 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 128) UPI: 42-3-231 - Gravity Line, DB: 1357/536 1988-08895			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 129) UPI: 42-3-229 - Gravity Line, DB: 1678/195 DB: 1358/74 & 78			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 130) UPI: 42-3M-144 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 131) UPI: 42-3M-145 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 132) UPI: 42-3M-146 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 133) UPI: 42-3M-147 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 134) UPI: 42-3M-148 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 135) UPI: 42-3M-149 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 136) UPI: 42-3M-150 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 137) UPI: 42-3M-151 - Gravity Line, DB: 644/72			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 138) UPI: 42-3-109.11 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 139) UPI: 42-3-297 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 140) UPI: 42-3-251 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 141) UPI: 42-3-252 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 142) UPI: 42-3-245 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 143) UPI: 42-3-296 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 144) UPI: 42-3-295 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 145) UPI: 42-3-281 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 146) UPI: 42-3-280 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 147) UPI: 42-3-298 - Gravity Line, Plan Nos. 10112- 10115			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 148) UPI: 42-3-298.1 - Gravity Line, DB: 4415/1866			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 150) UPI: 42-3-45.6Q - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 151) UPI: 42-3-334 - Gravity Line, Plan No. 13903			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 152) UPI: 42-3-45.6K - Gravity Line, PB: 31/19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 153) UPI: 42-3-242.10 - Gravity Line, PB: 37/3			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 155) UPI: 42-4-20.2S - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 156) UPI: 42-4-20.2Q - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 157) UPI: 42-4-20.2P - Gravity Line, DB: 1945/343 DB: 1945/353			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 158) UPI: 42-4-4 - Gravity Line,			Easement - No		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 159) UPI: 42-4-5.2C - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Partial Gap		$ -
	MILL LANE DRAINAGE AREA (ML)	(ML 160) UPI: 42-4-5.2D - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 161) UPI: 42-4-527 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 162) UPI: 42-4-5.45 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 163) UPI: 42-4-526 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 164) UPI: 42-4-525 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 165) UPI: 42-4-524 - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 166) UPI: 42-4-5.2B - Gravity Line, DB: 7246/1583 DB: 7647/431			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 167) UPI: 42-4-6.10 - Gravity Line,			Easement - No		$ -

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	(ML 168) UPI: 42-4-6.14 - Gravity Line, DB: 9494/1779			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 169) UPI: 42-4-5.24E - Gravity Line, DB: 3127/31			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 170) UPI: 42-3D-33 - Gravity Line, DB: 10298/1790			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 171) UPI: 42-3D-34 - Gravity Line, DB: 8784/252			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 172) UPI: 42-3D-36 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 173) UPI: 42-3D-38 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 174) UPI: 42-3D-37 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 175) UPI: 42-1R-5 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 176) UPI: 42-3D-30 - Gravity Line, DB: 1754/73			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 177) UPI: 42-3D-31 - Gravity Line, DB: 6306/1321			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 178) UPI: 42-3D-32 - Gravity Line, DB: 8432/684			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 179) UPI: 42-1R-6 - Gravity Line, Pl: 54/18 & 19			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 180) UPI: 42-2-10.2D - Gravity Line, Plan No. 5996 DB: 9405/211			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 182) UPI: 42-4-2.3 - Gravity Line, Plan No. 19563 DB: 8906/1501			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Manor View Circle - Gravity Line & Force Main, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Limekiln Drive - Gravity Line, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Valley Creek Road - Gravity Line, DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Mill Creek Lane - Gravity Line, DB: Y58/546			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Knollbrook Circle - Gravity Line, DB: S51/87			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Brett Lane - Gravity Line, DB: H64/127			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Westgate Circle - Gravity Line, DB: H64/131			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Stuart Drive - Gravity Line, DB: H64/131			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Devonshire Lane - Gravity Line, DB: 6482/1996			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Charles Street - Gravity Line, DB: P30/117			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	Markel Road - Gravity Line, DB: 644/66			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Kelmar Road - Gravity Line, DB: 644/66			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Rickmar Lane - Gravity Line, MB: 964/570			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Weightman Drive - Gravity Line, DB: 7784/928			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Morris Lane - Gravity Line, DB: 7784/923			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Craig Lane - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Kenwood Court - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Clover Mill Lane - Gravity Line, DB: 3966/279 DB: 4748/586 DB: 6267/1			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Tunbridge Lane - Gravity Line, DB: 4748/586			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Atterbury Drive - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Flintshire Road - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Ashlawn Road - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Ashlawn Circle - Gravity Line, DB: H49/73			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Oak Glen Road - Gravity Line, DB: 1288/316			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Oak Glen Drive - Gravity Line, DB: 1288/316			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Lapp Road - Gravity Line, DB: 1288/316 DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	McCoy Court - Gravity Line, DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Fetters Mill Drive - Gravity Line, DB: 7647/431			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Dale Lane - Gravity Line, DB: S54/409			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Forge Drive - Gravity Line, DB: S54/409			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Thayer Drive - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Almy Drive - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Aston Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	James Thomas Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	MILL LANE DRAINAGE AREA (ML)	Spruce Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Hayes Road - Gravity Line, DB: R53/418			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Yellow Springs Road - Gravity Line, DB: R53/410			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Phoenixville Road - Gravity Line, DB: 7174/1645 DB: 4748/586 DB: R53/410 DB: R53/418 MB: 964/552			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Conestoga Road - Gravity Line/ Force Main, DB: 7174/1645 MB: 964/552 DB: H49/68			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Swedesford Road - Gravity Line, DB: H64/131 DB: H49/68 MB: 964/560			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Sidley Road - Gravity Line, DB: 7647/431 DB: 7246/1583 DB: 3127/19 DB: 117/407 DB: R53/418			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Flat Road - Gravity Line, DB: 3127/19			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Moores Road - Gravity Line, DB: 7174/1645 DB: 1945/330 DB: 644/62 DB: 440/532 DB: 440/538 DB:			ROW - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	Mill Lane - Gravity Line, DB: 420/337 DB: 117/407 DB: Y58/546 DB: S51/87			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 2) UPI: 42-3-165 - Gravity Line & Force Main, DB: 9579/478			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 3) UPI: 42-3-149.1 - Gravity Line & Force Main, DB: 1358/17 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 4) UPI: 42-3R-11.1 - Gravity Line & Force Main, DB: 1357/564 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 5) UPI: 42-3R-12 - Gravity Line & Force Main, DB: 1357/568 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 6) UPI: 42-3R-13 - Gravity Line & Force Main, DB: 1357/572 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 7) UPI: 42-3-179 - Gravity Line & Force Main, DB: 1357/576 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 8) UPI: 42-3-180 - Gravity Line & Force Main, DB: 1678/190 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 9) UPI: 42-3Q-19 - Gravity Line & Force Main, DB: 1357/584 1988/08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 10) UPI: 42-3Q-18 - Gravity Line & Force Main, DB: 1357/588 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 11) UPI: 42-3Q-9 - Gravity Line & Force Main, DB: 1357/592 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 12) UPI: 42-3-182 - Gravity Line & Force Main, DB: 1358/1 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 13) UPI: 42-3-181 - Gravity Line & Force Main, DB: 1357/592 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 14) UPI: 42-3-183 - Gravity Line & Force Main, DB: 1358/5 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 15) UPI: 42-3-184 - Gravity Line & Force Main, DB: 1358/9 1988-08895			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PLANEBROOK DRAINAGE AREA (PB)	(PB 16) UPI: 42-3-185.1 - Gravity Line & Force Main, DB: 1358/13 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 17) UPI: 42-3-185 - Gravity Line & Force Main, DB: 1358/17 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 18) UPI: 42-3-145 - Gravity Line, DB: 1358/126 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 19) UPI: 42-6-10.1 - Gravity Line, DB: 1358/26 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 20) UPI: 42-6-10 - Gravity Line, DB: 1358/30 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 22) UPI: 42-3-228 - Gravity Line, DB: 1358/82 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 23) UPI: 42-6-23.1 - Gravity Line, DB: 1358/86 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 24) UPI: 42-6-23.4 - Gravity Line, DB: 1358/94 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 25) UPI: 42-6-23.4A - Gravity Line, DB: 1358/94 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 26) UPI: 42-6-24.2 - Gravity Line, DB: 1358/54 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 27) UPI: 42-6-21 - Gravity Line, DB: 1358/114 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 28) UPI: 42-6-23 - Gravity Line, DB: 1358/90 DB: 1379/275			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 29) UPI: 42-6-23.3 - Gravity Line, DB: 1358/98 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 30) UPI: 42-6-23.2D - Gravity Line, DB: 1358/102 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 31) UPI: 42-6-23.2 - Gravity Line, DB: 1358/122 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 32) UPI: 42-6-23.2C - Gravity Line, DB: 1358/106 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 33) UPI: 42-6-23.2B - Gravity Line, DB: 1358/110 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 34) UPI: 42-6-23.2A - Gravity Line, DB: 1358/118 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 36) UPI: 42-6-246 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 37) UPI: 42-6-222 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 38) UPI: 42-6-223 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 39) UPI: 42-6-224 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 40) UPI: 42-6-225 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 41) UPI: 42-6-226 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	PLANEBROOK DRAINAGE AREA (PB)	(PB 42) UPI: 42-6-227 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 43) UPI: 42-6-228 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 44) UPI: 42-6-229 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 45) UPI: 42-6-230 - Gravity Line, DB: 5406/689			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 46) UPI: 42-6G-16-E - Gravity Line, DB: Y58/519			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Whitewoods Lane - Gravity Line, DB: 5406/689			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Glenloch Way - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Ravine Road - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Ravine Road Railroad Crossing - Gravity Line,			ROW - No		$ -
	PLANEBROOK DRAINAGE AREA (PB)	King Road - Gravity Line, DB: Y58/531			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	South Phoenixville Pike - Gravity Line,			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Lancaster Avenue - Gravity Line,			ROW - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	Planebrook Road / Phoenixville Pike - Force Main,			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 2) UPI: 42-4-87.1 - Gravity Line, MB: 983/341 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 3) UPI: 42-4N-22 - Gravity Line, MB: 983/405 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 4) UPI: 42-4N-21 - Gravity Line, MB: 983/357 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 5) UPI: 42-4N-20.1 - Gravity Line, MB: 983/361 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 6) UPI: 42-4N-39 - Gravity Line, MB: 983/365 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 7) UPI: 42-4N-40 - Gravity Line, MB: 983/369 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 8) UPI: 42-4N-41 - Gravity Line, MB: 983/345 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 9) UPI: 42-4N-42 - Gravity Line, MB: 983/409 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 10) UPI: 42-4N-43 - Gravity Line, MB: 983/413 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 11) UPI: 42-4N-44 - Gravity Line, MB: 1357/504 1987-08895			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 12) UPI: 42-4-312 - Gravity Line, MB: 983/373 1987-08872			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 13) UPI: 42-4-312.1 - Gravity Line, MB: 983/377 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 14) UPI: 42-4-311 - Gravity Line, MB: 983/381 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 15) UPI: 42-4-310.1 - Gravity Line, MB: 983/417 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 16) UPI: 42-4-310 - Gravity Line, MB: 983/385 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 17) UPI: 42-4-310.2 - Gravity Line, MB: 983/421 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 18) UPI: 42-4-309 - Gravity Line, MB: 983/421 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 19) UPI: 42-4-309.1 - Gravity Line, MB: 983/425 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 20) UPI: 42-4-308.2 - Gravity Line, MB: 983/429 Plan No. 16523			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 21) UPI: 42-4-308.1 - Gravity Line, MB: 983/369 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 22) UPI: 42-4-308 - Gravity Line, MB: 983/393 DB: 3608/825			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 23) UPI: 42-4-307 - Gravity Line, MB: 983/397 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 24) UPI: 42-4-306 - Gravity Line, MB: 983/433 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 25) UPI: 42-4-304.2 - Gravity Line, MB: 983/437, 441 445 & 449			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 26) UPI: 42-4-304-E - Gravity Line, MB: 983/453 1987-08872			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 27) UPI: 42-4-303 - Gravity Line, DB: 1358/34 Plan No. 19774			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 28) UPI: 42-4-319-E - Gravity Line,			Easement - No		$ -
	WESTGATE DRAINAGE AREA (WG)	(WG 29) UPI: 42-4-296.16 - Gravity Line, Plan No. 15362			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 30) UPI: 42-4-296.15 - Gravity Line, Plan No. 15362			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 31) UPI: 42-4-296.14 - Gravity Line, Plan No. 18412			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 32) UPI: 42-4-296.7 - Gravity Line, DB: 5792/93			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 34) UPI: 42-4-297.2 - Gravity Line, Plan No. 18267			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 35) UPI: 42-4-297.3 - Gravity Line, Plan No. 20467			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 37) UPI: 42-7B-134 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 38) UPI: 42-7B-135 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 39) UPI: 42-4P-15 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 40) UPI: 42-4P-16 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 41) UPI: 42-4P-17 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 42) UPI: 42-4P-18 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 43) UPI: 42-4P-19 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 44) UPI: 42-4P-20 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 45) UPI: 42-4P-29 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 46) UPI: 42-4P-30 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 47) UPI: 42-4P-31 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 48) UPI: 42-4P-32 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 49) UPI: 42-7B-145 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 50) UPI: 42-7B-144 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 51) UPI: 42-7B-143 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 52) UPI: 42-7B-142 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 53) UPI: 42-4P-37 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 54) UPI: 42-4P-36 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 55) UPI: 42-7B-151 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 56) UPI: 42-7B-150 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 57) UPI: 42-7B-149 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 58) UPI: 42-7B-148 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 59) UPI: 42-7B-147 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 60) UPI: 42-7B-146 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 61) UPI: 42-7B-137 - Gravity Line , MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 62) UPI: 42-4P-27 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 63) UPI: 42-4P-24 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 64) UPI: 42-4P-23 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 65) UPI: 42-4P-22 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 66) UPI: 42-4P-21 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 67) UPI: 42-4P-33 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 68) UPI: 42-4P-26 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 69) UPI: 42-4P-25 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 70) UPI: 42-7B-136 - Gravity Line, MB: 575/140			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 71) UPI: 42-7B-100.2 - Gravity Line, DB: 5648/717			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 72) UPI: 42-7B-100 - Gravity Line, DB: 5648/711			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 73) UPI: 42-7A-41 - Gravity Line, DB: 5648/564			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 74) UPI: 42-7A-39 - Gravity Line, DB: 5686/926			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 75) UPI: 42-7A-38 - Gravity Line, DB: 5648/558			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 76) UPI: 42-7A-37 - Gravity Line, DB: 5676/1121			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 77) UPI: 42-7A-36 - Gravity Line, DB: 5676/1145			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 78) UPI: 42-7A-35 - Gravity Line, DB: 5676/1139			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 79) UPI: 42-7A-34 - Gravity Line, DB: 5676/1096			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 80) UPI: 42-7A-33 - Gravity Line, DB: 5676/1133			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 81) UPI: 42-7A-32 - Gravity Line, DB: 5676/1151			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 82) UPI: 42-7A-31 - Gravity Line, DB: 5676/1103			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 83) UPI: 42-7A-27 - Gravity Line, DB: 5542/1669 2003-00682			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 84) UPI: 42-7A-25.3 - Gravity Line, DB: 3802/1172			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 85) UPI: 42-7A-11.9 - Gravity Line, DB: 4599/2192			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 86) UPI: 42-7A-11.10 - Gravity Line, DB: 4599/2192			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 87) UPI: 42-7A-92.5 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 88) UPI: 42-7A-92.6 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 89) UPI: 42-7A-92.12 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 90) UPI: 42-7A-92.10 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 91) UPI: 42-7A-68 - Gravity Line, DB: 5648/577			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 92) UPI: 42-7A-69 - Gravity Line, DB: 5686/942			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 93) UPI: 42-7A-92.15 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 94) UPI: 42-7A-74 - Gravity Line, DB: 5648/583			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 95) UPI: 42-7A-73 - Gravity Line, DB: 5648/570			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 96) UPI: 42-7A-92.14 - Gravity Line, DB: 4599/2214			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 97) UPI: 42-7A-88 - Gravity Line, DB: 5648/699			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 99) UPI: 42-7A-55 - Gravity Line, DB: 5648/693			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 100) UPI: 42-7A-65 - Gravity Line, DB: 5676/1115			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 101) UPI: 42-7A-84 - Gravity Line, DB: 5676/1127			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 102) UPI: 42-7A-83 - Gravity Line, DB: 5648/730			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 103) UPI: 42-7A-82 - Gravity Line, DB: 5676/1109			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 104) UPI: 42-7A-81 - Gravity Line, DB: 5648/723			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 105) UPI: 42-7A-80 - Gravity Line, DB: 5542/1657 2003-00679			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 106) UPI: 42-7A-80.1 - Gravity Line, DB: 5542/1657 2003-00679			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 107) UPI: 42-7A-79 - Gravity Line, DB: 5686/912			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 108) UPI: 42-7-40 - Gravity Line, DB: 5542/1624 2003-00680			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 110) UPI: 42-7-43 - Gravity Line, DB: 5686/932			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 111) UPI: 42-7-44 - Gravity Line, DB: 5686/936			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 112) UPI: 42-7-48 - Gravity Line, DB: 5648/595			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WESTGATE DRAINAGE AREA (WG)	(WG 113) UPI: 42-7A-60 - Gravity Line, DB: 5542/2126 2003-02145			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 114) UPI: 42-7A-59 - Gravity Line, DB: 5648/589			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 115) UPI: 42-7A-58 - Gravity Line, DB: 5542/1691 2003-00683			Easement - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Westgate Village Drive - Gravity Line & Force Main, DB: 4804/2104			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Buttonwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Beechwood Avenue - Gravity Line, DB: R24/293			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Ridge Road - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Ridgewood Drive - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Sleighride Drive - Gravity Line, DB: S60/29			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Summit Road - Gravity Line, DB: S60/29 MB: 114/645 DB: 2603/357 DB: S36/49			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Carol Lane - Gravity Line, MB: 114/645			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Diane Drive - Gravity Line, MB: 114/645			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Dawn Way - Gravity Line, DB: 3802/1172			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Judith Lynn Way - Gravity Line, DB: 4599/2180			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Carla Terrace - Gravity Line, DB: 4599/2180			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Rogers Way - Gravity Line, DB: 4599/2224			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Barbara Drive - Gravity Line, DB: O34/259			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	Woodcrest Lane - Gravity Line, DB: T33/81			ROW - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 1) UPI: 42-4-15.1 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 3) UPI: 42-4-15.21 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 4) UPI: 42-4-15.14 - Gravity Line, MB: 634/200			Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	Flat Road - Gravity Line & Force Main, DB: U28/28			ROW - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	Great Valley Parkway - Gravity Line & Force Main, DB: D62/327 MB: 634/200			ROW - Yes		$ 1.00
							$ 668.00

Note 1: Each easement is designated as either Yes or No.
"Yes" easement has been confirmed with an instrument recorded in the Office of the Recorder of Deeds in and for Chester County.
"No" easement will have to be acquired by the Township.

353.30	LAND AND LAND RIGHTS - PUMPING						
	DEER RUN DRAINAGE AREA (DR)	(DR 1) UPI: 4-4F-13-E - Pump Station, DB: 8914/1465			Easement - Yes		$ 1.00
	HILLBROOK CIRCLE DRAINAGE AREA (HB)	(HB 8) UPI: 42-3-107.3N - Gravity, FM & Pump Station, DB: 6262/2370			Easement - Yes		$ 1.00
	KING ROAD DRAINAGE AREA (KR)	(KR 1) UPI: 53-2-18 & 53-2-127 - Pump Station, DB: 6033/577			Easement - Yes		$ 1.00
	LAPP ROAD DRAINAGE AREA (LR)	(LR 9) UPI: 42-4-26.1 - Gravity, FM & Pump Station, DB: 6773/273 MB: 173/277			Easement - Yes		$ 1.00
	LEE BOULEVARD DRAINAGE AREA (LB)	(LB 2) UPI: 42-2-10.4 - Gravity, FM & Pump Station, Plan No. 5369			Easement - Yes		$ 1.00
	MALVERN HUNT DRAINAGE AREA (MAL)	(MAL 1) UPI: 42-3-370 - Gravity, FM & Pump Station, DB: 7234/1961 Plan No. 16381			Easement - Yes		$ 1.00
	MEADOW VIEW DRAINAGE AREA (MV)	(MV 5) UPI: 42-4-71.2A - Pump Station & Force Main, Plan No. 2571			Easement - Yes		$ 1.00
	MILL LANE DRAINAGE AREA (ML)	(ML 1) UPI: 42-4-2.4-E - Gravity Line, FM & Pump Station, DB: 3127/39			Township Owned Property		$ 1.00
		(ML 91) UPI: 42-4-75.1 - Gravity Line & Pump Station, DB: 1357/483 & 488 1988-08895			Easement - Yes		$ 1.00
	PLANEBROOK DRAINAGE AREA (PB)	(PB 1) UPI: 42-3-153.3 - Gravity, FM & Pump Station, DB: 9950/1608 DB: 9830/1917			Easement - Yes		$ 1.00
		Frame Avenue - Gravity Line, FM & Pump Station , DB: P40/238			ROW - Yes		$ 1.00
	WESTGATE DRAINAGE AREA (WG)	(WG 1) UPI: 42-4-87.2 - Gravity, FM & Pump Station, MB: 983/353 1987-08872	(blank)	(blank)	Easement - Yes		$ 1.00
	WILBURDALE ROAD DRAINAGE AREA (WB)	(WB 2) UPI: 42-4-15.9 - Gravity, FM & Pump Station, MB: 634/200	(blank)	(blank)	Easement - Yes		$ 1.00
							$ 13.00

Note 1: Each easement is designated as either Yes or No.
"Yes" easement has been confirmed with an instrument recorded in the Office of the Recorder of Deeds in and for Chester County.
"No" easement will have to be acquired by the Township.

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
354.2	STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT						
		Sewer - Capactiy Rights	2017	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights outside of East Whiteland Township		$ 2,168,888.00
		VFSA Capacity Rights	2013	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights at Valley Forge Treatment Plant		$ 8,916,353.50
	TOTAL STRUCTURES AND IMPROVEMENTS - COLLECTION PLANT						**$ 11,085,241.50**
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING						
	(P.S. 1) Deer Run	(P.S. 1) Deer Run - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1976	Exhibit No. 3, Appendix D			$ 78,670.00
	(P.S. 1) Deer Run	(P.S. 1) Deer Run - Generator	2018	Steele Spreadsheet			$ 51,550.00
	(P.S. 11) Hillbrook Circle	(P.S. 11) Hillbrook Circle - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2000	Township Records			$ 464,526.14
	(P.S. 12) King Road	(P.S. 12) King Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2004	Exhibit No. 3, Appendix D			$ 233,129.00
	(P.S. 13) Malvern Hunt	(P.S. 13) Malvern Hunt - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2000	Escrow			$ 374,100.00
	(P.S. 14) Planebrook Road	(P.S. 14) Planebrook Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	2018	Escrow			$ 353,800.00
	(P.S. 14) Planebrook Road	(P.S. 14) Planebrook Road - Electrical	2018	Escrow			$ 79,730.00
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane - Reconstruction	2014	Exhibit No. 3, Appendix D, Township Records			$ 3,001,023.00
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane - Original Building (retained after reconstruction)	1976	Exhibit No. 3, Appendix D			$ 40,000.00
	(P.S. 3) Wilburdale	(P.S. 3) Wilburdale - Reconstruction, general	2017	Escrow			$ 469,600.00
	(P.S. 3) Wilburdale	(P.S. 3) Wilburdale - Reconstrcution, electrical	2017	Escrow			$ 95,500.00
	(P.S. 4) Lee Boulevard	(P.S. 4) Lee Boulevard - Reconstruction	2007	Township Records			$ 556,117.00
		(P.S. 4) Lee Boulevard - Pump Upgrades	2002	Estimate			$ 49,664.45
	(P.S. 5) Meadowview	(P.S. 5) Meadowview - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1980	Exhibit No. 3, Appendix D			$ 106,067.00
	(P.S. 6) Flat Road	(P.S. 6) Flat Road - Reconstruction	2019	Bid Tab & estimate for Township contribution			$ 352,000.00
	(P.S. 7) Lapp Road	(P.S. 7) Lapp Road - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1987	Exhibit No. 3, Appendix D			$ 179,265.00
	(P.S. 7) Lapp Road	(P.S. 7) Lapp Road - Upgrades: generator, pump control panel and transfer switch	2006	Estimate			$ 131,119.57

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
	(P.S. 8) Westgate	(P.S. 8) Westgate - Initial facility cost including pump station, building, generator, fencing, paving, etc.	1988	Exhibit No. 3, Appendix D, Township Records			$ 78,824.35
	(P.S. 8) Westgate	(P.S. 8) Westgate - Upgrades: generator, pump control panel and transfer switch	2001	Exhibit No. 3, Appendix D, Township Records			$ 89,972.00
		50KW MMD POWER PRO PORTABLE GENERATOR	2007	Township Records			$ 23,866.00
		SEWER JET (DIESEL) - TRAILER MOUNTED	2009	Township Records			$ 53,907.50
		Capacity Rights (Wilson Road Pump Station)	2014	East Whiteland Township Fixed Asset Detail Tie Out as of December 31, 2019	Capacity Rights within Wilson Road Pump Station system		$ 1,142,844.37
	TOTAL STRUCTURES AND IMPROVEMENTS - PUMPING						**$ 8,005,275.38**
360.21	COLLECTION SEWERS - FORCE - MAINS						
	(P.S. 1) Deer Run	(P.S. 1) Deer Run FM - 4" ACP	1976	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		830	$ 31,269.40
	(P.S. 11) Hillbrook Circle	(P.S. 11) Hillbrook Circle FM - 4" PVC	2000	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		785	$ 85,964.86
	(P.S. 12) King Road	(P.S. 12) King Road FM - 4" PVC	2004	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2,400	$ 286,021.50
	(P.S. 13) Malvern Hunt	(P.S. 13) Malvern Hunt FM - 6" DIP	2000	Escrow		2,860	$ 279,122.94
	(P.S. 14) Planebrook	(P.S. 14) Planebrook FM - 8" PVC	2017	Township provided		2,545	$ 443,454.75
	(P.S. 2) Mill Lane	(P.S. 2) Mill Lane FM - 14" DIP	1976	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,400	$ 193,322.11
	(P.S. 3) Wilburdale Rd	(P.S. 3) Wilburdale Rd FM - 10" PVC Replacement	2016	Estimate		1,935	$ 89,428.47
	(P.S. 4) Lee Blvd	(P.S. 4) Lee Blvd FM - 8" DIP	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,310	$ 276,127.99
	(P.S. 5) Meadow View	(P.S. 5) Meadow View FM - 4" ACP	1980	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,245	$ 63,237.44
	(P.S. 6) Flat Rd	(P.S. 6) Flat Rd FM - 6" ACP	1979	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,655	$ 77,969.12
	(P.S. 7) Lapp Rd	(P.S. 7) Lapp Rd FM - 6" PVC	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		3,715	$ 340,443.41
	(P.S. 8) Westgate	(P.S. 8) Westgate FM - 8" PVC	1988	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		1,620	$ 137,992.57
	TOTAL COLLECTION SEWERS - FORCE - MAINS					**26,300**	**$ 2,304,354.55**
361.21	COLLECTION SEWERS - GRAVITY - MAINS						
		18" ACP	1975	Quantities from GIS, unit pricing from estimate		1,842	$ 58,356.08
		12" ACP	1975	Quantities from GIS, unit pricing from estimate		2,830	$ 68,677.29
		12" ACP	1978	Quantities from GIS, unit pricing from estimate		2,027	$ 61,740.49
		10" ACP	1975	Quantities from GIS, unit pricing from estimate		4,486	$ 75,582.08
		10" ACP	1977	Quantities from GIS, unit pricing from estimate		2,296	$ 45,057.04
		10" ACP	2012	Quantities from GIS, unit pricing from estimate		109	$ 7,711.37

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		36" ACP	1967	Quantities from GIS, unit pricing from estimate		157	$ 3,625.87
		27" ACP	1967	Quantities from GIS, unit pricing from estimate		3,833	$ 67,279.78
		24" ACP	1967	Quantities from GIS, unit pricing from estimate		243	$ 3,557.15
		24" ACP	1975	Quantities from GIS, unit pricing from estimate		632	$ 19,081.73
		10" PVC	1991	Quantities from GIS, unit pricing from estimate		1,427	$ 52,555.09
		10" PVC	1992	Quantities from GIS, unit pricing from estimate		1,054	$ 40,012.42
		10" PVC	1993	Quantities from GIS, unit pricing from estimate		183	$ 7,273.99
		10" PVC	2007	Quantities from GIS, unit pricing from estimate		8,646	$ 524,646.93
		10" PVC	2019	Quantities from GIS, unit pricing from estimate		492	$ 42,281.39
		10" PVC	2020	Quantities from GIS, unit pricing from estimate		1,275	$ 111,336.08
		8" ACP	1951	Quantities from GIS, unit pricing from estimate		719	$ 2,995.29
		8" ACP	1954	Quantities from GIS, unit pricing from estimate		2,913	$ 14,038.43
		8" ACP	1967	Quantities from GIS, unit pricing from estimate		3,298	$ 27,177.06
		8" ACP	1970	Quantities from GIS, unit pricing from estimate		5,901	$ 62,533.31
		8" ACP	1971	Quantities from GIS, unit pricing from estimate		2,094	$ 25,402.60
		8" ACP	1972	Quantities from GIS, unit pricing from estimate		1,725	$ 23,205.13
		8" ACP	1973	Quantities from GIS, unit pricing from estimate		6,653	$ 96,745.87
		8" ACP	1974	Quantities from GIS, unit pricing from estimate		6,831	$ 105,874.72
		8" ACP	1975	Quantities from GIS, unit pricing from estimate		49,832	$ 845,813.84
		8" ACP	1977	Quantities from GIS, unit pricing from estimate		7,370	$ 145,673.10
		8" ACP	1978	Quantities from GIS, unit pricing from estimate		16,989	$ 361,879.62
		8" ACP	1979	Quantities from GIS, unit pricing from estimate		4,942	$ 113,876.97
		8" ACP	1981	Quantities from GIS, unit pricing from estimate		7,549	$ 204,755.08
		8" ACP	2012	Quantities from GIS, unit pricing from estimate		430	$ 30,744.03
		8" PVC	1970	Quantities from GIS, unit pricing from estimate		346	$ 3,668.20
		8" PVC	1983	Quantities from GIS, unit pricing from estimate		1,492	$ 46,541.18
		8" PVC	1984	Quantities from GIS, unit pricing from estimate		3,842	$ 122,229.73

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" PVC	1985	Quantities from GIS, unit pricing from estimate		794	$ 25,549.19
		8" PVC	1987	Quantities from GIS, unit pricing from estimate		13,171	$ 445,308.18
		8" PVC	1988	Quantities from GIS, unit pricing from estimate		16,918	$ 586,647.87
		8" PVC	1990	Quantities from GIS, unit pricing from estimate		8,876	$ 322,292.20
		8" PVC	1991	Quantities from GIS, unit pricing from estimate		3,676	$ 136,365.76
		8" PVC	1992	Quantities from GIS, unit pricing from estimate		1,919	$ 73,418.31
		8" PVC	1993	Quantities from GIS, unit pricing from estimate		2,966	$ 118,574.34
		8" PVC	1994	Quantities from GIS, unit pricing from estimate		1,176	$ 48,812.47
		8" PVC	1996	Quantities from GIS, unit pricing from estimate		409	$ 17,626.35
		8" PVC	1997	Quantities from GIS, unit pricing from estimate		4,377	$ 195,693.34
		8" PVC	1998	Quantities from GIS, unit pricing from estimate		3,549	$ 161,226.12
		8" PVC	1999	Quantities from GIS, unit pricing from estimate		4,126	$ 191,811.88
		8" PVC	2000	Quantities from GIS, unit pricing from estimate		17,626	$ 841,402.41
		8" PVC	2001	Quantities from GIS, unit pricing from estimate		697	$ 33,916.65
		8" PVC	2002	Quantities from GIS, unit pricing from estimate		11,437	$ 573,796.70
		8" PVC	2003	Quantities from GIS, unit pricing from estimate		2,539	$ 130,439.13
		8" PVC	2004	Quantities from GIS, unit pricing from estimate		2,760	$ 150,691.88
		8" PVC	2005	Quantities from GIS, unit pricing from estimate		18,989	$ 1,084,944.19
		8" PVC	2006	Quantities from GIS, unit pricing from estimate		423	$ 25,135.71
		8" PVC	2007	Quantities from GIS, unit pricing from estimate		784	$ 47,935.30
		8" PVC	2011	Quantities from GIS, unit pricing from estimate		1,899	$ 132,177.28
		8" PVC	2012	Quantities from GIS, unit pricing from estimate		2,913	$ 208,075.48
		8" PVC	2013	Quantities from GIS, unit pricing from estimate		380	$ 27,836.86
		8" PVC	2014	Quantities from GIS, unit pricing from estimate		111	$ 8,385.04
		8" PVC	2017	Quantities from GIS, unit pricing from estimate		3,251	$ 267,817.00
		8" PVC	2018	Quantities from GIS, unit pricing from estimate		1,398	$ 118,706.70
		8" DIP	1954	Quantities from GIS, unit pricing from estimate		862	$ 4,154.49

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		8" DIP	1975	Quantities from GIS, unit pricing from estimate		274	$ 4,654.72
		8" CIP	1975	Quantities from GIS, unit pricing from estimate		123	$ 2,079.98
		20" ACP	1975	Quantities from GIS, unit pricing from estimate		4,544	$ 129,196.92
		16" ACP	1975	Quantities from GIS, unit pricing from estimate		349	$ 9,050.37
		12" PVC	1970	Quantities from GIS, unit pricing from estimate		1,503	$ 22,773.69
		12" PVC	2012	Quantities from GIS, unit pricing from estimate		81	$ 8,301.62
		12" PVC	2016	Quantities from GIS, unit pricing from estimate		1,348	$ 152,918.81
		15" PVC	2013	Quantities from GIS, unit pricing from estimate		916	$ 81,957.99
		15" PVC	2017	Quantities from GIS, unit pricing from estimate		2,253	$ 226,562.48
		18" PVC	1988	Quantities from GIS, unit pricing from estimate		1,496	$ 96,804.77
		18" PVC	2013	Quantities from GIS, unit pricing from estimate		2,835	$ 387,731.42
		18" PVC	2014	Quantities from GIS, unit pricing from estimate		139	$ 19,571.48
		18" PVC	2017	Quantities from GIS, unit pricing from estimate		621	$ 95,579.17
		10" DI	2020	Quantities from GIS, unit pricing from estimate		93	$ 8,118.65
		8" CSP	1978	Quantities from GIS, unit pricing from estimate		1,049	$ 22,339.74
		8" CSP	1983	Quantities from GIS, unit pricing from estimate		2,490	$ 77,680.40
		20" PVC	2014	Quantities from GIS, unit pricing from estimate		98	$ 12,406.81
		21" PVC	2014	Quantities from GIS, unit pricing from estimate		74	$ 9,339.15
	TOTAL COLLECTION SEWERS - GRAVITY - MAINS					**302,772**	**$ 10,767,737.96**
361.23	COLLECTION SEWERS - GRAVITY - MANHOLES						
		Manholes	1951	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		6	$ 2,077.71
		Manholes	1954	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		22	$ 8,810.81
		Manholes	1967	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		35	$ 23,972.08
		Manholes	1970	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		28	$ 24,659.55
		Manholes	1971	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		9	$ 9,074.19
		Manholes	1972	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 5,589.66

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Manholes	1973	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		40	$ 48,339.55
		Manholes	1974	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 38,646.13
		Manholes	1975	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		297	$ 418,962.34
		Manholes	1977	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		50	$ 82,138.97
		Manholes	1978	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		83	$ 146,936.93
		Manholes	1979	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		24	$ 45,962.11
		Manholes	1980	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 4,128.63
		Manholes	1981	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 81,156.88
		Manholes	1983	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		17	$ 44,080.82
		Manholes	1984	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		24	$ 63,456.18
		Manholes	1985	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 13,376.28
		Manholes	1987	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		67	$ 188,257.68
		Manholes	1988	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		89	$ 256,487.24
		Manholes	1990	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		40	$ 120,708.58
		Manholes	1991	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 92,502.00
		Manholes	1992	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		16	$ 50,864.94
		Manholes	1993	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		19	$ 63,128.39
		Manholes	1994	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		7	$ 24,141.72
		Manholes	1996	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 7,168.03
		Manholes	1997	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		23	$ 85,453.87
		Manholes	1998	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		30	$ 113,259.95
		Manholes	1999	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		20	$ 77,279.51
		Manholes	2000	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		111	$ 440,368.85
		Manholes	2001	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 16,180.36
		Manholes	2002	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		61	$ 254,336.19
		Manholes	2003	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		13	$ 55,496.10
		Manholes	2004	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		15	$ 68,061.20

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		Manholes	2005	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		98	$ 465,353.00
		Manholes	2006	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 19,772.02
		Manholes	2007	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 182,884.21
		Manholes	2011	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		9	$ 52,057.49
		Manholes	2012	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		17	$ 100,911.05
		Manholes	2013	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		14	$ 85,237.04
		Manholes	2014	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		4	$ 25,014.12
		Manholes	2016	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		5	$ 32,964.00
		Manholes	2017	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		36	$ 246,501.10
		Manholes	2018	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		11	$ 77,599.65
		Manholes	2019	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 14,388.35
		Manholes	2020	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		8	$ 58,497.23
		Manholes	2021	Quantities from GIS, unit pricing from Exhibit No. 4, Appendix D		2	$ 14,624.31
	TOTAL COLLECTION SEWERS - GRAVITY - MANHOLES					**1,506**	**$ 4,350,867.01**
363.20	SERVICES TO CUSTOMERS						
		4" PVC	1982	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		3,190	$ 102,469.43
		4" PVC	1985	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,485	$ 52,315.53
		4" PVC	1986	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,320	$ 47,611.22
		4" PVC	1987	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		996	$ 36,853.27
		4" PVC	1988	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,952	$ 112,029.11
		4" PVC	1989	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		5,578	$ 216,183.43
		4" PVC	1993	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,629	$ 71,273.98
		4" PVC	1995	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		628	$ 28,853.50
		4" PVC	1996	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		227	$ 10,713.57
		4" PVC	1997	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		936	$ 45,795.05
		4" PVC	1998	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,142	$ 106,491.11
		4" PVC	1999	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		1,592	$ 81,005.82

ACCOUNT	LOCATION	ASSET	YEAR	SOURCE	COMMENTS	QUANTITY	ORIGINAL COST
		4" PVC	2000	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		622	$ 32,495.47
		4" PVC	2001	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,397	$ 340,755.79
		4" PVC	2002	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,486	$ 136,495.47
		4" PVC	2003	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		464	$ 26,084.10
		4" PVC	2004	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,820	$ 407,503.61
		4" PVC	2012	Number of customers since 2004. Average year and estimated length of laterals used. Estimated Unit Price used.		54,800	$ 4,283,602.02
		4" ACP	1970	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		6,016	$ 69,770.80
		4" ACP	1976	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		13,260	$ 267,367.04
		4" ACP	1978	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,749	$ 64,086.47
		4" ACP	1980	Quantities from Exhibit No. 5, Appendix D, unit pricing from estimate		2,951	$ 80,220.26
	TOTAL SERVICES TO CUSTOMERS					**119,240**	**$ 6,619,976.03**
365.20	FLOW MEASURING INSTALLATIONS						
	Woodview Apt., Matthew Road, and Erin Glen	Meter Pits	1976	Exhibit No. 3, Appendix D			$ 78,670.00
	TOTAL FLOW MEASURING INSTALLATIONS						**$ 78,670.00**
390.70	COMPUTER AND SOFTWARE						
		PIPE TECH SOFTWARE AND DURABOOK LAPTOP	2008	Township Records			$ 21,550.00
	TOTAL COMPUTER AND SOFTWARE						**$ 21,550.00**
391.70	TRANSPORTATION EQUIPMENT						
		2001 FORD E350 TRUCK	2001	Township Records			$ 39,952.00
		2003 GMC PICKUP TRUCK	2003	Township Records			$ 25,808.00
		2018 Carmate 20' Custom Cargo Trailer	2018	Township Records			$ 7,264.50
		2010 FORD F550 TRUCK	2010	Township Records			$ 62,722.85
		2011 GMC PICKUP TRUCK	2011	Township Records			$ 23,738.01
		2011 GMC PICKUP TRUCK	2011	Township Records			$ 20,470.45
		2019 Ford F-150 Unit	2019	Township Records			$ 33,000.00
	TOTAL TRANSPORTATION EQUIPMENT						**$ 212,955.81**
	SYSTEM TOTAL						**$ 43,447,309.24**

APPENDICES

APPENDIX A

SYSTEM MAPS

- **A1 – East Whiteland Township Sanitary Sewer Collection System**

Sanitary Sewer Collection System
East Whiteland Township
Chester County, PA

Pump Stations

1. Deer Run
2. Mill Ln
3. Wilburdale Rd
4. Lee Blvd
5. Meadow View
6. Flat Rd
7. Lapp Rd
8. Westgate
9. Planebrook Road
10. Hillbrook Circle
11. King Rd
12. Malvern Hunt

Meters

I. Old Lincoln Hwy
II. Warren Ave
III. Lee Blvd
IV. Church Rd
V. Matthews Rd
VI. Unisys
VII. Northridge/Miner Hill
VIII. Erin Glen
IX. Woodview Apt
X. Charlestown Oaks
XI. Charlestown Meadows

LEGEND

- Parcel Boundaries
- Subdivisions
- Municipal Boundaries
- Lakes & Ponds
- Streams
- Manholes
- Meters
- Pump Stations
- FMs
- Private Gravity Sewer

Gravity Sewer Pipe

SIZE

- 8" Gravity Sewer
- 10" Gravity Sewer
- 12" Gravity Sewer
- 15" Gravity Sewer
- 16" Gravity Sewer
- 18" Gravity Sewer
- 20" Gravity Sewer
- 21" Gravity Sewer
- 24" Gravity Sewer
- 27" Gravity Sewer
- 36" Gravity Sewer

N W E S

0 600 1,200
Feet

1 inch = 600 feet

Revision Date: 3/18/2021

MAP NOTES:

Mapping information was derived from various planning documents including Schoor DePalma's Sanitary Sewer Meter Location Plan, Kohli & Associates Township plan, Roy F. Weston's Master Sanitary Sewer System Plan, Chester County Recorder of Deeds Plans, and township as-built plans received by ARRO. The mapping is incomplete and will be improved as as-built and other plan information is updated into the GIS. This GIS database will provide a framework for modeling the collection system to analyze capacity issues and make recommended improvements to mitigate capacity deficiencies.

Data Sources: East Whiteland Township, Schoor DePalma, Kohli & Associates, Roy F. Weston, Chester County Recorder of Deeds and ARRO.

Charlestown Elementary School

Devault Foods

Charles Meadsows PS

XI. Charlestown Meadows Meter

Charlestown Meadows

Charlestown Oaks

X. Charlestown Oaks Meter

Willinghouse Preserve

Hillbrook Rd PS

Malvern Hunt PS

Pond 1

Pond 2

Planebrook PS

Mill Lane PS

Meadow View PS

Deer Run PS

Westgate PS

Kings Rd PS

Lee Boulevard PS

III. Lee Blvd Meter

Wilburdale Rd PS

Flat Rd PS

Lapp Road PS

IV. Church Rd Meter
(Tredyffrin Township eliminated meter on 8-3-13 due to additional gravity sewer extension.)

VI. Unisys Meter

V. Matthews Rd Meter

VII. Northridge/Miner Hill Meter

IX. Woodview Apt Meter

VIII. Erin Glen Meter

II. Warren Ave Meter

I. Old Lincoln Hwy Meter

Immaculata University

U:\Accounts\EWTP\EWTP\X17000 - Sale of System\PROJ RESOURCES\Assessment Report\DOCUMENTS\Asset List_GIS\EWTPX17000 - Service Area Map.mxd

APPENDIX B

- **Uniform System of Accounts - Section 300**
- **PA ACT 12 of 2016**

WASTEWATER UTILITY PLANT ACCOUNTS

	.1	.2
	Intangible Plant	Collection Plant
351. Organization	351.1	XXXXXXXXXX
352. Franchises	352.1	XXXXXXXXXX
353. Land and Land Rights	XXXXXXXXXX	353.2
354. Structures and Improvements	XXXXXXXXXX	354.2
355. Power Generation Equipment	XXXXXXXXXX	355.2
360. Collection Sewers - Force	XXXXXXXXXX	360.2
361. Collection Sewers - Gravity	XXXXXXXXXX	361.2
362. Special Collecting Structures	XXXXXXXXXX	362.2
363. Services to Customers	XXXXXXXXXX	363.2
364. Flow Measuring Devices	XXXXXXXXXX	364.2
365. Flow Measuring Installations	XXXXXXXXXX	365.2
366. Reuse Services	XXXXXXXXXX	XXXXXXXXXX
367. Reuse Meters and Meter Installations	XXXXXXXXXX	XXXXXXXXXX
370. Receiving Wells	XXXXXXXXXX	XXXXXXXXXX
371. Pumping Equipment	XXXXXXXXXX	XXXXXXXXXX
374. Reuse Distribution Reservoirs	XXXXXXXXXX	XXXXXXXXXX
375. Reuse Transmission and Distribution System	XXXXXXXXXX	XXXXXXXXXX
380. Treatment and Disposal Equipment	XXXXXXXXXX	XXXXXXXXXX
381. Plant Sewers	XXXXXXXXXX	XXXXXXXXXX
382. Outfall Sewer Lines	XXXXXXXXXX	XXXXXXXXXX
389. Other Plant and Misc. Equipment	389.1	389.2
390. Office Furniture and Equipment	XXXXXXXXXX	XXXXXXXXXX
391. Transportation Equipment	XXXXXXXXXX	XXXXXXXXXX
392. Stores Equipment	XXXXXXXXXX	XXXXXXXXXX
393. Tools, Shop and Garage Equipment	XXXXXXXXXX	XXXXXXXXXX
394. Laboratory Equipment	XXXXXXXXXX	XXXXXXXXXX
395. Power Operated Equipment	XXXXXXXXXX	XXXXXXXXXX
396. Communication Equipment	XXXXXXXXXX	XXXXXXXXXX
397. Miscellaneous Equipment	XXXXXXXXXX	XXXXXXXXXX
398. Other Tangible Plant	XXXXXXXXXX	XXXXXXXXXX

WASTEWATER UTILITY PLANT ACCOUNTS

.3	.4	.5	.6	.7
System Pumping Plant	Treatment and Disposal Plant	Reclaimed Water Treatment Plant	Reclaimed Water Distribution Plant	General Plant
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	352.6	XXXXXXXXXX
353.3	353.4	353.5	353.6	353.7
354.3	354.4	354.5	354.6	354.7
355.3	355.4	355.5	355.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	366.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	367.6	XXXXXXXXXX
370.3	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
371.3	XXXXXXXXXX	371.5	371.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	374.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	375.6	XXXXXXXXXX
XXXXXXXXXX	380.4	380.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	381.4	381.5	XXXXXXXXXX	XXXXXXXXXX
XXXXXXXXXX	382.4	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
389.3	389.4	389.5	389.6	XXXXXXXXXX
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	390.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	391.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	392.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	393.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	394.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	395.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	396.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	397.7
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	398.7

WASTEWATER UTILITY PLANT ACCOUNTS

The wastewater utility plant accounts have been designed utilizing an account matrix. The matrix employs a list of object accounts which in effect act as control accounts. The object accounts are further segregated by the matrix into classifications by functions or subaccount. The instructions for segregating the object accounts to the function subaccount are contained in Accounting Instruction 32. Listed below are the object account descriptions.

351. Organization

This account shall include all fees paid to federal or state governments for the privilege of incorporation and expenditures incident to organizing the corporation, partnership or other enterprise and putting it into readiness to do business. A sample of items to be included in this account are listed below.

1. Actual cost of obtaining certificates authorizing an enterprise to engage in the public utility business.
2. Fees and expenses for incorporation.
3. Fees and expenses for mergers or consolidations.
4. Office expenses incident to organizing the utility.
5. Stock and minute books and corporate seal.

Note A:--This account shall not include any discounts upon securities issued or assumed; nor shall it include any costs incident to negotiating loans, selling bonds or other evidences of debt, or expenses in connection with the authorization, issuance and sale of capital stock.

Note B:--Exclude from this account and include in the appropriate expense account the cost of preparing and filing papers in connection with the extension of the term of incorporation unless the first organization costs have been written off. Where charges are made to this account for expenses incurred in mergers, consolidations or reorganizations, amounts previously included herein or in similar accounts in the books of the companies concerned shall be excluded from this account.

352. Franchises

A. This account shall include amounts paid to the federal government, to a state or to a political subdivision thereof in consideration for franchises, consents or certificates, running in perpetuity or for a specified term of more than one year, together with necessary and reasonable expenses incident to procuring such franchises, consents or certificates of permission and approval, including expenses of organizing and merging separate corporations, where statutes require solely for the purpose of acquiring franchise.

B. If a franchise or certificate is acquired by assignment, the charge to this account in respect thereof shall not exceed the amount paid therefor by the utility to the assignor, nor shall it exceed the amount paid by the original grantee, plus the expense of acquisition to such grantee. Any excess of the amount actually paid by the utility over the amount specified shall be charged to account 426 - Miscellaneous Nonutility Expenses.

C. When any franchise has expired, the book cost thereof shall be credited hereto and charged to account 426 - Miscellaneous Nonutility Expenses, or to account 110.1 - Accumulated Amortization of Utility Plant in Service, as appropriate.

D. Records supporting this account shall be kept so as to show separately the book cost of each franchise.

Note:--Annual or other periodic payments under franchises shall not be included herein but in the appropriate expense account.

353. Land and Land Rights

This account shall include the cost of land and land rights used in connection with wastewater collection, pumping, treatment and disposal, reclaimed water treatment and distribution and general plant operations (See Accounting Instruction 24). A sample of items to be included in this account are listed below:

1. Bulkheads buried, not requiring maintenance or replacement.
2. Cost, first, of acquisition including mortgages and other liens assumed (but not subsequent interest thereon).
3. Condemnation proceedings, including court and counsel costs.
4. Consents and abutting damages, payment for.
5. Conveyancers' and notaries' fees.
6. Fees, commissions, and salaries to brokers, agents, and others in connection with the acquisition of the land or land rights.
7. Leases, cost of voiding upon purchase to secure possession of land.
8. Removing, relocating, or reconstructing property of others, such as buildings, highways, railroads, bridges, cemeteries, churches, telephone and power lines, etc., in order to acquire quiet possession.
9. Retaining walls unless identified with structures.
10. Special assessments levied by public authorities for public improvements on the basis of benefits for new

roads, new bridges, new sewers, new curbing, new pavements, and other public improvements, but not taxes levied to provide for the maintenance of such improvements.

11. Surveys in connection with the acquisition, but not amounts paid for topographical surveys and maps where such costs are attributable to structures or plant equipment erected or to be erected or installed on such land.
12. Taxes assumed, accrued to date of transfer of title.
13. Title, examining, clearing, insuring and registering in connection with the acquisition and defending against claims relating to the period prior to the acquisition.
14. Appraisals prior to closing title.
15. Cost of dealing with distributees or legatees residing outside of the state or county, such as recording power of attorney, recording will or exemplification of will, recording satisfaction of state tax.
16. Filing satisfaction of mortgage.
17. Documentary stamps.
18. Photographs of property at acquisition.
19. Fees and expenses incurred in the acquisition of sewer rights, and grants.
20. Cost of fill to extend bulkhead line over land under water, where riparian rights are held, which is not occasioned by the erection of a structure.
21. Sidewalks and curbs constructed by the utility on public property.
22. Labor and expenses in connection with securing rights of way, where performed by company employees and company agents.

354. Structures and Improvements

This account shall include the cost in place of structures and improvements used in connection with wastewater collection, pumping, treatment and disposal, reclaimed water treatment and distribution and general plant operations (See Accounting Instruction 25). A sample of items to be included in this account are listed below:

1. Architects' plans and specifications including supervision.
2. Boilers, furnaces, piping, wiring, fixtures, and machinery for heating, lighting, signaling, ventilating and air conditioning systems, plumbing, vacuum cleaning systems, incinerator and smoke pipe, flues, etc.

3. Bulkheads, including dredging, riprap fill, piling, decking, concrete fenders, etc., when exposed and subject to maintenance and replacement.
4. Commissions and fees to brokers, agents, architects and others.
5. Conduit (not to be removed) with its contents.
6. Damages to abutting property during construction.
7. Drainage systems.
8. Elevators, cranes, hoists, etc., and the machinery for operating them.
9. Excavation, including shoring, bracing, bridging, refill and disposal of excess excavated material, cofferdams around foundations, pumping water from cofferdam during construction, test borings.
10. Fences and fence curbs (not including protective fences isolating items of equipment, which should be charged to the appropriate equipment account).
11. Fire protection systems when forming a part of a structure.
12. Flagpole.
13. Floor covering (permanently attached).
14. Foundations and piers for machinery, constructed as a permanent part of a building or other item listed herein.
15. Grading and clearing when directly occasioned by the building of a structure.
16. Intrasite communication system, poles, pole fixtures, wires and cables.
17. Landscaping, lawns, shrubbery, etc.
18. Leases, voiding upon purchase, to secure possession of structures.
19. Leased property, expenditures on.
20. Lighting fixtures and outside lighting systems.
21. Marquee, permanently attached to building.
22. Painting, first cost.
23. Permanent paving, concrete, brick, flagstone, asphalt, etc., within the property lines.
24. Partitions, including movable.
25. Permits and privileges.
26. Power boards for services to a building.
27. Refrigerating systems for general use.
28. Retaining walls except when identified with land.
29. Roadways.
30. Roofs.
31. Scales, connected to and forming a part of a structure.
32. Water and wastewater systems, for general use.
33. Sidewalks, culverts, curbs and streets constructed by the utility on its property.

34. Sprinkling systems.
35. Stacks -- brick, steel, or concrete, when set on foundation forming part of general foundation and steelwork of a building.
36. Steel inspection during construction.
37. Storage facilities constituting a part of a building.
38. Storm doors and windows.
39. Temporary heating during construction (net cost).
40. Temporary water connection during construction (net cost).
41. Temporary shanties and other facilities used during construction (net cost).
42. Topographical maps.
43. Vaults constructed as part of a building.
44. Watchmen's sheds and clock systems (net cost when used during construction only).
45. Water meters and supply system for a building or for general company purposes.
46. Water supply piping, hydrants and wells.
47. Yard surfacing, gravel, concrete, or oil (First cost only).
48. Tunnels, intake and discharge when constructed as part of a structure including sluice gates and those constructed to house.

355. Power Generation Equipment

A. This account shall include the cost installed of any equipment used for the production of power principally used in pumping operations.

B. Subaccounts shall be maintained hereunder for the cost of equipment used for each type of power generating equipment.

360. Collecting Sewers - Force

This account shall include all sewers which are used to lift sewage from a low elevation to a higher elevation. The force sewer will include that pipe between the discharge outlet of the lift station and the receiving manhole.

361. Collecting Sewers - Gravity

This account shall include the installed cost of all gravity collecting sewers, interceptor, branch, trunk, lateral including service wye, and manholes and lampholes. Manholes shall be included as a separate unit of property.

362. Special Collecting Structures

Inverted siphon shall be included in this account but so

distinctly noted; also any other special designed structures unusual to the wastewater system should be included herein but specifically noted as to what they do.

363. Services to Customers

This account shall include the installed cost of service sewers, from collection sewer to the customer's property or curb line. A sample of items to be included in this account are listed below:

1. Jointing and jointing material.
2. Manhole or clean-out.
3. Municipal inspection and permits
4. Pavement disturbed.
5. Protection of street openings.
6. Tapping saddle.
7. Service connection wye shall be included in account 363 instead of account 361 when company owns service sewers to customers property line.

364. Flow Measuring Devices

A. This account shall include the cost of flow measuring and recording equipment and initial testing used for measuring the quantity of wastewater or wastewater effluent delivered by customers, whether actually in service or held in reserve.

B. When flow measuring equipment is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering flow measuring equipment shall be so kept that the utility can furnish information as to the number of devices of each type and size in service and in reserve, as well as the location of each device included in this account.

365. Flow Measuring Installations

A. This account shall include the cost of labor employed, materials used and expenses incurred in connection with the original installation of customers' flow measuring equipment. A sample of items to be included in this account are listed below:

1. Floats, connections, flumes, or wires.
2. Special manhole, boxes, or other separate housing.

B. When a flow measuring installation is permanently retired from service, the cost thereof shall be credited to this account.

366. Reuse Services

A. This account shall include the cost installed of reclaimed water service pipes and accessories leading to the customers' premises.

B. A complete reclaimed water service begins with the connection on the main and extends to but does not include the connection with the customer's meter. A stub service extends from the main to the property line, or the curb stop (curb stop cock).

C. Services which have been used but have become inactive shall be retired from utility plant in service immediately if there is no prospect for future use.

Items

1. Corporation stops or tees.
2. Gate valves and boxes.
3. Goose necks.
4. Jointing and jointing material.
5. Municipal inspection or permits.
6. Pavements disturbed.
7. Pipes.
8. Placing pipes and accessories.
9. Protection of street openings.
10. Service or curb boxes.
11. Service or curb stops (curb stop cocks).
12. Tapping main.
13. Tapping saddle.

367. Reuse Meters and Meter Installations

A. This account shall include the cost of meters, devices and appurtenances attached thereto, used for measuring the quantity of reclaimed water delivered to users, whether actually in service or held in reserve. It shall also include the cost of labor employed, materials used and expenses incurred in connection with the original installation of a customer's meters and devices and appurtenances attached thereto.

B. When a meter and/or meter installation is permanently retired from service, the amount at which it is included herein shall be credited to this account.

C. The records covering meters shall be so kept that the utility can furnish information as to the number of meters of each type and size in service and in reserve as well as the location of each meter included in this account.

D. A sample of items to be included in this account are listed

below:

1. Meters, including badging and initial testing.
2. Remote meter registers.
3. Installation labor (first installation only).
4. Meter coupling.
5. Meter bars.
6. Meter yokes.
7. Meter fittings, connections and shelves.
8. Meter vaults or boxes.
9. Stops.

Note A:--This account shall not include meters for recording the output of a supply or treatment plant, or those located on mains. It includes only those meters to record reclaimed water delivered to customers, including company use and for those used elsewhere in the system if a type available for general use.

Note B:--The utility shall maintain a statistical record to show separately the number of each type and size of meter or group of types and sizes as carried in the continuing property record. Underlying records shall be kept so that the utility can determine readily for each such classification the number of company-owned meters in service (subdivided between active and inactive) and the number of meters carried herein but not in service, the latter to include meters undergoing repairs; and the number of meters in service owned by customers.

370. Receiving Wells

This account shall include the cost of constructing wells at pumping stations or at other junction points along the collecting system, used for intercepting wastewater for clearing and screening, transfer to a pumping well or otherwise further convey it along the collecting system to the treatment plant or point of final
discharge. This account shall include any chemical feed apparatus and holding basins associated with the receiving well.

371. Pumping Equipment

This account shall include the cost installed of pumping equipment driven by electric power or diesel engines. A sample of items to be included in this account are listed below:

1. Motors or engines for driving pumps.
2. Pumps, including settings, gearing, shafting and belting.
3. Sewage piping within station, including valves.
4. Auxiliary equipment for motors and pumps such as oiling systems, cooling systems, condensers, etc.

5. Electrical power lines and switching.
6. Foundations, frames, and bed plates.
7. Hoist units.

374. Reuse Distribution Reservoirs

This account shall include the cost in place of reservoirs, tanks and appurtenances used in storing reclaimed water for distribution. A sample of items to be included in this account are listed below:

1. Bridges and culverts.
2. Clearing land.
3. Dams.
4. Embankments.
5. Fences.
6. Foundations.
7. Gates and gate houses.
8. Landscaping.
9. Lighting systems.
10. Piping system within reservoirs.
11. Retaining walls.
12. Roads and paths.
13. Rust-proofing apparatus.
14. Sewer drain or storm sewer.
15. Spillways and channels.
16. Standpipes.
17. Tanks.
18. Towers.
19. Valves.

375. Reuse Transmission and Distribution System

A. This account shall include the cost installed of reclaimed water transmission and distribution mains and appurtenances. A sample of items to be included in this account are listed below:

1. Air chambers.
2. Blow-offs and overflows.
3. Bridges and culverts.
4. Electrolysis control equipment.
5. Gauges and recorders.
6. Jointing and jointing material.
7. Manholes.
8. Meters and appurtenances.
9. Municipal inspection or permits.
10. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
11. Pipes.
12. Fire mains.
13. Fire Hydrants.

B. Records supporting this account shall be so kept as to show separately the cost of mains of different sizes and types and of each tunnel, bridge, or river crossing.

380. Treatment and Disposal Equipment

This account shall include the cost installed of apparatus equipment and other facilities used for the treatment of wastewater, disposal of sewage wastes and the treatment of effluent for reuse. A sample of items to be included in this account are listed below:

1. Aeration chambers.
2. Chemical equipment.
3. Disinfection facilities.
4. Filters.
5. Imhoff tank.
6. Land fill equipment and appurtenances.
7. Monitoring equipment.
8. Oxidation pond or lagoon.
9. Sedimentation equipment.
10. Septic tank.
11. Screen unit.
12. Sludge system.
13. Trucks, tractors, or other equipment used primarily for sludge or other waste disposal.
14. Package mechanical treatment plant.
15. Sedimentation basin.
16. Sludge digestion equipment.
17. Sludge filtration or dewatering equipment.

381. Plant Sewers

This account shall include the cost installed of plant yard piping and appurtenances, and facilities required to dispose of treatment plant liquid effluent into the outfall sewer line. A sample of items to be included in this account are listed below:

1. Unit to unit sections of yard piping.
2. Valves and vaults.
3. Pipe tunnels and galleries.
4. Filter and filter backwash piping.

382. Outfall Sewer Lines

This account shall include the installed cost of sewer line carrying effluent from treatment facility to point of discharge. Includible in this account would be headwall or outlet.

389. Other Plant and Miscellaneous Equipment

This account shall include the cost installed of all other intangible, collection system pumping, treatment and disposal, reclaimed water treatment and reclaimed water distribution plant not provided for in the foregoing accounts.

390. Office Furniture and Equipment

A. This account shall include the cost of office furniture and equipment owned by the utility and devoted to utility service, and not permanently attached to buildings, except the cost of such furniture and equipment which the utility elects to assign to other plant accounts on a functional basis. A sample of items to be included in this account are listed below:

1. Book cases and shelves.
2. Desk, chairs, and desk equipment.
3. Drafting room equipment.
4. Electronic data processing equipment.
5. Filing, storage and other cabinets.
6. Floor covering.
7. Library and library equipment.
8. Mechanical office equipment such as accounting machines, typewriters, etc.
9. Safes.
10. Tables.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

391. Transportation Equipment

This account shall include the cost of transportation vehicles used for utility purposes. A sample of items to be included in this account are listed below:

1. Airplanes.
2. Automobiles.
3. Bicycles.
4. Electrical vehicles.
5. Motor trucks.
6. Motorcycles.
7. Repair cars or trucks.
8. Tractors and trailers.
9. Other transportation vehicles.

392. Stores Equipment

A. This account shall include the cost of equipment used for the receiving, shipping, handling and storage of materials and supplies.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location. A sample of items to be included in this account are listed below:

1. Chain falls.
2. Counters.
3. Cranes (portable).
4. Elevating and stacking equipment (portable).
5. Hoists.
6. Lockers.
7. Scales.
8. Shelving.
9. Storage bins.
10. Trucks, hand and power driven.
11. Wheelbarrows.

393. Tools, Shop and Garage Equipment

This account shall include the cost of tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or includible in other accounts. A sample of items to be included in this account are listed below:

1. Air compressors.
2. Anvils.
3. Automobile repair shop equipment.
4. Battery charging equipment.
5. Belts, shafts and countershafts.
6. Boilers.
7. Cable pulling equipment.
8. Concrete mixers.
9. Drill presses.
10. Derricks.
11. Electric equipment.
12. Engines.
13. Forges.
14. Furnaces.
15. Foundations and settings specially constructed for and not expected to outlast the equipment for which provided.
16. Gas producers.
17. Gasoline pumps, oil pumps and storage tanks.
18. Greasing tools and equipment.

19. Hoists.
20. Ladders.
21. Lathes.
22. Machine tools.
23. Motor driven tools.
24. Motors.
25. Pipe threading and cutting tools.
26. Pneumatic tools.
27. Pumps.
28. Riveters.
29. Smithing equipment.
30. Tool racks.
31. Vises.
32. Welding apparatus.
33. Work benches.

394. Laboratory Equipment

A. This account shall include the cost installed of laboratory equipment used for general laboratory purposes and not specifically provided for or includible in other departmental or functional plant accounts. A sample of items to be included in this account are listed below:

1. Autoclaves.
2. Barometers.
3. Cameras.
4. Centrifuge.
5. Distilling apparatus.
6. Furnaces.
7. Microscopes.
8. Ovens.
9. Pitometers.
10. Rain gauges.
11. Refrigerators.
12. Scales.
13. Sterilizers.
14. Stop watches.
15. Testing machines.
16. Therometers.
17. Voltmeters.
18. Other bacteriological, electric, chemical hydraulic or research equipment.

B. If the utility has equipment includible in this account at more than one location, separate records shall be maintained for each location.

395. Power Operated Equipment

This account shall include the cost of power operated equipment used in construction of repair work exclusive of equipment includible in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted. A sample of items to be included in this account are listed below:

1. Air compressors, including driving unit and vehicle.
2. Back filling machines.
3. Boring machines.
4. Bulldozers.
5. Cranes and joists.
6. Diggers.
7. Engines.
8. Pile drivers.
9. Pipe cleaning machines.
10. Pipe coating or wrapping machines.
11. Tractors - Crawler type.
12. Trenchers.
13. Other power operated equipment.

Note:--It is intended that this account include only such large units as are generally self-propelled or mounted on moveable equipment.

396. Communication Equipment

This account shall include the cost installed of telephone, telegraph and wireless equipment for general use in connection with utility operations. A sample of items to be included in this account are listed below:

1. Antennae.
2. Booths.
3. Cables.
4. Distribution boards.
5. Extension cords.
6. Gongs.
7. Handsets, manual and dial.
8. Insulators.
9. Intercommunicating sets.
10. Loading coils.
11. Operators desks.
12. Poles and fixtures used wholly for telephone and telegraph wires.
13. Radio transmitting and receiving sets.
14. Remote control equipment and lines.
15. Sending keys.
16. Storage batteries.

17. Switchboards.
18. Teleautograph circuit connections.
19. Telegraph receiving sets.
20. Telephone and telegraph circuits.
21. Testing instruments.
22. Towers.
23. Underground conduit used wholly for telephone or telegraph wires and cable wires.

397. Miscellaneous Equipment

This account shall include the cost of equipment, apparatus, etc., used in utility operations, and which is not includible in any other account. A sample of items to be included in this account are listed below:

1. Hospital and infirmary equipment.
2. Kitchen equipment.
3. Recreation equipment.
4. Radios.
5. Restaurant equipment.
6. Soda fountains.
7. Operator's cottage furnishings.
8. Electric signs advertising the corporate name or symbol, plant or facility name, or otherwise serving only the general purpose of acquainting the public with the facilities and services of the utility.
9. Other miscellaneous equipment.

Note:--Miscellaneous equipment of the nature indicated above wherever practicable shall be included in the utility plant accounts on a functional basis.

398. Other Tangible Plant

This account shall include the cost of tangible utility plant not provided for elsewhere.

§ 1329. Valuation of acquired water and wastewater systems.

(a) Process to establish fair market value of selling utility.--Upon agreement by both the acquiring public utility or entity and the selling utility, the following procedure shall be used to determine the fair market value of the selling utility:

(1) The commission will maintain a list of utility valuation experts from which the acquiring public utility or entity and selling utility will choose.

(2) Two utility valuation experts shall perform two separate appraisals of the selling utility for the purpose of establishing its fair market value.

(3) Each utility valuation expert shall determine fair market value in compliance with the Uniform Standards of Professional Appraisal Practice, employing the cost, market and income approaches.

(4) The acquiring public utility or entity and selling utility shall engage the services of the same licensed engineer to conduct an assessment of the tangible assets of the selling utility. The assessment shall be incorporated into the appraisal under the cost approach required under paragraph (3).

(5) Each utility valuation expert shall provide the completed appraisal to the acquiring public utility or entity and selling utility within 90 days of execution of the service contract.

(b) Utility valuation experts.--

(1) The utility valuation experts required under subsection (a) shall be selected as follows:

(i) one shall be selected by the acquiring public utility or entity; and

(ii) one shall be selected by the selling utility.

(2) The utility valuation experts shall not:

(i) derive any material financial benefit from the sale of the selling utility other than fees for services rendered; or

(ii) be an immediate family member of a director, officer or employee of either the acquiring public utility, entity or selling utility within a 12-month period of the date of hire to perform an appraisal.

(3) Fees paid to utility valuation experts may be included in the transaction and closing costs associated with acquisition by the acquiring utility or entity. Fees eligible for inclusion may be of an amount not exceeding 5% of the fair market value of the selling utility or a fee approved by the commission.

(c) Ratemaking rate base.--The following apply:

(1) The ratemaking rate base of the selling utility shall be incorporated into the rate base of:

(i) the acquiring public utility during the acquiring public utility's next base rate case; or

(ii) the entity in its initial tariff filing.

(2) The ratemaking rate base of the selling utility shall be the lesser of the purchase price negotiated by the acquiring public utility or entity and selling utility or the fair market value of the selling utility.

(d) Acquisitions by public utility.--The following apply:

(1) If the acquiring public utility and selling utility agree to use the process outlined in subsection (a), the acquiring public utility shall include the following as an attachment to its application for commission approval of the acquisition filed pursuant to section 1102 (relating to enumeration of acts requiring certificate):

(i) Copies of the two appraisals performed by the utility valuation experts under subsection (a).

(ii) The purchase price of the selling utility as agreed to by the acquiring public utility and selling utility.

(iii) The ratemaking rate base determined pursuant to subsection (c)(2).

(iv) The transaction and closing costs incurred by the acquiring public utility that will be included in its rate base.

(v) A tariff containing a rate equal to the existing rates of the selling utility at the time of the acquisition and a rate stabilization plan, if applicable to the acquisition.

(2) The commission shall issue a final order on an application submitted under this section within six months of the filing date of an application meeting the requirements of subsection (d)(1).

(3) If the commission issues an order approving the application for acquisition, the order shall include:

(i) The ratemaking rate base of the selling utility, as determined under subsection (c)(2).

(ii) Additional conditions of approval as may be required by the commission.

(4) The tariff submitted pursuant to subsection (d)(1)(v) shall remain in effect until such time as new rates are approved for the acquiring public utility as the result of a base rate case proceeding before the commission. The acquiring public utility may collect a distribution system improvement charge during this time, as approved by the commission under this chapter.

(5) The selling utility's cost of service shall be incorporated into the revenue requirement of the acquiring public utility as part of the acquiring utility's next base rate case proceeding. The original source of funding for any part of the water or sewer assets of the selling utility shall not be relevant to determine the value of said assets.

(e) Acquisitions by entity.--An entity shall provide all the information required by subsection (d)(1) to the commission as an attachment to its application for a certificate of public convenience filed pursuant to section 1102.

(f) Postacquisition projects.--The following apply:

(1) An acquiring public utility's postacquisition improvements that are not included in a distribution improvement charge shall accrue allowance for funds used during construction after the date the cost was incurred until the asset has been in service for a period of four years or until the asset is included in the acquiring public utility's next base rate case, whichever is earlier.

(2) Depreciation on an acquiring public utility's postacquisition improvements that have not been included in the calculation of a distribution system improvement charge shall be deferred for book and ratemaking purposes.

(g) Definitions.--The following words and phrases when used in this section shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Acquiring public utility." A water or wastewater public utility subject to regulation under this title that is acquiring a selling utility as the result of a voluntary arm's-length transaction between the buyer and seller.

"Allowance of funds used during construction." An accounting practice that recognizes the capital costs, including debt and equity funds that are used to finance the construction costs of an improvement to a selling utility's assets by an acquiring public utility.

"Entity." A person, partnership or corporation that is acquiring a selling utility and has filed or whose affiliate has

filed an application with the commission seeking public utility status pursuant to section 1102.

"Fair market value." The average of the two utility valuation expert appraisals conducted under subsection (a)(2).

"Ratemaking rate base." The dollar value of a selling utility which, for postacquisition ratemaking purposes, is incorporated into the rate base of the acquiring public utility or entity.

"Rate stabilization plan." A plan that will hold rates constant or phase rates in over a period of time after the next base rate case.

"Selling utility." A water or wastewater company located in this Commonwealth, owned by a municipal corporation or authority that is being purchased by an acquiring public utility or entity as the result of a voluntary arm's-length transaction between the buyer and seller.

"Utility valuation expert." A person hired by an acquiring public utility and selling utility for the purpose of conducting an economic valuation of the selling utility to determine its fair market value.

(Apr. 14, 2016, P.L.76, No.12, eff. 60 days)

2016 Amendment. Act 12 added section 1329.

APPENDIX C

OWNED PROPERTY & EASEMENTS OF VALUE

- **(TO BE PROVIDED)**

APPENDIX D

SUPPORTING DOCUMENTS

- **EXHIBIT NO. 3**
- **EXHIBIT NO. 4**
- **EXHIBIT NO. 5**
- **PRICING STRUCTURE**

Exhibit No. 3
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Pump Stations

Pump Station		Year Placed in Service	Original Cost	Cost Index Original	Nov. 2005	2005 Replacement Cost	Cost Index Current	Trended Current Replacement Cost
~~Mill Lane~~	Replaced 2013	~~1976~~	~~$133,739~~	~~2401~~	~~7630~~	~~$425,000~~		
Deer Run		1976	78,670	2401	7630	250,000	11184	$366,441
Flat Road		1979	98,378	3003	7630	250,000	11184	366,441
~~Wilburdale~~	Replaced 2017	~~1979~~	~~98,378~~	~~3003~~	~~7630~~	~~250,000~~		
Meadowview		1980	106,067	3237	7630	250,000	11184	366,441
Lee Boulevard		1987	144,378	4406	7630	250,000	11184	366,441
Westgate		1988	148,080	4519	7630	250,000	11184	366,441
Church Road		1989	151,201	4615	7630	250,000	11184	366,441
Lapp Road		1995	179,265	5471	7630	250,000	11184	366,441
Hillbrook Circle		2002	214,220	6538	7630	250,000	11184	366,441
Frame Avenue		2002	214,220	6538	7630	250,000	11184	366,441
King Road		2004	233,129	7115	7630	250,000	11184	366,441
Three Meter Pits		1976	78,670	2401	7630	250,000	11184	366,441
			$1,646,278			**$2,750,000**		**$4,030,851**

Developer Built Subtractions

Pump Station		Year Placed in Service	Original Cost	Cost Index Original	Nov. 2005	2005 Replacement Cost	Cost Index Current	Trended Current Replacement Cost
Flat Road		1979	$98,378	3003	7630	$250,000	11184	$366,441
~~Wilburdale~~	Replaced 2017	~~1979~~	~~98,378~~	~~3003~~	~~7630~~	~~250,000~~		
Lapp Road		1995	179,265	5471	7630	250,000	11184	366,441
			$277,643			**$500,000**		**$732,882**

Exhibit No. 3
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Pump Stations

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Wilson Road PS Improvements - Tredyffrin Twp.	2012	$911,521	9308	11184	$1,095,199
Mill Lane Pump Station	2013	3,001,023	9547	11184	3,515,639
Wilburdale Pump Station	2017	533,051	10738	11184	555,196
Church Road PS Upgrade	2005	177,000	7446	11184	265,848
Deer Run PS Generator	2017	51,550	10738	11184	53,692
Lee Boulevard Pump Station and Force Main	2008	556,177	8310	11184	748,523
		$5,230,322			**$6,234,097**

Associated Retirements	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Deer Run PS Generator	1975	$(10,619)	2212	11184	$(53,692)
		$(10,619)			**$(53,692)**
	Net Total	**$6,588,338**			**$9,478,375**

Exhibit No. 4
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Sewers

Force Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot		Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1976	14" DIP	3,600	$180.69		$650,484	2401	7630	$204,694	11184	$953,456
1976	4"	730	119.72		87,396	2401	7630	27,502	11184	128,101
1979	4"	1,600	119.72		191,552	3003	7630	75,378	11184	280,770.04
1979	6"	2,240	127.80		286,272	3003	7630	112,652	11184	419,607
1980	4"	1,600	119.72		191,552	3237	7630	81,269	11184	280,770
1972	6"	3,200	127.80		408,960	1753	7630	93,959	11184	599,439
1988	8"	1,700	140.84		239,428	4519	7630	141,818	11184	350,945
1989	8"	1,340	140.84		188,726	4615	7630	114,142	11184	276,627
1991	6"	2,335	127.80		298,413	4835	7630	189,102	11184	437,403
1995	6"	4,600	127.80		587,880	5471	7630	421,545	11184	861,693
2002	4"	795	119.72		95,177	6538	7630	81,556	11184	139,508
2002	6"	1,600	127.80		204,480	6538	7630	175,215	11184	299,719
2004	6"	1,600	127.80		204,480	7115	7630	190,681	11184	299,719
		26,940			**$3,634,800**			**$1,909,513**		**$5,327,759**

Exhibit No. 4
East Whiteland Township
Chester County, Pennsylvania
Capacity System Assets - Sewers

Gravity Sewer Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	18"	320	$153.87	3	$4,748.50	$63,484	1381	7630	$11,490	11184	$93,052
1970	12"	4,410	126.51	14	4,748.50	624,388	1381	7630	113,012	11184	915,206
1970	10"	840	121.04	5	4,748.50	125,416	1381	7630	22,700	11184	183,830
1976	36"	100	$226.57	1	4,748.50	27,406	2401	7630	8,624	11184	40,170
1976	27"	4,000	190.22	12	4,748.50	817,862	2401	7630	257,364	11184	1,198,793
1976	24"	680	164.87	4	4,748.50	131,106	2401	7630	41,256	11184	192,170
1976	12"	3,221	126.51	18	4,748.50	492,962	2401	7630	155,125	11184	722,566
1976	10"	3,876	121.04	17	4,748.50	549,876	2401	7630	173,034	11184	805,988
1982	10"	2,240	$121.04	7	4,748.50	304,369	3825	7630	152,587	11184	446,133
		19,687		**81**		**$3,136,868**			**$935,192**		**$4,597,908**

Developer Built Subtractions

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	10"	840	$121.04	3	$4,748.50	$115,919	1381	7630	$20,981	11184	$169,910
1970	12"	4,410	126.51	14	4,748.50	624,388	1381	7630	113,012	11184	915,206
		5,250		**17**		**$740,307**			**$133,993**		**$1,085,116**

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original	Cost Index Current	Trended Current Replacement Cost
Conestoga Road Sewer Main	2015	$1,853,778	10036	11184	$2,065,864
		$1,853,778			**$2,065,864**
Associated Retirements					
Conestoga Road Sewer Main	1975	$(408,600)	2212	11184	$(2,065,864)
		$(408,600)			**$(2,065,864)**
	Net Total	**$2,246,377**			**$3,512,792**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Gravity Sewer Mains

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	8"	23,200	$111.50	81	$4,748.50	$2,971,429	1381	7630	$537,817	11184	$4,355,413
1976	8"	51,134	111.50	214	4,748.50	6,717,620	2401	7630	2,113,893	11184	9,846,446
1978	8"	10,600	111.50	49	4,748.50	1,414,577	2776	7630	514,661	11184	2,073,435.44
1980	8"	11,380	111.50	54	4,748.50	1,525,289	3237	7630	647,132	11184	2,235,714
1982	8"	12,300	111.50	64	4,748.50	1,675,354	3825	7630	839,891	11184	2,455,674
1985	8"	5,725	111.50	27	4,748.50	766,547	4195	7630	421,425	11184	1,123,577
1986	8"	5,090	111.50	31	4,748.50	714,739	4295	7630	402,310	11184	1,047,638
1987	8"	3,840	111.50	14	4,748.50	494,639	4406	7630	285,660	11184	725,024
1988	8"	11,385	111.50	53	4,748.50	1,521,098	4519	7630	900,980	11184	2,229,571
1989	8"	21,508	111.50	94	4,748.50	2,844,501	4615	7630	1,720,370	11184	4,169,367
1993	8"	6,280	111.50	35	4,748.50	866,418	5210	7630	591,664	11184	1,269,964
1995	8"	2,420	111.50	9	4,748.50	312,567	5471	7630	224,129	11184	458,149
1996	8"	875	111.50	4	4,748.50	116,557	5622	7630	85,885	11184	170,844
1997	8"	3,610	111.50	18	4,748.50	487,988	5825	7630	372,552	11184	715,275
1998	8"	8,260	111.50	37	4,748.50	1,096,685	5920	7630	850,961	11184	1,607,481
1999	8"	6,140	111.50	40	4,748.50	874,550	6060	7630	694,539	11184	1,281,884
2000	8"	2,400	111.50	11	4,748.50	319,834	6221	7630	260,778	11184	468,800
2001	8"	24,669	111.50	150	4,748.50	3,462,869	6342	7630	2,878,462	11184	5,075,748
2002	8"	9,585	111.50	59	4,748.50	1,348,889	6538	7630	1,155,837	11184	1,977,153
2003	8"	1,791	111.50	11	4,748.50	251,930	6695	7630	221,044	11184	369,270
2004	8"	26,300	111.50	134	4,748.50	3,568,749	7115	7630	3,327,909	11184	5,230,944
		248,492		**1,189**		**$33,352,825**			**$19,047,899**		**$48,887,372**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Developer Built Subtractions

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Manholes	2005 Cost Per Manhole	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	8"	9,156	$111.50	32	$4,748.50	$1,175,150	1381	7630	$212,697.50	11184	$1,722,492
1976	8"	20,179	111.50	86	4,748.50	2,657,665	2401	7630	836,311	11184	3,895,509
1978	8"	4,183	111.50	20	4,748.50	559,765	2776	7630	203,658	11184	820,484
1980	8"	4,491	111.50	22	4,748.50	603,612	3237	7630	256,093	11184	884,753
1982	8"	4,854	111.50	26	4,748.50	663,144	3825	7630	332,448	11184	972,012
1985	8"	2,259	111.50	11	4,748.50	303,346	4195	7630	166,771	11184	444,634
1986	8"	2,009	111.50	12	4,748.50	283,025	4295	7630	159,308	11184	414,847
1987	8"	1,515	111.50	6	4,748.50	195,637	4406	7630	112,983	11184	286,758
1988	8"	4,493	111.50	21	4,748.50	601,927	4519	7630	356,535	11184	882,283
1989	8"	8,488	111.50	38	4,748.50	1,125,463	4615	7630	680,687	11184	1,649,664
1993	8"	2,478	111.50	14	4,748.50	343,007	5210	7630	234,235	11184	502,767
1995	8"	955	111.50	4	4,748.50	123,630	5471	7630	88,650	11184	181,212
1996	8"	345	111.50	2	4,748.50	46,122	5622	7630	33,985	11184	67,604
1997	8"	1,425	111.50	7	4,748.50	193,137	5825	7630	147,449	11184	283,093
1998	8"	3,260	111.50	15	4,748.50	433,941	5920	7630	336,712	11184	636,055
1999	8"	2,423	111.50	16	4,748.50	346,372	6060	7630	275,077	11184	507,699
2000	8"	947	111.50	4	4,748.50	126,560	6221	7630	103,191	11184	185,507
2001	8"	9,735	111.50	60	4,748.50	1,371,233	6342	7630	1,139,819	11184	2,009,904
2002	8"	3,783	111.50	24	4,748.50	534,153	6538	7630	457,706	11184	782,943
2003	8"	707	111.50	4	4,748.50	99,762	6695	7630	87,532	11184	146,228
2004	8"	10,379	111.50	54	4,748.50	1,412,520	7115	7630	1,317,195	11184	2,070,422
		98,064		**477**		**$13,199,171**			**$7,539,041**		**$19,346,870**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Capital Projects Completed by the Township Since 2005

Description	Year Placed in Service	Original Cost	Cost Index Original		Cost Index Current	Trended Current Replacement Cost
Mill Lane Gravity Sewer	2014	$641,387.00	9806		11184	$731,517
Sidley Road Sewer Main	2014	1,022,044	9806		11184	1,165,665
Wilburdale FM and Flat Rd. Gravity	2016	533,529	10339		11184	577,135
		$2,196,960				**$2,474,317**

Associated Retirements	Year Placed in Service	Original Cost	Cost Index Original		Cost Index Current	Trended Current Replacement Cost
Wilburdale FM and Flat Rd. Gravity	1970	$(71,266)	1381		11184	$(577,135)
		$(71,266)				**$(577,135)**
	Net Total	**$22,279,348**		**$11,508,858**		**$31,437,685**

Exhibit No. 5
East Whiteland Township
Chester County, Pennsylvania
Collection System Assets - Sewers

Service Connections

Year Placed in Service	Size	Length	2005 Cost Per Foot	Number of Connections	Total 2005 Replacement Cost	Cost Index Original	Cost Index Nov. 2005	Trended Original Cost	Cost Index Current	Trended Current Replacement Cost
1970	4"	6,016	$97.87	201	$588,817	1381	7630	$106,574	11184	$863,068
1976	4"	13,260	$97.87	442	1,297,784	2401	7630	408,385	11184	1,902,245
1978	4"	2,749	$97.87	92	269,029	2776	7630	97,880	11184	394,333
1980	4"	2,951	$97.87	98	288,825	3237	7630	122,539	11184	423,349
1982	4"	3,190	$97.87	106	312,175	3825	7630	156,500	11184	457,575
1985	4"	1,485	$97.87	49	145,301	4195	7630	79,882	11184	212,977
1986	4"	1,320	$97.87	44	129,185	4295	7630	72,715	11184	189,354
1987	4"	996	$97.87	33	97,459	4406	7630	56,284	11184	142,853
1988	4"	2,952	$97.87	98	288,952	4519	7630	171,153	11184	423,536
1989	4"	5,578	$97.87	186	545,874	4615	7630	330,148	11184	800,123
1993	4"	1,629	$97.87	54	159,387	5210	7630	108,843	11184	233,623
1995	4"	628	$97.87	21	61,420	5471	7630	44,042	11184	90,027
1996	4"	227	$97.87	8	22,208	5622	7630	16,364	11184	32,551
1997	4"	936	$97.87	31	91,622	5825	7630	69,948	11184	134,296
1998	4"	2,142	$97.87	71	209,639	5920	7630	162,667	11184	307,282
1999	4"	1,592	$97.87	53	155,834	6060	7630	123,758	11184	228,415
2000	4"	622	$97.87	21	60,912	6221	7630	49,665	11184	89,283
2001	4"	6,397	$97.87	213	626,101	6342	7630	520,438	11184	917,716
2002	4"	2,486	$97.87	83	243,268	6538	7630	208,452	11184	356,573
2003	4"	464	$97.87	15	45,456	6695	7630	39,883	11184	66,627
2004	4"	6,820	97.87	227	667,496	7115	7630	622,449	11184	978,391
		64,440		**2,148**	**$6,306,743**			**$3,568,568**		**$9,244,197**

Pricing Structure

Pipe Diameter (in.)	Easement Installed Cost per LF	Paved Installed Cost per LF	Blended Cost per LF
<4	$ 55.00	$ 100.10	$ 55.00
4 [(4)]	$ 55.00	$ 97.87	$ 78.17
6	$ 55.00	$ 100.10	$ 55.00
8	$ 55.00	$ 100.10	$ 77.00
10	$ 59.00	$ 107.38	$ 76.44
12	$ 90.00	$ 163.80	$ 110.08
15	$ 94.00	$ 171.08	$ 94.00
16	$ 100.00	$ 182.00	$ 117.62
18	$ 114.00	$ 207.48	$ 143.74
21	$ 129.00	$ 234.78	$ 129.00
24	$ 137.00	$ 249.34	$ 137.00
27	$ 164.00	$ 298.48	$ 164.00
30	$ 183.00	$ 333.06	$ 183.00
36	$ 216.00	$ 393.12	$ 216.00
40	$ 239.00	$ 434.98	$ 239.00
42	$ 249.00	$ 453.18	$ 249.00
44	$ 262.00	$ 476.84	$ 262.00
48	$ 282.00	$ 513.24	$ 282.00
52	$ 308.00	$ 560.56	$ 308.00
54	$ 315.00	$ 573.30	$ 315.00
64	$ 392.00	$ 713.44	$ 392.00
72	$ 430.00	$ 782.60	$ 430.00

Notes:

1. Reflects generic unit prices for various components of a sewer system within this region. The schedule was a basis of cost for previous Assessment reports in the region.

2. Prices from 2015 unless otherwise noted, Table ENR CCI (2015) = 10035

3. The "Blended Cost" is a combined cost that accounts for the percentage of the overall system constructed within a completed roadway. Approximate percentages were determined from Township Records.

4. The "Blended Cost" is a combined cost that accounts for the percentage of laterals installed 2005 & later, assumed to be developer installed, and % of laterals installed before 2005, assumed to be Township installed. This number is assumed to be in the year 2012 and is then brought back for all of the other years.

Execution Version

SANITARY SEWER

ASSET PURCHASE AGREEMENT

By and Between

Township of East Whiteland, Chester County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of January 8, 2021

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SANITARY SEWER ASSET PURCHASE AGREEMENT

THIS SANITARY SEWER ASSET PURCHASE AGREEMENT ("Agreement"), dated as of January 8, 2021 (the "Effective Date"), is made and entered into by and between the Township of East Whiteland, Chester County, a body corporate and politic, organized and existing under the laws of the Commonwealth of Pennsylvania (the "Seller"), and Aqua Pennsylvania Wastewater, Inc. (the "Buyer"), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania.

RECITALS:

WHEREAS, Seller, acting by and through the Board of Supervisors of East Whiteland Township, Chester County (the "Township Board") owns and operates a sanitary wastewater collection and conveyance system (the "System") that provides sanitary wastewater service to various customers in East Whiteland Township, Pennsylvania (the "Service Area") and as set forth on Schedule A; and

WHEREAS, Buyer is a regulated public utility organized and existing under the laws of the Commonwealth of Pennsylvania that furnishes wastewater service to the public in several counties, including Chester County, Pennsylvania; and

WHEREAS, Buyer, in reliance upon the representations, warranties and covenants of Seller herein, desires to purchase and acquire from Seller, and Seller, in reliance upon the representations, warranties and covenants of Buyer herein, desires to sell, transfer and convey to Buyer all of the assets of the System (other than the Excluded Assets), and in connection therewith, Buyer has agreed to assume certain ongoing obligations and liabilities of Seller related to the acquired assets, all on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual representations, warranties, covenants, and agreements stated in this Agreement, the receipt and sufficiency of which hereby are acknowledged, intending to be legally bound, the Parties agree as follows:

ARTICLE I.

DEFINITIONS

In addition to the capitalized terms defined elsewhere in this Agreement, the following terms, as used in this Agreement (unless otherwise specified herein), have the meanings set forth in this Article I:

"**Acquired Assets**" has the meaning specified in Section 2.01.

"**Affiliate**" means, when used to indicate a relationship with a specified Person, a Person that, directly or indirectly, through one or more intermediaries, has a 10% or more voting or economic interest in such specified Person or controls, is controlled by or is under common control with (which includes, with respect to a managed fund or trust, the right to direct or cause the direction of the management and policies of such managed fund or trust as manager, advisor, supervisor, sponsor or trustee pursuant to relevant contractual arrangements) such specified

Person, and a Person is deemed to be controlled by another Person if controlled in any manner whatsoever that results in control in fact by that other Person (or that other Person and any Person or Persons with whom that other Person is acting jointly or in concert), whether directly or indirectly and whether through share ownership, a trust, a contract or otherwise (and for purposes of this definition, a managed fund or trust is deemed to be an Affiliate of the Person managing, supervising, sponsoring or advising such fund or trust and a limited partner in a managed fund or trust is deemed to be an Affiliate of such fund or trust and of the Person managing, supervising, sponsoring or advising such fund or trust).

"**Agreement**" has the meaning specified in the Preamble to this Agreement (and includes all Schedules and Exhibits referred to herein), as amended, modified and supplemented from time to time in accordance with the terms hereof.

"**Assigned Contracts**" has the meaning specified in Section 2.01(c).

"**Assignment and Assumption Agreement**" has the meaning specified in Section 13.02(c).

"**Assumed Liabilities**" has the meaning specified in Section 2.04(a).

"**Authorizations and Permits**" mean all licenses, permits, franchises, authorizations, certificates, registrations, consents, orders, adjudications, variances, waivers and approvals currently in effect issued or granted by Governmental Authorities, including without limitation, environmental permits, operating permits and approvals that are held by Seller that primarily relate directly or indirectly to the operation of the System, including those set forth on Schedule 4.12.

"**Business Day**" means any day that is neither a Saturday, Sunday nor a day observed as a holiday by either the Commonwealth of Pennsylvania or the United States government.

"**Buyer**" has the meaning specified in the Preamble of this Agreement.

"**Buyer Fundamental Representations**" has the meaning specified in Section 8.01.

"**Buyer Indemnified Persons**" has the meaning specified in Section 8.02.

"**CERCLA**" means the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended.

"**Closing**" means the consummation of the sale and purchase of the Acquired Assets and assumption of the Assumed Liabilities, the release/waiver of liabilities and the other transactions contemplated by this Agreement, all in accordance with the terms and conditions of this Agreement and as specified in Article XIII.

"**Closing Date**" has the meaning specified in Section 13.01.

"**Closing Effective Time**" has the meaning specified in Section 13.01.

"**Code**" means the Internal Revenue Code of 1986, as amended.

"**Confidential Information**" means any information about Buyer, Seller or the System related to the transactions contemplated by this Agreement, except that such term does not include information which the receiving Party can demonstrate (a) is generally available to or known by the public other than as a result of improper disclosure by the receiving Party, (b) is obtained by the receiving Party from a source other than the disclosing Party, and that source was not bound by a duty of confidentiality to the disclosing Party with respect to such information, or (c) is legally in the public domain.

"**Customer Sewer Laterals**" has the meaning specified in Section 2.02(k).

"**Direct Claim**" has the meaning specified in Section 8.04(c).

"**Easements**" means all easements, rights of way, licenses, use agreements, occupancy agreements, leases and other agreements and appurtenances for and over the real property of third parties that are necessary for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto).

"**EDU**" means equivalent dwelling unit and having a use rate of 275 gallons per day.

"**Effective Date**" has the meaning specified in the Preamble.

"**Environment**" means soil, surface waters, ground waters, land, stream sediments, flora, fauna, surface or subsurface strata and ambient air.

"**Environmental Claims**" means all notices of investigations, warnings, notice letters, notices of violations, Liens, orders, claims, demands, suits or administrative or judicial actions for any injunctive relief, fines, penalties, third party claims, or other claims asserting violations of Environmental Requirements or responsibility for Environmental Liabilities.

"**Environmental Conditions**" means the Release of Hazardous Materials or the presence of Hazardous Materials on, in, under or within any property (including the presence in the Environment), other than the presence of Hazardous Materials in locations and at concentrations that are naturally occurring.

"**Environmental Liabilities**" means any legal obligation or liability arising under Environmental Requirements or related to or arising out of any Environmental Condition, including those consisting of or relating to any (a) duty imposed by, breach of or noncompliance with any Environmental Requirements; (b) environmental, health or safety matters or conditions (including on-site or off-site contamination, occupational safety and health and regulation of Hazardous Materials); (c) Remedial Action undertaken by any Person; (d) bodily injury (including illness, disability and death, and regardless of when any such bodily injury occurred, was incurred or manifested itself), property damage (including trespass, nuisance, wrongful eviction and deprivation of the use of real or personal property), or other losses or damages incurred by any other Person (including any employee or former employee of such Person); (e) any injury to, destruction of, or loss of natural resources, or costs of any natural resource damage assessments; (f) exposure of any Person to any Hazardous Materials; and (g) the presence or Release of any Hazardous Materials.

"**Environmental Requirements**" mean all present Laws (including common law), regulations, legally binding or otherwise enforceable requirements and Authorizations and Permits relating to human health, pollution, or protection of the Environment (including ambient air, surface water, ground water, land surface or surface strata), including (i) those relating to emissions, discharges, Releases, or threatened Releases of Hazardous Materials, and (ii) those relating to the identification, generation, manufacture, processing, distribution, use, treatment, storage, disposal, release, recovery, transport or other handling of Hazardous Materials. Without limiting the previous, the term "**Environmental Requirements**" includes (1) CERCLA; the Superfund Amendments and Reauthorization Act, Public Law 99-499, 100 Stat. 1613; the Emergency Planning and Community Right to Know Act, 42 U.S.C. Sections 11001-11050; the Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901-6992k ("RCRA"); the Safe Drinking Water Act, 42 U.S.C. Sections 300f to 300j-26; the Toxic Substances Control Act, 15 U.S.C. Sections 2601-2692; the Hazardous Materials Transportation Act, 49 U.S.C. Sections 5101-5127; the Federal Water Pollution Control Act, 33 U.S.C. Sections 1251-1387; the Oil Pollution Act of 1990, 33 U.S.C. Sections 2701--2761; the Clean Air Act, 42 U.S.C. Sections 7401-7671q; the Atomic Energy Act of 1954, as amended, 42 U.S.C. Sections 2011 et seq.; the Low Level Radioactive Waste Policy Act, as amended, 42 U.S.C. Section 2021b et seq.; the Occupational Safety and Health Act, 29 U.S.C. Sections 651-678, and the regulations promulgated pursuant to the above-listed federal statutes, and (2) counterpart Laws and regulations promulgated or issued by any state or local Governmental Authority, specifically including the Pennsylvania Storage Tank and Spill Prevention Act of 1989 (35 Pa. C.S.A. § 6021.101 *et. seq.*).

"**EPA**" means the United States Environmental Protection Agency, or a successor Governmental Authority with substantially similar power and authority thereto.

"**Equipment and Machinery**" means (i) all the equipment, tangible personal property, machinery, office furniture and equipment, fixtures, tooling, spare maintenance or replacement parts, environmental testing equipment, and vehicles owned or leased by Seller (including all leases of such property), which are primarily used in the operation of the System, (ii) any rights of Seller to warranties applicable to the foregoing (to the extent assignable), and licenses received from manufacturers and Seller of any such item, and (iii) any related claims, credits, and rights of recovery with respect thereto, as set forth on Schedule 4.10.

"**Excluded Assets**" has the meaning specified in Section 2.02.

"**Excluded Liability**" or "**Excluded Liabilities**" means all liabilities other than Assumed Liabilities.

"**Files and Records**" means all files and records of Seller primarily relating to the System and the Acquired Assets, whether in hard copy, digital, or magnetic or other format including data, geographic information system data, plans, contracts and recorded knowledge relating to the Acquired Assets (including property records, related to the foregoing), customer and supplier records, customer lists (both current and prospective), customer billing records, records of sales calls, manuals, books, files, records, engineering data, procedures, systems, instructions, drawings, blueprints, plans, designs, specifications, equipment lists, parts lists, equipment maintenance records, equipment warranty information, plant plans, specifications and drawings, sales and

advertising material, and computer software, and records relating to the System, whether stored on-site or off-site.

"**Final Order**" means a Governmental Approval by a Governmental Authority as to which (a) no request for stay of the action is pending, no such stay is in effect and if any time period is permitted by statute or regulation for filing any request for such stay, such time period has passed, (b) no petition for rehearing, reargument or reconsideration of the action is pending and the time for filing any such petition has passed, (c) such Governmental Authority does not have action under consideration on its own motion and (d) no appeal to a court or administrative tribunal or a request for stay by a court or administrative tribunal of the Government Authority's action is pending or in effect and the deadline for filing any such appeal or request for stay has passed.

"**Governmental Approval**" means any consent, approval, authorization, notice, filing, registration, submission, reporting, order, adjudication or similar item of, to or with any Governmental Authority.

"**Governmental Authority**" or "**Governmental Authorities**" means any court, department, commission, board, bureau, municipality, municipal authority (established pursuant to the Municipal Authorities Act of the Commonwealth of Pennsylvania), agency or instrumentality of the United States, any state, county, city or political subdivision thereof, or any foreign governmental body, including without limitation, the PaPUC, the EPA, PaDEP and the Township Board.

"**Hazardous Materials**" means any solid, liquid, gas, odor, heat, sound, vibration, radiation or other substance or emission which is a contaminant, pollutant, dangerous substance, toxic substance, hazardous waste, residual waste, solid waste, hazardous material or hazardous substance which is or becomes regulated by applicable Environmental Laws or which is classified as hazardous or toxic under applicable Environmental Laws (including gasoline, diesel fuel or other petroleum hydrocarbons, polychlorinated biphenyls, asbestos and urea formaldehyde foam insulation).

"**Indemnified Party**" means any Buyer Indemnified Persons or Seller Indemnified Persons, as applicable, entitled to indemnification pursuant to Article VIII.

"**Indemnifying Party**" means a Party which is obligated to indemnify the Buyer Indemnified Persons or the Seller Indemnified Persons, as applicable, pursuant to Article VIII.

"**Knowledge**" means either (i) the actual knowledge of a Representative of Buyer and the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Buyer or (ii) the actual knowledge of a Representative of Seller, the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Seller, as applicable based on the context in which the term is used.

"**Land Development Agreement / Financial Security Agreement**" means any agreement between Seller and an applicant for subdivision and/or land development approval pursuant to the Pennsylvania Municipalities Planning Code, pursuant to which applicant is required to construct

public improvements and required to post financial security, for the benefit of Seller, to secure applicant's obligations under such agreement.

"**Law**" means any applicable law, statute, regulation, ordinance, rule, order, judicial, administrative and regulatory decree, judgment, adjudication, consent decree, settlement agreement or governmental requirement enacted, promulgated, entered into, agreed or imposed by any Governmental Authority, as may be in effect at the relevant time or times in the context in which the term is used.

"**Liability Cap**" has the meaning specified in Section 8.05(c).

"**Lien**" means any lien in a fixed and ascertainable monetary sum, or any pledge, mortgage, deed of trust or security interest securing a fixed and ascertainable monetary sum, or any charge or claim in a fixed and ascertainable monetary sum. In addition, in connection with Real Property, any item otherwise falling within the definition of a "Lien" must be filed of record by the responsible Party in accordance with the terms of this Agreement.

"**Loss**" means any and all losses, liabilities, obligations, damages, penalties, interest, Taxes, claims, actions, demands, causes of action, judgments, reasonable attorneys', consultants' and other professional fees, and all other reasonable costs and expenses sustained or incurred in investigating, preparing or defending or otherwise incident to any such claim, action, demand, cause of action or judgment or the enforcement of a Party's rights under Article VIII; except that "**Losses**" shall not include punitive, incidental, consequential, special or indirect damages, including loss of future revenue or income, loss of business reputation or opportunity relating to the breach or alleged breach of this Agreement, or diminution of value or any damages based on any type of multiple, except in the case of fraud or to the extent actually awarded to a Governmental Authority or other third party in respect of a Third Party Claim.

"**Material Adverse Effect**" means any result, occurrence, fact, change, event or effect that has a materially adverse effect on the business, financial condition, physical condition or results of operations of the System, except that no effect arising out of or in connection with or resulting from any of the following is deemed, either alone or in combination, to constitute or contribute to a Material Adverse Effect: (i) general economic conditions or changes in those conditions; (ii) financial, banking, currency or capital markets fluctuations or conditions (either in the United States or any international market and including changes in interest rates); (iii) conditions affecting the real estate, financial services, construction, water utility or sewer utility industries generally; (iv) any existing event, circumstance, condition or occurrence of which Buyer has Knowledge as of the Effective Date; (v) any action, omission, change, effect, circumstance or condition contemplated by this Agreement or attributable to the execution, performance or announcement of this Agreement or the transactions contemplated hereby; and (vi) negligence, intentional misconduct or bad faith of Buyer or its Representatives.

"**Missing Easements**" means, as of any particular date, each material Easement that is for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto) that either (a) has not been obtained by Seller as of such date or (b) if such Easement has been obtained by Seller as of such date, and such Easement is not sufficient to operate the System as currently conducted.

"**MS4 System**" or **"Municipal Separate Storm Sewer System**" means the current and any future assets and facilities, built, operated or maintained, or real property ("**MS4 System Real Property**") and Stormwater System Assets owned by Seller and used for the purpose of capturing, conveying and discharging stormwater separate from the System.

"**Outside Date**" means 365 days after the date the application to the PaPUC is accepted as complete by the PaPUC and the statutory 6-month consideration period is initiated.

"**PaDEP**" means the Pennsylvania Department of Environmental Protection, or any successor Governmental Authority with substantially similar powers thereto.

"**PaPUC**" means the Pennsylvania Public Utility Commission, or any successor Governmental Authority with substantially similar powers thereto.

"**Party**" means Buyer or Seller and the term "Parties" means collectively Buyer and Seller.

"**PCB Equipment**" means PCB equipment as defined in 40 C.F.R. Part 761.

"**Pending Development Plan**" means any subdivision or land development plan that has been submitted to Seller for approval pursuant to the Pennsylvania Municipal Planning Code, as updated prior to Closing.

"**Permitted Liens**" means (a) Liens for Taxes not yet due and payable or being contested in good faith by appropriate procedures; (b) easements, rights of way, zoning ordinances and other similar encumbrances affecting Real Property and Easements as set forth on Schedule 4.09; (c) other than with respect to Real Property owned by Seller, Liens arising under original purchase price conditional sales contracts and equipment leases with third parties entered into in the ordinary course of business; and (d) other imperfections of title or Liens, if any, that have not had, and would not have, a Material Adverse Effect.

"**Person**" means any individual (including, the heirs, beneficiaries, executors, legal representatives or administrators thereof), corporation, partnership, joint venture, trust, limited liability company, limited partnership, joint stock company, unincorporated association or other entity or a Governmental Authority.

"**Plan**" has the meaning specified in Section 7.10(a).

"**Purchase Price**" has the meaning specified in Section 3.01.

"**Real Property**" means those certain parcels of land, with the buildings, improvements, and Equipment and Machinery thereon or therein, that are part of the System and fee simple title to which is to be conveyed by Seller to Buyer as part of the Acquired Assets.

"**Regulated Asbestos Containing Material**" means regulated asbestos containing material as defined by 40 C.F.R. § 61.141.

"**Release**" means any actual or threatened spilling, leaking, pumping, pouring, injecting, emptying, discharging, emitting, escaping, leaching, dumping, disposal, or release or migration of

Hazardous Materials into the Environment, including the abandonment or discarding of barrels, containers and other receptacles containing any Hazardous Materials.

"**Remedial Action**" means any and all actions to (a) investigate, clean up, remediate, remove, treat, contain or in any other way address any Hazardous Materials in the Environment, (b) prevent the Release or threat of Release or minimize the further Release of any Hazardous Materials so it does not migrate or endanger public health or welfare or the indoor or outdoor Environment, and (c) perform pre-remedial studies and investigations and post-remedial monitoring, maintenance and care. The term "**Remedial Action**" includes any action which constitutes (i) a "removal", "remedial action" or "response" as defined by Section 101 of CERCLA, 42 U.S.C. §§ 9601(23), (24), and (25); (ii) a "corrective action" as defined in RCRA, 42 U.S.C. § 6901 et seq.; or (iii) a "response" or "interim response" as defined in the Pennsylvania Hazardous Sites Cleanup Act, 35 P.S. §6020.103.

"**Representative**" means, with respect to any Person, any director, officer, employee, official, lender mortgagee, financier, provider of any financial instrument (or any agent or trustee acting on their behalf), partner, member, owner, agent, lawyer, accountant, auditor, professional advisor, consultant, engineer, contractor, other Person for whom such Person is at law responsible or other representative of such Person and any professional advisor, consultant or engineer designated by such Person as its "Representative."

"**Schedules**" means the disclosure schedules delivered by Seller and Buyer, respectively, concurrently with the execution and delivery of this Agreement, and as may be supplemented and updated pursuant to Sections 9.03 and 10.04. Any disclosure set forth on any particular Schedule is deemed disclosure in reference to all Schedules comprising the Schedules to which such disclosure is reasonably apparent.

"**Seller**" has the meaning specified in the Preamble of this Agreement.

"**Seller Fundamental Representations**" has the meaning specified in Section 8.01.

"**Seller Indemnified Persons**" has the meaning specified in Section 8.03.

"**Seller DEP Permits**" means the Water Quality Management Permits set forth on Schedule 4.12, each issued by PaDEP to Seller with respect to the System, including any revisions or amendments thereto. This definition shall not include any permit issued and related to the Stormwater System Assets.

"**Service Area**" has the meaning specified in the recitals to this Agreement.

"**Stormwater System Assets**" means all assets owned by Seller, and used exclusively in the operation or maintenance of the MS4 System, including (i) drains, pipes and collection basins and all other stormwater drainage assets used exclusively for stormwater collection, conveyance and discharge; (ii) catch basins, inlets, pipes and all other stormwater lateral facilities (the "**Stormwater Lateral Facilities**") that connect surface stormwater drains to storm conveyances which discharge to surface waters; (iii) interest in real estate directly associated with (i) and (ii); and (iv) any related permits.

"**Supplies**" means all lubricants, spare parts, fuel, chemicals, raw materials, and other supplies and inventory, and all rights to warranties received from suppliers with respect to the foregoing, and related claims, credits, and rights of recovery with respect thereto that are necessary to operate the System.

"**System**" has the meaning specified in the recitals to this Agreement and shall include the Acquired Assets and exclude the Excluded Assets.

"**Taxes**" means any federal, state, local or foreign income, gross receipts, license, payroll, employment, excise, severance, stamp, occupation, premium, windfall profits, environmental, customs duties, permit fees, capital stock, franchise, profits, withholding, social security, unemployment, disability, real property, personal property, parking, sales, use, transfer, registration, value added, alternative or add-on minimum, estimated or other tax, levy, impost, stamp tax, duty, fee, withholding or similar imposition of any kind payable, levied, collected, withheld or assessed at any time, including any interest, penalty or addition thereto, whether disputed or not.

"**Third Party Claim**" has the meaning specified in Section 8.05(a).

"**Threshold Amount**" has the meaning specified in Section 8.05(a).

"**Title Commitment**" has the meaning specified in Section 6.01.

"**Title Company**" has the meaning specified in Section 6.01.

"**Title Policy**" has the meaning specified in Section 2.03.

"**Township Board**" the meaning specified in the Preamble of this Agreement.

"**Township Senior Staff**" means the Township Manager, Assistant Manager, Superintendent of Public Works and the Township Engineer.

"**UCC Search**" has the meaning specified in Section 6.04.

"**Unscheduled Real Property**" has the meaning specified in Section 6.06.

"**Utility Valuation Expert**" means an expert that was approved by the PaPUC and is currently, at the time of this Agreement, on the list of approved appraisers maintained by the PaPUC.

ARTICLE II.

TERMS OF PURCHASE AND ASSUMPTION OF LIABILITIES

Section 2.01. Purchase and Sale of Acquired Assets.

Subject to the terms and conditions set forth in this Agreement, at Closing, Buyer shall purchase from Seller and Seller shall sell, transfer, assign and deliver to Buyer, free and clear of all Liens except for Permitted Liens, all of Seller's right, title and interest in and to all assets, facilities, business, goodwill, properties and rights of Seller of every kind and description, whether tangible or intangible, real, personal or mixed, wherever situated, in each case used in, held for use in, or acquired or developed for use in, the System, or otherwise related to, or arising out of the operation or conduct of the System (whether or not any such assets have any value for accounting purposes or are carried or reflected on the books or financial records of Seller), including any of the foregoing in which Seller is entitled to acquire rights in the future pursuant to Pending Development Plans (other than the rights of Seller pursuant to Section 2.02(d)) or development plans approved pursuant to this Agreement, but in all cases other than the Excluded Assets (collectively referred to as the "Acquired Assets"), including:

(a) all real property and appurtenant interests, rights of way used in, or necessary for, the operation of the System, including without limitation (i) good and marketable fee simple title to the Real Property set forth on Schedule 4.09, and (ii) all Easements, including without limitation those set forth on Schedule 4.09;

(b) all sanitary wastewater related treatment, collection and conveyance facilities, including all collection system mains (whether gravity or force mains), laterals (from the collection system main to the edge-of-road or curb-line when the main is located within a public right-of-way or the edge of an easement where the main is located within private property), pumping stations, generators, manholes, and other related appurtenances and any billing and collections related assets necessary to own and operate the System;

(c) all contracts, licenses, and leases to which Seller is a party or beneficiary or payee, including without limitation, all construction contracts, surety bonds, operation and maintenance agreements, management agreements, reserved capacity agreements, architect agreements and consultant agreements, and agreements relating to vehicles and other items of personal property as set forth on Schedule 4.13 (the "Assigned Contracts");

(d) all Supplies;

(e) all personal property and fixed assets, including all Equipment and Machinery, auxiliary equipment and plant equipment, including without limitation those items set forth on Schedule 4.10;

(f) all expenses prepaid by Seller and security deposits paid by Seller;

(g) all Files and Records;

(h) all Authorizations and Permits of or held by Seller (to the extent transferrable to Buyer under Law), including all Authorizations and Permits which are environmental permits, Seller DEP Permits other than those NPDES permits that relate to the Stormwater System Assets, other operating permits and those items set forth on Schedule 4.12; and

(i) all goodwill of the System.

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION OR WARRANTY REGARDING ANY REPRESENTATION REGARDING THE FUTURE PROFITABILITY OR FUTURE EARNINGS PERFORMANCE OF THE ACQUIRED ASSETS OR THE SYSTEM OR ANY FUTURE RATEMAKING THAT MAY BE ALLOWED BY THE PAPUC FOR ANY OF THE ACQUIRED ASSETS. NOTWITHSTANDING THE FOREGOING, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE VALID UNTIL THE TIME OF CLOSING.

Section 2.02. Excluded Assets.

Notwithstanding anything herein to the contrary, the Acquired Assets shall not include the following (the "Excluded Assets"):

(a) the Stormwater System Assets, including any related NPDES permits;

(b) all contracts, licenses and leases that are not Assigned Contracts;

(c) the seals, organizational documents, minute books, tax returns, books of account or other records having to do with the organization of Seller;

(d) cash and cash equivalents, including (i) accounts receivable and amounts earned by Seller but not yet billed attributable to services rendered by Seller as of or before the Closing Date and (ii) EDU fees owed to Seller at or before the Closing Date for any Pending Development Plan but not yet paid to Seller;

(e) all insurance policies of Seller and all rights to applicable claims and proceeds thereunder;

(f) all rights to any outstanding lien related to non-payment by a System customer existing at or before the Closing Date and all actions, suits or claims of any nature available to or being pursued by Seller, whether arising by way of counterclaim or otherwise;

(g) all assets, properties and rights used by Seller other than those which primarily relate to the operations of the System;

(h) the assets, properties and rights specifically set forth on Schedule 2.02(h);

(i) the MS4 System Real Property;

(j) the rights which accrue or will accrue to Seller under this Agreement and any related agreement, exhibit or schedule; and

(k) all connecting facilities originating from Seller's terminus point of the collection facilities at the edge-of-road or curb-line when the facilities are located with a public right-of-way or the edge of an easement where the collection facilities are located within private property to and throughout the customer's property, including grinder pumps (the "Customer Sewer Laterals").

Section 2.03. Sale Free of Liens.

After Buyer fulfills its obligations pursuant to Section 3.01(a), on the Closing Date, the Acquired Assets will be free and clear of all Liens other than Permitted Liens. Seller shall convey the Acquired Assets by appropriate special warranty or other deed (subject to Section 6.02(c)), bills of sale, endorsements, assignments and other instruments of transfer or conveyance described herein, and if not expressly described herein, then by transfer documents satisfactory in form and substance reasonably acceptable to Buyer and Seller and their counsel in their reasonable, good faith discretion. At Closing, title to the Real Property shall be good and marketable and insured by the Title Company, at the Title Company's filed rates, as a good and marketable title, free and clear of all Liens and exceptions to coverage, except for the Permitted Liens, pursuant to an owner's policy of title insurance on the American Land Title Association's ("ALTA") Owner's Form 2006, subject to the terms of Section 6.02 (the "Title Policy").

Section 2.04. Assumption of Liabilities.

(a) On the terms and conditions set forth in this Agreement and excluding the Excluded Liabilities, Buyer shall assume and pay, perform and discharge when due any and all liabilities and obligations of Seller both (1) arising under Seller DEP Permits (arising from, related to, or based on events or circumstances occurring on or after the Closing Date), and (2) arising out of or relating to the System or the Acquired Assets on or after the Closing, including the following:

(i) all liabilities and obligations under the Assigned Contracts and Authorizations and Permits resulting from events that occur or conditions that arise on or after the Closing;

(ii) any litigation initiated against Seller related to the System or the Acquired Assets resulting from events that occur on or after Closing or conditions that arise on or after the Closing;

(iii) all liabilities and obligations for Taxes relating to the System, its operation, the Acquired Assets and the Assumed Liabilities attributable to the period after the Closing Date; and

(iv) all other liabilities and obligations arising out of or relating to Buyer's ownership or operation of the System and the Acquired Assets on or after the Closing (all of the aforementioned liabilities in this Section 2.04(a) are referred to as the "Assumed Liabilities").

(b) At the Closing, to the extent Seller is not released therefrom, Buyer shall indemnify Seller against any Loss relating to the Assumed Liabilities in accordance with Section 8.03.

(c) Buyer shall not assume or be liable to pay any liabilities or obligations relating to the Excluded Liabilities or any other liabilities or obligations that are not Assumed Liabilities.

Section 2.05. Further Assurances.

At any time and from time to time after the Closing Date, Seller shall, upon the request of Buyer, and Buyer shall, upon the request of Seller, at the cost of requesting Party, promptly execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate, (a) the sale, conveyance, transfer, assignment and delivery hereunder of the Acquired Assets to Buyer, (b) the assumption by Buyer of any of the Assumed Liabilities, (c) performance by the Parties of any of their other respective obligations under this Agreement, (d) the vesting in Buyer of all right, title and interest in the Acquired Assets and the System as specified in this Agreement, and (e) any other matters reasonably requested by a Party to carry out the provisions, purposes and intent of this Agreement.

Section 2.06. Certain Transfers; Assignment of Contracts.

(a) Notwithstanding anything to the contrary in this Agreement, and subject to the provisions of this Section 2.06(a) and Section 2.06(a), to the extent that the sale, transfer, assignment, conveyance and delivery, or attempted sale, transfer, assignment, conveyance and delivery, to Buyer of any Assigned Contract or other Acquired Asset would result in a violation of Law, or would require the consent, authorization, approval or waiver of any Person (other than the Parties), including any Governmental Authority, and such consent, authorization, approval or waiver shall not have been obtained before the Closing, this Agreement shall not constitute a sale, transfer, assignment, conveyance and delivery, or an attempted sale, transfer, assignment, conveyance and delivery, thereof (any such Acquired Asset, a "Nonassignable Asset"). Following the Closing, Seller and Buyer shall use its commercially reasonable efforts (at the cost and expense of the Party that is responsible for compliance with such Law or obtaining such consent, authorization, approval or waiver), and shall cooperate with each other, to obtain any such required consent, authorization, approval or waiver, or any release, substitution, novation or amendment required to sell, transfer, assign, convey and deliver any such Nonassignable Asset to Buyer and in no event will Buyer be required to pay any additional consideration therefor. Once such consent, authorization, approval, waiver, release, substitution or amendment is obtained, Seller shall sell, transfer, assign, convey and deliver to Buyer the relevant Acquired Asset to which such consent, authorization, approval, waiver, release, substitution or amendment relates for no additional consideration. Any applicable sales, transfer and other similar Taxes in connection with such sale, transfer, assignment, conveyance and delivery shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties

the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer or Seller identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Fifty Four Million Nine Hundred Thirty Thousand Dollars ($54,930,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and any amounts required to be deposited into the escrow fund pursuant to Section 6.05(e), to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is

entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

(c) In addition to the Purchase Price, Buyer shall pay Seller up to Seventy Thousand Dollars ($70,000) as reimbursement for engineering and legal fees incurred related to this transaction to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date. Seller shall provide Buyer with invoices evidencing the amount of transaction-related fees incurred at least five (5) Business Days before the Closing Date.

Section 3.02. Fair Consideration.

The consideration specified in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Transfer Taxes.

Any and all deed stamps or transfer Taxes which may be due the Commonwealth of Pennsylvania or any political subdivision in connection with the sale, transfer, assignment, conveyance and delivery hereunder of the Acquired Assets to Buyer (collectively, "Transfer Taxes"), shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

ARTICLE IV.

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller makes only the representations and warranties which are set forth in this Article IV.

As a material inducement to Buyer to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Seller represents and warrants, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply to or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 4.01. Organization.

Seller is a body corporate and politic, organized and existing under the Second Class Township Code of the Commonwealth of Pennsylvania.

Section 4.02. Power and Authority.

Seller has (i) duly adopted an authorizing ordinance or resolution authorizing the transactions contemplated herein, which remains in full force and effect, (ii) duly authorized and approved the execution and delivery of this Agreement and (iii) duly authorized and approved the performance by Seller of its obligations contained in this Agreement. Seller has all requisite power

and authority to own, lease and operate the Acquired Assets and the System and has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms of this Agreement.

Section 4.03. Enforceability.

This Agreement has been duly authorized, executed and delivered by Seller and is a valid and legally binding obligation of Seller, enforceable against Seller in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 4.04. No Conflict or Violation.

The execution and delivery of this Agreement by Seller, the consummation of the transactions contemplated by this Agreement and the performance by Seller of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Seller under (i) any Law or (ii) any agreement, instrument or document to which Seller is a party or by which it is bound.

Section 4.05. Consents and Approvals.

Schedule 4.05 sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Seller or the performance by Seller of its obligations hereunder.

Section 4.06. Undisclosed Liabilities

Except as set forth in Schedule 4.06, there are no liabilities or obligations of Seller, either accrued, absolute, contingent or otherwise, relating to the Acquired Assets, other than liabilities incurred in the ordinary course that could not reasonably be expected to have a Material Adverse Effect on Buyer.

Section 4.07. Absence of Certain Changes or Events.

Except as set forth on Schedule 4.07, since December 31, 2016, there has not been any transaction or occurrence that has resulted or is reasonably likely to result in a Material Adverse Effect and Seller has operated and maintained the System since that date in the ordinary course.

Section 4.08. Tax Matters.

Except as set forth in Schedule 4.08 or as would not have a Material Adverse Effect, (i) Seller has timely paid all Taxes that may have been or may be due and payable by Seller on or before the Closing Date, arising from the ownership or operation of the Acquired Assets or the System on or before the Closing Date (ii) no taxing authority has asserted any claim against the Seller for the assessment of any additional tax liability or initiated any action or proceeding which

could result in such an assertion; and (iii) the Seller has made all withholding of Taxes required to be made under all Laws and regulations, including without limitation, withholding with respect to compensation paid to employees, and the amounts withheld have been properly paid over to the appropriate taxing authorities.

Section 4.09. Real Property and Easements.

Schedule 4.09 sets forth all Real Property of Seller and separately identifies all Easements. Seller does not lease (as lessee) any real property that is used in the operation of the System. There are no pending condemnation proceedings relating to any of the Real Property or Easements nor has Seller actually received any written threats of any condemnation proceedings and, to the Knowledge of Seller, no such proceedings are threatened. Seller has not received any written notices of any violations of any Law from any Governmental Authority with respect to the Real Property or the Easements which has not been cured in all material respects and, to Seller's Knowledge, no such violations of Law exist. With respect to the Real Property, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Real Property held by third parties, (ii) Seller is in sole possession of the Real Property, and (iii) to Seller's Knowledge there are no encroachments either way across the boundary of the Real Property, nor any dispute with adjacent real property owners over the location of boundaries or potential claims adverse to title. With respect to each Easement, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Easement held by third parties, and (ii) to Seller's Knowledge there are no disputes with adjacent real property owners of the owners of the real property encumbered by the Easement over the location of boundaries or potential claims adverse to title.

Section 4.10. Equipment and Machinery.

All Equipment and Machinery included in the Acquired Assets is set forth on Schedule 4.10. Except as set forth in Schedule 4.10, Seller has good title, free and clear of all Liens (other than the Permitted Liens and Liens that will be released on or before Closing) to the Equipment and Machinery owned by Seller. Except as set forth on Schedule 4.10, all the Equipment and Machinery is owned by Seller, and none is leased or used under any conditional sales, title-retention, lease, license or similar arrangement.

Section 4.11. Environmental Compliance.

Except as set forth on Schedule 4.11, or that otherwise could not be expected to have a Material Adverse Effect:

(a) The System as currently operated by Seller and all operations and activities conducted by Seller with respect to the System are in compliance in all material respects with all applicable Environmental Requirements.

(b) Seller has generated, used, handled, treated, stored and disposed of all Hazardous Materials in (i) compliance in all material respects with all applicable Environmental Requirements and (ii) a manner that has not given, and could not reasonably be anticipated to give, rise to Environmental Liabilities.

(c) Seller has not received notice of any Environmental Claims related to the System that have not been fully and finally resolved, and to the Knowledge of Seller no claims of Environmental Liabilities have been threatened allegedly arising from or relating to the System that have not been fully and finally resolved.

(d) Hazardous Materials are not present at or on the System or Acquired Assets, there has been no Release of Hazardous Materials at, on or from any part of the System or the Acquired Assets, in each case in a manner that violates any Environmental Requirements or has resulted in, or could reasonably be anticipated to give rise to, Environmental Liabilities.

(e) No Lien or activity use limitation or institutional control has been recorded affecting any Acquired Assets by any Governmental Authority due to either the presence of any Hazardous Material on or off the Acquired Assets or a violation of any Environmental Requirement.

(f) There are no underground storage tanks on or at any of the Acquired Assets. Any underground storage tanks previously located at the Acquired Assets have been removed or otherwise closed, plugged and abandoned in compliance with applicable Environmental Requirements in effect at the time of such closure.

(g) No PCB Equipment is on or at any of the Acquired Assets. Any PCB Equipment that previously existed at the Acquired Assets has been flushed of polychlorinated byphenyls or has been removed and properly disposed of, in compliance with applicable Environmental Requirements, and any remaining PCB Equipment is labeled to the extent required under applicable Environmental Requirements and being managed in compliance with applicable Environmental Requirements.

(h) No Regulated Asbestos Containing Material exists in or on the Acquired Assets in an aggregate amount that would reasonably be expected to result in an Environmental Liability; and any Regulated Asbestos Containing Material is being managed in compliance with all applicable Environmental Requirements.

(i) Seller has delivered to Buyer (1) all material environmental site assessments or reasonable and accurate summaries thereof pertaining to the System, (2) all material compliance audits or compliance assurance reviews prepared within the previous five (5) years or reasonable and accurate summaries thereof relating to compliance with Environmental Requirements by the System, and (3) reasonable and accurate summaries of, or all material documents pertaining to, any known and unresolved Environmental Liabilities incurred in relation to the System, to the extent possessed by or under the reasonable control of Seller.

Section 4.12. Authorizations and Permits.

Schedule 4.12 sets forth the Authorizations and Permits of Seller that are currently in full force and effect; (ii) Seller has made true and complete copies of all Authorizations and Permits available to Buyer; and (iii) except as set forth on Schedule 4.12, Seller is in compliance with all terms, conditions and requirements of all Authorizations and Permits, except in each case where such violation or failure, individually or in the aggregate, would not have a Material Adverse

Effect, and no proceeding is pending or, to the Knowledge of Seller threatened relating to the revocation or limitation of any of the Authorizations or Permits, other than those revocations or limitations which do not individually or in the aggregate have a Material Adverse Effect.

Section 4.13. System Contracts.

(a) Schedule 4.13 sets forth a complete and accurate list of all the Assigned Contracts.

(b) Seller has made available to Buyer true and complete copies of all of the Assigned Contracts.

(c) All of the Assigned Contracts set forth on Schedule 4.13 are in full force and effect. Seller has not, nor to the Knowledge of Seller has any other party thereto, breached any material provision of or defaulted under the material terms of, nor does any condition exist which, with notice or lapse of time, or both, would cause Seller, or to the Knowledge of Seller, any other party, to be in default under any Assigned Contract.

Section 4.14. Compliance with Law; Litigation.

(a) Seller has operated and is operating the System in compliance, in all material respects, with all Laws, Authorizations and Permits and is not in breach of any Law, Authorization or Permit that would have a Material Adverse Effect on the operations of the System or on Buyer. There are no Authorizations or Permits from any Governmental Authority necessary for the operation of the System as currently being operated except for those Authorizations and Permits set forth on Schedule 4.12.

(b) Except at set forth on Schedule 4.14, there are no facts, circumstances, conditions or occurrences regarding the System that could reasonably be expected to give rise to any environmental claims or governmental enforcement actions that could reasonably be expected to have a Material Adverse Effect, and there are no past, pending or threatened environmental claims or governmental enforcement actions against Seller that individually or in the aggregate could reasonably be expected to have a Material Adverse Effect.

(c) Except at set forth on Schedule 4.14, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller before or at the time of Closing that could reasonably be expected to have a Material Adverse Effect on the operations of the System. As of the Effective Date, no action, suit or proceeding, at Law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller which could materially affect the validity or enforceability of this Agreement.

Section 4.15. Broker's and Finder's Fees.

No broker, finder, or Person is entitled to any commission or finder's fee by reason of any agreement or action of Seller in connection with this Agreement or the transactions contemplated by this Agreement. Seller shall pay when due the fees and expenses of their financial and technical advisors. Seller has employed Public Financial Management, Inc., as municipal advisor to provide transaction structuring advice and to provide Seller with municipal advice relating to the sale of

the System. Seller shall pay all fees owed to Public Financial Management, Inc. in connection with the transactions contemplated by this Agreement.

Section 4.16. Title to the Acquired Assets; Sufficiency.

(a) Except as set forth on Schedule 4.16(a), Seller has good and marketable title to, all Real Property, and valid leasehold interest in or valid licenses or Easements to use and access, all of the Acquired Assets, free and clear of all Liens, other than Permitted Liens and Liens which will be fully and unconditionally released at or before Closing. The use of the Acquired Assets is not subject to any Liens, other than Permitted Liens, and such use does not encroach on the property or the rights of any Person.

(b) Except as set forth on Schedule 4.16(b), the Acquired Assets are sufficient for, and constitute all the assets, properties, business, goodwill and rights of every kind and description, and services required for, the continued conduct and operation of the System by Buyer in substantially the same manner as currently conducted and operated by Seller. Except for the Excluded Assets and except as set forth on Schedule 4.16(b), (i) the Acquired Assets, taken as a whole, comprise all the assets, properties, business, goodwill and rights of every kind and description used or held for use in, or useful or necessary to the operation of the System as currently operated by Seller, and (ii) there are no assets, properties, business, goodwill, rights or services used in the conduct or operation of the System that are owned by any Person other than Seller that will not be licensed or leased to Buyer under valid, current license arrangements or leases. None of the Excluded Assets are material to the System.

Section 4.17. Pending Development Plans.

Schedule 4.17 sets forth a full and complete list of all Pending Development Plans as of the Effective Date. Each Pending Development Plan, if consummated could result in the expansion of the Service Area. Seller provides no assurances whatsoever that any development or expansion of the Service Area associated with any Pending Development Plan will actually be undertaken or completed. The Parties expect that Schedule 4.17 will change from time to time between the Effective Date and Closing, and the Seller shall provide updates to Schedule 4.17 pursuant to Section 9.03.

Section 4.18. Land Development Agreements/Financial Security Agreements

Schedule 4.18 sets forth a list of all Land Development / Financial Security Agreements existing as of the Effective Date between Seller and any third party.

ARTICLE V. REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer makes only the representations and warranties which are set forth in this Article V.

As a material inducement to Seller to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Buyer represents and warrants to Seller, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 5.01. Organization.

Buyer is duly organized, validly existing and in good standing under the laws of the state of its organization.

Section 5.02. Authorization and Validity of Agreement.

Buyer has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms of this Agreement. This Agreement has been duly authorized, executed and delivered by Buyer and is a valid and legally binding obligation of Buyer, enforceable against it in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 5.03. No Conflict or Violation.

The execution and delivery of this Agreement by Buyer, the consummation of the transactions contemplated hereby and the performance by Buyer of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a material breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Buyer under (i) any Law, (ii) any material agreement, instrument or document to which Buyer is a party or by which it is bound or (iii) the articles, bylaws or governing documents of Buyer.

Section 5.04. Consents and Approvals.

Schedule 5.04 sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Buyer or the performance by Buyer of its obligations hereunder.

Section 5.05. Broker's and Finder's Fees.

No broker, finder or third party is entitled to any commission or finder's fee in connection with this Agreement or the transactions contemplated by this Agreement.

Section 5.06. Financial Wherewithal.

Upon Closing, and after giving effect to the consummation of the transactions contemplated hereby and the incurrence of any indebtedness in connection therewith, Buyer shall have the financial ability and will have sufficient working capital for its needs and anticipated needs to operate the System as a certificated public utility system regulated by the PaPUC, authorized, among things, to provide wastewater utility services to retail residential, commercial and industrial customers in the System.

Section 5.07. Sufficient Funds.

Buyer shall have sufficient funds available at Closing to consummate the transactions contemplated by this Agreement, to pay the Purchase Price in accordance with Article III and expenses related to the transactions contemplated by this Agreement, and on and after Closing, to generally provide ownership, operation and capital for the operations and capital needs of the System following the Closing, and assuring that the customers of the System will receive safe, adequate and reliable wastewater service equal to or better than such customers would have received without the transactions contemplated by this Agreement and at all times consistent with the provisions of the Pennsylvania Public Utility Code, 66 Pa. C. S. § 101 *et seq*, and Law.

Section 5.08. Independent Decision.

Except as expressly set forth in this Agreement, or any of the related agreements, Buyer acknowledges that (a) neither Seller nor any other Person has made any representation or warranty, express or implied, as to the accuracy or completeness of the System or information provided to Buyer, and (b) neither Seller nor any other Person shall have or be subject to any liability to Buyer or any other Person resulting from the distribution to Buyer, or Buyer use of, any information regarding the System or Acquired Assets that has been furnished or made available to Buyer and its Representatives.

Section 5.09. Scheduled Matters.

Buyer acknowledges that: (a) the inclusion of any matter on any Schedule shall not be deemed an admission by Seller that such listed matter is material or that such listed matter has or could have a material adverse effect or constitutes a material liability with respect to the Acquired Assets; (b) matters reflected in the Schedules are not necessarily limited to matters required by this Agreement to be reflected in such Schedules; and (c) such additional matters are set forth for informational purposes only and do not necessarily include other matters of a similar nature.

Section 5.10. Independent Investigation.

Buyer acknowledges that it has conducted an independent investigation of the financial condition, assets, liabilities, properties and projected capital needs and operations of the System in making its determination as to the propriety of the transaction contemplated by this Agreement and, in entering into this Agreement and related agreements, has relied solely on the results of its investigation and on the representations and warranties of Seller expressly contained in Article IV of this Agreement.

Section 5.11. Litigation.

Buyer is not in breach of any Law that could have a material adverse effect on the operations of the System or Buyer. Neither Buyer nor any Affiliate of Buyer is listed on any of the following lists maintained by the Office of Foreign Assets Control of the United States Department of the Treasury, the Bureau of Industry and Security of the United States Department of Commerce or their successors, or on any other list of Persons with which Seller may not do business under Law: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the

Entity List and the Debarred List. Except as set forth on Schedule 5.11, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Buyer, threatened against Buyer before or at the time of Closing, which will have a material adverse effect on (i) the transactions contemplated by this Agreement or (ii) the validity or enforceability of this Agreement.

ARTICLE VI.

TITLE TO REAL PROPERTY; EASEMENTS

Section 6.01. Evidence of Title.

Subject to Section 6.06, with respect to all Real Property, Buyer shall obtain at its sole cost and expense a commitment for a Title Policy (the "Title Commitment"), issued by a title insurance company selected by Buyer and licensed to insure title to real property by the Commonwealth of Pennsylvania (the "Title Company"). Promptly following the Effective Date, Buyer shall order the Title Commitment from the Title Company and shall provide Seller evidence of the order. Notwithstanding anything to the contrary in Section 6.02(a), a purported Objection Notice is void with respect to any parcel of Real Property if, within thirty (30) Business Days after the Effective Date, Buyer has not ordered the Title Commitment from the Title Company for such parcel of Real Property and provided Seller with evidence of the order.

Section 6.02. Objections to Title.

(a) Notice of Objections. Within thirty (30) Business Days of Buyer's receipt of the Title Commitment for any of the parcels of Real Property, Buyer shall deliver to Seller a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of all exception documents listed in the Title Commitment, along with Buyer's notice to Seller of any exceptions to title set forth on Schedule B of the Title Commitment to which Buyer objects (the "Objection Notice"). The exceptions listed in the Title Objection Notice are referred to as the "Title Objection Items." None of the following are Title Objection Items: (a) Permitted Liens, (b) items that pertain to Buyer or any requirements, conditions or obligations of Buyer, (c) matters of record that are set forth in the Title Commitment and adversely restrict or prevent the use of the Real Property in the operation of the System and (d) standard Title Company exceptions (such as the "survey" exception). Any Objection Notice which does not include a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of any and all exception documents listed in the Title Commitment is void. If Buyer provides Seller with an Objection Notice, Seller shall use its commercially reasonable efforts to have all of the Title Objection Items cured, satisfied or released of record, or bond over, by the Title Company ("Cure" or "Cured") before or as of the Closing. At or before the Closing, Seller shall deliver written evidence to Buyer, in form and substance reasonably satisfactory to Buyer and at Seller's cost and expense, evidencing that Seller has Cured all Title Objection Items.

(b) Liens. Without limiting Seller's obligations pursuant to Section 6.02(a), before or as of the Closing, Seller shall, at its sole cost and expense, Cure any Lien encumbering the Real Property which can be Cured by the payment of money (other than Permitted Liens).

(c) Title Endorsements/Survey. Buyer shall pay for any endorsements required by Buyer or any mortgagee of Buyer to the Title Policy. If any survey is required by Buyer or its mortgagee, either as a condition to any endorsement or otherwise, Buyer shall pay to obtain the survey and all related costs and expenses. If Buyer obtains a survey of any Real Property and wants the deed to contain the legal description based on a survey, if the same is not identical to the legal description contained in Seller's deed of record, Seller is not obligated to include the same in the deed to Buyer unless the survey is certified to Seller and such description is included in the deed on a "quitclaim" basis only and without warranty of title.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Real Property in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Real Property as provided for in this Agreement. For the avoidance of doubt, Seller shall provide such title as soon as reasonably practicable in accordance with Section 6.01.

(e) Insurable Claims. To the extent any Claim for Losses under Article VIII is an Insurable Claim, Buyer shall assert and pursue with reasonable diligence the Insurable Claim against the Title Company (which includes commencing litigation and diligently prosecuting the Insurable Claim to judgment) before pursuing a Claim for Losses under Article VIII. Following a non-favorable judgment that substantially denies the relief sought by Buyer from the Title Company in connection with the Insurable Claim (each a "Non-Favorable Judgment"), Buyer may, following such Non-Favorable Judgment, pursue Seller with a Claim for Losses under Article VIII (any Claim against Seller following an attempted Insurable Claim against the Title Company is a "Residual Title Claim"). Notwithstanding anything to the contrary in Article VIII, Buyer must assert a Claim for Losses based upon a Residual Title Claim within sixty (60) day of the Non-Favorable Judgment. For purposes of this Section 6.02(d), an "Insurable Claim" means a Claim that: (i) arises out of Buyer's discovery of a title defect or encumbrance with respect to any of the Real Property following the Closing Date that materially restricts or prevents the use of such Real Property in the operation of the System; and (ii) is a claim against the Title Company under the Title Policy. Buyer acknowledges that any Claims that it could otherwise bring as a breach of a covenant of title under the special warranty deed to the Real Property is included within the Claim for Losses under Article VIII and is subject to the terms of this Section 6.02(d) of first pursuing the same as an Insurable Claim.

Section 6.03. Title Expenses.

Irrespective of whether Closing occurs, Buyer shall pay all costs and expenses for obtaining the Title Commitment, Title Policy and any survey. Seller shall pay for all expenses to release, satisfy or bond over any Liens, and to effect the Cure of any Title Objection Items that Seller undertakes to Cure, including the cost of any title endorsement to insure Buyer against any adverse effect of such Title Objection Items.

Section 6.04. UCC Search; Releases.

Not later than sixty (60) Business Days after the Effective Date, Buyer shall obtain at its sole cost and expense a Uniform Commercial Code search against Seller covering any of the personal property or fixtures included among the Acquired Assets from the Office of the Secretary

of the Commonwealth of Pennsylvania and the Recorder of Chester County, Pennsylvania (the "UCC Search"). On or before the Closing, Seller shall obtain at its sole cost and expense releases of any and all security interests in any of the Acquired Assets which are not Permitted Liens. Seller shall provide the form of the releases of any security interests to Buyer on or before the Closing Date.

Section 6.05. Easements.

(a) Promptly after the Effective Date and before the Closing, Seller shall, at its sole cost and expense, cause an abstractor selected by Seller and reasonably acceptable to Buyer and the Title Company (the "Abstractor") to perform a search of the public land records of Chester County, based on Seller's records and plans of the System (and such other sources of information as are reasonably related thereto), by means of searching the grantee index in the names of Seller and such other searches as the Abstractor may reasonably make, to (i) identify and provide Buyer with title information on all recorded Easements, and (ii) together with Seller, identify all Missing Easements. During this process, as the Abstractor provides written search results to Seller (including updated versions of the Abstractor search result chart), Seller will promptly provide the same to Buyer for its review, and Seller shall, or shall cause the Abstractor to, provide Buyer with periodic updates (which shall occur no less frequently than bi-weekly) on the status of the activities set forth in the previous sentence. Promptly after the Effective Date, Seller shall engage an engineer to develop a map of all collection pipes, services, pump stations, manholes of the System and identify each parcel within the Service Area that Seller's sanitary wastewater conveyance facilities encroaches upon private property for use in connection with the Abstractor's report to identify the Missing Easements.

(b) Notice of Objections. Within forty five (45) days of Buyer's receipt from the Seller (or the Abstractor or an engineer) of the information described in subsection 6.05(a), Buyer shall deliver to Seller written notice identifying the encumbrances on the Easements that, in Buyer's reasonable opinion, could materially and adversely restrict or prevent the use of the Easements in the operation of the System, (an "Easement Objection Notice"). Buyer shall not be permitted to include in its Easement Objection Notice any encumbrances that: (a) are Permitted Liens, (b) pertain to the Buyer or any requirements, conditions or obligations of the Buyer, or (c) are matters of record and set forth in the Abstractor's search results that do not, in Buyer's reasonable opinion, materially and adversely restrict or prevent the use of the Easements in the operation of the System (specifically including mortgages or other instruments securing indebtedness incurred by the owner of the land burdened by the Easement) (such exceptions objected to in the Objection Notice, the "Easement Objection Items." If Buyer provides the Seller with an Easement Objection Notice, the Seller shall use commercially reasonable efforts to have the Easement Objection Items Cured, prior to or as of the Closing. If Seller is unable to Cure any Easement Objection Item, Seller shall grant Buyer a license pursuant to Section 6.05(d) in all of Seller's rights necessary to access Easements and operate and maintain the System until such time as Buyer is provided title to such Easement as provided for in this Agreement.

(c) If during the process of Abstractor's review and investigation of the Chester County land records, Seller determines that there is a Missing Easement, Seller shall take any and all actions (including the use of its power of condemnation) to obtain any Missing Easements so that the same may be sold, assigned, transferred and conveyed to Buyer at the Closing pursuant to the terms and

conditions of this Agreement. All costs and expenses incurred in connection with obtaining each Missing Easement (including any payment to a landowner in connection with condemnation, in lieu of condemnation or otherwise) shall be paid by Seller and no additional consideration shall be payable by Buyer for any Missing Easement. If Seller has not obtained all Missing Easements by the date that is sixty (60) Business Days after the date that Abstractor has completed its review of the County land records and delivered the last results to Seller (the "Abstract Completion Date"), then, no later than thirty (30) Business Days after the Abstract Completion Date (but in any event no later than thirty (30) days before the Closing), Seller shall commence and file in the Court of Common Pleas, Chester County, a condemnation or eminent domain proceeding to obtain any and all such Missing Easements. For the purposes of clarity, upon obtaining each Missing Easement (including upon the final resolution of a condemnation proceeding), each Missing Easement that has been acquired or obtained by Seller will be considered an Easement.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Easement in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Easement as provided for in this Agreement.

(e) Escrow at Closing for Missing Easements. For all of the Missing Easements listed on attached Schedule 6.05(e) as of the Closing Date, Seller will have additional time following the Closing Date to secure and assign and transfer the Missing Easements to Buyer. Seller shall diligently pursue and deliver the Missing Easements on or before the third (3rd) anniversary of the Closing Date, subject to any extension as permitted by Escrow Agreement, in the form attached as Exhibit C, that will require, among other things, the funding of an escrow account in the amount of Two Thousand Dollars ($2,000) per Missing Easements listed on attached Schedule 6.05(e) as of the Closing Date to secure the Seller's obligations under this Agreement and the Escrow Agreement.

Section 6.06. Unscheduled Property.

The Parties acknowledge that Seller may own interests in or have the legal right to use or occupy the Real Property and Easements that is necessary or essential to the operation of the System and that is not set forth on Schedule 4.09 (the "Unscheduled Real Property"). If the Parties discover before or after the Closing Date, one or more parcels of Unscheduled Real Property, the discovering Party shall notify the non-discovering Party of the discovery. In addition to its obligations in Section 2.03, Seller shall convey, assign or otherwise transfer any rights to each parcel of Unscheduled Real Property, without additional consideration payable by Buyer, in such a manner as to provide Buyer with reasonable assurances that Buyer may use or occupy the Unscheduled Real Property as it was used by Seller as of the Effective Date.

ARTICLE VII.

OTHER AGREEMENTS

Section 7.01. Taxes.

Seller shall pay any and all Taxes, if any, arising out of the ownership of the Acquired Assets and out of the operation of the System before the Closing.

Section 7.02. Cooperation on Tax Matters.

Seller shall furnish or cause to be furnished to Buyer, as promptly as practicable, whether before or after the Closing Date, such information and assistance relating to the System as is reasonably necessary for the preparation and filing by Buyer of any filings relating to any Tax matters.

Section 7.03. Rates.

(a) Rates. Buyer shall implement the Seller's sanitary wastewater base rates then in effect at Closing, as set forth on Schedule 7.03(a) (the "Base Rate") as Buyer's effective sanitary wastewater base rates, provided that the rates set forth on Schedule 7.03(a) (at Closing) shall not be lower than those in effect on the date the Effective Date. Buyer shall not propose to increase Base Rates until after the third anniversary of the Closing Date. Buyer intends to bill customers on a monthly basis instead of annual billing, which Buyer will prorate accordingly. At and after the Closing, Buyer shall charge and collect its then-existing miscellaneous fees and charges and apply its then-existing rules and regulations for wastewater service in the Buyer's tariff (or rules and regulations), as amended from time to time, within the Service Area.

(c) PaPUC Approval. The Buyer shall include the rate provisions of Sections 7.03(a) in its requested PaPUC Governmental Approval.

Section 7.04. Buyer Taxpayer.

From and after the Closing Date, Buyer acknowledges that, upon conveyance of the Acquired Assets to Buyer, Buyer will be subject to, among other Taxes, real estate Taxes, which Buyer shall pay when due.

Section 7.05. PaPUC Approval.

(a) Promptly after the Effective Date, Buyer shall timely initiate and faithfully prosecute the necessary proceedings to obtain from the PaPUC (i) the issuance of certificates of public convenience to Buyer to provide wastewater services in the Service Area and (ii) the approval of the acquisition of the System by Buyer under terms and conditions that are reasonably acceptable to Seller and Buyer. Seller shall cooperate with and assist Buyer in proceedings before the PaPUC.

(b) Buyer and Seller hereby agree that the procedures for determining fair market value of the System and Acquired Assets outlined in subsection (a) of Section 1329 of Title 66 of the

Pennsylvania Consolidated Statutes ("Section 1329") shall be utilized and filed with the PaPUC as contemplated by Section 1329.

(c) The fees and expenses related to engaging the licensed engineer for such Section 1329 determination shall be paid one-half (50%) by Buyer and one-half (50%) by Seller.

(d) Buyer, in Buyer's first base rate proceeding with respect to the System following the Closing, shall propose the use of statutory and regulatory mechanisms available to benefit the Buyer's acquired customers for ratemaking purposes.

Section 7.06. Remedies for Breach of Article VII Agreements.

If Buyer breaches any of the covenants and agreements set forth in this Article VII following Closing, in addition to all other rights and remedies available at law or in equity, including specific performance and/or injunctive relief, Seller may commence proceedings before the PaPUC seeking enforcement of such covenants and agreements.

Section 7.07. Operation and Maintenance of the MS4 System.

Subject to Law, Seller, shall at all times maintain ownership of its MS4 System and Stormwater System Assets. Seller will maintain any NPDES permits related to the Stormwater System Assets.

Section 7.08. Utility Valuation Experts.

Buyer and Seller shall each be responsible for the costs associated with their respective Utility Valuation Expert for the preparation and completion of their respective Utility Valuation Expert's appraisal report and any additional work by their respective Utility Valuation Expert necessary to assist in the processing and prosecution of the application to the PaPUC in regard to this transaction under Section 1329.

Section 7.09. EDU Allocations.

In connection with EDU allocations, Buyer shall at all times act in compliance with Seller's ordinances, including those with respect to zoning and land use, the Seller's Act 537 plan and the Seller's comprehensive plans.

Section 7.10 Act 537 Plan.

(a) Buyer acknowledges that Seller previously drafted and committed to an Act 537 Plan under the Pennsylvania Sewage Facilities Act (the original plan established in 1995, together with all subsequent amendments, the "Plan"), which has been made available to Buyer and which may be amended pursuant to Section 12.08 hereunder. Buyer understands that the Plan contains obligations and commitments, as more fully set forth in the Plan to complete certain improvements and upgrades to the System (the "System Improvements"). Buyer shall accept and complete all of the System Improvements as Seller agreed to complete under the Plan.

(b) Buyer acknowledges the Seller has jurisdiction over sewage facilities planning and sewer service through the Plan and its Act 537 planning program, zoning, subdivision and land development ordinances and comprehensive land use planning policies. Buyer and Seller shall cooperate with respect to current and future sewage facilities planning and sewer service consistent with the provisions of this Section 7.10.

(c) Subject to PaPUC approval of the Service Area as specified in Section 7.10, Buyer shall extend sewer lines and provide sewage collection and treatment services to properties within the Service Area in a manner consistent with the Plan and the Buyer's Tariff. Pursuant to Section 12.08, Seller will confer with Buyer concerning any amendment to the Plan that would affect the provision of sewage collection and treatment services within the Service Area. Seller will not propose or adopt any amendment to the Plan that would reduce the Service Area or divert wastewater flows generated from properties located within the Service Area from being served by the System without the approval of Buyer.

(d) Buyer will not request, pursue, or implement expansions of the System within the Seller's border beyond the current Service Area (that would trigger a Plan amendment) without the prior written approval of Seller and the PaDEP. Seller shall promptly notify and confer with Buyer, and consider Buyer's comments, concerning any proposed Plan amendment (including any sewage facilities planning module) that would involve the provision of sewage collection and treatment services by the System to area or properties outside of the Service Area. With respect to any such potential Plan amendment, Seller and Buyer shall cooperate in evaluating alternatives for provision of sewage services to such areas consistent with the requirements of 25 Pa Code Ch. 71, including consideration of the technical feasibility, economic feasibility and cost effectiveness, consistency with the objectives and policies of plans and requirements of 25 Pa. Code Ch. 71.21(a)(5), consistency with municipal land use plans and ordinances, subdivision ordinances and other ordinances and plans for controlling land use and development, technically and administratively able to be implemented, and other factors required under Act 537 or under Buyer's Tariff.

(e) If Seller and Buyer each determine that the provision of sewage collection and treatment services by the System to certain areas or properties outside of the Service Area is technically feasible, economically feasible and cost effective, and meets all of the requirements set forth in Act 537 and 25 Pa. Code Ch. 71, the Seller shall amend the Plan to include such identified areas and properties in the Service Area. If Seller amends the Plan pursuant to this subsection and such amendment is approved by PaDEP, (i) Buyer shall request that the modified Service Area be approved by PaPUC; and (ii) subject to PaPUC approval of the inclusion of such modified Service Area, Buyer shall extend sewer lines and provide sewage collection services to properties within such Service Area in a manner consistent with the Plan and Buyer's Tariff.

Section 7.11 Compliance and Operational Reports.

After the Effective Date and through the Closing Date, Seller shall provide Buyer with a periodic report to the person designated by Buyer, disclosing any and all material compliance or operational deficiencies that occurred during the previous month.

Section 7.12 Required Sewer Projects / Malvern Hunt System.

(a) Subject to extensions set forth in subsection (b) below, on or prior to the later to occur of: (i) the first anniversary of the Closing Date; or (ii) first anniversary following the date on which Seller secures and assigns to Buyer: all permits required from any Governmental Authority having jurisdiction over the Required Sewer Projects or the completion thereof; and all easements or other property rights required to complete the Required Sewer Projects, Buyer shall complete the sewer projects set forth on Schedule 7.12 (the "Required Sewer Projects") and a map of the expanded Service Area anticipated to result from the Required Sewer Projects as set forth on Schedule 7.12. Each Required Sewer project is deemed complete only upon notice of Seller's reasonable satisfaction of completion. After the Closing Date and through the completion date of each Required Sewer Project, Buyer shall provide Seller with a periodic report to the person designated by Seller, with an update and status report regarding each Required Sewer Project.

(b) The one (1) year deadline set forth in subsection (a) above shall be extended for any delays resulting from the discovery of concealed subsurface conditions, including but not limited to, the presence of rock or infrastructure of other utilities requiring relocation.

(c) Seller shall be responsible for all work to decommission the Excluded Assets specified on Schedule 2.02(h) (the "Malvern Hunt System") and for constructing all gravity and / or force main piping systems required to divert sewage flow into the existing collection system included with the Acquired Assets, all in compliance with applicable Laws. The decommissioning work conducted by Seller shall include upgrade of existing pumping systems if needed. Seller shall be responsible for post-decommissioning water quality sampling of existing groundwater monitoring wells as well as preparation of a final closure report to PA DEP if required by DEP.

Section 7.13 Governance Matters.

Effective on the Closing Date, Seller shall:

(i) provide Buyer with all financial information and other reports or communications received by Seller from the Valley Forge Sewer Authority within two (2) Business Days of receipt of such information by Seller from the Valley Forge Sewer Authority; and

(ii) appoint, as Seller representative, the person identified by Buyer to the joint board pursuant to the Valley Forge Sewage Treatment Plant Agreement and any successor to any subsequent term.

ARTICLE VIII.

INDEMNIFICATION

Section 8.01. Survival.

All representations and warranties contained in this Agreement shall survive until twelve (12) months following the Closing Date, except that (a) the representations and warranties of Seller set forth in Section 4.01 (Organization), Section 4.02 (Power and Authority), Section 4.03 (Enforceability) and Section 4.15 (Brokers' and Finders' Fees) (collectively, the "Seller

Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law, and (b) the representations and warranties of Buyer set forth in Section 5.01 (Organization), Section 5.02 (Authorization and Validity of Agreement), and Section 5.05 (Brokers' and Finders' Fees) (collectively, the "Buyer Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law. The covenants and agreements of the Parties contained in this Agreement survive the Closing indefinitely or for the shorter period explicitly specified therein, except that for those covenants and agreements that survive for a shorter period, breaches thereof survive indefinitely or until the latest date permitted by Law. Notwithstanding the preceding sentences, (x) any breach of representation, warranty, covenant or agreement in respect of which indemnity may be sought under this Agreement shall survive the time at which it would otherwise terminate pursuant to the preceding sentences, if notice of the inaccuracy or breach thereof giving rise to such right of indemnity shall have been given to the Party against whom such indemnity may be sought before such time, and (y) nothing contained in this Section 8.01 shall limit in any way any rights a Party may have to bring claims grounded in fraud, intentional misrepresentation or willful misconduct, which rights shall survive the Closing indefinitely.

Section 8.02. Indemnification by Seller.

To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Seller shall indemnify, defend and hold harmless, Buyer and its successors and Affiliates and their respective employees, officers, directors, trustees and agents (the "Buyer Indemnified Persons"), from and against any and all claims for Losses arising from or relating to: (a) any misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement (without regard to any materiality, Material Adverse Effect or related qualifications in the relevant representation or warranty (except where such provision requires disclosure of lists of items of a material nature or above a specified threshold)); (b) any breach or nonfulfillment of any of the covenants or agreements of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement; or (c) any Excluded Liability or Excluded Asset.

Section 8.03. Indemnification by Buyer.

To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Buyer shall defend, indemnify and hold harmless Seller and its successors and Affiliates and each of their respective employees, officers, directors and agents (the "Seller Indemnified Persons") from and against any and all claims for Losses arising from or relating to: (a) any material misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Buyer contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (b) any material breach of any of the covenants or agreements of Buyer contained in this Agreement or in any exhibit, schedule certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (c) any Assumed Liability as and when payment and performance is due, including without limitation any liability related to any claims by any Governmental Authority; (d) Buyer's actions involving Environmental Laws, Hazardous

Materials or environmental claims from and after the Closing Date; or (e) the ownership, operation or control of the Acquired Assets or the System from and after the Closing Date.

Section 8.04. Indemnification Procedure.

(a) Third Party Claims. If any Indemnified Party receives notice of the assertion or commencement of any action, suit, claim or other legal proceeding made or brought by any Person who is not a Party or an Affiliate of a Party or a Representative of a Party (a "Third Party Claim") against such Indemnified Party with respect to which the Indemnifying Party may be obligated to provide indemnification under this Agreement, the Indemnified Party shall promptly notify the Indemnifying Party thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Third Party Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party. The Indemnifying Party may participate in, or by giving notice to the Indemnified Party (and subject to the other requirements herein) to assume the defense of any Third Party Claim at the Indemnifying Party's expense and by the Indemnifying Party's own counsel (which counsel shall be reasonably acceptable to the Indemnified Party), so long as (i) the Indemnifying Party notifies the Indemnified Party, within ten (10) Business Days after the Indemnified Party has given notice of the Third Party Claim to the Indemnifying Party (or by such earlier date as may be necessary under applicable procedural rules in order to file a timely appearance and response) that the Indemnifying Party is assuming the defense of such Third Party Claim, and if the Indemnifying Party assumes control of such defense it must first agree and acknowledge in such notice that the Indemnifying Party is fully responsible (with no reservation of any rights other than the right to be subrogated to the rights of the Indemnified Party) for all Losses relating to such Third Party Claim, (ii) the Indemnifying Party conducts the defense of the Third Party Claim actively and diligently and at its own cost and expense, and (iii) the Third Party Claim (A) does not involve injunctive relief, specific performance or other similar equitable relief, any claim in respect of Taxes, any Governmental Authority, any criminal allegations, or any potential damage to the goodwill, reputation or overriding commercial interests of Buyer or its Affiliates, (B) is not one in which the Indemnifying Party is also a party and joint representation would be inappropriate or there may be legal defenses available to the Indemnified Party which are different from or additional to those available to the Indemnifying Party, or (C) does not involve a claim which, upon petition by the Indemnified Party, the appropriate court rules that the Indemnifying Party failed or is failing to vigorously prosecute or defend. The Indemnified Party shall reasonably cooperate in good faith in such defense. If the Indemnifying Party assumes the defense of any Third Party Claim, subject to Section 8.04(b), it may take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party may, at its own cost and expense, participate in the defense of any Third Party Claim with counsel selected by it subject to the Indemnifying Party's right to control the defense thereof. If the Indemnifying Party elects not to compromise or defend such Third Party Claim or fails to promptly notify the Indemnified Party in writing of its election to defend as specified in this Agreement, the Indemnified Party may, subject to Section 8.04(b), pay, compromise, and defend such Third Party Claim and seek indemnification for any and all Losses based upon, arising from or relating to such

Third Party Claim. Seller and Buyer shall reasonably and in good faith cooperate with each other in all reasonable respects in connection with the defense of any Third Party Claim, including making available records relating to such Third Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party or management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third Party Claim.

(b) Settlement of Third Party Claims. Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into settlement of any Third Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld or delayed), except as specified in this Section 8.04(b). If a firm offer is made to settle a Third Party Claim without leading to liability or the creation of a financial or other obligation on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all liabilities and obligations in connection with such Third Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall promptly notify the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within fifteen (15) days after its receipt of such notice, the Indemnified Party may continue to contest or defend such Third Party Claim and in such event, the maximum liability of the Indemnifying Party as to such Third Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third Party Claim, the Indemnifying Party may settle the Third Party Claim upon the terms set forth in such firm offer to settle such Third Party Claim. If the Indemnified Party has assumed the defense pursuant to Section 8.04(a), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

(c) Direct Claims. Any claim by an Indemnified Party with respect to any Loss which does not arise or result from a Third Party Claim (a "Direct Claim") shall be asserted by the Indemnified Party giving the Indemnifying Party prompt notice thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Direct Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Losses that have been or may be sustained by the Indemnified Party. The Indemnifying Party shall have thirty (30) days after its receipt of such notice to respond in writing to such Direct Claim. During such thirty (30) day period, the Indemnified Party shall reasonably cooperate and assist the Indemnifying Party in determining the validity and amount of such Direct Claim. If the Indemnifying Party does not so respond within such thirty (30) day period, by delivery of notice disputing the basis or amount of the Direct Claim, the Indemnifying Party shall be deemed to have rejected such claim, in which case the Indemnified Party shall be free to pursue such remedies as may be available to the Indemnified Party on the terms and subject to the provisions of this Agreement. If the Indemnifying Party has timely disputed its indemnity obligation for any Losses with respect to such Direct Claim, the Parties shall proceed in good faith to negotiate a resolution of such dispute and, if not resolved through negotiations, such dispute may be resolved by litigation in an appropriate court of jurisdiction determined pursuant to this Agreement.

Section 8.05. Limitations on Indemnification Obligations.

(a) Subject to the other limitations contained in this Section 8.05, neither Buyer nor Buyer Indemnified Persons shall seek indemnification pursuant to Section 8.02(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement or for breach of Seller's Fundamental Representations) unless the aggregate amount of Losses incurred by Buyer and Buyer Indemnified Persons under this Agreement exceeds one (1) percent of the Purchase Price in the aggregate (the "Threshold Amount"), in which case Seller will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(b) Subject to the other limitations contained in this Section 8.05 neither Seller nor the Seller Indemnified Persons shall seek indemnification pursuant to Section 8.03(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement) unless the aggregate amount of Losses incurred by Seller and Seller Indemnified Persons under this Agreement exceeds the Threshold Amount, in which case Buyer will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(c) Except in the case of fraud, intentional misrepresentation or willful misconduct (for which all applicable legal and equitable remedies will be available to Buyer), the Buyer Indemnified Parties shall only be entitled to assert claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations, which shall not be limited by this Section 8.05(c)) up to the aggregate amount of 5% of Purchase Price (the "Liability Cap"), which shall represent the sole and exclusive remedy of Buyer and the other Buyer Indemnified Parties for any such claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations or in the case of fraud, intentional misrepresentation or willful misconduct which shall not be subject to the Liability Cap, but shall be capped at the Purchase Price).

(d) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be limited to the amount of any liability or damage that remains after deducting therefrom any insurance proceeds and any indemnity, contribution or other similar payment received or reasonably expected to be received by the Indemnified Party in respect of any such claim. The Indemnified Party shall use its commercially reasonable efforts to recover under insurance policies or indemnity, contribution or other similar agreements for any Losses before seeking indemnification under this Agreement.

(e) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be reduced by an amount equal to any Tax benefit realized or reasonably expected to be realized as a result of such Loss by the Indemnified Party.

(f) Each Indemnified Party shall take, and cause its Affiliates to take, all reasonable steps to mitigate any Loss upon becoming aware of any event or circumstance that would be

reasonably expected to, or does, give rise thereto, including incurring costs only to the minimum extent necessary to remedy the breach that gives rise to such Loss.

(g) Subject to the provisions of Sections 3.01, 7.06, 15.11 and any other provisions for equitable relief and/or specific performance, the Parties' sole and exclusive remedy with respect to any and all claims for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article VIII. Each Party hereby waives, to the fullest extent permitted under Law, any and all rights, claims and causes of action for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement it may have against the other Party and their Affiliates and each of their respective Representatives arising under or based upon any Law, except pursuant to the indemnification provisions set forth in this Article VIII. Nothing in this Section 8.05(g) shall limit any Party's right to seek and obtain any equitable relief and/or specific performance pursuant to this Agreement.

Section 8.06. Knowledge of Breach.

Neither Party shall be liable for any Losses based upon or arising out of any inaccuracy in or breach of any representations or warranties of such Party contained in this Agreement if the Party claiming such Losses had Knowledge of such inaccuracy or breach before the Closing.

ARTICLE IX.

PRE-CLOSING COVENANTS OF SELLER

Section 9.01. Operation of the System.

Except as otherwise expressly permitted by this Agreement, as required by Law or with the prior written consent of Buyer (which consent shall not be unreasonably withheld, delayed or conditioned), from the Effective Date until the Closing, Seller shall (i) operate and manage the System only in the ordinary course of business in accordance with past practices and procedures, (ii) collect accounts receivable and pay accounts payable in the ordinary course and in a manner consistent with its past practices, (iii) comply in all material respects with all Laws and Authorizations and Permits, (iv) use its commercially reasonable efforts to maintain and preserve intact the business and assets of the System and preserve the rights, franchises, goodwill and relationships of Seller and the System and its customers, lenders, suppliers, regulators, and others having business relationships with Seller and the System, (iv) continue to collect EDU Fees, and sewer rents in a manner consistent with past practice, without discounting such EDU Fees, and sewer rents, (v) perform all of its obligations under all Assigned Contracts, and (vi) not take any action, or omit to take any action, that would cause to occur a fact, circumstance, condition or occurrence regarding the System or any of the Acquired Assets that could reasonably be expected to have a Material Adverse Effect.

Section 9.02. Cooperation.

Seller shall reasonably cooperate with Buyer and its employees, attorneys, accountants and other agents and, generally, act in reasonably good faith to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated by this Agreement.

Section 9.03. Supplements and Updates.

Seller shall promptly deliver to Buyer any supplemental information and reports updating the information set forth in the representations and warranties set forth in Article IV of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as specified in such representations and warranties) as if then made. Within ten (10) Business Days of having Knowledge of the same, but in no event later than three (3) Business Days before the Closing Date, Seller shall promptly advise Buyer of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

Section 9.04. Consents and Approvals.

Promptly after the Effective Date, or as required by Law, except as otherwise expressly specified in this Agreement, Seller shall file all applications and reports that are required to be filed by Seller with any Governmental Authority necessary to undertake and consummate the transactions contemplated in this Agreement as set forth on Schedule 4.05. Seller shall also promptly provide all information that any Governmental Authority may require in connection with any such application or report. Seller shall use its commercially reasonable efforts to obtain each consent, waiver, authorization or approval of any kind from any Person in connection with the transactions contemplated by this Agreement. All authorizations of any Governmental Authority necessary to consummate the transactions contemplated by this Agreement will be in form and content reasonably satisfactory to Buyer and Seller before Closing and shall be final and non-appealable. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 9.05. Pending Development Plan Agreements / Future Developments.

Seller shall enforce all of its rights and the counterparties' obligations under any agreements relating to Pending Development Plans in existence as of the Effective Date, which shall not be amended without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide such consent to Seller within fifteen (15) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. After the Effective Date, Seller shall not enter into any new agreements (including Land Development Agreements and Financial Security Agreements) with landowners regarding the construction of any sewer facilities which, upon completion of construction, will be transferred to Buyer pursuant to Section 2.01 without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide such consent to Seller within seven (7) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. For the avoidance of doubt, any attempt by Buyer to withhold consent for entry into any amendment or new agreement by Seller pursuant to this Section 9.05 that is, in the opinion of Seller's solicitor, required pursuant

to the Pennsylvania Municipal Planning Code is deemed unreasonable. Prior to Closing, Seller shall complete the dedication of all Acquired Assets.

ARTICLE X.

PRE-CLOSING COVENANTS OF BUYER

Section 10.01. Actions Before the Closing Date.

Buyer shall not take any action which shall cause it to be in breach of any representation, warranty, covenant or agreement contained in this Agreement or cause it to be unable to perform in any material respect its obligations hereunder, and Buyer shall use its commercially reasonable efforts (subject to any conditions set forth in this Agreement) to perform and satisfy all conditions to Closing to be performed or satisfied by Buyer under this Agreement, including action necessary to obtain all consents and approvals from any Person required to be obtained by Buyer to effect the transactions contemplated by this Agreement.

Section 10.02. Governmental Approvals.

Promptly after the execution of this Agreement, or as required by Law, except as otherwise expressly specified in this Agreement, Buyer shall file all applications and reports that are required to be filed by Buyer with any Governmental Authority as set forth on Schedule 5.04. Buyer shall also promptly provide all information that any Governmental Authority may reasonably require in connection with any such application or report.

Section 10.03. Cooperation.

Buyer shall reasonably cooperate with Seller and their employees, attorneys, accountants and other agents and, generally, do such other acts and things in good faith as may be reasonable to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated in accordance with the provisions of this Agreement.

Section 10.04. Supplements and Updates.

Buyer shall promptly deliver to Seller any supplemental information updating the information set forth in the representations and warranties set forth in Article V of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as specified in such representations and warranties) as if then made. At least three (3) Business Days before the Closing Date, Buyer shall advise Seller of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

ARTICLE XI.

CONDITIONS PRECEDENT TO OBLIGATIONS OF SELLER

The obligation of Seller to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Seller in its sole discretion:

Section 11.01. Consents and Approvals.

Receipt of all required material, consents, waiver, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 5.04, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired).

Section 11.02. Representations and Warranties of Buyer.

The representations and warranties made by Buyer in Article V which are (a) not qualified by materiality must be true and correct in all material respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all material respects as of such specified date) and (b) qualified by materiality must be true and correct in all respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all respects as of such specified date), and Seller must have received a certificate to that effect from a duly authorized officer of Buyer dated as of the Closing Date.

Section 11.03. PaPUC Approval.

PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals or files a petition for reconsideration of PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 11.04. No Injunctions.

Neither Seller nor Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 11.05. Performance of the Obligations of Buyer.

Buyer must have performed in all material respects all obligations required under this Agreement to be performed by Buyer on or before the Closing Date, and Seller must have received a certificate to that effect from Buyer dated the Closing Date.

Section 11.06. Deliveries by Buyer.

Buyer must have made delivery to Seller of the documents and items specified in Section 13.03 herein.

Section 11.07. No Material Adverse Effect.

There must not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

ARTICLE XII.

CONDITIONS PRECEDENT TO OBLIGATIONS OF BUYER

The obligation of Buyer to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Buyer in its sole discretion:

Section 12.01. Consents and Approvals.

Receipt of all required material, consents, waivers, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 4.05, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired).

Section 12.02. Representations and Warranties of Seller.

The representations and warranties made by Seller in Article IV this Agreement (disregarding all "materiality" and "Material Adverse Effect" or similar qualifications contained therein) must be true and correct on and as of the Closing Date (except for representations and warranties expressly stated to relate to a specific date, in which case each such representation and warranty must be true and correct as of such earlier date), with only such exceptions as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and Buyer must have received a certificate to that effect from Seller dated as of the Closing Date.

Section 12.03. PaPUC Approval.

PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 12.04. No Injunctions.

Neither Seller nor Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 12.05. No Material Adverse Effect.

There must not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

Section 12.06. Deliveries by Seller.

Seller must have made delivery to Buyer of the documents and items specified in Section 13.02 herein.

Section 12.07. Performance of the Obligations of Seller.

Seller must have performed in all material respects all obligations required under this Agreement to be performed by Seller on or before the Closing Date, and Buyer must have received a certificate to that effect from Seller dated the Closing Date.

Section 12.08. Act 537 Plan.

The Seller must have obtained PaDEP approval of all Act 537 Plan revisions or updates (i) required by PaDEP in order to allow acquisition of the System by Buyer or (ii) otherwise required to address other outstanding deficiencies with respect to existing Act 537 Plan, upon terms and conditions satisfactory to Buyer in its reasonable discretion. Notwithstanding the previous sentence, Buyer shall be responsible for the costs of preparing and submitting any necessary revisions to the Act 537 Plan required to allow acquisition of the System by Buyer. Seller and Buyer shall cooperate regarding the Act 537 Plan submission and PaDEP approval process.

ARTICLE XIII.

CLOSING

Section 13.01. Closing Date.

The Closing shall take place at the offices of Hamburg, Rubin, Mullin, Maxwell and Lupin, PC (375 Morris Rd, Lansdale, PA 19446) at 10:00 a.m. Eastern Standard Time on the earliest agreed upon date or within twenty (20) Business Days after the date upon which all the conditions precedent to Closing described in this Agreement have been fulfilled or waived and Buyer and Seller receive the last of the required consents, waivers, authorizations and approvals from the Governmental Authorities, in each case, for the transactions contemplated by this Agreement, or at such other place and time, by such other method, or on such other date, as may be mutually agreed to by the Parties (the "Closing Date"). The Closing will be effective at 12:01 a.m., East Whiteland Township, PA time, on the Closing Date (the "Closing Effective Time").

Section 13.02. Deliveries by Seller.

At the Closing, Seller shall deliver or cause to be delivered to Buyer executed copies of the following agreements, documents and other items:

(a) A Bill of Sale transferring all of the Acquired Assets comprising personal property, in the form attached as Exhibit A;

(b) Possession of the Acquired Assets, including without limitation, the Real Property, the Easements and an interest in the Missing Easements, including a license from Seller to Buyer;

(c) A duly executed counterpart to an Assignment and Assumption Agreement with respect to the Assumed Liabilities (the "Assignment and Assumption Agreement"), in the form attached as Exhibit B;

(d) The consents to transfer all of the Assigned Contracts and Authorizations and Permits (including environmental Authorizations and Permits), to the extent required hereunder;

(e) One or more special warranty or other deeds in recordable form reasonably acceptable to Buyer transferring fee simple title of Real Property;

(f) Copies or originals of all Files and Records, materials, documents and records in possession of Seller relating to the Real Property or the Assigned Contracts;

(g) Certificate of Seller pursuant to Section 12.02 of this Agreement;

(h) Certificate of Seller pursuant to Section 12.07 of this Agreement;

(i) Any documents duly executed by Seller required by the Title Company to issue final owner's title policies in accordance with the provisions of Article VI;

(j) A duly executed counterpart to the Escrow Agreement; and

(k) All such other instruments of conveyance or other documents as shall, in the reasonable opinion of Buyer and its counsel, be necessary to transfer to Buyer the Acquired Assets in accordance with this Agreement or to carry out the terms of this Agreement, duly executed and acknowledged by Seller, if necessary, and in a recordable form.

Section 13.03. Deliveries by Buyer.

At the Closing, Buyer shall deliver or caused to be delivered to Seller the following agreements, documents and other items:

(a) Payment in full of the Purchase Price;

(b) A duly executed counterpart to the Assignment and Assumption Agreement;

(c) Certificate of Buyer pursuant to Section 11.02 of this Agreement;

(d) Certificate of Buyer pursuant to Section 11.05 of this Agreement;

(e) Evidence of PaPUC approval as specified in Section 12.03;

(f) A duly executed counterpart to the Escrow Agreement; and

(g) All such other instruments of assumption as shall, in the reasonable opinion of Seller and its counsel, be necessary for Buyer to assume the Assumed Liabilities in accordance with this Agreement.

ARTICLE XIV.

TERMINATION

Section 14.01. Events of Termination.

This Agreement may be terminated and abandoned at any time before the Closing:

(a) By the mutual consent of Seller and Buyer;

(b) By either Seller or Buyer, upon notice, if:

(i) the Closing does not occur on or before the Outside Date, except Buyer has the one-time right, upon notice to Seller, to extend the Outside Date for up to ninety (90) days if, in the Buyer's sole discretion, any such amount of time up to ninety (90) days is necessary to obtain a required Governmental Approval; or

(ii) any Governmental Authority issues an order, decree or ruling or taken any other action, in each case permanently restraining, enjoining or otherwise prohibiting the material transactions contemplated by this Agreement and such order, decree, ruling or other action becomes final and non-appealable;

(c) By Seller (if Seller is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Buyer pursuant to the terms of this Agreement or of any representation or warranty of Buyer contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Seller to Buyer or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XI of this Agreement not being satisfied (which condition has not been waived by Seller in writing); or

(d) By Buyer (if Buyer is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Seller pursuant to the terms of this Agreement or of any representation or warranty of Seller contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Buyer to Seller or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XII of this Agreement not being satisfied (which condition has not been waived by Buyer in writing).

This Agreement may not be terminated after the Closing.

Section 14.02. Effect of Termination.

If this Agreement is terminated by Seller or Buyer pursuant to Section 14.01, notice thereof will be given promptly to the other and all further obligations of the Parties terminate without further action by either Party and without liability or other obligation of either Party to the other Party hereunder, except that no Party will be released from liability hereunder if this Agreement is terminated and the transactions abandoned by reason of any willful breach of this Agreement.

Section 14.03. Damages for Willful Breach.

If this Agreement is terminated as a result of willful breach by either Party as described in Section 14.02, the Party who willfully breached the Agreement is liable for Losses incurred by the non-breaching Party as a result of the breach in accordance with Article VIII.

ARTICLE XV.

MISCELLANEOUS

Section 15.01. Confidentiality.

Except as and to the extent required by Law (including but not limited to the Pennsylvania Right-To-Know Act at 65 Pa § 67.101) or pursuant to an order of a court of competent jurisdiction and as required hereunder to obtain any and all required Governmental Approvals, neither Party shall, directly or indirectly, disclose or use (and no Party shall permit its Representatives to disclose or use) any Confidential Information with respect to the other Party furnished, or to be furnished, by such other Party or its Affiliates or Representatives to the other Party or its Affiliates or Representatives in connection herewith at any time or in any manner other than in connection with the completion of the transactions contemplated by this Agreement and related transactions.

Section 15.02. Public Announcements.

Subject to Law or listing rules of an exchange on which Buyer's parent corporation's stock is listed, and except as otherwise set forth herein, the initial public announcement relating to the transactions contemplated herein will be mutually agreed upon and jointly made by the Parties. Subsequent public announcements related to the sale of the System by one Party shall be provided to the other Party as soon as reasonably practicable before issuance.

Section 15.03. Notices.

All notices, other communications and approvals required or permitted by this Agreement shall be in writing, shall state specifically that they are being given pursuant to this Agreement and shall be addressed as follows:

in the case of Seller:

East Whiteland Township

209 Conestoga Road
Frazer, PA 19355
Attention: Manager

with a copy to:

Hamburg, Rubin, Mullin, Maxwell and Lupin, PC
375 Morris Rd
Lansdale, PA 19446
Attention: Joseph J. McGrory, Jr., Solicitor

in the case of Buyer:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Marc A. Lucca, President
malucca@aquaamerica.com

with a copy to:

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr, PA 19010
Attention: Frances Orth, Esq., Vice President, Senior Managing Counsel
fporth@aquaamerica.com

or such other persons or addresses as a Party may from time to time designate by notice to the other Party. A notice, other communication or approval is deemed to have been sent and received (i) on the day it is delivered, or if such day is not a Business Day or if the notice is received after ordinary office hours (time or place of receipt), the notice, other communication or approval is deemed to have been sent and received on the next Business Day, or (ii) on the fourth Business Day after mailing if sent by United States registered or certified mail.

Section 15.04. Headings.

The article, section and paragraph headings in this Agreement are for reference purposes only and do not affect the meaning or interpretation of this Agreement.

Section 15.05. Severability.

If any term, provision, covenant or restriction contained in this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions contained in this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

Section 15.06. Entire Agreement.

This Agreement is the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, negotiations, discussions and understandings, written or oral, between the Parties. There are no representations, warranties, conditions or other agreements, whether direct or collateral, or express or implied, that form part of or affect this Agreement, or that induced any Party to enter into this Agreement or on which reliance is placed by any Party, except as specifically set forth in this Agreement. The Parties acknowledge and agree that (i) each has substantial business experience and is fully acquainted with the provisions of this Agreement, (ii) the provisions and language of this Agreement have been fully negotiated and (iii) no provision of this Agreement shall be construed in favor of any Party or against any Party by reason of such provision of this Agreement having been drafted on behalf of one Party rather than the other Party.

Section 15.07. Amendments; Waivers.

The Parties may amend this Agreement only by the Parties' written agreement that identifies itself as an amendment to this Agreement. Any waiver of, or consent to depart from, the requirements of any provision of this Agreement will be effective only if it is in writing and signed by the Party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Agreement will operate as a waiver of such right. No single or partial exercise of any such right will preclude any other or further exercise of such right or the exercise of any other right.

Section 15.08. Parties in Interest; Third Party Beneficiary.

This Agreement is not intended to and shall not be construed to create upon any Person other than the Parties any rights or remedies hereunder.

Section 15.09. Anti-Assignment; Successors and Assigns.

Neither Party to this Agreement may assign any right or delegate any performance under this Agreement without the prior written consent of the other Party. A purported assignment or purported delegation without prior written consent is void. This agreement is binding upon, and inures to the benefit of, the Parties and their permitted respective successors and assigns.

Section 15.10. Governing Law; Jurisdiction.

The laws of the Commonwealth of Pennsylvania (without giving effect to its conflicts of law principles) govern all matters arising and relating to this Agreement, including torts. The Parties irrevocably agree and consent to the jurisdiction of the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Chester County, Pennsylvania, and each Party irrevocably submits to the exclusive

jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 15.11. Specific Performance.

Irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof and that the Parties may seek specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity if the other Party has performed in accordance with the terms hereof.

Section 15.12. Counterparts; Electronic Mail; Facsimile Execution.

This Agreement may be executed in any number of counterparts which, taken together, is one and the same agreement. This Agreement becomes effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Agreement, a Party may send a copy of its executed counterpart to the other Party by electronic mail or facsimile transmission. Such Party is deemed to have executed and delivered this Agreement on the date it sent such electronic mail or facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Agreement executed by such Party.

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SIGNATURES NEXT PAGE]

DocuSign Envelope ID: B42369F8-D4E8-4DB6-91BA-A36B7EF006E4

IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: _____
Printed: John Nagel	Printed: Marc A. Lucca
Its: Manager	Its: President
ATTEST:	ATTEST:
By: Donna Wikert	By: _____
Printed: Donna Wikert	Printed: _____
Title: Assistant to the Township Manager, Board Secretary	Title: _____

IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

TOWNSHIP OF EAST WHITELAND, CHESTER COUNTY	AQUA PENNSYLVANIA WASTEWATER, INC.
By: _____	By: Marc A. Lucca
Printed: John Nagel	Printed: Marc A. Lucca
Its: Manager	Its: President
ATTEST:	ATTEST:
By: _____	By: Heidi H. McIntyre
Printed: _____	Printed: HEIDI H. McINTYRE
Title: _____	Title: Ass't Secretary

Execution Version

ASSET PURCHASE AGREEMENT

By and Between

Township of East Whiteland, Chester County,

As Seller

and

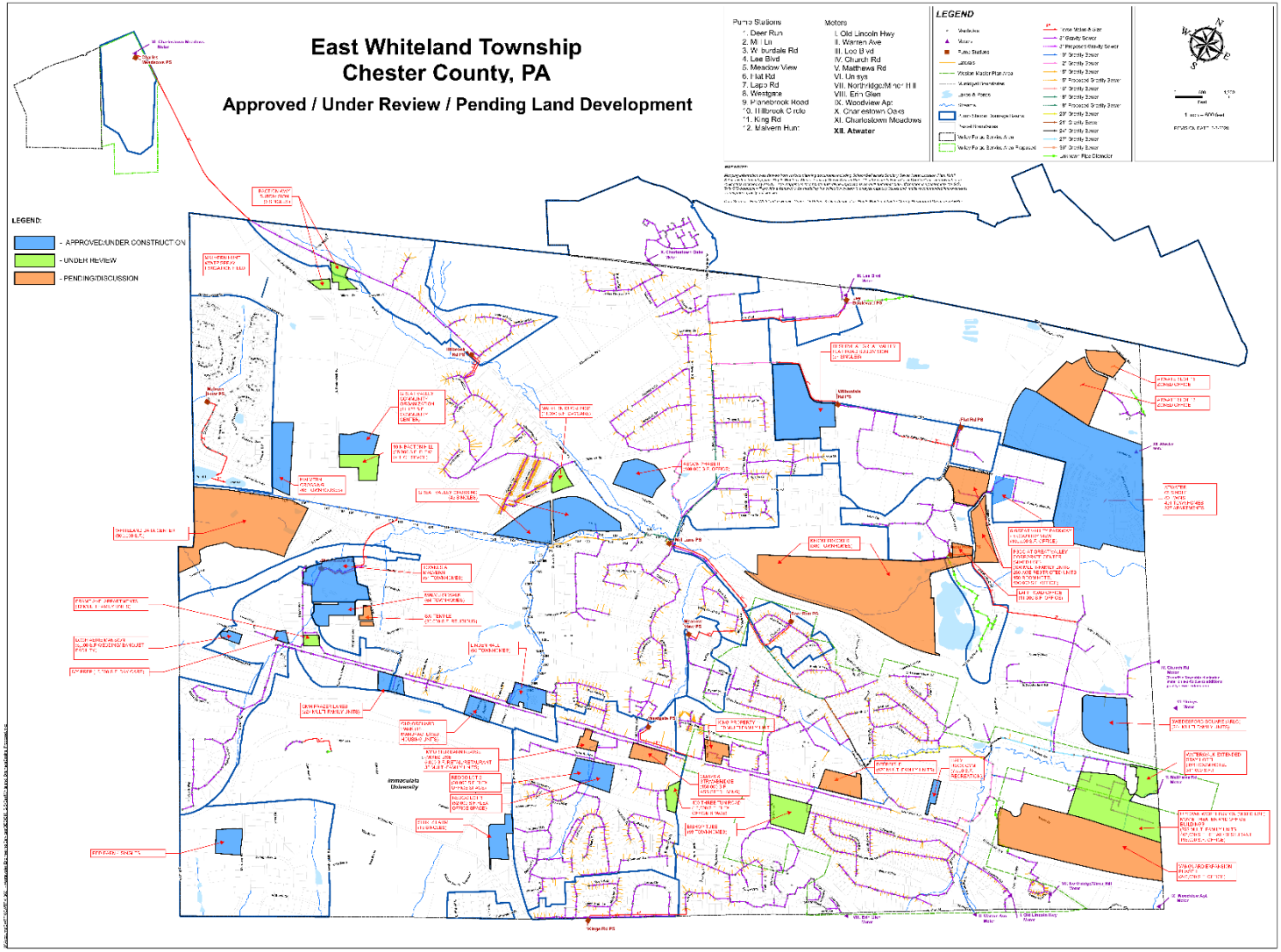
Aqua Pennsylvania Wastewater, Inc. As Buyer

SCHEDULES AND EXHIBITS

Capitalized terms used in the Schedules which are not otherwise defined herein shall have the respective meanings ascribed to such terms in the Agreement. The Schedules are to be read in their entirety. Nothing in the Schedules is intended to broaden the scope of any representation or warranty in the Agreement. The disclosure of any item, explanation, exception or qualification in any Schedule is disclosure of that item for all purposes for which disclosure is required under the Agreement when it is reasonably apparent from the context that such item, explanation, exception or qualification also relates to another Schedule irrespective of whether any cross reference is made or no Schedule is provided with respect to a representation. Other than as expressly set forth herein or when the Schedules reference agreements or other matters not documented in a separate writing, all descriptions of agreements, written materials or other matters appearing herein, are summary in nature and are qualified by reference to the complete documents, which have been supplied to the Buyer or its counsel.

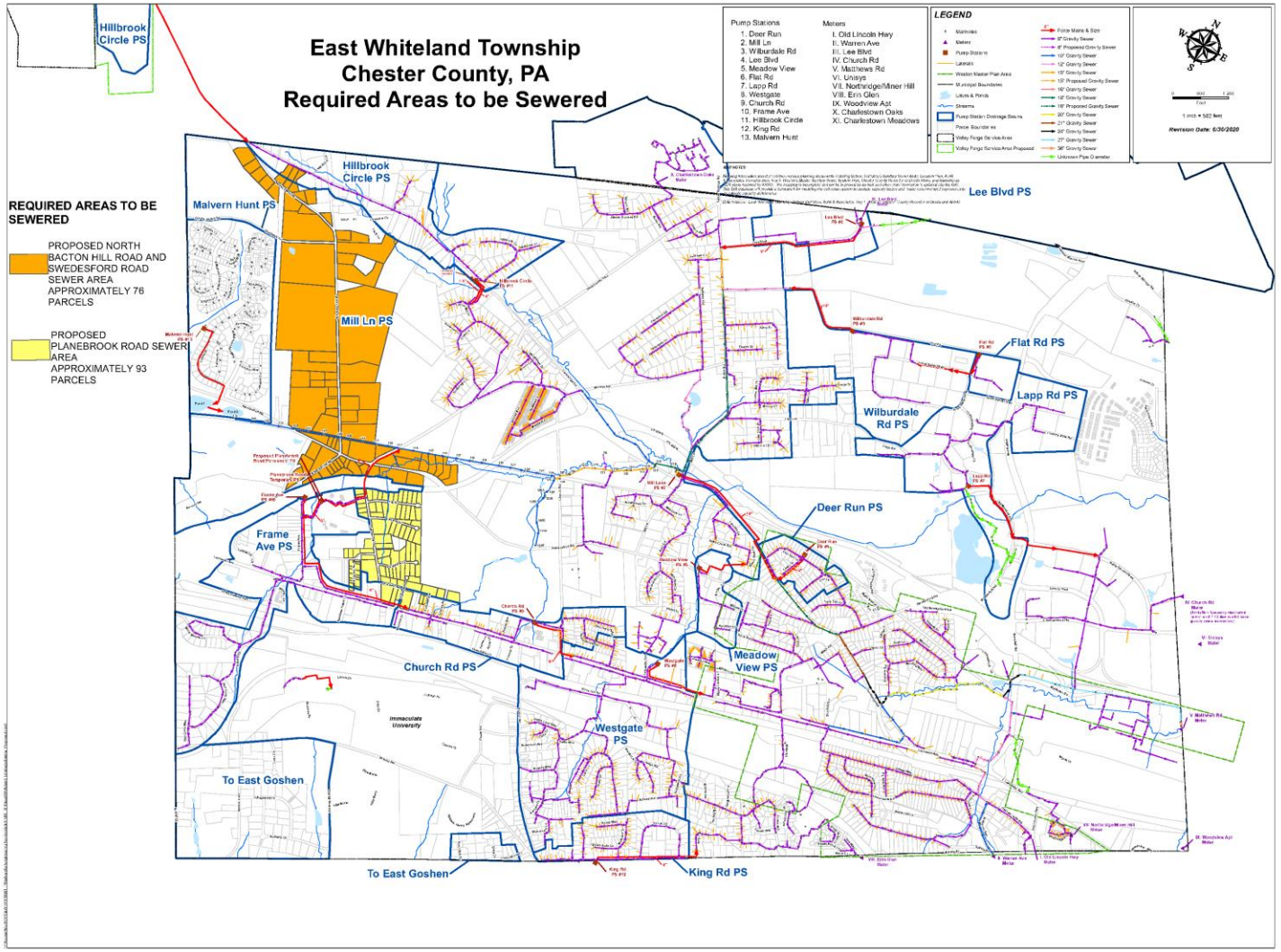
SCHEDULE A

Service Area



SCHEDULE B

Expanded Service Area Map



Schedule 2.02(h)

Excluded Assets

The Malvern Hunt Pumping Station, force main and the gravity sewer collection system within the Malvern Hunt Wastewater Treatment Plant (the "WWTP") will be included in the Acquired Assets. However, it is expected that the spray irrigation system associated with the WWTP, including the treatment ponds and the spray irrigation fields, will be decommissioned[1] and, along with associated parcels 42-3-47 and 42-3-127, will be excluded from the sale.

[1] Pursuant to a plan to be provided by Pennoni.

Schedule 4.05

Consents and Approvals

1. Pennsylvania Public Utility Commission ("PaPUC") Approval of Transaction

2. PaPUC Approval of Consent to Assignment and Amendment to Sewer Service Agreements and Related Amendments

3. Pennsylvania Department of Environmental Protection ("PaDEP") Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer

4. PaDEP Approval of Transfer of all NPDES[2] and WQM Permits

[2] NPDES permits will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

Schedule 4.06

Undisclosed Liabilities

None.

Schedule 4.07

Events Having a Material Adverse Effect

None.

Schedule 4.08

Tax Matters

None.

Schedule 4.09

Real Property and Easements; Liens[3]

Deed of Dedication of Roads and Sanitary Sewer Easements for Whitewoods Subdivision dated August 8, 2002 by Southdown Properties, Inc. in favor of East Whiteland Township for sewer main located in Ravine Road.

East Whiteland Municipal Authority Railroad Crossings and Rights-of-Way, prepared by Roy F. Weston, Inc. dated September 25, 1975 and updated September 14, 1977.

Easement Agreement between East Whiteland and Malvern Institute dated September 16, 2003 and recorded January 8, 2004 (King Road Pump Station).

Easements: *See spreadsheet below for Easements and use following key in review of spreadsheet:*

EAST WHITELAND TOWNSHIP SEWER SALE SPREADSHEET COLOR KEY

Preliminary guidance on reading spreadsheet:

- The official sewer system map is separated by drainage basin, and therefore the spreadsheet is as well.
- The left-most column labels each sewer line segment by manhole. Often times the same segment of sewer line runs through multiple parcels.
- The owner listed is the most current owner, not the owner of the property at the time the easement/deed of dedication/condemnation/ license was entered into or occurred.
- The right-most column is still incomplete, but will ultimately indicate the type, validity, and issues of each easement/condemnation/deed of dedication/license.

Drainage Basin (heading): **Blue**
Road & Township Owned Property: **Green**
End of Road: **Black**
Same Road, Change of Direction: White
Private Property: **Yellow**
Pump Station / Force Maine: **Red**
Meter: **Purple**
Train Tracks: **Orange**
Private/Unlabeled Sewer Line: **Pink**

[3] Initial list of easements has been provided by solicitor. This will be updated and all easements and real property will be confirmed.

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
		DEER RUN DB			
Deer Run PS1	4-4F-13-E	East Whiteland Township	15 Deer Run La.	8918/1465	Deed of Dedication
PS1:MT0052 (FM)					
	42-4K-62	Mark & Karen Schneider	10 Fawn Cir.	No easement found	
	42-4k-61	Mitchell Murtha Sr.	144 Conestoga Rd.	No easement found	
	42-4K-124	Mark Groves	143 Conestoga Rd.	No easement found	
MT0052: Mill Lane PS2 (FM)					
	42-4K-124	Mark Groves	143 Conestoga Rd.	No easement found	
	42-4K-123	Charles Curran	145 Conestoga Rd.	No easement found	
	42-4K-122	Allan Cappelli	147 Conestoga Rd.	No easement found	
	42-4K-121	Vincent C. Gambale	149 Conestoga Rd.	No easement found	
	42-4K-120	Stuart Levin; Kathleen B	151 Conestoga Rd.	No easement found	
	42-4K-119	David Foreman; Nancy McGann	153 Conestoga Rd.	No easement found	
	42-4-71.3	William & Ellen Jordan	1 Manor View Cl.	No easement found	
	42-4-71.23	Christopher & Susan McKenna	1 Valley Creek Rd.	No easement found	
	42-4-38	Diane & Mala Washington	154 Conestoga Rd.	No easement found	
	42-4-39	Emory Washington	158 Conestoga Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-18-E	EW Twp.	170 Conestoga Rd.		
	42-4-2.2-E	EW Twp.	198 Conestoga Rd.		
	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
PS1:DR0002V	42-4F-13-E	EW Twp.	15 Deer Run La.	8918/1465	Deed of Dedication
DR0002:DR0003	Township Street	Deer Run La.			
DR0003:DR0004	Township Street	Deer Run La.			
DR0004:DR101	Township Street	Deer Run La.			
DR101:DR102	PennDot Rd.	Conestoga Rd.			
DR102:DR103	PennDot Rd.	Conestoga Rd.			
DR0002V:DR0005	Township Street	Deer Run La.			
DR0005:DR0006	Township Street	Deer Run La.			
DR0006:DR301V	Township Street	Deer Run La.			
DR0002V:DR201	Township Street	Fawn Circle			
DR201:DR202	Township Street	Fawn Circle			
DR202:DR203	42-4K-57	Edward Gill; George Gill	11 Fawn Cir.	197/259	Easement
	42-4K-60	Elizabeth Slatcher	146 Conestoga Rd.	199/67	Easement
DR301V:DR302	Township Street	Doe Lane			
DR302:MT0303	Township Street	Doe Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0303:DR304	Township Street	Doe Lane			
DR301V:DR305	Township Street	Doe Lane			
DR305:DR306	Township Street	Doe Lane			
DR306:DR307	Township Street	Doe Lane			
		MATTHEWS ROAD DB			
MT0914:MT0913	Township Street	Doe Lane			
MT0913:MT0909V	Township Street	Doe Lane			
MT0909V:MT0910	Township Street	Buck Run Lane			
MT0910:MT0911	Township Street	Buck Run Lane			
MT0911:MT0912	Township Street	Buck Run Lane			
MT0909V:MT0908	Township Street	Buck Run Lane			
MT0908:MT0907	Township Street	Buck Run Lane			
MT0907:MT0904V	Township Street	Buck Run Lane			
MT0904V:MT0905	PennDot Road	Swedesford Road			
MT0905:MT0906	PennDot Road	Swedesford Road			
MT0904V:MT0903	PennDot Road	Swedesford Road			
MT0903:MT0902	PennDot Road	Swedesford Road			
MT0902:MT0901V	PennDot Road	Swedesford Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0901V:MT0045	PennDot Road	Conestoga Road			
MT0045:MT0047	42-4-92-E	Free Presbyterian Church	80 Malin Rd.	No easement found	
	42-4-91	Gregory Blackburn	129 Conestoga Rd.	No easement found	
MT0047:MT0048V	PennDot Road	Swedesford Road			
MT0048V:MT0049	PennDot Road	Conestoga Road			
MT0049:MT0050	42-4K-130	Elizabeth Bolt	131 Conestoga Rd.	No easement found	
	42-4K-129	Cecilia Paulking Trust	133 Conestoga Rd.	No easement found	
MT0050:MT0051	42-4K-129	Cecilia Paulking Trust	133 Conestoga Rd.	No easement found	
	42-4K-128	Kris Kraihanzel	135 Conestoga Rd.	No easement found	
MT0051:MT0052	42-4K-127	Adam Wertz	137 Conestoga Rd.	No easement found	
	42-4K-126	Charmeka Parker	139 Conestoga Rd.	No easement found	
	42-4K-125	Catherine Consalvi	141 Conestoga Rd.	No easement found	
	42-4K-124	Mark Groves	143 Conestoga Rd.	No easement found	
MT0052: Mill Lane PS2 (FM) (see above)					
MT0048V:MT1001	Penndot Road	Swedesford Road			
MT1001:MT1002	42-4K-15	Matt & Miroslava Atlay	274 Swedesford Rd.	No easement found	
	42-4K-14	John Mott; D Renita	276 Swedesford Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1002:MT1003	42-4K-14	John Mott; D Renita	276 Swedesford Rd.	No easement found	
	42-4K-13	Dorothy Schmidt	278 Swedesford Rd.	No easement found	
MT1003:MT1004	Penndot Road	Swedesford Road			
MT0901V:MT0045(2)	PennDot Road	Conestoga Road			
MT0045(2): MT0044V	PennDot Road	Conestoga Road			
MT0044V:MT1101	Township Street	Beth Circle			
MT1101:MT1102	Township Street	Beth Circle			
MT0044V:MT0043	42-4-151	William Sabatini	83 Conestoga Rd.	No easement found	
	42-4-150	Margaret Reher; Marie Kelly	81 Conestoga Rd.	No easement found	
MT0043:MT0042	42-4-150	Margaret Reher; Marie Kelly	81 Conestoga Rd.	No easement found	
	42-4-149	Barry Evans	79 Conestoga Rd.	No easement found	
	42-4-148	Judith Entner	77 Conestoga Rd.	No easement found	
	42-4-147	Robert Hanning; A. Hunter	75 Conestoga Rd.	No easement found	
MT0042V:MT0041	42-4-147	Robert Hanning; A. Hunter	75 Conestoga Rd.	No easement found	
	42-4-145	Robert Hanning; F. Hunter	73 Conestoga Rd.	No easement found	
MT0041:MT0040	42-4-145	Robert Hanning; F. Hunter	73 Conestoga Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0040:MT0039	42-4-145	Robert Hanning; F. Hunter	73 Conestoga Rd.	No easement found	
	42-4-144	PECO		No easement found	
MT0039V:MT1501	PennDot Road	Conestoga Road			
MT1501:MT1502	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
MT1502:MT1503	42-4-143.1	Conestoga Road LP	33 Conestoga Rd.	No easement found	
MT1503:MT1504V	PennDot Road	Conestoga Road			
MT1504V:MT2702	42-4-141	GST MPM-Non tax exempt Marital Trust; Edna Morelli	81 Lancaster Ave	284/249	
MT2702:MT2703	42-4-141	GST MPM-Non tax exempt Marital Trust; Edna Morelli	81 Lancaster Ave	284/249	
MT2703:MT2704	42-4-141	GST MPM-Non tax exempt Marital Trust; Edna Morelli	81 Lancaster Ave	284/249	
	42-4-140	GST MPM-Non tax exempt Marital Trust; Edna Morelli	75 Lancaster Ave	287/9	
	42-4-139	GST MPM-Non tax exempt Marital Trust; Edna Morelli	73 Lancaster Ave	287/1	
MT0039V:MT0038	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
MT0038:MT0037	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
MT0037:MT0036V	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0036V:MT0801	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
MT0801:MT0802	Township Street	Roberts Road			
MT0802:MT0803V	Township Street	Roberts Road			
MT803V:MT804	Township Street	Winding Way			
MT804:MT805	Township Street	Winding Way			
MT803:MT806	Township Street	Elbow Lane			
MT806:MT807	Township Street	Elbow Lane			
MT807:MT808	Township Street	Elbow Lane			
MT808:MT809	Township Street	Elbow Lane			
MT0036:MT0035	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
MT0035:MT0034	42-4-143	Peoples Light & Theatre Co.	39 Conestoga Rd.	18296/1	Easement shown on subdivision plan
	42-4-240.3	Bradley Fugok	8 Winding Way	199/51	
	42-4-240.1	Scot Pineno	12 Winding Way	199/48, 51; 202/41	
MT0034:MT0033	42-4-240.1	Scot Pineno	12 Winding Way	199/48, 51; 202/41	
	42-4-142	PECO	40 Morehall Rd.	197/268; 18296/1	Easement; Easement shown on subdivision plan
MT0033:MT0032	42-4-142	PECO	40 Morehall Rd.	197/268; 18296/1	Easement; Easement shown on subdivision plan
	42-4-252	Scot Pineno	12 Winding Way	197/883	
MT0032:MT0031	42-4-252	Scot Pineno	12 Winding Way	197/883	
MT0031:MT0029	42-4-252	Scot Pineno	12 Winding Way	197/883	
MT0029:MT0030	42-4-252	Scot Pineno	12 Winding Way	197/883	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-249	Mark Dammeyer	30 Winding Way	345/52	
	42-4-253-E	EW Twp.	36 Winding Way		
MT0030:MT0028	42-4-253-E	EW Twp.	36 Winding Way		
MT0028:MT0027	42-4-253-E	EW Twp.	36 Winding Way		
	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0027:MT0026V	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0026V:MT0601V	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0601V:MT0701V	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0701V:MT0714	Township Street	Winding Way			
MT0714:MT0715	Township Street	Winding Way			
MT0715:MT0716	Township Street	Winding Way			
MT0716:MT0717	Township Street	Winding Way			
MT0701V:MT0702	Township Street	Wood Lane			
MT0702:MT0703	Township Street	Wood Lane			
MT0703:MT0704	Township Street	Wood Lane			
MT0704:MT0705	Township Street	Wood Lane			
MT0705:MT0706	Township Street	Wood Lane			
MT0706:MT0707V	Township Street	Wood Lane			
MT0707V:MT0708	Township Street	Wood Lane			
MT0708:MT0709	Township Street	Wood Lane			
MT0709:MT0710	Township Street	Wood Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0707V:MT0711	Township Street	Beth Lane			
MT0711:MT0712	Township Street	Beth Lane			
MT0712:MT0713	Township Street	Beth Lane			
MT601V:MT602V	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
	42-4-257.1	Realty Associates Fund X LP	200 Lindenwood Dr.	No easement found	
MT602V:MT504	42-4-257.1	Realty Associates Fund X LP	200 Lindenwood Dr.	No easement found	
MT504:MT505	42-4-257.1	Realty Associates Fund X LP	200 Lindenwood Dr.	No easement found	
MT602V:MT603	42-4-257.1	Realty Associates Fund X LP	200 Lindenwood Dr.	No easement found	
MT603:MT604	42-4G-14	Paul & Gretchen Disciascio	22 Hillside Dr.	No easement found	
MT604:MT605V	42-4G-14	Paul & Gretchen Disciascio	22 Hillside Dr.	No easement found	
MT605V:MT6013	Township Street	Kane Drive			
MT6013:MT6012	Township Street	Kane Drive			
MT605V:MT606	Township Street	Hillside Drive			
MT606:MT607	Township Street	Hillside Drive			
MT607:MT608	Township Street	Hillside Drive			
MT608:MT609V	Township Street	Hillside Drive			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT609V:MT6011	Township Street	Old Swedesford Road			
MT609V:MT610	42-4G-3	Marina McCarthy	238 Old Swedesford Rd.	No easement found	
	42-4G-2	David Mueller	232 Old Swedesford Rd.	No easement found	
	42-4G-1	Saifuddin Bookbinder	234 Old Swedesford Rd.	No easement found	
MT0026V:MT0025	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0025:MT0024	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0024:MT0023	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0023:MT0022V	42-4-254	50 GVP Properties Co. LLC	50 Morehall Rd.	199/57	
MT0022V:MT0021	42-4-257.2	Realty Associates Fund X LP	Unaddressed Parcel	No easement found	
MT0021:MT0020V	42-4-257.2	Realty Associates Fund X LP	Unaddressed Parcel	No easement found	
MT0020V:MT0501	42-4-257.2	Realty Associates Fund X LP	Unaddressed Parcel	No easement found	
MT0501:MT0502	42-4-257.4	Realty Associates Fund X LP	101 Lindenwood Dr.	No easement found	
MT0502:MT0503	42-4-257.4	Realty Associates Fund X LP	101 Lindenwood Dr.	No easement found	
MT0020V:MT0018	42-4-257.4	Realty Associates Fund X LP	101 Lindenwood Dr.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-260.2A	Wawa Inc.	5 Matthews Rd.	554/536	
MT0018:MT0017	42-4-260.2A	Wawa Inc.	5 Matthews Rd.	554/536	
MT0017:MT0015	42-4-260.2A	Wawa Inc.	5 Matthews Rd.	554/536	
	42-4-260.2	Great Valley Holdings LLC	11 Matthews Rd.	554/536	
MT0015:MT0014	42-4-260.2	Great Valley Holdings LLC	11 Matthews Rd.	554/536	
MT0014:MT0013	42-4-260.2	Great Valley Holdings LLC	11 Matthews Rd.	554/536	
	?	PennDot?	202 Corridor?		
MT0013:MT0012V	?	PennDot?	202 Corridor?		
MT0012V:MT0201	?	PennDot?	202 Corridor?		
MT0201:MT0202	42-4-260.6-E	Penn State University	30 E. Swedesford Rd.	554/536	
MT0202:MT0203	42-4-260.6-E	Penn State University	30 E. Swedesford Rd.	554/536	
MT0203:MT0204	42-4-260.6-E	Penn State University	30 E. Swedesford Rd.	554/536	
MT0204:MT0205V	42-4-260.6-E	Penn State University	30 E. Swedesford Rd.	554/536	
MT0205V:MT0401	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0401:MT0402*	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0402:MT0403*	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0403:MT0404*	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0404:MT0405	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication
MT0405:MT0406	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication
MT0406:MT0409	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication
MT0409:MT0410	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication
MT0410:MT0411	42-4-53.14	DP Valley Retail, LLC	20 Liberty Bl.	260/325	Deed of Dedication
MT0205V:MT0310	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0310:MT0309	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
	42-4-53	IPX Liberty Blvd. Investors LLC	41 Liberty Bl.	Deed of Dedication (11/9/05) (unrecorded)	Deed of Dedication (11/9/05) (unrecorded)
MT0309:MT0301	42-4-53	IPX Liberty Blvd. Investors LLC	41 Liberty Bl.	Deed of Dedication (11/9/05) (unrecorded)	Deed of Dedication (11/9/05) (unrecorded)
	42-4-53.8	Star 70VS Owner LLC	70 Valley Stream Pw.	No easement found	
MT0301:MT0302V	PennDot Road	E Swedesford Road			
MT0302V: MT0308	PennDot Road	E Swedesford Road			
MT0302V:MT0303	42-4-53.11	Malvern Title Holder LLC	75 Valley Stream Pw.	19299/1	Easement shown on subdivision plan
MT0303:MT0304	42-4-53.11	Malvern Title Holder LLC	75 Valley Stream Pw.	19299/1	Easement shown on subdivision plan
	42-4-53.5	WPT Land 2 LP	65 Valley Stream Pw.	No easement found	
MT0304:MT0305	42-4-53.5	WPT Land 2 LP	65 Valley Stream Pw.	No easement found	
MT0305:MT0306	42-4-53.5	WPT Land 2 LP	65 Valley Stream Pw.	No easement found	
MT0306:MT0307	42-4-53.5	WPT Land 2 LP	65 Valley Stream Pw.	No easement found	
Tredyffrin Twp.	Tredyffrin Twp.	Tredyffrin Twp.	Tredyffrin Twp.	Tredyffrin Twp.	
MT0307:Church Rd. Meter (eliminated by Tredyffrin Twp on 8-					

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
3-13 due to additional grav. Sewer extension)					
MT0205V:MT0206	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0206: MT0207	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
MT0207:MT0208	42-4-53.15	WPT Land 2 LP	40 Liberty Bl.	554/536; 260/325	Deed of Dedication
	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	
MT0208:MT0209	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	
MT0209:MT0408V	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	
MT0408V:MT0415	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	
	42-4-53.7	Stradley Ronon	30 Valley Stream Pw.	554/536; Deed of Dedication (11/9/05)	Deed of Dedication
MT0415:MT0416	42-4-53.7	Stradley Ronon	30 Valley Stream Pw.	554/536; Deed of Dedication (11/9/05)	Deed of Dedication
	42-4-53.10	WPT Land 2 LP	20 Valley Stream Pw.	No easement found	
MT0416:MT0417	42-4-53.10	WPT Land 2 LP	20 Valley Stream Pw.	No easement found	
MT0408V:MT0412	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	
	42-4-53.12	WPT Land 2 LP	40 Valley Stream Pw.	No easement found	
MT0412:MT0413	42-4-53.12	WPT Land 2 LP	40 Valley Stream Pw.	No easement found	
	42-4-53.13	WPT Land 2 LP	50 Valley Stream Pw.	No easement found	
MT0413:MT0414	42-4-53.13	WPT Land 2 LP	50 Valley Stream Pw.	No easement found	
MT0408V:MT0409	42-4-53.16	IPX Liberty Blvd. Invstors LLC	11 Liberty Bl.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-53.12	WPT Land 2 LP	40 Valley Stream Pw.	No easement found	
	42-4-53.7	Stradley Ronon	30 Valley Stream Pw.	554/536; Deed of Dedication (11/9/05)	Deed of Dedication
MT0409:MT0210	42-4-53.7	Stradley Ronon	30 Valley Stream Pw.	554/536; Deed of Dedication (11/9/05)	Deed of Dedication
MT0210:MT0418V	42-4-53.7	Stradley Ronon	30 Valley Stream Pw.	554/536; Deed of Dedication (11/9/05)	Deed of Dedication
MT0418:MT0419	42-4-53.3	Cerner Health Services, Inc.	51 Valley Stream Pw.	Deed of Dedication (9/14/05) (unrecorded)	Deed of Dedication (unrecorded)
MT0419:MT0421	42-4-53.3	Cerner Health Services, Inc.	51 Valley Stream Pw.	Deed of Dedication (9/14/05) (unrecorded)	Deed of Dedication (unrecorded)
MT0421:MT0420	42-4-53.3	Cerner Health Services, Inc.	51 Valley Stream Pw.	Deed of Dedication (9/14/05) (unrecorded)	Deed of Dedication (unrecorded)
MT0420:MT0422	42-4-53.3	Cerner Health Services, Inc.	51 Valley Stream Pw.	Deed of Dedication (9/14/05) (unrecorded)	Deed of Dedication (unrecorded)
MT0418V:FORCE MAINE TO LAPP RD. PS7					
	42-4-53.6	DP 10 Valley LLC	10 Valley Stream Pw.	No easement found	
	42-4-29.1	Quarry Ridge Parcel B Condo Ass'n	280 Morehall Rd.	18373/1	Easement shown on subdivision plan
	42-4-28.2	Daniel Rubino Irrevocable Trust	257 Old Morehall Rd.	Easement (1/15/02) (not recorded)	Easement (not recorded)
	42-4-42	Knickerbocker Lands LLC	367 Old Morehall Rd.	6765/1780	Easement
	42-4-26.2	Sophia Keh	514 Lapp Rd.	Easement (6/1/01) (not recorded)	Easement (not recorded)
MT0012V:MT0011	PennDot Road	202 Corridor			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT0011:MT0010	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
MT0011:MT0009	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
MT0009:MT0008	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
MT0008:MT0007	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
MT0007:N/AV	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
N/AV:MT006	42-4-266	Uptown Worthington	50 Foundry Wy.	1958/1	Easement shown on subdivision plan
	42-5-1.1	Matthews Rd. Associates LP	85 Matthews Rd.	18677/1	Easement shown on subdivision plan
MT006:MT005	42-5-1.1	Matthews Rd. Associates LP	85 Matthews Rd.	18677/1	Easement shown on subdivision plan
MT005:MT004	42-5-1.1	Matthews Rd. Associates LP	85 Matthews Rd.	18677/1	Easement shown on subdivision plan
MT004:MT002	42-5-1.1	Matthews Rd. Associates LP	85 Matthews Rd.	18677/1	Easement shown on subdivision plan
MT002:MT001	42-5-1.1	Matthews Rd. Associates LP	85 Matthews Rd.	18677/1	Easement shown on subdivision plan
MT001:Matthews Rd. Meter					
MT0022V:MT1901	42-4-254	50 GVP Property Co. LLC	50 Morehall Road	199/57	
MT1901:MT1902V	Township Street	Morehall Road			
MT1902V:MT1903	Township Street	Morehall Road			
MT1903:MT1904V	Township Street	Morehall Road			
MT1904V:MT2101	Township Street	Morehall Road			
MT2101:MT2012	Township Street	Morehall Road			
MT2102:MT2103	42-4-268.1	JMP Malvern Associates LP	19 Morehall Rd.	19612/1	Easement shown on subdivision plan

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2103:MT2104	42-4-268.1	JMP Malvern Associates LP	19 Morehall Rd.	19612/1	Easement shown on subdivision plan
MT2104:MT2015	42-4-268.1	JMP Malvern Associates LP	19 Morehall Rd.	19612/1	Easement shown on subdivision plan
MT2105:MT2106	42-4-268.1	JMP Malvern Associates LP	19 Morehall Rd.	19612/1	Easement shown on subdivision plan
	42-4-269	Horatio Realty Trust	1100 Brannan Bl.	18523/1	Easement shown on subdivision plan
	42-4-268	VIII-HII-Morehall Road LLC	1 Morehall Rd.	3559/1973	
MT2106:MT2107	42-4-269	Horatio Realty Trust	1100 Brannan Bl.	18523/1	Easement shown on subdivision plan
MT2107:MT2108	42-4-269	Horatio Realty Trust	1100 Brannan Bl.	18523/1	Easement shown on subdivision plan
MT2108:MT2109	42-4-269	Horatio Realty Trust	1100 Brannan Bl.	18523/1	Easement shown on subdivision plan
MT2109:MT2110	42-4-269	Horatio Realty Trust	1100 Brannan Bl.	18523/1	Easement shown on subdivision plan
	42-4-270	Pennsylvania Lines LLC	Train Tracks		
MT2110:MT2111	42-4-270	Pennsylvania Lines LLC	Train Tracks		
	42-4-272	Del. Val. Real Estate LLC	49 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
MT2111:MT2112	42-4-272	Del. Val. Real Estate LLC	49 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
MT2112:MT2113	42-4-272	Del. Val. Real Estate LLC	49 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
MT2113:MT2114	42-4-272	Del. Val. Real Estate LLC	49 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
	42-4-273	Gunner Properties LTD	51 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
MT2114:MT2115	42-4-273	Gunner Properties LTD	51 E. Lancaster Ave	17494/1	Easement shown on subdivision plan
MT2115:MT2116	42-4-273	Gunner Properties LTD	51 E. Lancaster Ave	17494/1	Easement shown on subdivision plan

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2116:MT2117	PennDot Road	Lancaster Ave			
MT2117:MT2118V	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2118V:MT2119	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2119:MT2120V	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2120V:MT2126	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2118V:MT2127	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2127:MT2128	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2128:MT2129	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2118V:MT2121	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2121:MT2123	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2123: Northridge/Miner Hill Meter (5)					
MT2123:MT2122	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT2122:MT2125	42-5-16.1	Northridge Community Ass'n	Unaddressable Parcel	No easement found	
MT1904V:MT1905	Township Street	Morehall Road			
MT1905:MT1906V	Township Street	Morehall Road			
MT1904V:MT1906V	Township Street	Morehall Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1906V:MT1908	Township Street	Morehall Road			
MT1908:MT1909	42-4-132.2	Great Valley Racquet Club	10 Morehall Rd.	199/73	
MT1909:MT1910	42-4-132.2	Great Valley Racquet Club	10 Morehall Rd.	199/73	
MT1910:MT1912	42-4-132.2	Great Valley Racquet Club	10 Morehall Rd.	199/73	
MT1912:MT1913V	42-4-132.2	Great Valley Racquet Club	10 Morehall Rd.	199/73	
	42-4-132.1	Selvan Inc.	7 Lancaster Ave	No easement found	
MT1913V:MT2201	PennDot Road	Lancaster Ave			
MT2201:MT2202	PennDot Road	Lancaster Ave			
MT2202:MT2205	PennDot Road	Lancaster Ave			
MT2205:MT2204	PennDot Road	Lancaster Ave			
MT1913V:MT1914V	PennDot Road	Lancaster Ave			
MT1914V:MT2206	42-4-332	Hbab Enterprises LLC	32 Lancaster Ave	199/54; 284/241	
MT2206:Null	42-4-332	Hbab Enterprises LLC	32 Lancaster Ave	199/54; 284/241	
	42-4-331	Conlin Brothers II LLP	52 Lancaster Ave	284/237	
Null:MT2207	42-4-331	Conlin Brothers II LLP	52 Lancaster Ave	284/237	
	42-4-330	Abistan LLC	60 Lancaster Ave	284/233	
	42-4-329	70-72 Lancaster Pike Irrevocable Trust; Salamone Lisa S Trust	70 Lancaster Ave	284/229	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1914V:MT1915	PennDot Road	Lancaster Ave			
MT1915:MT1916	42-4-332	Hbab Enterprises LLC	32 Lancaster Ave	199/54	
	42-4-333.1	70-72 Lancaster Pike Irrevocable Trust; Salamone Lisa S Trust	14 E. Lancaster Ave.	No easement found	
	42-4-333	Ronald & Vera Noll	18 E. Lancaster Ave.	No easement found	
MT1916:1403	42-4-333	Ronald & Vera Noll	18 E. Lancaster Ave.	No easement found	
	42-4-334-E	Pennsylvania Lines LLC	Train Tracks		
1403:MT1917	42-4-334-E	Pennsylvania Lines LLC	Train Tracks		
	42-4-335	9 Village Way LP	9 Village Way	199/30; 206/582	
MT1917:MT1918V	42-4-335	9 Village Way LP	9 Village Way	199/30; 206/582	
MT1918V:MT2401V	Township Street	<-- Village Way			
MT2401V:MT2402	Township Street	<-- Village Way			
MT2402:MT2403	Township Street	<-- Village Way			
MT2403:MT2404	Township Street	<-- Village Way			
MT2404:MT2405	Township Street	<-- Village Way			
MT2405:MT2406	Township Street	<-- Village Way			
MT2401V:MT2407V	Township Street	Lantern Lane			
MT2407V:MT2409(1)	Township Street	Fahnestock Road			
MT2409(1):MT2409(2)	Township Street	Fahnestock Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2409(2):MT2410	Township Street	Fahnestock Road			
MT2410:MT2411	Township Street	Fahnestock Road			
MT2411:MT2412	Township Street	Fahnestock Road			
MT2412:MT2413	Township Street	Fahnestock Road			
MT2413:MT2414	Township Street	Fahnestock Road			
MT2414:MT2415	Township Street	Fahnestock Road			
MT2407V:MT2417	Township Street	Lantern Lane			
MT2417:MT2418	Township Street	Lantern Lane			
MT2418:MT2420	42-4R-19	Michelle Mclain	8 Lantern La.	284/339	
MT2420:1402	42-4R-19	Michelle Mclain	8 Lantern La.	284/339	
	42-4R-26	Richard & Felicia Covatta	15 Spring Rd.	284/347; 345/56	
	42-4R-25	Jaspreet Dillon	127 Watch Hill La.	345/56	
1402:MT2422	42-4R-25	Jaspreet Dillon	127 Watch Hill La.	345/56	
MT2422:MT2423	42-4R-25	Jaspreet Dillon	127 Watch Hill La.	345/56	
	42-4R-34	Thomas Nestor	39 Spring Rd.	285/1; 402/164	
MT2423:1401	42-4R-34	Thomas Nestor	39 Spring Rd.	285/1; 402/164	
1401:MT2424	42-4R-34	Thomas Nestor	39 Spring Rd.	285/1; 402/164	
	42-4R-33	Douglas Caldwell	45 Spring Rd.	No easement found	
	42-4R-32	Diane Frey	57 Spring Rd.	285/5	
MT2424:MT2425V	42-4R-32	Diane Frey	57 Spring Rd.	285/5	
MT2425V:MT2426	42-4R-32	Diane Frey	57 Spring Rd.	285/5	
MT2425V:MT2428	42-4R-32	Diane Frey	57 Spring Rd.	285/5	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2428:MT2429	Township Street	Spring Lane			
MT2429:MT2430	Township Street	Spring Lane			
MT2430:MT2431	Township Street	Spring Lane			
MT2431:MT2432	Township Street	Spring Lane			
MT2432:MT2433	Township Street	Spring Lane			
MT2433:MT2434	Township Street	Spring Lane			
MT2434:MT2435	Township Street	Spring Lane			
MT1918V:MT1919V	Township Street	Old Lancaster Rd			
MT1919V:MT2301	Township Street	Old Lancaster Rd			
MT2301:MT2302	42-4-338	Old Lancaster Venture LP	5 Old Lancaster Pk.	No easement found	
MT2302:MT2303V	42-4-338	Old Lancaster Venture LP	5 Old Lancaster Pk.	No easement found	
	42-4-350	Old Lancaster Venture LP	54 Old Lancaster Pk.	No easement found	
MT2303V: MT2305	42-4-350	Old Lancaster Venture LP	54 Old Lancaster Pk.	No easement found	
	42-4-351	Michael Dooner	52 Old Lancaster Pk.	No easement found	
MT2305V:OLD LINCOLN HIGHWAY METER (OLHM)					
OLHM:MT2306	42-4-350	Old Lancaster Venture LP	54 Old Lancaster Pk.	No easement found	
	42-4-352	Old Lancaster Venture LP	54 Old Lancaster Pk.	No easement found	
	42-4-352.3	Michael & Beth Ford	103 Daisey La.	No easement found	
	42-4-352.2	Richard Lolla; Paula Pierce	102 Daisey La.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2306:MT2307	42-4-352.2	Richard Lolla; Paula Pierce	102 Daisey La.	No easement found	
MT2307:MT2309	42-4-352.2	Richard Lolla; Paula Pierce	102 Daisey La.	No easement found	
MT1919V:MT1920	Township Street	N Warren Ave			
MT1920:MT1921	Township Street	N Warren Ave			
MT1921:MT1922	42-4-343	Finbar Bleahen; Elaine Ohara	333 N. Warren Ave.	199/79	
MT1922:MT1923	42-4-343	Finbar Bleahen; Elaine Ohara	333 N. Warren Ave.	199/79	
MT1923:MT1924	Township Street	N Warren Ave			
MT1924:MT1925	Township Street	N Warren Ave			
MT1925:MT1925	Township Street	N Warren Ave			
MT1926: Warren Ave Meter					
MT1504V:MT1505	PennDot Road	Conestoga Road			
MT1505:MT1506	42-4-130	Commerce Bank/PA	101 Lancaster Ave.	285/9	
MT1506:MT1507	42-4-130	Commerce Bank/PA	101 Lancaster Ave.	285/9	
	42-4-127	Lawrence Dunn	115 Lancaster Ave.	No easement found	
	42-4-129	Deerfield Road Associates II LLP	155 Lancaster Ave.	No easement found	
MT1507:MT1508	42-4-129	Deerfield Road Associates II LLP	155 Lancaster Ave.	No easement found	
	42-4-125.2	Deerfield Road Associates II LLP	157 Lancaster Ave	No easement found	
	42-4-125.3	Deerfield Road Associates II LLP	161 Lancaster Ave.	199/45	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1508:MT1509	42-4-125.3	Deerfield Road Associates II LLP	161 Lancaster Ave.	199/45	
	42-4-125.3A	Deerfield Road Associates II LLP	167 Lancaster Ave.	No easement found	
	42-4-125.8	Deerfield Road Associates II LLP	No Address	No easement found	
MT1509:MT1510V	42-4-125.8	Deerfield Road Associates II LLP	No Address	No easement found	
	42-4-125	Main Line I Associates LP	Unadressable Parcel	284/273	
MT1510V:MT1511	42-4-125	Main Line I Associates LP	Unadressable Parcel	284/273	
	42-4-102.2	Forge Millwork & Lumber Co.	181 Lancaster Ave.	284/277; 401/378	
	42-4-102.4	Mary Ann Pilotti	183 Lancaster Ave.	284/277; 401/378	
	42-4-103	Sylvester Cavalati	189 Lancaster Ave.	284/281	
MT1511:MT1512	42-4-103	Sylvester Cavalati	189 Lancaster Ave.	284/281	
	42-4-104	Domenick Mancini	195 Lancaster Ave.	284/285; 399/399	
	42-4-106.1	Constance & Garabet Karkakelian	197 Lancaster Ave.	284/253	
	42-4-106	Sunoco Partners Marketing & Terminals LP	41 Malin Rd.	284/253	
MT1510V:MT1513V	42-4-125	Main Line I Associates LP	Unadressable Parcel	284/273; 17487/1	Easement shown on subdivision plan
	42-4-322.5	154 Inc.	154 Lancaster Ave.	199/42; 284/193; 390/33	
MT1513V:MT1514	42-4-322.5	154 Inc.	154 Lancaster Ave.	199/42; 284/193; 390/33	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-322.6	Danai Kuranuruk	152 Lancaster Ave.	287/13	
	42-4-322.7	National Bank of Malvern	140 Lancaster Ave.	284/197	
MT1514:2000	42-4-322.7	National Bank of Malvern	140 Lancaster Ave.	284/197	
	42-4-322.8	122-134 Lancaster LLC	126 Lancaster Ave.	284/201	
2000:MT1515	42-4-322.8	122-134 Lancaster LLC	126 Lancaster Ave.	284/201	
	42-4-322.9	Frazer Property Acquisition Inc.	120 Lancaster Ave.	284/205	
	42-4-322	Gerhard S Inc.	116 Lancaster Ave	284/209	
	42-4-323	Gerhard S Inc.	114 Lancaster Ave.	284/209	
MT1515:MT1516	42-4-323	Gerhard S Inc.	114 Lancaster Ave.	284/209	
	42-4-324	Craig & Megan Suhoskey	112 Lancaster Ave.	284/213	
	42-4-325	Philip Smith	108 Lancaster Ave.	284/217	
	42-4-326	Ronald Buckwalter Jr.	106 Lancaster Ave	284/221	
	42-4-327	J & N Walsh LLC	102 Lancaster Ave.	284/225	
MT1516:MT1517	42-4-327	J & N Walsh LLC	102 Lancaster Ave.	284/225	
	42-4-328	McDonald's Corp.	84 Lancaster Ave.	287/5	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1513V:MT1601	42-4-322.5	154 Inc.	154 Lancaster Ave.	199/42; 284/193; 390/33	
	42-4-322.4	John & Carole Lyster	160 Lancaster Ave.	284/189	
	42-4-334-E	Pennsylvania Lines LLC	Train Tracks		
MT1601:MT1602	42-4-334-E	Pennsylvania Lines LLC	Train Tracks		
MT1602:MT1603	42-4-334-E	Pennsylvania Lines LLC	Train Tracks		
	42-4-321.2	Constitution Dr. Partners LP	1 S. Malin Rd.	197/888	
MT1603:MT1604V	42-4-321.2	Constitution Dr. Partners LP	1 S. Malin Rd.	197/888	
MT1604V:MT1611	Township Street	Fahnestock Road			
MT1611:MT1612	Township Street	Fahnestock Road			
MT1612:MT1613	Township Street	Fahnestock Road			
MT1613:MT1614	Township Street	Fahnestock Road			
MT1614:MT1515	Township Street	Fahnestock Road			
MT1615:MT1616	Township Street	Fahnestock Road			
MT1616:MT1617	Township Street	Fahnestock Road			
MT1617:MT1618	Township Street	Fahnestock Road			
MT1618:MT1619	Township Street	Fahnestock Road			
MT1604V:MT1606V	Township Street	Village Way			
MT1606V:MT1620	Township Street	Woodview Rd			
MT1620:MT1621	Township Street	Woodview Rd			
MT1621:MT1622	Township Street	Woodview Rd			
MT1622:MT1623	Township Street	Woodview Rd			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1623:MT1624	Township Street	Woodview Rd			
MT1624:MT1625	Township Street	Woodview Rd			
MT1625:MT1626	Township Street	Woodview Rd			
MT1626:MT1627	Township Street	Woodview Rd			
MT1627:MT1628	Township Street	Woodview Rd			
MT1628:MT1629	Township Street	Woodview Rd			
MT1629:MT1630	Township Street	Woodview Rd			
MT1606V:MT1605	Township Street	Village Way			
MT1605:MT1607	Township Street	Village Way			
MT1607:MT1608V	Township Street	Village Way			
MT1608V:MT1631	Township Street	Longview Road			
MT1631:MT1632	Township Street	Longview Road			
MT1632:MT1633	Township Street	Longview Road			
MT1608V:MT1609	Township Street	Village Way			
MT1609:MT1610	Township Street	Village Way			
MT1513V:MT1518	42-4-322.5	154 Inc.	154 Lancaster Ave	199/42; 284/193; 390/33	
	42-4-322.4	John & Carole Lyster; Rhinda Funk	160 Lancaster Ave.	284/189	
	42-4-322.2	Jarle & Myrna Rokke	172 Lancaster Ave.	184/185	
MT1518:MT1519	42-4-322.2	Jarle & Myrna Rokke	172 Lancaster Ave.	184/185	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-322.1	J Edwards Co. LLC	188 Lancaster Ave.	No easement found	
MT1519:MT1520V	42-4-322.1	J Edwards Co. LLC	188 Lancaster Ave.	No easement found	
MT1520V:MT1701	Township Street	S. Malin Road			
MT1701:MT1702					
MT1702:MT1703	42-4-321.2	Constitution Drive Partners LP	1 Malin Rd.	No easement found	
	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
MT1703:MT1704	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
	42-4-321.2	Constitution Drive Partners LP	1 Malin Rd.	No easement found	
MT1704:MT1705	42-4-321.2	Constitution Drive Partners LP	1 Malin Rd.	No easement found	
	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
MT1705:MT1706V	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
MT1706V:MT1801	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
MT1801:MT1802	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
	42-4-321	10 Malin Rd. Associates	9 S. Malin Rd.	286/340	
MT1802:MT1803	42-4-321	10 Malin Rd. Associates	9 S. Malin Rd.	286/340	
MT1803:MT1804	42-4-321	10 Malin Rd. Associates	9 S. Malin Rd.	286/340	
MT1804:MT1805	42-4-321	10 Malin Rd. Associates	9 S. Malin Rd.	286/340	
	42-4-294-E	National Railroad Passenger Corp.	Train Tracks	Valid license through 7/14/2024; Assignment issues	
	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1805:MT1806	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
MT1806:MT1835	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
MT1835:N/AV	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
N/AV:MT1841	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
MT1841:MT1842	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
	42-4-281.30	Joanne Thurber	12 Broad Leaf Tr.	6267/2378	Easement (Condo Association)
MT1842:MT1843	42-4-281.30	Joanne Thurber	12 Broad Leaf Tr.	6267/2378	Easement (Condo Association)
	42-4-281.31	Andrew & Kathleen Reid	14 Broad Leaf Tr.	6267/2378	Easement (Condo Association)
	42-4-281.28	Jayalal Janaka; Karunamuni Silva	8 Broad Leaf Tr.	6267/2378	Easement (Condo Association)
N/AV:MT1836	42-4-281	Sugartown Ridge Condo Assoc. Inc.	Unaddressable Parcel	6267/2378	Easement
MT1836:MT1837	Private Road	Sugartown Ridge Condo Assoc. Inc.	Broad Leaf Trail	6267/2378	Easement
MT1837:MT1838	Private Road	Sugartown Ridge Condo Assoc. Inc.	Broad Leaf Trail	6267/2378	Easement
MT1838:MT1839	Private Road	Sugartown Ridge Condo Assoc. Inc.	Broad Leaf Trail	6267/2378	Easement
MT1706V:MT1707	42-4-321.1	10 Malin Rd. Associates	10 S. Malin Rd.	286/340	
	42-4-295.1	Buckeye Terminals LLC	8 S. Malin Rd.	284/327	
MT1707:MT1708	42-4-295.1	Buckeye Terminals LLC	8 S. Malin Rd.	284/327	
MT1708:MT1709	42-4-295.1	Buckeye Terminals LLC	8 S. Malin Rd.	284/327	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-294-E	National Railroad Passenger Corp.	Train Tracks	License valid through 7/14/2024; Assignment issues	
MT1709:MT1710	42-4-294-E	National Railroad Passenger Corp.	Train Tracks	License valid through 7/14/2024; Assignment issues	
MT1710:MT1711	42-4-294-E	National Railroad Passenger Corp.	Train Tracks	License valid through 7/14/2024; Assignment issues	
	42-4P-28-E	East Whiteland Township	49 Summit Rd.		
	42-4Q-157	Nathan & Jen Miller	41 Oak Hill Cir.	427/203	
MT1711:MT1712	42-4Q-157	Nathan & Jen Miller	41 Oak Hill Cir.	427/203	
MT1712:MT1713V	42-4Q-157	Nathan & Jen Miller	41 Oak Hill Cir.	427/203	
	42-4Q-156	Anthony & Donna Dimonte	43 Oak Hill Cir.	284/343	
MT1713V:MT1736	42-4Q-173	Eric & Roxanne Alessandroni	28 Oak Hill Cir.	No easement found	
	42-4Q-174	Joseph & Kim Samuel	26 Oak Hill Cir.	No easement found	
MT1736:MT1737	Township Street	Oak Hill Circle			
MT1737:MT1738	Township Street	Oak Hill Circle			
MT1738:MT1739	Township Street	Oak Hill Circle			
MT1739:MT1740	Township Street	Oak Hill Circle			
MT1713V:MT1714V	Township Street	Oak Hill Circle			
MT1714V:NULL	42-4Q-172	Andrew & Mary Lawson	30 Oak Hill Cir.	No easement found	
	42-4Q-171	Dennis Dunbar	32 Oak Hill Cir.	No easement found	
NULL:MT1734	42-4Q-171	Dennis Dunbar	32 Oak Hill Cir.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4Q-180	Joan Turner	7 Forest Way	No easement found	
	42-4Q-179	Jay Anderson	5 Forest Way	No easement found	
MT1734:MT1735	42-4Q-179	Jay Anderson	5 Forest Way	No easement found	
MT1714V:MT1715	Township Street	Oak Hill Circle			
MT1715:MT1716V	Township Street	Oak Hill Circle			
MT1716V:MT1728	Township Street	Summit Rd (west)			
MT1728:MT1729	Township Street	Summit Rd (west)			
MT1729:MT1730	Township Street	Summit Rd (west)			
MT1730:MT1731	Township Street	Summit Rd (west)			
MT1731:MT1732	Township Street	Summit Rd (west)			
MT1716V:MT1718	Township Street	Summit Road (south)			
MT1718:MT1719V	Township Street	Summit Road (south)			
MT1719V:MT1720	42-7-64.5	Trevor Sawyer	14 Summit Rd.	No easement found	
	42-7-64.4	Kevin Crowly	16 Summit Rd.	960/194	
MT1720:MT1721	42-7B-138.11	Paul & Margurite Deignan	21 Amy La.	No easement found	
MT1721:MT1722	42-7B-138.11	Paul & Margurite Deignan	21 Amy La.	No easement found	
MT1722:NULL	Township Street	Amy Lane			
NULL:MT1723	Township Street	Amy Lane			
MT1723:MT1724	Township Street	Amy Lane			
MT1724: FORCE MAINE TO KING RD. PS12					

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-7-53	Harold & Josephine Herkins	909 King Rd.	No easement found	
	42-7B-101	Robert Barone	911 King Rd.	No easement found	
	42-7B-102	Walter Jara; Silvia Castro	1 King Cir.	No easement found	
	42-7B-133	Daniel Gianforte; Kelly Edwards	923 King Rd.	No easement found	
	42-7B-132	Judy Achlott-Asousa; Theodore Asousa	927 King Rd.	No easement found	
	42-7B-119	Daniel Maguire	937 King Rd.	No easement found	
	72-7B-120	Catherine Summers	36 King Cir.	No easement found	
	42-7B-118	Richard & Joy Mullin	35 King Cir.	No easement found	
	42-7B-85	Maureen Loncar	957 King Rd.	No easement found	
	42-7B-86	Andrew Vacante	1 Madeline Dr.	No easement found	
	42-7B-84	Stephen & Pamela Converse	961 King Rd.	No easement found	
	72-7B-83	Mary Lou Chappel	965 King Rd.	No easement found	
	42-7B-82	Adam & Laura Shames	6 Queen Anne La.	No easement found	
	42-7B-81	Joseph O'Neil	8 Queen Anne La.	No easement found	
	42-7B-80	James Hood Jr.	10 Queen Anne La.	No easement found	
MT1719V:MT1726	Township Street	Summit Road (south)			
MT1726:MT1727	Township Street	Oak Hill Circle			
MT1727:MT1832	Township Street	Oak Hill Circle			
MT1832:MT1831	Township Street	Oak Hill Circle			
MT1831:MT1830	Township Street	Oak Hill Circle			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1830:MT1829	Township Street	Oak Hill Circle			
MT1829:MT1828	42-7C-5	Gregory Fair	15 Oak Hill Cir.	5648/615	Easement
	42-4Q-169	Regina Kessler Lewis	17 Oak Hill Cir.	5648/607	Easement
MT1828:MT1827V	42-4Q-169	Regina Kessler Lewis	17 Oak Hill Cir.	5648/607	Easement
	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1827V:MT1833	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1827V:MT1826	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1826:MT1825	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1825:MT1824	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1824:MT1809	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1809:MT1810	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1810:MT1812	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1812:MT1813	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1813:MT1814	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1814:MT1815	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1815:MT1816	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement
MT1816:MT1817	42-4-281	Sugartown Road Condo Ass'n	Unaddressable Parcel	6267/2378	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1817:MT1818	42-4-281.47	Sugartown Road Condo Ass'n	Sugar Ridge Lane	No easement found	
MT1818:MT1819	42-4-281.47	Sugartown Road Condo Ass'n	Sugar Ridge Lane	No easement found	
MT1819:MT1820	42-4-281.47	Sugartown Road Condo Ass'n	Sugar Ridge Lane	No easement found	
MT1820:MT1821	42-4-281.47	Sugartown Road Condo Ass'n	Sugar Ridge Lane	No easement found	
MT1821:MT1822	42-4-281.47	Sugartown Road Condo Ass'n	Shady Brook Lane	No easement found	
MT1822:MT1823	42-4-281.47	Sugartown Road Condo Ass'n	Shady Brook Lane	No easement found	
EG0004:EG0002V	42-4-278.20	Eric Gelen Homeowners Assoc. Inc.	Inis Way		
EG0002V:EG0003	42-4-278.20	Eric Gelen Homeowners Assoc. Inc.	Kerry Lane		
EG0003:EG0001	42-4-278.20	Eric Gelen Homeowners Assoc. Inc.	Kerry Lane		
EG0001:ERIN GLENN METER	42-4-278.20	Eric Gelen Homeowners Assoc. Inc.			
MT1520V:MT1521	42-4-318	Provco Frazer LLC	200 Lancaster Ave.	284/177	
	42-4-317.2	Robert Protesto V Jr. Trust	218 Lancaster Ave.	284/169; 287/17	
MT1521:MT1522	42-4-317.2	Robert Protesto V Jr. Trust	218 Lancaster Ave.	284/169; 287/17	
	42-4-317.1	Robert Protesto V Jr. Trust	228 Lancaster Ave.	284/173	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1522:MT1523	42-4-317.1	Robert Protesto V Jr. Trust	228 Lancaster Ave.	284/173	
	42-4-317	Leslie & Ernest Eadeh Revocable Trust	228 Lancaster Ave.	284/169; 287/17	
	42-4-316	Edward & Gerard Leaf	230 Lancaster Ave.	284/165	
	42-4-315	William Mangan	240 Lancaster Ave.	284/161	
MT1523:MT1524	42-4-315	William Mangan	240 Lancaster Ave.	284/161	
MT1524:MT1525	42-4-315	William Mangan	240 Lancaster Ave.	284/161	
	42-4-313	Sam & Sal Associates	270 Lancaster Ave.	284/153	
MT0042V:MT1201	42-4-125	Main Line I Associates LP	Unaddressable Parcel (back on Conestoga Rd)	284/273	
MT1201:MT1202	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
MT1202:MT1203	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
MT1203:MT1204	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
	42-4-113	Ourania Illia	75 Malin Rd.	No easement found	
	42-4-112	Dam & Michele Coll	73 Malin Rd.	No easement found	
MT1204:MT1205	42-4-112	Dam & Michele Coll	73 Malin Rd.	No easement found	
	42-4-111	Robert & Karen Stalker	71 Malin Rd.	No easement found	
	42-4-110	Richard & Rebecca Priest	69 Malin Rd.	No easement found	
MT1205:MT1206V	42-4-110	Richard & Rebecca Priest	69 Malin Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1206V:MT1208	42-4-110	Richard & Rebecca Priest	69 Malin Rd.	No easement found	
	42-4-109	Robert & Beverly Reinhardt	67 Malin Rd.	No easement found	
	42-4-108	Dunh Vu & Lan Nguyen	65 Malin Rd.	No easement found	
MT1206V:MT2603	42-4-110	Richard & Rebecca Priest	69 Malin Rd.	345/134	
	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
MT2603:MT2604	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
MT2604:MT2605	42-4-125	Main Line I Associates LP	Unaddressable Parcel	284/273	
MT1206V:MT1209	42-4-110	Richard & Rebecca Priest	69 Malin Rd.	345/134	
	42-4-109	Robert & Beverly Reinhardt	67 Malin Rd.	377/134	
MT1209:MT1210V	Township Street	Mailin Road			
MT1210V:MT1301	Township Street	Birch Road			
MT1301:MT1302V	Township Street	Birch Road			
MT1302V:MT1303	Township Street	Birch Road			
MT1303:MT1304	Township Street	Birch Road			
MT1304:MT1305	Township Street	Birch Road			
MT1302V:MT1306	Township Street	Locust Drive			
MT1306:MT1307	Township Street	Locust Drive			
MT1307:MT1308	42-4K-30	Deborah Flad & Brian Weber	7 Locust Dr.	197-262, 265,268	
	42-4K-17	Martin & Dorothy Costello	12 Locust Dr.	196/999	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1308:MT1309V	42-4K-17	Martin & Dorothy Costello	12 Locust Dr.	196/999	Easement
	42-4K-27	William Marella & Jeffrey Graver	8 Pine Rd.	196/993, 996	
	42-4K-28	William & Evelyn Miller	6 Pine Rd.	197/271	Easement
MT1309V:MT1316	Township Street	Pine Road (south)			
MT1309V:MT1314	Township Street	Pine Road (north)			
MT1314:MT1315	Township Street	Pine Road (north)			
MT1309V:MT1310	42-4K-7	James & Michele Hanlon	7 Pine Rd.	196/1002	Easement
MT1310:MT1311	42-4K-7	James & Michele Hanlon	7 Pine Rd.	196/1002	Easement
	42-4K-142	Harry & Vivian Allison	30 Birch Rd.	No easement found	
MT1311:MT1312	42-4K-142	Harry & Vivian Allison	30 Birch Rd.	No easement found	
	42-4K-143	Frank Potere	28 Birch Rd.	No easement found	
MT1312:MT1313V	42-4K-143	Frank Potere	28 Birch Rd.	No easement found	
MT1313V:MT1317	Township Street	Birch Road (south)			
MT1313V:MT1318	Township Street	Birch Road (north)			
MT1318:MT1319	Township Street	Birch Road (north)			
MT1210V:MT1211	Township Street	Malin Rd. (south)			
MT1211:MT1212	Township Street	Malin Rd. (south)			
MT1212:MT1213	Township Street	Malin Rd. (south)			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1213:MT1214V	Township Street	Malin Rd. (south)			
MT1214V:MT1409	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1409:MT1401	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1401V:MT1408	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1408:MT1410	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1410:MT1411	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1411:MT1412	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1401V:MT1402	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1402:MT1403	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1403:MT1405	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1405:MT1404	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1404:MT1406	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1406:MT1407	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1214V:MT1215	Township Street	Malin Road			
MT1215:MT1216	Township Street	Malin Road			
MT1216:MT1217	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT1217:MT1218	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
MT1218:MT1219	42-4-97.1	Lincoln Investors LP	237 Lancaster Ave.	284/293	
	42-4-98.1	Lizelton Inc.	245 Lancaster Ave.	284/298	
MT1219:MT1220	42-4-98.1	Lizelton Inc.	245 Lancaster Ave.	284/298	
MT1220:MT1221	42-4-98.1	Lizelton Inc.	245 Lancaster Ave.	284/298	
	42-4-98.4	MGD LLC	249 Lancaster Ave.	284/302	
MT1221:MT1222	42-4-98.4	MGD LLC	249 Lancaster Ave.	284/302	
MT1222:MT1223V	42-4-98.4	MGD LLC	249 Lancaster Ave.	284/302	
	42-4-98	MGD LLC	255 Lancaster Ave.	284/302	
	42-4-100	271 LP	271 Lancaster Ave.	284/306	
MT1223V:MT2501	42-4-100	271 LP	271 Lancaster Ave.	284/306	
	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2501:MT2502	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2502:MT2503V	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2503V:MT2504	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2504:MT2505	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MT2505:MT0014	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT0014:MT0013	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
	42-4-89.1A	Frazer Mennonite Church	58 Maple Linden La.	No easement found	
MT2503V:MT2506V	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2506V:MT0016	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT0016:MV0015	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2506V:MT2507	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2506V:MT2511V	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2511V:MV0018	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT2511V:MT2512	42-4-89.1B	One Park Place Residents Association	Unaddressable Parcel	No easement found	
MT1223V:MT1224	42-4-100	271 LP	271 Lancaster Ave.	284/306	
MT1224:MT1225	42-4-100	271 LP	271 Lancaster Ave.	284/306	
MT1225: FORCE MAIN TO WEST GATE PS8					
	42-4-100	271 LP	271 Lancaster Ave.	284/306	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-101.1	Jason Nardone LLC	289 Lancaster Ave.	983/337	
	42-4-87.2	Windon Twentieth Real Estate LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
		KING ROAD DB			
KING ROAD PS12	East Goshen Twp. (53-2-18) (54-2-127)	Malvern Institute for Psychiatric & Alcoholic Studies	940 West King Rd.	6033/577	Easement
PS12: KR0004V (FM)	PennDot Road	King Road			
KR0004V:KR0002V	PennDot Road	King Road			
KR0002V:KR0001	PennDot Road	King Road			
KR0001:KR0101V	PennDot Road	King Road			
KR0101V:KR0301	Township Street	King's Circle			
KR0301:KR0302	Township Street	King's Circle			
KR0302:KR0303	Township Street	King's Circle			
KR0303:KR0304	Township Street	King's Circle			
KR0304:KR0305	Township Street	King's Circle			
KR0305:KR0306	Township Street	King's Circle			
KR0101V:KR0102	PennDot Road	King Road	King Road DB		
KR0102:KR0103	47-7B-119	Daniel Maguire	937 King Rd.	No easement found	
KR0103:KR0104V	47-7B-119	Daniel Maguire	937 King Rd.	No easement found	
	42-7B-132	Judy Schlott-Asousa;	927 King Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
		Theodore Asousa			
	42-7B-133	Daniel Gianforte; Kelly Edwards	923 King Rd.	No easement found	
KR0104V:KR0105	42-7B-102	Walter Jara; Silbia Castro	1 Kings Cir.	No easement found	
	42-7B-101	Robert Barone	911 King Rd.	No easement found	
KR0104V:KR0401	Township Street	King's Circle			
KR0401:KR0402	Township Street	King's Circle			
KR0402:KR0403	Township Street	King's Circle			
KR0002V:KR0201V	Township Street	Madeline Dr			
KR0201V:KR0202	Township Street	Queen Anne Ln			
KR0202:KR0203	Township Street	Queen Anne Ln			
KR0201:KR0204	Township Street	Madeline Dr			
KR0204:KR0205	Township Street	Madeline Dr			
KR0205:KR0206V	Township Street	Madeline Dr			
KR206V:KR0207	Township Street	Madeline Dr			
KR0206V:KR0208	Township Street	Kevin Way			
KR0208:KR0209	Township Street	Kevin Way			
KR0209:KR0210	Township Street	Kevin Way			
KR0004V:KR0005V	PennDot Road	King Road			
KR0005V:KR0211	Township Street	Carol Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
KR0211:KR0212	Township Street	Carol Lane			
KR0212KR0213	Township Street	Carol Lane			
KR0005V:KR0007V	PennDot Road	King Road			
KR0007V:KR0008	42-7-52.3	Charles & Robin Haines	1013 King Rd.	5648/601	Easement
	42-7-52	Joanne Ozmond	1009 King Rd.	5686/920	Easement
KR0007:KR0009	42-7-52.2	Brita Vanrossum; Fred Stluka	1011 King Rd.	No easement found	
	42-7-52.1A	Daniel & Alyssa Mazzenga	1015 King Rd.	No easement found	
KR0009:KR0010	42-7-52.1A	Daniel & Alyssa Mazzenga	1015 King Rd.	No easement found	
	42-7-50.1	Michael & Kristy Stevens	1017 King Rd.	No easement found	
	42-7-50	Frank & Sheil Caldwell	1021 King Rd.	No easement found* (but see subdivision plan at 17279/1)	
	42-7-49	Giurastante Family Revocable Trust	1027 King Rd.	No easement found	
KR0010:KR0011	42-7-48	Giurastante Family Revocable Trust	1029 King Rd.	5648/595	Easement
	42-7-47	Colleen Brogan-McTieran	1031 King Rd.	No easement found	
		WEST GATE DB			
PS8:WG0001	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0001:WG0002	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
WG0002:WG0003	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
WG0003:FR0004V	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
FR0004V:WG0201	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
WG0201:WG0202	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
WG0202:WG0203	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
FR0004V:WG0005	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
	42-4-87.1	Piroeff Family Limited Partnership	337 Lancaster Ave.	983/341	
WG0005:WG0006	42-4-87.1	Piroeff Family Limited Partnership	337 Lancaster Ave.	983/341	
	42-4N-22	Battlehawn Properties LLC	345 Lancaster Ave.	983/405	
WG0006:WG0007	42-4N-22	Battlehawn Properties LLC	345 Lancaster Ave.	983/405	
	42-4N-21	Ernest George III	351 Lancaster Ave.	983/357	
WG0007:WG0008V	42-4N-21	Ernest George III	351 Lancaster Ave.	983/357	
	42-4N-20.1	Winifred Mclean	353 Lancaster Ave.	983/361	
WG0008V:WG0101	Township Street	Beechwood Ave			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0101:WG0102V:	Township Street	Beechwood Ave			
WG0102V:WG0104	Township Street	Beechwood Ave			
WG0102V:WG0103	Township Street	Buttonwood Ave	Westgate DB	Township Street	
WG0008V:WG0009	42-4N-39	Brookside Investments LP	365 Lancaster Ave	983/365	
WG0009:WG0010	42-4N-39	Brookside Investments LP	365 Lancaster Ave	983/365	
	42-4N-40	Michael Brogan	375 Lancaster Ave	983/369	
	42-4N-41	SCF RC Funding IV LLC	383 Lancaster Ave	No easement found	
WG0010:WG0011	42-4N-41	SCF RC Funding IV LLC	383 Lancaster Ave	No easement found	
	42-4N-42	SCF RC Funding IV LLC	385 Lancaster Ave	983/409	
	42-4N-43	Eadeh Family Limited Partnership	393 Lancaster Ave	983/413	
WG0011: FORCE MAINE TO CHURCH RD. PS9					
	42-4N-43	Eadeh Family Limited Partnership	393 Lancaster Ave	983/413	
	42-4N-44	SHS1 LLC	397 Lancaster Ave	1357/504	
	42-4-80	Stoney Creek Industrial Park	403 Lancaster Ave	1357/500	
	42-4-80.1	Steven Blatman; Maria Hurley	14 Church Road	1357/496	
	42-4-75.1	Plute Homes of PA LP	Unaddressable Parcel	Easement (unrecorded)	
	42-4-79	Chris & Penny Strauss	16 Church Road	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-78	Microorigin Ventures Inc.	18 Church Road	No easement found* (but see subdivision plan at 15555/1)	
	42-4-77	Rubino Holdings LP	22 Church Road	1357/492	
	42-4-75.1	Plute Homes of PA LP	Unaddressable Parcel	Easement (unrecorded)	
FR0004V:WG301V	42-4-87.2	Windon Twentieth; 422 Realty LP	309 Lancaster Ave.	983/349,353,401; Case No. 87-08872	Easement; Condemnation
	42-4-309	Main Line Watercraft Realty LP	310 Lancaster Ave.	983/421	
WG301V:WG0309	42-4-309	Main Line Watercraft Realty LP	310 Lancaster Ave.	983/421	
	42-4-310.2	Main Line Watercraft Realty LP	310 Lancaster Ave.	No easement found	
WG0309:WG0310	42-4-310.2	Main Line Watercraft Realty LP	310 Lancaster Ave.	No easement found	
	42-4-310	Main Line Watercraft Realty LP	310 Lancaster Ave.	983/385	
	42-4-311	Eadeh Family Limited Partnership	288 Lancaster Ave.	983/381	
WG0310:WG0311	42-4-311	Eadeh Family Limited Partnership	288 Lancaster Ave.	983/381	
WG0311:WG0312	42-4-311	Eadeh Family Limited Partnership	288 Lancaster Ave.	983/381	
	42-4-312.1	Eadeh Family Limited Partnership	286 Lancaster Ave.	983/377	
	42-4-312	Leslie Eadeh Revocable Trust	284 Lancaster Ave.	983/373	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0301V:WG0302	42-4-309	Main Line Watercraft Realty LP	310 Lancaster Ave.	983/421	
	42-4-309.1	330 Lancaster Avenue LP	330 Lancaster Ave.	983/425	
WG0302:WG0303V	42-4-309.1	330 Lancaster Avenue LP	330 Lancaster Ave.	983/425	
	42-4-308.2	DFKS Management LLC	340 Lancaster Ave.	983/429	
WG0303V:WG0304	42-4-308.2	DFKS Management LLC	340 Lancaster Ave.	983/429	
	42-4-308.1	Carol Burke	352 Lancaster Ave.	983/389	
	42-4-308	Helen Depaul LP	362 Lancaster Ave.	983/393	
WG0304:WG0305	42-4-308	Helen Depaul LP	362 Lancaster Ave.	983/393	
	42-4-307	Rubino Holdings LP	360 Lancaster Ave.	983/397	
WG0305:WG0306	42-4-307	Rubino Holdings LP	360 Lancaster Ave.	983/397	
	42-4-306	Penn Crest Properties LLC	370 Lancaster Ave.	983/433	
WG0306:WG0307	42-4-306	Penn Crest Properties LLC	370 Lancaster Ave.	983/433	
	42-4-304.2	Tri State Technical Sales Corp.	382 Lancaster Ave.	983/437,441,445,449	
WG0307:WG0308	42-4-304.2	Tri State Technical Sales Corp.	382 Lancaster Ave.	983/437,441,445,449	
	42-4-304-E	Covenant United Presbyterian Church	384 Lancaster Ave.	983/453	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0308:CH0110	42-4-304-E	Covenant United Presbyterian Church	384 Lancaster Ave.	983/453	
	42-4-303	Frazer Realty Holdings	392 Lancaster Ave.	1358/34	
WG0303V:WG0401	42-4-308.2	DFKS Management LLC	340 Lancaster Ave.	983/429	
WG0401:WG0402	42-4-308.2	DFKS Management LLC	340 Lancaster Ave.	983/429	
	42-4-308	Helen Depaul LP	362 Lancaster Ave.	983/393	
WG0402:WG0403	42-4-308	Helen Depaul LP	362 Lancaster Ave.	983/393	
WG0403:WG0404V	42-4-308	Helen Depaul LP	362 Lancaster Ave.	983/393	
	42-4-319-E	Pennsylvania Lines LLC	Train Tracks		
WG404V:WG0801	42-4-319-E	Pennsylvania Lines LLC	Train Tracks		
WG0801:WG0802	42-4-296.16	Terra Minor LLC	155 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
WG0802:WG0805	42-4-296.16	Terra Minor LLC	155 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
MG0805:WG0806	42-4-296.16	Terra Minor LLC	155 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
	42-4-296.15	Terra Minor LLC	215 Three Tun Rd.	No easement found* (but see	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
				subdivision plan at 18412/1)	
WG0806:WG0807	42-4-296.15	Terra Minor LLC	215 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
	42-4-296.14	What a Good Dog LLC	225 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
WG0807:WG0808	42-4-296.14	What a Good Dog LLC	225 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
WG0808:WG0809	42-4-296.14	What a Good Dog LLC	225 Three Tun Rd.	No easement found* (but see subdivision plan at 18412/1)	
WG0809:WG0810	Township Road	Three Tun Rd.			
WG0810:WG0813V	Township Road	Three Tun Rd.			
WG0813V:WG0814	42-4-296.7	TKO Ventures	380 Three Tun Rd.	5752/93	Easement
WG0813V:WG0811	42-4-296.6	Edison Properties LP	340 Three Tun Rd.	No easement found* (but see subdivision plan at 18219/1)	
WG0811:WG0812	42-4-296.6	Edison Properties LP	340 Three Tun Rd.	No easement found* (but see subdivision plan at 18219/1)	
WG0812:WG0901V	42-4-296.6	Edison Properties LP	340 Three Tun Rd.	No easement found* (but	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
				see subdivision plan at 18219/1)	
	42-4-294-E	National Railroad Passenger Group	Train Tracks		
	42-4P-19	Michaele Vaughn	13 Ridge Rd.	No easement found	
WG0901V:WG0913	42-4P-19	Michaele Vaughn	13 Ridge Rd.	No easement found	
WG0913:WG0914	42-4P-19	Michaele Vaughn	13 Ridge Rd.	No easement found	
WG0914:WG0915	42-4P-19	Michaele Vaughn	13 Ridge Rd.	No easement found	
	42-4P-18	Jennifer Donovan	11 Ridge Rd.	No easement found	
	42-4P-22	Theodore & Dagmar Graybill	8 Ridgewood Dr.	No easement found	
	42-4P-23	Marcel Frey	6 Ridgewood Dr.	No easement found	
	42-4P-17	Patricia Paul	9 Ridge Rd.	No easement found	
WG0915:WG0916V	42-4P-17	Patricia Paul	9 Ridge Rd.	No easement found	
	42-4P-16	Karen Boyd	7 Ridge Rd.	No easement found	
WG0916V:WG0925	42-4P-16	Karen Boyd	7 Ridge Rd.	No easement found	
	42-4P-23	Marcel Frey	6 Ridgewood Dr.	No easement found	
	42-4P-24	Thomas Juenger	4 Ridgewood Dr.	No easement found	
WG0925:WG0926	42-4P-24	Thomas Juenger	4 Ridgewood Dr.	No easement found	
WG0926:WG0927	42-4P-25	Kenneth & Lorraine Lawless	87 Summitn Rd.	No easement found	
	42-4P-26	John Walsh	85 Summit Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0916V:WG0917	42-4P-16	Karen Boyd	7 Ridge Rd.	No easement found	
	42-4P-15	Howard & Colleen Marano	5 Ridge Rd.	No easement found	
	42-7B-136	Thomas Hemler	93 Summit Rd.	5648/705	Easement
WG0917:WG0918	42-7B-136	Thomas Hemler	93 Summit Rd.	5648/705	Easement
WG0918:WG0919	42-7B-136	Thomas Hemler	93 Summit Rd.	5648/705	Easement
WG0919:WG0920	42-7B-136	Thomas Hemler	93 Summit Rd.	5648/705	Easement
WG0920:WG0921V	42-7B-136	Thomas Hemler	93 Summit Rd.	5648/705	Easement
	42-7B-134	Jeffrey & Kimberly Payne	1 Ridge Rd.	Case No. 00684	Condemnation
WG0921V:WG0923	Township Street	Summit Rd (east)			
WG0923:WG0924	42-7B-99	Michael & Denise Ryan	96 Summit Rd.	No easement found	
	42-7B-100.2	Thomas & Meredith Mitchell; Priscilla Colan	90 Summit Rd.	5648/717	Easement
	42-7B-100	Thomas & Rebecca Burke	92 Summit Rd.	5648/711	Easement
WG0921V:WG0922	Township Street	Summit Rd (west)			
WG0901V:WG0902	42-4P-19	Michaele Vaughn	13 Ridge Rd.	No easement found	
	42-4P-20	John Hee	15 Ridge Rd.	No easement found	
WG0902:WG0903	42-4P-20	John Hee	15 Ridge Rd.	No easement found	
	42-4P-29	Christopher & Elise Deegan	17 Ridge Rd.	No easement found	
	42-4P-30	John Gleason	19 Ridge Rd.	No easement found	
	42-4P-31	Donna Sargent	21 Ridge Rd.	No easement found	
	42-4P-32	Joseph Weckerle	23 Ridge Rd.	No easement found	
	42-4P-33	David Iacobucci	3 Sleighride Dr.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0903:WG0904	42-4P-33	David Iacobucci	3 Sleighride Dr.	No easement found	
WG0904:WG0905V	Private Rd.	Sleighride Drive			
WG0905V:WG0909	Private Rd.	Sleighride Drive			
WG0909:WG0910	42-7B-151	John & Alice Presley	14 Ridge Rd.	No easement found	
	42-4P-36	Steven Boyd	12 Ridge Rd.	No easement found	
	42-4P-37	John & Mary Ferrara	10 Ridge Rd.	No easement found	
WG0910:WG0911	42-4P-37	John & Mary Ferrara	10 Ridge Rd.	No easement found	
	42-7B-142	Scott & Sherri Lewis	8 Ridge Rd.	No easement found	
	42-7B-143	Howard & Araclis Polesky	6 Ridge Rd.	No easement found	
WG0911:WG0912	42-7B-143	Howard & Araclis Polesky	6 Ridge Rd.	No easement found	
	42-7B-144	Scott & Rebecca Gamble	4 Ridge Rd.	No easement found	
	42-7B-145	Douglas & Barbara Mccarson	2 Ridge Rd.	No easement found	
WG0905V:WG0906	Township Street	Ridge Road			
WG0906:WG0907	Township Street	Ridge Road			
WG0907:WG0908	Township Street	Ridge Road			
WG404V:WG0405V	42-4-319-E	Pennsylvania Lines LLC	Train Tracks		
WG0405V: PRIVATE SEWER LINE TO THE LEFT (running from 40 Three Tun Rd.					
WG0405V:WG0406	42-4-297.3	Chester County Fund Inc.	70 Three Tun Rd.	20467/1	Easement shown on land development plan
WG0406:WG0407	42-4-297.3	Chester County Fund Inc.	70 Three Tun Rd.	20467/1	Easement shown on land development plan
	42-4-297.2	60 Three Tun LLC	60 Three Tun Rd.	20467/1	Easement shown on land development plan

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0407WG0408	42-4-297.2	60 Three Tun LLC	60 Three Tun Rd.	20467/1	Easement shown on land development plan
WG0408:WG0409	42-4-297.2	60 Three Tun LLC	60 Three Tun Rd.	20467/1	Easement shown on land development plan
WG0409:WG0410V	42-4-297.2	60 Three Tun LLC	60 Three Tun Rd.	20467/1	Easement shown on land development plan
	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
WG0410V:WG0601	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
WG0601:WG0602	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
WG0602:WG0603	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
WG0603:WG0604	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
WG0604:WG0605	42-4-294-E	National Railroad Passenger Group	Train Tracks	Expired License on 10/31/2018; Assignment Issues	
	42-7A-27	William & Carol Howard	54 Carol La.	No easement found	
WG0605:WG0606V	42-7A-27	William & Carol Howard	54 Carol La.	No easement found	
WG0606V:WG0607	Township Street	Carol Lane			
WG0607:WG0608	Township Street	Carol Lane			
WG0608:WG0609V	Township Street	Carol Lane			
WG0609V:WG0619	Township Street	Diane Dr.			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0619:WG0620	Township Street	Diane Dr.			
WG0620:WG0622	Township Street	Diane Dr.			
WG0622:WG0621	Township Street	Diane Dr.			
WG0621:WG0623	Township Street	Diane Dr.			
WG0623:WG0624	Township Street	Diane Dr.			
WG0609V:WG0610	Township Street	Carol Lane			
WG0610:WG0611	Township Street	Carol Lane			
WG0611:WG0612	Township Street	Carol Lane			
WG0612:WG0613V	Township Street	Carol Lane			
WG0613V:WG0616	Township Street	Summit Road (east)			
WG0616:WG0617	Township Street	Summit Road (east)			
WG0617:WG0618	Township Street	Summit Road (east)			
WG0613V:WG0614	Township Street	Summit Road(west)			
WG0614:WG0615	Township Street	Summit Road(west)			
WG0606V:WG0625	Township Street	Carol Lane			
WG0625:WG0626	Township Street	Carol Lane			
WG0626:WG0627V	Township Street	Carol Lane			
WG0627V:WG0628	Township Street	Carol Lane			
WG0628:WG0629	Township Street	Carol Lane			
WG0627V:WG0630	42-7A-31	Kathy Sheridan	46 Carol La.	5676/1103	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0630:WG0631	42-7A-32	Joseph & Mary McGeehan	44 Carol La.	5676/1151	Easement
	42-7A-33	Thomas & Nancy Jarrett	42 Carol La.	5676/1133	Easement
WG0631:WG0632	42-7A-34	Patricia Morris	40 Carol La.	5676/1096	Easement
	42-7A-35	Matthew Pesot	38 Carol La.	5676/1139	Easement
WG0632:WG0633	42-7A-35	Matthew Pesot	38 Carol La.	5676/1139	Easement
	42-7A-36	Karen Farrelly	36 Carol La.	5676/1145; Case No. 03-00678	Easement; Condemnation
	42-7A-37	James Beam	34 Carol La.	5676/1121	Easement
WG0633:WG0634	42-7A-37	James Beam	34 Carol La.	5676/1121	Easement
WG0634:WG0635	42-7A-37	James Beam	34 Carol La.	5676/1121	Easement
	42-7A-38	Robert & Barbara Perrin	32 Carol La.	5648/588	Easement
WG0635:WG0636	42-7A-38	Robert & Barbara Perrin	32 Carol La.	5648/588	Easement
	42-7A-39	Robert Carver	30 Carol La.	5686/926; Case No. 03-00685	Easement; Condemnation
	42-7A-71	Lorne Munroe	9 Barbara Dr.	5608/2114; Case No. 03-2143	
WG0410V:WG0411	42-4-294-E	National Railroad Passenger Group	Train Tracks		
	42-7A-25.2	Robert Caccese; Deb Wolbach	1 Dawn Way	No easement found	
WG0411:WG0412	42-7A-25.2	Robert Caccese; Deb Wolbach	1 Dawn Way	No easement found	
	42-7A-25.3	Michael & Kim Buchanan	3 Dawn Way	No easement found	
WG0412:WG0413	42-7A-25.3	Michael & Kim Buchanan	3 Dawn Way	No easement found	
WG0413:WG0414	42-7A-25.3	Michael & Kim Buchanan	3 Dawn Way	No easement found	
	42-7A-25.4	Mia Haiching	4 Dawn Way	No easement found	
WG0414:WG0501V	42-7A-25.4	Mia Haiching	4 Dawn Way	No easement found	
WG0501V:WG0502	Township Street	Judith Way			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0502:WG0503V	Township Street	Judith Way			
WG0503V:WG0504	Township Street	Judith Way			
WG0504:WG0505	Township Street	Judith Way			
WG0503V:WG0517	Township Street	Carla Terrace			
WG0517:WG0518	Township Street	Carla Terrace			
WG0501V:WG0506	Township Street	Judith Way			
WG0506:WG0507	42-7A-11.10	Alan & Melissa Neves	29 Judith Way	No easement found	
	42-7A-92.6	Narayanan Radhakrishnan	17 Rogers Way	No easement found	
WG0507:WG0508	42-7A-92.6	Narayanan Radhakrishnan	17 Rogers Way	No easement found	
	42-7A-92.5	Wang Yang; Zeng Wenyu	15 Rogers Way	No easement found	
WG0508:WG0509V	42-7A-92.5	Wang Yang; Zeng Wenyu	15 Rogers Way	No easement found	
WG0509V:WG0510	Township Street	Rogers Way			
WG0510:WG0511	Township Street	Rogers Way			
WG0511:WG0512	Township Street	Rogers Way			
WG0509V:WG0513	42-7A-92.12	Francis & Andrea Golden	16 Rogers Way	No easement found	
WG0513:WG0514	Township Street	Rogers Way			
WG0514:WG0515	42-7A-92.10	Raymond & Susan Cori	20 Rogers Way	No easement found	
WG0515:WG0516	42-7A-92.10	Raymond & Susan Cori	20 Rogers Way	No easement found	
	42-7A-92.14	Hao Sun; Jiangyue Zhang	11 Barbara Dr.	No easement found	
WG0516:WG0705	42-7A-92.15	Russell & Cynthia Lighton	10 Barbara Dr.	No easement found	
WG0705:WG0704V	Township Street	Barbara Dr.			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0704V:WG0706V	42-7A-68	Thomas & Patricia Jolly	4 Barbara Dr.	5648/577	Easement
	42-7A-69	Kathy Simmonds	6 Barbara Dr.***	5686/942	Easement
	42-7A-79	Jeremy & Dana Harrison	137 Sproul Rd.	5686/912	Easement
WG0706V:WG0707	42-7A-79	Jeremy & Dana Harrison	137 Sproul Rd.	5686/912	Easement
	42-7A-65	Jonathan Godley	219 Summit Rd.	5676/1115	
WG0706V:WG0708	42-7A-79	Jeremy & Dana Harrison	137 Sproul Rd.	5686/912	Easement
	42-7A-80.1	Walter Haly; Richard Haly	135 Sproul Rd.	No easement found	
	42-7A-80	Walter Haly; Richard Haly	133 Sproul Rd.	Case No. 03-00679	Condemnation
	42-7A-81	Dwight & Catherine Lasure	131 Sproul Rd.	5648/724	Easement
WG07089:WG0709	42-7A-81	Dwight & Catherine Lasure	131 Sproul Rd.	5648/724	Easement
	42-7A-82	John Lovasz	129 Sproul Rd.	5676/1109	Easement
	42-7A-84	Rebecca Shirk; Neal Gliksman	125 Sproul Rd.	5676/1127	Easement
	42-7A-83	Minika & James Chapman	127 Sproul Rd.	5648/730	Easement
WG0704V:WG0703V	Township Street	Barbara Dr.		Township Street	
WG0703V:WG0702	42-7A-74	Janet Obrien; Peter Spengeman	3 Barbara Dr.	5648/583	Easement
	42-7A-73	Stephanie McNichol	5 Barbara Dr.	5648/570	Easement
WG0702:WG0701	42-7A-73	Stephanie McNichol	5 Barbara Dr.	5648/570	Easement
	42-7A-74	Janet Obrien; Peter Spengeman	3 Barbara Dr.	5684/583	Easement
WG0701:WG0637	42-7A-74	Janet Obrien; Peter Spengeman	3 Barbara Dr.	5684/583	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-7A-71	Lorne Munroe	9 Barbara Dr.	5608/2114; Case No. 03-2143	
WG0637:WG0638	42-7A-71	Lorne Munroe	9 Barbara Dr.	5608/2114; Case No. 03-2143	
	42-7A-88	Amy Mellinger	197 Summit Rd.	5648/699	Easement
WG0638:WG0639V	42-7A-88	Amy Mellinger	197 Summit Rd.	5648/699	Easement
	42-7A-41	Kenneth & Yvonne Miller	26 Carol La.	5648/564	Easement
WG0639V:WG0641	Township Street	Carol Lane (Sorth)			
WG0639V:WG0640	Township Street	Carol Lane (South)			
WG0703V:WG0710	Township Street	Barbara Dr.			
WG0710:WG0711	42-7A-67	William Dierkes	2 Barbara Dr.	No easement found	
	42-7A-66	Kathleen Michaels	217 Summit Rd.	No easement found	
WG0711:WG0712V	42-7A-66	Kathleen Michaels	217 Summit Rd.	No easement found	
WG0712V:WG0713	42-7A-55	Charles & Denney Magee	218 Summt Rd.	5648/693	Easement
	42-7A-56	Christopher & Wendy Corkran	216 Summit Rd.	No easement found	
WG0713:WG0714	42-7A-56	Christopher & Wendy Corkran	216 Summit Rd.	No easement found	
	42-7-40	Robert & Betty Whitaker	159 Sproul Rd.	Case No. 03-00680	Condemnation
	42-7-41	Miguel Jara	163 Sproul Rd.	Case No. 03-00681	Condemnation
	42-7A-59	Daniel & Kelly Farrell	4 Woodcrest Lane	5648/589	Easement
WG0712V:WG0715V	Township Street	Summit Road			
WG0715V:WG0719	Township Street	Summit Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WG0719:WG0720	42-7-51	Marjorie Cockerham	200 Summit Rd.	No easement found	
	42-7B-40	Alan Donatone	18 Carol La.	No easement found	
WG0715V:WG0716	Township Street	Woodcrest Lane			
	72-7A-58	Porter & Harriet Carlson	6 Woodcrest La.	Case No. 03-00683	Condemnation
WG0716:WG0717	42-7A-61	Romayne Howard-McKellar	5 Woodcrest La.	No easement found	
	42-7A-60	Irina Shevertalova	3 Woodcrest La.	5608/2126	Condemnation
WG0717:WG0718	42-7A-60	Irina Shevertalova	3 Woodcrest La.	5608/2126	Condemnation
	42-7-43	Benjamin Poehand	179 Sproul Rd.	5686/932	Easement
	42-7-44	Joseph & Kelly Dantoni	181 Sproul Rd.	5686/936; Case No. 03-2147	Easement; Condemnation
		CHURCH RD. DB			
Church Road PS9	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
PS9:CH0001	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
CH0001:CH0301	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
CH0301:CH0302	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
	42-4-77	Rubino Holdings LP	22 Church Rd.	1357/492	
CH0302:CH0303	42-4-77	Rubino Holdings LP	22 Church Rd.	1357/492	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0303:CH0304V	42-4-77	Rubino Holdings LP	22 Church Rd.	1357/492	
CH0304V:CH305	42-3-199	Chester Valley Golf Club	430 Swedesford Rd.	7819/2124	Easement
CH305:CH306	Township Street	Church Road			
CH304V:CH0401	42-3-199	Chester Valley Golf Club	430 Swedesford Rd.	7819/2124	Easement
CH0401:CH0402	Township Street	Church Road			
CH0402:CH0403	Township Street	Church Road			
CH04903:CH0404	Township Street	Beachwood Ave			
CH0404:CH0405	Township Street	Beachwood Ave			
CH0405:CH0406V	Township Street	Beachwood Ave			
CH0406V:CH0411	Township Street	Beachwood Ave			
CH0411:CH0412	42-4N-12	James & Seanna Meehan	21 Beechwood Ave	No easement found	
CH0406V:CH0407	Township Street	Buttonwood Ave			
CH0407:CH0408	Township Street	Buttonwood Ave			
CH0408:CH0409	Township Street	Buttonwood Ave			
CH0409:CH0410	Township Street	Buttonwood Ave			
CH0001:CH0002	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
CH0002:CH0003	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
CH0003:CH0004	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0004:CH0005V	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
CH0005V:CH0101V	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
	42-4-275	Eadeh Leslie Revocable Trust	446 Lancaster Ave.	1357/426; 1379/271	
CH0101V:CH0106	42-4-275	Eadeh Leslie Revocable Trust	446 Lancaster Ave.	1357/426; 1379/271	
CH0106:CH0107	42-4-275	Eadeh Leslie Revocable Trust	446 Lancaster Ave.	1357/426; 1379/271	
	42-4-298	Carol Sexton	430 Lancaster Ave.	1357/418	
CH0107:CH0108	42-4-298	Carol Sexton	430 Lancaster Ave.	1357/418	
	42-4-299	Glenn & Helen Cockerham	422 Lancaster Ave.	1358/50	
	42-4-300	Glenn & Helen Cockerham	420 Lancaster Ave.	1358/46	
CH0108:CH0109	42-4-300	Glenn & Helen Cockerham	420 Lancaster Ave.	1358/46	
	42-4-302.1-E	Covenant United Presbyterian Church	410 Lancaster Ave.	1358/42	
	42-4-302-E	Covenant United Presbyterian Church	400 Lancaster Ave.	1358/38	
CH0101V:CH0102	42-4-275	Eadeh Leslie Revocable Trust	446 Lancaster Ave.	1357/426; 1379/271	
CH0102:CH0103	42-4-275	Eadeh Leslie Revocable Trust	446 Lancaster Ave.	1357/426; 1379/271	
	42-3-239	Eadeh Family Limited Partnership	211 Apple La.	1357/430	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0103:CH0104	42-3-239	Eadeh Family Limited Partnership	211 Apple La.	1357/430	
CH0104:CH0105	42-3-239	Eadeh Family Limited Partnership	211 Apple La.	1357/430	
	42-3-238	Eadeh Family Limited Partnership	474 Lancaster Ave.	1357/434	
	42-3-237.2	Arch-Frazer LLC	480 Lancaster Ave.	1357/438	
	.				
CH0005V:CH0006	42-4-75.1	Plute Homes of PA Limited Partnership	Unaddressable Parcel	Easement (unrecorded)	
	42-3-227	Hill Laboratories Co.	445 Lancaster Ave.	1357/479	
	42-3-226.1	Thomas & Wayne Keyes	447 Lancaster Ave.	1357/475	
	42-3-226	Thomas & Wayne Keyes	449 Lancaster Ave.	1357/467	
CH0006:CH0007	42-3-223	Thomas & Wayne Keyes	457 Lancaster Ave.	1357/471	
	42-3-222	Michael Rizzo	459 Lancaster Ave.	1357/508	
	42-3-222.1	H&B Associates LLC	471 Lancaster Ave.	1357/512	
CH0007:CH0008	42-3-222.1	H&B Associates LLC	471 Lancaster Ave.	1357/512	
	42-3-221	Cohab Realty LLC; Forest Dr. LLC	477 Lancaster Ave.	1357/520	
CH0008:CH0009	42-3-221	Cohab Realty LLC; Forest Dr. LLC	477 Lancaster Ave.	1357/520	
	42-3-220	Jeffrey Dambrosio	483 Lancaster Ave.	1357/516; 1367/531	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0009:CH0010	42-3-220	Jeffrey Dambrosio	483 Lancaster Ave.	1357/516; 1367/531	
	42-3-218	Rudy & Nancy Ricca	497 Lancaster Ave.	1357/524	
CH0010:CH0011	42-3-218	Rudy & Nancy Ricca	497 Lancaster Ave.	1357/524	
	42-3-217	Minh Hang; Nguyen Tam	503 Lancaster Ave.	1357/528	
	42-3R-5	Francis & Julie Boromeo	1 Charles St.	1357/532; 1678/210	
CH0011:CH0012V	42-3R-2	Leticia Casillas	2 Charles St.	1357/536; 1678/200	
	42-3R-16	Coffman Commons Condominium Association	Unaddressable Parcel	1357/540	
CH0012V:CH0201V	42-3R-16	Coffman Commons Condominium Association	Unaddressable Parcel	1357/540	
	42-3R-38	Thunderbird Trading Co. LLC	530 Lancaster Ave.	1357/462	
CH0201VCH0205	42-3R-38	Thunderbird Trading Co. LLC	530 Lancaster Ave.	1357/462	
	42-3-233.1	Malvern Realty Holdings, Inc.	520 Lancaster Ave	1357/458	
	42-3-234	David Goldstein	510 Lancaster Ave	1357/450,454	
	42-3-236	Frederick Callaghan Jr; Paul Callahan	500 Lancaster Ave	1357/446	
CH0205:CH0206	42-3-236	Frederick Callaghan Jr; Paul Callahan	500 Lancaster Ave	1357/446	
	42-3-237.1	Arch-Frazer LLC	490 Lancaster Ave.	1357/442	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0201V:CH0204	42-3R-38	Thunderbird Trading Co. LLC	530 Lancaster Ave.	1357/462	
	42-3R-40	VJM Realty Partners, LLC	522 Lancaster Ave.	1358/62	
	42-3R-39	James & Diana Genn	526 Lancaster Ave.	1358/66	
CH0201V:CH0203	42-3R-38	Thunderbird Trading Co. LLC	530 Lancaster Ave.	1357/462	
	42-3R-37	Canakis Real Estate LLC	524 Lancaster Ave.	1358/58	
	42-3-232	Wolfe Investment Properties LLC	536 Lancaster Ave.	1358/70	
CH0203:CH0202	42-3-232	Wolfe Investment Properties LLC	536 Lancaster Ave.	1358/70	
	42-3-231	Wolfe Investment Properties LLC	544 Lancaster Ave.	1367/535	
	42-3-230	??	20 Norbros Cir.	1358/74	
CH0202:FR0410	42-3-230	??	20 Norbros Cir.	1358/74	
FR0410:FR0411	42-3-230	??	20 Norbros Cir.	1358/74	
CH0012:CH0013	42-3R-16	Coffman Commons Condominium Association	Unaddressable Parcel		
	42-3R-6	Touchstone Properties	519 Lancaster Ave.	1357/544	
CH0013:CH0014	42-3R-7	F L W Realty Co.	527 Lancaster Ave.	1357/549	
	42-3R-8	Emac Installers Co.	531 Lancaster Ave.	1357/552	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
CH0014:CH0015	42-3R-8	Emac Installers Co.	531 Lancaster Ave.	1357/552	
	42-3R-9	Franklin Auto Spa LP	535 Lancaster Ave.	1357/556	
	42-3R-10	Roanoke Properties LLC	537 Lancaster Ave.	1357/560	
CH0015:FORCE MAINE TO FRAME AVE PS 10					
	42-3R-10	Roanoke Properties LLC	537 Lancaster Ave.	1357/560	
	42-3R-11.1	John & Christine Vagnozzi	549 Lancaster Ave.	1357/564	
	42-3R-12	Jack Azat	555 Lancaster Ave	1357/568	
	42-3R-13	Whiteland Plaza	565 Lanaster Ave.	1357/572	
	42-3-179	Wawa, Inc.	567Lancaster Ave	1357/576	
	42-3-180	Jack Azat	577 Lancaster Ave	1357/580; 1678/190	
	42-3Q-19	Jack Azat	581 Lancaster Ave	1357/584	
	42-3Q-18	Jack Azat	585 Lancaster Ave	1357/588	
	42-3Q-9	Luludoli LLC	587 Lancaster Ave	1357/596; 1678/205	
	42-3-181	Jack Azat	591 Lancaster Ave	1357/592	
	42-3-182	Jack Azat	589 Lancaster Ave	1358/1	
	42-3-183	Spruce EW Realty LP	593 Lancaster Ave	1358/5	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-3-184	Spruce EW Realty LP	593 Lancaster Ave	1358/9	
	42-3-185.1	Spruce EW Realty LP	593 Lancaster Ave	1358/13	
	42-3-149.1	Anthony Celia	5 Frame Ave.	No easement found	
	42-3-150.1	Townes at Malvern Community Association	114 Mulberry Dr.	No easement found	
	42-3-149	Daniel Giegel	7 Frame Ave.	1358/21; 20126/1	Easement; Easement shown on subdivision plan
	42-3-149.2	Construction Technology Services, Inc.	11 Frame Ave	20565/1	Easement shown on subdivision plan
	42-3-150	Rehana Syed; Amit Godambe	15 Frame Ave.	20126/1	Easement shown on subdivision plan
	12-3-151	Marie Stotler	23 Frame Ave.	No easement found	
	42-3-151.1	Amit Godambe; Rehana Syed	25 Frame Ave.	No easement found	
	42-3-152	Ryan & Maura Klembecki	27 Frame Ave	No easement found	
	42-3-153.3	Townes at Malvern Community Association	150 Planebrook Rd.	9950/1608; 19840/1	Easement;Easement shown on subdivision plan
		FRAME AVE. DB			
Frame Ave PS10	PennDot Road	202			
N/A:FR0002	PennDot Road	202			
FR0002:FR0003	Township Street	Frame Ave			
FR0003:N/AV	Township Street	Frame Ave			
N/AV: FORCE MAIN TO PLAINBROOK PS					

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-3-153.3	Townes at Malvern Community Association	150 Planebrook Rd.	9950/1608; 19840/1	Easement;Easement shown on subdivision plan
PLAINBROOK PS: CHESTER VALLEY TRAIL (private line)					
	42-3-153.3	Townes at Malvern Community Association	150 Planebrook Rd.	9950/1608; 19840/1	Easement;Easement shown on subdivision plan
	42-3-153	Barry & Linda Cockerham	148 Planebrook Rd.	19840; 1	Easement shown on subdivision plan
	42-3-165	Daniel & Ginger McGuire	60 Planebrook Rd.	9579/478	Easement
	42-3-111.2	Eadeh Family Limited Partnership	105 Phoenixville Pk.	16114/1	Easement shown on subdivision plan
	42-3-111.8	John & Deborah Abel	111 Phoenixville Pk.	No easement found	
N/AV:FR0004	Township Street	Frame Ave			
FR0004:FR0005	Township Street	Frame Ave			
FR0005:FR0006	Township Street	Frame Ave			
FR0006:FR0007	Township Street	Frame Ave			
FR0007:FR0008V	Township Street	Frame Ave			
FR008V:FR0202	42-3-149.1	Anthony Celia	5 Frame Ave	No easement found	
FR0202:FR0101	42-3-149.1	Anthony Celia	5 Frame Ave	No easement found	
	42-3-147	Anthony & Josaphine Celia	5 Frame Ave Ste 102	No easement found	
	42-3-185.1	Spruce EW Realty LP	593 Lancaster Ave.	1358/13	
FR0101:FR0102	42-3-185.1	Spruce EW Realty LP	593 Lancaster Ave.	1358/13	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-3-185	Richard Haly; Walter Haly	609 Lancaster Ave	1358/17	
FR0102:FR0103	42-3-185.1	Spruce EW Realty LP	593 Lancaster Ave.	1358/13	
FR0103:FR0104	42-3-185.1	Spruce EW Realty LP	593 Lancaster Ave.	1358/13	
	42-3-184	Spruce EW Realty LP	593 Lancaster Ave.	1358/9	
	42-3-183	Spruce EW Realty LP	593 Lancaster Ave.	1358/5	
FR0104:FR0105	42-3-183	Spruce EW Realty LP	593 Lancaster Ave.	1358/5	
	42-3-182	Jack Azat	589 Lancaster Ave	1358/1	
	42-3-181	Jack Azat	591 Lancaster Ave	1357/592	
	42-3Q-9	Luludoli LLC	587 Lancaster Ave	1357/596; 1678/205	
FR0105:FR0106	42-3Q-18	Jack Azat	585 Lancaster Ave	1357/588	
	42-3Q-19	Jack Azat	581 Lancaster Ave	1357/584	
	42-3-180	Jack Azat	577 Lancaster Ave	1357/580; 1678/190	
FR0106:FR0107	42-3-180	Jack Azat	577 Lancaster Ave	1357/580; 1678/190	
	42-3-179	Wawa, Inc.	567Lancaster Ave	1357/576	
FR0107:FR0108	42-3-179	Wawa, Inc.	567Lancaster Ave	1357/576	
	42-3R-13	Whiteland Plaza	565 Lanaster Ave.	1357/572	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
FR0108:FR0109	42-3R-13	Whiteland Plaza	565 Lanaster Ave.	1357/572	
	42-3R-12	Jack Azat	555 Lancaster Ave	1357/568	
	42-3R-11.1	John & Christine Vagnozzi	549 Lancaster Ave.	1357/564	
FR0008V:FR0009	Township Street	Frame Ave			
FR0009:FR0010	Township Street	Frame Ave			
FR0010:FR0011	42-3-145	Anthony Celia	619 Lancaster Ave.	1358/126	
FR0011:FR0012	42-3-145	Anthony Celia	619 Lancaster Ave.	1358/126	
FR0012:FR0013V	42-3-145	Anthony Celia	619 Lancaster Ave.	1358/126	
	42-6-10.1	Robert & Arlene Stevens	627 Lancaster Ave.	1358/26	
FR0013V:FR0301	42-6-10.1	Robert & Arlene Stevens	627 Lancaster Ave.	1358/26	
	42-6-10	Moody National Lancaster Frazer Holding LLC	635 Lancaster Ave.	1358/30	
FR0301:FR0302	42-6-10	Moody National Lancaster Frazer Holding LLC	635 Lancaster Ave.	1358/30	
FR0302:FR0303	42-6-10	Moody National Lancaster Frazer Holding LLC	635 Lancaster Ave.	1358/30	
	42-3-137.1	MHC 36 Frazer PA LLC	641 Lancaster Ave.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-6-8	675 Lancaster LLC	675 Lancaster Ave.	No easement found	
FR0013V:FR0014V	42-6-10.1	Robert & Arlene Stevens	627 Lancaster Ave.	1358/26	
	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	
FR0014V:FR0401	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	
	42-6-24.2	Pennsylvania Lines LLC	9 Ravine Road	1358/54	
FR0401:FR0402	42-6-24.2	Pennsylvania Lines LLC	9 Ravine Road	1358/54	
	42-6-23.2A	Frazer 642 Inc.	642 Lancaster Ave.	1358/118	
FR0402:FR0403	42-6-23.2A	Frazer 642 Inc.	642 Lancaster Ave.	1358/118	
	42-6-23.2B	638 Partners	640 Lancaster Ave.	1358/110	
FR0403:FR0404	42-6-23.2B	638 Partners	640 Lancaster Ave.	1358/110	
	42-6-23.2C	638 Partners	638 Lancaster Ave.	1358/106	
	42-6-23.2	Ward 642 Partners LLC	634 Lancaster Ave.	1358/122	
	42-6-23.2D	Christopher Hashem	630 Lancaster Ave.	1358/102	
	42-6-23.3	DKM Associates	600 Lancaster Ave.	1358/98	
FR0404:FR0405	42-6-23.3	DKM Associates	600 Lancaster Ave.	1358/98	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-6-23	DKM Associates	600 Lancaster Ave.	1358/90; 1379/275	
FR0405:FR0406	42-6-23	DKM Associates	600 Lancaster Ave.	1358/90; 1379/275	
	42-6-23.4A	Fon Kozani LP	596 Lancaster Ave.	No easement found	
FR0406:FR0407	42-6-23.4	580 Lancaster Associates LP	590 Lancaster Ave.	1358/94	
FR0407:FR0408	42-6-23.4	580 Lancaster Associates LP	590 Lancaster Ave.	1358/94	
	42-6-23.1	Arec 5 LLC	564 Lancaster Ave.	1358/86	
FR0408:FR0409	42-6-23.1	Arec 5 LLC	564 Lancaster Ave.	1358/86	
	42-3-228	J&P Spingh Management LLP	562 Lancaster Ave.	1358/82	
	42-3-229	GMH East Whiteland Holdings LLC	554 Lancaster Ave.	1358/78; 1678/195	
FR0014V:FR0015V	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	
FR0015V:FR0501	42-6-14.2	Home Depot USA Inc.	690 Lancaster Ave.	No easement found	
FR0015V:FR0016	Penndot Road	Phoenixville Pike			
FR0016:FR0017	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	
FR0017:FR0018	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
FR0018:FR0019	42-6-21	Chester Co. Commons Owners Assoc. Inc.	Unaddressable Parcel	1358/114	
FR0019:FR0020	Township Street	Ravine Road			
FR0020:FR0021	Township Street	Ravine Road			
FR0021:FR0022	42-6-245	Kyle & Kerri Turner	16 Ravine Rd.	No easement found	
FR0022:FR0023V	42-6-246	Whitewoods Community Association, Inc.	Unaddressable Parcel	No easement found	
FR0023V:FR0024	42-6-246	Whitewoods Community Association, Inc.	Unaddressable Parcel	No easement found	
FR0024:FR0601	42-6-246	Whitewoods Community Association, Inc.	Unaddressable Parcel	No easement found	
	42-6-233	Page & Robert Hinkle	26 Whitewoods La.	No easement found	
FR0601:FR0602	42-6-233	Page & Robert Hinkle	26 Whitewoods La.	No easement found	
FR0602:FR0603	42-6-230	Michael Carroll; Carolyn Cross	19 Whitewoods La.	No easement found	
	42-6-229	Thomas & Lisa Nackers	17 Whitewoods La.	No easement found	
FR0603:FR0604	42-6-229	Thomas & Lisa Nackers	17 Whitewoods La.	No easement found	
FR0604:FR0605	42-6-229	Thomas & Lisa Nackers	17 Whitewoods La.	No easement found	
	42-6-228	Nirav Mehta	15 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
	42-6-227	Patrick & Laura Sullivan	13 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-6-226	Ming Hang; Tammy Nguyen	11 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
FR0605:FR0606	42-6-226	Ming Hang; Tammy Nguyen	11 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
	42-6-225	Douglas & Cynthia Claffey	9 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
	42-6-224	Victor & Lioudmila Tchistiak	7 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
FR0606:FR0607	42-6-224	Victor & Lioudmila Tchistiak	7 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
	42-6-223	Francis & Kimberly Simon	5 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
	42-6-222	Arthur Jones	3 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
FR0607:FR0608	42-6-222	Arthur Jones	3 Whitewoods La.	5406/689; 4349/12	Deed of Dedication (from developer for entire Whitewoods subdivision)
FR0608:FR0609	Private Road	White Woods Ln.			
FR0609:FR0610	Private Road	White Woods Ln.			
FR0023V:FR0025	42-6-246	Whitewoods Community Assoc. Inc.	Unaddressable Parcel	No easement found	
FR0025:FR0026	42-6-246	Whitewoods Community Assoc. Inc.	Unaddressable Parcel	No easement found	
FR0026:FR0027	42-6-246	Whitewoods Community Assoc. Inc.	Unaddressable Parcel	No easement found	
FR0027:FR0028	42-6G-16-E	East Whiteland Township	Unaddressable Parcel		
FR0028:FR0701	42-6G-16-E	East Whiteland Township	Unaddressable Parcel		
FR0701:FR0702V	42-6G-16-E	East Whiteland Township	Unaddressable Parcel		
	42-6G-17	Eric & Maureen Johnson	32 Glenloch Way	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
FR0702V:FR0703	Township Street	Glenloch Way			
FR0703:FR0704	Township Street	Glenloch Way			
FR0702V:FR0709	Township Street	Glenloch Way			
FR0709:FR0710	Township Street	Glenloch Way			
FR0710:FR0711	Township Street	Glenloch Way			
FR0711:FR0712	Township Street	Glenloch Way			
FR0712:FR0713	Township Street	Glenloch Way			
FR0713:FR0714	Township Street	Glenloch Way			
FR0714:FR0715V	Township Street	Glenloch Way			
FR0715V:FR0717	Township Street	Glenloch Way			
FR0717:FR0718	Township Street	Glenloch Way			
FR0718:FR0719	42-6-36	Ruth Brown; Janice Senn	1320 King Rd.	No easement found	
FR0715V:FR0716	Township Street	Glenloch Way			
FR07156:FR0708	Township Street	Glenloch Way			
FR0708:FR0707	Township Street	Glenloch Way			
FR0707:FR0706	Township Street	Glenloch Way			
FR0706:FR0705	Township Street	Glenloch Way			
		MEADOW VIEW DB			
Meadow View PS5	42-4-71.2A	Richard Schoeninger	313 Swedesford Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
PS5:MV0001V	42-4-71.2A	Richard Schoeninger	313 Swedesford Rd.	No easement found	
MV0001:MV0101	42-4-71.2A	Richard Schoeninger	313 Swedesford Rd.	No easement found	
	42-4-71.2	Brian Bretz; Siobhan Haney	309 Swedesford Rd.	No easement found	
MV0001:MV0002	42-4-89.2	Dante & Christine Bradley	310 Swedesford Rd.	No easement found	
MV0002:MV0003	42-4-89.2	Dante & Christine Bradley	310 Swedesford Rd.	No easement found	
MV0003:MV0004	42-4-89.2	Dante & Christine Bradley	310 Swedesford Rd.	No easement found	
MV0004:MV0005	42-4-89.2	Dante & Christine Bradley	310 Swedesford Rd.	No easement found	
MV0005:MV0006	42-4-89.2	Dante & Christine Bradley	310 Swedesford Rd.	No easement found	
	42-4-89	William & Robin Smith	304 Swedesford Rd.	No easement found	
MV0006:MV0007V	42-4-89	William & Robin Smith	304 Swedesford Rd.	No easement found	
	42-4-89.5	Barry & Elizabeth Conway	9 Willow Dr.	No easement found	
MV0007V:MV0008	Township Street	Willow Dr.			
MV0007V:MV0009	42-4-89.5	Barry & Elizabeth Conway	9 Willow Dr.	No easement found	
	42-4-88	Philip Malin	11 Sycamore Dr.	No easement found	
MV0009:MV0010	42-4-88	Philip Malin	11 Sycamore Dr.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MV0010:MV0011	42-4-88	Philip Malin	11 Sycamore Dr.	No easement found	
	Township Street	Sycamore Dr.			
		MILL LANE DB			
Mill Lane PS2	42-4-2.4-E	EW Twp.	200 Conestoga Rd.	8918/1465	Deed of Dedication
PS2:ML0001	42-4-2.4-E	EW Twp.	200 Conestoga Rd.	8918/1465	Deed of Dedication
	42-4-2.5-E	EW Twp.	202 Conestoga Rd.	8918/1465	Deed of Dedication
ML0001:ML0801V	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
ML0801V:ML0002	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
ML0002:ML0003V	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
ML0003:1405V	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
1405V:N/A(1)	42-4-18-E	EW Twp.	170 Conestoga Rd.		
N/A(1):N/A(2)	42-4-18-E	EW Twp.	170 Conestoga Rd.		
N/A(2):ML1205	42-4-18-E	EW Twp.	170 Conestoga Rd.		

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1205:ML1207	42-4-70	Rubino Holdings LP	161 Conestoga Rd.	No easement found	
	42-4-71.19	Michael Matkovic	9 Limekiln Dr.	No easement found	
ML1207:ML1208V	42-4-71.19	Michael Matkovic	9 Limekiln Dr.	No easement found	
ML1208V:ML1210	42-4-71.19	Michael Matkovic	9 Limekiln Dr.	No easement found	
	42-4-71.18	Robert & Audrey Duffy	11 Limekiln Dr.	No easement found	
	42-4-71.26	Colleen & Joe Johnson	8 Limekiln Dr.	No easement found	
	42-4-71.27	Jeffrey & Mary Focht	11 Valley Creek Rd.	No easement found	
ML1208V:ML1211	42-4-71.19	Michael Matkovic	9 Limekiln Dr.	No easement found	
ML1211:ML1212	Township Street	Limekiln Drive			
ML1212:ML1213	42-4-71.25	Steven Aquilani	7 Valley Creek Rd.	No easement found	
ML1213:ML1214	42-4-71.9	Christopher & Wendy Nawn	4 Manor View Cir.	No easement found	
ML1214:ML1215	Township Street	Manor View Cir.			
ML1215:FORCE MAIN TO MEADOW VIEW PS5					
ML1215: MV0103	42-4-71.7	Ryan & Colleen Blackburn	8 Manor View Cir.	No easement found	
	42-4-71.8	Gregory & Margaret Ricker	6 Manor View Cir.	No easement found	
	42-4-71.13	Aaron & Jennifer Govatos	303 Swedesford Rd.	No easement found	
	42-4-71.2	Brian Bretz; Siobhan Haney	309 Swedesford Rd.	No easement found	
MV0103:MV0102	42-4-71.2	Brian Bretz; Siobhan Haney	309 Swedesford Rd.	No easement found	
MV0102:PS5	42-4-71.2	Brian Bretz; Siobhan Haney	309 Swedesford Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-71.2A	Richard Schoeninger	313 Swedesford Rd.	No easement found	
1405V:ML1301	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
	42-4-59-E	EW Twp.	205 Conestoga Rd.		
ML1301:ML1302	Township Street	Mill Lane			
ML1302:ML1303	Township Street	Mill Lane			
ML1303:ML1304V	Township Street	Mill Lane			
ML1304V:ML1306	42-4-65.1	Dirk & Jennifer Heerding	1 Mill Creek Lane	No easement found	
	42-4-65.2	Kenneth & Rosemary Bigelow	3 Mill Creek Lane	No easement found	
	42-4-65.3	Robert & Connie Dailey	5 Mill Creek Lane	No easement found	
ML1306:N/A	42-4-65.3	Robert & Connie Dailey	5 Mill Creek Lane	No easement found	
	42-4-65.4	Peter & Jane Austin	7 Mill Creek Lane	No easement found	
	42-4-65.5	Eric Brodfuehrer; Holly Humphrey	9 Mill Creek Lane	No easement found	
	42-4-65.6	Benjamin & Lauren Weiner	11 Mill Creek Lane	No easement found	
N/A:N/A	42-4-65.6	Benjamin & Lauren Weiner	11 Mill Creek Lane	No easement found	
	42-4-65.7	Joyce Vanschoonevel d	10 Mill Creek Lane	No easement found	
N/A:ML1309	42-4-65.7	Joyce Vanschoonevel d	10 Mill Creek Lane	No easement found	
	42-4J-31	Robert & Rosheen McCutcheon	8 Brett Lane	No easement found	
ML1309:ML1310	42-4J-31	Robert & Rosheen McCutcheon	8 Brett Lane	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1210:ML1311	Township Street	Brett Lane			
ML1311:ML1312	Township Street	Brett Lane			
ML1312:ML1313V	Township Street	Brett Lane			
ML1313V:ML1314	Township Street	Westgate Cir.			
ML1314:ML1315V	Township Street	Westgate Cir.			
ML1315V:ML1316	Township Street	Westgate Cir.			
ML1315V:ML1317	42-4J-9	William & Heather Riley	17 Westgate Cir.	No easement found	
ML1317:ML1318	42-4J-9	William & Heather Riley	17 Westgate Cir.	No easement found	
	42-4J-10	Donna Sweeney	19 Westgate Cir.	No easement found	
	42-4J-11	Bryan & Julia Keely	21 Westgate Cir.	No easement found	
	42-4J-12	Robert & Karen Toal	5 Stuart Dr.	No easement found	
ML1318:ML1319	42-4J-15	Eugene & Elizabeth Twardowski	2 Stuart Dr.	No easement found	
ML1319:Private system	42-4J-15	Eugene & Elizabeth Twardowski	2 Stuart Dr.	No easement found	
	42-4J-16	Frederick & Sheila Heins	4 Stuart Dr.	No easement found	
	42-4J-17	Roberto & Mary Jane Bartilomo	6 Stuart Dr.	No easement found	
	42-4J-18	Herbert & Eulalia Walton	8 Stuart Dr.	No easement found	
	42-4-87.3	Westgate Village Associates LP	333 Lancaster Ave.	18117/1	Easement shown on subdivision plan
Private System - Westgate Village					
ML1313V:ML1320	Township Street	Devonshire Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1320:ML1321	Township Street	Devonshire Lane			
ML1321:ML1322	Township Street	Devonshire Lane			
ML1322:ML1323	Township Street	Devonshire Lane			
ML1323:ML1324	Township Street	Devonshire Lane			
ML1324:ML1325	Township Street	Devonshire Lane			
ML1325:ML1326	Township Street	Devonshire Lane			
ML1304V:ML1305	Township Street	Mill Lane			
ML1305:ML1501V	Township Street	Mill Lane			
ML1501V:ML1502	42-4-65.10	Anthony Black; Helen Cockerham	4 Mill Creek Lane	No easement found	
ML1501V:ML1503	Township Street	Knollbrook Cir.			
ML1503:ML1504	42-4-60.3	Terrance & Kendra Walsh	3 Knollbrook Cir.	No easement found	
ML1504:ML1505V	42-4-60.3	Terrance & Kendra Walsh	3 Knollbrook Cir.	No easement found	
	42-4-60.4	Gale Sevi	5 Knollbrook Cir.	No easement found	
ML1505V:ML1506	42-4-60.4	Gale Sevi	5 Knollbrook Cir.	No easement found	
	42-4-60.5	Peter & Susan Gilmore	7 Knollbrook Cir.	No easement found	
ML1505V:ML1507	42-4-60.4	Gale Sevi	5 Knollbrook Cir.	No easement found	
	42-4-60.5	Peter & Susan Gilmore	7 Knollbrook Cir.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-60.6	Harry Eckerson	9 Knollbrook Cir.	No easement found	
	42-4-60.7	Wayne & Knollbrook Tougher	11 Knollbrook Cir.	No easement found	
ML1507:ML1508	42-4-60.7	Wayne & Knollbrook Tougher	11 Knollbrook Cir.	No easement found	
ML1508:ML1509	42-4-60.9	Ricardo & Jennifer Navarro	12 Knollbrook Cir.	No easement found	
ML1509:ML1510	42-4-60.9	Ricardo & Jennifer Navarro	12 Knollbrook Cir.	No easement found	
	42-4-61.4	Eugene Dooley	28 Mill Lane	No easement found	
ML1510:ML1511	42-4-61.4	Eugene Dooley	28 Mill Lane	No easement found	
ML1511:ML1512	42-4-61.4	Eugene Dooley	28 Mill Lane	No easement found	
	42-4-61.3	Bruce & Margaret Crowly	24 Mill Lane	No easement found	
ML1512:ML1513	42-4-61.3	Bruce & Margaret Crowly	24 Mill Lane	No easement found	
	42-4-61.2	Robert Kirkby; Nicole Roy	22 Mill Lane	No easement found	
	42-4-61.1	Nathan Hornburg; Christina Batchelor	20 Mill Lane	No easement found	
ML0801:ML0802	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
ML802:N/A(1)V	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
	42-4-2.1-E	East Whiteland Township	206 Conestoga Rd.		
	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
N/A(1)V:N/A(2)	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
	42-4-58-E	East Whiteland Township	207 Conestoga Rd.		
N/A(2):N/A(3)V	42-4-58-E	East Whiteland Township	207 Conestoga Rd.		
	42-4-58.1-E	East Whiteland Township	209 Conestoga Rd.		
N/A(3)V:ML0902	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
ML0902:ML0903	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
N/A(3)V:N/A(4)	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
N/A(4):N/A(5)	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
N/A(5)N/A(6)	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
N/A(6):N/A(7)V	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
N/A(7)V:ML0907	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
ML0907:ML0908	42-4-58.1-E	EW Township Building	209 Conestoga Rd.		
	42-3-124-E	County of Chester	Chester Valley Trail	No easement found (chester county)	
ML0908:ML0909	42-3-124-E	County of Chester	Chester Valley Trail	No easement found (chester county)	
	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0909:ML0910	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0910:ML0911	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0911:ML0912	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0912:ML0913	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0913:ML0914	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-3-125.7	Anthony & Cynthia Falcone	69 Church Rd.	5151/2258	Condemnation
	42-3-125.5	Eric & Margaret Wolfamott	63 Church Rd.	No easement found	
ML0914:ML0915	42-3-125.5	Eric & Margaret Wolfamott	63 Church Rd.	No easement found	
	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0915:ML0916	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0916:ML0917	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0917:ML0918V	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-3-125.3	George & Alyssa Minnick	369 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-3-125.2	Alicia & Niall Donnelly	371 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0918V:ML0926	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0926:ML0927	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0927:ML0928	42-4-55-E	Great Valley School District	361 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-4-62	Great Valley School District	357 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0928:ML0929	42-4-62.2	Erlene & Darrell Pearson	355 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-4-62.1	Jesse & Naro Rhonda	353 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
ML0918V:ML0919V	42-4-83.1-E	East Whiteland School District	354 Swedesford Rd.	No easement found (school)	
ML0919V:ML0920	42-4-83.1-E	East Whiteland School District	354 Swedesford Rd.	No easement found (school)	
	42-4-82.2	Robert & Patricia Geiss	372 Swedesford Rd.	Easement (not recorded)	Easement (not recorded)
	42-4-82	Thomas & Ann Curran	51 Church Rd.	Easement (not recorded)	Easement (not recorded)
ML0919V:ML0924	42-4-83.1-E	East Whiteland School District	354 Swedesford Rd.	No easement found (school)	
ML0924:ML0925	42-4-83.1-E	East Whiteland School District	354 Swedesford Rd.	No easement found (school)	
	42-4-83-E	East Whiteland School District	354 Swedesford Rd.	No easement found (school)	
N/A(7)V: Private system running south through Chester Velley Golf Club to PS9					
N/A(7):Private system running west along Chester Valley trail					
N/A(1)V:ML0804	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0804:ML0805	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
ML0805:ML0806	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
ML0806:ML0807	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
ML0807:ML0808	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
ML0808:ML0809	42-4-365-E	East Whiteland Township	208 Conestoga Rd.		
ML0809:ML0810	PennDot Road	Conestoga Road			
ML0810:ML0811	PennDot Road	Conestoga Road			
ML0811:ML0812	42-3-244-E	East Whiteland Township	210 Conestoga		
ML0812:ML0813	42-3-244-E	East Whiteland Township	210 Conestoga		
ML0813:ML0814	PennDot Road	Conestoga Road			
ML0814:ML0815V	Township Street	Moores Road			
ML0815V:ML1001	Township Street	Church Road			
ML1001:ML1002	Township Street	Church Road			
ML1002:ML1003	Township Street	Church Road			
ML1003:ML1004	Township Street	Markel Road			
ML1004:ML1005	Township Street	Markel Road			
ML1005:ML006	Township Street	Markel Road			
ML1006:ML1007	42-3M-144	Bradley Emery	80 Markel Rd.	No easement found	
ML1007:ML1008	42-3M-144	Bradley Emery	80 Markel Rd.	No easement found	
	42-3M-145	David & Kathleen Duquette	82 Markel Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1008:ML1009V	42-3M-145	David & Kathleen Duquette	82 Markel Rd.	No easement found	
	42-3M-146	Clint Coons Trust	84 Markel Rd.	No easement found	
	42-3M-147	Thomas & Lisa Diorio	86 Markel Rd.	No easement found	
	42-3M-148	Jason Shindledecker; Melissa Welsh	88 Markel Rd.	No easement found	
	42-3M-149	Raymond Keefe	90 Markel Rd.	No easement found	
	42-3M-150	James Sanderell; Michelle Root	92 Markel Rd.	No easement found	
	42-3M-151	Xiaoli Qin	94 Markel Rd.	No easement found	
ML0815:ML0816	Township Street	Moores Road			
ML0816:ML0817	Township Street	Moores Road			
ML0817:ML0818V	Township Street	Moores Road			
ML0818V:ML1011	Township Street	Rickmar Lane			
ML1011:ML1012	Township Street	Rickmar Lane			
ML1012:ML1013	Township Street	Rickmar Lane			
ML0818V:ML0819V	Township Street	Moores Road			
ML0819V:ML1606	42-3-109.11	Chin Ho; Lilian Tan	13 Weightman Dr.	PP	
ML1606:ML1605	Township Street	Weitman Dr.			
ML1605:ML1603V	Township Street	Weitman Dr.			
ML1603V:ML1604	Township Street	Morris Lane			
ML1603V:ML1602	Township Street	Weitman Dr.			
ML1602:ML1601	Township Street	Weitman Dr.			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0819:ML0820V	Township Street	Moores Road			
ML0820V:ML1014	Township Street	Kelmar Ave			
ML1014:ML1015	Township Street	Kelmar Ave			
ML1015:ML1016	Township Street	Kelmar Ave			
ML1016:ML1009	Township Street	Kelmar Ave			
ML1009:ML1010	Township Street	Kelmar Ave			
ML0820:ML0821	Township Street	Moores Road			
ML0821:ML0822	Township Street	Moores Road			
ML0822:ML0823	Township Street	Moores Road			
ML0823:ML0824	Township Street	Moores Road			
ML0824:ML0825	Township Street	Moores Road			
ML0825:ML1101V	Township Street	Moores Road			
ML1101V:ML1102	PennDot Road	Phoenixville Pike			
ML1102:ML1103	42-3-297	Wyckfield Homeowners Association	Unaddressable Parcel	No easement found	
ML1103:ML1104	42-3-297	Wyckfield Homeowners Association	Unaddressable Parcel	No easement found	
	42-3-251	Roland Laplante	11 Tunbridge Lane	No easement found	
ML1104:ML1105	42-3-251	Roland Laplante	11 Tunbridge Lane	No easement found	
ML1105:ML1106	Township Street	Turnbridge Lane			
ML1106:ML1107	Township Street	Turnbridge Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1101V:ML1108V	42-3-297	Wyckfield Homeowners Association	Unaddressable Parcel	No easement found	
ML1108V:ML1109	Township Street	Craig Lane			
ML1109:ML1109	Township Street	Craig Lane			
ML1109:ML1110	Township Street	Craig Lane			
ML1108V:ML1112	42-3-245	Patel Prashant	1 Craig Lane	No easement found	
	42-3-296	Gregory Howson	5 Craig Lane	No easement found	
ML1112:ML1114	42-3-296	Gregory Howson	5 Craig Lane	No easement found	
	42-3-295	Benjamin & Rebecca Tengwall	7 Craig Lane	No easement found	
	42-3-298	Wyckfield Homeowners Association	Unaddressable Parcel	No easement found	
	42-3-298.1-E	East Whiteland Township	165 Phoenixville Pike		
ML1114:ML1115	42-3-298.1-E	East Whiteland Township	165 Phoenixville Pike		
	42-3-281	Pak Koon Living Trust	41 Craig Lane	No easement found	
ML1115:ML1116	Township Street	Craig Lane			
ML1116:ML1117	Township Street	Craig Lane			
ML1117:ML1118	Township Street	Craig Lane			
ML1118:ML1119	Township Street	Craig Lane			
ML1119:ML1123	Township Street	Craig Lane			
ML1123V:ML1124	Township Street	Kenwood Court			
ML1123V:ML1126	Township Street	Craig Lane			
ML1126:ML1127	Township Street	Craig Lane			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML1119V:ML1120V	Township Street	Clover Mill Lane			
ML1120:ML1121	Township Street	Clover Mill Lane			
ML1121:ML1122	Township Street	Clover Mill Lane			
ML1120V:FORCE MAINE TO HILLBROOK CIR. PS11					
	43-3-107.3N	David & Virginia Pohlman	10 Clover Mill La.	Easement (not recorded)	Easement (not recorded) - written consent of owners needed to assign.
	42-3-107.3P	Wesley & Meredith Moore	8 Clover Mill La.	No easement found	
ML0801V:ML0002	42-4-2.5-E	EW Twp.	202 Conestoga Rd.		
	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
ML0002:ML0003V	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
ML0003V:N/A(1)	42-4-2.4-E	EW Twp.	200 Conestoga Rd.		
	42-4-2.1-E	EW Twp.	206 Conestoga Rd.		
N/A(1):ML0004	42-4-2.1-E	EW Twp.	206 Conestoga Rd.		
ML0004:N/A(2)	42-4-2.1-E	EW Twp.	206 Conestoga Rd.		
	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
N/A(2):ML0005V	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0005V:ML0006	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0006:ML0007	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0007:ML0008	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0008:ML0009	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0009:ML0011	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0011:ML0012	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0012:ML0010	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0010:ML0013	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0013:ML0014	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0014:ML0015	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0015:ML0016V	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0016:ML0416	Township Street	Moores Road			
ML0416:ML0417	Township Street	Moores Road			
ML0417:ML0419	42-3-45.6R	Lester & Barbara Craig	17 Moores Rd.	No easement found	
	42-3-45.6Q	Sujan & Harris Shekhawat	19 Moores Rd.	No easement found	
ML0419:ML0420	42-3-45.6Q	Sujan & Harris Shekhawat	19 Moores Rd.	No easement found	
	42-3-334	CLF Westerbrook Walvern	21 Moores Rd.	No easement found	
	42-3-45.6K	Robert & Mary Clark	26 Atterbury Dr.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0420:ML0421V	42-3-45.6K	Robert & Mary Clark	26 Atterbury Dr.	No easement found	
ML0421V:ML0415	Township Street	Atturbury Dr.			
ML0421V:ML0422	Township Street	Flintshire Road			
ML0422:ML0423	Township Street	Flintshire Road			
ML0423:ML0424	Township Street	Flintshire Road			
ML0424:ML0425	Township Street	Flintshire Road			
ML0016V:ML0017	Township Street	Moores Road			
ML0017:ML0401	Township Street	Ashlawn Road			
ML0401:ML0402	Township Street	Ashlawn Road			
ML0402:ML0403V	Township Street	Ashlawn Road			
ML0403V:ML0411	Township Street	Atternury Drive			
ML0411:ML0412	Township Street	Atternury Drive			
ML0412:ML0413	Township Street	Atternury Drive			
ML0413:ML0414	Township Street	Atternury Drive			
ML0403V:ML0404	Township Street	Ashlawn Road			
ML0404:ML0405	Township Street	Ashlawn Road			
ML0405:ML0406	Township Street	Flintshire Rd			
ML0406:ML0407	Township Street	Flintshire Rd			
ML0407:ML0408	Township Street	Flintshire Rd			
ML0408:ML0409	Township Street	Flintshire Rd			
ML0409:ML0410	Township Street	Flintshire Rd			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0005V:ML0101	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
ML0101:1404	42-4-2.3	Mountain Laurel Funding Co. LLC	20 Moores Rd.	19563/1	Easement shown on subdivision plan
1404:??	Township Street	Sidley Road			
??:ML0103	Township Street	Sidley Road			
ML0103:ML0104V	Township Street	Sidley Road			
ML0104V:ML0105	Township Street	Lapp Rd.			
ML0105:ML0106	Township Street	Lapp Rd.			
ML0106:ML0107	Township Street	Lapp Rd.			
ML0107:ML0108V	Township Street	Oak Glen Dr.			
ML0108V:ML0109	42-4-20.2S	John Gray	1 Oak Glen Dr.	No easement found	
	42-4-20.2T	Bryan & Nicole Brook	140 Lapp Rd.	No easement found	
	42-4-20.2Q	Kim & James Banks	5 Oak Glen Dr.	1945/343	
ML0109:ML0110	42-4-20.2Q	Kim & James Banks	5 Oak Glen Dr.	1945/343	
	42-4-20.2P	Adrion & Betty Knight	7 Oak Glen Dr.	1945/343	
ML0112V:ML0113	Township Street	Oak Glen Dr.			
ML0112V:ML0111	Township Street	Oak Glen Dr.			
ML0108V:ML0114	Township Street	Oak Glen Dr.			
ML0114:ML0115	Township Street	Oak Glen Dr.			
ML0115:ML0116	42-4-20.2E	Salaman Arshad	10 Oak Glen Dr.	No easement found	
ML0104V:ML0201	42-4-4	Brough & Beth Richey	1 Lapp Rd.	No easement found	
ML0201:ML0202	42-4-4	Brough & Beth Richey	1 Lapp Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0202:ML0203	42-4-4	Brough & Beth Richey	1 Lapp Rd.	No easement found	
	42-4-5.2C	Fetters Mill Community Association	Unaddressable Parcel	No easement found	
ML0203:ML0204	42-4-5.2C	Fetters Mill Community Association	Unaddressable Parcel	No easement found	
ML0204:ML0205V	42-4-5.2C	Fetters Mill Community Association	Unaddressable Parcel	No easement found	
	42-4-527	Najdat & Melissa Haydar	4 Fetters Mill Dr.	No easement found	
ML0205V:ML0208	Township Street	Fetters Mill Dr. (south)		Township Street	
ML0205V:ML0206	42-4-513	Michael & Kelly Cortese	1 McCoy Ct.	No easement found	
ML0206:ML0207	Township Street	McCoy Ct		Township Street	
ML205V:ML208	Township Street	Fetters Mill Dr. (south)			
ML0205V:ML0209V	Township Street	Fetters Mill Dr. (north)			
ML0209V:ML0210	Township Street	Fetters Mill Dr. (north)			
ML0210:ML0211	Township Street	Fetters Mill Dr. (north)			
ML0211:ML0212	Township Street	Fetters Mill Dr. (north)			
ML0212:ML0213	Township Street	Fetters Mill Dr. (north)			
ML0213:ML0214	Township Street	Fetters Mill Dr. (north)			
ML0209V:ML0215	42-4-5.2B	Fetters Mill Community Association	Unaddressable Parcel	No easement found	
ML0215:ML0216	42-4-5.2B	Fetters Mill Community Association	Unaddressable Parcel	No easement found	
	42-4-6.10	Brian Jami Peters	8 Dale Lane	No easement found	
ML0216:ML0217	42-4-6.10	Brian Jami Peters	8 Dale Lane	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0217:ML0218	42-4-6.10	Brian Jami Peters	8 Dale Lane	No easement found	
ML0218:ML0219V	42-4-6.10	Brian Jami Peters	8 Dale Lane	No easement found	
ML0219V:ML0220	Township Street	Dale Lane (south)			
ML0220:ML0221	Township Street	Dale Lane (south)			
ML0219V:ML0222	Township Street	Dale Lane (north)			
ML0222:ML0223	Township Street	Dale Lane (north)			
ML0219V:ML0224	42-4-6.14	Lauren & Eric Naylor	10 Forge Dr.	9494/1783	Easement
ML0224:ML0225	Township Street	Forge Dr.			
ML0005V:Private Line (n. on Sidley Rd.)					
ML0301:ML0020	42-4-5.44	Christopher Almy	291 Sidley Rd.	No easement found	
	42-4-5.24-E	East Whiteland Township	2 Thayer Dr.		
ML0020:ML0514V	42-4-5.24-E	East Whiteland Township	2 Thayer Dr.		
ML0514V:ML0513	Township Street	Thayer Dr.			
ML0513:ML0512	Township Street	Thayer Dr.			
ML0512:ML0511	Township Street	Thayer Dr.			
ML0514V:ML0504	Township Street	Sidley Road			
ML0504:ML0503V	Township Street	Sidley Road			
ML0503V:ML0505	Township Street	Amy Dr.			
ML05045:ML0506	Township Street	Amy Dr.			
ML0506:ML0507	Township Street	Amy Dr.			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0507:ML0508	Township Street	Amy Dr.			
ML0508:ML0509	Township Street	Amy Dr.			
ML0509:ML0510	Township Street	Amy Dr.			
ML0503V:ML0502	Township Street	Sidley Road			
ML0502:ML0501	Township Street	Sidley Road			
Wilburdale Rd. PS3:ML1705	42-4-15.9	WPT Land 2 LP	77 Great Valley PW	9392/1527	Easement
PS3: ML1705 (FM)	Township Street	Flat Road			
ML1705:ML1704	Township Street	Flat Road			
ML1704:ML1703	Township Street	Flat Road			
ML1703:ML1701	Township Street	Flat Road			
ML1701:ML1702	Township Street	Flat Road			
ML1702:N/A(15)	Township Street	Flat Road			
N/A(15):N/A(16)	Township Street	Sidley Road			
N/A(16):N/A(17)V	Township Street	Sidley Road			
N/A(17)V:N/A(18)V	42-3-242.10	Ryan & Eileen Dougherty	34 Ashlawn Cir.	No easement found	
N/A(18)V:ML0027	42-3-242.10	Ryan & Eileen Dougherty	34 Ashlawn Cir.	No easement found	
N/A(18)V:ML0601	42-3-242.10	Ryan & Eileen Dougherty	34 Ashlawn Cir.	No easement found	
ML0601:ML0602V	42-3-242.14	Douglas & Jennifer Schultz	21 Ashlawn Rd.	No easement found	
ML0602V:ML0603	Township Street	Ashlawn Cir.			
ML0602V:ML0604	Township Street	Ashlawn Cir.			
ML0604:ML0605	Township Street	Ashlawn Cir.			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
N/A(17)V:N/A(19)V	Township Street	Sidley Road			
N/A(19)V:FORCE MAINE TO LEE BLVD. PS4					
	Township Street	Lee Blvd.			
	42-2-10.7A	Mustang II Reh LLC	9 Lee Blvd.	No easement found	
	42-4-10.1	Triple M. Partners LP	11 Lee Blvd.	No easement found	
	42-2-10.5A	Vai Real Estates LP	15 Lee Blvd.	No easement found	
	42-2-10.4	17 Lee Bouldevard Associates LLC	17 Lee Blvd.	No easement found	
N/A(19)V:ML0029V	Township Street	Sidley Road			
ML0029V:ML0028	Township Street	Sidley Road			
ML0029V:ML0030V	42-3D-36	Timothy & Shannon Carey	8 Hayes Rd.	No easement found	
	42-3D-37	Donald & Katherine Price	5 Hayes Rd.	No easement found	
ML0030V:ML0031	42-3D-37	Donald & Katherine Price	5 Hayes Rd.	No easement found	
ML0031:ML0032	42-2-10.2D	WPT Land 2 LP	301 Pheonixville Pk	No easement found	
ML0032:ML0033	42-2-10.2D	WPT Land 2 LP	301 Pheonixville Pk	No easement found	
ML0030V:N/A(20)	42-3D-37	Donald & Katherine Price	5 Hayes Rd.	No easement found	
N/A(21):ML0702V	42-3D-37	Donald & Katherine Price	5 Hayes Rd.	No easement found	
ML0702:ML0703	42-3D-38	James & Voula Sioutis	3 Hayes Rd.	No easement found	
	42-1R-6	Rachel Radwan	285 Phoenixville Pk.	No easement found	
ML0703:N/A(22)	42-1R-6	Rachel Radwan	285 Phoenixville Pk.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-3D-37	Donald & Katherine Price	5 Hayes Rd.	No easement found	
ML0702V:ML0705	Township Street	Hayes Road			
ML0705:2003	Township Street	Hayes Road			
2003:ML0706V	Township Street	Hayes Road			
ML0706V:ML0707	42-3D-34	Zachary & Sheila Donahue	4 Hayes Rd.	No easement found	
	42-3D-33	James & Maria Driscoll	2 Hayes Rd.	No easement found	
	42-3D-32	Ryan & Samantha King	275 Phoenixville Pk.	No easement found	
ML0707:ML0708	42-3D-32	Ryan & Samantha King	275 Phoenixville Pk.	No easement found	
	42-3D-31	John & Shirley Mateyk	273 Phoenixville Pk.	No easement found	
	42-3D-30	Christopher Derby	271 Phoenixville Pk.	No easement found	
ML0706V:ML0709V	Township Street	Hayes Road		Township Street	
ML0709V:ML0710	Township Street	Phoenixville Pike		Township Street	
ML0710:ML0711	Township Street	Phoenixville Pike		Township Street	
ML0709V:ML0712	42-3D-24	Gregory & Kathleen Biles	280 Phoenixville Pk.	No easement found	
	42-3D-25	Matthew Banister	278 Phoenixville Pk.	No easement found	
ML0712:ML0713	42-3D-25	Matthew Banister	278 Phoenixville Pk.	No easement found	
	42-3D-26	Michael Risch; Julie Amador-Risch	1 Aston Rd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
ML0713:ML0714	Township Street	Aston Road		Township Street	
ML0714:ML0715V	Township Street	Aston Road		Township Street	
ML0715V:ML0718	Township Street	James Thomas Road		Township Street	
ML0718:ML0719V	Township Street	James Thomas Road		Township Street	
ML0719V:ML0720	Township Street	Spruce Road		Township Street	
ML0719V:ML0721	Township Street	James Thomas Road		Township Street	
ML0721:ML0722	Township Street	James Thomas Road		Township Street	
ML0722:ML0723	Township Street	James Thomas Road		Township Street	
ML0723:ML0724	Township Street	James Thomas Road		Township Street	
ML0715V:ML0716	Township Street	James Thomas Road		Township Street	
ML0716:ML0717	Township Street	James Thomas Road		Township Street	
ML0717:N/A(21)	35-3-102	Charlestown Oaks Homeowners Association	Unaddressable Parcel		
N/A(21):N/A(22)	35-3-102	Charlestown Oaks Homeowners Association	Unaddressable Parcel		
N/A(22): Charlestown Oaks Meter					
		HILLBROOK CIRCLE DB			
Charlestown Meadows PS:HB0025		Conestoga Road (Outide of Township)			
HB0026:HBOO25	PennDot Road	Conestoga Road			
HB0025:HB0024	PennDot Road	Conestoga Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
HB0024:HB0023	PennDot Road	Conestoga Road			
HB0023:HB0022	PennDot Road	Conestoga Road			
HB0022:HB0021	PennDot Road	Conestoga Road			
HB0021:HB0020	PennDot Road	Conestoga Road			
HB0020:HB0018	42-3-98.4	Bacton Investment Partners LP	Unknown	17694/1	Easement shown on subdivision plan
HB0018:N/A	42-3-98.4	Bacton Investment Partners LP	Unknown	17694/1	Easement shown on subdivision plan
	42-3-98.5	Bacton Investment Partners LP	Unknown	17694/1	Easement shown on subdivision plan
N/A:HB0017	42-3-98.5	Bacton Investment Partners LP	Unknown	17694/1	Easement shown on subdivision plan
HB0017:HB0016	PennDot Road	Conestoga Road			
HB0016:HB0015	PennDot Road	Conestoga Road			
HB0015:HB0014	PennDot Road	Conestoga Road			
HB0014:HB0013V	PennDot Road	Conestoga Road			
HB0013:S-101	Township Street	Willing Way			
S-101:S-102	Township Street	Willing Way			
S-102:S-103	42-3-14.10	Bharat Patel	4 Willing Way	8407/1516	Easement shown on declaration of covenants, conditions, easements and restrictions for Willinghouse Preserve
	42-3-14.9	Justin & Aimee Sherrock	8 Willing Way	8407/1516	Easement shown on declaration of covenants, conditions, easements and restrictions for Willinghouse Preserve
	42-3-14.8	Blaise Coleman; Lisa Hurchik	12 Willing Way	8407/1516	Easement shown on declaration of covenants, conditions, easements and restrictions for Willinghouse Preserve

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
S-103:S-104	42-3-14.8	Blaise Coleman; Lisa Hurchik	12 Willing Way	8407/1516	Easement shown on declaration of covenants, conditions, easements and restrictions for Willinghouse Preserve
	42-3-14.7	Amit Gangoli	16 Willing Way	8407/1516	Easement shown on declaration of covenants, conditions, easements and restrictions for Willinghouse Preserve
HB0013V:HB0012	PennDot Road	Conestoga Road			
HB0012:N/A	PennDot Road	Conestoga Road			
N/A:HB0011	PennDot Road	Conestoga Road			
HB0011:HB0010	PennDot Road	Conestoga Road			
HB0010:HB0009	PennDot Road	Conestoga Road			
HB0009:HB0008	PennDot Road	Conestoga Road			
HB0008:HB0007	PennDot Road	Conestoga Road			
HB0007:HB0006	PennDot Road	Conestoga Road			
HB0006:HB0005V	PennDot Road	Conestoga Road			
HB0005V:HB0115	Township Street	Hillbrook Cir.			
HB0115:HB0114	Township Street	Hillbrook Cir.			
HB0114:HB0113	Township Street	Hillbrook Cir.			
HB0005V:HB0004	42-3-32.2	Justin Lopez; Charlotte Smith-Widdis	38 Hillbrook Cir.	Easement (not recorded)	Easement (not recorded)
	42-3-32.1	Abdelouahed Nachani	388 Conestoga Rd.	Easement (not recorded)	Easement (not recorded)
HB0004:HB0003	42-3-32.1	Abdelouahed Nachani	388 Conestoga Rd.	Easement (not recorded)	Easement (not recorded)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-3-32	Kim Hye Ran	386 Conestoga Rd.	Easement (not recorded)	Easement (not recorded)
HB0003:HB0002V	42-3-32	Kim Hye Ran	386 Conestoga Rd.	Easement (not recorded)	Easement (not recorded)
	42-3-33	Robert & Eleanora Sybesma	384 Conestoga Rd.	Easement (not recorded)	Easement (not recorded)
	42-3-33.1	Philip & Gladys Wells Revocable Living Trust	2 Hillbrook Cir.	Easement (not recorded)	Easement (not recorded)
HB0002V:HB101	42-3-33.1	Philip & Gladys Wells Revocable Living Trust	2 Hillbrook Cir.	Easement (not recorded)	Easement (not recorded)
HB0101:HB0102	Township Street	Hillbrook Cir.			
HB0102:HB0103	Township Street	Hillbrook Cir.			
HB0103:HB0104	Township Street	Hillbrook Cir.			
HB0104:HB0105	Township Street	Hillbrook Cir.			
HB0105:HB0106	Township Street	Hillbrook Cir.			
HB0106:HB0107V	Township Street	Hillbrook Cir.			
HB0107V:HB0201	Township Street	Hillbrook Cir.			
HB0201:HB0202	Township Street	Hillbrook Cir.			
HB0107V:HB0108	Township Street	Hillbrook Cir.			
HB0108:HB0109	Township Street	Hillbrook Cir.			
HB0109:HB0110	Township Street	Hillbrook Cir.			
HB0110:HB0111	Township Street	Hillbrook Cir.			
HB0111:HB0112	Township Street	Hillbrook Cir.			
HB0002:HB0001	42-3-33.1	Philip & Gladys Wells	2 Hillbrook Cir.	Easement (not recorded)	Easement (not recorded)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
		Revocable Living Trust			
	42-3-107.3N	David & Virginia Pohlman	10 Clover Mill La.	Easement (not recorded)	Easement (not recorded)
HB0001:Hillbrook PS11	42-3-107.3N	David & Virginia Pohlman	10 Clover Mill La.	Easement (not recorded)	Easement (not recorded)
		LEE BLVD. DB			
Lee Blvd PS4	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB PS4:LB0002V	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB0002V:LB0003V	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB0002V:LB001	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB001:LB0201	42-2-10.3A	Exeter 14 Lee LLC	14 Lee Blvd.	No easement found	
LB0201:LB0202	42-2-10.3A	Exeter 14 Lee LLC	14 Lee Blvd.	No easement found	
LB0202:LB0203	Township Street	Lee Blvd			
PS4:LB003V	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB0003V:LB0005	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LN0005:LB0006	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
	42-2-10.5A	Vai Real Estates LP	15 Lee Blvd.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-2-10.1	Triple M Partners LP	11 Lee Blvd.	No easement found	
LNB0006:LB0007	42-2-10.1	Triple M Partners LP	11 Lee Blvd.	No easement found	
LB0007:LB0008	42-2-10.1	Triple M Partners LP	11 Lee Blvd.	No easement found	
LB0008:LB0011	42-2-10.1	Triple M Partners LP	11 Lee Blvd.	No easement found	
LB0011:LB0010	42-2-10.1	Triple M Partners LP	11 Lee Blvd.	No easement found	
LB0010:LB0009	Township Street	Lee Blvd			
LB0009:LB0012	42-2-10.3	Dawson Logistics Assets LLC	8 Lee Blvd.	19921/1	Easement shown on land dev. plan
LB0012:LB0013	42-2-10.3	Dawson Logistics Assets LLC	8 Lee Blvd.	19921/1	Easement shown on land dev. plan
LB0013:LB0014	42-2-10.3	Dawson Logistics Assets LLC	8 Lee Blvd.	19921/1	Easement shown on land dev. plan
LB0014:LB0015	42-2-10.3	Dawson Logistics Assets LLC	8 Lee Blvd.	19921/1	Easement shown on land dev. plan
	42-2-10.2B	M&B Properties 6 Lee Bouldevard PA LLP	6 Lee Blvd.	17687/1	Easement shown on land dev. plan
LB0003V:LB0102	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB0102:LB0103	42-2-10.4	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
	42-2-3.1C	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
LB0103:N/A	42-2-3.1C	17 Lee Boulevard Associates LLC	17 Lee Blvd.	No easement found	
		FLATT RD. DB			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
Flat Rd. PS6	42-2-14.1	Exeter 9-25 Great Valley LLC	25 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
PS6:FL0001	42-2-14.1	Exeter 9-25 Great Valley LLC	25 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-4-15.10A	WPT Land 2 LP	31 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0001:FL0002	42-4-15.10A	WPT Land 2 LP	31 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-4-15.10	WPT Land 2 LP	29 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0002:FL0003	42-4-15.10	WPT Land 2 LP	29 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0003:FL0004	42-4-15.10	WPT Land 2 LP	29 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-2-14.1	Exeter 9-25 Great Valley LLC	25 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-2-14	Shields Family Partnership	11 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0004:FL0005	42-2-14	Shields Family Partnership	11 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0005:FL0006	42-2-14	Shields Family Partnership	11 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-2-14.1	Exeter 9-25 Great Valley LLC	25 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
FL0006:FL0007	42-2-14.1	Exeter 9-25 Great Valley LLC	25 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
		WILBURDALE DB			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
FL PS6:WD0012	42-4-15.10A	WPT Land 2 LP	31 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-4-15.10	WPT Land 2 LP	29 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
WD0012:WD0011	42-4-15.10	WPT Land 2 LP	29 Great Valley Parkway	574/402	Deed of Dedication (w/ Mortgage Joinder)
	42-4-15.2	WPT Land 2 LP	30 Great Valley Parkway	574/402; 6773/273	Deed of Dedication (w/ Mortgage Joinder)
WD0011:WD0010	42-4-15.2	WPT Land 2 LP	36 Great Valley Parkway	574/402; 6773/273	Deed of Dedication (w/ Mortgage Joinder)
WD0010:WD0009	42-4-15.2	WPT Land 2 LP	36 Great Valley Parkway	574/402; 6773/273	Deed of Dedication (w/ Mortgage Joinder)
	42-4-15.4	Centocor Property Management Corp. II	40 Great Valley Parkway	No easement found (no parcel found)	
	42-4-15.6	Centocor Property Management Corp. II	84 Great Valley Parkway	No easement found (no parcel found)	
WD0009:WD0008	42-4-15.6	Centocor Property Management Corp. II	84 Great Valley Parkway	No easement found (no parcel found)	
WD0008:WD0007	42-4-15.1	WPT Land 2 LP	67 Great Valley Parkway	18198/1	Easement shown on subdivision plan
WD0007:WD0006	42-4-15.1	WPT Land 2 LP	67 Great Valley Parkway	18198/1	Easement shown on subdivision plan
WD0006:WD0004V	42-4-15.1	WPT Land 2 LP	67 Great Valley Parkway	18198/1	Easement shown on subdivision plan
	42-4-15.5	WPT Land 2 LP	75 Great Valley Parkway	No easement found	
	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
WD0004V:WD0003	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement
WD0003:WD0002	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement
WD0002:WD0001	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement
WD0001:Wilburdale Rd. PS3	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement
WD0004V:WD0101	42-4-15.9	WPT Land 2 LP	103 Great Valley Parkway	9392/1527	Easement
WD0101:WD0102	42-4-15.13	Centocor Property Management Corp. II	90 Great Valley Parkway	No easement found (no parcel found)	
WD0102:WD0103	Township Street	Great Valley Parkway			
WD0103:WD0104	Township Street	Great Valley Parkway			
WD0104:WD0105	42-4-15.8	Bell Telephone Co. of PA	125 Great Valley Parkway	No easement found	
	42-4-15.22	WPT Land 2 LP	155 Great Valley Parkway	No easement found	
WD0105:WD0106	42-4-15.22	WPT Land 2 LP	155 Great Valley Parkway	No easement found	
WD0106:WD0107	42-4-15.22	WPT Land 2 LP	155 Great Valley Parkway	No easement found	
WD0107:WD0108	Township Street	Great Valley Parkway	Wildburdale DB		
WD0108:WD0109	Township Street	Great Valley Parkway	Wildburdale DB		
WD0109:WD0110	42-4-15.21	Centocor Property Management Corp. II	244 Great Valley Parkway	No easement found	
	42-4-15.14	Centocor Property Management Corp. II	260 Great Valley Parkway	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
		LAPP RD. DB			
Lapp Rd. PS 7	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
PS7:LR0001V	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
LR0001V:LR0501V	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
LR0501V:LR0701	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
	42-4-42	Knickerbocker Lands LLC	367 Old Morehall Rd.	6765/1780	Easement
LR0701:LR0702	42-4-42	Knickerbocker Lands LLC	367 Old Morehall Rd.	6765/1780	Easement
	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0702:LR0703	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0703:LR0704	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0704:LR0705	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0705:LR0706	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0706:LR0707	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0707:LR0708	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0708:LR0709	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
LR0709:LR0710	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0710:LR0711	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0711:LR0712V	42-4-29	425 GVP Property Co. LLC	201 Old Morehall Rd.	7037/1110	Easement (corrective easement needed)
LR0712V:LR0713	Township Street	Old Morehall Road			
LR0713:N/A	Township Street	Old Morehall Road			
N/A:LR0714	42-4-29.2	WPT Land 2 LP	2 W. Liberty Blvd.	No easement found	
LR0712V:Private System	42-4-29.1B	Apple Nine Malvern PA Business Trust	280 Old Morehall Rd.		
LR0501V:LR0502V	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
	42-4-25.3	WPT Land 2 LP	508 Lapp Rd.	6773/273	Deed of Dedication
LR0502V:LR0503	42-4-25.3	WPT Land 2 LP	508 Lapp Rd.	6773/273	Deed of Dedication
LR0502V:LR0504	42-4-25.3	WPT Land 2 LP	508 Lapp Rd.	6773/273	Deed of Dedication
LR0504:LR0502(2)	42-4-25.3	WPT Land 2 LP	508 Lapp Rd.	6773/273	Deed of Dedication
	42-4-25	WPT Land 2 LP	460 Lapp Rd.	6773/273	Deed of Dedication
LR0502V:LR0601	42-4-25.3	WPT Land 2 LP	508 Lapp Rd.	6773/273	Deed of Dedication
	42-4-42	Knickerbocker Lands LLC	367 Morehall Rd.	6765/1780	Easement
LR0601:LR0602	42-4-42	Knickerbocker Lands LLC	367 Morehall Rd.	6765/1780	Easement
LR0001V:LR0002	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
LR0002:LR0003V	42-4-26.1	WPT Land 2 LP	510 Lapp Rd.	6773/273	Deed of Dedication
LR0003V:LR0101	Township Street	Lapp Rd.			
LR0003V:LR0005	42-4-15.18	WPT Land 2 LP	425 Technology Dr.	6773/273	Deed of Dedication
LR0005:LR0006	42-4-15.18	WPT Land 2 LP	425 Technology Dr.	6773/273	Deed of Dedication
LR0006:LR0007V	42-4-15.18	WPT Land 2 LP	425 Technology Dr.	6773/273	Deed of Dedication
LR0007V:LR0801	Township Street	Lapp Rd.			
LR0801:LR0802	Township Street	Lapp Rd.			
LR0802:LR0803	Township Street	Lapp Rd.			
LR0803:LR0804	Township Street	Lapp Rd.			
LR0804:LR0805	Township Street	Lapp Rd.			
LR0805:LR0806	42-4-25	WPT Land 2 LP	460 Lapp Rd.	6773/273	Deed of Dedication
LR0806:LR0807	42-4-25	WPT Land 2 LP	460 Lapp Rd.	6773/273	Deed of Dedication
	42-4-24	KRUS IV LLC	400 Lapp Rd.	No easement found	
LR0807:LR0808	42-4-24	KRUS IV LLC	400 Lapp Rd.	No easement found	
LR0808:LR0809	42-4-24	KRUS IV LLC	400 Lapp Rd.	No easement found	
LR0809:LR0810	42-4-24	KRUS IV LLC	400 Lapp Rd.	No easement found	
LR0007:LR0008	Township Street	Technology Dr.			
LR0008:LR0009	Township Street	Technology Dr.			
LR0009:LR0010V	42-4-16	PBP Realty Partnership LP	358 Technology Dr.	Deed of Dedication (11/4/05)	Deed of Dedication (not recorded)
LR0010V:LR0201	42-4-16	PBP Realty Partnership LP	358 Technology Dr.	Deed of Dedication (11/4/05)	Deed of Dedication (not recorded)

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
	42-4-16.1	WPT Land 2 LP	287 Great Valley Pw.	6773/273	Deed of Dedication
LR0201:LR0202	42-4-16.1	WPT Land 2 LP	287 Great Valley Pw.	6773/273	Deed of Dedication
	42-4-15.27	WPT Land 2 LP	271 Great Valley Pw.	6773/273	Deed of Dedication
LR0010V:LR0011	42-4-16	PBP Realty Partnership LP	358 Technology Dr.	Deed of Dedication (11/4/05)	Deed of Dedication (not recorded)
	42-4-15.20	WPT Land 2 LP	300 Technology Dr.	No easement found	
LR0011:LR0013	42-4-15.18A	375 Technology Dr LLC	375 Technology Dr.	6773/273	Deed of Dedication
	42-4-17	MLR Technology Drive LLC	333 Technology Dr.	6773/273	Deed of Dedication
LR0013:LR0302	42-4-17	MLR Technology Drive LLC	333 Technology Dr.	6773/273	Deed of Dedication
	42-4-15.17	AJV Real Partners LP	325 Technology Dr.	6773/273	Deed of Dedication
LR0302:LR0301	42-4-15.17	AJV Real Partners LP	325 Technology Dr.	6773/273	Deed of Dedication
LR0301:LR0016	42-4-15.17	AJV Real Partners LP	325 Technology Dr.	6773/273	Deed of Dedication
	42-4-15.17A	PSDC / Malvern 1 LLC	311 Technology Dr.	6773/273	Deed of Dedication
LR0016:LR0017V	42-4-15.17A	PSDC / Malvern 1 LLC	311 Technology Dr.	6773/273	Deed of Dedication
LR0017V:Private System (left)		Schoor Depalma Plan			
LR0017V:LR0018	42-4-15.17A	PSDC / Malvern 1 LLC	311 Technology Dr.	6773/273	Deed of Dedication
	42-4-15.15	PSDC / Malvern 1 LLC	10 Great Valley Pw.	6773/273	Deed of Dedication
LR0018:LR0019	PennDot road	Morehall Road			

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
LR0019:LR0020	42-4-52.6	PSDC / Malvern 1 LLC	5 Country View Rd.	19880/1	Easement shown on subdivision plan
LR0020:LR0021	42-4-52.6	PSDC / Malvern 1 LLC	5 Country View Rd.	19880/1	Easement shown on subdivision plan
LR0021:LR0022	42-2-12	WPT Land 2 LP	7 Great Valley Pw.	16670/1	Easement shown on subdivision plan
LR0022:LR0023	42-2-12	WPT Land 2 LP	7 Great Valley Pw.	16670/1	Easement shown on subdivision plan
LR0023:LR0024V	42-2-12	WPT Land 2 LP	7 Great Valley Pw.	16670/1	Easement shown on subdivision plan
	42-2-12.3	WPT Land 2 LP	5 Great Valley Pw.	16670/1	Easement shown on subdivision plan
LR0024V:LR0401	42-2-12.3	WPT Land 2 LP	5 Great Valley Pw.	16670/1	Easement shown on subdivision plan
	42-4-52.5	Sophia Purchaser Co LP	4 Country View Rd.	No easement found	
LR0401:LR0402	42-4-52.5	Sophia Purchaser Co LP	4 Country View Rd.	No easement found	
LR0402:LR0403	42-4-52.5	Sophia Purchaser Co LP	4 Country View Rd.	No easement found	
	42-4-52	WPT Land 2 LP	3 Country View Rd.	No easement found	
LR0403:LR0404	42-4-52	WPT Land 2 LP	3 Country View Rd.	No easement found	
LR0024V:LR0025	42-2-12.3	WPT Land 2 LP	5 Great Valley Pw.	No easement found	
	42-2-12.1	Three Great Valley Parkway Associates LP	3 Great Valley Pw.	No easement found	
LR0025:LR0026	42-2-12.1	Three Great Valley Parkway Associates LP	3 Great Valley Pw.	No easement found	
	42-2-12.2	WPT Land 2 LP	1 Great Valley Pw.	No easement found	

Facility	Parcel	Owner/Street	Address	Deed Book/Page; Date or Case # if Unrecorded	Type & Validity
MH1407:MH1406	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1406:MH1405	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1405:MH1404	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1404:MH1403V	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1403V:MH1408	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1408:MH1409	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1403V:MH1410	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1410:N/A	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1403V:MH1401	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH1401:MH109	42-2-8.1	IPXI 1200 Atwater Investors LLC	1400 Atwater Dr.	No easement found	
MH109:MH110	Private Road	Atwater Dr.			
MH110:N/A	Private Road	Atwater Dr.			

Schedule 4.10

Equipment and Machinery

Equipment
Pipe Tech Software and Durabook Laptop
50KW MMD Power Portable Generator
Sewer Jet (Diesel) – Trailer Mounted
Deer Run Pump Station Generator

Vehicles

Vehicle Type	VIN
2001 Ford E350 Truck	
2003 GMC Pickup Truck	
2010 Ford F550 Truck	
2011 GMC Pickup Truck	
2011 GMC Pickup Truck	
2018 Carmate 20' Custom Cargo Trailer	
2019 Ford F-150 Unit	

Schedule 4.11

Environmental Compliance

Sanitary System Overflow (SSO) Reporting for Operating Years 2016 through 2019:

- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2016, there was no reported SSO within the East Whiteland Township wastewater collection and conveyance system.

- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2017, there was no reported SSO within the East Whiteland Township wastewater collection and conveyance system.

- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2018, there were three (3) SSOs:

    - On June 11, 2018 and August 13, 2018 SSOs occurred at manhole 6-9, located at 249 Lancaster Avenue. These 2 SSOs were caused by rain events exceeding 3" per hour. On November 30, 2018, the Township diverted the flow from the Frame Avenue Pump Station to the Planebrook Pump Station, which reduced the flow by 80,000 GPD on Lancaster Avenue at the location of the overflows. Also, the Church Road Sewer Extension, referenced on Schedule 4.12, which was completed in March 2020, will redirect the flow associated with the Church Road Pump Station from the Lancaster Avenue area where these SSOs occurred.
    - On August 23, 2018 an SSO occurred at manholes 18A-1 to 18 A-2, located on Warren Avenue, which was caused by a clogged pipe. The pipe was cleared and flow resumed.

- Pursuant to the Chapter 94 Municipal Wasteload Management Annual Report for Operating Year 2019, there was no reported sanitary system overflow within the East Whiteland Township wastewater collection and conveyance system.

Corrective Action Plan (CAP) and Connection Management Plan (CMP):

- From 2013 to 2014 the Township was under a CAP. Phases 1 and 2 of the CAP required improvements to the Mill Lane and Sidley Collection System. Phase 3 of the CAP required improvements to the Lee Boulevard Pump Station. Upgrade improvements were also made to the sanitary sewer within Conestoga Road. Approximately 3,780 L.F. of new 18", 20" and 24" pipe were installed to replace existing deteriorating sewer. The CAP was lifted by the DEP in 2015 after the Township completed the gravity sewer main replacement from the Mill Lane Pump Station to Lee Boulevard.

- The conditions of the CMP currently on file with the PADEP are still in effect for the contributory drainage areas from Charlestown that flow through the Mill Lane and Sidley Road sewer systems.

Schedule 4.12

Authorizations and Permits

537 Plan:

- East Whiteland Township Act 537 Sewage Facilities Plan, dated May 2, 1995
- East Whiteland Township Act 537 Sewage Facilities Plan Special Study for the Mill Lane Pump Station Replacement Project (Route 401 Area (Area 1), Bacton Hill and Swedesford Road Areas (Area 2), Planebrook Area (Area 3), Church Road Extension – to Eliminate Church Road Pump Station (Area 4), and Immaculata University Area (Area 5)), as prepared by Advanced GeoServices and revised September 2011.
- East Whiteland Township/Charlestown Township (Southside) Act 537 Sewage Facilities Plan Special Study for the North-Central portion of East Whiteland Township and the South-Central portion of Charlestown Township (to accommodate future flow needs for Charlestown Township and East Whiteland Township), as prepared by Arro Consulting, Inc. dated February 2013.
- East Whiteland Township/Great Valley Corporate Center Act 537 Sewage Facilities Plan Special Study for upgrades of the Willburdale Pump Station and Flat Road Pump Station (for wastewater needs of the Great Valley Corporate Campus), as prepared by Arro Consulting, Inc. dated April 2015 and revised September 2015.
- East Whiteland Township Act 537 Sewage Facilities Plan Special Study for Frame Avenue/Planebrook Road Sewer Extension, as prepared by Arro Consulting, Inc. dated August 2016, with a last revision date of October 30, 2018.
- East Whiteland Township Sewage Facilities Planning Module (Component 3m) Planebrook Road Area Sewer Extension, as prepared by Arro Consulting, Inc. dated March 2020. This module is for the extension of public sanitary sewer service from the existing manhole located on Planebrook Road to properties currently served by on-lot disposal systems along Planebrook Road, Elk Drive, Fairview Drive, Prospect Avenue, Golf Circle, Bracken Avenue, and Davis Avenue.

NPDES Permits:

- **Permit No. 1501419**[4]
- **Permit No. 1502418** for sewer extension completed in 2004 for approximately 250 homes located in the King Road, Carol Lane and Summit Road areas.

[4] To confirm purpose of permit

- **Permit No. 1599418** for the Malvern Hunt sewage treatment plant.[5]

WQM Permits

Pump Station	**WQM Permit Number[6]**
Deer Run	
Mill Lane	
Wilburdale	
Lee Boulevard	
Meadowview	
Flat Road	
Lapp Road	
Westgate	
Church Road	
Frame Ave	
Hillbrook	
King Road	
Malvern Hunt	
Planebrook	

Those required Permits set forth on Schedule 4.17.

[5] Will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.
[6] WQM permit numbers to be provided

Schedule 4.13

Assigned Contracts

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewage Treatment Agreement	East Goshen Township East Goshen Municipal Authority East Whiteland Township East Whiteland Municipal Authority	November 17, 1987	Transmission of sewage from 23 lots located in East Whiteland (the "EW Lots") Township within the Lockwood Chase Development from East Whiteland through East Goshen Township's sewage collection system to the Lockwood Chase Plant (leased and operated by East Goshen Township) for treatment.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewage Treatment Agreement	East Goshen Township East Whiteland Township	October 17, 2000	Transmission of sewage from 4 lots located in East Whiteland

	East Whiteland Municipal Authority		Township within the Mill Valley subdivision from East Whiteland through East Goshen's sewage collection system, to the West Goshen Treatment Plant for treatment. East Goshen reserves its capacity in the West Goshen Treatment Plant for East Whiteland.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement	Malvern Borough East Whiteland Township East Whiteland Municipal Authority	July 10, 1995	Transmission of sewage from 19 lots located in East Whiteland Township within the Erin Glenn subdivision from East Whiteland through the Erin Glen Meter into Malvern Borough's collection system, then

			back to East Whiteland through the Warren Avenue Meter (which will then go through the East Whiteland Trunkline to Valley Forge Sewage Treatment Plant).
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement	Willistown Township East Whiteland Township East Whiteland Municipal Authority	September 14, 1993	Transmission of sewage from 114 apartments in East Whiteland Township within the Woodview Apartments from East Whiteland to the collection system in Willistown (which will then go through the Valley Creek Trunkline to the Valley Forge Sewage Treatment Plant).

Name of Contract	Parties to Contract	Date of Contract	Subject
Sewage Capacity/Service Agreement	East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Township Municipal Authority Trammell Crow Northeast Metro Development, Inc.	November 1, 2000	Transmission of sewage from the portion of the Great Valley Corporate Campus (developed by Trammel Crow) located in East Whiteland Township (the "EW Portion") that is required to be served by the Valley Forge Sewage Treatment Plant ("VFSTP") under East Whiteland's 537 Plan. Tredyffrin sold its reserve capacity in the VFSTP to Trammel Crow for use by the EW Portion. Tredyffrin bills East Whiteland for its flow into Tredyffrin's system. Sewage is transmitted

			from the EW Portion through the Valley Creek Trunkline (in Tredyffrin) to the VFSTP for treatment.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Addendum to Sewage Capacity/Service Agreement dated November 1, 2000	East Whiteland Township Tredyffrin Township RLD Water JV, LLC The Haven at Atwater Village, LLC	November 19, 2015	Modifies the Agreement dated November 1, 2000 to address additional flow from the Havens Apartment Complex, located in East Whiteland (the "Atwater Capacity"). The addendum adds RLD Atwater and The Haven at Atwater Village as parties. Tredyffrin will bill East Whiteland a sewer rental charge for the first 46,393 GPD of flows from the Atwater Capacity. For

			the average daily flows over 46,393 GPD, Tredyffrin will be entitled to collect a conveyance fee (but not a treatment fee) – as of March 2020, the conveyance fee has not yet been established or charged.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Professional[7] Services Agreement	ARRO Consulting East Whiteland Township	July 26, 2011	ARRO's services in connection with the operation and maintenance of the Malvern Hunt Wastewater Treatment Plant.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
East Whiteland Trunk Line Agreement	East Whiteland Township East Whiteland Municipal Authority	February 1, 1971	Transmission of sewage from the municipalities through the East

[7] Professional Services Agreement will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

	Malvern Municipal Authority Borough of Malvern Valley Forge Sewer Authority		Whiteland Trunkline (the "Trunkline") to the Valley Forge Sewage Treatment Plant ("VFSTP"), including charges for maintenance and repairs to the Trunkline.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Amendment to East Whiteland Trunk Line Agreement	East Whiteland Township East Whiteland Municipal Authority Malvern Municipal Authority Borough of Malvern Valley Forge Sewer Authority ("VFSA")	December 12, 1979	Addendum to the Agreement dated February 1, 1971 to address the reservation by EW for the VFSA of reserved capacity in the Trunkline and the Mill Lane Pump Station and the transmission of sewage from Charlestown Township through the Trunkline to the VFSTP. The addendum also adds VFSA as a municipality under the

			agreement, as it owns and operates the Charlestown Sewer System.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Amendment to East Whiteland Trunk Line Agreement	East Whiteland Township East Whiteland Municipal Authority Valley Forge Sewer Authority	April 18, 2014	Addendum to the Agreement dated February 1, 1971 establishing an increased reserve capacity for the VFSA within the East Whiteland sewer system and establishing the related cost sharing between East Whiteland and VFSA.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Valley Forge Sewer Treatment Plant Agreement	Schuylkill Township East Pikeland Township Charlestown Township	November 1, 1970	Transmission and treatment of sewage from the municipalities to the Valley Forge Sewage Treatment Plant ("VFSTP"),

	East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		including charges for maintenance and repairs to the VFSTP.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Composite Amendment No. 1	Schuylkill Township East Pikeland Township Charlestown Township	December 18, 1974	This amendment amends portions of (and specifically Section 2.03 and certain Exhibits) of

	East Whiteland Township Tredyffrin Township Willistown Township Easttown Township Malvern Borough East Whiteland Municipal Authority Tredyffrin Municipal Authority Easttown Municipal Authority Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		the Valley Creek Trunk line Agreement, the East Whiteland Trunk line Agreement and the Valley Forge Sewer Treatment Plant Agreement to address the construction by and reimbursement of Tredyffrin Authority by the other municipalities for its construction of the portion of the Valley Creek Trunk Sewer located in Valley Forge State Park. Also addresses the award of and credit for certain grants from the EPA to each of the authorities for the respective collection systems.

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement	East Whiteland Municipal Authority Valley Forge Sewer Authority	December 27, 1978	East Whiteland Municipal Authority and VFSA agreed to share costs for the Sidley Road Trunk line repairs. Schedule A (detailing the repairs and referenced in the agreement) is not included.

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Amendment to Valley Forge Sewage Treatment Agreement	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")	January 1, 1983	This amendment changed the interest rates for late payments.

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Supplement to Valley Forge Sewage Treatment Agreement for the Purpose of Complying with the United States Environmental Protection Agency Regulations	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township Easttown Township	December 2, 1985	This supplement includes requirements that the municipalities, in order to comply with EPA regulations, enact ordinances to include monitoring, reporting and other requirements for industrial users and it gives VFSA authority to inspect, charge, fine, etc. industrial users and act on behalf of each municipality if necessary.

	Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Addendum to Valley Forge Sewage Treatment Agreement for the Purpose of Permitting and administering the Sale of Reserved Capacity among the Parties	Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township East Whiteland Municipal Authority Tredyffrin Township Tredyffrin Municipal Authority Willistown Township	October 1994	This addendum addresses disparities between the reserved capacities of the various municipalities by allowing for the permanent sale of unused reserved capacity between the municipalities, with the consent of VFSA and pursuant to certain offer and sale procedures.

	Easttown Township Easttown Municipal Authority Malvern Borough Malvern Municipal Authority Valley Forge Sewer Authority ("VFSA")		
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Wastewater Conveyance Agreement	Aqua Resources, Inc. Schuylkill Township East Pikeland Township Charlestown Township East Whiteland Township Tredyffrin Township Willistown Township Easton Township Easton Municipal Authority	November 2018	The transmission of sewage from the municipalities through the Valley Creek Trunkline (owned by Aqua) to be treated at Valley Forge Sewer Treatment Plant ("VFSTP"). The VFSA agrees to accept, treat and dispose of such sewage pursuant to this Agreement

	Malvern Borough Valley Forge Sewer Authority ("VFSA")		and the Valley Forge Sewage Treatment Plant Agreement.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Sewer Treatment Agreement	East Whiteland Township East Goshen Township Malvern Institute for Psychiatric and Alcoholic Studies	March 2, 2004	Transmission of flow from the Malvern Institute property located in East Goshen, through East Whiteland Township's system to the Valley Forge Sewage Treatment Plant. The agreement also addresses the permanent sewer easement that Malvern Institute conveyed and granted across its property to allow East Whiteland to construct a sanitary sewer line and the King Road Pump Station.

Name of Contract	Parties to Contract	Date of Contract	Subject
National Railroad Passenger Corporation License Agreement	National Railroad Passenger Corporation (NRPC) East Whiteland Township Municipal Authority	November 18, 1993	NRPC granted an exclusive license to East Whiteland to construct, maintain, repair, alter, renew, relocate and remove an iron sewer pipe, encased in a steel casing pipe, for a distance of approximately 250 feet under NRPC's right-of-way. The pipe conveys sanitary sewage from the Southridge Subdivision to East Whiteland's collection system.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
National Railroad Passenger Corporation Amendment to License Agreement	National Railroad Passenger Corporation East Whiteland Township Municipal Authority	May 6, 2002	Amends November 18, 1993 License Agreement. Changes description and location of pipe to be

			installed and adds additional lump sum rent payment of $16,315 for May 6, 2002 (date of Amendment) through October 31, 2018 and $250 fee for expenses and preparation of Amendment. Previous lump sum payment of $13,120 was made upon execution of original agreement (as well as $500 for expenses and license preparation).
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
National Railroad Passenger Corporation License Agreement	National Railroad Passenger Corporation East Whiteland Township	September 10, 1999	NRPC granted an exclusive license to East Whiteland to construct, maintain, repair, alter, renew, relocate and

			remove an iron sewer pipe, encased in a steel casing pipe, for a distance of approximately 267 feet near Sugartown Road. The pipe conveys sanitary sewage from the Sugartown Ridge Subdivision to East Whiteland's collection system.
Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
Agreement with Public Utility or Municipality for Crossing under Railroad Private Property	Reading Company East Whiteland Municipal Authority	March 21, 1972 (no set term)	Reading Company (RC) granted a license across and under its tracks, right of way and property to East Whiteland Municipal Authority (EW) to lay, maintain, and use two steel pipes in steel casing pipes 1,600 feet west and 511 feet west of Valley Store Station in East Whiteland

			Township (the "Facilities"). EW is responsible for all costs of construction, relocation and removal and for all taxes assessed against the Facilities. There is an annual $40 charge for the license, to be adjusted by RC every fifth year commencing on January 1, 1977. In the event that RC deems it necessary that the Facilities be altered or changed, EW must do so within 30 days of notice of such from RC. Upon termination of the agreement (by RC if there is a breach by EW), EW is required to remove the Facilities and restore the premises to good condition.

Name of Contract	**Parties to Contract**	**Date of Contract**	**Subject**
License Agreement for Wire, Pipe and Cable Transverse Crossings and Longitudinal Occupations	Penn Central Transportation Company East Whiteland Municipal Authority	July 11, 1975 (no set term)	Penn Transportation Company (PTC) granted a license across and under its tracks, right of way and property to East Whiteland Municipal Authority (EW) to construct, maintain, alter renew, relocate and ultimately remove a sewage main under Railroad Bridge No. 2.73 and 2 manholes at valuation station 2284+49, located 1399 feet west of mile post 3 (west of Knickerbocker station) (the "Facilities"). EW is responsible for all costs of construction, relocation and removal and

			for any taxes assessed against the Facilities. In addition to reimbursement to PTC for the cost of preparing the agreement, there was a $1,100 licensing fee paid to PTC. PTC must consent to any alterations to the planned Facilities required by EW. In the event that PTC deems it necessary that the location of the Facilities be altered, EW must do so at EW's sole cost and expense. Upon termination of the agreement, EW is required to remove the Facilities and restore the premises to good condition, at EW's sole cost and expense.

Schedule 4.14

Seller Litigation

None.

Schedule 4.16(a)

Exception to Title to Acquired Assets

None.

Schedule 4.16(b)

Sufficiency

To be provided upon further review of due diligence.

Schedule 4.17

Pending Development Plans

1. Phase 1 – Conestoga Road (Rt. 401) (TO BE COMPLETED BY SELLER)

Scope of work is to connect 22 properties (one has been connected) to the existing 8" sanitary main within the right-of-way of Conestoga Road.

- This phase requires receipt of a Highway Occupancy Permit (HOP) from PennDOT, the application for which has been submitted.
- Design drawings and bid specs are completed, other than revisions for bid dates.
- A field view with PennDOT was scheduled for June 2, 2020.
- In the event that PennDOT will require sections of lanes to be repaved, an alternate bid item has been added to obtain a unit price for milling and overlay based on a selected quantity.
- Remaining Work: Address and respond to PennDOT comments, and resubmit.
- Remaining Work: Finalize alternate bid item for road paving.
- Phase is 99% complete as of May 29, 2020.

Also see Required Sewer Projects to be completed by Buyer on Schedule 7.12.

Schedule 4.18

Land Development/Financial Security Agreements[8]

[8] Further information to be provided

Schedule 5.04

Buyer Consents and Approvals

1. Pennsylvania Public Utility Commission (the "PaPUC") Approval of Transaction

2. PaPUC Approval of Consent to Assignment and Amendment to Sewage Treatment Agreements and Related Amendments

3. Pennsylvania Department of Environmental Protection (the "PaDEP") Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer

4. PaDEP transfer of all NPDES[9] and WQM Permits

[9] NPDES permits will not be transferred if the Malvern Hunt WWTP is decommissioned prior to closing, as anticipated.

Schedule 5.11

Buyer Litigation

To be addressed by Buyer.

Schedule 7.03(a)

Rates

Sewer District	**Rate**
Sewer District A	$400/EDU/Year or $33.33/EDU/Month
Sewer District B	$400/EDU/Year or $33.33/EDU/Month
Sewer District C	$542/EDU/Year or $45.17/EDU/Month
Sewer District D	$600/EDU/Year or $50.00/EDU/Month
Sewer District E	$480/EDU/Year or $40.00/EDU/Month

Commercial and Industrial users whose quarterly sewer discharge or water consumption is in excess of 100,000 gallons shall pay a quarterly charge of $6.20 per 1,000 gallons.

Schedule 7.12

Required Sewer Projects

A. North Bacton Hill Road and Swedesford Road:

   a. Generally consisting of those parcels abutting the following roads:

      i. North Bacton Hill Road from Swedesford Road to Spring Valley Road.

      ii. Spring Valley Road from North Bacton Hill Road to the Conestoga Road.

      iii. South Bacton Hill Road from Swedesford Road to the cul-de-sac.

      iv. Swedesford Road from Bacton Hill Road to a point approximately 620-feet west of the intersection.

B. Planebrook Road:

   a. Generally consisting of those parcels abutting the following roads and/or unopened streets:

      i. Planebroook Road form Bracken Avenue to the Route 202 overpass.

      ii. Elk Drive from Planebrook Road to the cul-de-sac.

      iii. Fairway Drive from Planebrook Road to the cul-de-sac.

      iv. Golf View Lane from Planebrook Road to the cul-de-sac.

      v. Prospect Avenue from Planebrook Road to UPI #42-30-8 (2 Prospect Avenue), including a spur to service UPI #42-3-174.

      vi. Bracken Avenue form Planebrook Road to Coffman Street including the following spurs:

         1. East of Coffman Street to service UPI #42-3-216.1, UPI #42-3-216.2 and UPI #42-3-216.3

         2. North of Bracken Avenue within "Davis Avenue" to service UPI #42-3R-28

The installations in A and B above shall be in general conformance with the following design plans completed by ARRO Consulting Inc.:

- Plans Entitled "*North Bacton Hill & Swedesford Road Areas Sanitary Sewer Phase 2",* 24-sheets, dated January 23, 2020

- Plans Entitled *"Planebrook Road Areas Sanitary Sewers Phase 4",* 19 sheets, dated January 23, 2020.

Gravity and Low Pressure System Service Connections for A and B above:

- The Required Sewer Projects described in sections A and B above will provide service connections to the curb, ROW line, or property line as shown on the plans.
- The respective property owners will be responsible, at their own expense, for connecting to the service connection provided as noted above. Buyer will have no responsibility for infrastructure located within the boundaries of the property owners' properties.
- Notwithstanding references to "E-One Grinder Pumps" on the plans, Buyer will have no responsibility for grinder pumps which will remain the responsibility of the property owners served by such grinder pumps.

Permitting - The Township is in the process of obtaining all required permits for the above projects in A and B above.

Easements - Various easements will be required for portions of the proposed sewer within Prospect Avenue, Bracken Avenue and Davis Avenue in the Planebrook Road project. The Township will retain responsibility for securing all necessary easements per Section 7.12(a) of the Asset Purchase Agreement.

aus consultants

JEROME C. WEINERT
Principal & Director

8555 West forest Home Avenue, Suite 201
Greenfield, WI 53228
414-529-5755 ▪ Tel
414-698-8371 ▪ Cell
weinertj@auswest.net

May 27, 2021

Mr. John Nagel
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: East Whiteland Township Wastewater Collection System Fair Market Value Appraisal

Dear Mr. Nagel:

AUS Consultants is please to respond to Scott Shearer's (PFM Financial Advisors, LLC) request for a proposal for a valuation of East Whiteland Township's wastewater collection system. We understand the nature and purpose of the request is to determine the fair market value of the Township's wastewater collection property and its operation for compliance with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues Section 1329 of the "Valuation of Acquired water and wastewater systems" collectively referred to as Act 12 of the Commonwealth of Pennsylvania's 2016 legislative session. AUS Consultants is a Utility Valuation Expert (UVE) as designated by the Pennsylvania Public Utility Commission (PUC) Docket No. A-2016-2566251 Entity Code 9919181 renewed January 13, 2020. Our appraisal assumes an investor-owned utility as the purchaser and that the purchaser would be successful in establishing the purchase price, assumed to be the appraised value, as rate-base for regulatory purposes under Section 1329 of the Public Utility Code of Pennsylvania.

Our response to this request will include the scope of our services, a list of AUS Consultants staff and their qualifications, an initial listing of data required to perform the appraisal and a range of project costs through the completion of the appraisal report; activities subsequent to the delivery of our final report will be billed at our hourly per diems defined below. The appraisal will be prepared under the 2020-2021 edition of the Uniform System of Professional Appraisal Practices (USPAP) which has been extended through 2022.

Before addressing the proposal requirements, it is important to understand the valuation concepts and parameters as they would apply to this project which will be subject to consideration of issues regarding to recent Commission decisions and settlements entered into between the Pennsylvania Office of Consumer Advocate (OCA) and the participants (Aqua Pennsylvania and Pennsylvania American) in other recent Act 12 cases.

Valuation Study

AUS Consultants understands the purpose of the valuation study is to determine the fair market of the Township's wastewater collection system assets and their operation. Fair market value is defined as:

> "The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 13th Edition, page 23

Our conclusion will represent the fair market value as a going concern, in this case an operating wastewater collection system and not an amount that would be realized from a liquidation of those assets.

Valuation Methodologies

The valuation of the Township's wastewater collection assets, as part of a going concern, will the three (3) generally accepted valuation methodologies: the cost, income and market approaches.

The primary valuation method that will be utilized is the **cost approach.** In preparing the cost approach we will rely on the "Engineer's Assessment" inventory prepared for the Township and the Purchaser per the Pennsylvania PUC's (Act 12) Final Implementation Order M-2016-2543993. In order for the Engineer's Assessment to be of maximum use to the UVEs it should detail the property by account, type and size of property and or equipment, its date of

installation and its original cost. It should be noted that Section 1329 does not restrict the property to be appraised in any fashion so all property of the Township subject to the sale whether Township constructed and/or developer contributed is subject to the appraisal. The cost approach will give consideration to the Township's wastewater collection plant and equipment's replacement cost adjusted for appraisal depreciation. The replacement cost new will be developed using either trending the property's investment by account and installation year or by application of appraisal date unit costs to property's inventory by account and installation year. Next, appraisal depreciation, physical, function and economic, will be assessed and deducted from the replacement cost new. The physical and functional depreciation will be determined based on the age-life depreciation methods using aging from the Engineer's Assessment, the service lives applicable to wastewater industry depreciation lives and a physical inspections of the property.

The property subsequent to its acquisition, will be regulated by the Pennsylvania PUC utilizing a rate base/rate of return regulation. This form regulation allows for the fair return on and of the Company's capital invested for the provision of wastewater services. The last step in the Cost Approach's we will consider the property's economic returns under PUC regulation in order to determine if economic obsolescence exits in the preliminary Cost Approach conclusion discussed above. We will use the results of Income and Market Approaches (discussed below) in making this determination.

The **income approach** provides an indication of value by evaluation the future returns of the operation of the property as wastewater collection system. There are two commonly used methods of the income approach: the discounted cash flow (DCF) approach and the capitalized income approach. Both procedures discount the future returns of the property using a recognized cost of capital for the wastewater industry.

In the DCF, the expected or future cash flows of the operation of the property are discounted to the appraisal date (present value) using a recognized cost of capital for the wastewater industry. Future cash flows are based on historical results from operation in terms of revenues and expenses as the basis forecast of future operations. The projected cash flow levels must provide for additional cash investment and working capital additions, as well as reflect the specific growth potential of the system being valued.

In the capitalize income approach the property's future returns are consolidated into a single estimate for all future periods. The capitalized income approach to value is determined by the direct capitalization of the estimated income using an adjusted cost of capital removing future growth from the cost of capital rate.

The discount rate used in the income approaches will be developed from a market analysis of debt and equity reflecting the risks associated with a rate regulated water and wastewater companies regulated by the Pennsylvania PUC.

The **market approach** looks to market sales of similar water and wastewater utility properties (companies). There are two methods which are commonly utilized to estimate the market approach: actual market sales and market multiples based on wastewater industry comparables based on financial performance as reported in Value Line Investment Surveys for the water/wastewater industry.

The **final appraised value** will consider each of the three approaches to value both individually and collectively.

AUS Consultants Professional Staff

AUS Consultants' professional staff has extensive nationwide experience in preparing business enterprise valuations for water and wastewater systems.

Jerome C. Weinert, Professional Engineer (PE), Accredited Senior Appraiser (ASA), Certified Depreciation Professional (CDP)

- 49 years in Appraisal and Depreciation Consulting
- BS in Mechanical Engineering – Milwaukee School of Engineering (1972)
- Master's in Business Administration – Marquette University (1988)
- Testimony Experience:
  - Regulatory (Depreciation and Rate Base)
  - Courtroom (Valuations – ad valorem taxation and eminent domain and rate of return)

Michael J. Diedrich, PE, ASA, CDP, Certified General Appraiser

- 38 years in Appraisal and Depreciation Consulting
- BS in Architectural Engineering Technology – Milwaukee School of Engineering (1981)
- Master's in Business Administration – Marquette University (1991)
- Testimony Experience:

Courtroom (Valuations ad valorem taxation and eminent domain)

David Weiler

- 36 years in Valuations of Business Enterprises, Closely-held common Stock, Cost of Capital Studies and Valuations of Intangible Property
- Bachelor of Science in Finance-Drexel University (1978)

David A. Sheffer

- 39 years in Regulatory Consulting (Depreciation, Rate Base, Cost of Service, Valuations and Original Cost Studies)

Elizabeth A Weinert

- 19 years in Appraisal and Depreciation Consulting
- B Bachelor of Science in Mechanical Engineering – Milwaukee School of Engineering (2001)
- Master's in Aeronautical Engineering – University of Alabama (2015)

First Request for Data

In order to expedite the project upon the East Whiteland Township's acceptance of our proposal, AUS Consultants needs the following data:

Inventory of property plant and equipment. Ultimately this inventory needs to be provided by the firm preparing the "Engineer's Assessment" for both the Township and the Purchaser. As stated above:

> "In order for the Engineer's Assessment to be of maximum value use it should detail the property by account, type and size of equipment, its date of installation and its original cost. It should be noted that Section 1329 does not restrict the property to be appraised in any fashion so all property whether municipally constructed and/or developer contributed is subject to the appraisal."

Township's financial information related to the operation of the wastewater collection system over each of the last four to six years.

Customer information for the last four years

This data request is not intended to be all inclusive of the information required. There will be follow-up questions and additional requests for data.

AUS Consultants would like to perform a physical inspection of the Township's wastewater system and schedule interviews, as appropriate, with township personnel familiar with the wastewater collection system's operation.

Fee Estimate

AUS Consultants would offer a professional fee range of $25,000 to $27,000 plus expenses to complete a valuation study. Expenses billed at our cost will include travel and living, report preparation, and Fed X as necessary.

For activities subsequent to our final report the following table of hourly per diems plus expenses:

Consultant	Hourly Per Diems ($s/hr.)
Jerome C. Weinert	275
Michael J Diedrich	250
Earl Robinson	200
David A. Sheffer	200
David Weiler	170
Elizabeth A. Weinert	150
Susan Macchia	70

These activities typically include responding to interrogatories (Commission staff, OCA, Small Business Advocate, and/or other possible intervenors), reviewing the testimony of participating parties, preparing testimony (direct, cross, and possibly sur-rebuttal), attending Commission hearings. If expert testimony is required, Jerome C. Weinert will be the witness and attend any hearings which is required.

Closure

AUS Consultants appreciates the opportunity to respond to East Whiteland Township's request for our services. Should you have any questions regarding our response, please contact the undersigned.

Respectfully submitted,
Jerome C. Weinert
AUS Consultants
Principal & Director

Jerome C Weinert

Date: May 27, 2021

Accepted by:

East Whiteland Township, PA
Date: 5/27/2021

VIA E-MAIL

[illegible]

[illegible]

RE: Aqua Pennsylvania Wastewater, Inc. – East Whiteland Township, Section 1329 Fair Market Value Application

D[illegible]

E[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

A[illegible]

[illegible]

E[illegible]

Aqua – East Whiteland 1329 FMV Application

Requirements from Prior Commission Orders for Utility Valuation Experts:

1. Market Approach

    a. If "comparable acquisitions" are used as a factor in determining market value, the purchase price for each "comparable acquisition" shall be based on the actual amount paid for the assets at the time of purchase and future capital improvements shall not be included;

    b. If the number of customers is used as a factor in determining market value, the actual, unadjusted number of customers shall be used rather than projected future number of customers. This applies to the number of customers for both the system being acquired and any "comparable acquisitions" being used in the determination.

    c. Speculative growth adjustments will not be used, consistent with *New Garden* (Order pp. 52-53). U.S. Census Data and relevant and applicable regional planning commission reports may be used as a basis to determine growth in a subject area. OCA reserves the right to challenge the specific use of the data in each case.

    d. The proxy group used for calculating market value should not be limited to only companies which engage in Pennsylvania fair market value acquisitions. Aqua agrees that it will provide the terms of this agreement to any UVE prior to engaging the UVE.

    e. Comparable sales used to establish the valuation should not be limited to those that the UVE previously appraised. Aqua agrees that it will provide the terms of this agreement to any UVE prior to engaging the UVE.

2. Income Approach

    a. The rate base/rate of return methodology is not an appropriate methodology for calculating fair market value.

    b. Calculations done under the Income Approach will clearly describe the basis for discount rate(s) in the report rather than only in the exhibits. The following information should be provided about the discount rate(s) used:

        i. The capital structure used in the analysis with an explanation as to why the capital structure was selected. If Company's actual capital structure was not used, explain why not.

        ii. The cost of equity used in the analysis, and the basis for the cost of equity.

iii. The cost of debt used in the analysis. If Company's actual cost of debt was not used, explain why not.

c. Additionally, if a capitalization rate is used, the calculation of the capitalization rate and the basis for the growth rate will be disclosed and fully explained.

3. Cost Approach

a. If the reproduction cost methodology is used, valuation of the collection mains will not be treated differently or as a special circumstance unless reasonably justified;

b. Future capital projects shall not be considered in determining the cost approach result;

c. The cost of land, if included, shall not be adjusted by the ENR index.

d. Aqua and the OCA reserve the right to present adjustments and oppose other methodologies, inputs and assumptions in appraisals in future cases and proceedings, including methodologies, inputs and assumptions that were present in this case but not challenged by the OCA or that were accepted by the Commission.

4. Other Appraisal Considerations:

a. The "going value," "provision for erosion on return," and "overhead cost" add-ons will not be adopted or included in the appraisals.

***

Current cost of Easements

Activity	Engineer	Legal	Fees	Total
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	54	100		
Total Cost	486	300	250	1,036

EXHIBIT S1

GANNETT FLEMING SERVICE AGREEMENT AND INVOICES

Gannett Fleming

Excellence Delivered As Promised

May 24, 2021

Via email to WCPackerJr@essential.co

Mr. William C. Packer
Vice President Controller
Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Ave
Bryn Mawr, PA 19010

Dear Mr. Packer:

Fair Market Value Appraisal

In response to your request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett") is pleased to submit this cost proposal to provide Aqua Pennsylvania Wastewater, Inc. ("Aqua") with a fair market value appraisal of the East Whiteland Township's wastewater system assets ("Wastewater System") consistent with the date of the Engineer's Assessment.

SCOPE OF SERVICES

Gannett Fleming Valuation and Rate Consultants, LLC proposes to conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. It should be noted that Gannett will utilize asset cost information provided by the Engineering Assessment of the Wastewater System's assets.

Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

As stated, the standard of value for this engagement is fair market value. The premise of value is going concern. The going concern premise of business value assumes that the business will continue running normally using all of its assets to produce income and will continue operating beyond the valuation date.

Gannett will value the Wastewater System's assets as a group under the premise that they collectively comprise an ongoing operating business enterprise. In accordance with 66 Pa. C.S.

Section 1329, the original source of funding for any part of the assets of the selling utility will not be relevant to the determination of the value of said assets.

We will accept all information and data provided by the Wastewater System and Aqua as it pertains to this assignment "as is" after a limited review. That is, we will neither audit nor verify any data, original cost study, financial records or operating data provided for this assignment.

We will provide direct testimony summarizing our fair market value appraisal suitable for filing before the Pennsylvania Public Utility Commission (PAPUC). Our appraisal and/or direct testimony will reflect the list of items concerning Utility Valuation Expert appraisals for applications to the PAPUC under 66 Pa. C.S. Section 1329, provided previously by Alexander R. Stahl (letter of February 24, 2021).

SITE INSPECTION

We will visit or inspect the Wastewater System's facilities and rely on the information provided by the Engineering Assessment of the Wastewater System's assets provided by the Wastewater System and Aqua.

APPRAISAL REPORT

We will prepare a written document to substantiate our opinion. Our appraisal will be developed consistent with the Uniform Standards of Professional Appraisal Practices. Our valuation will include a detailed analysis and will be presented in a narrative comprehensive, ''stand-alone'' document for your use. The estimate of value that results from a valuation engagement will be expressed as a conclusion of value to be used for the purposes stated above.

Although our valuation is intended to estimate fair market value, we assume no responsibility for the inability of a seller or buyer to obtain a sale or purchase contract at that price.

QUALIFICATIONS

Since 1915, Gannett and its predecessors have been helping clients in public pricing policy and related financial matters for managerial purposes, before regulatory commissions and in courts of law. Our staff has considerable experience in providing an array of specialized financial services to support the core needs and objectives of our clients.

Our specialized financial services encompass utility valuations, economic valuation studies, cost of capital studies, depreciation studies, rate studies, lead lag studies, analyses of public utility accounting systems, debt financing reports, economic and demographic studies, financial decision studies, optimum capital structure, debt service levels, dividend policy, private placement of debt, financial benchmarking, and conducting property inventories.

We design each study and its related report to meet the specific requirements of our clients. These studies require objective analyses of basic data, informed professional judgment, and clear presentation of the results. Our staff includes professionals specialized in public utility accounting and ratemaking, valuation, cost of capital, lead lag, depreciation, associated technical services, and financial analysis. We are experienced utility valuation experts who determine fair market value using the cost, market, and income approaches in accordance with 66 Pa. C.S. Section 1329. We are a registered Municipal Advisor with the Securities & Exchange Commission (SEC); and are a subsidiary of Gannett Fleming, Inc.

Gannett is approved as a "Utility Valuation Expert" by the PAPUC within the context of 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems.

FIDUCIARY DUTY

Gannett has a fiduciary duty to, and will, provide a thorough, objective, and fair market valuation using the cost, market and income approaches in accordance with 66 Pa. C.S. Section 1329 and Pennsylvania laws.

Gannett attests that it does not derive any material financial benefit from the sale of, or purchase of, a selling utility other than fees for services rendered. Gannett also verifies it does not have any immediate family members who are directors, officers or employees of either an acquiring public utility, entity or selling utility within a 12-month period of the date of hire to perform an appraisal. We further affirm that Gannett is not directly or indirectly owned, partnered or in any way affiliated with a water/wastewater distribution company.

BASIS FOR COMPENSATION

Gannett will perform the above services, and other related services that you may authorize, based on hourly billing rates for our personnel in effect when we perform the work, plus the reimbursement of direct expenses. Direct expenses include transportation, meals, lodging and incidental expenses incurred while traveling and any other expenses required as a result of the assignment that are not incidental to the normal conduct of business. Attached is a copy of our billing rates currently in effect. We will render invoices monthly for services performed during the preceding month.

Based on our experience, we estimate the cost for a complete study, direct testimony, and other filing requirements will range from $30,000 to $35,000. The actual charges for these services will, of course, depend on the amount of time required to complete the assignment and the extent to which data are provided. The availability and quality of the required data sources of information will affect the final cost.

SCHEDULE

The fair market value appraisal will be completed within 45 to 60 days of timely receipt of an executed proposal, the requested data, and completion of the Engineering Assessment.

PROPOSAL

Based on the understanding outlined in this letter, we propose that Aqua Pennsylvania Wastewater, Inc. retain Gannett Fleming Valuation and Rate Consultants, LLC to perform the services as outlined in this letter. If this proposal is satisfactory to you, please so indicate by signing where indicated below and scanning and emailing the executed copy to me via email at hwalker@gfnet.com, with a copy to Cheryl Rutter at crutter@gfnet.com.

We thank Aqua for this opportunity to provide valuation services in connection with the fair market value appraisal of the Wastewater System's assets. We look forward to acceptance of our proposal and to a successful project.

Respectfully Submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

HAROLD WALKER, III
Manager, Financial Studies

Aqua Pennsylvania Wastewater, Inc. accepts the foregoing Proposal and authorizes Gannett Fleming Valuation and Rate Consultants, LLC to proceed with the services described herein.

ACCEPTED BY:

William C. Packer
(Signature)

William C. Packer
(Printed Name)

Vice President - Regulatory Accounting & Regional Controller
(Title)

May 24, 2021
(Date)

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
BILLING RATES

Personnel	Hourly Rate
SUPERVISORY STAFF	
John J. Spanos, President	$285.00
Harold Walker, III, Manager, Financial Studies	260.00
John F. Wiedmayer, Jr., Project Manager, Depreciation	240.00
Ned W. Allis, Vice President	240.00
Constance E. Heppenstall, Senior Project Manager, Rate Studies	240.00
STAFF	
Senior Engineer	260.00
Analysts and Engineers	180.00
Associate Analysts	170.00
Assistant Analysts III	160.00
Assistant Analysts II	130.00
Assistant Analysts I	120.00
Senior Technicians	120.00
Support Staff	120.00

Gannett Fleming

Excellence Delivered As Promised

INVOICE

Gannett Fleming Valuation and Rate Consultants, LLC

ACH/EFT Payment Information:
ABA: 031312738
Account No.: 5003165655
Account Name: Gannett Fleming

Aqua Pennsylvania Wastewater, Inc.
Attn: William C. Packer, Vice President - Controller
762 W. Lancaster Avenue
Bryn Mawr, PA 19010-3489

Check Payment Information:
Gannett Fleming Valuation and Rate Consultants, LLC
PO Box 829160
Philadelphia, PA 19182-9160

Project: 068774
Invoice No: 068774*116435
Invoice Date: June 17, 2021

Federal EIN: 46-4413705
Send Remit Info: AccountsReceivable@gfnet.com

Note: TO PREVENT IMPOSTER FRAUD. If you receive any notification of a change in payment instructions, you should call our Accounts Receivable department at 717-763-7211 to verify the authenticity of the change. We cannot be held responsible for a misdirected payment as a result of your not confirming authenticity of requested changes to payment instructions or "imposter hacks" to your system.

Invoice Period: May 8, 2021 through June 4, 2021

Project Manager : Harold Walker III hwalker@gfnet.com 610 650-8101

Fair Market Value Appraisal - East Whiteland

Summary of Current Charges

Phase 000	- FAIR MRKT VAL APPR-E.WHITELAND	$ 13,460.00
	Total Charges	$ 13,460.00
	Total Due This Invoice	**$13,460.00**

Gannett Fleming

Excellence Delivered As Promised

Project: 068774
Invoice No: 068774*116435
Invoice Date: June 17, 2021

Gannett Fleming Valuation and Rate Consultants, LLC

Phase 000 -- FairMrktValAppr-E.Whiteland

Labor Costs

Labor Classification	*Hours*	*Rate*	*Amount*
Harold Walker	49.00	$ 260.00	$ 12,740.00
Support Staff	6.00	120.00	720.00

Total Labor Costs **$ 13,460.00**

Total Phase -- 000 **$ 13,460.00**

Gannett Fleming

Excellence Delivered As Promised

INVOICE

Gannett Fleming Valuation and Rate Consultants, LLC

ACH/EFT Payment Information:
ABA: 031312738
Account No.: 5003165655
Account Name: Gannett Fleming

Aqua Pennsylvania Wastewater, Inc.
Attn: William C. Packer, Vice President - Controller
762 W. Lancaster Avenue
Bryn Mawr, PA 19010-3489

Check Payment Information:
Gannett Fleming Valuation and Rate Consultants, LLC
PO Box 829160
Philadelphia, PA 19182-9160

Project: 068774
Invoice No: 068774*118584
Invoice Date: July 15, 2021

Federal EIN: 46-4413705
Send Remit Info: AccountsReceivable@gfnet.com

Note: TO PREVENT IMPOSTER FRAUD. If you receive any notification of a change in payment instructions, you should call our Accounts Receivable department at 717-763-7211 to verify the authenticity of the change. We cannot be held responsible for a misdirected payment as a result of your not confirming authenticity of requested changes to payment instructions or "imposter hacks" to your system.

Invoice Period: June 5, 2021 through July 2, 2021

Project Manager : Harold Walker III hwalker@gfnet.com 610 650-8101

Fair Market Value Appraisal - East Whiteland

Summary of Current Charges

Phase 000	- FAIRMRKTVALAPPR-E.WHITELAND	$ 19,960.00
	Total Charges	$ 19,960.00
	Total Due This Invoice	**$19,960.00**

Gannett Fleming

Excellence Delivered As Promised

Project: 068774
Invoice No: 068774*118584
Invoice Date: July 15, 2021

Gannett Fleming Valuation and Rate Consultants, LLC

Phase 000 -- FairMrktValAppr-E.Whiteland

Labor Costs

Labor Classification	*Hours*	*Rate*	*Amount*
Analyst	1.00	$ 180.00	$ 180.00
Harold Walker	74.00	260.00	19,240.00
Support Staff	4.50	120.00	540.00

Total Labor Costs **$ 19,960.00**

Total Phase -- 000 **$ 19,960.00**

EXHIBIT S2

AUS SERVICE AGREEMENT AND INVOICES

aus consultants

JEROME C. WEINERT
Principal & Director

8555 West forest Home Avenue, Suite 201
Greenfield, WI 53228
414-529-5755 ▪ Tel
414-698-8371 ▪ Cell
weinertj@auswest.net

May 27, 2021

Mr. John Nagel
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: East Whiteland Township Wastewater Collection System Fair Market Value Appraisal

Dear Mr. Nagel:

AUS Consultants is please to respond to Scott Shearer's (PFM Financial Advisors, LLC) request for a proposal for a valuation of East Whiteland Township's wastewater collection system. We understand the nature and purpose of the request is to determine the fair market value of the Township's wastewater collection property and its operation for compliance with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues Section 1329 of the "Valuation of Acquired water and wastewater systems" collectively referred to as Act 12 of the Commonwealth of Pennsylvania's 2016 legislative session. AUS Consultants is a Utility Valuation Expert (UVE) as designated by the Pennsylvania Public Utility Commission (PUC) Docket No. A-2016-2566251 Entity Code 9919181 renewed January 13, 2020. Our appraisal assumes an investor-owned utility as the purchaser and that the purchaser would be successful in establishing the purchase price, assumed to be the appraised value, as rate-base for regulatory purposes under Section 1329 of the Public Utility Code of Pennsylvania.

Our response to this request will include the scope of our services, a list of AUS Consultants staff and their qualifications, an initial listing of data required to perform the appraisal and a range of project costs through the completion of the appraisal report; activities subsequent to the delivery of our final report will be billed at our hourly per diems defined below. The appraisal will be prepared under the 2020-2021 edition of the Uniform System of Professional Appraisal Practices (USPAP) which has been extended through 2022.

Before addressing the proposal requirements, it is important to understand the valuation concepts and parameters as they would apply to this project which will be subject to consideration of issues regarding to recent Commission decisions and settlements entered into between the Pennsylvania Office of Consumer Advocate (OCA) and the participants (Aqua Pennsylvania and Pennsylvania American) in other recent Act 12 cases.

Valuation Study

AUS Consultants understands the purpose of the valuation study is to determine the fair market of the Township's wastewater collection system assets and their operation. Fair market value is defined as:

> "The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 13th Edition, page 23

Our conclusion will represent the fair market value as a going concern, in this case an operating wastewater collection system and not an amount that would be realized from a liquidation of those assets.

Valuation Methodologies

The valuation of the Township's wastewater collection assets, as part of a going concern, will the three (3) generally accepted valuation methodologies: the cost, income and market approaches.

The primary valuation method that will be utilized is the **cost approach.** In preparing the cost approach we will rely on the "Engineer's Assessment" inventory prepared for the Township and the Purchaser per the Pennsylvania PUC's (Act 12) Final Implementation Order M-2016-2543993. In order for the Engineer's Assessment to be of maximum use to the UVEs it should detail the property by account, type and size of property and or equipment, its date of

installation and its original cost. It should be noted that Section 1329 does not restrict the property to be appraised in any fashion so all property of the Township subject to the sale whether Township constructed and/or developer contributed is subject to the appraisal. The cost approach will give consideration to the Township's wastewater collection plant and equipment's replacement cost adjusted for appraisal depreciation. The replacement cost new will be developed using either trending the property's investment by account and installation year or by application of appraisal date unit costs to property's inventory by account and installation year. Next, appraisal depreciation, physical, function and economic, will be assessed and deducted from the replacement cost new. The physical and functional depreciation will be determined based on the age-life depreciation methods using aging from the Engineer's Assessment, the service lives applicable to wastewater industry depreciation lives and a physical inspections of the property.

The property subsequent to its acquisition, will be regulated by the Pennsylvania PUC utilizing a rate base/rate of return regulation. This form regulation allows for the fair return on and of the Company's capital invested for the provision of wastewater services. The last step in the Cost Approach's we will consider the property's economic returns under PUC regulation in order to determine if economic obsolescence exits in the preliminary Cost Approach conclusion discussed above. We will use the results of Income and Market Approaches (discussed below) in making this determination.

The **income approach** provides an indication of value by evaluation the future returns of the operation of the property as wastewater collection system. There are two commonly used methods of the income approach: the discounted cash flow (DCF) approach and the capitalized income approach. Both procedures discount the future returns of the property using a recognized cost of capital for the wastewater industry.

In the DCF, the expected or future cash flows of the operation of the property are discounted to the appraisal date (present value) using a recognized cost of capital for the wastewater industry. Future cash flows are based on historical results from operation in terms of revenues and expenses as the basis forecast of future operations. The projected cash flow levels must provide for additional cash investment and working capital additions, as well as reflect the specific growth potential of the system being valued.

In the capitalize income approach the property's future returns are consolidated into a single estimate for all future periods. The capitalized income approach to value is determined by the direct capitalization of the estimated income using an adjusted cost of capital removing future growth from the cost of capital rate.

The discount rate used in the income approaches will be developed from a market analysis of debt and equity reflecting the risks associated with a rate regulated water and wastewater companies regulated by the Pennsylvania PUC.

The **market approach** looks to market sales of similar water and wastewater utility properties (companies). There are two methods which are commonly utilized to estimate the market approach: actual market sales and market multiples based on wastewater industry comparables based on financial performance as reported in Value Line Investment Surveys for the water/wastewater industry.

The **final appraised value** will consider each of the three approaches to value both individually and collectively.

AUS Consultants Professional Staff

AUS Consultants' professional staff has extensive nationwide experience in preparing business enterprise valuations for water and wastewater systems.

Jerome C. Weinert, Professional Engineer (PE), Accredited Senior Appraiser (ASA), Certified Depreciation Professional (CDP)

- 49 years in Appraisal and Depreciation Consulting
- BS in Mechanical Engineering – Milwaukee School of Engineering (1972)
- Master's in Business Administration – Marquette University (1988)
- Testimony Experience:
  - Regulatory (Depreciation and Rate Base)
  - Courtroom (Valuations – ad valorem taxation and eminent domain and rate of return)

Michael J. Diedrich, PE, ASA, CDP, Certified General Appraiser

- 38 years in Appraisal and Depreciation Consulting
- BS in Architectural Engineering Technology – Milwaukee School of Engineering (1981)
- Master's in Business Administration – Marquette University (1991)
- Testimony Experience:

Courtroom (Valuations ad valorem taxation and eminent domain)

David Weiler

- 36 years in Valuations of Business Enterprises, Closely-held common Stock, Cost of Capital Studies and Valuations of Intangible Property
- Bachelor of Science in Finance-Drexel University (1978)

David A. Sheffer

- 39 years in Regulatory Consulting (Depreciation, Rate Base, Cost of Service, Valuations and Original Cost Studies)

Elizabeth A Weinert

- 19 years in Appraisal and Depreciation Consulting
- B Bachelor of Science in Mechanical Engineering – Milwaukee School of Engineering (2001)
- Master's in Aeronautical Engineering – University of Alabama (2015)

First Request for Data

In order to expedite the project upon the East Whiteland Township's acceptance of our proposal, AUS Consultants needs the following data:

Inventory of property plant and equipment. Ultimately this inventory needs to be provided by the firm preparing the "Engineer's Assessment" for both the Township and the Purchaser. As stated above:

> "In order for the Engineer's Assessment to be of maximum value use it should detail the property by account, type and size of equipment, its date of installation and its original cost. It should be noted that Section 1329 does not restrict the property to be appraised in any fashion so all property whether municipally constructed and/or developer contributed is subject to the appraisal."

Township's financial information related to the operation of the wastewater collection system over each of the last four to six years.

Customer information for the last four years

This data request is not intended to be all inclusive of the information required. There will be follow-up questions and additional requests for data.

AUS Consultants would like to perform a physical inspection of the Township's wastewater system and schedule interviews, as appropriate, with township personnel familiar with the wastewater collection system's operation.

Fee Estimate

AUS Consultants would offer a professional fee range of $25,000 to $27,000 plus expenses to complete a valuation study. Expenses billed at our cost will include travel and living, report preparation, and Fed X as necessary.

For activities subsequent to our final report the following table of hourly per diems plus expenses:

Consultant	Hourly Per Diems ($s/hr.)
Jerome C. Weinert	275
Michael J Diedrich	250
Earl Robinson	200
David A. Sheffer	200
David Weiler	170
Elizabeth A. Weinert	150
Susan Macchia	70

These activities typically include responding to interrogatories (Commission staff, OCA, Small Business Advocate, and/or other possible intervenors), reviewing the testimony of participating parties, preparing testimony (direct, cross, and possibly sur-rebuttal), attending Commission hearings. If expert testimony is required, Jerome C. Weinert will be the witness and attend any hearings which is required.

Closure

AUS Consultants appreciates the opportunity to respond to East Whiteland Township's request for our services. Should you have any questions regarding our response, please contact the undersigned.

Respectfully submitted,
Jerome C. Weinert
AUS Consultants
Principal & Director

Jerome C Weinert

Date: May 27, 2021

Accepted by:

East Whiteland Township, PA
Date: 5/27/2021

INVOICE

East Whiteland Wastewater

July 7, 2021

Enclosed is our AUS Consultants invoice for the East Whiteland Wastewater Collection System fair market value appraisal which was delivered via DropBox on 6/21/2021.

Proposed Fee & Expenses

East Whiteland Townshi 10-0735

Appraisal Activity	Fees	Expenses	Total
Preliminary Appraisal			
UVE Appraisal Completion	25,000.00	800.00	25,800.00
Total Appraisal	**25,000.00**	**800.00**	**25,800.00**
Appraisal Updates	-	-	-
Direct Testimony	2,000.00	100.00	2,100.00

Consultants		Per diem
Jerome C. Weinert	JCW	275
Elizabeth A. Weinert	EAW	150

Final UVE Appraisal and Testimony

Invoice 10-0735-01 **7/6/2021**

Professional Fees

	Time Sheet Dates		Hours	Per diem	Fees	
Jerome Weinert (JCW)						
	6/7/2021	6/13/2021	35.0	275	9,625.00	
	6/14/2021	6/20/2021	42.0	275	11,550.00	
	6/21/2021	6/28/2021	7.5	275	2,062.50	Testimony
Subtotal JCW					**23,237.50**	
Elizabeth Weinert (EAW)						
	6/7/2021	6/13/2021	15.0	150	2,250.00	
	6/14/2021	6/20/2021	7.5	150	1,125.00	
	6/21/2021	6/28/2021	0.0	150	-	
Subtotal EAW					**3,375.00**	
Subtotal Professional Fees					**26,612.50**	
Expenses					$ 157.97	
Total this Invoice: 10-0735-01					$ 26,770.47	

GRAND TOTAL THIS INVOICE..... $26,770.47

Please remit with a duplicate copy of this invoice to:

AUS Consultants, Inc.
155 Gaither Drive, Suite A
Mt. Laurel, NJ 08054

CUSTOMER I.D. 70-EAS05
INVOICE NO. 157455
Reference No. 10-0735-01
(G/L No. 441036)

Employer I.D. No.22-194-3906
INCORPORATED

Remit Wires to:
AUS, Inc. at Webster Bank, N.A.
Account 10974951, ABA# ACH211170101
International Swift# WENAUS31

EXHIBIT T1

VERIFIED STATEMENT OF GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC

VERIFIED STATEMENT

I, Harold Walker, III, Manager of Financial Studies of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett"), a Utility Valuation Expert in the Commonwealth of Pennsylvania, hereby state the following, subject to the penalties of 18 Pa. Cons. Stat. § 4904 (relating to unsworn falsification to authorities):

1. Gannett was selected by Aqua Pennsylvania Wastewater, Inc., to perform a fair market value appraisal of the East Whiteland Township Wastewater Collection System ("System");

2. As Manager of Financial Studies of Gannett, I prepared the foregoing Fair Market Value Appraisal of the System;

3. The facts set forth in the Fair Market Value Appraisal are true and correct to the best of my knowledge, information, and belief;

4. Gannett has no affiliation with either Aqua Pennsylvania Wastewater, Inc. or East Whiteland Township;

5. As Manager of Financial Studies of Gannett, I determined the fair market value of the System in compliance with the most recent edition of the Uniform Standards of Professional Appraisal Practice as of the date of the Appraisal, employing the cost, market and income approaches;

6. As Manager of Financial Studies of Gannett, I applied applicable jurisdictional exceptions to the submitted Appraisal;

7. Neither Gannett nor I have derived any material benefit from the sale of the System other than fees for services rendered; and

8. I am not an immediate family member of a director, officer or employee of either Aqua Pennsylvania Wastewater, Inc. or East Whiteland Township, Chester County, within a 12-month period of the date Gannett was engaged to perform the appraisal.

Harold Walker, III
Gannett Fleming Valuation and Rate
Consultants LLC

Dated: July 19, 2021

EXHIBIT T2

VERIFIED STATEMENT OF AUS CONSULTANTS

VERIFIED STATEMENT

I, Jerome C. Weinert, ASA, P.E., CDP, Principal and Director of AUS Consultants, Inc. ("AUS"), a Utility Valuation Expert in the Commonwealth of Pennsylvania, hereby state the following subject to the penalties of 18 Pa. Cons. Stat. § 4904 (relating to unsworn falsification to authorities):

1. AUS was selected by East Whiteland Township to perform a fair market value appraisal of the Township's Wastewater Collection System ("System");

2. As Principal and Director of AUS, I prepared the foregoing Fair Market Value Appraisal of the System;

3. The facts set forth in the Fair Market Value Appraisal are true and correct to the best of my knowledge, information, and belief;

4. AUS has no affiliation with either East Whiteland Township or Aqua Pennsylvania Wastewater, Inc.;

5. As Principal and Director of AUS, I determined the fair market value of the System in compliance with the most recent edition of the Uniform Standards of Professional Appraisal Practice as of the date of the Appraisal, employing the cost, market and income approaches;

6. As Principal and Director of AUS, I applied applicable jurisdictional exceptions to the submitted Appraisal;

7. Neither AUS nor I have derived any material benefit from the sale of the System other than fees for services rendered; and

8. I am not an immediate family member of a director, officer or employee of either East Whiteland Township, Chester County, or Aqua Pennsylvania Wastewater, Inc., within a 12-month period of the date AUS was engaged to perform the appraisal.



Jerome C. Weinert, ASA, P.E., CDP
AUS Consultants, Inc.

Dated: July 20, 2021

EXHIBIT U

TESTIMONY OF WILLIAM C. PACKER

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

AQUA PENNSYLVANIA WASTEWATER, INC.

DOCKET NO. A-2021-3026132

AQUA STATEMENT NO. 1

DIRECT TESTIMONY OF
WILLIAM C. PACKER

With Regard To
A General Overview of the Transaction
Financial and Legal Fitness of Aqua
APA Rate Provisions
Public Benefits of the Transaction
Section 1329
Section 2102

July 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is William C. Packer. My business address is 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010.

Q. By whom are you employed and in what capacity?

A. I am employed by Essential Utilities, Inc. ("Essential"), as Vice President, Regulatory Accounting and Regional Controller. In this position, I am the Regional Controller of Aqua Pennsylvania, Inc. ("Aqua PA") and Aqua New Jersey, Inc. ("Aqua NJ"). Additionally, I oversee rate issues for all subsidiaries of Essential. Aqua PA is the parent company to Aqua Pennsylvania Wastewater, Inc. ("Aqua" or the "Company").

Q. Please provide a brief description of your education and work experience.

A. I graduated from Richard Stockton College of New Jersey in 1998 with a Bachelor of Science degree in Business Studies with a concentration in Accounting. In 1998, I joined GE Capital Mortgage Services Inc. as a Staff Accountant. In September 1999, I joined New Jersey American Water Company ("American") as a General Staff Accountant responsible for financial statement preparation, account reconciliation, financial support for rate cases, and account analysis. In September 2001, I was transferred to American's Service Company, in its Shared Services operation located in Mt. Laurel, New Jersey. I was employed there for four years in several roles, including Senior Fixed Assets/Job Cost Accountant, Financial Support Analyst, and Accounting Supervisor Fixed Assets. At American, I had the opportunity to support the rate-making process by working

closely with operating subsidiaries in 23 states, preparing schedules and answering interrogatories.

In March 2005, I joined Aqua New Jersey, Inc., where I served as Assistant Controller until December 2006, when I transferred to Aqua America, Inc. In July 2008, I was promoted to the position of Mid-Atlantic Manager of Rates. In April 2011, I became the Manager of Rates and Planning – Northeast Divisions. I was promoted to Regional Controller for Aqua PA and Aqua NJ subsidiaries in October 2012. In April 2017, I was promoted to Vice President – Controller of Aqua PA. In 2020, I was promoted to my current position of Vice President, Regulatory Accounting and Regional Controller where I have additional responsibilities to oversee rates and regulatory accounting matters of Essential.

In addition to my corporate experience, I served three terms as a Councilman in the Borough of Woodbury Heights, New Jersey. In that role, I served as the Chairman of the Finance, Administration, and Personnel committee; in addition, I served as a member of the Public Safety and Streets/Roads committees.

I was elected as Mayor of the Borough of Woodbury Heights in November of 2018 and was sworn in on January 5, 2019. The Borough of Woodbury Heights is one of 565 municipalities in New Jersey and has a population of approximately 3,000 residents.

Q. Have you testified before this Commission before?

A. Yes, I have testified in several proceedings before the Pennsylvania Public Utility Commission ("PUC" or the "Commission"), including Aqua PA's petition to charge a 7.5% Distribution System Improvement Charge ("DSIC") at Docket R-2008-2079310,

Aqua PA's last three rate cases at Docket Nos. R-2009-2132019, R-2011-2267958, R-2018-3003558, and Aqua's seven previous Section 1329 proceedings in Docket Nos. A-2016-2580061, A-2017-2605434, A-2018-3001582, A-2019-3008491, A-2019-3009052, A-2019-3015173 and A-2021-3024267. I have also testified in various other proceedings before the Commission.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is as follows: (1) to provide a general overview of Aqua; (2) to provide a general overview of the proposed transaction ("Proposed Transaction") between Aqua and East Whiteland Township ("EWT" or the "Township"); (3) to describe Aqua's technical, legal, and financial fitness to own and operate the system; and (4) to explain the benefits of the proposed transaction.

Q. Are you sponsoring any Exhibits with your testimony?

A. Yes. Attached to my testimony as Appendix A is a schedule showing the revenue deficiency and overall impact on customers.

Q. Are there any other witnesses submitting testimony with this application?

A. Yes. In addition to my testimony, Aqua is submitting the following statements in support of the Application:

- Aqua Statement No. 2 – Direct Testimony of Mark J. Bubel, Sr. Mr. Bubel will provide testimony regarding the specifics of the system being acquired from an operations/engineering perspective.

- Aqua Statement No. 3 – Direct Testimony of John Nagel. Mr. Nagel will provide testimony regarding the background of the Proposed Transaction from EWT's perspective and benefits of the Proposed Transaction.
- Aqua Statement No. 4 – Direct Testimony of Harold Walker III. Mr. Walker will provide testimony regarding the appraisal conducted on behalf of the Company.
- Aqua Statement No. 5 – Direct Testimony of Jerome C. Weinert. Mr. Weinert will provide testimony regarding the appraisal conducted on behalf of EWT.

Q. Has the Company filed an application with the Commission for regulatory approval to acquire the wastewater system assets of the EWT Sanitary Wastewater Collection System (the "System")?

A. Yes. Aqua filed its Application on July 23, 2021.

Q. What is Aqua seeking in its application?

A. There are four requests. First, Aqua is requesting approval of the acquisition under Section 1102, 66 Pa. C.S. § 1102, similar to many requests that come before the Commission. Second, pursuant to Act 12 of 2016 ("Act 12" or the "Act"), 66 Pa. C.S. § 1329, Aqua is seeking to utilize fair market value for the determination of the ratemaking rate base of the EWT System. Third, Aqua is requesting that the Commission approve, if necessary, its acquisition agreement with EWT and the assignment of twenty-two contracts with municipalities under Section 507, 66 Pa. C.S. § 507. Fourth, Aqua is seeking approval under Section 2102, 66 Pa. C.S. § 2102, to the extent necessary, of the

assignment of a contract to which Aqua Resources, Inc. ("Aqua Resources"), an affiliate of Aqua, is a party.

Q. What does Section 1329 require to be included in the application?

A. Section 1329 requires that the application include (1) copies of the two appraisals, (2) the purchase price, (3) ratemaking rate base, (4) transaction and closing costs, and (5) the proposed tariff. A rate stabilization plan could also be required if it is applicable to the transaction.

Q. Can you generally opine on the purpose of Section 1329 and the Commission's view?

A. Yes, as stated by the Commission, "Section 1329 works to: (1) provide certainty as to the value of acquired utility property; (2) remove regulatory barriers to the prudent sale of public water and wastewater assets; (3) protect a Seller from having to offer public assets for sale at below-market rates; and (4) allow a Buyer to recover market-based investment in those public assets through regulated rates."[1] I also agree with the Commission that Section 1329 "encourages a realistic approach to the sale of public assets based upon the fair market value of those assets."[2] Moreover, as further explained by the Commission:

> Section 1329 recognizes that no reasoned argument would propose that these public assets are of marginal value simply because the book value and the Commission's traditional rate setting methodology dictate as much. Rather, the valuation methods of Section 1329 provide municipalities and authorities with a wholistic recognition of the fair market value of the public assets they seek to sell based on a balancing of accepted business valuation principles, specifically, the cost, market, and income approaches. 66 Pa.

[1] *Implementation of Section 1329 of the Public Utility Code*, Docket No. M-2016-2543193 Tentative Supplemental Implementation Order at 4 (Sep. 20, 2018) (hereinafter "TSIO").
[2] TSIO at 7.

> C.S. § 1329(a). Thus, for sale purposes, Section 1329 works to value the public assets as the businesses they are as opposed to what their value might be under regulatory accounting for depreciated utility assets.[3]
>
> …
>
> Section 1329 enables a Seller to price its public assets at a market value based on reasonable business valuation principles and enables a Buyer to recover its investment in those public assets at that market-based value.[4]

Q. What does the Commission require for the approval of the certificate that utilizes Section 1329?

A. In its Final Implementation Order entered October 27, 2016, in Docket No. M-2016-2543193 ("Final Implementation Order"), the Commission referenced the checklist in the Tentative Implementation Order for items to include with the application for it to be processed in a six-month time frame. This checklist was subsequently updated in March 2017. The Commission released its Final Supplemental Implementation Order on February 28, 2019 in Docket No. M-2016-2543193, which included an updated checklist, standard data requests ("SDR"), jurisdictional exceptions, and form testimony for Utility Valuation Experts ("UVE"). Aqua has included references with the Checklist indicating where in the Application the relevant information is located.

II. OVERVIEW OF AQUA PA AND AQUA

Q. Please provide a general overview of Aqua PA and Aqua.

A. Aqua PA is the second largest investor owned regulated water/wastewater utility operating in the Commonwealth of Pennsylvania. Aqua PA provides water and

[3] TSIO at 6.
[4] TSIO at 7.

wastewater utility service to approximately 488,000 customers, consisting of 443,000 water customers and 45,000 wastewater customers. Aqua PA employs approximately 600 highly trained utility professionals to achieve its mission to provide safe, adequate, and reliable utility service at reasonable rates. In addition, Aqua PA is one of eight regulated subsidiaries of water and wastewater subsidiaries of Essential, which brings to bear its own financial, technical, and managerial resources to assist in our mission.

Aqua is a subsidiary of Aqua PA and is engaged in the business of collecting, treating, transporting, and disposing of wastewater for the public. Aqua provides wastewater service to approximately 45,000 customers in Adams, Bucks, Carbon, Chester, Clarion, Clearfield, Delaware, Lackawanna, Luzerne, Monroe, Montgomery, Pike, Schuylkill, Venango, and Wyoming Counties. Aqua brings extensive expertise in providing wastewater service to citizens of Pennsylvania, and currently operates 39 wastewater treatment plants.

Q. Please provide a description of the EWT.

A. EWT owns the sewer system and provides wastewater service in East Whiteland Township. EWT is a Pennsylvania second-class township. Wastewater utility service is provided to approximately 3,895 customers. The utility infrastructure being acquired includes, but is not limited to, collection and conveyance assets, pumping stations, manholes, and land and land rights. Please see Aqua Statement No. 3, Direct Testimony of Mr. Nagel, for a further description of the Township.

Q. Please provide an overview of the proposed Transaction.

A. Aqua responded to a request for bids by the Township and was ultimately chosen as the successful bidder. After arms-length negotiations between Aqua and the Township, the Asset Purchase Agreement ("APA") was signed and executed on January 8, 2021, providing for the sale of the assets, properties and rights of the wastewater system. The purchase price totaled $54,930,000. According to the APA, the acquired customers will be charged the existing rates of the seller upon closing. Aqua's tariff rules and regulations will apply following closing.

III. FITNESS

Q. Please describe how the Company is legally fit to own and operate the system.

A. Aqua is a public utility operating under Commission granted certificates of public convenience. There are no pending legal proceedings challenging Aqua's ability to provide safe and adequate service to customers.

Q. Please describe how the Company is financially fit to own and operate the system.

A. As I mentioned in my overview, Aqua PA, as parent company to Aqua, is a Class A water utility in the Commonwealth and the largest water/wastewater subsidiary of Essential, with total net utility plant assets of $4.3 billion and annual revenues of $509 million in 2020. Aqua PA had operating income of approximately $261 million and net income of $187 million. Aqua PA's cash flows from operations equaled approximately $231 million. Aqua is a Class A wastewater utility in the Commonwealth, with total net utility plant assets of $350 million and annual revenues of $32 million. Aqua PA has an A rating from Standard and Poor's Rating Service and has approximately $1.825 billion

in outstanding long-term debt at a weighted average interest rate of approximately 4.03%. Aqua PA also utilizes low-cost long-term debt financing instruments through the Pennsylvania Infrastructure Investment Authority ("PENNVEST"), representing about 2% of Aqua PA's total debt portfolio. In addition to Aqua PA's access to long-term debt, Aqua PA has its short-term credit facility of $100 million and has access to equity capital as a subsidiary of Essential. Aqua, as a subsidiary of Aqua PA, has access to all of Aqua PA's financing capabilities.

IV. FUNDING

Q. Please explain how Aqua plans to fund the Proposed Transaction.

A. The Proposed Transaction will be funded using existing short-term credit lines. The short-term credit funding will be converted to a mix of long-term debt and equity capital shortly after closing.

Q. Do you anticipate the Proposed Transaction will affect Aqua PA's corporate credit rating?

A. No. The Company does not anticipate that the Proposed Transaction will affect Aqua PA's corporate credit rating.

V. APA RATE PROVISIONS AND RATE STABILIZATION PLAN

Q. Please explain the rate provisions in paragraph 7.03 of the APA.

A. Under the provisions of Paragraph 7.03 of the APA, as of the day of closing, the Company will charge the same base rates as those previously charged by the Township,

and the Company shall apply its then-existing miscellaneous fees and charges in the Company's Tariff. The base rates shall not be increased until after the third anniversary of the Closing Date.

Q. What is a rate stabilization plan?

A. A rate stabilization plan is defined in Section 1329(g), 66 Pa. C.S. § 1329(g), as a plan that will hold rates constant or phase rates in over a period of time after the next base rate case.

Q. Does the Application include a rate stabilization plan?

A. No.

Q. Does the Application include a proposed tariff that includes language that would constitute a rate stabilization plan?

A. No. The Company is proposing to implement the Township's current rates. There is no language in Aqua's proposed tariff requesting that rates be held constant or phased in over a period of time after the next rate case. Section 7.03 of the APA, accordingly, does not constitute a rate stabilization plan.

Q. Are you requesting the implementation of a DSIC for Township customers at this time?

A. No. Following closing, Aqua intends to amend its Long-Term Infrastructure Improvement Plan ("LTIIP") to include EWT in the LTIIP and file the amended LTIIP

with the PUC. The Company will include a request in that filing to initiate the DSIC to EWT customers as permitted by Section 1329.

Q. Please explain how the Company will bill the Township's customers after closing.

A. Currently, the Township bills their customers on an annual or quarterly basis. The Company will convert customers to monthly billing.

VI. PUBLIC INTEREST

Q. Please explain why the proposed transaction is in the public interest.

A. The PUC has a long-standing record of support for consolidation/regionalization of water/wastewater systems. The PUC understands that in doing so, the utility industry will have a better chance to realize the benefits of better management practices, economies of scale, and the resulting greater customer/environmental/economic benefits. The Commission has previously stated that "acquisitions of smaller systems by larger more viable systems will likely improve the overall long-term viability of the water and wastewater industry. Additionally, these types of acquisitions will also enhance the quality of ratepayers' daily lives, promote community economic development, and provide environmental enhancements."[5] Ultimately, these benefits inure to customers both existing and acquired. The Proposed Transaction with EWT is no exception to the principles noted in the aforementioned policy statement, and Aqua PA has successfully

[5] Pennsylvania Public Utility Commission, Final Policy Statement on Acquisitions of Water and Wastewater Systems, Docket No. M-00051926, Final Order at 18 (Aug. 17, 2006).

acquired numerous water/wastewater utilities in its over approximately 135 years of operation.

Q. Please discuss the Company's track record of acquiring and improving wastewater systems in the Commonwealth.

A. Aqua currently provides utility service to approximately 45,000 wastewater customers in the Commonwealth and has years of experience operating wastewater treatment and collection systems in a safe, reliable and efficient manner. Moreover, Aqua has the managerial, technical, and financial resources to continue to operate, maintain and improve the EWT System.

Aqua has acquired 16 wastewater systems over the past 10 years.[6] Many of these systems required significant investment to correct service and environmental issues. Other systems did not need substantial capital investment. Aqua and Aqua PA are essentially the compilation of smaller systems that have been acquired over the last 135 years and make both utilities what they are today. The inherent diversification of systems and customers provides a foundation of stability in the day to day, month to month, and year to year operations of the utility, in that, they are all not requiring major capital investments at the same time. Thus, spreading the financial impacts over the long-term operations of the utility. I would submit that if Aqua were permitted to acquire only non-viable systems, rather than a mix of viable and non-viable, this would have a significant impact on its existing customers' rates and service. Both types of systems, viable and

[6] New Garden, East Norriton (2020); Cheltenham (2019); East Bradford, Limerick (2018); Tobyhanna, Avon Grove (2017); Emlenton, Honeycroft (2016); Bunker Hill (2015); Penn Township (2014); Treasure Lake (2013); and Sage Hill, Kidder Township, Beech Mountain, Village at Valley Forge (2012).

non-viable, are consistent with the Commission's policy statements regarding acquisitions. The acquisition of the EWT System will continue to address the Commission's supported policy of consolidation and regionalization.

Q. Did the Commonwealth Court refer to the Commission's policy of consolidation/regionalization and Aqua's expertise in system operations and ability to raise capital in its opinion in *McCloskey v. Pa. P.U.C.* addressing Aqua's transaction with New Garden Township?

A. Yes. Although I am not an attorney, I have read the Court's Opinion in the McCloskey case. At the end of Section A of the Opinion, the Court refers to Commission findings that Aqua, as owner of numerous water and wastewater systems in Southeastern Pennsylvania, has sufficient expertise to operate a system and ability to raise capital to support a system and that the Commission has a policy of consolidation and regionalization that allows for increased maintenance, upgrade and expansion of public facilities. The Court concludes that the foregoing are reasons of the type that the Supreme Court in its *Verizon* decision held were sufficient to meet the public benefit standard and substantial evidence to support the notion that there is a public benefit for the transaction. This same analysis is sufficient to support the public benefit and substantial evidence of public benefit in this proceeding.

Q. Will the Township's customers benefit from the transaction?

A. Yes. The Township's customers will become part of a larger scale, efficiently operated, wastewater utility. The Company is already the owner and operator of the EWT water

system. As such, we have key operations in nearby service areas and will be able to assume the operations of the EWT System, fold them into a larger scale, efficiently operated wastewater utility that over time will likely yield further operating efficiencies and improve long term viability as envisioned in the PUC policy statement. The operational overlap between water and wastewater utility operations will provide the opportunity for better coordination of capital activities throughout the EWT service area. Utility activities that involve road openings and restoration can be better aligned to result in less disturbance to EWT as we execute our capital improvement plan.

Additionally, the acquisition will not have any immediate impact on the rates of either the Township's customers or the existing customers of Aqua. The Company is projecting less operating and maintenance costs under the Company's ownership that will likely be realized through reductions in costs for wastewater maintenance, as well as efficiencies in administrative and general costs, such as insurance, auditing and legal, among others. Specifically, referencing EWT 2020 Financial statements, Sewer Fund Operating Expenses were approximately $2.8M, whereas, the Company is projecting annual expenses of approximately $2.0M.

Lastly, given the fact that there are meaningful investments needed in this system, as noted in the testimony of Mark J. Bubel, Sr., Aqua Statement No. 2, the customers of the EWT System will benefit greatly from the Company's technical experience and fitness in deploying resources towards capital improvements.

Q. Will Aqua's existing customers benefit from the acquisition?

A. Yes. The acquisition of the EWT System will be an approximate 9% increase in Aqua's customer base. By virtue of the Company's larger customer base, future infrastructure investments across the state will be shared at a lower incremental cost per customer for all of Aqua's customers.

The EWT System renders the majority of their sewer rents on a per EDU basis and their system is comprised of single-family homes, but also multi-unit structures. As such, the EDU's per the Township's records are approximately 7,658, which equates to approximately $7,200 purchase price per EDU and is almost equal to the Company's existing rate base per EDU, projected at approximately $7,000. Given the similarities in purchase price to rate base per EDU, combined with the meaningfully lower operating cost I mentioned previously, the EWT system characteristics demonstrate that there are economies of scale that can be achieved as a result of this acquisition.

I note again that both Aqua and Aqua PA have developed into the utility they are today by acquiring and operating smaller and mid-sized systems. This progression has successfully happened over the last several decades and taken the form of both viable and non-viable systems. Over the long term, this process has benefitted both current customers, future customers that were acquired, and the Commonwealth.

Q. Will acquired customers benefit from Aqua's customer service?

A. Yes. Aqua and Aqua PA provide customer service through a toll-free number that customers can call from 8:00AM-5:00PM EST for regular business. The same customer service number houses the Company's 24/7/365 emergency response line. EWT customers will benefit from expanded bill payment options including online payment and

payment by text message. EWT customers can go to the Aqua Companies' website and establish an account. EWT customers can also sign up for notifications and alerts to be sent to their email address or phone concerning their service. This service allows customers to stay informed of events impacting their service. EWT customers will also have access to Aqua's customer assistance programs.

Q. Will the acquired customers benefit from customer billing and payment protections?

A. Yes. Aqua has procedures in place under Chapter 14, 66 Pa. C.S. 1401, *et seq.*, that provide for billing, payment, collection, termination and reconnection of service, payment arrangements, medical certifications, and formal and informal complaint procedures. Aqua Services employs customer care teams to help resolve service and billing issues, and has an established process and procedure for addressing formal and informal complaints.

Q. In *McCloskey*, the Commonwealth Court concluded that the Commission must address rate impact "in a general fashion" when deciding whether there is substantial public benefit. Please address the rate impact of the Proposed Transaction.

A. The current average monthly bill of a residential customer in EWT, is approximately $33.33 per month at one EDU. As my calculations in Appendix A demonstrate, applying 100% of the revenue deficiency to the existing rates, the average bill would increase to approximately $77.64 per month or a 132.93% increase. Again, this system has

characteristics that demonstrate that economies of scale can be achieved as a result of this acquisition. Given this fact and the fact that there are again meaningful future investments needed to address deficiencies in the system, those future rate impacts could be spread across a broader customer base thus moderating those future rate increases over time. Yet, while the rates of the EWT System are reasonably expected to increase, either on their own, or whether acquired by the Company, the fact is that there is more flexibility and opportunity to deal with those impacts over a much larger customer base. This benefits both existing and acquired customers alike.

Q. Is the impact on rates outweighed by other positive factors from the Proposed Transaction?

A. Yes. While there is an expectation of increased rates as a result of the transaction, this is not unexpected. The possibility of increased rates is noted by the Commonwealth Court in *McCloskey*. The positive factors from the transaction outweigh the possibility of increased rates. These types of transactions further a recognized legislative objective and are consistent with the Commission's consolidation/regionalization policy. The Company's application demonstrates that there will be both tangible and intangible positive factors that are likely realized as a result of the Proposed Transaction, including capital improvements, expense efficiencies, and economies of scale.

VII. SECTION 1329 FAIR MARKET VALUE CONSIDERATIONS

Q. Is Aqua proposing that its application be evaluated utilizing the Fair Market Value provisions of Section 1329 of the Public Utility Code?

A. Yes. The Company's Application has been prepared with this in mind. Specifically, the Company is requesting that the ratemaking rate base of the EWT System be based on the lesser of the average of the Fair Market Value Appraisals included in the Application or the purchase price pursuant to Section 1329 of the Public Utility Code.

Q. Has Aqua prepared its application in compliance with the Commission's Final Implementation Order and Final Supplemental Implementation Order?

A. Yes. Aqua has complied with all required documentation according to the PUC's application checklist including, but not limited to, the Engineering Assessment of Assets, responses to SDRs, testimony supporting the Application, and two independent Fair Market Value appraisals.

Q. Please provide an overview of the valuation process.

A. Following the execution of the APA, the Company and the Township agreed to engage Pennoni Associates, Inc. to complete the Engineer's Assessment (Exhibit D). Both parties engaged their respective UVEs to perform a Fair Market Value analysis of the system in accordance with the Uniform Standards of Professional Appraisal Practice ("USPAP"), utilizing the cost, market, and income approaches. Aqua engaged the services of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett") and has attached to its Application their Fair Market Value Appraisal as Exhibit Q. The Township engaged the services of AUS Consultants, Inc. ("AUS") and their Fair Market Value Appraisal is attached to the Application as Exhibit R. Both firms have been pre-

certified as authorized UVEs by the PUC and are on the list of qualified appraisers maintained by the PUC.

Q. Please describe the conclusions of the two appraisals used to determine the fair market value of the Township's assets.

A. The two appraisals used the USPAP employing the cost, market, and income approaches to arrive at the fair market value of the system. The Township sponsored appraisal performed by AUS arrived at a system value of $57,781,548. The Company sponsored appraisal performed by Gannett arrived at a system value of $55,668,000. Therefore, the fair market value as defined in Act 12 is the average of these two appraisals which is $56,724,729.

Q. Pursuant to Section 1329 of the Public Utility Code, what is the resulting rate base determination for the EWT System?

A. According to Section 1329, the ratemaking rate base is the lesser of either the purchase price in the APA, which is $54,930,000, or the fair market value which is $56,724,729. In this instance, since the purchase price is lower than the fair market value, the ratemaking rate base for the EWT System is $54,930,000.

Q. Please state the total of the UVE fees incurred by the Company.

A. The UVE fees for the Company's appraisal received as of the date of the Application totaled $33,420. The Company's UVE fees will be included in the transaction and closing costs of this Proposed Transaction as stated below.

Q. Please explain whether you believe the UVEs' fees are reasonable?

A. Based on the scope of work, the methods used as accepted industry practice, and that the UVEs' fees were less than 5% of the fair market value benchmark noted in the Final Implementation Order and Final Supplemental Implementation Order, I believe the fees are reasonable. Per the Final Implementation Order, Final Supplemental Implementation Order and Checklist, the contract engaging the Company's UVE, Gannett, along with Gannett's invoices are included as Exhibit S1. The contract engaging the Township's UVE, AUS, along with AUS's invoices are included as Exhibit S2.

Q. Please comment on the transaction and closing costs?

A. The Company anticipates that the transaction and closing costs will be approximately $308,300 including the Company's UVE fees. The exact closing costs will be determined at closing.

VIII. SECTION 2102 APPROVAL

Q. Is Aqua requesting approval of an agreement between affiliates?

A. Yes. Aqua is requesting approval to assign certain municipal contracts to Aqua. As part of that request, Aqua will be taking assignment of EWT's rights and responsibilities under an agreement between Aqua Resources, an affiliate of Aqua, and various municipalities for transportation of wastewater, dated November 20, 2018, included in the Application as Exhibit F17 ("November 2018 Agreement"). The November 2018 Agreement is for conveyance of wastewater from six contributing municipalities through

the Valley Creek Trunk Line ("VCTS"), located in Tredyffrin Township, owned by Aqua Resources. One of the contributing municipalities is EWT. Upon assignment of Exhibit F17, the November 2018 Agreement will become an agreement between a public utility, Aqua, and an affiliate, Aqua Resources, which requires Commission approval.

Q. Does the November 2018 Agreement set forth how each party will be charged for wastewater transportation?

A. Yes. Section 9 of the November 2018 Agreement describes that each entity will be charged the amounts set forth in Schedule 9.1 of the November 2018 Agreement, and that after the first three years of the November 2018 Agreement, billings will be based on meter flows at each connection point. No changes in the charges under Section 9 and Schedule 9.1 will occur as a result of the assignment.

Q. Are the charges reasonable?

A. Yes. I believe the charges are reasonable. The charges and the November 2018 Agreement being assigned were negotiated by Aqua Resources and non-affiliates of Aqua and, thus, are reflective of a negotiated, market rate for the conveyance of wastewater service.

IX. CONCLUSION

Q. Does this conclude your testimony?

Yes it does, however I reserve the right to supplement my testimony as additional issues and facts arise during the course of this proceeding.

Aqua Pennsylvania Wastewater, Inc.
EAST WHITELAND sanitary sewer system

1.) **EAST WHITELAND sanitary sewer system**

		Year 1	Notes
Revenue	$	3,769,536	
O&M		1,965,601	
Depreciation		1,505,867	****2.72% Composite Depreciation Rate*
Taxes Other		90,539	
Income Taxes	$	(265,129)	*****21% Federal & 9.99% State*
Operating Income	**$**	**472,658**	
Rate Base at Fair Market Value	$	54,930,000	
Capital Investments *(Year 1)*	$	432,764	
Rate Base *(Including Capital Investments less depreciation year 1)*	$	53,856,897	
Interest Expense ^		1,124,933	
^ *Includes Interest Expense syncronized with rate base*			
Required Operating Income ***(Rate Base x Rate of Return)***	**$**	**3,971,270**	
Operating Income Deficiency	**$**	**3,498,613**	
Gross Revenue Conversion Factor		1.432171	
Revenue Deficiency (Excess) $	**$**	**5,011,000**	
Revenue Deficiency (Excess) %		**132.93%**	
Increase applied to Acquired (Authority) customers 100%	**$**	**5,011,000**	
Increase %		**132.93%**	
Increase applied to Acquired (Authority) customers 50%	**$**	**2,505,500**	
Increase %		**66.47%**	
Increase applied to Existing (Company Wastewater) customers 50%	**$**	**2,505,500**	
Increase %		**4.67%**	
Increase applied to Existing (Company Water) customers (Act 11)	**$**	**2,195,134**	
Increase %		**0.41%**	

	Avg. Usage/Kgal		Estimated Monthly Increase	Estimated Percentage Increase
Sewer District A & B - Residential & Commercial 100%	Fixed	$	44.31	132.93%
Sewer District C - Residential 100%	Fixed	$	60.04	132.93%
Sewer District D - Residential 100%	Fixed	$	66.47	132.93%
Sewer District E - Residential & Commercial 100%	Fixed	$	53.17	132.93%
High Volume Users 100%	372.21	$	3,067.71	132.93%
Sewer District A & B - Residential & Commercial 100%	Fixed	$	22.16	66.47%
Sewer District C - Residential 100%	Fixed	$	30.02	66.47%
Sewer District D - Residential 100%	Fixed	$	33.23	66.47%
Sewer District E - Residential & Commercial 100%	Fixed	$	26.59	66.47%
High Volume Users 100%	372.21	$	1,533.86	66.47%
Impact Existing Customers (Company Wastewater) - Residential - 50%	3.02	$	4.62	4.67%
Impact Existing Customers (Company Wastewater) - Commercial - 50%	21.94	$	14.53	4.67%
Impact Existing Customers (Company Wastewater) - Industrial - 50%	3.20	$	3.74	4.67%
Impact Existing Customers (Company Water) - Residential	4.08	$	0.33	0.41%
Impact Existing Customers (Company Water) - Commercial	37.05	$	2.06	0.41%
Impact Existing Customers (Company Water) - Industrial	211.51	$	9.72	0.41%

2.) **Rate of Return**

	Ratio	Cost Rate	WACC
Debt	47.15%	4.43%	2.09%
Equity	52.85%	10.00%	5.29%
	100.00%		7.37%

3.) **Gross Revenue Conversion Factor**

Dollar of Revenue		1.0000
Less: Gross Receipts (Revenue) Tax	0.00%	0.0000
Less: Reg Assesments	0.62%	0.0062
Less: Bad Debts	1.17%	0.0117
State Taxable Income		0.982053
State Income Tax	9.9999%	0.0982
Federal Taxable Icome		0.883848772
Federal Tax Rate	21.00%	
Federal Income Tax		0.185608
Net Revenue Dollar		0.69824052992
Gross Revenue Conversion Factor		1.43217123
EFT	28.8999%	

Aqua Pennsylvania Wastewater, Inc.
Calculation of EAST WHITELAND sanitary sewer system - Present Revenues

	Current Rates	*Customers 2020*	*Method*	*Gallons 2020*	*EDU's 2020*	*Revenue 2020*
Service Charges:						
SEWER DISTRICT A & B	$400.00	3,053	per EDU annually		6,566	$2,626,400
SEWER DISTRICT C	$542.00	28	per EDU annually		28	$15,176
SEWER DISTRICT D	$600.00	279	per EDU annually		279	$167,400
SEWER DISTRICT E	$480.00	522	per EDU annually		772	$370,560
HIGH VOLUME CUSTOMERS	$6.20 per 1,000 gallons	13	per 1,000 Gallons	58,064,516	13	$360,000
Other Charges:						$230,000
Total Revenue at Present Rates		**3,895**		**58,064,516**	**7,658**	**$3,769,536**

Aqua Pennsylvania Wastewater, Inc.
Calculation of EAST WHITELAND sanitary sewer system - Operating and Maintenance Expenses

OPERATING AND MAINTENANCE EXPENSES:	*Year 1*
O&M Labor Exp Reg	$ 161,782
O&M Labor Exp OT	16,178
O&M Employee Benefits	97,069
O&M Purchased WW Treatment	1,313,690
O&M Purchased Power	84,000
O&M Chemicals	1,000
O&M Mgmt Fees	195,381
O&M OS Engineering	6,000
O&M OS Operations	10,000
O&M OS Maintenance	16,000
O&M Transportation	36,000
O&M Supplies	8,500
O&M Other	20,000
Total O&M Expenses =>	$ 1,965,601

Aqua Pennsylvania Wastewater, Inc.
Calculation of EAST WHITELAND sanitary sewer system - Taxes Other Than Income

TAXES OTHER THAN INCOME (PRE-RATE CASE)	*Rate*		*Year 1*
Payroll Taxes (FICA, FUTA, SUTA)	8.000%	$	14,237
Property Taxes / (Purta)	1.400%	$	52,774
Regulatory Assessments	0.624%	$	23,529
Total		$	90,539

Docket No. R-2018-3003558

Schedule A-2
Witness: William C. Packer

AQUA PENNSYLVANIA, INC.

NUMBER OF CUSTOMERS SERVED

AND WHOSE BILLS WILL BE CHANGED

LINE NO.	CUSTOMER CLASS	SERVED AT 3/31/2017	SERVED AT 3/31/2018	TO BE SERVED AT 3/31/2019	TO BE SERVED AT 3/31/2020	INCREASED BILLS	DECREASED BILLS	UNCHANGED BILLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Metered:							
2	Residential	391,514	394,192	395,423	396,654	396,654	-	-
3	Commercial	22,264	22,460	22,598	22,737	22,733	4	-
4	Industrial	781	779	776	773	773	-	-
5	Public	1,254	1,256	1,256	1,256	1,256	-	-
6	Bulk Water	-	-	-	-	-	-	-
7	Private Fire Protection	5,197	5,301	5,403	5,504	5,504	-	-
8	Sales to Water Utilities	17	16	16	16	16	-	-
9	Total Metered Customers	421,027	424,004	425,472	426,940	426,936	4	-
10	Other:							
11	Unmetered	903	943	943	943	943	-	-
12	Availabillity Charge	2,801	2,769	-	-	-	2,769	-
13	Public Fire Protection	263	263	263	263	263	-	-
14	Private Fire Protection	766	779	779	779	779	-	-
15	Total Customers	425,760	428,758	427,457	428,925	428,921	2,773	-

[redacted]

Docket No. R-2018-3003561

Schedule A-2
Witness: William C. Packer

AQUA PENNSYLVANIA WASTEWATER, INC.

NUMBER OF CUSTOMERS SERVED

AND WHOSE BILLS WILL BE CHANGED

LINE NO.	CUSTOMER CLASS	SERVED AT 3/31/2017	SERVED AT 3/31/2018	TO BE SERVED AT 3/31/2019	TO BE SERVED AT 3/31/2020	INCREASED BILLS	DECREASED BILLS	UNCHANGED BILLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Residential	16,062	17,051	17,051	17,051	16,981	-	70
2	Commercial	1,324	1,469	1,469	1,469	1,427	42	-
3	Industrial	1	1	1	1	1	-	-
4	Public	38	40	40	40	40	-	-
5	Miscellaneous	-	-	-	-	-	-	-
6	Availabillity Charge	469	446	-	-	-	446	-
7	Total Customers	17,894	19,007	18,561	18,561	18,449	488	70

ADD	Limerick	Res	4,882
		Com	315
		Ind	-
ADD	East Bradford	Res	1,213
		Com	33
		Ind	2
ADD	Cheltenham	Res	9648
		Com	534
		Ind	14
		Pub	23
ADD	New Garden	Res	1916
		Com	190
ADD	East Norriton	Res/Com	4966
		Total Existing WW Customers	**42,297**

[redacted]

Wastewater Settlement Revenues => Exhibit 1(b) from 2018/2019 APWW Rate Case =>	**$ 17.920.976**
Add East Bradford WW	$ 1,082,402
Add Limerick WW	$ 4,771,000
Add Cheltenham WW	$ 7,321,878
Add New Garden	$ 2,620,039
Add East Norriton	$ 3,315,000
[redacted]	
Total Existing WW Revenues	[redacted]

Docket No. R-2018-3003558

Water Settlement Revenues => Exhibit 1(b) from 2018/2019 APWW Rate Case =>	**$ 473,763,919**
Residential	$ 307,623,471
Commercial	$ 111,880,600
Industrial Revenues	$ 16,482,317
[redacted]	
Total Existing Water Revenues (Res, Com, & Ind classes)	[redacted]

[redacted]

AQUA PENNSYLVANIA, INC.

1-A/a\ WATER AND 1-B/b\ WASTEWATER REVENUE REQUIREMENT - SUMMARY

		Total Company	Water Operations	Wastewater Operations
Present Rate Revenue		$ 444.858.981	$ 431.415.676	$ 13.443.305
Additional Revenue Requirement		47,002,319	35,263,332	11,738,987
Act 11 Allocation	(1)	-	7,261,316	(7,261,316)
Proposed Revenues		$ 491,861,300	$ 473,940,324	$ 17,920,976
Rate Increase/(Decrease) - $		$ 47,002,319	$ 42,524,648	$ 4,477,671
Rate Increase/(Decrease) - %		10.57%	9.86%	33.31%

Notes:

(1) The allocation between wastewater operations and water operations is achieved by the proposed consolidation of water and wastewater revenue requirements to derive the water and wastewater rates proposed by the Company in this case.

Aqua Pennsylvania, Inc
Residential Average Monthly Bill Comparison - Wastewater
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Avg Consumption	Present Rates	Settlement Rates	$ Change	% Change	Metered Number of Bills	Metered & Unmetered Number of Bills
1	Bridlewood Division	1	4,100	43.04	67.48	24.44	56.79%	3,908	3,908
2	CS Sewer Division (Masthope)	6	1,300	28.99	40.94	11.95	41.22%	15,517	15,578
3	Deerfield Knoll Division	3	3,000	57.87	71.50	13.63	23.55%	1,426	1,426
4	Eagle Rock Division	1	1,900	39.67	45.44	5.77	14.54%	11,704	11,716
5	East Bradford Division	5	5,400	106.43	125.84	19.41	18.24%	972	972
6	Laurel Lakes Division	3	4,200	51.49	81.70	30.21	58.67%	2,348	2,372
7	Links at Gettysburg Division	3	2,700	63.58	68.95	5.37	8.45%	2,046	2,046
8	Little Washington Division	5	3,400	98.05	106.64	8.59	8.76%	4,152	4,164
9	Media Division	1	4,200	42.19	62.92	20.73	49.13%	20,733	20,773
10	Newlin Green Division	5*	6,500	158.75	158.75	0.00	0.00%	588	588
11	Peddlers View Division	4	4,100	78.44	100.95	22.51	28.70%	2,564	2,564
12	Penn Township Division	1B	3,400	40.70	55.00	14.30	35.14%	3,148	3,148
13	Plumsock Division	5	5,300	107.12	124.88	17.76	16.58%	456	456
14	Rivercrest Division	2	3,200	45.22	61.92	16.70	36.93%	5,785	5,869
15	Stony Creek Division	3	2,500	54.86	67.25	12.39	22.58%	2,558	2,558
16	The Greens at Penn Oaks Division	5	3,500	106.38	107.60	1.22	1.15%	838	850
17	Thornhurst Division	3	2,600	52.36	68.10	15.74	30.06%	3,538	3,538
18	Treasure Lake Division	1A	3,000	40.52	49.90	9.38	23.15%	25,259	25,590
19	Twin Hills Division	4	4,200	70.15	101.90	31.75	45.26%	3,947	3,947
20	White Haven Division	2	2,900	47.07	59.49	12.42	26.39%	5,568	5,736
21	Willistown Woods Division	3	3,100	54.92	72.35	17.43	31.74%	8,888	8,888
22	Woodloch Springs Division	3	2,000	51.87	63.00	11.13	21.46%	4,907	4,987
23	Beech Mountain Lakes Division	3	Unmetered	56.04	80.00	23.96	42.76%		11,234
24	Bunker Hill Subdivision	1A	Unmetered	31.92	56.20	24.28	76.07%		790
25	Emlenton Borough Division	2	Unmetered	45.00	68.40	23.40	52.00%		4,416
26	Honeycroft Village Division	4	Unmetered	66.67	100.00	33.33	49.99%		1,250
27	Lake Harmony Division	4	Unmetered	65.63	100.00	34.37	52.37%		12,033
28	New Daleville Division	4	Unmetered	74.17	100.00	25.83	34.83%		1,272
29	Pinecrest Division	2	Unmetered	$44.28	$68.40	$24.12	54.48%		4,002
30	Tobyhanna Township Division	4	Unmetered	66.67	100.00	33.33	49.99%		6,453
31	Sage Hill	5*	Unmetered	180.00	180.00	0.00	0.00%		251
	WEIGHTED AVERAGE Metered		**3,018**		**62.09**				
	WEIGHTED AVERAGE ALL				**68.27**				

5* - Special Charges have been assigned to these divisions within Rate Zone 5.
All Residential Customers are charged a customer charge on an EDU basis with the exception of the Media and Treasure Lake Divisions, which are charged a customer charge based on the appropriate meter size of the applicable Rate Zone. Media and Treasure Lake rates above represent a 5/8" meter.

Pinecrest Division's Present Rate is based on the weighted average of the present rates of all customers both inside Pinecrest and outside Pinecrest.

Bridlewood Division's Average Consumption and Present Rate are based on the weighted average of both townhome and single family home customers.

As per the Asset Purchase Agreement, the Tobyhanna Division rate increase will not become effective until January 1, 2020.

Aqua PennsylRania, Inc
Commercial Average Monthly Bill Comparison - Wastewater
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Avg Consumption	Present Rates	Settlement Rates	$ Change	% Change	Number of Bills
1	CS Sewer Division (Masthope)	6	24,800	41.33	64.44	23.11	56%	96
2	Eagle Rock Division	1	11,700	52.02	124.92	72.90	140%	323
3	Links at Gettysburg Division	3	20,000	216.93	216.00	-0.93	0%	24
4	Media Division	1	15,700	111.87	150.32	38.45	34%	3,388
5	Penn Township Division	1B	88,800	873.10	955.50	82.40	9%	507
6	Rivercrest Division	2	12,200	92.66	134.82	42.16	45%	108
7	The Greens at Penn Oaks Division	5	78,400	798.26	1,122.64	324.38	41%	12
8	Tobyhanna Township Division	4	9,600	86.00	153.20	67.20	78%	1449
9	Treasure Lake Division	1A	31,700	153.53	230.71	77.18	50%	382
10	Village at Valley Forge Division	1A	144,500	1,054.42	1,220.35	165.93	16%	243
11	White Haven Division	2	5,700	50.60	82.17	31.57	62%	463
12	Willistown Woods Division	3	3,200	55.23	73.20	17.97	33%	1,428
13	Woodloch Springs Division	3	117,000	62.62	71.50	8.88	14%	98
14	Avon Grove School District	5*	Unmetered	6,625.00	8,281.25	1656.25	25%	
15	Beech Mountain Lakes Division	3	Unmetered	69.74	80.00	10.26	15%	
16	Bridlewood Division	1	Unmetered	38.42	61.40	22.98	60%	
17	Emlenton Borough Division	2	Unmetered	45.00	68.40	23.40	52%	
18	Honeycroft Rillage Division	4	Unmetered	466.69	700.00	233.31	50%	
19	Lake Harmony Division	4	Unmetered	65.63	100.00	34.37	52%	
20	Pinecrest Division	2	Unmetered	$52.32	$68.40	16.08	31%	
	WEIGHTED AVERAGE - METERED ONLY		**21,936**		**214.73**			

5* - Special Charges have been assigned to these Divisions within Rate Zone 5.

All Residential Customers are charged a customer charge on an EDU basis with the exception of the Media and Treasure Lake Divisions, which are charged a customer charge based on the appropriate meter size of the applicable Rate Zone. Media and Treasure Lake rates above represent a 5/8" meter.

Bridlewood Division's Present Rate and Settlement Rate are based on the weighted average of the EDU rate charged to the 2 commercial customers.

Woodloch Springs Division's Present Rate and Settlement Rate are based on the customer charge per EDU.

As per the Asset Purchase Agreement, the Tobyhanna Division rate increase will not become effective until January 1, 2020.

Aqua Pennsylvania, Inc
Industrial Average Monthly Bill Comparison - Wastewater
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Meter Size	Avg Consumption	Present Rates	Settlement Rates	$ Change	% Change
7	Media Division	1	5/8"	3,200	36.13	55.32	19.19	53%

Aqua Pennsylvania, Inc
Residential Average Monthly Bill Comparison - Water
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Present Rates*	Settlement Rates*	$ Change	% Change	Number of Bills	Consumption	Average Gallons
1	Main Division Eagle Rock, Fawn Lake, Tanglewood,	1	$59.85	$65.52	$5.67	9.47%	4,173,338	172,154,838	4,125
	Thornhurst, Woodledge Village, Western								
2	& Pinecrest Divisions	3	59.85	65.52	5.67	9.47%	36,516	737,618	2,020
3	Bensalem Division	1	55.80	65.52	9.72	17.42%	179,147	7,534,487	4,206
4	Chalfont Division	2	47.27	65.52	18.25	38.61%	25,821	1,021,170	3,955
5	Oakland Beach/Lakeside Acres Division	3	57.04	65.52	8.48	14.87%	11,344	261,978	2,309
6	CS Water Division (Masthope)	3	49.36	65.52	16.16	32.74%	15,615	204,095	1,307
7	Country Club Gardens Division	1	40.29	52.98	12.69	31.50%	4,979	223,135	4,482
8	Clarendon Water Division	1	51.05	65.52	14.47	28.34%	3,407	109,345	3,210
9	Kratzerville Division	1	52.29	65.52	13.23	25.30%	1,727	58,671	3,398
10	Honesdale Division	1	52.20	65.52	13.32	25.52%	17,272	632,741	3,663
11	Sand Springs Division	1	40.73	52.98	12.25	30.08%	5,023	168,199	3,349
12	Mifflin Township Division	1	37.11	50.64	13.53	36.46%	5,606	176,827	3,154
13	Beech Mountain Lakes Division	1	21.45	31.73	10.28	47.93%	11,187	369,388	3,302
14	Treasure Lake Division	2	27.20	40.15	12.95	47.61%	25,311	765,777	3,026
15	Concord Park Division	2	30.88	43.91	13.03	42.20%	1,980	77,030	3,890
16	Bristol Township Water System Division	1	24.24	38.40	14.16	58.42%	5,089	226,795	4,457
17	Mt Jewett Borough Division	1	45.95	65.52	19.57	42.59%	4,832	155,007	3,208
18	Bunker Hill Subdivision	Bunker Hill	12.88	26.36	13.48	104.66%	779	31,897	4,097
19	Robin Hood Lakes Division	1	40.16	53.09	12.93	32.20%	2,397	67,756	2,826
20	East Cameron Division	1	57.02	65.52	8.50	14.91%	609	12,076	1,982
21	Sun Valley Division**	Sun Valley	15.00	19.50	4.50	30.00%			
22	Superior Water Company	2	57.02	65.52	8.50	14.91%	47,018	2,045,060	4,350
	WEIGHTED AVERAGE			**65.20**					**4,080**

*Residential water rates are based on 5/8" meter and an average consumption of 4,080 gallons per month for all divisions.

**Sun Valley customers are flat rate, unmetered customers.

Aqua Pennsylvania, Inc
Commercial Average Monthly Bill Comparison - Water
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Meter Size	Avg Consumption	Present Rates	Settlement Rates	$ Change	% Change	Number of Bills
1	Main Division	1	5/8"	37,800	$380.00	$419.63	$39.63	10.43%	236,233
2	Eagle Rock, Fawn Lake, Tanglewood, Thornhurst, Woodledge Village, Western & Pinecrest Divisions	3	5/8"	13,800	171.34	186.73	15.39	8.98%	665
3	Bensalem Division	1	5/8"	50,700	468.54	531.51	62.97	13.44%	15,289
4	Chalfont Division	2	5/8"	7,100	70.32	102.49	32.17	45.75%	1,678
5	Oakland Beach/Lakeside Acres Division	3	5/8"	5,500	84.39	93.45	9.06	10.74%	381
6	CS Water Division (Masthope)	3	5/8"	42,300	426.00	468.66	42.66	10.01%	57
7	Country Club Gardens Division	1	5/8"	33,900	271.22	333.27	62.05	22.88%	11
8	Clarendon Water Division	1	5/8"	9,900	93.91	135.81	41.90	44.62%	252
9	Kratzerville Division	1	5/8"	7,600	82.56	108.44	25.88	31.35%	23
10	Honesdale Division	1	5/8"	12,600	133.84	164.18	30.34	22.67%	3,789
11	Sand Springs Division	1	2"	40,800	309.80	523.34	213.54	68.93%	12
12	Mifflin Township Division	1	5/8"	19,600	112.70	174.80	62.10	55.10%	369
13	Beech Mountain Lakes Division	1	5/8"	23,000	51.34	95.40	44.06	85.82%	60
14	Treasure Lake Division	2	5/8"	30,800	121.26	185.24	63.98	52.76%	393
15	Concord Park Division	2	4"	487,300	2,226.92	3,381.86	1,154.94	51.86%	12
16	Bristol Township Water System Division	1	5/8"	14,800	116.15	146.76	30.61	26.35%	1,785
17	Mt Jewett Borough Division	1	5/8"	2,200	33.07	44.18	11.11	33.60%	444
20	East Cameron Division	1	3/4"	300	50.00	34.04	(15.96)	-31.92%	28
22	Superior Water Company	2	5/8"	8,400	99.18	117.96	18.78	18.94%	1,077
	WEIGHTED AVERAGE			**37,047**		**409.72**			

Aqua Pennsylvania, Inc
Industrial Average Monthly Bill Comparison - Water
Docket Nos. A-2018-3004108, A-2018-3004109, R-2018-3003558 and R-2018-3003561

	Current Division	New Rate Zone	Meter Size	Avg Consumption	Present Rates	Settlement Rates	$ Change	% Change	Number of Bills
1	Main Division	1	5/8"	231,500	$1,897.56	$2,099.59	$202.03	10.65%	8,254
3	Bensalem Division	1	1"	53,500	523.48	590.30	66.82	12.76%	853
4	Chalfont Division	2	2"	37,000	358.73	484.19	125.46	34.97%	57
5	Oakland Beach/Lakeside Acres Division	3	5/8"	76,500	691.26	765.28	74.02	10.71%	12
10	Honesdale Division	1	5/8"	23,200	222.27	275.01	52.74	23.73%	72
17	Mt Jewett Borough Division	1	1"	600	22.11	59.64	37.53	169.74%	24
	WEIGHTED AVERAGE			**211,513**		**1,930**			

EXHIBIT V

TESTIMONY OF MARK J. BUBEL, SR.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

AQUA PENNSYLVANIA WASTEWATER, INC.

DOCKET NO. A-2021-3026132

AQUA STATEMENT NO. 2

DIRECT TESTIMONY OF MARK J. BUBEL, SR.

With Regard To
Description of the System
Environmental Compliance
Integration into Current Operations
Technical Fitness
Public Benefits of the Transaction

July 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Mark J. Bubel, Sr. My business address is 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010.

Q. By whom are you employed and in what capacity?

A. I am employed by Aqua Pennsylvania, Inc., ("Aqua PA") as a Project Engineer III.

Q. Please provide a brief description of your education and work experience.

A. I received a Bachelor's of Science Degree (B.S.) in Civil Engineering in 1980 from Lehigh University and a Master's Degree in Civil Engineering (M.C.E.) with a concentration in Environmental Engineering in 1983 from Villanova University. I have worked in various engineering roles and have over 40 years of experience in environmental engineering related to municipal and industrial wastewater treatment and operations. I have worked at Aqua America since 2003 in roles related to wastewater treatment facilities including planning, design, start-up, and operational troubleshooting. I am a Registered Professional Engineer in Pennsylvania, Delaware, Maryland, North Carolina, and Florida. I am also a Licensed Water and Wastewater Operator in Pennsylvania.

Q. Have you previously testified before the Pennsylvania Public Utility Commission ("PUC" or the "Commission")?

A. Yes. I provided testimony in Aqua Pennsylvania Wastewater, Inc.'s ("Aqua" or the "Company") New Garden, Limerick, East Bradford, Cheltenham, East Norriton, Delaware County Regional Water Quality Control Authority and Lower Makefield Township Section 1329 Application proceedings at Docket Nos. A-2016-2580061, A-2017-2605434, A-2018-3001582, A-2019-3008491, A-2019-3009052, A-2019-3015173, and A-2021-3024267, respectively. I also provided testimony in Aqua PA and Aqua's most recent base rate case proceeding at Docket Nos. R-2018-3003558 and R-2018-3003561

Q. What is the purpose of your testimony?

A. The purpose of my testimony is as follows: (1) to provide a general description of the acquired system; (2) to explain how the acquired system will be integrated into Aqua's operations; (3) to describe Aqua's technical fitness to run the system, and (4) to discuss the benefits of the transaction.

Q. Are you sponsoring any Exhibits with the Company's filing?

A. No.

II. OVERVIEW OF AQUA AND THE EWT SYSTEM

Q. Please provide a general overview of Aqua.

A. Aqua, a subsidiary of Aqua PA, is engaged in the business of collecting, treating, transporting, and disposing of wastewater for the public. Aqua serves approximately 45,000 customers in Adams, Bucks, Carbon, Chester, Clarion, Clearfield, Delaware,

Lackawanna, Luzerne, Monroe, Montgomery, Pike, Schuylkill, Venango, and Wyoming Counties. Aqua operates 39 wastewater treatment plants ("WWTP") throughout the Commonwealth of Pennsylvania, and 24 systems of Aqua's Southeast Division are in proximity to East Whiteland Township ("EWT" or the "Township") allowing for operational efficiencies. Aqua, and its parent company Aqua PA, have approximately 600 employees bringing extensive expertise in providing water and wastewater service to citizens of Pennsylvania.

Q. Please provide a description of the EWT Sanitary Wastewater Collection System (the "System").

A. The Township is located in the northeast part of Chester County, Pennsylvania and the majority of the Township is served by a public sewer system. The EWT System is a collection and conveyance system owned by EWT that collects wastewater from within EWT and conveys wastewater via 12 Township owned pump stations, associated force mains and approximately 60 miles of gravity sewers and interceptor sewers to a wastewater treatment plant ("WWTP") owned by the Valley Forge Sewer Authority ("VFSA"), National Pollution Discharge Elimination System ("NPDES") Permit No. PA0043974, via the Valley Creek Trunk Sewer. EWT also owns a WWTP, Malvern Hunt WWTP, WQM Permit No. 1599418, which is in the process of being decommissioned and converted into a pump station. Following the decommissioning of the Malvern Hunt WWTP, which is expected to be finished in 2021, all wastewater flows will be treated at the VFSA WWTP. EWT, in addition, collects/conveys flow to /from its system from the Borough of Malvern, Tredyffrin Township, Charlestown Township,

and Willistown Township, which then flows for treatment at the VFSA. EWT also has several areas of its system that are on the border between EWT and East Goshen Township. While EWT owns the facilities within its borders, flows from these customers are sent to the East Goshen Municipal Authority ("EGMA") WWTP, NPDES Permit No. PA0050504.

Description of the System

The VFSA treatment plant began treatment of wastewater in about January 1978. The plant receives flow from the contributing municipalities from two force mains. Flow from the two force mains combines immediately prior to the raw influent structure. The raw influent structure meters and diverts the flow into two primary clarifiers, which are operated in parallel, for gravity settling to remove heavy inorganic and organic solids as well as to reduce biochemical oxygen demand (BOD_5). Following the primary clarifiers, further reduction of BOD_5 sufficient to also allow nitrification, occurs biologically in the two activated sludge aeration tanks. Final settling is achieved following the aeration tanks in four final clarifiers also operated in parallel. The final treatment step prior to discharge to the Schuylkill River is ultraviolet light (UV) disinfection.

Wastewater solids produced during primary clarification are pumped through cyclone de-gritters where grit is removed from the wastewater, sent to one of three treatment plant gravity thickeners where it is combined with other plant solids (scum, trucked wastewater and waste activated sludge).

In addition to its connected customers, VFSA also receives regulated and non-regulated (residential) trucked waste at a designated receiving station for preliminary treatment and equalization prior to combination with other plant solids in gravity

thickeners. The gravity thickened solids produced in the sludge thickeners are pumped to centrifuges for dewatering. The resulting cake solids produced by the centrifuge dewatering process are alkaline stabilized by mixing dewatered sludge solids with hydrated lime, resulting in a biosolids product registered with the Pennsylvania Department of Agriculture as a fertilizer product. VFSA biosolids have been land applied for over 10 years for beneficial agricultural reuse.

The VFSA WWTP is permitted at an annual average flow of 11.75 million gallons per day ("MGD") and has a maximum monthly average flow of 11.75 MGD. The 2020 annual average flow was 6.8 MGD and the 3-month maximum average flow was 7.42 MGD. The WWTP is permitted for a maximum organic loading of 26,700 pounds per day (lbs./day) according to the Pennsylvania Department of Environmental Protection ("DEP") Water Quality Management Permit ("WQM") provided as Exhibit M2. The 2020 maximum month organic loading was 12,830 lbs./day.

The Malvern Hunt WWTP is an aerated lagoon treatment system, consisting of an influent pump station, a headworks with a comminutor and influent bar screen, a secondary treatment lagoon, storage/polishing lagoon, and effluent spray pumps. Sewage flow to the treatment lagoon is continuous, going through aeration, solid – liquid separation settling, and decanting processes. The treated water is discharged through an 8-inch diameter gravity main to the storage/polishing lagoon. The supernatant of the storage/polishing lagoon is chlorinated prior to being pumped out for spray irrigation disposal.

The WWTP spray irrigation is applied to three (3) zones located in woodlands north of the Malvern Hunt development (18.5 acres total).

The Malvern Hunt WWTP is permitted at an annual average flow of 0.105 MGD and has a design hydraulic capacity of 0.128 MGD. The 2020 annual average flow was 0.049 MGD and the 3-month maximum average flow was 0.055 MGD. The WWTP is permitted for a maximum organic loading of 222 lbs./day. The 2020 maximum month organic loading was 176 lbs./day.

The EGMA WWTP is a sequencing batch reactor ("SBR") activated sludge treatment facility consisting of an influent grinder and screen, influent pumping station, 4-tank SBR system, post equalization tanks, effluent filtration, and ultraviolet ("UV") disinfection prior to stream discharge to Ridley Creek. Solids treatment consists of the previously mentioned influent grinder and screen, aerobic sludge digestion, and a dewatering centrifuge with polymer addition. Screenings and dewatered sludge are hauled off site for disposal at a properly permitted solid waste landfill.

The EGMA WWTP is permitted at an annual average flow of 0.750 MGD and permitted at an annual average flow for the Applebrook golf course irrigation pond of 0.135 MGD. The EGMA WWTP has a design hydraulic capacity of 0.750 MGD and the lagoon has a design hydraulic capacity of 0.135 MGD for the subject golf course irrigation. Treated effluent from the WWTP is sent to the irrigation pond when requested by the golf course turf manager. The 2020 annual average flow was 0.461 MGD and the 3-month maximum average flow was 0.497 MGD. The EGMA WWTP is permitted for a maximum organic loading of 2,098 lbs./day. The 2020 maximum month organic loading was 1,123 lbs./day.

The EWT collection and transmission piping is summarized in the Engineering Assessment included as Exhibit D to the Application.

Q. Please provide the elevations[1] for the VFSA WWTP, the Malvern Hunt WWTP, the EGMA WWTP and the Requested Territory.

A. VFSA WWTP: elevation generally varies between EL 90 to EL 105.

Malvern Hunt WWTP: elevation generally varies between EL 356 to EL 362.

EGMA WWTP: elevation generally varies between EL 365 to EL 380.

Requested Territory: Area elevations vary generally from:

- EL 354 to EL 566 along the western boundary.
- EL 364 to EL 582 along the southern boundary.
- EL 388 to EL 666 along the northern boundary.
- EL 198 to EL 364 along the eastern boundary.

EWT Pump Stations: Pump Station elevations are approximately:

- P.S. 1 (Deer Run), EL 329.
- P.S. 2 (Mill Lane), EL 278.
- P.S. 3 (Wilburdale), EL 354.
- P.S. 4 (Lee Boulevard), EL 338.
- P.S. 5 (Meadowview), EL 305.
- P.S. 6 (Flat Road), EL 345.
- P.S. 7 (Lapp Road), EL 241.
- P.S. 8 (Westgate), EL 352.
- P.S. 11 (Hillbrook Circle), EL 335.

[1] Elevation is approximate, and to the nearest two (2) feet interval based on PAMAP Program – Topographic Contours (2 ft Interval) 2006-2008 – DCNR PAMAP Program, https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=1245

- P.S. 12 (King Road), EL 544.
- P.S. 13 (Malvern Hunt), EL 360.
- P.S. 14 (Planebrook Road), EL 352.

Q. Please state the approximate time of the installation of the component facilities of the system.

A. With regard to the approximate time of the original construction, the VFSA WWTP was finished construction and placed in service in approximately January 1978 and provided basic primary treatment. The plant was upgraded in 2016 with a fourth clarifier as well as a third gravity thicker and a third centrifuge. A new influent fine screen was added in January 2020. The Malvern Hunt WWTP was constructed in 2000 and provided basic aerated wastewater lagoon treatment. The EGMA WWTP was constructed in 1985 as an extended aeration treatment system and was upgraded and expanded to a sequencing batch reactor system in 2010.

The majority of the EWT System was originally constructed between 1968 and 1978 with a second phase of expansion between 1978 and 1988 to accommodate expected growth. The System was expanded in the ensuing decades as new developments were added to the System along with additional pump stations. However, the average age of the pipe in the EWT System is approximately 32 years old.

Q. Is Aqua planning any capital projects over the next 10 years?

A. Yes. Aqua looked at upgrades to pump stations, force mains, and gravity collection systems based on facility conditions observed, facility age, and safety. Aqua estimates that it will invest approximately $16.92 million over the next 10 years.

Aqua will execute capital projects as set forth in Schedule 7.12 to the Asset Purchase Agreement. These projects include sewer extensions for the Bacton Hill Road and Swedesford Road areas as well as the Planebrook Road areas.

Upgrades to pump stations include pump replacement, electrical and mechanical replacement, emergency generator replacement, as well as facilities upgrade. Force main replacement will occur based on pipe age. Gravity collection system pipe rehabilitation and replacement will occur based on an assessment of pipe age and condition. Aqua will work with EWT and the DEP to address the inflow and infiltration ("I&I") and sanitary sewer overflows ("SSOs") within the system if they were to occur. There were no reported SSO's in 2019 or 2020 as reported in the respective Chapter 94 Reports for the respective systems.

Q. Do you foresee any other projects that would be required in the immediate future?

A. Replacement and upgrade of facilities will continue beyond Aqua's 10-year capital plan based on facility age and expected facility life span.

Q. Please state the actual number of EWT customers by class and gallons treated.EWT has 3,895 customers. EWT groups customers by Sewer District A through E, and large volume commercial and industrial customers.

Service Area	District A/B	District C	District D	District E[2]	Large Volume	Total
EWT	3,053	28	279	522	13	3,895

The number of gallons treated by VFSA, EGMA and Malvern Hunt from EWT for the period of January 1, 2020 to December 31, 2020 is 505,789,000 gallons. EWT bills on an EDU basis and does not track consumption by class, except for large volume users.

Q. Are the acquired EWT customers currently Aqua PA water customers?

A. Yes. EWT wastewater customers are currently served by Aqua PA and private wells for water service.

III. ENVIRONMENTAL COMPLIANCE

Q. Does the Application include NPDES permits?

A. Yes, although not part of the EWT System acquisition, the NPDES discharge permits for the VFSA WWTP and the EGMA WWTP are included in the Application as Exhibit N1 and N2.

Q. Does the Application include Water Quality Management ("WQM") Permits?

A. Yes. The WQM permit for the Malvern Hunt WWTP is included with the Application as Exhibit M1. Although not part of the EWT System acquisition, the WQM Permits for the

[2] 2020 Year end customers totaled 522. The Atwater development has since been fully built out with 545 customers.

VFSA WWTP, issued in 2010, and the EGMA WWTP, issued in 2008, are included in the Application as Exhibits M2 and M3.

Q. Are Act 537 plans included in the Application?

A. Yes. EWT's Act 537 plan documents are included with the Application as Exhibit P1 (1995 Plan), Exhibit P2 (Special Study 2011), Exhibit P3 (Special Study 2013), Exhibit P4 (Special Study 2015), Exhibit P5 (Special Study 2016), and Exhibit P6 (Planning Modules). The VFSA and EGMA Act 537 Plans are included with the Application as Exhibit P7 and Exhibit P8, respectively.

Q. Are there any Notices of Violation ("NOV") issued to EWT by the DEP in the last five years?

A. No.

Q. Were there any other NOVs issued to EWT by the DEP during the last five years?

A. To Aqua's knowledge, EWT has no Notices of Violation within the last five years.

Q. Have there been any Consent Assessments of Civil Penalty ("CACP") entered into by the Township and the DEP?

A. No. There are no current CACPs entered into by the Township and the DEP.

Q. Please state if there are any current environmental compliance issues for the EWT System.

A. EWT did not have any SSOs in 2020 per the Chapter 94 reports submitted by the Township. EWT was released from its Corrective Action Plan ("CAP") in 2015.

Q. Are there any noncompliance issues pending with the United States Environmental Protection Agency ("EPA")?

A. No.

Q. Please state the estimated number of future connections for the system for the next 5 years.

A. The below table provides projected equivalent dwelling units ("EDU") for the next five years (2021-2025):

	2021	2022	2023	2024	2025	Total (Rounded)
EWT	550.4	740.5	681	427.5	43	2,442

Q. Is there present system capacity to meet the demands of current and future customers?

A. Yes. While the 2020 Chapter 94 Report for the Mill Lane Pump Station shows an existing and projected hydraulic overload condition, we understand that a spreadsheet error was made in Attachment F of the 2020 Chapter 94 Report which will be corrected and submitted to DEP to show that an existing and projected hydraulic overload in fact does not exist within the 2-year reporting window. The revised Chapter 94 Attachment F will be provided upon revision.

IV. INTEGRATION OF EWT SYSTEM, TECHNICAL FITNESS AND PUBLIC BENEFIT

Q. Please state how many miles the EWT System is from Aqua's existing service territory.

A. The EWT System's distance from Aqua's existing service territory is as follows:

Buyer's Plant	Location	Approximate Distance to EWT (miles)
Willistown Woods System	West Chester, PA	5
Deerfield Knoll System	West Chester, PA	5
Plumsock System	West Chester, PA	5
Bryn Mawr, PA Corporate HQ	Bryn Mawr, PA	11

Q. Will the EWT System be physically interconnected with Aqua's system or be operated as a standalone system?

A. The EWT System will be operated as a standalone system within Aqua's footprint.

Q. Please describe how Aqua will integrate the operation of the EWT System into its current operations.

A. The operation of the EWT System will be managed from Aqua's Southeastern Division headquarters in Bryn Mawr, PA. Management, customer service, regulatory compliance, engineering, financial, and ancillary services will be provided seamlessly from our Southeastern Division office. Aqua plans to hire 3 additional operators to address the

day-to-day operations of the EWT system; however, these operators may be used in other Aqua systems in the area.

Q. Will other Aqua PA employees assist in the operation of the system, if needed?

A. Yes. Aqua has 27 wastewater operators, many holding dual water and wastewater certifications, which may be called upon to assist in the operations of the system. These operators are also supported by Aqua PA employees, which will benefit customers through engineering and field service functions.

Q. Please explain the support services that Aqua Services will provide to the EWT System.

A. Aqua Services, Inc. ("Aqua Services"), the Service Company for Essential, provides expertise in a variety of areas to the subsidiaries of Essential. Aqua Services will provide support to the operation of the system through its employees' expertise in accounting and financial, administrative, communications, corporate secretarial, customer service and billing, engineering, fleet services, human resources, information systems, operations, regulatory compliance, rates and regulatory, risk management, water quality, legal, and purchasing, contracts and sales of real estate.

Q. Does Aqua plan any physical, operational, and managerial changes after closing?

A. As mentioned above, there are planned capital improvements and Aqua plans to hire 3 operators. The EWT System will be operated from Aqua's Southeastern Division office. There will be no other physical, operational, and managerial changes after closing.

Q. Is the EWT System similar to other systems owned and operated by Aqua?

A. Yes. The EWT System, as stated above, is a wastewater collection system only. Aqua owns four (4) other collection only systems located within southeastern Pennsylvania.

Q. Do you believe that Aqua is technically fit to own and operate the system?

A. Yes.

Q. Please describe the Company's technical fitness and how the Company can provide quality and reliable service to EWT wastewater customers.

A. Aqua PA and Aqua are Class A utilities that already have certificates to operate throughout the Commonwealth and have acquired many systems in the last three decades. Aqua will provide quality and reliable service to the EWT wastewater customers given the Company's operational expertise as well as engineering support local to the EWT System. Aqua has expertise in troubleshooting mechanical equipment as well as wastewater treatment processes. Aqua also has expertise in operating wastewater collection and conveyance systems. Aqua strives to ensure the collection, conveyance and pumping systems which the Company owns provide continuous safe and reliable service. Aqua has worked with the Commission and statutory advocates to acquire and improve troubled wastewater systems (e.g., Washington Park Wastewater, Docket No. A230550F2000). In addition, Aqua was appointed receiver for the North Heidelberg Sewer Company system in Berks County by the Commission effective March 5, 2018. Aqua took over daily wastewater operations of the facility serving approximately 274

customers on March 5, 2018. Aqua has provided operations service and improvements to the system to ensure quality and reliable service.

Q. Does Aqua have emergency preparedness measures in place?

A. Yes. Aqua currently has emergency preparedness measures in place in order to ensure security and continued service in emergency circumstances all of which have been reviewed by the Commission.

Q. Please explain Aqua's safety programs.

A. Aqua and Aqua PA maintain safety programs that entail basic safety training in all the major categories which operators and management personnel are required to complete including but not limited to:

- Confined Space Training
- Back and Lifting Safety
- Work Zone Traffic Control
- Excavation Safety Awareness
- Fall Protection Training
- Hazard Communication
- Personal Protective Equipment
- Emergency Egress, Exits and Fire Safety
- Electrical Safety Training
- Control of Hazardous Energy | Lockout Tagout
- Respiratory Protection
- Hearing Conservation

Aqua's safety program and procedures provide public benefits in that the EWT customers will have a leader in the wastewater industry providing service.

Q. Can Aqua provide adequate wastewater collection, treatment, or disposal capacity to meet present and future customer demands?

A. Yes. Aqua can provide adequate wastewater service for present and future customers. Aqua will continue to make improvements to the system to ensure any future customer demands are met.

Q. Please summarize why you believe it is in the public benefit for Aqua to own and operate the system.

A. My explanation of Aqua's current operations, the EWT System's similarity to other systems operated by Aqua, the EWT System's proximity to Aqua's service territory, the additional support that will be provided by Aqua as an experienced wastewater utility, and my explanation of Aqua's technical fitness, all support that it is in the public benefit for Aqua to own and operate the EWT System.

V. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does. However, I reserve the right to supplement my testimony as additional issues and facts arise during the course of this proceeding.

EXHIBIT W

TESTIMONY OF JOHN NAGEL

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

In re: Application of Aqua Pennsylvania Wastewater, Inc.	:	Docket No. A-2021-3026132
	:	

TOWNSHIP OF EAST WHITELAND
AQUA STATEMENT NO. 3

DIRECT TESTIMONY OF

JOHN NAGEL

TOWNSHIP MANAGER

TOWNSHIP OF EAST WHITELAND

With Regard To
A General Overview of the Transaction
East Whiteland's Wastewater Collection and Treatment System and Operations
Benefits of the Proposed Transaction
East Whiteland's Rates

July 2021

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is John Nagel. My business address is 209 Conestoga Road, Frazer, PA 19355.

Q. In what capacity are you affiliated with the Township of East Whiteland?

A. I am the Township Manager for the Township of East Whiteland (the "Township" or "East Whiteland"). The Township Manager is appointed by the East Whiteland Board of Supervisors (the "Board") and is responsible to the Board for the execution of its policies. The Manager is designated as the Chief Administrative Officer of the Township and directs all administrative departments, prepares the annual budget and recommends other policies and procedures to the Board.

Q. Please provide a brief description of your education and work experience.

A. I attended the Temple University, where I received a bachelor's degree in accounting. I have served as the Township Manager since April 2015. As Manager, I oversee all day-to-day operations and staff for all Township departments. I work to implement the policies of our elected Board and coordinate with staff to bring the Board's goals to fruition. Additionally, I administer an annual budget of $28.9 million including $13.8 million in General Funds and $7.3 million of Sewer Funds. Prior to my current position, I served as the Director of Finance for Whitpain Township from September 2011 to April 2015, the Director of Administrative Services for the City of Reading, PA from February 2011 to September 2011, a Financial Advisor for Public Financial Management from

October 2010 to December 2010, and Township Manager for the Montgomery Township August 1999 to August 2010.

Q. Have you testified before the Pennsylvania Public Utility Commission ("PUC" or the "Commission") before?

A. No.

Q. On whose behalf are you testifying in this proceeding?

A. My testimony is on behalf of the Township and in support of the application of Aqua Pennsylvania Wastewater, Inc. ("Aqua") to purchase the Township's wastewater collection and conveyance system (the "System") that provides sanitary wastewater service to various customers in The Township.

Q. What is the purpose of your direct testimony and summarize the key points?

A. The purpose of my testimony is as follows: (1) to provide a description of the System, (2) to describe the anticipated benefits of the sale of the System assets to Aqua under and in accordance with an Asset Purchase Agreement dated January 8, 2021 between the Township and Aqua (the "Proposed Transaction"), and (3) to describe how Township sets its annual rates.

In particular, I will focus on the numerous benefits of the Proposed Transaction that are most important to the Township and the customers who use the System, including:

- The Township can exit the sanitary sewer business and instead focus its resources on other core government functions while ensuring safe, reliable, and professional service at affordable rates for its residents;
- Receipt of sale proceeds will permit the Township to allocate these funds to various projects in the Township;
- Benefits from Aqua's expertise, long-standing capital improvement programs, and its experience in improving systems throughout the Commonwealth to address capital improvements needed over time in the Township;
- Township residents will benefit from enhanced customer service and operational functions through expanded customer service hours, additional payment options (including by phone or online), access to Aqua's Helping Hand low-income assistance program, and Aqua's team of experienced water and wastewater professionals;
- Aqua's capability to make long-term investments in necessary capital improvements to the wastewater system;
- Aqua's proven record of environmental stewardship for the operation of wastewater systems;
- Regulation of the service provided to Township's customers will fall under PUC jurisdiction, which will ensure regulatory oversight, require approval for all rate increases, and provide significant consumer protections; and
- Enabling the Township to reallocate its administration time to focus on other key initiatives of the Township.

Q. Are you sponsoring any Exhibits with your testimony?

A. No.

II. DESCRIPTION OF THE TOWNSHIP AND ITS WASTEWATER SYSTEM

Q. Please provide a general overview of the Township of East Whiteland.

A. The Township of Whiteland was founded in 1704. In 1732, Whiteland was divided into East Whiteland and West Whiteland. The Township is located in Chester County, and consists of approximately 10.9 square miles. The Township is governed by its five-member Board. Presently, there are approximately 14,720 residents in the Township.

Q. Please provide a description of the Township's wastewater system.

A. The Township owns and operates the System, which consist of twelve (12) pump stations, about 329,072 linear feet of gravity and force mains, approximately 1,506 manholes, associated infrastructure and appurtenances, and related land and land rights. The System's pump stations are: Deer Run; Flat Road; Hillbrook Circle; King Road; Lapp Road; Lee Boulevard; Malvern Hunt; Meadowview; Mill Lane; Planebrook Road; Westgate; and Wilburdale.

The System currently provides service to 3,895 residential and commercial customers, and services approximately 7,908 Equivalent Dwelling Units ("EDU"). EDUs are estimated to increase by nearly 2,500 EDUs through 2025.

East Whiteland is responsible for the safe collection and transmission of over 1.062 million gallons of wastewater per day that is generated in southeastern Pennsylvania. The System accepts flows and collects sewer rental fees from the

adjoining municipalities of East Goshen Township, Charlestown Township and Malvern Borough. In turn, the Township pays sewer rental fees to neighboring Tredyffrin Township and East Goshen Township, and a company for conveyance and to the Valley Forge Sewer Authority Wastewater Treatment Plant—where the Township has purchased capacity.

Q. Please provide an overview of any compliance issues with the wastewater system experienced by the Township.

A. The Township currently has an Act 537 plan with the Pennsylvania Department of Environmental Protection (the "DEP") originally dated May 2, 1995, and subsequently amended as recently as March 2020.

From 2013 to 2014, the Township was under a Corrective Action Plan ("CAP") with the DEP that required various improvements to be made to the Mill Lane and Sidley Collection System, the Lee Boulevard Pump Station, and the sanitary sewer on Conestoga Road. Additionally, the Township installed approximately 3,780 linear feet of new piping to replace the existing deteriorating sewer. In 2015, the DEP lifted the CAP once the Township completed the gravity sewer main replacement from the Mill Lane Pump Station to Lee Boulevard. Lastly, in the past five (5) years, the Township has experienced only three (3) sanitary sewer Overflows (SSO's). All were immediately addressed.

III. SALE PROCESS

Q. Please describe the Township's decision process in concluding that a sale of the wastewater system was in the best interest of the Township.

A. The decision to sell the System was the result of deliberate consideration by the Township, its administration and our residents. Beginning in April 2019, we undertook a thorough process, along with capable outside experts, to review the System, assess future costs of capital and revenue requirements, evaluate the ongoing time commitments of Township personnel to address System issues, and carefully consider from various stakeholder points of view the numerous qualitative and quantitative factors that weigh in favor of or against the Township keeping the System. We weighed and balanced issues at numerous public meetings and working sessions that addressed the Proposed Transaction.

Ultimately, the decision to sell resulted from two primary goals. First, the Township wanted to exit the business of providing sanitary sewer service and instead focus on its core governmental functions while simultaneously ensuring that our residents would have safe and reliable service at affordable rates. The System's aging infrastructure will require additional investment over time, which we project will cause increases in rates if the System remains with the Township. Second, the Township desired to address other Township purposes with the sale proceeds.

After the Board made the decision to sell the System based on these considerations, we issued a Request for Qualifications and a Request for Bids. Once we reviewed the responses, we determined that Aqua submitted a bid that was in the best

interest of, and provided the greatest value to, the Township and its residents, and accepted that bid.

Q. Did the Township request public input on the sale?

A. Yes. The deliberative process undertaken by the Township in deciding to sell the System was public and involved an opportunity for public comment at the November 11, 2020 meeting where the Township, its financial advisors, and Aqua all presented the goals and benefits of the Proposed Transaction.

Q. Please describe the process by which the Township solicited bids for the System.

A. On January 31, 2020, the Township released its Request for Qualifications, and received the responses on February 20, 2020. The Township held various management meetings and asset tours throughout mid-July 2020. The Township continued its due diligence through August 2020, and pre-qualified four (4) potential bidders based on industry established criteria for the possible execution of an agreement for the sale of the System. On September 15, 2020, the Township issued its Request for Bids, and received the responses on October 13, 2020.

After receiving the bids, the Board conducted a public meeting on November 11, 2020. At this meeting, the Township Manager and its financial advisors presented to the Board and the public the reasons the Township explored the sale of the System and the benefits that Township residents may realize from the sale, including uses of the sale proceeds. The Township stated that it would discuss the specific uses of the proceeds in the coming nine (9) to twelve (12) months. After careful consideration of the bids and

public participation, the Township decided that the sale was in the best interest of the Township, and the Board unanimously voted to accept Aqua's bid at the November 11, 2020 meeting.

Q. Please describe the process that the Township used to hire a Utility Valuation Expert for the transaction.

A. When the Board approved the sale on November 11, 2020, it also authorized me to seek proposals from and select a Utility Valuation Expert. On May 27, 2021, the Township received a proposal from AUS Consultants ("AUS"), which was accepted that same day after review and consideration. AUS is not affiliated with the Township.

IV. BENEFITS OF THE PROPOSED TRANSACTION

Q. Please describe the benefits of the Proposed Transaction for the Township.

A. The Township will benefit from the Proposed Transaction as it will transfer its wastewater assets to a long-standing and well-run public utility – Aqua. There are two key benefits of the Proposed Transaction to the Township and its residents. The sale will (1) permit the Township to exit the business of providing sanitary sewer service and instead focus on its core governmental functions while simultaneously ensuring that our residents would have safe and reliable service at affordable rates, and (2) the sale proceeds will allow the Township to address improvements and projects throughout the Township and benefit the Township's overall financial position.

First, given the time and economic impact on the Township of dealing with the System, the Proposed Transaction permits the Township to reallocate its time to focus on

other key initiatives of the Township. For example, due to additional investment required for our aging System, we project that wastewater rates will increase in the coming years regardless if the Township retains ownership of the System. As such, we believe that the sale to Aqua provides the best opportunity for the Township to focus its resources on other core government function while ensuring safe, reliable, and professional service at affordable rates for its residents.

Additionally, the Proposed Transaction will provide the Township with the ability to make improvements within the Township. The Township has identified, *inter alia*, the following potential uses for the proceeds: the reduction of debt; development of the Township Campus, including the construction of a new police station, renovation of the current administration building, etc.; and the implementation of roadway projects to improve traffic flow in the Township.

Q. Please describe any further benefits from the Proposed Transaction.

A. The Township will realize many additional benefits from the sale of its wastewater system to Aqua. These benefits include, but are not limited to, the following:

- The Township will benefit from Aqua's capital improvement programs, and its experience in improving and correcting systems with compliance issues.
- Township residents will benefit from enhanced customer service and operational functions through expanded customer service hours, additional payment options (including by phone or online), access to Aqua's Helping Hand low-income assistance program, and Aqua's team of experienced water and wastewater professionals;

- Aqua's capability to make long-term investments in necessary capital improvements to the aging System; and
- Aqua's proven record of environmental stewardship for the operation of wastewater systems.

Q. Do you believe that the Proposed Transaction provides affirmative public benefits and is in the public interest?

A. Yes. For the reasons set forth above, I believe that the Proposed Transaction provides substantial affirmative public benefits and is in the public interest. I urge the Commission to promptly approve the Proposed Transaction.

V. RATES

Q. How does Township set the rates it charges customers for wastewater treatment and collection?

A. Rates are governed by the Township Code. Pursuant to the Code, the Township is currently divided into five sanitary sewer districts based on geographic boundaries. The Board may establish additional districts by ordinance. The applicable rate for any given district is established by resolution of the Board, and may be amended as the Board deems appropriate. While the rates throughout any given district must be uniform, the rates may vary from district to district. Furthermore, the Township establishes distinct sewer rates for any commercial or industrial user whose total quarterly sewage or water consumption exceeds 100,000 gallons, also referred to as "high volume customers."

Q. How frequently does Township adjust rates?

A. Rates have only been increased when necessary. For example, the rates for Districts A through E were last raised in 2016 and the rates for "high volume customers" were last raised in 2018.

VI. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does. However, I reserve the right to file additional testimony at a later date as may be necessary or appropriate.

EXHIBIT X

TESTIMONY OF HAROLD WALKER, III

AQUA STATEMENT NO. 4
Docket No. A-2021-3026132

AQUA PENNSYLVANIA WASTEWATER, INC.
BRYN MAWR, PENNSYLVANIA

DIRECT TESTIMONY
OF
HAROLD WALKER, III

FAIR MARKET VALUE APPRAISAL

EAST WHITELAND TOWNSHIP
WASTEWATER SYSTEM ASSETS

July 2021

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC
Valley Forge, Pennsylvania

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APPENDIX A **A-1**

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Harold Walker III, and my business address is 1010 Adams Avenue, Audubon, Pennsylvania.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") as Manager, Financial Studies.

Q. WOULD YOU DESCRIBE BRIEFLY GANNETT FLEMING?

A. Yes. Since 1915, Gannett Fleming and its predecessors have been helping clients in public pricing policy and related financial matters for managerial purposes, before regulatory commissions and courts of law. Gannett Fleming is registered as a Utility Valuation Expert ("UVE") in the Commonwealth of Pennsylvania. Gannett Fleming is also a registered Municipal Advisor with the SEC and I am a licensed Municipal Advisor Representative (Series 50) with the Municipal Securities Rulemaking Board ("MSRB") and the Financial Industry Regulatory Authority ("FINRA"). Gannett Fleming is a subsidiary of Gannett Fleming, Inc.

Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGER, FINANCIAL STUDIES OF GANNETT FLEMING?

A. I supervise and develop financial and economic studies on behalf of investor-owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline, and telephone utilities, as well as resource-recovery companies.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND YOUR EDUCATIONAL BACKGROUND AND EMPLOYMENT EXPERIENCE?

A. My educational background, business experience and qualifications are provided in a Curriculum Vitae included as **Appendix A**.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION?

A. Yes. I have testified before the Pennsylvania Public Utility Commission ("Commission" or "PUC"), as well as other state regulatory commissions, on many occasions, as shown on **Appendix A**.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony describes and explains the fair market value appraisal of the East Whiteland Township ("Township") wastewater system assets ("Wastewater System") that I and staff, working under my direction, performed. Gannett Fleming was engaged by Aqua Pennsylvania Wastewater, Inc. ("Aqua") to perform this appraisal. Our report is entitled "East Whiteland Township Wastewater System Assets Fair Market Value Appraisal at May 20, 2021" ("Gannett Fleming Appraisal Report"). The appraisal and its report were developed to meet the criteria established in Section 1329 of the Pennsylvania Public

Utility Code ("Code"), 66 Pa. C.S. § 1329 ("Determination of the fair market value of water and wastewater assets").

In its 2015-2016 legislative session, the Pennsylvania Legislature passed Act 12 of 2016 and Governor Wolf signed Act 12 into law adding Section 1329 of the Code which established the legislative requirements facilitating the acquisition of municipal and authority water and wastewater systems by private investor-owned utilities and other entities which are rate-regulated by the Commission. This legislation was intended to facilitate the acquisition of water and wastewater systems in order to facilitate capital improvements to the water and wastewater properties.

QUALIFICATION AS UTILITY VALUATION EXPERT

Q. IS GANNETT FLEMING ON THE COMMISSION'S REGISTRY OF UTILITY VALUATION EXPERTS?

A. Yes. Gannett Fleming is a UVE in the Commonwealth of Pennsylvania approved by the PUC (Utility Code 9919244).

Q. PLEASE DESCRIBE THE PROCESS BY WHICH GANNETT FLEMING WAS PLACED ON THE COMMISSION'S REGISTRY OF UTILITY VALUATION EXPERTS.

A. After passage of Section 1329 of the Code, the Commission established an application process by which the Commission would approve and designate firms to be placed on the Commission's "Registry of Utility Valuation Experts." To be included on the registry, the UVEs must establish their qualifications. Gannett Fleming submitted its original

application and the required proof of experience in September of 2016 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in December of 2016. Renewal of inclusion on the Commission's UVE Registry must be done annually. Gannett Fleming submitted its 2018 renewal application and the required proof of experience in December of 2017 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2018. In 2018, Gannett Fleming submitted its 2019 renewal application and the required proof of experience in December of 2018 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2019. Again in 2019, Gannett Fleming submitted its 2020 renewal application and the required proof of experience in December of 2019 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in January of 2020. In 2020, Gannett Fleming submitted its 2021 renewal application and the required proof of experience in December of 2020 and received confirmation and approval from the Commission of Gannett Fleming's placement on the Commission's UVE Registry in February of 2021.

Q. HAVE YOU EVER HAD YOUR PROFESSIONAL CREDENTIALS REVOKED OR SUSPENDED?

A. No.

Q. DO YOU HAVE SPECIFIC EXPERIENCE WITH THE VALUATION AND APPRAISAL OF UTILITY ASSETS?

A. Yes. In addition to serving as an expert witness on various financial and economic matters before utility regulatory commissions for over 35 years, I have also provided valuations of utility asset services for more than 20 years. In that capacity I have testified on valuation matters before the Commission and sponsored or adopted Gannett Fleming's UVE appraisals under Section 1329 of the Code in the New Garden Township proceeding, the Limerick Township proceeding, the East Bradford Township proceeding, the Mahoning Township (water) proceeding, the Mahoning Township (wastewater) proceeding, the Exeter Township proceeding, the Cheltenham Township proceeding, the East Norriton Township proceeding, the Kane Borough proceeding, the Delaware County Regional Water Quality Control Authority proceeding, the Borough of Royersford proceeding, the Valley Township (water) proceeding, the Valley Township (wastewater) proceeding, the Upper Pottsgrove proceeding, the Lower Makefield Township proceeding and the Borough of Brentwood proceeding. In addition to testifying in Section 1329 proceedings, I have also testified and filed reports on valuation matters in California, Illinois, New Hampshire, and Pennsylvania in courts of law and regulatory commissions.[1]

Q. HAVE YOU OR GANNETT FLEMING OR ANY OF ITS STAFF DERIVED ANY MATERIAL FINANCIAL BENEFIT FROM THE SALE OF THE WASTEWATER SYSTEM'S ASSETS OTHER THAN FEES FOR YOUR SERVICES RENDERED?

[1] An electronic link to the PA PUC Dockets where I have testified in the last two years is provided in response to Section 1329 Application Standard Data Request 15-d. All other testimony relating to valuation is more than two years old and, therefore, is not provided.

A. No.

Q. ARE YOU OR GANNETT FLEMING OR ANY OF ITS STAFF AN IMMEDIATE FAMILY MEMBER OF A DIRECTOR, OFFICER, OR EMPLOYEE OF EITHER AQUA OR THE TOWNSHIP?

A. No.

Q. IS GANNETT FLEMING IN COMPLIANCE WITH APPLICABLE PENNSYLVANIA LAWS?

A. Yes.

Q. DOES GANNETT FLEMING HAVE THE FINANCIAL AND TECHNICAL FITNESS, INCLUDING PROFESSIONAL LICENSES AND TECHNICAL CERTIFICATIONS, TO PERFORM A FAIR MARKET VALUATION OF THE WASTEWATER ASSETS OF THE TOWNSHIP?

A. Yes, to be placed on the Commission's "Registry of Utility Valuation Experts" Gannett Fleming had to establish its qualifications.

Q. ARE YOU AWARE OF ANY FACT, INCLUDING BUT NOT LIMITED TO ANY POTENTIAL CONFLICT OF INTEREST THAT WOULD CAST DOUBT UPON YOUR ABILITY TO PROVIDE A THOROUGH, OBJECTIVE, UNBIASED, AND FAIR VALUATION IN THIS PROCEEDING?

A. No.

Q. HAVE YOU CORRESPONDED WITH SELLER'S UVE WITH REGARD TO ITS RESPECTIVE FAIR MARKET VALUE APPRAISAL OF THE ASSETS AT ISSUE IN THIS CASE?

A. No.

Q. DO YOU HAVE ANY AFFILIATION WITH EITHER THE SELLING UTILITY OR THE ACQUIRING PUBLIC UTILITY?

A. No. Other than the current assignment to provide the subject appraisal, and similar assignments to provide appraisals of other utility systems, I have no business or personal relationships with any party to the proposed acquisition.

FEES PAID FOR UTILITY VALUATION EXPERT SERVICES

Q. WHAT IS THE GANNETT FLEMING FEE ARRANGEMENT TO DELIVER THE APPRAISAL?

A. Gannett Fleming is being compensated on an hourly basis. Our fee arrangement is included as Exhibit S1 to Aqua's Application. True, correct, and complete copies of Gannett Fleming's invoices to Aqua for this matter, as of the date of Aqua's Application filing, are also included in Exhibit S1.

Q. WHAT IS THE ESTIMATED TOTAL COMPENSATION THAT GANNETT FLEMING WILL RECEIVE FOR ITS SERVICES IN THIS MATTER?

A. The estimated total compensation that Gannett Fleming will receive for its services in this matter as of the date of Aqua's Application filing is $32,000, which represents approximately 0.06% of the fair market valuation. I estimate our fee will total $75,000 if this proceeding is fully litigated, which represents approximately 0.14% of the fair market valuation.

Q. PLEASE DESCRIBE THE PROCESS BY WHICH THIS COMPENSATION WAS NEGOTIATED?

A. Gannett Fleming submitted a proposal to provide the required services in May 2021, which Aqua accepted.

Q. ARE THESE FEES CONSISTENT WITH COMPENSATION RECEIVED FOR SIMILAR SERVICES PROVIDED TO OTHER CLIENTS?

A. Yes.

Q. WILL GANNETT FLEMING RECEIVE ITS FEE REGARDLESS OF WHETHER THE COMMISSION APPROVES THE PROPOSED TRANSACTION OR WHETHER IT CLOSES?

A. Yes. 66 Pa. C.S. § 1329(a)(3) mandates that I comply with the Uniform Standards of Professional Appraisal Practice ("USPAP") when developing an appraisal. Under the USPAP, I cannot perform the appraisal with bias, and acceptance of a fee contingent on a particular outcome, like closing or Commission approval, would violate the Ethics Rule.

Q. ARE YOU ADVOCATING FOR ANY PARTY OR OUTCOME?

A. No. The Ethics Rule of the USPAP, applicable here pursuant to 66 Pa. C.S. § 1329(a)(3), requires that I perform the appraisal with impartiality, objectivity, and independence, and without accommodation of personal interests. I have not performed this appraisal assignment with bias, and I am not advocating the cause or interest of any party or issue. Further, I have not accepted this or any assignment that includes the reporting of predetermined opinions and conclusions.

FAIR MARKET VALUATION OF WASTEWATER SYSTEM ASSETS

Q. PLEASE IDENTIFY EXHIBIT Q TO AQUA'S APPLICATION IN THIS PROCEEDING?

A. Exhibit Q of Aqua's application includes Gannett Fleming's appraisal report dated June 25, 2021.

Q. HOW DO YOU RECOGNIZE IT?

A. I personally prepared, and also directed and supervised Gannett Fleming personnel in preparing, the report, and recognize it as Gannett Fleming's work product.

Q. IS EXHIBIT Q A TRUE, COMPLETE, AND ACCURATE COPY OF THE GANNETT FLEMING APPRAISAL REPORT?

A. Yes, and I incorporate it into my direct testimony as if set forth in its entirety.

Q. PLEASE DESCRIBE THE PROCESS BY WHICH YOU PREPARED THE GANNETT FLEMING APPRAISAL REPORT.

A. In accordance with Section 1329 of the Code, Aqua engaged Gannett Fleming to prepare the fair market valuation report of the Wastewater System. The Township/Aqua provided financial statements and budget statements regarding the Wastewater System and a copy of the Engineering Assessment[2] as required by Section 1329(a)(4). In addition, Gannett Fleming reviewed the assets, reviewed additional information provided by the Township/Aqua and conducted additional research regarding the Township and the Wastewater System, including a site visit. After those activities and data gathering, we developed the appraisal.

The appraisal contains a letter of transmittal; a table of contents detailing all the sections of the report and work papers; and a narrative report explaining our methodology and conclusions.

The intent of the valuation report is to provide the appraisal results, as well as the entire appraisal work file, in sufficient detail to satisfy the parties' and Commission's review requirements of Section 1329 and the Commission's Final Implementation Order, *In re: Implementation of Section 1329 of the Public Utility Code*, Docket No. M-2016-2543193 (Order Entered October 27, 2016), and Final Supplemental Implementation Order, *In re: Implementation of Section 1329 of the Public Utility Code*, Docket No. M-2016-2543193 (Order Entered February 28, 2019). In addition to a copy of the appraisal report, I have provided supporting work papers for the appraisal report in Exhibit Q of Aqua's Application. The relevant work papers have also been submitted to the

[2] "East Whiteland Township Sewerage Facilities Engineering Assessment and Original Cost" and related files prepared by Pennoni Associates Inc.

Commission and provided to the public advocates in **CONFIDENTIAL** live electronic format.

Q. IS THERE ANYTHING THAT YOU WOULD CHANGE IN THE GANNETT FLEMING APPRAISAL REPORT SINCE ITS PREPARATION?

A. No.

Q. WAS THE FAIR MARKET VALUATION OF THE WASTEWATER SYSTEM ASSETS DETERMINED IN COMPLIANCE WITH USPAP?

A. Yes. Our fair market valuation was determined in compliance with USPAP 2020-2021 Edition.

Q. DID YOU EMPLOY THE COST, MARKET, AND INCOME APPROACHES IN PREPARING YOUR VALUATION?

A. Yes.

Q. DID YOU INCLUDE ANY EXTRAORDINARY ASSUMPTIONS OR HYPOTHETICAL CONDITIONS IN DEVELOPING YOUR APPRAISAL?

A. No.

Q. DID YOU INCLUDE ANY LIMITING CONDITIONS IN DEVELOPING YOUR APPRAISAL?

A. Yes. We accepted all information and data provided by the Township/Aqua as it pertains to this assignment "as is" after a limited review. That is, we neither audited nor verified any data, engineering assessment, financial record or operating data provided for this assignment. We assumed all title to all assets included in the appraisal is good and marketable and no hazardous conditions or materials exist which could affect the assets.

Q. PLEASE SUMMARIZE YOUR RESULTS OF THE APPLICATION OF THE COST, MARKET, AND INCOME APPROACHES.

A. Please see the below table:

Approach	Indicated Value	Weight	Weighted Value
Cost Approach	$59,118,924	33.33%	$19,704,337
Market Approach	46,741,589	33.34%	15,583,646
Income Approach	61,147,544	33.33%	20,380,476
		100%	$55,668,459
Conclusion			**$55,668,000**

Q. PLEASE FURTHER DESCRIBE EACH APPROACH IN THE DEVELOPMENT OF YOUR APPRAISAL.

A. We developed our appraisal utilizing the cost, income, and market approaches as required by USPAP and Section 1329 of the Code. We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach. These approaches are summarized below.

Cost Approach. The cost approach utilized the original cost method and replacement cost method. The original cost method determined the original cost of the assets when "new" or first constructed based on the information contained in the Engineering Assessment. The original cost new inventory was then trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the trended cost, or reproduction cost, and was converted to replacement cost new after obsolescence was factored. The calculated accrued depreciation was determined for the original cost new and for the replacement cost new as of May 20, 2021. The calculated accrued depreciation was based on the assets' attained ages, and the service life of the assets. The cost basis of depreciable assets was reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed. All land and land rights were valued at original cost.

Income Approach. The income approach utilized the capitalization of earning (cash flow) method and two discounted cash flow methods. The capitalization of earning method converted a single base economic income number to a value by dividing it by a capitalization rate. The discounted cash flow methods used estimates of future debt free net cash flow and discounted them to arrive at a present value or price of the cash flows.

The capitalization rate and the discount rate were developed based on market debt and equity rates at the appraisal date. The discounted cash flow methods reflected two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model (market multiple discounted cash flow method) and a capitalization of terminal value model (capitalization discounted cash flow method).[3]

Market Approach. The market approach was developed based on the market multiples method and the selected transaction method. The market multiples method was based on the market price data of publicly traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publicly traded corporations was used to calculate the market multiples for the comparable publicly traded corporations at the appraisal date. The selected transactions method used certain public information relating to the purchase or sale of businesses involved in the same or a similar business line as the Wastewater System to calculated market multiples at the time of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied by the corresponding Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

Q. PLEASE STATE THE NUMBER OF CUSTOMERS YOU USED IN DEVELOPING YOUR APPRAISAL AND THE SOURCE OF THAT NUMBER.

A. The number of customers I used was 3,895. This customer count number was provided by the Township/Aqua.

[3] EBIT is earnings before interest and taxes and EBITDA is earnings before interest, tax, depreciation, and amortization.

Q. DID YOU MAKE ANY UPDATES TO YOUR APPRAISAL AFTER IT WAS SUBMITTED TO THE SELLER/BUYER, AND IF SO, WHAT WAS THE UPDATE, WHEN WAS IT MADE, AND WHY WAS IT NECESSARY?

A. No.

Q. DID YOU PERFORM AN ON-SITE INSPECTION OF THE WASTEWATER SYSTEM?

A. Yes. Gannett Fleming viewed the wastewater system assets on June 15, 2021.

Q. DID YOU RELY UPON A LICENSED ENGINEER'S ASSESSMENT OF THE TANGIBLE ASSETS OF THE WASTEWATER SYSTEM IN PERFORMING YOUR VALUATION?

A. Yes. The Township/Aqua provided a copy of the Engineering Assessment and this information was incorporated into our Cost Approach in our appraisal.

Cost Approach

Q. DID YOU USE THE REPRODUCTION COST OR THE REPLACEMENT COST IN YOUR COST APPROACH?

A. We utilized the original cost new ("OCN") to calculate the trended original cost ("TOC") measures, or the reproduction cost of the depreciable assets by multiplying the OCN by specific cost indices. We converted reproduction cost new to replacement cost new after factoring in obsolescence. We used the TOC method because the mandated use of the

Engineering Assessment's original cost essentially dictates the use of TOC over the reproduction cost or the replacement cost methods.

Q. WHAT INDEX, IF ANY, DID YOU USE FOR THAT METHOD?

A. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new.

Q. UNDER YOUR APPLICATION OF THE COST APPROACH WHAT ASSETS DID YOU VALUE OR TREND DIFFERENTLY FROM OTHER ASSETS AND WHY WAS THAT NECESSARY?

A. We did not trend land and land rights. That is, all land and land rights were valued at original costs. Plant accounts were trended mainly using the Handy Whitman plant account indices. In limited instances, when Handy Whitman plant account indices were not available, we used the U.S. Bureau of Labor Statistics, Producer Price Index which best matches the assets being trended.[4]

Q. UNDER YOUR APPLICATION OF THE COST APPROACH, WHAT YEAR-END DATE DID YOU USE FOR CALCULATING THE DEPRECIATION RESERVE?

A. We used the date of May 20, 2021.

[4] The plant accounts which Handy Whitman indices were not available included: 390.70 Computers; 391.70 Transportation Equipment; and 395.70 Power Operated Equipment.

Q. HOW DID YOU DETERMINE THE DEPRECIATION PARAMETERS OF SURVIVAL/RETIREMENT CHARACTERISTICS AND SERVICE LIVES FOR THE UTILITY PROPERTY UNDER THE COST APPROACH?

A. We determined the average service lives of depreciable assets based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

Q. WHY ARE THOSE PARAMETERS APPROPRIATE?

A. We believe our average service lives of depreciable assets are appropriate based on our experience of having determined average service lives for numerous other water and wastewater utilities and given the fact they resemble those used by other Pennsylvania wastewater companies.

Income Approach

Q. REGARDING YOUR APPLICATION OF THE INCOME APPROACH, WHAT METHOD DID YOU USE TO DETERMINE THE INCOME APPROACH RESULT?

A. We used the Market Multiple Discounted Cash Flow Method ("Market Multiple DCF"), and Capitalization Discounted Cash Flow Method ("Capitalization DCF") to determine the Income Approach result. We refer to the Market Multiple DCF and the Capitalization DCF collectively as the DCF method. We used the capitalization of earning method to estimate value under current ownership and operations. The capitalization of earning method was not used to determine the Income Approach result.

Q. WHAT ASSUMPTIONS DID YOU EMPLOY TO DEVELOP YOUR INCOME APPROACH RESULT?

A. All general assumptions are listed on page 3 of Exhibit 12, and page 7 of Exhibits 13, 14, 15 and 16.[5]

Q. DID YOU USE AQUA'S CAPITALIZATION RATE OR THEIR DISCOUNT RATE IN YOUR INCOME APPROACH TO VALUATION?

A. No. Use of Aqua's capitalization rate or their discount rate in an income approach to valuation is not consistent with the standard of value of fair market value because the "buyer" under the standard of value of fair market value is not a specific entity (i.e., Aqua), but rather a hypothetical buyer. Use of Aqua's capitalization rate or their discount rate in an income approach to valuation is only used under the standard of value of investment value.[6] In accordance with Section 1329 of the Code, the standard of value is fair market value, not investment value.

Q. PLEASE EXPLAIN THE CAPITALIZATION RATE AND THE DISCOUNT RATE USED IN YOUR INCOME APPROACH TO VALUATION.

A. The capitalization rate used in the capitalization of earnings method and the discount rate used in the DCF method are related. The discount rate is the opportunity cost rate related to the risk of the cash flows. The capitalization rate is simply the discount rate minus the

[5] Exhibit references herein are to the Exhibits in the Gannett Fleming Appraisal Report.

[6] Pratt, Shannon P. "Defining Standards of Value." Valuation 34, no. 2, June 1989. http://www.appraisers.org/docs/default-source/college-of-fellows-articles/defining-standards-of-value.pdf.

expected growth rate. If no growth is assumed, the capitalization rate is equal to the discount rate.

As explained previously, under the standard of value of fair market value the "buyer" is not a specific entity (i.e., Aqua), but rather a hypothetical buyer. Accordingly, the hypothetical bidder/buyer may range from large regional municipal authorities ("MUNI") to investor-owned utilities ("IOU"). For a MUNI, the appropriate discount rate is the current municipal revenue bond yield on May 20, 2021 of 3.09%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on May 20, 2021 and ranges from 6.57% to 7.79%.[7]

For a MUNI, the appropriate discount rate is the current municipal revenue bond yield, 3.09%, because debt is the only major source of capital available to finance an acquisition (developed on Exhibit 20, pages 2-5). Although a MUNI likely carries equity on their books (balance sheet), all existing equity is already invested in other assets and therefore, cannot be used to finance an acquisition.[8] For valuation purposes, an embedded cost of debt, or the historical cost of all debt issuances outstanding is not used because this capital is already invested in assets. Whereas the marginal cost of debt, 3.09%, at the valuation date is used in accordance with accepted valuation practice and used for market valuation purposes.

As discussed previously, for an IOU, the appropriate discount rate is the net of tax overall cost of capital (weighted average cost of capital), 6.57% to 7.79% (Exhibit 20,

[7] Both the American Society of Appraisers, ASA Business Valuation Standards, 2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition: "Weighted Average Cost of Capital (WACC). The cost of capital (discount rate) is determined by the weighted average, at market values, of the cost of all financing sources in the business enterprise's capital structure."

[8] For example, when a municipal or government entity, such as the Commonwealth of Pennsylvania, finances construction of a road or bridge, they only consider the marginal debt cost despite having "equity" reflected on their books (balance sheet).

pages 2-8). In this instance, the net of tax overall cost of capital (weighted average cost of capital) is based on the Comparable Group's market value capital structure of 23.9% debt and 76.1% equity, a market cost of debt of 3.37% and a range of market cost of equity of 7.87% to 9.47% based on the Comparable Group's market value CAPM on May 20, 2021.[9] The Comparable Group's net of tax overall cost of capital (weighted average cost of capital) is used as a proxy to conform to the "hypothetical buyer" or "hypothetical seller" of fair market valuation. Use of the buyer's net of tax overall cost of capital (weighted average cost of capital) would produce an investment valuation, not a fair market valuation. The supporting documentation for the development of the MUNI and IOU discount rates is shown on pages 2 to 8 of Exhibit 20.

Q. WHY IS THE NET OF TAX OVERALL COST OF CAPITAL APPROPRIATE TO USE?

A. The net of tax overall cost of capital is appropriate because the cash flows being discounted are after tax, or net of tax. The income approach uses estimates of future free cash flow and discounts them to arrive at a present value or price of the cash flows. Generally, this analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty years along with a terminal value. In each year, the Debt Free Net Cash Flow is comprised of projected EBIT, minus income taxes, plus projected depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures.

[9] For an example of the net of tax overall cost of capital, see http://www.investinganswers.com/financial-dictionary/financial-statement-analysis/weighted-average-cost-capital-wacc-2905. Also see http://www.wallstreetmojo.com/weighted-average-cost-capital-wacc/, or http://accountingexplained.com/misc/corporate-finance/wacc.

Q. WHAT IS THE BASIS FOR THE GROWTH RATE USED TO CALCULATE THE CAPITALIZATION RATE USED IN THE INCOME APPROACH?

A. The growth rate used to calculate the capitalization rate reflects the growth in the Debt Free Net Cash Flow after the terminal value year. For the Township, the growth rate of 0.2% was used based on the current level of rates and the unique population growth projected for the Wastewater System. Under both MUNI and IOU ownership a growth rate of 0.2% was used based on the projected growth in population (1.6%), projected inflation (2.5%) and the actual growth in the Debt Free Net Cash Flow in the years prior to the terminal value year. Under MUNI ownership the average growth in the Debt Free Net Cash Flow for the last two years prior to the terminal value year was 0.6% and 1.0% under IOU ownership. A growth of 0.2% was deemed reasonable based on the aforesaid.

Q. WHAT UTILITY EARNINGS REPORT WAS USED TO CREATE THE CAPITAL STRUCTURE USED IN YOUR APPRAISAL?

A. As documented previously in footnotes 6 and 8, book value capitalization is not used in fair market valuation determination. Therefore, we did not use the 6.33% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation because a "hypothetical buyer" cannot finance an acquisition at such a rate and, therefore, its use would provide a meaningless result. The Comparable Group's 6.33% DSIC related cost was determined based the Comparable Group's book value capital structure of 47.4% debt and 52.6% equity, a cost of debt of 3.37% and a DSIC cost of equity of 9.85% based on the December 2020 Earnings Report (public meeting May

6, 2021). However, we note the 6.33% Comparable Group's DSIC related net of tax overall cost of capital falls below the 6.57% to 7.79% range of discount rates used in our Income Approach.

If we used the 6.33% Comparable Group's DSIC related net of tax overall cost of capital in our valuation shown on Exhibit 16, the results of the Capitalization DCF would show a value for the Wastewater System of $55.5 million. Further, the results of the Market Multiple DCF would show a value of $69.6 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicates a value of $62.8 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $67.1 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of $62.8 million. Collectively, the DCF method indicates a value of $65.0 million when DSIC is considered.

Q. IF YOU USED A TERMINAL VALUE IN YOUR DISCOUNTED CASH FLOW ANALYSIS WHAT IS THE NUMBER OF YEARS OVER WHICH THE CASH FLOWS ARE CONSIDERED?

A. The use of a "terminal value" in a Discounted Cash Flow analysis is reasonable and is in accordance with accepted valuation practice. Simply put, the "terminal value" is a mathematical shortcut to avoid having to show and/or calculate annual Debt Free Net Cash Flows for hundreds of time periods, or hundreds of years. Within the Discounted Cash Flow analysis, the "terminal value" is simply a point in time in which the growth in annual Debt Free Net Cash Flows changes from multiple growth rates to a constant growth rate. For example, in our Discounted Cash Flow analysis, the growth rate of annual Debt Free

Net Cash Flows during time periods 1 through 24 changes multiple times due to the various general assumptions listed in the Gannett Fleming Appraisal Report. After time period 24, the growth in annual Debt Free Net Cash Flows is a constant growth rate. Accordingly, period 24, or year 24, is the "terminal value" year in our DCF method.

Market Approach

Q. REGARDING YOUR APPLICATION OF THE MARKET APPROACH, WHAT METHODS DID YOU USE TO DETERMINE THE MARKET APPROACH RESULT?

A. I used the market multiples method and the selected transaction method.

Q. WHAT ASSUMPTIONS, ANALYSES, AND/OR ADJUSTMENTS DID YOU MAKE UNDER EACH METHOD?

A. The general assumptions used for the market multiples method are listed on page 1 of Exhibit 17. No assumptions were made under the selected transaction method.

Q. REGARDING YOUR APPLICATION OF THE MARKET MULTIPLES METHOD, DID YOU LIMIT YOUR PROXY GROUP USED FOR CALCULATING MARKET VALUE TO ONLY COMPANIES WHICH ENGAGE IN PENNSYLVANIA FAIR MARKET VALUE ACQUISITIONS?

A. No.

Q. REGARDING YOUR APPLICATION OF THE COMPARABLE SALES USED TO ESTABLISH THE VALUATION, DID YOU LIMIT THE TRANSACTIONS SELECTED TO THOSE THAT YOU PREVIOUSLY APPRAISED?

A. No.

Q. PLEASE STATE THE COMPARABLE TRANSACTIONS YOU USED IN DEVELOPING YOUR MARKET APPROACH.

A. Please see Aqua's Application Exhibit Q (the Gannett Fleming appraisal), Exhibit 18, pages 2 and 3, which shows that we reviewed the following transactions[10] in developing the selected transactions method:

- Sale of the City of McKeesport Wastewater system to Pennsylvania-American Water Company in 2017.
- Sale of New Garden Township Sewer Authority to Aqua Pennsylvania in 2017.
- Sale of Limerick Township Wastewater system to Aqua Pennsylvania in 2017.
- Sale of East Bradford Township Wastewater system to Aqua Pennsylvania in 2018.
- Sale of Mahoning Township Water system to Suez Water Pennsylvania in 2018.
- Sale of Mahoning Township Wastewater system to Suez Water Pennsylvania in 2018.
- Sale of Sadsbury Township Wastewater system to Pennsylvania-American Water Company in 2018.

[10] The years listed indicate when the applicant sought approval or when the Commission approved each of the transactions.

- Sale of Exeter Township Wastewater system to Pennsylvania-American Water Company in 2019.
- Sale of Steelton Borough Authority Water system to Pennsylvania-American Water Company in 2019.
- Sale of Cheltenham Township Wastewater system to Aqua Pennsylvania in 2019.
- Sale of East Norriton Township Wastewater system to Aqua Pennsylvania in 2019.
- Sale of Kane Borough Authority Water system to Pennsylvania-American Water Company in 2020.
- Sale of Royersford Borough Authority Water system to Pennsylvania-American Water Company in 2021.

As a check on the transactions I studied, that are listed above, I also reviewed the purchase of Connecticut Water Service, Inc. by SJW Group (Exhibit 18 page 4) which was announced in 2018 and approved in 2019.

Q. WHAT WERE THE RESULTS OF THE MARKET APPROACH ANALYSIS YOU PERFORMED?

A. The results of the market multiples method are shown on page 1 of Exhibit 17 and the results of the selected transactions method are shown on page 1 of Exhibit 18. The conclusion regarding the Market Approach analysis is explained on page 42 of our appraisal.

CONCLUSION

Q. WHAT IS YOUR CONCLUSION REGARDING THE FAIR MARKET VALUE OF THE WASTEWATER SYSTEM'S ASSETS TO BE PURCHASED BY AQUA?

A. Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

Based on our analysis, as described in our appraisal report, the estimate of the fair market value of the Wastewater System as of May 20, 2021 is $55,668,000 (rounded). The results of the analyses and calculations are summarized in Table 1 for the Wastewater System as follows:

Valuation Approach	Indicated Value
Cost Approach	$59,118,924
Income Approach	61,147,544
Market Approach	46,741,589

Table 1

We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our

Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach.

We considered the results of each approach as an indicator of value individually, or as independent indicators of value. Therefore, all three approaches to valuation were given consideration in arriving at our estimate of the fair market value conclusion. In our opinion, each of the valuation approaches utilized in our appraisal is relevant. Accordingly, we assign an equal weight to the result of each approach. Our conclusion regarding the fair market value can be described by the weightings given the specific results of the three approaches to valuation. The results of our analyses, shown on Exhibit 19, indicate a range of value for the Wastewater System of $46.7 million to $61.1 million and collectively indicate a fair market value of $55,668,000 for the Wastewater System.

Q. GENERALLY SPEAKING, IS IT COMMON FOR DIFFERENT APPRAISERS TO REACH VARYING OPINIONS OF FAIR MARKET VALUE?

A. Yes. I do not think the underlying results of the models employed for valuation purposes are ever the same from one appraiser to another appraiser. Further, the conclusion of value from one appraiser to another appraiser usually differs as well. I believe these are some of the reasons the results of the conclusion of value from two different UVEs are averaged under Section 1329, 66 Pa. C.S. § 1329.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. However, I reserve the right to supplement my testimony as additional issues or facts arise during the course of this proceeding.

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience, and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services and educating Gannett Fleming personnel and Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal. His column was the Financial News column and focused mainly on the natural gas industry.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 26 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: fair market value, the taking of natural resources, appropriate capital structure and fixed capital cost rates, depreciation, fair rate of return, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, benchmarking, and fair value. The following tabulation provides a listing of the electric power, natural gas

distribution, telephone, wastewater, and water service utility cases in which he has been involved as a witness.

Client	Docket No.	
Alpena Power Company	U-10020	
Armstrong Telephone Company - Northern Division	92-0884-T-42T	
Armstrong Telephone Company - Northern Division	95-0571-T-42T	
Artesian Water Company, Inc.	90 10	
Artesian Water Company, Inc.	06 158	
Aqua Illinois Consolidated Water Divisions and Consolidated Sewer Divisions	11-0436	
Aqua Illinois Hawthorn Woods Wastewater Division	07 0620/07 0621/08 0067	
Aqua Illinois Hawthorn Woods Water Division	07 0620/07 0621/08 0067	
Aqua Illinois Kankakee Water Division	10-0194	
Aqua Illinois Kankakee Water Division	14-0419	
Aqua Illinois Vermilion Division	07 0620/07 0621/08 0067	
Aqua Illinois Willowbrook Wastewater Division	07 0620/07 0621/08 0067	
Aqua Illinois Willowbrook Water Division	07 0620/07 0621/08 0067	
Aqua Pennsylvania Wastewater Inc	A-2016-2580061	*
Aqua Pennsylvania Wastewater Inc	A-2017-2605434	*
Aqua Pennsylvania Wastewater Inc	A-2018-3001582	*
Aqua Pennsylvania Wastewater Inc	A-2019-3008491	*
Aqua Pennsylvania Wastewater Inc	A-2019-3009052	*
Aqua Pennsylvania Wastewater Inc	A-2019-3015173	*
Aqua Pennsylvania Wastewater Inc	A-2021-3024267	*
Aqua Virginia - Alpha Water Corporation	Pue-2009-00059	
Aqua Virginia - Blue Ridge Utility Company, Inc.	Pue-2009-00059	
Aqua Virginia - Caroline Utilities, Inc. (Wastewater)	Pue-2009-00059	
Aqua Virginia - Caroline Utilities, Inc. (Water)	Pue-2009-00059	
Aqua Virginia - Earlysville Forest Water Company	Pue-2009-00059	
Aqua Virginia - Heritage Homes of Virginia	Pue-2009-00059	
Aqua Virginia - Indian River Water Company	Pue-2009-00059	
Aqua Virginia - James River Service Corp.	Pue-2009-00059	

Aqua Virginia - Lake Holiday Utilities, Inc. (Wastewater)	Pue-2009-00059	
Aqua Virginia - Lake Holiday Utilities, Inc. (Water)	Pue-2009-00059	
Aqua Virginia - Lake Monticello Services Co. (Wastewater)	Pue-2009-00059	
Aqua Virginia - Lake Monticello Services Co. (Water)	Pue-2009-00059	
Aqua Virginia - Lake Shawnee	Pue-2009-00059	
Aqua Virginia - Land'or Utility Company (Wastewater)	Pue-2009-00059	
Aqua Virginia - Land'or Utility Company (Water)	Pue-2009-00059	
Aqua Virginia - Mountainview Water Company, Inc.	Pue-2009-00059	
Aqua Virginia - Powhatan Water Works, Inc.	Pue-2009-00059	
Aqua Virginia - Rainbow Forest Water Corporation	Pue-2009-00059	
Aqua Virginia - Shawnee Land	Pue-2009-00059	
Aqua Virginia - Sydnor Water Corporation	Pue-2009-00059	
Aqua Virginia - Water Distributors, Inc.	Pue-2009-00059	
Berkshire Gas Company	18-40	
Borough of Brentwood	A-2021-3024058	*
Borough of Hanover	R-2009-2106908	
Borough of Hanover	R-2012-2311725	
Borough of Hanover	R-2014-242830	
Borough of Royersford	A-2020-3019634	*
Chaparral City Water Company	W 02113a 04 0616	
California-American Water Company	CIVCV156413	*
Connecticut-American Water Company	99-08-32	
Connecticut Water Company	06 07 08	
Citizens Utilities Company Colorado Gas Division	-	
Citizens Utilities Company Vermont Electric Division	5426	
Citizens Utilities Home Water Company	R 901664	
Citizens Utilities Water Company of Pennsylvania	R 901663	
City of Bethlehem - Bureau of Water	R-00984375	
City of Bethlehem - Bureau of Water	R 00072492	
City of Bethlehem - Bureau of Water	R-2013-2390244	
City of Bethlehem - Bureau of Water	R-2020-3020256	

City of Dubois – Bureau of Water	R-2013-2350509	
City of Dubois – Bureau of Water	R-2016-2554150	
City of Lancaster Sewer Fund	R-00005109	
City of Lancaster Sewer Fund	R-00049862	
City of Lancaster Sewer Fund	R-2012-2310366	
City of Lancaster Sewer Fund	R-2019-3010955	
City of Lancaster Sewer Fund	R-2019-3010955	
City of Lancaster Water Fund	R-00984567	
City of Lancaster Water Fund	R-00016114	
City of Lancaster Water Fund	R 00051167	
City of Lancaster Water Fund	R-2010-2179103	
City of Lancaster Water Fund	R-2014-2418872	
Coastland Corporation	15-cvs-216	
Consumers Pennsylvania Water Company		
Roaring Creek Division	R-00973869	
Consumers Pennsylvania Water Company		
Shenango Valley Division	R-00973972	
Country Knolls Water Works, Inc.	90 W 0458	
East Resources, Inc. - West Virginia Utility	06 0445 G 42T	
Elizabethtown Water Company	WR06030257	
Forest Park, Inc.	19-W-0168 & 19-W-0269	
Hampton Water Works Company	DW 99-057	
Hidden Valley Utility Services, LP	R-2018-3001306	
Hidden Valley Utility Services, LP	R-2018-3001307	
Illinois American Water Company	16-0093	
Indian Rock Water Company	R-911971	
Indiana Natural Gas Corporation	38891	
Jamaica Water Supply Company	-	
Kane Borough Authority	A-2019-3014248	*
Kentucky American Water Company, Inc.	2007 00134	
Middlesex Water Company	WR 89030266J	
Millcreek Township Water Authority	55 198 Y 00021 11	*
Missouri-American Water Company	WR 2000-281	
Missouri-American Water Company	SR 2000-282	
Mount Holly Water Company	WR06030257	
Nevada Power Company d/b/a NV Energy	20-06003	
New Jersey American Water Company	WR 89080702J	

New Jersey American Water Company	WR 90090950J	
New Jersey American Water Company	WR 03070511	
New Jersey American Water Company	WR-06030257	
New Jersey American Water Company	WR08010020	
New Jersey American Water Company	WR10040260	
New Jersey American Water Company	WR11070460	
New Jersey American Water Company	WR15010035	
New Jersey American Water Company	WR17090985	
New Jersey American Water Company	WR19121516	
New Jersey Natural Gas Company	GR19030420	
Newtown Artesian Water Company	R-911977	
Newtown Artesian Water Company	R-00943157	
Newtown Artesian Water Company	R-2009-2117550	
Newtown Artesian Water Company	R-2011-2230259	
Newtown Artesian Water Company	R-2017-2624240	
Newtown Artesian Water Company	R-2019-3006904	
North Maine Utilities	14-0396	*
Northern Indiana Fuel & Light Company	38770	
Oklahoma Natural Gas Company	PUD-940000477	
Palmetto Utilities, Inc.	2020-281-S	
Palmetto Wastewater Reclamation, LLC	2018-82-S	
Pennichuck Water Works, Inc.	DW 04 048	*
Pennichuck Water Works, Inc.	DW 06 073	
Pennichuck Water Works, Inc.	DW 08 073	
Pennsylvania Gas & Water Company (Gas)	R-891261	
Pennsylvania Gas & Water Co. (Water)	R 901726	
Pennsylvania Gas & Water Co. (Water)	R-911966	
Pennsylvania Gas & Water Co. (Water)	R-22404	
Pennsylvania Gas & Water Co. (Water)	R-00922482	
Pennsylvania Gas & Water Co. (Water)	R-00932667	
Philadelphia Gas Works	R-2020-3017206	
Public Service Company of North Carolina, Inc.	G-5, Sub 565	
Public Service Electric and Gas Company	ER181010029	
Public Service Electric and Gas Company	GR18010030	
Presque Isle Harbor Water Company	U-9702	
Sierra Pacific Power Company d/b/a NV Energy	19-06002	
St. Louis County Water Company	WR-2000-844	

Suez Water Delaware, Inc.	19-0615	
Suez Water Idaho, Inc.	SUZ-W-20-02	
Suez Water New Jersey, Inc.	WR18050593	
Suez Water New Jersey, Inc.	WR20110729	
Suez Water Owego-Nichols, Inc.	17-W-0528	
Suez Water Pennsylvania, Inc.	R-2018-3000834	
Suez Water Pennsylvania, Inc.	A-2018-3003519	*
Suez Water Pennsylvania, Inc.	A-2018-3003517	*
Suez Water Rhode Island, Inc.	Docket No. 4800	
Suez Water Owego-Nichols, Inc.	19-W-0168 & 19-W-0269	
Suez Water New York, Inc.	19-W-0168 & 19-W-0269	
Suez Westchester, Inc.	19-W-0168 & 19-W-0269	
Town of North East Water Fund	9190	
Township of Exeter	A-2018-3004933	*
United Water New Rochelle	W-95-W-1168	
United Water Toms River	WR-95050219	
Upper Pottsgrove Township	A-2020-3021460	*
Valley Township (water)	A-2020-3019859	*
Valley Township (wastewater)	A-2020-3020178	*
Valley Water Systems, Inc.	06 10 07	
Virginia American Water Company	PUR-2018-00175	
West Virginia-American Water Company	15-0676-W-42T	
West Virginia-American Water Company	15-0675-S-42T	
Wilmington Suburban Water Corporation	94-149	
York Water Company	R-901813	
York Water Company	R-922168	
York Water Company	R-943053	
York Water Company	R-963619	
York Water Company	R-994605	
York Water Company	R-00016236	
Young Brothers, LLC	2019-0117	

* - Testimony related to valuation

EXHIBIT Y

TESTIMONY OF JEROME C. WEINERT

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

AQUA PENNSYLVANIA WASTEWATER, INC.

DOCKET NO. A-2021-3026132

AQUA STATEMENT NO. 5

DIRECT TESTIMONY OF JEROME C. WEINERT, PE, ASA, CDP UTILITY VALUATION EXPERT SELECTED BY EAST WHITELAND TOWNSHIP, PENNSYLVANIA

Date: July 2021

DIRECT TESTIMONY OF JEROME C. WEINERT

Q. Please state your name, business address, and occupation.

A. My name is Jerome C. Weinert. My business address is 8555 West Forest Home Avenue, Suite 201, Greenfield, WI 53228. I am a Principal and Director of AUS Consultants, Inc. ("AUS Consultants"). This testimony was prepared by me.

Q. Please describe your qualifications and indicate if you are registered as a Utility Valuation Expert with the Pennsylvania Public Utility Commission.

A. My curriculum vitae **("**CV") is attached to my report and this testimony. AUS Consultants is a registered Utility Valuation Expert with the Pennsylvania Public Utility Commission ("PUC"). We obtained that registration in 2016 and were informed of our latest renewal by the PUC's Secretary on January 12, 2021.

Q. What is the purpose of your testimony?

A. This direct testimony provides clarification and explanation of the appraisal I provided to East Whiteland Township, Pennsylvania ("EWT"), the Selling Utility pursuant to 66 Pa. C.S. § 1329(a)(5) and in accordance with the Uniform Standards of Professional Appraisal Practice ("USPAP") (2020-2021 Edition).

Q. Are you advocating for any party or outcome?

A. No. The Ethics Rule of the USPAP, applicable here pursuant to 66 Pa. C.S. § 1329(a)(3), requires that I perform the appraisal with impartiality, objectivity, and independence, and without accommodation of personal interests. In addition, the USPAP Ethics Rule requires that I not perform the assignment with bias, that I must not advocate the cause or interest

of any party or issue and that I must not accept an assignment that includes the reporting of predetermined opinions and conclusions.

Q. Do you have any affiliation with either the Acquiring Utility or the Acquiring Public Utility or Entity?

A. No. Other than the current assignment to provide the subject appraisal, I have no business or personal relationships with any party to the proposed acquisition.

Q. What is your fee arrangement to deliver the appraisal?

A. A copy of the fee arrangement is included with the Application as **Exhibit S2**. In summary, AUS Consultants are to receive $25,000 to $27,000 plus expenses in compensation for our appraisal, which represents approximately 0.47% of the appraised value.

Q. Will you receive that fee regardless of whether the Commission approves the proposed transaction or whether it closes?

A. Yes. 66 Pa. C.S. § 1329(a)(3) mandates that I comply with the USPAP when developing my appraisal. Under the USPAP, I cannot perform the appraisal with bias and acceptance of a fee contingent on a particular outcome like closing or Commission approval would violate that Ethics Rule.

Q. Have you prepared any exhibits, schedules, or appendices to accompany your direct testimony?

A. Yes. The appraisal I submitted to the Seller pursuant to Section 1329(a)(5) is included in the Application as **Exhibit R**. The appraisal includes a narrative and supporting exhibits in sections. All were prepared under my supervision and control. Also, as stated above, attached to this testimony as **Appendix A** is my CV.

Q. Please summarize your results of the application of the cost, market, and income approaches to valuation.

A. The summary results of the cost, income, and market approaches is presented below.

Appraisal Approach	Value Indicator	Weight	Wtd Value Indicator
Cost	59,847,171	50%	29,923,586
Income	55,600,045	40%	22,240,018
Market	56,178,539	10%	5,617,854
Appraisal Conclusion			57,781,458

Q. Please describe any assumptions, extraordinary assumptions, hypothetical conditions, and/or limiting conditions that you applied to the valuation.

A. The major assumptions and limiting conditions used in preparing our appraisal of the East Whiteland's Wastewater Collection System and Purchased Treatment Capacity are described in our appraisal report "Fair Market Appraisal Report of East Whiteland Township, Pennsylvania's (PA) Wastewater Collection System and Purchased Treatment Capacity, as of January 8, 2021." Beyond the above-described assumptions, there are no

extraordinary[1] or hypothetical[2] assumptions (as defined in the 2020-2021 edition of USPAP).

Q. How was each assumption used and what was its result?

A. The assumptions are detailed in my appraisal report and are discussed further in this testimony.

Q. How did you develop the weighting applied to each approach in your appraisal and why are the individual weights you chose appropriate for this proposed transaction?

A. For the cost approach I chose a weighting of 50%. It is my opinion that this weighting is appropriate for the cost approach because the major purpose of this appraisal is to be an input to the Commission's establishment of cost for future ratemaking and the cost approach conclusion is directly reflective of the property cost.

For the market approach, I chose a weighting of 10%. It is my opinion that this weighting is appropriate for the market approach because while the market approach provides some information as to the value of the property, establishing comparability between the individual sales to the subject property is difficult and uncertain therefore requiring less weight of the market approach and the 10% weight accomplishes that objective.

[1] Extraordinary assumption: an assignment-specific assumption as of the effective date regarding uncertain information used in an analysis which, if found to be false, could alter the appraiser's opinions or conclusions. 2020-2021 USPAP page 4.

[2] Hypothetical condition: a condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but used for the purpose of analysis. 2020-2021 USPAP page 4.

For the income approach, I chose a weighting of 40%. It is my opinion that this weighting is appropriate for the income approach because the income approach reflects the value of the property's return to the property's owner. The 40% weight accomplishes that objective.

Q. Did you conduct an on-site inspection of the Selling Utility assets, and if so, what was its result on the appraisal?

A. No. AUS Consultants relied on the aging of the investment provided in the Engineer's Assessment to assess the condition of the system.

Q. What Utility Earnings Report was used to create the capital structure used in your appraisal?

A. I used a market required capital structure (detailed in the Cost of Capital / Required Return portion of our appraisal report). Information used in developing the market capital structure was obtained from financial statistics reported in Value Line Investment Survey for the water / wastewater industry published in their January 1, 2021 issue.

Q. What capital structure was used in your appraisal?

A. The capital structure used in my appraisal is included below.

Water and Wastewater Cost of Capital
First Quarter 2021 (0-01-2021)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	29%	Market	2.79%	Market	28.89%	71.11%	0.58%
Equity	71%	Market	9.85%	Market	0.0%	100.0%	6.99%
Total Capital r	**100.0%**						**7.57%**
Growth (g)							**1.82%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.65%**

Cost Approach

Q. Regarding your application of the cost approach, what method did you use to determine the cost approach result (e.g. original cost, replacement cost, reproduction cost)?

A. I used the replacement cost method.

Q. Please explain why you chose the replacement cost method.

A. I chose the replacement cost method because it is considered the proper starting point for a cost approach. Replacement cost reflects the appraisal date cost of providing the property's functionality and capacity at the appraisal date using recognized materials and labor costs.

Q. What index did you use for that method?

A. I used the Handy Whitman Index of Public Utility Construction Costs for the Water Industry (Northeastern US Region), AUS Telephone Index (General Plant), and various United States Bureau of Labor Statistics cost index series.

Q. Under your application of the cost approach what assets did you value or trend differently from other assets and why was that necessary?

A. I costed each property account with cost trends appropriate for the property contained in the account. As such, the costing of each property account may differ from account to account. It is my opinion that an accurate appraisal requires each property account be costed with cost trends reflective of the property contained in the account. For the assets associated with Land and Land Rights, appraisal date costs were estimated. For the appraisal date cost of obtaining and registering the easement with the Register of Deeds, estimates were developed based on the time and cost associated with developing the easement, contacting the property owner and registering the easement.

East Whiteland Township's property, as detailed in the Pennoni Associates, Inc. "Engineer's Assessment" of $43,447,309.24, including purchase treatment capacity, was determined to have a replacement cost new of $85,964,664 summarized as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.	Eng Assmnt	AUS Input			AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Original Cost	Cost Index Table	Translator	RCN	COR / RCN Factor	COR
353.20	353.20	Land & Land Rights - Original Basin	668.00	USBLS1	2.87	1,920	375.01	720,020
353.30	353.30	Land & Land Rights - Pumping	13.00	USBLS1	2.08	27	498.82	13,468
354.30	354.30	Stuctures & Improvements - Pumping	8,005,275.38	HWW-18	1.52	12,142,235	1.00	12,142,235
360.21	360.21	Collection Sewers - Force - Mains	2,304,354.55	HWW-144	2.59	5,971,267	1.00	5,971,267
361.21	361.21	Collection Sewers - Gravity - Mains	10,767,737.96	HWW-144	2.84	30,582,161	1.00	30,582,161
361.23	361.23	Collection Sewers - Gravity - Manholes	4,350,867.01	HWW-145	2.32	10,108,723	1.00	10,108,723
363.20	363.20	Service Laterals	6,619,976.03	HWW-139	1.85	12,259,833	1.00	12,259,833
365.20	365.20	Flow Measuring Installations Meter Pits	78,670.00	HWW-140	4.95	389,338	1.00	389,338
354.20	354.20	Stuctures & Improvements - Treatment	11,085,241.50	HWW-115	1.22	13,511,701	1.00	13,511,701
390.70	390.70	Office Furniture and Equipment	21,550.00	AUST-115	1.16	25,084	1.00	25,084
391.70	391.70	Transportation Equipment	212,955.81	AUST-14	1.13	240,834	1.00	240,834
		Grand Total	43,447,309.24		1.96	85,233,123	1.01	85,964,664

These results are detailed in Application **Exhibit R** (AUS Appraisal) under the Cost Approach section.

Q. Under your application of the cost approach, what date did you use for calculating the depreciation or condition of the property?

A. I used the date of January 8, 2021.

Q. How did you determine the depreciation parameters of survival/retirement characteristics and service lives for the utility property under the cost approach?

A. I determined those parameters based on our review of the depreciation studies filed by Pennsylvania-American Water Company ("PAWC") and Aqua Pennsylvania Wastewater, Inc. ("Aqua") in support of their depreciation parameters (Iowa-type Survival Characteristics and Service Lives) and the resultant depreciation expense and rate base (net book) in their recent General Rate Cases (R-2017-2595853, R-2020-3019371 and R-2018-3003561) and AUS Consultants' experience in preparing depreciation studies for the water and wastewater industry and our experience appraising water and wastewater properties. The following table summarizes those studies and AUS Consultants' review of the depreciation parameters:

Summary of PAWC & Aqua Depreciation Studies Prepared for Rate Case

Account	Account Description	Iowa Curves			Service Life		
		PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018	PAWC 12/31/2016	PAWC 12/31/2019	Aqua 3/31/2018
					years	years	
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	R3	R3	S0.5	45	45	55
354.30	STRUCTURES AND IMPROVEMENTS - SPP	R2.5	S0	S1.0	50	55	60
354.40	STRUCTURES AND IMPROVEMENTS - TDP	R2	S0	R2.0	65	55	50
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	S1	S1	R3.0	35	35	50
355.00	POWER GENERATION EQUIPMENT	R2.5	S0.5		35	35	
360.10	COLLECTION SEWERS - FORCE MAINS	S2	R3	R2.5	70	75	75
361.10	COLLECTION SEWERS - GRAVITY MAINS	R2.5	R2.5	R2.5	70	80	75
361.20	MANHOLES	S1.5	S2.5		50	50	
363.00	SERVICES	R3	R3	R4.0	38	47	70
364.00	FLOW MEASURING DEVICES	L3	L2.5		20	15	
365.00	FLOW MEASURING INSTALLATIONS	S1.5	S2		30	25	
370.00	RECEIVING WELLS	R3	R3		50	50	
371.00	PUMPING EQUIPMENT	SO	S0.5	L0.5	40	30	25
380.00	TREATMENT EQUIPMENT	5-R2	S1.5	S0.0	45	35	40
381.00	PLANT SEWERS	R3	R3	R1.5	50	50	40
382.00	OUTFALL SEWER LINES	R3	R3	R2.5	50	50	40
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	52.5	S2.5		20	20	
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	SQ	SQ	L3.0	20	5	20
390.00	OFFICE FURNITURE AND EQUIPMENT	L4	SQ	SQ	15	20	20
391.00	TRANSPORTATION EQUIPMENT	SQ	L4		25	14	
392.00	STORES EQUIPMENT	SQ	SQ		20	25	
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	SQ	SQ	SQ	15	20	20
394.00	LABORATORY EQUIPMENT	L2.5	SQ	SQ	16	15	25
395.00	POWER OPERATED EQUIPMENT	SQ	R2		15	22	
396.00	COMMUNICATION EQUIPMENT	SQ	SQ		15	15	
397.00	MISCELLANEOUS EQUIPMENT		SQ			15	
398.00	OTHER TANGIBLE PLANT		SQ			25	

Q. Why are those parameters appropriate?

A. Those parameters are appropriate because the parameters reflect the actual service life experienced by Aqua in serving wastewater customers in the Commonwealth of Pennsylvania and which were adjudicated by the PUC in PAWC's 2017 General Rate Case, PAWC's 2020 General Rate Case (Docket Nos. R-2020-3019369 and R-2020-30193371, respectively), and Aqua's 2018 General Rate Case (Docket No. R-2018-3003561). The parameters in the following table also reflect AUS Consultants' experience of the survival / retirement characteristics of normal and functional service lives of wastewater properties:

9 10 11 12 13

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
January 8, 2021

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.20	Land & Land Rights - Original Basin	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.30	Land & Land Rights - Pumping	ZNonDep	0.00	0.00%	Non-Depr	0.00
354.20	Stuctures & Improvements - Treatment	R4.0	55.00	0.00%	MACRS	25.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
360.21	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.21	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.23	Collection Sewers - Gravity - Manholes	R2.5	80.00	0.00%	MACRS	25.00
363.20	Service Laterals	R3.0	70.00	0.00%	MACRS	25.00
365.20	Flow Measuring Installations Meter Pits	S2.0	30.00	0.00%	MACRS	25.00
390.70	Office Furniture and Equipment	R3.0	12.00	0.00%	MACRS	12.00
391.70	Transportation Equipment	R3.0	10.00	0.00%	MACRS	10.00

10 11 12

Also, due the age of East Whiteland Township's early property installations, the maximum depreciation was limited to 85% of the cost new.

Q. What was the result of the application of the depreciation parameters to the previously described replacement cost new of $85,964,664?

A. With the application of the above-described depreciation parameters, the replacement cost new of $85,964,664 results in a replacement cost new less depreciation of $58,078,339 determined as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 8, 2021 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR $s		years	years	years	% of COR	CORLD $s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	East Whiteland Township Wastewater Assets Detail by Pennoni Associates, Inc.		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.20	Land & Land Rights - Original Basin	31.62	720,020	ZNonDep	-	-	-	-	720,020
353.30	Land & Land Rights - Pumping	20.27	13,468	ZNonDep	-	-	-	-	13,468
354.30	Stuctures & Improvements - Pumping	14.58	12,142,235	R4.0	45.00	31.23	45.82	45.00	8,379,553
360.21	Collection Sewers - Force - Mains	29.95	5,971,267	R3.0	75.00	47.21	77.16	75.00	3,669,861
361.21	Collection Sewers - Gravity - Mains	33.23	30,582,161	R2.5	80.00	50.80	84.03	80.00	18,623,208
361.23	Collection Sewers - Gravity - Manholes	32.21	10,108,723	R2.5	80.00	51.66	83.87	80.00	6,272,518
363.20	Service Laterals	22.75	12,259,833	R3.0	70.00	48.95	71.70	70.00	8,428,787
365.20	Flow Measuring Installations Meter Pits	44.50	389,338	S2.0	30.00	4.50	49.00	30.00	58,401
354.20	Stuctures & Improvements - Treatment	6.78	13,511,701	R4.0	55.00	48.11	54.89	55.00	11,842,733
390.70	Office Furniture and Equipment	12.50	25,084	R3.0	12.00	2.20	14.70	12.00	3,763
391.70	Transportation Equipment	11.45	240,834	R3.0	10.00	2.91	14.35	10.00	66,027
Grand Total		24.57	85,964,664		68.23	46.41	70.71	0.68	58,078,339

The above replacement cost new less depreciation represents the cost approach of the tangible assets of East Whiteland Township's wastewater system. In addition to the above-described tangible assets, are intangible assets; in East Whiteland Township's case, which

consist of the contracts associated with its wastewater treatment contracts held with the following communities:

Municipality	2020 YTD Projected
Charlestown Township	
Treatment Charge	80,068
Subtotal Charlestown Twp	80,068
Malvern Borough	
Treatment Charge	150,300
Subtotal Malvern Borough	150,300
East Whiteland Service Revenues	
Total Revenues	3,761,787

These contracts represent value assets which are included in the overall income and market approaches which are not specifically addressed in the cost approach of the tangible assets; therefore, in order to make the cost approach comparable to the income and market approaches these intangible assets were separately appraised and included in the cost approach totals. AUS Consultants developed an income approach estimate to the value which was relied upon for the contract values.

The 2020 budget estimate the revenues and expenses of the wastewater treatment contracts were used in order to develop the estimated operating income as a surrogate for the cash flows associated the wastewater treatment contracts. The estimated cash flows were next discounted to appraisal date values using the cost of capital of 5.65% i.e., the cost of capital of 6.99% with the embedded growth rate of 1.82% removed; the development of

which is described in the Cost of Capital section of the workpapers. The income approach to the wastewater treatment contracts was developed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Income Approach to Trearment Agreements Valuation

Municipality	2020 YTD Actual	2021 Projected		Expenses	Operating Income	Value Capitalized @ 5.65%
						5.65%
Charlestown Township						
Treatment Charge	80,068					
Subtotal Charlestown Twp	80,068	80,068	1.39%	45,324	34,744	614,938
Malvern Borough						
Treatment Charge	150,300					
Subtotal Malvern Borough	150,300	150,300	2.61%	85,105	65,195	1,153,894
Total East Whiteland Revenues						
Total Revenues	5,428,667	5,759,816		3,260,709		1,768,832

Based on the Income Approach analysis, the wastewater treatment contracts were determined to have a value of $1,768,832 which was included in the final cost approach to value as follows:

East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
Original Cost (OC)	(9)	43,447,309
Replacement Cost New (RCN)	(16)	85,964,664
Replacement Cost New less Depreciation (RCNLD)	(31)	58,078,339
Intangible Assets - Treatment Contracts		1,768,832
Fair Market Vaue (FMV)	(41)	59,847,171

This conclusion which was tested for economic obsolescence based on the results of the income and market approaches which will be described in the remainder of this testimony. Based on our review of the preliminary cost approach and the results of the income and market approaches, no economic obsolescence exists at the preliminary cost approach conclusion of $59,847,171; therefore, the final cost approach conclusion was determined to be $59,847,171. These results are detailed in Application **Exhibit R** (AUS Appraisal) under the Cost Approach section.

Market Approach

Q. Regarding your application of the market approach, what methods did you use to determine the market approach result?

A. I used the comparable sales of water and wastewater properties in the Commonwealth of Pennsylvania subsequent to the passage of Section 1329 and financial market value ratios of publicly traded water and wastewater companies as reported in the January 1, 2021, issue of Value Line Investment Survey.

Q. What assumptions, analyses, and/or adjustments did you make under each method?

A. Under the comparable sales method, it is my opinion that sales amount to depreciated replacement cost is the best indicator in arriving at the appraised value of physical assets operating as a wastewater collection system. Under the financial ratios method, I believe that an accurate result depends on using the weighted mean of the ratio of the market debt and equity to book debt and equity.

Q. What were the results of each analysis you performed?

A. The comparable sales analysis produced a result of $56,178,539 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

Central Tendancy and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted	
Mean	1.7594	1.8494	
Standard Deviation	0.5882	0.4204	
Median	1.49	1.4355	
Mode	1.4418	1.4418	
Conclusion		1.8494	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD		35,172,804	Cost Approach - OCLD
Market Value Indication		**65,048,584**	

Market Sales Analysis - PP/CORLD

	Simple	Weighted	
Mean	0.8087	0.9337	
Standard Deviation	0.1746	0.1695	
Median	0.8229	0.7558	
Mode	0.6918	0.6918	
Conclusion		0.9387	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity CORLD		59,847,171	Cost Approach - CORLD
Market Value Indication		**56,178,539**	

Market Sales Analysis - PP/Customer

	Simple	Weighted	
Water Tretment & Distribution			
Mean	6,123	10,962	
Standard Deviation		4,613	
Median	5,021	4,963	
Wastewater Collection & Treatment		16,785	
Mean	9,579		
Standard Deviation		-	AUS Input
Median	8,754		
Wastewater Collection			
Mean	6,507		
Standard Deviation			
Median	6,636		
Watewater Treatment Only			
Mean	3,072		
Standard Deviation			
Median	2,118		
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Customers		3,918	AUS Input
Wastewater Collection & Treatment PP/Customer		8,754	AUS Input
Collection and Treatement Customers Market Value I		**34,298,172**	

Treatement Only Market Value Indication

Treatment Only PP/customer		2,118	AUS Input
Treatment Only Customers		-	AUS Input
Market Value Indication Treatment Only		-	

Total Market Value Indication **34,298,172**

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.40	
Market to Book (equity and debt)	2.11	
Use (equity and debt)	2.11	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity OCLD	33,403,972	Cost Approach - OCLD
Market Value Indication	**70,482,381**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted	
Mean	17.48	15.32	
Standard Deviation	5.71	5.10	
Median	17.41	18.13	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		18.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity Cash		2,396,686	Income Approach
Market Value Indication		**43,140,348**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted	
Mean	11.62	11.45	
Standard Deviation	2.67	2.14	
Median	11.65	12.07	
Mode	Not Applicable	Not Applicable	
Forecast			
Conclusion		12.00	AUS Input
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity		3,264,195	Income Approach
Market Value Indication		**39,170,336**	

Summary of Market Analyses

Indicators	
OCLD	65,048,584
CORLD	56,178,539
Customers	34,298,172
Cash Flows	
EBITDA Periods 1-5	43,140,348
EBITDA Periods 1-13	39,170,336
Value Line	70,482,381
Mean	51,386,393
Median	49,659,444
Conclusion	**56,178,539**

1

Q. What was your market approach result?

A. I used the results of $56,178,539 because I believe those results represent an accurate assessment and it was based on the relationship of market comparable sales to the replacement cost new less depreciation of those properties. These results are detailed in Application **Exhibit R** (AUS Appraisal) under the Market Approach section.

Q. What was the calculation you used to determine your overall market approach results?

A. I used the weighted mean of the purchase price to replacement cost less depreciation.

Q. What comparable transactions or comparable sales did you evaluate to develop your market approach?

A. I examined the following transactions to develop the result of my market approach:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional \	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

Income Approach

Q. Regarding your application of the income approach, what method did you use to determine the income approach result?

A. I used the discounted cash flow method.

Q. What assumptions did you employ to develop your income approach result?

A. Under the income approach, it is my opinion that the results of the future operations of the East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity must be considered. I believe that an accurate result depends on adjusting recent results of the systems operation to better reflect how those results will migrate over future periods under the operation as a rate regulated wastewater system regulated by the PUC.

Q. What discount rate did you use to calculate your income approach?

A. I used a discount rate of 7.57% and 5.65% capitalization rate.

Q. Please explain how you developed the discount rate.

A. In each case, the discount rate was a market discount rate at the appraisal date and was determined using the weighted average cost of capital ("WACC") of both debt and equity. The inputs to the WACC determination, capital structure, cost of debt, cost of equity, and income tax rate (state and federal) were determined based on an analysis of Value Line Investment Surveys and the Ibbotson Stock, Bonds, Bills, and Inflation ("Ibbotson SBBI") 2021 Edition (SBBI activity over the period 1926 through 2020). The cost of debt was determined at January 1, 2021, based on the Value Line Selected Yields publication. The

cost of equity was based on the capital asset pricing model ("CAPM") and the Dividend Growth Model ("DGM"), two recognized cost of equity estimating models and the PUC's Bureau of Technical Utility Services' Report on Quarterly Earnings of Jurisdictional Utilities for Year-ending December 31, 2020. The above-described data for the East Whiteland Township appraisal can be found in the exhibits to my appraisal report in the section entitled Cost of Capital / Required Return.

Q. What capital structure inputs differ from those identified in capital structure set forth earlier in your testimony?

A. None. As described in the previous discussion of the capital structure, we utilized a market required capital structure based on analysis of the water / wastewater industry's market capital structure as defined by analysis of market financials as published in Value Line Investment Survey (January 1, 2021). The theory in appraisal is to estimate the value of a property in an arm's length transaction wherein the purchaser finances the purchase with capital (debt and equity) available in the financial markets at the appraisal date. Those are the current (appraisal date) financial markets.

Q. What is the source and basis of the alternative input you propose in the income approach?

A. As discussed above, we had used Value Line Investment Survey to develop a market required capital structure. Please see Application **Exhibit R** (AUS Appraisal) Income Approach section for the cost of capital of the Income Approach and Cost of Capital / Required Return section for the basis of the Cost of Capital / Required Return.

Q. If you used a terminal value in your discounted cash flow analysis what is the number of years over which the cash flows are considered?

A. I considered those cash flows over 19 periods with period 20 representing all future periods.

Q. What is the basis for using this number of years?

A. It is my opinion that the use of 19 periods is a reasonable number of periods for the forecast revenues and expenses to stabilize.

Q. What is your Income Approach conclusion?

A. AUS Consultants' income approach conclusion was determined to be $55,600,045 detailed as follows:

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Potential Purchaser: Investor-Owned Utility
As of January 8, 2021
Discounted Cash Flow Analysis

Discount Rate: 7.57%
Capitalization Rate: 5.65%

(1) Period	(2) Age	(3) Revenues	(4) O&M Expenses	(5) Tax Depreciation	(6) Cash Flow from Operations (3)-(4)	(7) Taxable Income before State & Federal Taxes (6)-(5)	(8) State and Federal Taxes @ 28.89% (7) *28.89%	(9) Capital Expenditures	(10) Change in Working Capital	(11) Net Cash Flows (3)-(4)-(8)-(9)-(10)	(12) Period Present Worth Factor (PW)	(13) PW of Cashflow (11)*(12)	(14) Accumulated PW of Cashflows Sum (13)
1	0.5	5,759,816	3,305,486	2,193,634	2,454,330	260,696	75,315	806,090	(78,093)	1,651,018	0.964	1,591,581	1,591,581
2	1.5	5,759,816	3,371,594	2,218,239	2,388,222	169,983	49,108	812,135	-	1,526,979	0.896	1,368,173	2,959,754
3	2.5	5,759,816	3,439,026	2,243,274	2,320,790	77,516	22,394	818,227	-	1,480,169	0.833	1,232,981	4,192,735
4	3.5	7,775,752	3,507,806	2,268,741	4,267,946	1,999,205	577,570	824,363	(27,334)	2,893,347	0.775	2,242,344	6,435,079
5	4.5	7,775,752	3,577,962	2,294,647	4,197,790	1,903,143	549,818	830,547	-	2,817,425	0.720	2,028,546	8,463,625
6	5.5	9,719,690	3,649,522	2,320,996	6,070,168	3,749,172	1,083,136	836,776	(26,356)	4,176,612	0.669	2,794,153	11,257,778
7	6.5	9,719,690	3,722,512	2,315,050	5,997,178	3,682,128	1,063,767	721,779	-	4,211,632	0.622	2,619,635	13,877,413
8	7.5	9,719,690	3,796,962	2,338,381	5,922,728	3,584,347	1,035,518	727,193	-	4,160,017	0.579	2,408,650	16,286,063
9	8.5	10,691,659	3,872,902	2,362,106	6,818,757	4,456,651	1,287,526	732,647	(13,178)	4,811,762	0.538	2,588,728	18,874,791
10	9.5	10,691,659	3,950,359	2,386,228	6,741,300	4,355,072	1,258,180	738,141	-	4,744,979	0.500	2,372,490	21,247,281
11	10.5	10,691,659	4,029,366	2,410,754	6,662,293	4,251,539	1,228,270	743,679	-	4,690,344	0.465	2,181,010	23,428,291
12	11.5	11,333,159	4,109,952	2,435,686	7,223,207	4,787,521	1,383,115	749,257	(8,698)	5,099,533	0.432	2,202,998	25,631,289
13	12.5	11,333,159	4,192,151	2,461,029	7,141,008	4,679,979	1,352,046	754,875	-	5,034,087	0.402	2,023,703	27,654,992
14	13.5	11,333,159	4,275,994	2,486,788	7,057,165	4,570,377	1,320,382	760,535	-	4,976,248	0.373	1,856,141	29,511,133
15	14.5	12,013,149	4,361,513	2,512,970	7,651,636	5,138,666	1,484,561	766,240	(9,219)	5,410,054	0.347	1,877,289	31,388,422
16	15.5	12,013,149	4,448,744	2,539,579	7,564,405	5,024,826	1,451,672	771,988	-	5,340,745	0.323	1,725,061	33,113,483
17	16.5	12,013,149	4,537,720	2,566,617	7,475,429	4,908,812	1,418,156	777,777	-	5,279,496	0.300	1,583,849	34,697,332
18	17.5	12,733,938	4,628,474	2,594,092	8,105,464	5,511,372	1,592,235	783,611	(9,773)	5,739,391	0.279	1,601,290	36,298,622
19	18.5	12,733,938	4,721,044	2,622,008	8,012,894	5,390,886	1,557,427	789,487	-	5,665,980	0.259	1,467,489	37,766,111
20 and beyond	19.5	12,733,938	4,815,465	2,650,370	7,918,473	5,268,103	1,521,955	795,408	-	5,601,110	3.184	17,833,934	55,600,045
								15,540,755					
Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.241				Net Plant		44,551,804			
PW to Perpetuity = 1/Capitalization Rate				13.210				ADIT		(6,443,119)			
PW$_{(20and Beyond)}$ = PW to Perpetuity * PW Factor$_{(19.5)}$				3.184				Rate Base		38,108,685	0.241	9,184,193	46,950,304
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		87,105,453	0.241	20,992,414	58,758,525
								PP	54,930,000				
								OCLD	33,403,972				
								PP/OCLD	1.644				
								RCNLD	58,078,339				
								RCNLD/PP		1.057315474			
										40,292,902.78	0.241	9,710,590	47,476,701
								Average					52,196,394

These results are detailed in Application **Exhibit R** (AUS Appraisal) under the Income Approach section.

Q. What number of Selling Utility customers or equivalent dwelling units did you use to value the Seller's system and how did you develop that number?

A. I used 3,918 customers based on a customer listing provided by East Whiteland Township in developing the forecasted revenues and expenses. I also used past and budgeted results from operations to establish forecasted operating results.

Q. Did you make any updates to your appraisal after it was submitted to the Seller, and if so, what was the update, when was it made, and why was it necessary?

A. No.

Q. Does this conclude your direct testimony?

A. It does. However, by filing this direct testimony I understand that I may have the opportunity to submit additional testimony responsive to challenges to my appraisal.

Curriculum Vitae (CV) of Jerome C. Weinert, P.E., CDP, ASA

Mr. Weinert is currently Principal and Director of AUS Consultants, Depreciation and Valuation. He has forty-nine (2021-1972) years' experience in valuation and depreciation consulting and management. AUS, with offices across the country, has provided consulting services to the regulated utility industry nationally for over thirty-nine years. A partial list of services provided includes valuations depreciation studies, rate of return studies, cost of service studies, and rate design.

Prior to joining AUS in 1987, Mr. Weinert was employed by American Appraisal Associates, Inc. (American) for sixteen years in their Regulated Industries Group. He held various positions at American, the last being supervising appraiser. Among his other valuation responsibilities, he directed the firm's utility industry capital recovery studies and AUS Consultant's valuation of communication company assets and businesses.

Mr. Weinert graduated from the Milwaukee School of Engineering with a Bachelor of Science degree in Mechanical Engineering and received a master's in business administration from Marquette University. He is a registered professional engineer (1976) (by examination) in the state of Wisconsin as well as a senior member (1982) of the American Society of Appraisers in the public utility valuation field. This latter designation is obtained by written examination primarily in the areas of utility valuation, depreciation, and the economics of regulated firms. He is also a Certified Depreciation Professional (1997) (CDP) and founding member of the Society of Depreciation Professionals and the Society's 1995 President and sponsor of the Society's Certification and re-certification program as such Mr. Weinert developed these programs and oversaw their initial introduction into the Society. He also worked in conjunction with Society members in the development of the Society's training programs which as of 2003 has become the only such formalized depreciation training program in the North America and is an instructor in several of its courses.

During his professional career related to valuations and depreciation matters Mr. Weinert has testified before various courts and public service commissions on these subjects. He has also assisted numerous utilities in preparing capital recovery plans which specifically address the issues of plant replacement. Mr. Weinert has also presented expert testimony on valuation matters. Mr. Weinert has testified before the Pennsylvania Public Utility Commission on regulatory matters associated with Pennsylvania Section 1329 matters. On matters related to eminent domain issues, Mr. Weinert has presented expert testimony in the Massachusetts Superior Court, the Court of Common Pleas, Fayette County, Ohio, the New Hampshire Public Utilities Commission, the Twentieth Judicial Court (deposition only) in Charlotte County, Florida, the Nineteenth Judicial Circuit Court in St. Lucie County, Florida (deposition only). In regard to ad valorem taxation, Mr. Weinert has presented study results to the New York State Board of Equalization and Assessment (now the New York Office of Real Property Services (NY ORPS)), pertaining to useful life and net salvage values for all types of utility property subject to the Board's mass appraisal model. Mr. Weinert has appeared before the Valuation Adjustment Board in Florida for Duval, Hillsborough, Okeechobee, and Palm Beach counties, the Twelfth Judicial Circuit Sarasota County, Florida, the California Board of Equalization and Assessment, the Arizona Board of Assessment, the Missouri Board of Taxation, the Colorado and Texas Departments of Review, the Massachusetts Tax Appeal Court, the Superior Court of the State of Arizona in the County of Maricopa, the State Tax Appeal Board of the State of Montana, the New York City Tax Commission and the Public Utility Commission of Pennsylvania Section 1329 hearings (8).

Mr. Weinert has appeared before regulatory bodies in Alaska, Arkansas, Illinois, Indiana, Iowa, Missouri, Nevada, Nebraska, North Carolina, Ohio, Oregon, Pennsylvania, and South Carolina in support of rate-base valuation determination and capital recovery. He has presented testimony on depreciation matters before the Canadian Radio-Television and Telecommunications Commission (CRTC) and the United

States Federal Energy Regulatory Commission (FERC). In terms of water and wastewater acquisitions and applications for regulatory approval of rate base Mr. Weinert has testified for two investor-owned acquisitions of municipal wastewater authorities one representing the municipality and secondly for the acquiring investor-owned utility. He has submitted study results to the State Commissions of Alabama, Alaska, Arkansas, Idaho, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Carolina, Oregon, Pennsylvania, South Carolina, Washington, and Wisconsin, and the Federal Communications Commission.

Mr. Weinert has presented papers on valuation and depreciation topics to professional and utility industry trade organizations. He also directed AUS Consultants' semi-annual week-long depreciation training programs (1988-1997). These specialized training courses, offered at basic and advanced levels, teach depreciation study techniques to public utility and public service commission staff specialists. The training includes depreciation theory and concepts and hands-on experience with personal computer-based analytical depreciation programs.

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
2021				
AT&T Communications	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	California	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2020	2021	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2020	2021	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2020	2021	Ad Valorem Tax Appraisal
Lower Makefield	Lower Makefield Wastewater	2020	2021	Fair Market Value 1329
Pennsylvania American Water Company	Brentwood Borough Wastewater	2020	2021	Fair Market Value 1329
2020				
AT&T Communications	North America	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	California	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2019	2020	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2019	2020	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2019	2020	Ad Valorem Tax Appraisal
East Norriton Township, PA	East Norriton Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Kane Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Royersford Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Water	2019	2020	Fair Market Value 1329
Lehigh County Authority	Allentown Water & Sewer	2020	2020	Financing
Pennsylvania American Water Company	Upper Pottsgrove wastewater	2020	2020	Fair Market Value 1329
2019				
AT&T Communications	North America	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	California	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2018	2019	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2018	2019	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2018	2019	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2018	2019	Ad Valorem Tax Appraisal
Cheltenham Township, PA	Cheltenham Wastewater	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Steelton Water	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Exeter Wastewater	2018	2019	Fair Market Value 1329
2018				
AT&T Communications	North America	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	California	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2017	2018	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2017	2018	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2017	2018	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
East Bradford Township, PA	East Bradford Wastewater	2018	2018	Fair Market Value 1329

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Pennsylvania American Water Company	Sadsbury Wastewater	2017	2018	Fair Market Value Appraisal
Pennsylvania American Water Company	Kane Wastewater	2017	2018	Fair Market Value Appraisal
2017				
AT&T Communications	North America	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	California	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2016	2017	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	California	2016	2017	Ad Valorem Tax Appraisal
Whitpain Township, PA	Whitpain Wastewater	2016	2017	Appraisal for Planning
Plymouth Township, PA	Plymouth Wastewater	2016	2017	Appraisal for Planning
East Norriton Township, PA	East Norriton Wastewater	2016	2017	Appraisal for Planning
Pennsylvania American Water Company	Sadsbury Wastewater	2016	2017	Fair Market Value Appraisal
Pennsylvania American Water Company	McKeesport Wastewater	2016	2017	Fair Market Value Appraisal
Intermountain Gas Company	Idaho	2016	2017	Depreciation Study
2016				
AT&T Communications	North America	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	California	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2015	2016	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	California	2015	2016	Ad Valorem Tax Appraisal
New Garden Township, PA	New Garden Wastewater	2016	2016	Fair Market Value Appraisal
2015				
AT&T Communications	North America	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	California	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2014	2015	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	California	2014	2015	Ad Valorem Tax Appraisal
Verizon Wireless	Nationwide	2014	2015	Ad Valorem Tax Appraisal
2014				
AT&T Communications	North America	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	California	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2013	2014	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
AT&T - Indiana Bell Telephone Company	Indiana	2013	2014	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	California	2013	2014	Ad Valorem Tax Appraisal
Cascade Natural Gas Corporation	Oregon & Washington	2013	2014	Depreciation Study
Intermountain Gas Company	Idaho	2013	2014	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2013	2014	Depreciation Study
Verizon Wireless	Nationwide	2013	2014	Ad Valorem Tax Appraisal
2013				
AT&T Communications	North America	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	California	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2012	2013	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2012	2013	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2012	2013	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2012	2013	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2012	2013	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2012	2013	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2013	Ad Valorem Tax Appraisal
2012				
AT&T Communications	North America	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	California	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2011	2012	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2011	2012	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2011	2012	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2011	2012	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2011	2012	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2011	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2012	Ad Valorem Tax Appraisal
2011				
AT&T Communications	North America	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	California	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2010	2011	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
AT&T - Michigan Bell Telephone Company	Michigan	2010	2011	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2010	2011	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2010	2011	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2010	2011	Ad Valorem Tax Appraisal
Global Crossing	North America	2010	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Sprint Nextel Corporation	North America	2010	2011	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2010	2011	Technical Update of Depreciation Study
2010				
AT&T Communications	North America	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	California	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2009	2010	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2009	2010	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2009	2010	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2009	2010	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2009	2010	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2009	2010	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2009	2010	Ad Valorem Tax Appraisal
Global Crossing	North America	2009	2010	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2009	2010	Ad Valorem Tax Appraisal
2009				
AT&T Communications	North America	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	California	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2008	2009	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2008	2009	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2008	2009	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2008	2009	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2008	2009	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2008	2009	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Embarq Virginia	Virginia	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2008	2009	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2008	2009	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2008	2009	Ad Valorem Tax Appraisal
Global Crossing	North America	2008	2009	Ad Valorem Tax Appraisal
AboveNet, Inc	North America/California	2003	2009	Ad Valorem Tax Appraisal
Verizon Wireless	Ohio Properties	2004-2005	2009	Ad Valorem Tax Appraisal
Virgin Islands Telephone Corporation	US Virgin Islands	2008	2009	Depreciation Study
Sprint Nextel Corporation	North America	2008	2009	Ad Valorem Tax Appraisal
2008				
AT&T Communications	North America	2007	2008	Ad Valorem Tax Appraisal
AT&T Communications	California	2007	2008	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2007	2008	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2007	2008	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2007	2008	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2007	2008	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2007	2008	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2007	2008	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	California	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2008	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2007	2008	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2007	2008	Ad Valorem Tax Appraisal
Global Crossing	North America	2007	2007	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2007	2008	Depreciation Study
2007				
AT&T Communications	North America	2006	2007	Ad Valorem Tax Appraisal
AT&T Communications	California	2006	2007	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2006	2007	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2006	2007	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2006	2007	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2006	2007	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas,	2006	2007	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2006	2007	Ad Valorem Tax Appraisal
Embarq North Carolina	North Carolina	2006	2007	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	California	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2006	2007	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2006	2007	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Qwest Communications Corporation	North America California	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan, & Arizona	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002 - 2006	2007	Ad Valorem Tax Appraisal
Global Crossing	North America	2006	2007	Ad Valorem Tax Appraisal
Alaska Communications System, Inc. (ACS)	ACS of Alaska ACS of Anchorage ACS of Fairbanks ACS of the Northland ACS Holdings	2006	2007	Depreciation Studies
Intermountain Gas Company	Idaho	2006	2007	Depreciation Study
2006				
AT&T Communications	Palm Beach Florida	2000 - 2003	2006	Ad Valorem Tax Appraisal
AT&T Communications	North America	2005	2006	Ad Valorem Tax Appraisal
AT&T Communications	California	2005	2006	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2005	2006	Ad Valorem Tax Appraisal
Sprint Texas, Inc.	Texas,	2005	2006	Ad Valorem Tax Appraisal
Sprint Missouri, Inc.	Missouri	2005	2006	Ad Valorem Tax Appraisal
Sprint North Carolina	North Carolina	2005	2006	Ad Valorem Tax Appraisal
Sprint Virginia	Virginia	2005	2006	Ad Valorem Tax Appraisal
Embarq Nevada	Nevada	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	California	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2005	2006	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	Massachusetts	2002-2--5	2006	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2005	2006	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002-2006	2006	Ad Valorem Tax Appraisal
Global Crossing	North America	2005	2006	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2005	2006	Depreciation Study
2005				
AT&T Communications	North America	2004	2005	Ad Valorem Tax Appraisal
AT&T Communications	California	2004	2005	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2004	2005	Ad Valorem Tax Appraisal
Sprint PCS	North America	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	California	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2004	2005	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2004	2005	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	New York Special Franchise Property	2003 & 2004	2005	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2004	2005	Depreciation Study
2004				
Sprint Florida, Inc.	Florida	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	California	2003	2004	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Verizon Communications	Northwest	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	New England	2003	2004	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2003	2004	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2003	2004	Ad Valorem Tax Appraisal
Global Crossing	North America	2003	2004	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	North America	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	California	2003	2004	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2003	2004	Depreciation Study
2003				
Sprint Florida, Inc.	Florida	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	California	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2002	2003	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2002	2003	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2002	2003	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	North America	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	California	2002	2003	Ad Valorem Tax Appraisal
Global Crossing	North America	2002	2003	Ad Valorem Tax Appraisal
Verizon Wireless	Broward County, FL	1998 through 2002	2003	Ad Valorem Tax Appraisal
2002				
Sprint Florida, Inc.	Florida	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	California	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2001	2002	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2001	2002	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Global Crossing	North America	2001	2002	Ad Valorem Tax Appraisal
AT&T Wireless	Plymouth, MI	2001	2002	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2001	2002	Ad Valorem Tax Appraisal
AT&T Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2001	2002	Depreciation Study
AT&T Communications	California	2001	2002	Ad Valorem Tax Appraisal
2001				
Verizon	Verizon - New York	2001	2001-2	Functional Obsolescence & Useful Life studies for valuation
Sprint Florida, Inc.	Sprint Florida, Inc.	2000	2001	Ad Valorem Tax Appraisal
Verizon Communications	California	2000	2001	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2000	2001	Ad Valorem Tax Appraisal
Global Crossing	North America	2000	2001	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2000	2001	Ad Valorem Tax Appraisal
Sprint Corporation	Centel - Nevada	2000	2001-2	Depreciation Study
Alaska Communications System, Inc. (ACS)	ACS of Alaska ACS of Anchorage ACS of Fairbanks ACS of the Northland ACS Holdings	2000	2001	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
2000				
Sprint PCS	BTS Equipment	2000	2000	Economic Life Study
Telus Communications	Telus - Alberta & British Columbia	2000	2000	Depreciation study Phase III Price Caps
Sprint Florida, Inc.	Florida	1999	2000	Ad Valorem Tax Appraisal
Verizon Communications	California	1999	2000	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1999	2000	Ad Valorem Tax Appraisal
1999				
Sprint Corporation	Centel - Nevada	1998	1999	Depreciation Study
Intermountain Gas Company	Intermountain Gas Company	1998	1999	Depreciation Study
Sprint Florida, Inc.	Florida	1998	1999	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1998	1999	Ad Valorem Tax Appraisal
1998				
Frontier Corporation	Frontier Telephone of Rochester	1998	1997	Valuation depreciation Lives and Net Salvage Parameters
Pacific Telecom, Inc.	Telephone Utilities of Washington	1997	1998	Depreciation Study
Sprint Florida, Inc.	Florida	1997	1998	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1997	1998	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1997	1998	Ad Valorem Tax Appraisal
Sprint Corporation	United Telephone Company of South Carolina	1998	1998	Depreciation Expense Universal Service Fund
Sprint Corporation	Carolina Telephone and Telegraph and Central Telephone of North Carolina	1998	1998	Depreciation Expense Universal Service Fund
Telus Communications	Telus - Edmonton (TCE)	1997	1998	Depreciation Study Phase II Price Caps
1997				
Sprint Corporation	Centel - Nevada	1997	1997	Unbundling/ Inter-connection Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Oregon	1996	1997	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Alaska And the Northland	1996	1997	Depreciation Study
Telus Communications	Telus - TCI formerly AGT	1996	1997	Depreciation Study Phase II Price Caps
Indianapolis Power & Light	IPL	1996	1997	Depreciation Study
Sprint Florida, Inc.	Florida	1996	1997	Ad Valorem Tax Appraisal

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
Verizon Communications	Florida	1996	1997	Ad Valorem Tax Appraisal
Pacific Telecom, Inc.	Eagle Telephone (Colorado)	1996	1997	Depreciation Study
1996				
Intermountain Gas Company	Intermountain Gas Company	1995	1996	Depreciation Study
Sprint Florida, Inc.	Florida	1995	1996	Ad Valorem Tax Appraisal
Century Telephone	Century Telephone of Ohio, Inc.	1995	1996	Depreciation Study
Telus Communications	AGT Limited (Alberta Government Telephones)	1995	1996	Depreciation Study
Johnson County Kansas Office of the Assessor	Useful Life of Computer Equipment	1995	1995	Useful/Market Life Analysis
Milwaukee Metropolitan Sewerage District	Milwaukee Metropolitan Sewerage District	1995	1996	Depreciation Study
Sprint Corporation	Long Distance Division	1995	1995	Depreciation/Recovery Status Study
Sprint Corporation	Cellular Division	1995	1995	Depreciation/Recovery Status Study
Pacific Telecom, Inc.	Alascom, Inc.	1994	1995	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of the Northland	1993	1994	Depreciation Study
	Telephone Utilities of Alaska	1993	1994	Depreciation Study
Indiana Energy	Indiana Gas Company	1993	1994	Depreciation Study
Columbia Gas Transmission	Gas Pipeline Property in Sullivan County, NY	1993	1993	Useful Life Study
United Telephone - Midwest Group	United Telephone Company of Missouri	1993	1993	Modernization/ Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1992	1993	Depreciation Study
Pacific Telecom, Inc.	Alascom, Inc.	1992	1993	Depreciation Study
	Telephone Utilities of Oregon, Inc.	1991	1992	Depreciation Study
	Telephone Utilities of Washington, Inc.	1991	1992	Depreciation Study
Small Telephone Company Coalition	Oregon Small Telephone Companies	1991	1992	Depreciation Support

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
United Telephone Systems	United Telephone Co. of Pennsylvania	1991	1992	Instructional Depreciation Study
New York State Division of Equalization and Assessment	Electric, Gas, Water, Telephone, Pipeline, Steam, CATV	1991	1992	Useful Lives and Net Salvage Values
Rochester Telephone Company	Enterprise Telephone	1991	1992	Study Review
Indiana Energy	Indiana Gas/Richmond Gas/ Terre Haute Gas	1990	1991	Depreciation Study
American Electric Power	Indiana/Michigan Power Co.	1990	1991	Depreciation Study
Rochester Telephone Company	Rochester Telephone Co.	1990	1991	Study Review
United Telephone Systems	United Telephone Co. of Florida	1990	1991	Instructional Depreciation Study
United Telephone Systems	United Telephone Co. of Oregon	1989	1990	Study Review
Telephone and Data Systems, Inc.	Quincy Telephone Company	1990	1991	Depreciation Study
Telephone and Data Systems, Inc.	Wolverine Telephone Company	1989	1990	Depreciation Study
Indiana Energy	Indiana Gas Company, Inc.	1989	1990	Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1989	1990	Remaining Life/Net Salvage Support
North-West Telephone Company	North-West Telephone Company	1989	1990	Study Review
United Telephone System	United of Texas	1989	1990	Instructional Depreciation Study
	United of Missouri	1989	1990	Instructional Depreciation Study
Milwaukee Water	Milwaukee Water	1989	1990	Depreciation Study
Indiana Natural Gas Corp.	Indiana Natural Gas Corp.	1989	1990	Depreciation Study
Pacific Telecom	Telephone Utilities of the Northland	1989	1990	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Year	Study Year Performed	Activity
	Telephone Utilities of Alaska	1989	1990	Depreciation Study
	Alascom	1989	1990	Depreciation Study
	Telephone Utilities of Washington, Inc.	1988	1989	Depreciation Study
WICOR	Wisconsin Gas Company	1988	1989	Depreciation Study
ALLTEL	ALLTEL - Kentucky, Inc.	1987	1989	Depreciation Study
	ALLTEL - Ohio, Inc.	1988	1989	Depreciation Study
	Western Reserve Telephone Company	1988	1989	Depreciation Study
Milwaukee Metropolitan Sewer District	Milwaukee Metropolitan Sewer District	1988	1989	Depreciation Study
United Telephone	United of Ohio	1988	1989	ELG Support
Telephone Company	Telephone Company	1988	1989	ELG Support
United Telecom	U.S. Sprint	1988	1988	Useful Life Study
Pacific Telecom	Telephone Utilities of Oregon	1987	1988	Depreciation Study
	Telephone Utilities of Eastern Oregon	1987	1988	Depreciation Study
	Rose Valley Telephone Company	1987	1988	Depreciation Study
United Telephone	United of Minnesota	1987	1988	Capital Planning Support
Wisconsin Southern Gas	Wisconsin Southern Gas	1987	1988	Depreciation Study
Pacific Telecom	Glacier State Telephone Company	1986	1987	Depreciation Study
	Sitka Telephone Co.	1986	1987	Depreciation Study
	Juneau-Douglas Tel Company	1986	1987	Depreciation Study
Pacific Telecom	Telephone Utilities of Alaska	1986	1987	Depreciation Study
	Alascom	1986	1987	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Year	Study Year Performed	Activity
Lincoln Telecommunications	Lincoln Telephone and Telegraph Company	1986	1987	Digital Switching Service Life
Northwest Natural Gas Corporation	Northwest Natural Gas Corporation	1985	1986	Depreciation Study
ALLTEL	Western Reserve Telephone Company	1984	1985	Depreciation Study
	ALLTEL - Ohio	1984	1985	Depreciation Study
	ALLTEL - Alabama	1984	1985	Depreciation Study
Gulf Telephone Co.	Gulf Telephone Company	1984	1985	Depreciation Study
United Telephone Systems, Inc.	United of Iowa	1984	1985	Depreciation Study
	United of Arkansas	1984	1985	Depreciation Study
Pacific Telecom	Telephone Utilities of Washington	1983	1984	Depreciation Study
	Telephone Utilities of Eastern Oregon	1983	1984	Depreciation Study
Pacific Telecom	Telephone Utilities of Oregon	1983	1984	Depreciation Study
	Northwestern Telephone Systems, Inc., Oregon	1983	1984	Depreciation Study
	Rose Valley Telephone Company	1983	1984	Depreciation Study
United Telecommunications	All United Telephone Companies	1983	1984	Capital Recovery Strategy
Lincoln Telecommunications	Lincoln Telephone & Telegraph Company	1983	1984	Depreciation Study
ALLTEL	ALLTEL - Mississippi	1982	1983	Depreciation Study
	ALLTEL - Michigan	1982	1983	Depreciation Study
North Carolina Natural Gas Corp.	North Carolina Natural Gas Corporation	1982	1983	Depreciation Study
Mid Continent Telephone (Currently ALLTEL)	Western Reserve Telephone	1982	1983	Depreciation Study
	Mid Ohio Telephone	1982	1982	Depreciation Study

Appraisal & Capital Recovery Activities Client List

Company	Property	Study Year	Year Performed	Activity
	Florence Telephone Company	1980	1981	Depreciation Study
	Leeds Telephone Co.	1980	1981	Depreciation Study
	Elmore Coosa Tel Company	1980	1981	Depreciation Study
	Brookville Telephone Company	1980	1981	Depreciation Study
	Mid-Pennsylvania Telegraph	1980	1981	Depreciation Study
Telephone Utilities (Currently Pacific Telecom)	Telephone Utilities of Oregon	1979	1980	Depreciation Study
	Telephone Utilities of Eastern Oregon	1979	1980	Depreciation Study
	Northwestern Telephone Systems, Inc.-Oregon	1979	1980	Depreciation Study
	Rose Valley Telephone Company	1979	1980	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1979	1980	Depreciation Study
Telephone Utilities	Telephone Utilities of Washington	1978	1979	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1978	1979	Depreciation Study
Rochester Telephone	Rochester Telephone (Indiana)	1977	1978	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1977	1978	Depreciation Study
Princeton Telephone	Princeton Telephone (Indiana)	1976	1977	Depreciation Study
Northwestern Telephone	Northwestern Telephone (Illinois)	1975	1976	Depreciation Study

Papers and Seminars

2011 Training Instructor Depreciation Basics Sessions A & B and Life and Salvage Analysis
Society of Depreciation Professionals 25th Annual Meeting
Atlanta, GA September 20-22, 2011

2010 Will the Real Cost Approach Please Stand Up?
National Association of Property Tax Representatives Transportation, Energy, & Communications (NAPTR·TEC)
Scottsdale, Arizona October 25-27, 2010

Issues Affecting Assessment of Regulated Industries
Institute for Professionals in Taxation (IPT) Property Tax Symposium
Austin, Texas October 31 – November 3, 2010

2009 (Valuing) Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 28, 2009

Fair Value Accounting (Appraisal Panelist)
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 29, 2009

2008 Valuation Issues Valuation of Assets and the Impact of Depreciation
Society of Depreciation Professionals Annual Meeting
Greenville, SC September 21-26, 2008

Obsolescence in the Long-Distance and Local Transport Networks
Technology Futures Inc. Asset Valuation Conference
Austin Texas February 8, 2008

2007 Communications Industry Issues
National Association of Property Tax Representative – Transportation, Energy, & Communications
New Orleans, LA October 30, 2007

2006 Appraisal Procedures & Issues in a Changing communications Industry
Florida Chapter International Association of Assessing Officers' Tangible Personal Property Conference
Ocala, Florida January 12, 2006

Valuation of Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 25, 2006

SDP 20 years of History and Beyond
Society of Depreciation Professionals 20th Annual Meeting
Long Beach, CA September 18, 2006

2005 Valuation in a World with Asset Impairments
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas August 1, 2005

Papers and Seminars

2004 Depreciation in the Valuation of Assets
Society of Depreciation Professionals' Eighteenth Annual Meeting
Washington, D.C., September 13, 2004

2003 Cost Approach and the Use of Appraisal Guidelines
Institute for Professionals in Taxation – Property Tax Symposium
Fort Lauderdale, FL, September 17, 2003

Cost Approach – Obsolescence and Depreciation
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 28, 2003

2000 Appraisal Issues Associated with Technological Change in the Wireline Telecommunications Industry
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 31, 2000

The Impact of Advancing Technology and the Changing Regulatory Environment on Obsolescence Calculations for Ad Valorem Valuation Purposes
Journal of Property Tax Management, Spring 2000

1996 How to Develop a Reproduction/Replacement Cost New Less Depreciation Approach to Value
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, August 4, 1996

1995 Valuation Method, Techniques and Strategies (How to Quantify Stranded Investment) (Market, Income, & Cost Approach
AGA Depreciation Committee Meeting
Denver, Colorado, August 6-9, 1995, jointly presented with Earl Robinson of AUS Consultants

1994 Integrating Future Expectations for the Telephone Industry into Historical Depreciation Analysis
United States Telephone Association (USTA's 1994 Capital Recovery Seminar)
Scottsdale, Arizona, September 12-13, 1994

1994 Capital Recovery: United States versus Canada
Canadian Telephone Industry's Annual Capital Recovery Seminar
Edmonton, Alberta, Canada June 14-15, 1994

1990 Capital Recovery: Methods, Terminology, Procedures, and Record Keeping
United States Telephone Association (USTA)'s
1990 Non-FCC Subject and Small Company Capital Recovery Seminar
Minneapolis, Minnesota April 10_11, 1990

Integration of Technology Forecasting Into Historical Life Studies
29th Iowa State Regulatory Conference
Ames, Iowa May 15-17, 1990

The 1990's and the Second Wave of Major Plant Retirements in the Communications Industry
NARUC's Seventh Biennial Information Conference
Columbus, Ohio September 12-14, 1990

Papers and Seminars

How Do We Incorporate Change into the Study Filing Procedures?
USTA's 1990 Capital Recovery Seminar
Chicago, Illinois October 16_17, 1990

1989 Plant Modernization: Capital Planning and Capital Recovery
Midwest Utilities Conference
Chicago, Illinois September 11_14, 1989

Price Indexes Today: Procedures, Uses, and Misuses
Society of Depreciation Professionals' Third Annual Meeting
New Orleans, Louisiana December 6_7, 1989

1988 Plant Modernization: Capital Planning and Capital Recovery
National Association of Regulatory Utility Commissioners (NARUC)'s
Sixth Biennial Regulatory Information Conference
Columbus, Ohio September 14_16, 1988

Papers and Seminars

1997	Sprint Corporation - West Finance Center Overland Park, Kansas, August 1997
1997	Rochester Telephone Corporation Rochester, New York, April 1997
1996	Sprint-Florida-Vista United Telecommunications Altamonte Springs, Florida August 27-29, 1996
1994	Saskatchewan Telecommunications Regina, Saskatchewan, Canada, June 1994
1994	AUS Consultants/Leroy J. Murphy and Associates 1994 Capital Recovery Seminar May 1994
1993	Manitoba Telephone System, Winnipeg, Manitoba, December 1993
1993	Society of Depreciation Professionals Annual Meeting Charleston, South Carolina September 30, 1993
1993	SPRINT - Local Telephone Division Atlanta, Georgia August 11-12, 1993
1993	AUS Consultants/Leroy J. Murphy and Associates 1993 Capital Recovery Seminar Chicago, Illinois May 11 - 13, 1993
1993	Canadian Telephone Capital Recovery Seminar Halifax, Nova Scotia April 20 - 22, 1993
1993	United Telephone, Midwest Group Overland Park, Kansas January 20, 1993
1992	BellSouth Corporation Birmingham, Alabama November 23, 1992
1992	Sprint - Local Telephone Division Kansas City, Kansas November 18 - 20, 1992
1992	Society of Depreciation Professionals Annual Meeting San Antonio, Texas September 9 - 10, 1992
1992	AUS Consultants/Leroy J. Murphy and Associates 1992 Capital Recovery Seminar Chicago, Illinois October 6 - 8, 1992
1991	Society of Depreciation Professionals Annual Meeting Nashville, Tennessee November 20-22, 1991
1991	ALLTEL Corporation Microcomputer Depreciation Studies System Training Hudson, Ohio October 14-16, 1991

Capital Recovery Training

2016 Society of Depreciation Professionals
Annual Training
Charleston, South Carolina, September 18-23, 2016

2015 Society of Depreciation Professionals
Annual Training
Austin Texas September 2015

2014 Society of Depreciation Professionals
Annual Training
New Orleans, Louisiana September 2014

2013 Society of Depreciation Professionals
Annual Training
Salt Lake City, Utah September 2013

2012 Society of Depreciation Professionals
Annual Training
Minneapolis, Minnesota, September 16-18, 2012

1991 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training
Kansas City, Kansas September 23-25, 1991

1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Lake Geneva, Wisconsin September 17-19, 1991

1991 Rochester Telephone Corporation, Capital Recovery/Microcomputer Depreciation Studies System Training, Rochester, New York September 3-7, 1991

1991 Ameritech Services, Microcomputer Depreciation Studies System Training
Chicago, Illinois May 16-17, 1991

1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Washington, D.C. April 9_11, 1991

1990 United Telecommunications, Inc., Capital Recovery Seminar
Overland Park, Kansas December 1990

1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois September 24_27, 1990

1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois January 29-February 1, 1990

1990 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1990

1989 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1989

Capital Recovery Training

1989	AUS Consultants/Leroy J. Murphy and Associates 1989 Capital Recovery Seminar Chicago, Illinois March 6_9, 1989
1988	AUS Consultants/Leroy J. Murphy and Associates 1988 Capital Recovery Seminar Chicago, Illinois July 25_28, 1988
1988	United Telecommunications, Inc., Microcomputer Depreciation Studies System Training Kansas City, Kansas January 1988

EXHIBIT Z

RESPONSES TO STANDARD DATA REQUESTS

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

1. Estimate the potential monthly incremental cost impact on existing and acquired customers following the actual results of the Buyer's most recently adjudicated base rate proceeding, whether litigated or settled, allocating the fair market value of the acquired system according to the Buyer's previously approved single-tariff pricing model.

   a. In the case of a wastewater acquisition, a Buyer that employs a combined revenue requirement pursuant to 66 Pa. C.S. § 1311 will provide information assuming a combined water and wastewater revenue requirement consistent with its most recent adjudicated base rate proceeding.

   b. If a Buyer has filed the thirty-day notice of 52 Pa. Code § 53.45(a), or has filed a rate case, it should calculate the above using data as proposed in its upcoming or filed rate case.

Response: Regarding a. and b. above, please refer to Appendix A of Aqua Statement No. 1, Direct Testimony of William C. Packer, included as Exhibit U to the Application.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

2. If the Buyer has a present intention to increase the acquired system's rates to a certain level, please state the basis for the targeted rate.

Response: Aqua has no present intention to increase East Whiteland Township rates to a targeted rate.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

3. Provide the annual depreciation expense using the purchase price/proposed rate base. If the exact depreciation expense is not available, provide the best estimate of the annual depreciation expense. Show how the depreciation expense is calculated.

Response: Please refer to Appendix A of Aqua Statement No. 1, Direct Testimony of William C. Packer, included as Exhibit U to the Application.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

4. Provide an estimate of the annual revenue requirement of the municipal system under the Buyer's ownership. Provide the assumptions for the annual revenue requirement, including expected rate of return, expected depreciation expense, O&M expenses, etc.

Response: Please refer to Appendix A of Aqua Statement No. 1, Direct Testimony of William C. Packer, included as Exhibit U to the Application.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

5. Other than the STAS, does Buyer's current water/wastewater tariff include any provisions that would fall under "pass-through costs or charges imposed by the Commonwealth of Pennsylvania"?

Response: Aqua has a Distribution System Improvement Charge (DSIC) in its current wastewater tariff.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

6. Provide a listing of any entities that currently receive free service from the Seller.

Response: East Whiteland Township currently provides free service to the East Whiteland Township Administration Building, the East Whiteland Township Public Works Building, and the East Whiteland Township Fire Company.

East Whiteland had provided the attached letter acknowledging that free service will cease at the Closing of the Proposed Transaction.

EAST WHITELAND TOWNSHIP
THE HEART OF GREAT VALLEY

209 Conestoga Road
Frazer, Pennsylvania 19355-1699
Telephone: 610-648-0600
www.eastwhiteland.org

Board of Supervisors: Susan Drummond • Scott Lambert • Richard Orlow **Township Manager:** John Nagel

July 15, 2021

Thomas F. Rafferty
Director, Business Development
Aqua Pennsylvania, Inc.
762 W Lancaster Avenue
Bryn Mawr, PA 19010

Re: Municipal Facilities – Free Sewer Service

Dear Tom:

As requested, please let this letter serve as your notice that we understand that, if the proposed sale of our sewer system to Aqua is consummated, then free future sewer service to three municipal facilities will be ended. Those buildings are:

- East Whiteland Township Municipal Building, 209 Conestoga Road, Frazer, PA 19355
- East Whiteland Township Public Works Building, 215 Conestoga Road, Frazer, PA 19355
- East Whiteland Township Volunteer Fire Association Building, 205 Conestoga Road, Frazer, PA 19355

If you need any further information, please let me know. Thanks

Sincerely,

John Nagel

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

7. In the next rate case, does buyer anticipate including the acquired system in a combined revenue requirement?

Response: Aqua anticipates including the East Whiteland system in a combined revenue requirement in the next rate case.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

8. If Seller has increased rates in the last year, please state the date of the increase and provide a copy of the new rate schedule and the total annual revenues produced under the new rates.

Response: East Whiteland Township has not increased rates in the last year.

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Rates/Ratemaking

9. Are there any leases, easements, and access to public rights-of-way that Buyer will need in order to provide service which will not be conveyed at closing? If yes, identify when the conveyance will take place and whether there will be additional costs involved.

Response: The Company is not presently aware of any needed leases, easements or access to public rights-of-way that will not be transferred at closing. The Township and Abstractor is currently reviewing real property records to determine any needed easements and will be obtaining any needed easements in accordance with Article 6 of the Asset Purchase Agreement.

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Costs/Benefits

10. Provide a breakdown of the estimated transaction and closing costs. Provide invoices to support any transaction and closing costs that have already been incurred.

Response: The estimated total transaction and closing costs are included in the application at paragraph 57. Please see below for a breakdown of costs projected through closing. Please see Application Exhibit S1 for Gannett UVE invoices. Please see the attachments to SDR-10 for copies of other invoices incurred to date on the Application.

Legal	$205,000
UVE	$75,000
Engineering Assessment	$28,300
Total	**$308,300**

The costs shown above are estimated costs and are subject to change.

INVOICE

Remit Payment To:
Pennoni Associates Inc.
P.O. Box 827328
Philadelphia, PA 19182-7328

Thomas, F. Rafferty
Director of Business Development
Aqua Pennsylvania
762 W. Lancaster Avenue
Bryn Mawr, PA 19010

Invoice No : 1063461
Invoice Date : 03/19/2021
Project : EWTPX17000
Project Name : Sale of System

For Services Rendered Through 02/28/2021

From 12/22/2020 to 2/28/2021

Seller Contact: John B. Nagel, Township Manager, East Whiteland Township
AQUA Pennsylvania Contact: Thomas, F. Rafferty, Director of Business Development

Contract Code: **EWTPX00001**
Client Project Name: **Sale of System**

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
03.01 -- Assessment Rpt-Visit/Inventory Facilitie		$15,000.00	$0.00	70.63%	$10,594.00	$10,594.00
03.02 -- Assessment Rpt-Original Costs of Assets		$14,000.00	$0.00	10.86%	$1,520.00	$1,520.00
03.03 -- Assessment Rpt-Facilities Assessment		$20,500.00	$0.00	0.00%	$0.00	$0.00
03.04 -- Assessment Rpt-Prepare Assessment Report		$9,000.00	$0.00	0.00%	$0.00	$0.00
03.05 -- Assessment Rpt-Meetings Allowance	NTE	$1,000.00	$0.00	0.00%	$0.00	$0.00
Total :		$59,500.00	$0.00		$12,144.00	$12,114.00

Amount Due This Invoice **$12,114.00**

* Total Amount Due is split evenly between East Whiteland Township and AQUA Pennsylvania.

Total Due - AQUA Pennsylvania **$6,507.00**

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

INVOICE

Remit Payment To:
Pennoni Associates Inc.
P.O. Box 827328
Philadelphia, PA 19182-7328

Marc A. Lucca, President
Aqua Pennsylvania 762
W. Lancaster Ave Bryn
Mawr, PA 19010

Invoice No : 1067326
Invoice Date : 04/15/2021
Project : EWTPX17000
Project Name : Sale of System

For Services Rendered Through 03/31/2021

From 3/1/201 to 3/31/2021

Seller Contact: John B. Nagel, Township Manager, East Whiteland Township
AQUA Pennsylvania Contact: Thomas, F. Rafferty, Director of Business Development

Contract Code: **EWTPX00001**
Client Project Name: **Sale of System**

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
03.01 -- Assessment Rpt-Visit/Inventory Facilitie		$15,000.00	$10,594.00	81.77%	$12,265.00	$1,671.00
03.02 -- Assessment Rpt-Original Costs of Assets		$14,000.00	$1,520.00	75.95%	$10,633.00	$9,113.00
03.03 -- Assessment Rpt-Facilities Assessment		$20,500.00	$0.00	12.01%	$2,462.00	$2,462.00
03.04 -- Assessment Rpt-Prepare Assessment Report		$9,000.00	$0.00	36.88%	$3,319.00	$3,319.00
03.05 -- Assessment Rpt-Meetings Allowance	NTE	$1,000.00	$0.00	0.00%	$0.00	$0.00
Total :		$59,500.00	$12,114.00		$28,679.00	$16,565.00

Amount Due This Invoice **$16,565.00**

* Total Amount Due is split evenly between East Whiteland Township and AQUA Pennsylvania.

Total Due - AQUA Pennsylvania **$8,282.50**

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

INVOICE

Remit Payment To:
Pennoni Associates Inc.
P.O. Box 827328
Philadelphia, PA 19182-7328

Marc A. Lucca, President
Aqua Pennsylvania
762 W. Lancaster Ave
Bryn Mawr, PA 19010

Invoice No : 1072124
Invoice Date : 05/20/2021
Project : EWTPX17000
Project Name : Sale of System

For Services Rendered Through 04/30/2021

From 4/1/201 to 4/30/2021

Seller Contact: John B. Nagel, Township Manager, East Whiteland Township
AQUA Pennsylvania Contact: Thomas, F. Rafferty, Director of Business Development

Contract Code: **EWTPX00001**
Client Project Name: **Sale of System**

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
03.01 -- Assessment Rpt-Visit/Inventory Facilitie		$15,000.00	$12,265.00	100.00%	$15,000.00	$2,735.00
03.02 -- Assessment Rpt-Original Costs of Assets		$14,000.00	$10,633.00	100.00%	$14,000.00	$3,367.00
03.03 -- Assessment Rpt-Facilities Assessment		$20,500.00	$2,462.00	40.00%	$8,200.00	$5,738.00
03.04 -- Assessment Rpt-Prepare Assessment Report		$9,000.00	$3,319.00	79.22%	$7,130.00	$3,811.00
03.05 -- Assessment Rpt-Meetings Allowance	NTE	$1,000.00	$0.00	0.00%	$0.00	$0.00
Total :		$59,500.00	$28,679.00		$44,330.00	$15,651.00

Amount Due This Invoice **$15,651.00**

* Total Amount Due is split evenly between East Whiteland Township and AQUA Pennsylvania.

Total Due - AQUA Pennsylvania **$7,825.50**

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

INVOICE

Remit Payment To:
Pennoni Associates Inc.
P.O. Box 827328
Philadelphia, PA 19182-7328

Marc A. Lucca, President
Aqua Pennsylvania 762
W. Lancaster Ave Bryn
Mawr, PA 19010

Invoice No : 1075492
Invoice Date : 06/22/2021
Project : EWTPX17000
Project Name : Sale of System

For Services Rendered Through 05/31/2021

From 5/1/2021 to 5/31/2021

Seller Contact: John B. Nagel, Township Manager, East Whiteland Township
AQUA Pennsylvania Contact: Thomas, F. Rafferty, Director of Business Development

Contract Code: **EWTPX00001**
Client Project Name: **Sale of System**

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
03.01 -- Assessment Rpt-Visit/Inventory Facilitie		$15,000.00	$15,000.00	100.00%	$15,000.00	$0.00
03.02 -- Assessment Rpt-Original Costs of Assets		$14,000.00	$14,000.00	100.00%	$14,000.00	$0.00
03.03 -- Assessment Rpt-Facilities Assessment		$20,500.00	$8,200.00	65.61%	$13,450.00	$5,250.00
03.04 -- Assessment Rpt-Prepare Assessment Report		$9,000.00	$7,130.00	85.62%	$7,705.50	$575.50
03.05 -- Assessment Rpt-Meetings Allowance	NTE	$1,000.00	$0.00	0.00%	$0.00	$0.00
Total :		$59,500.00	$44,330.00		$50,155.50	$5,825.50

Amount Due This Invoice **$5,825.50**

* Total Amount Due is split evenly between East Whiteland Township and AQUA Pennsylvania.

Total Due - AQUA Pennsylvania **$2,912.75**

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

INVOICE

Remit Payment To:
Pennoni Associates Inc.
P.O. Box 827328
Philadelphia, PA 19182-7328

Marc A. Lucca, President
Aqua Pennsylvania 762
W. Lancaster Ave Bryn
Mawr, PA 19010

Invoice No : 1078082
Invoice Date : 07/13/2021
Project : EWTPX17000
Project Name : Sale of System

For Services Rendered Through 06/30/2021

From 6/1/2021 to 6/30/2021

Seller Contact: John B. Nagel, Township Manager, East Whiteland Township
AQUA Pennsylvania Contact: Thomas, F. Rafferty, Director of Business Development

Contract Code: **EWTPX00001**
Client Project Name: **Sale of System**

Phase Code / Name		Contract Amount	Previously Billed	% Complete	Complete To Date	Amount This Invoice
03.01 -- Assessment Rpt-Visit/Inventory Facilitie		$15,000.00	$15,000.00	100.00%	$15,000.00	$0.00
03.02 -- Assessment Rpt-Original Costs of Assets		$14,000.00	$14,000.00	100.00%	$14,000.00	$0.00
03.03 -- Assessment Rpt-Facilities Assessment		$20,500.00	$13,450.00	90.24%	$18,500.00	$5,050.00
03.04 -- Assessment Rpt-Prepare Assessment Report		$9,000.00	$7,705.50	91.11%	$8,200.00	$494.50
03.05 -- Assessment Rpt-Meetings Allowance	NTE	$1,000.00	$0.00	0.00%	$0.00	$0.00
Total :		$59,500.00	$50,155.50		$55,700.00	$5,544.50

Amount Due This Invoice **$5,544.50**

* Total Amount Due is split evenly between East Whiteland Township and AQUA Pennsylvania.

Total Due - AQUA Pennsylvania **$2,772.25**

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

April 9, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 182508

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 1,000.00
Disbursements: $ 0.00
Total: $ 1,000.00

August 8, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 186173

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 11,450.00
Disbursements: $ 0.00
Total: $ 11,450.00

September 4, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 188083

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 3,225.00
Disbursements: $ 0.00
Total: $ 3,225.00

October 6, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 189192

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 6,225.00
Disbursements: $ 0.00
Total: $ 6,225.00

November 5, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 190362

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 2,800.00
Disbursements: $ 0.00
Total: $ 2,800.00

December 4, 2020

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 191425

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0033 (0046)

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 2,400.00
Disbursements: $ 0.00
Total: $ 2,400.00

February 8, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 193875

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 9,300.00
Disbursements: $ 0.00
Total: $ 9,300.00

March 5, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 195167

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 3,300.00
Disbursements: $ 0.00
Total: $ 3,300.00

April 7, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 196819

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 100.00
Disbursements: $ 0.00
Total: $ 100.00

May 7, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 198196

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 3,100.00
Disbursements: $ 0.00
Total: $ 3,100.00

June 7, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 199269

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 2,200.00
Disbursements: $ 0.00
Total: $ 2,200.00

July 8, 2021

Aqua Pennsylvania Wastewater, Inc.
762 W. Lancaster Avenue
Bryn Mawr PA 19010

Invoice: 200709

Re: Acquisition of Wastewater System Assets from East Whiteland Township
LM Account Number: 180379.0046

Please remit payment to:
Lamb McErlane PC
Attn.: Billing Department
PO Box 565
West Chester, PA 19381-0565

For Services Rendered in connection with acquisition of wastewater system assets.

Services: $ 500.00
Disbursements: $ 0.00
Total: $ 500.00

THOMAS, NIESEN & THOMAS, LLC

Attorneys and Counsellors at Law

July 12, 2021

AQUA PENNSYLVANIA WASTEWATER, INC

TO: THOMAS, NIESEN & THOMAS, LLC
212 Locust Street
Suite 302
Harrisburg, PA 17101

Invoice No. 13198

For professional services rendered to Aqua Pennsylvania Wastewater, Inc. during May and June 2021 in connection with the following matter:

AQUAWW-0033	**Acquisition of East Whiteland Township**	
	[redacted]	$ 3,901.00
		$ 0.00
	TOTAL	**$ 3,901.00**

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Costs/Benefits

11. Please describe known and anticipated general expense savings and efficiencies under Buyer's ownership. State the basis for all assumptions used in developing these costs and provide all supporting documentation for the assumptions, if available.

Response: Aqua estimates annual operating and maintenance expenses of approximately $1.97M based on East Whiteland Township's operating expenses presented in the 2019 financial statements adjusted by the Company. The assumed reduction in operating costs is based on Aqua's experience and estimates of costs during the first year of operations. Please also refer to the direct testimony of William C. Packer (Aqua Statement No. 1), included in the Application as Exhibit U, for further costs/benefits of the system under the Buyer's ownership.

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Costs/Benefits

12. Please provide a copy of the Seller's request for proposals (if there was one) and any accompanying exhibits with respect to the proposed sale of the system.

Response: Please see the attachment to SDR-12.

EAST WHITELAND TOWNSHIP

SEWER SYSTEM TRANSACTION - REQUEST FOR BIDS ("RFB")

PRE-QUALIFIED BIDDERS ONLY

RFB Distributed: September 15, 2020

Proposals Due: October 13, 2020

1. GENERAL INFORMATION FOR THE PROPOSER:

This Request for Bids ("RFB") is being provided to your team by the Township of East Whiteland, Chester County (together "East Whiteland" or the "Seller") to solicit a final, binding proposal (the "Proposal") to enter into either the Asset Purchase Agreement (the "APA"), or Asset Lease Agreement (the "ALA") (collectively referred to as the "Bidding Documents") for the sanitary sewer collection and conveyance system (the "Sewer System").

The assets included in the Transaction are described in more detail in the Bidding Documents. Except for removing relevant bracketed information and filling in blanks, and except as otherwise provided herein, no changes will be permitted to the Bidding Documents prior to signing, without written consent from East Whiteland.

All recipients of this RFB submitted responses to the Request for Qualifications for Sewer System Monetization dated January 31, 2020 (the "RFQ") and were determined to be eligible for consideration in moving forward with the proposed transaction process ("Pre-Qualified Proposers"). The Pre-Qualified Proposers were subsequently provided with the opportunity to conduct additional due diligence on the sewer system assets included in the Bidding Documents (the "System"), including (i) access to an online data room, and (ii) meetings with East Whiteland representatives and advisors. In addition, East Whiteland solicited feedback on drafts of the Bidding Documents.

2. SYSTEM DESCRIPTION:

All assets owned by the Seller comprising the System are set forth in Section 2.01 of the Bidding Documents.

3. INFORMATION REQUIRED FROM PROPOSERS AND SELECTION CRITERIA:

All Pre-Qualified Proposers eligible to respond to this RFB were deemed eligible to move forward based on their demonstrated technical and financial qualifications detailed in their response to the RFQ. All Pre-Qualified Proposers who submit a response to this RFB ("Proposers") must comply with the requirements set forth in this document for submitting a Proposal. Provided that the Proposal requirements are met and the Proposer is found to remain qualified, responsible and responsive, the award of the Agreement will be based what the Township deems to be the best overall transaction. In accordance with

62 Pa.C.S. §513(d), the contents of Proposals will not be publically disclosed at the time of opening of the Proposals.

Each Proposal shall be in writing and formatted in accordance with the following outline:

Section 1.0 Executive Summary

Proposal Form 1: Transmittal Letter

Proposal Form 2: Non-Collusion Affidavit

Section 2.0 Project Team and Technical Capability Information

Proposal Form 3: Statement of Ownership - Proposer

Proposal Form 4: Operator Information

Proposal Form 5: Contract and Lobbyist Disclosure

Section 3.0 Business Proposal

Proposal Form 6: Business Proposal – 3 Year Rate Freeze

4. SUBMISSION INSTRUCTIONS AND REQUIREMENTS:

One (1) original and two (2) hard copies of the Proposal shall be submitted, with the original copy of the Proposal clearly marked as the original and must contain the original signature forms and other original documents. ***All packages shall be sealed and clearly marked with the legend: "RESPONSE TO EAST WHITELAND SEWER SYSTEM RFB."*** In accordance with Section 8 of this RFB, the contents of the Proposal will not be made public until after the award of a contract. The Proposal shall be submitted in a sealed envelope or package addressed to:

PFM Financial Advisors LLC
c/o Garrett Moore
213 Market Street
Mail Room Third Floor
Harrisburg, PA 17101

THE SEALED PROPOSAL MUST BE RECEIVED NO LATER THAN 2:00 P.M. EASTERN TIME ON OCTOBER 13, 2020.

To the extent there are any questions regarding delivery of the Proposal, please contact Garrett Moore at mooreg@pfm.com or 717-232-2723.

By submitting a Proposal, Proposers acknowledge and agree to the following conditions:

- All Proposals submitted in response to this RFB shall become the property of East Whiteland. As such, after the award of a contract, or after the opening and rejection of all Proposals, Proposals submitted will become public records subject to public review under applicable law, subject to certain exceptions as described in Section 8 of this RFB.

- The selection of a Proposal by East Whiteland shall not waive or limit any assumptions of risk, provision of indemnity, or other obligations of the Proposer under the Bidding Documents as may be executed between the Proposer and East Whiteland.

- Proposers and their representatives shall comply with the communications protocol set forth in Section 5 of this RFB with respect to all communications concerning this RFB.

- Proposals shall comply with all content requirements of Section 3 of this RFB. Failure to comply with such requirements may result in a Proposer being deemed non-responsive.

- The pre-qualification of Proposers to receive this RFB and provide a Proposal does not waive or abridge the right of East Whiteland to find that any Proposer is not qualified or that the Proposal is non-responsive to the requirements of this RFB.

- **Proposers should ensure that the written and numerical Purchase Price/Consideration in Business Proposal 6 match. Should this not be the case, the binding Purchase Price/Consideration will be assumed to be the lower of the two Purchase Price/Consideration numbers.**

- **Bids must be submitted in the form and on the date required by this RFB. No further proposals, modifications or alternative offers will be considered pursuant to this RFB.**

- **East Whiteland reserves the right to reject any and all bids and to determine not to proceed with a sale of the Sewer System at its sole discretion.**

- **Based on the outcome of regulatory determinations (if applicable) subsequent to the award of the winning bid hereunder, the Seller reserves the right to renegotiate certain terms of the Bidding Documents, including Purchase Price/Consideration, as it deems in its best interests and as are acceptable to the winning bidder.**

5. QUESTIONS AND REQUESTS FOR CLARIFICATION:

All questions and requests for clarification concerning this RFB shall be directed in writing (e-mail) to Garrett Moore, whose contact information is provided below, by **NO LATER THAN 2:00 PM EASTERN TIME ON SEPTEMBER 29, 2020.** No questions, written or oral, shall be accepted after this time.

Garrett Moore
PFM Financial Advisors LLC
mooreg@pfm.com

All questions and clarification requests should be submitted in writing, and Pre-Qualified Proposers are encouraged to submit such questions and clarification requests in advance of the above deadline. Answers to such questions provided by East Whiteland will be in writing and will be made available to all Proposers.

6. APPROVAL AND SIGNING:

East Whiteland intends to select the Proposer that offers the best overall transaction, provided that the Proposer complies with all requirements set forth in this RFB for submitting a final Proposal and is found to remain qualified, responsible and responsive. Execution of the Bidding Documents by East Whiteland will be subject to final approval and authorization by the Seller's Board (the "Board"). A recommendation will be submitted to the Boards, shortly after the conclusion of the proposal process. After selection of a Proposal and approval by the Boards, the selected Proposer and East Whiteland shall be required to execute the Bidding Documents.

7. CONFIDENTIALITY AND DISCLOSURE TO THIRD PARTIES:

The existence and contents of this letter are subject to the confidentiality agreement that you previously executed. We ask you to remind all members of your team of your obligations under such confidentiality agreement and the indemnity obligation for any violation thereof.

Proposers should be aware that records of East Whiteland are subject to the provisions of the Pennsylvania Right-to-Know Law, 65 P.S. §67.101 et seq. ("RTK Law"), and that with certain exceptions, such records are subject to public disclosure. East Whiteland understands that in responding to this RFB, Proposers will be submitting information, including financial data that the parties desire to be kept confidential. It is East Whiteland's position that this RFB is part of a competitive proposal transaction process, and that prior to the award of a contract or prior to the opening and rejection of all proposals, all such submissions are confidential and exempt from disclosure under the Section 708(b)(26) of the RTK Law, 65 P.S. §67.708(b)(26).

Proposers are advised, however, that following award of a contract or the opening and rejection of all Proposals, such submissions may be subject to public disclosure unless they are otherwise exempt from disclosure under another provision of the RTK Law. Records and information submitted by Prospective Proposers that constitute "trade secrets" or "confidential proprietary information" as defined in the RTK Law are exempt from

disclosure under Section 708(b)(11), 65 P.S. §67.708(b)(11). "Confidential proprietary information" includes commercial and financial information which is privileged or confidential to the submitting party and the disclosure of which would cause substantial harm to the competitive position of the person who submitted the information. Proposers are advised that if they believe any information being submitted in response to this Request for Bids constitutes or references trade secret or confidential propriety information, they should clearly so label any such information with a prominent label of either: "TRADE SECRET" or "CONFIDENTIAL PROPRIETARY INFORMATION." Any such claims may be subject to review pursuant to the procedures set forth in the RTK Law. If East Whiteland, the Pennsylvania Office of Open Records or a court determines that such information does not qualify as a trade secret or confidential proprietary information, such information may be subject to public disclosure.

8. RIGHT TO REJECT BIDS AND SALE; MODIFICATION OF PRICE:

East Whiteland reserves the right to reject any and all bids and to determine not to proceed with a sale of the Sewer System. In addition, based on the outcome of regulatory determinations (if applicable) subsequent to the award of the winning bid hereunder, the Seller reserves the right to renegotiate certain terms of the Bidding Documents, including Purchase Price/Consideration, as it deems in its best interests and as are acceptable to the winning bidder.

PROPOSAL FORMS

Proposal Form 1 – East Whiteland Township Sewer System RFB
Transmittal Letter

{to be prepared on Proposer's Letterhead}

[Date], 2020

PFM Financial Advisors LLC
c/o Garrett Moore
213 Market Street
Mail Room Third Floor
Harrisburg, PA 17101

Re: East Whiteland Sewer System Request for Bids

Dear East Whiteland:

_____ (the "Proposer") hereby submits the attached Proposal in response to East Whiteland Township's Sewer System Request for Bids (the "RFB") issued by East Whiteland Township ("**East Whiteland**") on September 15, 2020, as amended.

The undersigned Proposer hereby unconditionally and irrevocably offers to enter into the Asset Purchase Agreement (the "**APA**"), or Asset Lease Agreement (the "**ALA**")(collectively the "**Bidding Documents**") for identified sewer facilities owned and operated by East Whiteland. Capitalized terms not otherwise defined in this Proposal have the meanings set forth in the Bidding Documents.

The Proposer, by its undersigned duly-authorized representative, hereby covenants, certifies, represents, and warrants, as follows in connection with this Proposal:

1. ***RFB and Addendum Acknowledgement.*** The Proposer acknowledges receipt of the RFB and the following addenda to the RFB:

Addendum No.	Date
_____	_____
_____	_____
_____	_____

2. ***Due Authorization.*** The submittal of the Proposal has been duly authorized by, and in all respects is binding upon, the Proposer.

3. ***Completeness; Warranty as to Proposal Information.*** The Proposer has submitted all Proposal Forms and such Proposal Forms are a part of this Proposal. All information and statements contained in the Proposal are current, correct and complete, and are made with full knowledge that will rely on such information and statements in determining which Proposals are responsive and responsible, and in ultimately selecting the Proposal deemed most advantageous to East Whiteland and executing the respective Bidding Documents.

4. ***Identity of Buyer***. The Buyer will be the Proposer, provided that the Proposer may, prior to the execution of the Bidding Documents pursuant to paragraph 8 below, create a subsidiary to be the Buyer (the "Subsidiary"), in which event the Subsidiary shall carry out all of the obligations of the Buyer under the Bidding Documents from and after such execution.

5. ***Final Agreements.*** The Proposer agrees to enter into the Bidding Documents in each case in the form identified as "Binding Proposal, Execution Copy" as posted in the Virtual Data Room for this Transaction (except for filling in indicated blanks and completion of Schedules as provided therein).

6. ***Purchase Price/Consideration*.** The amount of the Purchase Price/Consideration that Proposer will pay pursuant to Section 3.01 of the Bidding Documents will be the total set forth in Proposal Form 6.

7. ***Proposal Effective Period.*** This Proposal and offer shall remain in effect and irrevocable until 5:00 p.m. Eastern Daylight Savings Time on December 15, 2020, unless extended to 5:00 p.m. Eastern Daylight Savings Time on January 15, 2021 by East Whiteland or unless further extended by mutual consent of both East Whiteland and the Proposer (the "Termination Time"). In the event that the Proposal submission date is delayed, the Termination Time will be extended for the same such period. If East Whiteland does not give written notice to the Proposer that East Whiteland is prepared to enter into the Bidding Documents on or prior to the Termination Time, this offer and the terms of this Proposal shall terminate at the Termination Time.

8. ***Agreement Execution.*** If at any time prior to the Termination Time, East Whiteland gives written notice to the Proposer, at the address specified below, that they are prepared to enter into the Bidding Documents with the Proposer, the Proposer will, within two Business Days of its receipt of such notice, execute and deliver the Bidding Documents to East Whiteland.

9. ***Debarment.*** Neither the Proposer, the Operator, nor any other member of Proposer's project team is currently suspended or debarred from doing business with any governmental entity.

10. ***Contract Disclosures.*** Except as disclosed in Proposal Form 5, neither Proposer nor any member of Proposer's team has entered into any arrangement with any person or entity involving a finder's fee, fee splitting, firm affiliation or relationship with any broker- dealer, payments to consultants, lobbyists, or commissioned representatives or other contractual arrangements that could present a real or perceived conflict of interest.

11. ***No Litigation.*** There is no action, suit or proceeding, at law or in equity, before any

court or similar governmental body, against the Proposer, wherein an unfavorable decision, ruling or finding would have a materially adverse effect on the ability of the Proposer to perform its obligations under the Bidding Documents contemplated hereby, or which, in any way, would have a materially adverse effect on the validity or enforceability of the obligations proposed to be undertaken by the Proposer, or any Bidding Documents or instrument entered into by the Proposer in connection with the Transaction contemplated hereby.

12. ***Certain Representations.*** The Proposer represents and warrants that (1) Proposer has full power and authority to make this offer and submit this Proposal; (2) Proposer, or the Subsidiary, will have full power and authority to execute and deliver the Bidding Documents pursuant to the terms hereof; (3) such actions do not and will not violate the terms of any of the Proposer's or the Subsidiary's organizational documents or any agreement binding upon it or the terms of any Applicable Law; (4) no further consent to this offer or Proposal or to the execution of the Bidding Documents pursuant to the terms hereof is required to be obtained from any other Person or Governmental Authority; and (5) this offer and Proposal constitute, and the Bidding Documents, if executed pursuant to the terms hereof, will constitute duly authorized, valid and legally binding obligations of the Proposer, or the Subsidiary, enforceable in accordance with their respective terms, except as may be limited by bankruptcy, reorganization, insolvency, moratorium, fraudulent conveyance or transfers, or other laws affecting creditor's rights generally, and subject to general principles of equity (regardless of whether in law or in equity).

13. ***Material Changes.*** The Proposer has disclosed as an attachment to this Proposal all material changes from the information provided in the Proposer's RFQ Response.

14. ***Principal Contact.*** The principal contact person who will serve as the interface between the Governmental Party and the Proposer for all communications is:

NAME: _____

TITLE: _____

ADDRESS: _____

_____

PHONE: _____

FAX: _____

EMAIL: _____

Submitted by:

Name of Proposer: _____

Name of Designated Signatory _____

Signature _____

Title: _____

Proposal Form 2- East Whiteland Township Sewer System RFB
Non-Collusion Affidavit

STATE OF _____)

COUNTY OF _____)

I, [INSERT DESIGNATED SIGNATORY NAME], a resident of _____MUNICIPALITY OR OTHER JURISDICTION], in the State of [INSERT STATE], of full age, being duly sworn according to law, on my oath depose and say that:

(1) I am the [INSERT TITLE] of [INSERT PROPOSER NAME], organized under the laws of the state of [INSERT STATE NAME], the Proposer making the Proposal in response to the East Whiteland Township Sewer System Request for Bids issued by East Whiteland Township on September 15, 2020, as amended, and that I executed said Proposal with full authority to do so;

(2) The pricing information set forth in this Proposal have been arrived at independently without collusion, fraud, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such pricing information with any other Proposer or anyone employed by or representing East Whiteland;

(3) Unless otherwise required by law, the pricing information which has been quoted in this Proposal has not been knowingly disclosed by the Proposer and will not knowingly be disclosed by the Proposer, directly or indirectly, to any other Proposer or to any competitor prior to execution of the Bidding Documents; and

(4) No attempt has been made or will be made by the Proposer to induce any other person or entity to submit or not to submit a Proposal for the purpose of restricting competition.

I, hereby affirm under the penalties of perjury that the foregoing statements are true.

_____
Name of Proposer

_____
Name of Designated Signatory

_____
Signature

_____
Title

(Notary Public)

State/Commonwealth of ____

County of _____

On this _____ day of _____, 2020, before me appeared [DESIGNATED SIGNATORY], who is [INSERT TITLE] of [INSERT PROPOSER], a [INSERT STATE AND ENTITY TYPE], personally known to me to be the person described in and who executed this Non-Collusion Statement and acknowledged that she/he signed the same freely and voluntarily for the uses and purposes therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

_____
Notary Public in and for the State/Commonwealth of

(seal)

_____
(Name printed)

Residing at _____

Commission Number _____

Proposal Form 3 – East Whiteland Township Sewer System RFB
Statement of Ownership – Proposer

Name of Proposer:

Business Address:

Legal Form of Proposer:

State of Incorporation or Organization:

If not organized in Pennsylvania, is Proposer authorized to do business in Pennsylvania? [ ] Yes [ ] No

List Names and Titles of All Principal Officers and Directors:

Significant Equity Owners of the Proposer:

List the names, business addresses and percentage ownership interests of all Persons (individuals or entities) who own, directly or indirectly, 10% or more of the capital stock, units, partnership or membership interests, or other equity interests or securities of the Proposer (including options, warrants and other rights to acquire such equity interests) (the "Significant Equity Owners"). If none, please state "NONE." If one or more such Significant Equity Owner(s) of Proposer is an entity, then list the names and addresses of all Significant Equity Owners of such entity; if none, please state "None." This disclosure shall be continued until names and addresses of every Significant Equity Owners exceeding the ten percent ownership criteria of each entity listed has been identified. Additional pages may be attached.

Name	Address	% Interest

Proposal Form 4- East Whiteland Township Sewer System RFB
Operator Information

If the Proposer is not the Operator, the Proposer must clearly identify the entity or entities that will serve as the Operator under the APA/ALA. For the proposed Operator, please provide the following information.

1. **Name & Address of Proposed Operator**:

2. **Operator's Primary Representative**:

3. **Operator Experience (if not previously provided in response to the RFQ)**:

4. **Operator's References (if not previously provided in response to the RFQ)**:

5. **Material Change:** Any change in condition (financial or otherwise), development, occurrence or circumstance that could be materially adverse to the Operator that has arisen after the date of the RFQ and which would have been responsive to the RFQ if such change, development, occurrence or circumstance had arisen prior to the Proposer's response to the RFQ.

Proposal Form 5 – East Whiteland Township Sewer System RFB
Contract and Lobbyist Disclosure

Proposer hereby certifies that except as listed below, neither Proposer nor any member of Proposer's team has entered into any arrangement with any person or entity involving a finder's fee, fee splitting, firm affiliation or relationship with any broker-dealer, payments to consultants, lobbyists, or commissioned representatives or other contractual arrangements that could present a real or perceived conflict of interest. (If there are no such arrangements, please write NONE)

Name of Person or Entity	***Disclosure and Description of Arrangement***

Name of Proposer

Name of Designated Signatory

Signature

Title

Proposal Form 6 - East Whiteland Township Sewer System RFB
Business Proposal

For the purposes of Proposal Form 6a please provide your Purchase Price/Consideration assuming a three-year rate freeze, outlined in the Bidding Documents, **were to be imposed** by East Whiteland.

The amount of the Purchase Price/Consideration that Proposer offers to pay pursuant to Section 3.01 of the Bidding Documents is:

US$ _____ [*in numbers*],

_____ [*in words*] United States Dollars.

Proposers should ensure that the written and numerical Purchase Price/Consideration in this Business Proposal exactly match. Should this not be the case, the binding Purchase Price/Consideration will be assumed to be the lower of the two Purchase Price/Consideration numbers.

Please provide nonbinding indicative rates that relate to the Purchase Price/Consideration above. For the purposes of transparency, and to aid in comparing bids, please feel free to add any clarifying remarks in the area provided below. **AT A MINIMUM**, please specify, 1) the amount of subsidization, if any, you are assuming, via Act 11; 2) whether the rates provided below include any DISC surcharge, and 3) at this time do you anticipate requesting any DISC surcharge in your next rate filing

Please note, completion of the indicative rate section below is required for your bid to be deemed as "compliant".

Indicative rates for the next 10 years:

2021: (See rate Ordinance) 2022: (See rate Ordinance) 2023: (See rate Ordinance)
2024: _____ 2025: _____ 2026: _____ 2027: _____ 2028: _____
2029: _____ 2030: _____

Description of rates outlined above:

_____
_____
_____
_____
_____

_____
Name of Proposer

_____
Name of Designated Signatory

Signature

Respondent: William C. Packer
Vice President – Regulatory Accounting and Regional Controller of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Costs/Benefits

13. Please provide a copy of the proposal and exhibits of the Buyer for the purchase of Seller's system.

Response: Please see the attachment to SDR-13.

ORIGINAL

October 13, 2020

PFM Financial Advisors LLC
c/o Garrett Moore
213 Market Street
Mail Room Third Floor
Harrisburg, PA 17101

Re: East Whiteland Sewer System Request for Bids

Dear East Whiteland:

Aqua Pennsylvania Wastewater, Inc. (the "Proposer") hereby submits the attached Proposal in response to East Whiteland Township's Sewer System Request for Bids (the "RFB") issued by East Whiteland Township ("**East Whiteland**") on September 15, 2020, as amended.

The undersigned Proposer hereby unconditionally and irrevocably offers to enter into the Asset Purchase Agreement (the "**APA**") for identified sewer facilities owned and operated by East Whiteland. Capitalized terms not otherwise defined in this Proposal have the meanings set forth in the APA.

The Proposer, by its undersigned duly-authorized representative, hereby covenants, certifies, represents, and warrants, as follows in connection with this Proposal:

1. ***RFB and Addendum Acknowledgement.*** The Proposer acknowledges receipt of the RFB and the following addenda to the RFB:

Addendum No.	Date

2. ***Due Authorization.*** The submittal of the Proposal has been duly authorized by, and in all respects is binding upon, the Proposer.

3. ***Completeness; Warranty as to Proposal Information.*** The Proposer has submitted all Proposal Forms and such Proposal Forms are a part of this Proposal. All information and statements contained in the Proposal are current, correct and complete, and are made with full knowledge that East Whiteland will rely on such information and statements in determining which Proposals are responsive and responsible, and in ultimately selecting the Proposal deemed most advantageous to East Whiteland and executing the Agreement.

4. ***Identity of Buyer***. The Buyer will be the Proposer, provided that the Proposer may, prior to the execution of the Agreement pursuant to paragraph 8 below, create a subsidiary to be the Buyer (the "Subsidiary"), in which event the Subsidiary shall carry out all of the obligations of the Buyer under the Agreement from and after such execution.

5. ***Final Agreements.*** The Proposer agrees to enter into the Agreement in each case in the form identified as "Binding Proposal, Execution Copy" as posted in the Virtual Data Room for this Transaction (except for filling in indicated blanks and completion of Schedules as provided therein).

6. ***Purchase Price.*** The amount of the Purchase Price that Proposer will pay pursuant to Section 3.01 of the Agreement will be the total set forth in Proposal Form 6.

7. ***Proposal Effective Period.*** This Proposal and offer shall remain in effect and irrevocable until 5:00 p.m. Eastern Daylight Savings Time on December 15, 2020, unless extended to 5:00 p.m. Eastern Daylight Savings Time on January 15, 2021 by East Whiteland or unless further extended by mutual consent of both East Whiteland and the Proposer (the "Termination Time"). In the event that the Proposal submission date is delayed, the Termination Time will be extended for the same such period. If East Whiteland does not give written notice to the Proposer that East Whiteland is prepared to enter into the Bidding Documents on or prior to the Termination Time, this offer and the terms of this Proposal shall terminate at the Termination Time.

8. ***Agreement Execution.*** If at any time prior to the Termination Time, East Whiteland gives written notice to the Proposer, at the address specified below, that they are prepared to enter into the Agreement with the Proposer, the Proposer will, within two Business Days of its receipt of such notice, execute and deliver the Agreement to East Whiteland.

9. ***Debarment.*** Neither the Proposer, the Operator, nor any other member of Proposer's project team is currently suspended or debarred from doing business with any governmental entity.

10. ***Contract Disclosures.*** Except as disclosed in Proposal Form 5, neither Proposer nor any member of Proposer's team has entered into any arrangement with any person or entity involving a finder's fee, fee splitting, firm affiliation or relationship with any broker- dealer, payments to consultants, lobbyists, or commissioned representatives or other contractual arrangements that could present a real or perceived conflict of interest.

11. ***No Litigation.*** There is no action, suit or proceeding, at law or in equity, before any court or similar governmental body, against the Proposer, wherein an unfavorable decision, ruling or finding would have a materially adverse effect on the ability of the Proposer to perform its obligations under the Agreement contemplated hereby, or which, in

any way, would have a materially adverse effect on the validity or enforceability of the obligations proposed to be undertaken by the Proposer, or any agreement or instrument entered into by the Proposer in connection with the Transaction contemplated hereby.

12. ***Certain Representations.*** The Proposer represents and warrants that (1) Proposer has full power and authority to make this offer and submit this Proposal; (2) Proposer, or the Subsidiary, will have full power and authority to execute and deliver the Agreement pursuant to the terms hereof; (3) such actions do not and will not violate the terms of any of the Proposer's or the Subsidiary's organizational documents or any agreement binding upon it or the terms of any Applicable Law; (4) no further consent to this offer or Proposal or to the execution of the Agreement pursuant to the terms hereof is required to be obtained from any other Person or Governmental Authority; and (5) this offer and Proposal constitute, and the Agreement, if executed pursuant to the terms hereof, will constitute duly authorized, valid and legally binding obligations of the Proposer, or the Subsidiary, enforceable in accordance with their respective terms, except as may be limited by bankruptcy, reorganization, insolvency, moratorium, fraudulent conveyance or transfers, or other laws affecting creditor's rights generally, and subject to general principles of equity (regardless of whether in law or in equity).

13. ***Material Changes.*** The Proposer has disclosed as an attachment to this Proposal all material changes from the information provided in the Proposer's RFQ Response.

14. ***Principal Contact.*** The principal contact person who will serve as the interface between the Governmental Party and the Proposer for all communications is:

NAME: **Thomas F Rafferty**

TITLE: **Director, Business Development**

ADDRESS: **762 W. Lancaster Ave. Bryn Mawr, PA 19010**

PHONE: **(O): 610-645-1064 (M): 215-205-0800**

FAX: **610.645.1061**

EMAIL: **TFRafferty@aquaamerica.com**

Submitted by:

Name of Proposer

Aqua Pennsylvania Wastewater Inc.

Name of Designated Signatory

Marc A. Lucca

Signature

Matthew Klunk on behalf of Marc Lucca

Title

President Executive Vice President - Strategy & Corporate Dev

Proposal Form 2- East Whiteland Township Sewer System RFB
Non-Collusion Affidavit

STATE OF _____ PENNSYLVANIA)

COUNTY OF _____ MONTGOMERY)

I, Marc A. Lucca, a resident of Lower Merion Township, in the State of Pennsylvania, of full age, being duly sworn according to law, on my oath depose and say that:

(1) I am the President of Aqua Pennsylvania Wastewater Inc., organized under the laws of the state of Pennsylvania, the Proposer making the Proposal in response to the East Whiteland Township Sewer System Request for Bids issued by East Whiteland Township on September 15, 2020, as amended, and that I executed said Proposal with full authority to do so;

(2) The pricing information set forth in this Proposal have been arrived at independently without collusion, fraud, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such pricing information with any other Proposer or anyone employed by or representing East Whiteland;

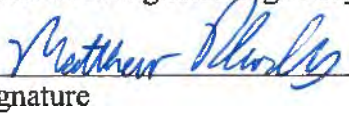
(3) Unless otherwise required by law, the pricing information which has been quoted in this Proposal has not been knowingly disclosed by the Proposer and will not knowingly be disclosed by the Proposer, directly or indirectly, to any other Proposer or to any competitor prior to execution of the Agreement; and

(4) No attempt has been made or will be made by the Proposer to induce any other person or entity to submit or not to submit a Proposal for the purpose of restricting competition.

I, hereby affirm under the penalties of perjury that the foregoing statements are true.

Aqua Pennsylvania Wastewater Inc.
Name of Proposer

Marc A. Lucca
Name of Designated Signatory



Signature

President
Title

(Notary Public)

State/Commonwealth of Pennsylvania

County of Montgomery

On this 12 day of October, 2020, before me appeared **Matt Rhodes**, who is an Officer of Aqua Pennsylvania Wastewater Inc., a Pennsylvania Corporation, personally known to me to be the person described in and who executed this Non-Collusion Statement and acknowledged that she/he signed the same freely and voluntarily for the uses and purposes therein described.

In witness thereof, I have hereunto set my hand and affixed my official seal the day and year last written above.

Heather S. D. Harrisson

Notary Public in and for the State (Commonwealth of) Pennsylvania

(seal)

Heather S. D. Harrisson

(Name printed)

Residing at 762 W. Lancaster Ave
Bryn Mawr, PA 19010

Commission Number 1213370

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Heather S. D. Harrisson, Notary Public
Lower Merion Twp., Montgomery County
My Commission Expires Feb. 3, 2021
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Proposal Form 3- East Whiteland Township Sewer System RFB
Statement of Ownership – Proposer

Name of Proposer: Aqua Pennsylvania Wastewater, Inc.

Business Address: 762 W. Lancaster Avenue, Bryn Mawr, PA 19010

Legal Form of Proposer: Corporation

State of Incorporation or Organization: Pennsylvania

If not organized in Pennsylvania, is Proposer authorized to do business in Pennsylvania? [ ] Yes [ ] No

List Names and Titles of All Principal Officers and Directors:

Christopher H. Franklin	Chief Executive Officer (Officer & Director)
Daniel J. Schuller	EVP, Chief Financial Officer (Officer & Director)
Richard S. Fox	EVP, Chief Operating Officer (Officer & Director)
Matthew R. Rhodes	EVP, Strategy and Corporate Development (Officer & Director)
Christopher P. Luning	SVP, General Counsel and Secretary (Officer & Director)
Marc A. Lucca	President (Officer & Director)
Stan Szczygiel	Vice President and Treasurer

Significant Equity Owners of the Proposer:

List the names, business addresses and percentage ownership interests of all Persons (individuals or entities) who own, directly or indirectly, 10% or more of the capital stock, units, partnership or membership interests, or other equity interests or securities of the Proposer (including options, warrants and other rights to acquire such equity interests) (the "Significant Equity Owners"). If none, please state "NONE." If one or more such Significant Equity Owner(s) of Proposer is an entity, then list the names and addresses of all Significant Equity Owners of such entity; if none, please state "None." This disclosure shall be continued until names and addresses of every Significant Equity Owners exceeding the ten percent ownership criteria of each entity listed has been identified. Additional pages may be attached.

Name	*Address*	*Interest %*
Aqua Pennsylvania, Inc.	762 W. Lancaster Ave., Bryn Mawr, PA 19010	100%

Proposal Form 4- East Whiteland Township Sewer System RFB
Operator Information

If the Proposer is not the Operator, the Proposer must clearly identify the entity or entities that will serve as the Operator under the APA. For the proposed Operator, please provide the following information.

1. **Name & Address of Proposed Operator**:

   PROPOSER IS THE OPERATOR

2. **Operator's Primary Representative**:

   TODD DUERR

3. **Operator Experience (if not previously provided in response to the RFQ)**:

   SEE RFQ

4. **Operator's References (if not previously provided in response to the RFQ)**:

   SEE RFQ

5. **Material Change:** Any change in condition (financial or otherwise), development, occurrence or circumstance that could be materially adverse to the Operator that has arisen after the date of the RFQ and which would have been responsive to the RFQ if such change, development, occurrence or circumstance had arisen prior to the Proposer's response to the RFQ.

Proposal Form 5- East Whiteland Township Sewer System RFB
Contract and Lobbyist Disclosure

Proposer hereby certifies that except as listed below, neither Proposer nor any member of Proposer's team has entered into any arrangement with any person or entity involving a finder's fee, fee splitting, firm affiliation or relationship with any broker-dealer, payments to consultants, lobbyists, or commissioned representatives or other contractual arrangements that could present a real or perceived conflict of interest. (If there are no such arrangements, please write NONE)

Name of Person or Entity	*Disclosure and Description of Arrangement*
None	

Aqua Pennsylvania Wastewater, Inc.
Name of Proposer

Marc A. Lucca
Name of Designated Signatory

Signature

President
Title

Proposal Form 6- East Whiteland Township Sewer System RFB
Business Proposal

For the purposes of Proposal Form 6 please provide your Purchase Price/Consideration assuming a three-year rate freeze, outlined in the Bidding Documents, **were to be imposed** by East Whiteland.

The amount of the Purchase Price/Consideration that Proposer offers to pay pursuant to Section 3.01 of the Bidding Documents is:

US **$54,930,000.00 (calculated as $55,000,000 less the $70,000 in fees reimbursable to Seller per Section 3.01c)**

Fifty-four Million Nine Hundred and thirty thousand dollars and Zero Cents United States Dollars.

Proposers should ensure that the written and numerical Purchase Price in this Business Proposal exactly match. Should this not be the case, the binding Purchase Price will be assumed to be the lower of the two Purchase Price numbers.

Please provide nonbinding indicative rates that relate to the Purchase Price/Consideration above. For the purpose of transparency, and to aid in comparing bids, please feel free to add any clarifying remarks in the area provided below. AT A MINIMUM, please specify, 1) the amount of subsidization, if any, you are assuming, via Act 11; 2) whether the rates provided below include any DSIC surcharge, and 3) at this time do you anticipate requesting any DSIC surcharge in your next rate filing

Please note, completion of the indicative rates section below is required for your bid to be deemed as "compliant".

Indicative rates for the next 10 years:

2021 **(See Rate Ordinance)**
2022 **(See Rate Ordinance)**
2023 **(See Rate Ordinance) $37.31 (+2.5% DSIC)**
2024 **$53.42**
2025 **$54.76 (+2.5%DSIC)**
2026 **$56.13 (+2.5% DSIC)**
2027 **$56.13**
2028 **$57.53 (+2.5% DSIC)**
2029 **$58.97 (+2.5% DSIC)**
2030 **$59.00 (+0.05% DSIC)**

Description of rates and considerations as outlined above:

1. ***The Company's 10-year projection of rates for the costs associated with the acquisition of the East Whiteland Wastewater system assume base rate increases in 2025 and 2028, assuming an Asset Purchase Agreement is signed no later than March 1, 2021.***
2. ***The Company assumes approximately 30% cost allocation, and a DSIC surcharge beginning no sooner than 2023. These projections are for illustrative purposes and reflect reasonable expectations of the Company based on current industry trends, however, are subject to changes and the approval of the PA Public Utility Commission.***

Aqua Pennsylvania Wastewater, Inc.
Name of Proposer

Marc A. Lucca
Name of Designated Signatory

Signature

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Costs/Benefits

14. Provide a copy of the Buyer's offer to purchase the Seller's system and the Seller's response to that offer.

Response: Please see the response to SDR-13 for the Company's response to the Request For Bids. Please see the attachment to SDR-14 for East Whiteland Township's ordinance approving the sale of its system to the Company.

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TOWNSHIP OF EAST WHITELAND
CHESTER COUNTY, PENNSYLVANIA

ORDINANCE NO. #325

AN ORDINANCE AUTHORIZING THE EXECUTION BY EAST WHITELAND TOWNSHIP (THE "TOWNSHIP") OF AN ASSET PURCHASE AGREEMENT (THE "PURCHASE AGREEMENT") BETWEEN THE TOWNSHIP AND THE PURCHASER, AQUA PENNSYLVANIA WASTEWATER, INC. ("AQUA"); AUTHORIZING THE ASSIGNMENT OF THE TOWNSHIP'S RIGHTS AND OBLIGATIONS IN ALL RELEVANT AGREEMENTS TO AQUA; AUTHORIZING AND APPROVING ALL CONVEYANCE INSTRUMENTS; AUTHORIZING COMMUNICATIONS OF INFORMATION AND COOPERATION WITH AQUA; AUTHORIZING ALL ACTIONS RELATING TO THE EXECUTION OF THE PURCHASE AGREEMENT AND THE ASSIGNMENT OF ALL RELEVANT AGREEMENTS; AUTHORIZING INCIDENTAL ACTION TO BE TAKEN BY SPECIFIED OFFICERS OF THE TOWNSHIP; AND REPEALING INCONSISTENT ORDINANCES AND RESOLUTIONS.

WHEREAS, Township is a body corporate and politic, organized and existing under the Second Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. §65101, et. seq. (the "Code").

WHEREAS, the Township currently owns and operates a sanitary wastewater collection and disposal system (the "System") that provides wastewater service to various customers primarily within the Township; and

WHEREAS, the Township previously decided to pursue the sale of all of the assets, properties and rights of the Township (whether tangible, real, personal or mixed) which are exclusively held and used by it in connection with the System, as set forth in the Purchase Agreement (the "System Assets") through a competitive bidding process (the "Assets Sale"); and

WHEREAS, the Township issued a Request for Qualifications (the "RFQ") and qualified four bidders and a subsequent Request for Bids (the "RFB") to solicit binding bids from interested and qualified companies and entities to purchase the System; and

WHEREAS, the Township received four responses to the RFQ and, after the opportunity for due diligence, received binding bids from two interested entities ("Potential Bidders") that were found to be qualified; and

WHEREAS, the Township has reviewed the binding bids submitted in response to the RFB from the Potential Bidders, and has determined that Aqua has submitted a bid that is in the best interest of the Township and offers the greatest value to the Township, as determined by the Board of Supervisors of the Township based on the advice of the Township's Financial Advisor and the Special Counsel; and

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WHEREAS, to the extent the Township has determined that the Assets Sale is in the best interests of the Township, such determination to be evidenced through the execution by the Township of the Purchase Agreement, the Township will sell the System Assets to Aqua by entering into the Purchase Agreement with Aqua; and

WHEREAS, pursuant to the Purchase Agreement, the Township will assign the Township 's rights and obligations under all relevant Agreements to Aqua as necessary and appropriate and in accordance with the Purchase Agreement; and

WHEREAS, under the Purchase Agreement, the Township will transfer to Aqua the ownership of the System Assets through the execution and delivery of all necessary and required bills of sale, instruments of assignment, consents to transfer, deeds, and other agreements, documents, and instruments of conveyance (collectively, the "Conveyance Instruments"); and

NOW THEREFORE, BE IT ORDAINED AND ENACTED by the Board of Supervisors of East Whiteland Township as follows:

Section 1. Approval of the Purchase Agreement

The Board of Supervisors hereby authorizes and approves the execution, delivery, and performance of the Purchase Agreement substantially in the form attached hereto as ***Exhibit A***. The Chairperson or Vice Chairperson of the Board of Supervisors or the Township Manager are hereby authorized and directed on behalf of the Township to execute any and all papers and documents and to do and cause to be done any and all actions and things necessary or proper to execute the Purchase Agreement.

Section 2. Assignment of Intermunicipal Agreements and Other Relevant Agreements

The Board of Supervisors hereby authorizes and approves the assignment of the Township's rights and obligations under all relevant agreements. The Chairperson or Vice Chairperson of the Board of Supervisors or the Township Manager are hereby authorized and directed on behalf of the Township to execute any and all papers and documents and to do and cause to be done any and all actions and things necessary or proper to effectuate such assignment, provided that the terms and conditions of all such papers and documents are satisfactory to the Township Solicitor and Special Counsel to the Township.

Section 3. Approval of Deeds, Certificates, and Related Documents

The Board of Supervisors hereby authorizes the execution and delivery by the Chairperson or Vice Chairperson of the Board of Supervisors or the Township Manager of the Conveyance Instruments necessary and required to be executed.

Section 4. Disposition of Proceeds

The proceeds of the sale shall be utilized at the discretion of the Board of Supervisors in a

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manner consistent with the Code and other applicable law.

Section 5. Information and Cooperation

The Board of Supervisors hereby authorizes the Township, its agents and employees, to obtain and communicate the System billing information and any and all rights of the Township in connection therewith and other information required or desirable, in the sole discretion of the Township Manager, to Aqua and to cooperate with Aqua for the continued operation of the System and the use of the System Assets.

Section 6. General Authorization

The Board of Supervisors hereby further authorizes the Township, its agents and employees, to take any and all necessary actions required by the Code and other applicable law to complete the sale of the System Assets.

Section 7. Severability

The provisions of this Ordinance are intended to be severable, and if any section, sentence, clause, part or provision hereof shall be held illegal, invalid or unconstitutional by any court of competent jurisdiction, such decision of the court shall not affect or impair the remaining sections, sentences, clauses, parts or provisions of this Ordinance. It is hereby declared to be the intent of the Board of Supervisors that this Ordinance would have been adopted even if such illegal, invalid or unconstitutional section, sentence, clause, part or provisions had not been included herein.

Section 8. Effective Date

This Ordinance shall take effect and be in force five (5) days from and after its approval as required under the Code.

Section 9. Repealer

All other ordinances and resolutions or parts thereof as they are inconsistent with this Ordinance are hereby repealed.

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ENACTED AND ORDAINED this 11th day of November, 2020 by the Board of Supervisors of East Whiteland Township.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Scott Lambert

Scott Lambert, Chairperson

Richard Orlow

Rich Orlow, Vice Chairperson

Sue Drummond

Susan Drummond, Member

ATTEST:

John Nagel

John Nagel, Township Manager/Secretary

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Appraisals

15. For each UVE in this case, please provide the following, if not already provided:

a. A list of valuations of utility property performed by the UVE;

b. A list of appraisals of utility property performed by the UVE

c. A list of all dockets in which the UVE submitted testimony to a public utility commission related to the appraisal of utility property; and

d. An electronic copy of or electronic link to testimony in which the UVE testified on public utility fair value acquisitions in the past two years.

Response: Harold Walker III:

a. Please see Mr. Walker's Curriculum Vitae attached as Appendix A to Mr. Walker's direct testimony, included as Exhibit X to the Application (Aqua Statement No. 4). Starred items represent dockets where Mr. Walker presented testimony related to the appraisal of utility property.

b. Please see Mr. Walker's response to a. above.

c. Please see Mr. Walker's response to a. above.

d. In the past two years, Mr. Walker submitted testimony in the below dockets. Links to the dockets where Mr. Walker testified are below:

i. Cheltenham Township – A-2019-3008491
https://www.puc.pa.gov/docket/A-2019-3008491
ii. East Norriton – A-2019-3009052
https://www.puc.pa.gov/docket/A-2019-3009052
iii. Kane Borough Authority - A-2019-3014248
https://www.puc.pa.gov/docket/A-2019-3014248
iv. Delaware County Regional Water Quality Control Authority – A-2019-3015173
https://www.puc.pa.gov/docket/A-2019-3015173

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

v. Borough of Royersford – A-2020-3019634
https://www.puc.pa.gov/docket/A-2020-3019634
vi. Valley Township – A-2020-3019859
https://www.puc.pa.gov/docket/A-2020-3019859
vii. Valley Township – A-2020-3020178
https://www.puc.pa.gov/docket/A-2020-3020178
viii. Upper Pottsgrove Township – A-2020-3021460
https://www.puc.pa.gov/docket/A-2020-3021460
ix. Lower Makefield Township – A-2021-3024267
https://www.puc.pa.gov/docket/A-2021-3024267
x. Borough of Brentwood – A-2021-3024058
https://www.puc.pa.gov/docket/A-2021-3024058

Jerome C. Weinert:

a. Please see Mr. Weinert's Curriculum Vitae attached as Appendix A to Exhibit Y of the Application, direct testimony of Jerome C. Weinert (Aqua Statement No. 5).

b. Please see Mr. Weinert's response to a., above.

c. Please see the below list of dockets that Mr. Weinert submitted testimony to a public utility commission related to the appraisal of utility property:

A-2016-2580061 – New Garden
A-2017-2606103 – McKeesport
A-2018-3001582 – East Bradford
A-2018-3002437 – Sadsbury
A-2018-3004933 – Exeter
A-2019-3006880 – Steelton
A-2019-3008491 – Cheltenham
A-2019-3009052 – East Norriton
A-2020-3019634 – Borough of Royersford
A-2019-3014248 – Kane Borough
A-2020-3019859 – Valley Township
A-2020-3020178 – Valley Township
A-2020-3021460 – Upper Pottsgrove Township
A-2021-3024267 – Lower Makefield Township

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

d. In the past two years, Mr. Weinert submitted testimony in the below dockets. Links to the dockets where Mr. Weinert testified are below:

i. Steelton Borough – A-2019-3006880
https://www.puc.pa.gov/docket/A-2019-3006880
ii. Cheltenham Township – A-2019-3008491
https://www.puc.pa.gov/docket/A-2019-3008491
iii. East Norriton Township – A-2019-3009052
https://www.puc.pa.gov/docket/A-2019-3009052
iv. Kane Borough – A-2019-3014248
https://www.puc.pa.gov/docket/A-2019-3014248
v. Borough of Royersford – A-2020-3019634
https://www.puc.pa.gov/docket/A-2020-3019634
vi. Valley Township – A-2020-3019859
https://www.puc.pa.gov/docket/A-2020-3019859
vii. Valley Township – A-2020-3020178
https://www.puc.pa.gov/docket/A-2020-3020178
viii. Upper Pottsgrove Township – A-2020-3021460
https://www.puc.pa.gov/docket/A-2020-3021460
ix. Lower Makefield Township – A-2021-3024267
https://www.puc.pa.gov/docket/A-2021-3024267

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Appraisals

16. Please explain each discount rate used in the appraisals, including explanations of the capital structure, cost of equity and cost of debt. State the basis for each input. Provide all sources, documentation, calculations and/or workpapers used in determining the inputs.

Response: Harold Walker III:

Please see the direct testimony of Harold Walker III, included as Exhibit X to the Application (Aqua Statement No. 4) at p. 19-21, Exhibit Q to the Application (Gannett Appraisal), and **CONFIDENTIAL** Gannett electronic workpapers.

Jerome C. Weinert:

Please see the direct testimony of Jerome C. Weinert, Application Exhibit Y (Aqua Statement No. 5) at p. 18-22. Information on the discount rate can also be found in Application Exhibit R (AUS Appraisal), the section entitled "Cost of Capital / Required Return".

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Appraisals

17. Please explain whether the UVE used replacement cost or reproduction cost and why that methodology was chosen.

Response: Harold Walker III:

Gannett Fleming used the original cost new (OCN) to calculate the trended original cost (TOC) measures, or the reproduction cost of the depreciable assets by multiplying the OCN by specific cost indices. We converted reproduction cost new to replacement cost new (RCN) after factoring in obsolescence. We used the TOC method because the mandated use of the Engineering Assessment's original cost essentially dictates the use of TOC over the reproduction cost or the replacement cost methods. Please see the direct testimony of Harold Walker III, included as Exhibit X to the Application (Aqua Statement No. 4) at p. 16-17 for an explanation of why this method was chosen.

Jerome C. Weinert:

AUS Consultants used replacement cost. Please see the direct testimony of Jerome C. Weinert, Application Exhibit Y (Aqua Statement No. 5) at p. 6 for an explanation of why the replacement cost was chosen.

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Appraisals

18. Please provide a copy of the source for the purchase price and number of customers for each comparable acquisition used in the appraisals.

Response: Harold Walker III:

Please see pages 9 to 46 of Exhibit 20 (workpapers) from Exhibit Q to the Application (Gannett Appraisal) for the source for the purchase price and number of customers for each comparable acquisition used in the Gannett Appraisal.

Jerome C. Weinert:

The source of the purchase prices used in the comparable sales approach to the Market Approach was the Asset Purchase Agreements in those transactions. Please see SDR-18 Attachment 1 for excerpts from those Agreements. Mr. Weinert compared those purchase price statistics to the following appraisal statistics: original cost less depreciation, replacement cost new less depreciation, customers, and to cash flows (EBITDA both 5-year and 13-year averages) in developing our comparable sales approach.

Pennsylvania Section 1329 Water and Wastewater Transactions

Utility System	Acquirer	Date	Purchase Price $
New Garden Sewer System	Aqua Pennsylvania (Aqua PA)	August 2016	29,500,000
McKeesport Wastewater	Pennsylvania American (PAWC)	September 2016	156,000,000
Limerick Wastewater	Aqua PA	November 16,2016	75,100,000
East Bradford Wastewater	Aqua PA	December 20, 2017	5,000,000
Sadsbury Wastewater	PAWC	September 5, 2017	9,500,000
Mahoning Water	SUEZ	April 20, 2018	4,734,800
Mahoning Wastewater	SUEZ	April 20, 2018	4,765,200
Steelton Water	PAWC	November 14, 2018	22,500,000
Exeter Wastewater	PAWC	May 28, 2018	96,000,000
Cheltenham Wastewater	Aqua PA	June 2018	50,250,000
East Norriton Wastewater	Aqua PA	October 29, 2018	21,000,000
Kane Wastewater	PAWC	September 30, 2018	17,560,000
Royersford Wastewater	PAWC	December 10, 2019	13,000,000
Valley Water	PAWC	December 17, 2019	7,325,000
Valley Wastewater	PAWC	December 17, 2019	13,950,000
DELCORA	Aqua PA	September 17, 2019	276,500,000
Upper Pottsgrove	PAWC	April 28, 2020	13,750,000
Lower Makefield	Aqua PA	September 17, 2020	53,000,000

East Whiteland Township, Pennsylvania
East Whiteland Township's Wastewater Collection System and Purchased Treatment Capacity
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of January 8, 2021

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price[1]	Number of Total Customers	Relationship to the passage of Section 1329
1	9/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	11/16/2016	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Wastewater Collection and paid for treatment Capacity	5,000,000	5,000,000	1,248	Post
5	4/20/2018	SUEZ	Mahoning	Carbon	Water Distribution System	4,734,800	4,734,800	1,186	Post
6	4/20/2018	SUEZ	Mahoning	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	6/1/2018	Aqua PA	Cheltenham	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	11/14/2018	PA American Water	Steelton	Dauphin	Water Distribution and Treatment	22,500,000	21,750,000	2,325	Post
9	1/1/2017	PA American Water	Sadsbury	Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	9/30/2018	PA American	Kane	McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	12/10/2019	PA American	Royersford	Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	12/17/2019	PA American	Valley	Chester	Water Treatment and Distribution System	7,325,000	7,325,000	1,459	Post
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post
16	12/31/2019	Aqua PA	Delaware County Regional Wa	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	9/17/2020	Aqua PA	Lower Makefield	Bucks	Wastewater Collection and Purchased Treatment Capacity	53,000,000	53,000,000	11,151	Post

ASSET PURCHASE AGREEMENT

Between

NEW GARDEN TOWNSHIP

And

NEW GARDEN TOWNSHIP SEWER AUTHORITY

And

AQUA PENNSYLVANIA WASTEWATER, INC.

August ____, 2016

New Garden

b. The purchase price for the Assets will consist of payment of Twenty-nine Million Five Hundred Thousand Dollars ($29,500,000.00) (the "Purchase Price") to be paid by Buyer at Closing in one lump sum payment of immediately available funds. Buyer and Seller agree that the results of the appraisals pursuant to Act 12 (as defined herein) shall have no effect on the Purchase Price.

c. Buyer also agrees to contribute Twenty Thousand Dollars ($20,000.00) toward Seller's closing costs.

2.6 Assumption of Liabilities and Contracts

a. Buyer will (a) satisfy and comply with all conditions and requirements of the permits specified in Schedule 2.6(a) upon transfer of such permits to Aqua.

b. Seller and Buyer shall: (I) obtain consents to the assignment of the contracts listed on Schedule 2.6(b), section I from all parties to said contracts if required by the terms of the respective contracts; and (II) arrange for the termination or amendment of the contract listed on Schedule 2.6(b), section II and the execution of a new agreement or, in the case of an amendment, an assignment, that is agreeable to Aqua in its sole discretion, with any such new agreement to replace the terminated contract. The contracts listed on Schedule 2.6(b) are collectively referred to herein as the "Assumed Liabilities".

c. Seller hereby acknowledges that, following the effective time of Closing, Aqua shall be responsible for the provision of wastewater service to the customers of Seller.

d. All other liabilities and obligations of Seller shall remain the sole responsibility of Seller. Other than the Assumed Liabilities, Buyer shall not assume and shall not be liable for, and Seller shall indemnify and hold harmless Aqua and its officers, employees and agents from and against, any and all liabilities or obligations of Seller of any nature whatsoever whether express or implied, fixed or contingent, known or unknown at the time of Closing.

3. CLOSING

Closing hereunder (the "Closing") shall take place at the offices of Lamb McErlane PC located at 24 E. Market St., West Chester, PA 19381 or other mutually agreed upon location, commencing at 10:00 a.m. local time, on the later to occur of: (i) one hundred fifty (150) days from the date Seller accepts Buyer's offer, as evidenced by the date of Seller's execution of this Agreement, and (ii) forty-five (45) days (a) after receipt of the last required unappealed regulatory approval of the transactions contemplated herein and (b) fulfillment of all conditions precedent under Section 4 hereof. Seller may terminate this Agreement should Buyer fail to obtain unappealed regulatory approval of the transactions contemplated herein within 365 days of the Effective Date, unless mutually extended in writing. The date of the Closing is referred to herein as the "Closing Date". The effective time of the Closing shall be 12:01 a.m. on the day following the Closing Date.

Execution Copy

ASSET PURCHASE AGREEMENT

By and Among

THE CITY OF MCKEESPORT,

THE MUNICIPAL AUTHORITY OF THE CITY OF MCKEESPORT

AS SELLER

and

PENNSYLVANIA AMERICAN WATER COMPANY

AS BUYER

Dated as of September ____, 2016

not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

(e) From the date of this Agreement until the Closing Date, the Seller shall collect accounts receivable and pay accounts payable in the ordinary course and in a manner consistent with its past practices.

ARTICLE III.

ESCROW AND PURCHASE PRICE

Section 3.01. **Escrow Amount.** At Closing, Seven Million Eight Hundred Thousand Dollars ($7,800,000) of the Purchase Price (defined below) shall be deposited in escrow (the "Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of Exhibit A, by and among the Seller, the City, the Buyer and the Escrow Agent (the "Closing Escrow Agreement") to provide for any indemnification claims of the Buyer due and payable by the Seller pursuant to Section 8.02 herein; *provided, however*, that the Escrow Fund shall be released to the Seller or the City (in accordance with the Closing Escrow Agreement) on the Escrow Release Date, except for any amount reasonably required to cover any indemnification claim made by the Buyer prior to such date.

Section 3.02. **Purchase Price.** The purchase price for the Acquired Assets shall be One Hundred Fifty-Six Million Dollars ($156,000,000) or the final appraised value as determined under 66 Pa.C.S. Section 1329, whichever is higher (the "Purchase Price") which shall be paid as follows:

(a) Within five (5) Business Days of the Effective Date, Buyer shall deposit Five Million Dollars ($5,000,000) of the Purchase Price, payable to the City in immediately available funds (the "Signing Cash Deposit"), subject to Section 14.02 and secured by the City with a duly executed note (the "Deposit Note"), in the form attached hereto as Exhibit B;

(b) Within five (5) Business Days of receipt of written notice from the City that it has due and owing specific payables which meet the definition of Appropriate Use, such payables meet or exceed the amount set forth below and such payables are specifically identified in said notice, but in any case not prior to January 15, 2017, Buyer shall deposit Two Million Dollars ($2,000,000) of the Purchase Price, payable to the City in immediately available funds (the "2017 Cash Deposit" and together with the Signing Cash Deposit, the "Deposits"), subject to Section 14.02 and secured by the City with the Deposit Note.

(c) At Closing, Buyer shall (i) provide for payment in full the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Between

Limerick Township, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of November 16, 2016

Parties the economic and, to the extent permitted under applicable Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as the Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under applicable Law and the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for the Seller, pay, perform and discharge the liabilities and obligations of the Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or prior to the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under applicable Law, the Seller shall, at Buyer's expense, hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the date hereof and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the date hereof, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

Limerick

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL CONSIDERATION

Section 3.01. **Purchase Price and Additional Consideration.** The purchase price for the Acquired Assets shall be Seventy-Five Million One Hundred Thousand Dollars ($75,100,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for the payment in full the total amount of Outstanding Indebtedness; and

(b) Subject to any adjustment in Purchase Price resulting from the proration procedures set forth in Section 3.01(c), Buyer shall pay to the Seller at Closing by wire transfer

ASSETS PURCHASE AGREEMENT
Between
EAST BRADFORD TOWNSHIP
And
AQUA PENNSYLVANIA WASTEWATER, INC.

December 20, 2017

within thirty (30) days after receipt thereof.

First Blanked

1.4 Excluded Assets

The Assets shall not include any of the following (collectively, the "Excluded Assets"):

a. Any and all customer service laterals that run from the curb area (or edge of road or right-of-way) to each of the individual customer's residences or structures.

b. Any and all piping and fixtures internal to each of the individual customer's residences or structures.

c. Any of Seller's cash, investments, cash equivalents and accounts, including without limitation any accounts receivable or unbilled charges for Services furnished for periods prior to and up to the Closing Date.

d. The real and personal property, including the improvements on said real property, described in **Schedule 1.4**.

e. Any other asset, property, easement or interest as is shown in **Schedule 1.4**.

1.5 Consideration

The aggregate cash purchase price for the Assets is FIVE MILLION U.S. Dollars ($5,000,000.00) (the "Purchase Price"). The Purchase Price shall be paid by Buyer at Closing, by wire transfer of immediately available funds to Seller.

Buyer and Seller agree to utilize the procedures under Act 12 of 2016, 66 Pa. C.S. § 1329 ("Section 1329") in completing this transaction.

Buyer agrees to and shall (i) assume at Closing the Assumed Liabilities (hereinafter defined), and (ii) pay at Closing Seller's actual, out-of-pocket costs incurred for services performed, excluding attorneys' fees, after the date of this Agreement in order to comply with the PUC Implementation Order, provided such costs do not relate to the Original Cost Study or any update thereto, and further provided such costs do not relate to the preparation and completion of the Seller's Utility Valuation Expert appraisal report and any additional work by the Seller's Utility Valuation Expert necessary to assist in the processing and prosecution of the application to the Pennsylvania Public Utility Commission ("PUC") in regard to this transaction under Section 1329. Buyer and Seller will be responsible for the costs associated with their respective Utility Valuation Experts. Buyer and Seller agree that the costs associated with the licensed engineer to develop and finalize the Engineer's Assessment will be paid fifty percent (50%) by Buyer and fifty percent (50%) by Seller.

Upon its execution and delivery of this Agreement to the Seller, the Buyer shall obtain a performance bond equal to ten percent (10%) of the Purchase Price (the "Bond"). The Bond

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of SUEZ Water Pennsylvania Inc., Pursuant to the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1102(a), and 66 Pa. C.S. § 1329 For approval of 1) the transfer, by sale, of Substantially all of the Township of Mahoning's Assets, properties and rights related to its Wastewater collection and conveyance system to SUEZ Water Pennsylvania Inc., and 2) the rights Of SUEZ Water Pennsylvania Inc. to begin to Offer or furnish Wastewater collection and Conveyance service to the public in portions of the Townships of Mahoning, Cooper and Valley, Montour County, Pennsylvania	:	A-2018-3003517
Application of SUEZ Water Pennsylvania Inc., Pursuant to the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1102(a), and 66 Pa. C.S. § 1329 For approval of 1) the transfer, by sale, of Substantially all of the Township of Mahoning's Assets, properties and rights related to its water Distribution system to SUEZ Water Pennsylvania Inc., and 2) the rights of SUEZ Water Pennsylvania Inc. to begin to offer or furnish Water distribution service to the public in Portions of the Townships of Mahoning, Cooper And Valley, Montour County, Pennsylvania	:	A-2018-3003519

RECOMMENDED DECISION

Before
Joel H. Cheskis
Deputy Chief Administrative Law Judge

this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

9. That SUEZ Water Pennsylvania Inc. may defer depreciation related to post-acquisition improvements not recovered through the DSIC for book and ratemaking purposes. The Commission recognizes that the Joint Petitioners reserve their rights to litigate their positions fully in future rate cases when this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

10. That, pursuant to 66 Pa. C.S. § 1329(d)(iv), SUEZ Water Pennsylvania Inc. may include, in its next base rate case, a claim for transaction and closing costs related to the acquisition of the Mahoning water and wastewater systems. The Commission recognizes that the Joint Petitioners reserve their rights to litigate their positions fully in future rate cases when this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

11. That the Commission's Secretary's Bureau shall issue Certificates of Filing or approvals for the following agreements between SUEZ Water Pennsylvania Inc. and a municipal corporation:

(1) Asset Purchase Agreement Between Township of Mahoning and SUEZ Water Pennsylvania Inc., dated April 20, 2018;

(2) Water Service Agreement dated July 9, 2001, between Danville Municipal Authority and Mahoning Township Authority;

(3) Service Agreement dated October 17, 2005 between Valley Township and Mahoning Water Authority;

(4) Connection and Conveyance Agreement dated October 16, 2017 between the Township of Mahoning and Cooper Township Municipal Authority;

(5) Service Agreement dated October 17, 2005 between Valley Township and Mahoning Sewer Authority;

13. SWPA was notified by Mahoning that SWPA was selected as the successful bidder for the Systems, and Mahoning sent a draft asset purchase agreement to SWPA for review and comment. SWPA Statement No. 1 p. 9.

14. The final asset purchase agreement ("APA") was signed on April 20, 2018. SWPA Statement No. 1 p. 9.

15. The APA sets forth the terms and conditions pursuant to which Mahoning will sell, and SWPA will purchase, substantially all assets, properties and rights that Mahoning owns and uses in connection with the Systems. Under the APA, the closing of the Transaction will occur after the receipt of all applicable governmental approvals, including approvals from the Commission, and after all applicable conditions have been met (or waived) by the parties. SWPA Statement No. 1 p. 10.

16. Upon closing of the Transaction, SWPA will take ownership of the Systems and begin rendering water distribution and wastewater collection and conveyance services to Mahoning's current customers and Mahoning will permanently discontinue providing or furnishing water distribution and wastewater collection and conveyance service to the public. SWPA Statement No. 1 p. 10.

17. The negotiated purchase price is $9,500,000 for both the Water System and the Wastewater System. SWPA has allocated $4,734,800 of the negotiated purchase price to the Water System and $4,765,200 of the negotiated purchase price to the Wastewater System. SWPA Statement No. 1 pp. 11-12.

D. The Application and the Utility Valuation Expert ("UVE") Appraisals

18. On July 20, 2018, SWPA filed an application with the Commission to acquire the Water System (the "Water Application") and an application to acquire the Wastewater System ("Wastewater Application") (together, the "Applications"). Water

ASSET PURCHASE AGREEMENT

BETWEEN

TOWNSHIP OF SADSBURY

AND

PENNSYLVANIA-AMERICAN WATER COMPANY

SEPTEMBER 5, 2017

(c) Any and all grinder pumps, piping and fixtures located at the curb-line or edge-of-the road to and throughout the customer's property and included as components of the Customer Sewer Laterals;

(d) Any and all stormwater system facilities including, but not limited to: (a) facilities located on, in, within, or under the real property, including easements, that is a part of the Assets, (b) facilities that are connected to the System and located within the public rights-of-way and (c) facilities or assets used in the operation of a municipal separate stormwater system;

(e) Seller's cash on hand on the date of Closing and Seller's account receivables related to the System for services rendered through the close of business on the Closing Date;

(f) All rights of Seller under this Agreement and related Bill of Sale and Assignment of Contracts Agreement as it pertains to the transfer and sale herein contemplated; and

(g) the specific assets, properties and rights of Seller set forth on **Schedule 1.3**.

1.4 Accounts Receivable. Accounts receivable for wastewater services related to the System rendered through the close of business on the Closing Date shall be excluded assets as per **Section 1.3**, and accounts receivable for wastewater services related to the System rendered thereafter shall belong to PAWC.

ARTICLE 2
PURCHASE PRICE

SADSBURY

2.1 Purchase Price for the Assets.

(a) Upon its execution and delivery of this Agreement to the Seller, PAWC shall remit a deposit of THIRTY SEVEN THOUSAND FIVE HUNDRED DOLLARS ($37,500.00) (i) which shall be retained by Seller in the event that the Closing does not occur for any reason other than Seller's default under this Agreement or a failure of a condition precedent under Section 8.1 below, and (ii) which, in the event of Closing, shall be applied to the Purchase Price.

(b) Subject to the terms and conditions of this Agreement, the purchase price (the "**Purchase Price**") for the Assets shall be NINE MILLION FIVE HUNDRED THOUSAND DOLLARS ($9,500,000.00). The parties agree that the Purchase Price represents the "negotiated purchase price" for such Assets, pursuant to the valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. The Purchase Price shall be payable directly to Seller on the Closing Date by wire transfer or by corporate check, at Seller's discretion.

2.2 Use of Fair Market Valuation Process. Following the execution of this Agreement, PAWC and Seller shall each take such any and all further actions as are necessary to invoke, commence and complete the fair market valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. Without limiting the generality of the foregoing, PAWC and Seller have each engaged a utility valuation expert from the list of such experts maintained by the Pennsylvania Public Utility Commission ("**PUC**") and have jointly selected and engaged a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa.C.S. § 1329(a)(4). The final reports of each of the two utility valuation experts are attached as **Schedule 2.2**. All costs and expenses associated with the utility valuation experts shall be the responsibility of the party engaging such expert. All costs and expenses associated with the licensed engineer jointly selected by the parties were shared equally between PAWC and Seller prior to the execution of this Agreement. PAWC

EXECUTION COPY

ASSET PURCHASE AGREEMENT

By and Between

Steelton Borough Authority

As Seller

and

Pennsylvania-American Water Company
As Buyer

Dated as of November 14, 2018

the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the date hereof and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the date hereof, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

STEELTON

Section 3.01 Purchase Price.

(a) Purchase Price for the Assets. Subject to the terms and conditions of this Agreement, the purchase price ("Purchase Price") for the Acquired Assets shall be Twenty Two Million Five Hundred Thousand Dollars ($22,500,000). The Purchase Price shall be payable directly to seller on the Closing Date by wire transfer.

(b) Use of Fair Market Valuation Process. Following the execution of this Agreement, Buyer and Seller shall each take such actions as are necessary to invoke, commence and complete the fair market valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. §1329. Without limiting the generality of the foregoing, Buyer and Seller shall each engage a utility valuation expert other than HRG from the list of such experts maintained by the PaPUC and shall jointly utilize HRG, a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa.C.S. §1329(a)(4). All costs and expenses associated with the licensed engineer jointly utilized by the parties shall be shared equally between the Buyer and Seller. Seller agrees that Buyer shall prosecute an application for approval of the transaction contemplated by this Agreement and Buyer agrees that: (1) Seller has the right to intervene and participate in any regulatory or legal proceeding relating to the application, including negotiation or execution of a settlement agreement related to the application; (2) Buyer shall not oppose

ASSET PURCHASE AGREEMENT
Between
TOWNSHIP OF EXETER
(as Seller)
and
PENNSYLVANIA-AMERICAN WATER COMPANY
(AS BUYER)

dated as of May 29, 2018

Article 2.4 **Excluded Liabilities**. Any other liabilities and obligations of Seller shall remain the sole responsibility of Seller, including any liabilities and obligations of Seller arising under or to be performed under the Collective Bargaining Agreement and any liabilities or obligations with respect to any Compensation Plan that the Seller maintains, contributes to, has an obligation to contribute to or otherwise has any liability with respect thereto, and any withdrawal liability or funding obligation incurred by Buyer on or after the Closing with respect to any multi-employer pension plan (the "Excluded Liabilities").

Article 2.5 **Customer Billing**. Unless Buyer and Seller agree to a different procedure prior to Closing, Seller shall issue final bills for all customer accounts in accordance with its current billing practices after the Closing Date.

Article 2.6 **Purchase Price**.

a) Purchase Price. Subject to Section 3.4, the purchase price for the sale, transfer, assignment, conveyance and delivery of the Assets shall be $96,000,000.00 as may be adjusted in accordance with the terms of this Agreement (the "Purchase Price"), which shall be paid by Buyer to Seller at Closing in one lump sum payment by cash or by wire transfer of immediately available funds. Buyer and Seller agree that the results of any appraisals pursuant to Act 12 (defined below) shall have no effect on the Purchase Price.

b) Deposit. Within fourteen (14) days after the Effective Date, Buyer shall remit a deposit in the form of a performance bond in substantially the form attached hereto as Exhibit "A" (the "Bond") in the amount of $9,600,000.00 (equal to ten percent (10%) of the Purchase Price) ("Deposit"). The Bond is payable to Seller and the surety company shall pay to Seller the amount of the Bond under the circumstances set forth in Sections 10.1(a) and 10.2(c), if applicable. Upon Closing, Seller will provide a full and unconditional discharge and release of the Bond by way of a written release letter addressed to and in a form reasonably satisfactory to the surety company (the "Bond Release").

c) Intentionally Deleted.

d) Transfer Taxes. Any and all deed stamps or transfer taxes that may be due the Commonwealth of Pennsylvania or any political subdivision in connection with the sale, transfer, assignment, conveyance and delivery hereunder of the Assets to Buyer (collectively, "Transfer Taxes"), shall be borne equally between Buyer and Seller.

ARTICLE 3
CLOSING

Article 3.1 **Closing**. The Closing hereunder (the "Closing") shall take place at the offices of Fox Rothschild LLP at 2000 Market Street, Philadelphia, Pennsylvania, or other mutually agreed upon location, commencing at 10:00 a.m. local time, within five (5) Business Days after the date upon which all the conditions precedent to Closing described in this Agreement have been fulfilled or waived, or at such other place and time as may be mutually agreed to by the

Execution Copy

ASSET PURCHASE AGREEMENT

By and Between

Township of Cheltenham, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of June __, 2018

ARTICLE III.

PURCHASE PRICE

Cheltenham

Section 3.01. **Purchase Price**

. The purchase price for the Acquired Assets shall be Fifty Million Two Hundred Fifty Thousand Dollars ($50,250,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for payment in full of the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by Buyer pursuant to clause (ii) below) and/or (ii) subject to the provisions of Section 7.07, assume any of Seller's obligations related to the Outstanding Indebtedness and obtain a release of Seller from all obligations thereunder in such form and terms reasonably acceptable to Seller and/or provide written evidence of such payment in full to Seller in such form reasonably acceptable to Seller, at Buyer's discretion;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (after taking into account the amount paid or assumed by Buyer pursuant to Section 3.01(b)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

(c) Final Billing: The Parties agree that Buyer shall be entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller shall be entitled to all such billings for the period prior to the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

Section 3.02. **Fair Consideration**

. The Parties acknowledge and agree that the consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. **Allocation of the Purchase Price**

. Buyer and Seller agree that the Purchase Price (which for purposes of this Section 3.03 shall include any liabilities required to be treated as part of the Purchase Price for federal income tax

Execution Version

ASSET PURCHASE AGREEMENT

By and Between

Township of East Norriton, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of October 29, 2018

East Norriton

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets shall be Twenty-One Million Dollars ($21,000,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for payment in full of the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by Buyer pursuant to clause (ii) below) and/or (ii) subject to the provisions of Section 7.06, assume any of Seller's obligations related to the Outstanding Indebtedness and obtain a release of Seller from all obligations thereunder in such form and terms reasonably acceptable to Seller and/or provide written evidence of such payment in full to Seller in such form reasonably acceptable to Seller, at Buyer's discretion;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (after taking into account the amount paid or assumed by Buyer pursuant to Section 3.01(b)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

(c) Final Billing: The Parties agree that Buyer shall be entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller shall be entitled to all such billings for the period prior to the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

Section 3.02. Fair Consideration. The Parties acknowledge and agree that the consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Allocation of the Purchase Price. At Buyer's request and Seller shall agree that the Purchase Price (which for purposes of this Section 3.03 shall include any liabilities required to be treated as part of the Purchase Price for federal income tax purposes), as may be adjusted pursuant to this Section 3.03, shall be allocated among the Acquired Assets in accordance with the allocation reflected in a schedule prepared by Buyer in accordance with this Section 3.03 (the "Allocation Schedule"). Within sixty (60) days following the final determination of the Purchase Price pursuant to Section 3.01, Buyer shall deliver to Seller a draft of the Allocation Schedule setting forth Buyer's proposed allocation for Seller's review. Seller shall have the right to review and reasonably comment upon Buyer's proposed Allocation Schedule, *provided*, that (a) such proposed Allocation Schedule shall be deemed approved by Seller and shall be final and binding upon the Parties unless Seller provides written notice of

ASSET PURCHASE AGREEMENT

BETWEEN

BOROUGH OF KANE AUTHORITY, TOGETHER WITH

BOROUGH OF KANE AND WETMORE TOWNSHIP

AND

PENNSYLVANIA-AMERICAN WATER COMPANY

November 4, 2019

Purchase Price $17,560,000

APA Pg 3

{L0825790.2}

(b) Following the Closing, PAWC shall assume only those contractual liabilities arising after the Closing Date under the Assigned Contracts (specifically excluding any liability under the Assigned Contracts arising out of or relating to a breach or other circumstances that occurred on or prior to the Closing Date).

1.3 Excluded Assets. Notwithstanding anything to the contrary contained in this Agreement, the Assets shall not include any of the following:

(a) Any and all connecting facilities (customer's sewer laterals) from the Seller's wastewater lines, mains or collection facilities at the curb-line or edge-of-road that are within the customer's property (the "**Customer Sewer Laterals**");

(b) Any and all piping and fixtures internal to each individual customer's structure (whether residential, commercial, industrial or other types);

(c) Any and all grinder pumps, piping and fixtures located at the curb-line or edge-of-the road that are within the customer's property;

(d) Any and all stormwater system facilities including, but not limited to: (a) facilities located on, in, within, or under the real property, including easements, that is a part of the Assets, (b) facilities that are connected to the System and located within the public right-of-way and (c) facilities or assets used in the operation of a municipal separate stormwater system;

(e) Seller's cash on hand on the date of Closing and Seller's accounts receivable related to the System for services rendered through the close of business on the Closing Date;

(f) All rights of Seller under this Agreement and related Bill of Sale and Assignment of Contracts Agreement as it pertains to the transfer and sale herein contemplated; and

(g) The specific assets, properties and rights of Seller set forth on **Schedule 1.3**.

1.4 Accounts Receivable. Accounts receivable for wastewater services related to the System rendered through the close of business on the Closing Date shall be excluded assets as per **Section 1.3**, and accounts receivable for wastewater services related to the System rendered thereafter shall belong to PAWC.

ARTICLE 2
PURCHASE PRICE

2.1 Purchase Price for the Assets. Subject to the terms and conditions of this Agreement, the negotiated purchase price shall be Seventeen Million, Five Hundred Sixty Thousand Dollars ($17,560,000.00) (the "**Purchase Price**"). The Purchase Price shall be payable directly to Seller on the Closing Date by wire transfer or by corporate check, at the Seller's discretion.

2.2 Use of Fair Market Valuation Process. Following the execution of this Agreement, PAWC and Seller shall each take such further actions as are necessary to invoke, commence and complete the fair market **valuation** process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. Without limiting the generality of the foregoing, PAWC and Seller have each engaged a utility valuation expert from the list of such experts maintained by the Pennsylvania Public Utility Commission ("**PUC**") and have jointly selected and engaged a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa.C.S. § 1329(a)(4). All costs and expenses associated with the utility valuation experts shall be the

EXECUTION COPY

ASSET PURCHASE AGREEMENT

By and Between

Royersford Borough, Montgomery County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 10, 2019

4824-5430-5949

permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.15, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets is Thirteen Million Dollars ($13,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall provide for payment in full of the total amount of Outstanding Indebtedness directly to Seller's obligees on account of the Purchase Price;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (remaining after the debt repayment pursuant to Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(c) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

Execution Version

WATER

ASSET PURCHASE AGREEMENT

By and Between

Valley Township, Chester County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 17, 2019

4826-7132-5345

and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Seven Million Three Hundred Twenty-Five Thousand Dollars ($7,325,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and to release Liens, to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to drinking water customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

Execution Version

SANITARY SEWER

ASSET PURCHASE AGREEMENT

By and Between

Valley Township, Chester County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 17, 2019

4833-0982-2110

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.
The purchase price for the Acquired Assets is Thirteen Million Nine Hundred Fifty Thousand Dollars ($13,950,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), to Seller by wire transfer of immediately available funds the Purchase Price (remaining after the payments required in Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Among

The Delaware County Regional Water Quality Control Authority,

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of September 17, 2019

4836-0962-5504

(c) If, following the Effective Date and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) If, during the twelve (12) month period following the Closing Date, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

ESCROW; PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. **Escrow Amount.**

At Closing, Five Million Dollars ($5,000,000) of the Purchase Price shall be deposited in escrow (the "Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of Exhibit B, by and among the Seller, the Buyer, and the Escrow Agent (the "Escrow Agreement") to provide for Seller's post-Closing obligations pursuant to Article VI. The Escrow Fund shall be released in accordance with the Escrow Agreement. After the Closing Date and notwithstanding any other provision of this Agreement, the Escrow Fund is Buyer's sole recourse with respect to providing for Seller's post-Closing obligations pursuant to Article VI.

Section 3.02. **Purchase Price and Additional Consideration**

The purchase price for the Acquired Assets shall be Two Hundred Seventy-Six Million Five Hundred Thousand Dollars ($276,500,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall pay in full, fully fund or defease the total amount of Outstanding Indebtedness.

(b) Subject to any adjustment in Purchase Price resulting from the proration procedures set forth in Section 3.02(c) and after making the payments required in Sections 3.01 and 3.02(a), Buyer shall pay to the Seller by wire transfer of immediately available funds the balance of the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

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SANITARY SEWER

ASSET PURCHASE AGREEMENT

By and Between

Upper Pottsgrove Township, Montgomery County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of April 28, 2020

effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.
PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Thirteen Million Seven Hundred Fifty Thousand Dollars ($13,750,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), to Seller by wire transfer of immediately available funds the Purchase Price less (i) debt repayments, if any, required to release any Liens on Acquired Assets, (ii) the deposit as provided in Section 3.01(c), and (iii) Seller's share of Transfer Taxes payable upon recording of real estate, if any, as provided in Section 3.03, to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

(c) The Buyer shall pay a deposit of Ninety Thousand Dollars ($90,000) within ten (10) days of the Effective Date to the Seller to be used for Seller's incurred engineering and legal fees related to this transaction. At the successful closing of the transaction, the deposit will be deducted from the Purchase Price at settlement. In the event that the transaction does not successfully close, the amount of the deposit that has not been spent on engineering and legal fees will be refunded to the Buyer. The amount of such refund will be calculated as of the date of a termination under Section 14.01 based on the Seller's expenditures and accrued expenses as of such date of termination. Any engineering and legal fees incurred by the Seller related to this transaction that exceed the $90,000 deposit shall be the sole responsibility of the Seller.

Section 3.02. Fair Consideration.

The consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Transfer Taxes.

Execution Version

ASSET PURCHASE AGREEMENT

By and Between

The Township of Lower Makefield, Bucks County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of September 17, 2020

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the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for the Seller, pay, perform and discharge the liabilities and obligations of the Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, the Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.14 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.14 identifying such contract, and such contract will thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) If, during the twelve (12) month period following the Closing Date, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.14 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract will be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL CONSIDERATION

Section 3.01. **Purchase Price and Additional Consideration**

The purchase price for the Acquired Assets is Fifty Three Million Dollars ($53,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay Three Million Dollars ($3,000,000) to Seller as a deposit on account of the Purchase Price (the "Deposit") upon the earlier to occur of: (1) the third business day following Buyer's receipt of notice from the PaPUC that the application to the PaPUC for the transaction contemplated by this Agreement has been conditionally accepted; and (2) December 15, 2020. The Deposit shall be governed as follows:

(i) Subject to subparagraph (ii) below, Seller shall be free to use the Deposit upon receipt as it determines in Seller's sole discretion.

Respondent: Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Appraisals

19. Have Buyer's and Seller's UVE corresponded with regard to their respective fair market value appraisals of the assets at issue in this case? If yes, provide the following information:

a. Identify the nature and date(s) of correspondence;

b. Identify the type(s) of correspondence (i.e. written, verbal, etc); and,

c. Provide copies of any written correspondence exchanged between the UVEs

Response: No.

Respondent: Mark J. Bubel, Sr. Project Engineer III of Aqua Pennsylvania, Inc.
and
Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Miscellaneous

20. Are there any outstanding compliance issues that the Seller's system has pending with the PA Department of Environmental Protection. If yes, provide the following information:

a. Identify the compliance issue(s);

b. Provide an estimated date of compliance;

c. Explain Buyer's anticipated or actual plan for remediation;

d. Provide Buyer's estimated costs for remediation; and,

e. Indicate whether the cost of remediation was or is anticipated to be factored into either or both fair market valuation appraisals offered in this proceeding.

Response: a.- d. Compliance issues

Mark J. Bubel, Sr.

The Township does not currently have compliance issues. Please see the Direct Testimony of Mark J. Bubel, Sr., Application Exhibit V (Aqua Statement No. 2) page 14. The Township did not have any sanitary sewer overflows ("SSOs") in the system in 2019 or 2020.

e. Cost of remediation

Harold Walker III:

Gannet Fleming's appraisal did not factor in specific projected remediation cost. However, the income approach does factor in (deduct) estimated capital expenditures when calculating future net cash flows. Historical remediation cost is reflected in the cost approach to the extent they are included in the Engineers Assessment's inventory.

Respondent: Mark J. Bubel, Sr. Project Engineer III of Aqua Pennsylvania, Inc.
and
Harold Walker III, Manager, Financial Studies, Gannett Fleming Valuation and Rate Consultants LLC
and
Jerome C. Weinert, Principal and Director, AUS Consultants
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Jerome C. Weinert:

While the cost of remediation of the compliance issues of the system were not specifically considered in AUS's appraisal, the appraisal's various approaches address the remediation issue in their application. The Cost approach's recognition of depreciation, i.e., the difference between the replacement cost new of $85,964,664 (a system without need for remediation) and the replacement cost new less depreciation of $58,078,339 reflects the value diminishment ($37,886,325) resulting from all causes, physical and functional depreciation related to wear and tear including such factors as remediation. Plant investment (replacement cost new less depreciation) was used along with historical plant expenditures in the income approach to project future expenditures (a deduction from cashflows) thus reducing the resultant income approach thereby addressing any remediation. The market approach was based on an analysis of market comparable to the depreciated original cost (OCLD) and the replacement cost less depreciation (RCNLD) both of which include the depreciation related to aging and wear and tear which also addresses any remediation costs.

Respondent: Mark J. Bubel, Sr.
Project Engineer III of Aqua Pennsylvania, Inc.
Date: July 23, 2021

AQUA PENNSYLVANIA WASTEWATER, INC.
EAST WHITELAND TOWNSHIP
Section 1329 Application Standard Data Requests

Miscellaneous

21. Are there any outstanding compliance issues that the Seller's system has pending with the US Environmental Protection Agency. If yes, provide the following information:

a. Identify the compliance issue(s);

b. Provide an estimated date of compliance;

c. Explain Buyer's anticipated or actual plan for remediation;

d. Provide Buyer's estimated costs for remediation; and

e. Indicate whether the cost of remediation was or is anticipated to be factored into either or both fair market valuation appraisals offered in this proceeding.

Response: Please see the responses to SDR-20. The PA DEP holds primacy regulatory authority in Pennsylvania.

EXHIBIT AA1

AQUA VERIFIED STATEMENT RE SELECTION OF
GANNETT FLEMING AS UVE

VERIFICATION

I, William C. Packer, Vice President, Regulatory Accounting & Regional Controller of Aqua Pennsylvania, Inc., hereby state that Aqua Pennsylvania Wastewater, Inc. selected Gannett Fleming Valuation and Rate Consultants, LLC as its Utility Valuation Expert to conduct a Fair Market Value Appraisal of the wastewater system assets of East Whiteland Township. I understand that my statement herein is made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

William C. Packer

William C. Packer
Vice President, Regulatory
Accounting & Regional Controller
Aqua Pennsylvania, Inc.

Dated: July 21, 2021

EXHIBIT AA2

EAST WHITELAND TOWNSHIP VERIFIED STATEMENT RE SELECTION OF AUS CONSULTANTS AS UVE

VERIFICATION

I, John Nagel, Township Manager of East Whiteland Township, hereby state that East Whiteland Township selected AUS Consultants, Inc. as its Utility Valuation Expert to conduct a Fair Market Value Appraisal of its wastewater system assets. I understand that my statement herein is made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

John Nagel
Township Manager
East Whiteland Township

Dated: July 30, 2021